Specifications For
Vehicle Exhaust Gas Analyzer Systems
For Use In The
Texas Vehicle Emission Testing Program

Date: March 4, 2015

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1.0 GENERAL

This document contains specifications for manufacturers to design vehicle emissions inspection analyzers (known as the analyzer(s) throughout this document) to be used in the Texas vehicle inspection and maintenance (I/M) program. The analyzers certified for use in the Texas I/M program must be capable of performing consistent acceleration simulation mode (ASM), two-speed idle (TSI), and on-board diagnostics (OBD) emissions inspections.

1.1 Design Goals

The analyzer must be designed and constructed to provide reliable and accurate service in the automotive service environment and have a useful life of at least five years. The software used in the analyzer must consist of a process control system capable of using reference data. The software also must be designed for maximum operational simplicity and be capable of providing emissions readings or codes that can be used for vehicle diagnostics. In addition, the analyzer must include security measures that will prevent unauthorized modifications to the software or inspection data, record unauthorized entry, also known as tampering, and prevent subsequent inspections when tampering is detected.

The analyzer specifications contain the minimum requirements for analyzers used to perform emissions inspections in the I/M Program. Manufacturers may include additional items with approval from the Texas Commission on Environmental Quality (TCEQ).

1.1.1 Identification Data

A nameplate including the following information must be permanently affixed to the housing of the analyzer:

- name and address of manufacturer;
- model description;
- serial number; and
- date of assembly.

In addition, the manufacturer shall affix a label to the housing of the analyzer that contains a toll-free telephone number for customer service. This telephone number must also be displayed on error messages that recommend the need for service by the manufacturer.

The analyzer must also electronically display:

- the nameplate data;
- the analyzer number; and
- the propane equivalency factor (PEF).

The first two characters of the analyzer number must be alpha characters, denoting the manufacturer's initials. The initials chosen are subject to approval by the TCEQ to prevent duplication between

manufacturers. The remaining six characters must be numeric. The numbers must be right justified and zeroes used to fill blank spaces between the initials and the numbers. For example, the analyzer number for an analyzer with a serial number of “23” from Hasty Electronics would be “HE000023”.

1.2 Manuals

Each analyzer sold or leased by the manufacturer must be provided with a current copy of a manual that contains, at a minimum, operating instructions, maintenance instructions, and initial start up instructions.

1.3 Certification Requirements

The manufacturer shall submit a letter to the TCEQ stating that an analyzer model sold or leased by the manufacturer or its authorized representatives satisfies all design and performance criteria described in these specifications. The manufacturer shall also provide documentation to demonstrate conformance with these criteria, including a complete description of all hardware components, the results of appropriate performance testing, and a point by point response to specific requirements.

All components of the analyzer must be tested by an independent laboratory. The manufacturer shall obtain prior written approval from the TCEQ of the certification laboratory and notify the TCEQ at least fifteen days in advance of the certification process. The notification must include the laboratory name, address, telephone number, and the contact person. The TCEQ reserves the right to be present during the evaluation of all analyzers. The independent laboratory must issue a report detailing the objectives, test methods, and test results of the component. The report must be submitted to the TCEQ for evaluation and acceptance. Previous certification by the TCEQ may be considered in this process, but may not be sufficient to satisfy all documentation requirements. The manufacturer shall be responsible for all costs associated with analyzer certification.

Unless otherwise specified, a copy of the software documentation listed below must be submitted to the TCEQ as part of the certification application. The documentation must include, at a minimum, the following:

- complete program listing(s);
- functional specifications;
- functional flowcharts of the software;
- example inputs and outputs from all processes;
- detailed interface information on system components including the identification of protocol and output specifications; and
- file layouts.

To ensure proper maintenance of all analyzers, a full description of the manufacturer’s service procedures and policies, sample contracts, warranties, and extended service agreements must be provided as part of the certification application. The manufacturer shall provide a training plan to the TCEQ that will be used to conduct certification training of potential inspectors on the use of the analyzer. One fully functional analyzer must be supplied to the TCEQ at no charge.

1.3.1 Confidential Information

The manufacturer must specify that the certification package or the elements within the package are confidential and exempt from release under the Texas Open Records Act (TORA). In addition, the manufacturer shall list which exceptions of the TORA applies with specific and detailed reasons. Each page containing confidential information should be marked accordingly. All certification packages or their respective parts that are not marked confidential will automatically be considered public information. Vague and general claims to confidentiality are not acceptable. This requirement is necessary so that the TCEQ will have sufficient information to provide to the Attorney General of Texas if an opinion is requested. The TCEQ does not assume responsibility for legal arguments on behalf of the manufacturers. The manufacturers are advised to consult with legal counsel concerning disclosure issues resulting from this certification process and take precautions to safeguard trade secrets and other proprietary information.

1.3.2 Escrow of Software

The manufacturer of the analyzer must submit a letter of corporate authorization agreeing to place software source codes and other pertinent technical information in an escrow placement approved by the TCEQ. The manufacturer shall contract with the approved escrow company and provide the TCEQ with a copy of the contract including the TCEQ as a beneficiary. Certification of the analyzer will not be valid until this condition has been met.

The manufacturer must place in escrow the most recent version of analyzer software, including but not limited to, the actual software code and related materials used to meet this specification. The software will be turned over to the TCEQ only if the manufacturer defaults or cannot ensure continued performance of the analyzers.

In the event that the software is transferred, the TCEQ shall protect it from public dissemination and commercial usage. The software may be used, maintained, and updated by the TCEQ, or its assignee, to support the I/M program. At a minimum, the TCEQ shall:

- limit source code access to parties necessary to maintain and update the analyzers;
- require all parties to sign a non-disclosure agreement before obtaining access to the code; and
- grant no license permitting an entity to use any part of the codes for any commercial purpose other than to update and operate the analyzers.

The purpose of the requirements regarding the software is to provide the TCEQ with a mechanism to ensure continued performance of analyzers in the event that a manufacturer should default. The TCEQ is not interested in the disclosure of proprietary information or the detailed inner workings of the software. However, it is essential that the software, schematics, and drawings be available in case the manufacturer defaults.

1.3.3 Performance Bond

As a prerequisite to certification, the manufacturer shall furnish a performance bond to the TCEQ. This bond must be in a form approved by the TCEQ, executed as a surety by a bonding company authorized to do business in the State of Texas, and signed by a licensed resident agent. The performance bond must be for $1,000,000.00 and must remain valid for the entire time period that the manufacturer participates in

the I/M Program. The performance bond must cover all analyzers that are certified to conduct emissions inspections in the I/M program.

The performance bond may be used by the TCEQ at any time if the manufacturer is in default of the requirements of these specifications, including but not limited, to the following "Events of Default":

A) the manufacturer fails to remedy a breach of covenant, representation, or warranty required by these specifications within thirty (30) days after written notice of such breach has been given to the manufacturer by the TCEQ;

B) the manufacturer makes a general assignment for the benefit of creditors, admits in writing its inability to pay debts as they mature, institutes proceedings to be adjudicated upon voluntary bankruptcy, consents to the filing of a bankruptcy proceeding against it, files a petition or answer or consent seeking reorganization, readjustment, arrangement, composition, or similar relief under federal bankruptcy or any other similar applicable law(s), consents to the filing of any such petition, consents to the appointment of a receiver, liquidator, trustee, or assignee in bankruptcy or insolvency of the manufacturer or a substantial part of its property, or takes action to further any of these purposes; or

C) a court of competent jurisdiction enters a decree or order adjudging the manufacturer as bankrupt or insolvent, or approving a properly filed petition seeking reorganization, readjustment, arrangement, composition, or similar relief for the manufacturer under the federal bankruptcy or any other similar applicable law(s), and such decree or order is not discharged or stayed continuously for a period of sixty (60) days; or a decree or order of a court of competent jurisdiction for the appointment of a receiver, liquidator, trustee or assignee in bankruptcy or insolvency of the manufacturer or of a substantial part of its property, or for the liquidation of its affairs, is entered, and such decree or order is not discharged or stayed continuously for a period of sixty (60) days; or any substantial part of the property of the manufacturer is sequestered or attached and is not returned to the manufacturer or released from such attachment within sixty (60) days thereafter.

To require performance by the surety under the performance bond, the TCEQ shall give written notice of the event of default to the manufacturer, specifying the date upon which the surety performance must begin.

The Executive Director of the TCEQ or its designee shall release the performance bond once it is determined that the manufacturer has satisfactorily completed its obligations in accordance with the terms of these specifications, or at an earlier date, if it is determined by the Executive Director to be in the best interest of the State.

1.4 Warranty Coverage and Extended Service Agreements

A written warranty coverage agreement, signed by an authorized representative of the equipment manufacturer and the vehicle inspection station, which provides a complete description of coverage for all systems and components and all manufacturer provided services listed below in Section 1.5: *Manufacturer Provided Services*, must accompany the sale or lease of each analyzer.

The original manufacturer's warranty must be a minimum of one year from the date of purchase. An extended warranty service agreement must be available to the analyzer owner upon the expiration of the manufacturer's original warranty period. Cost disclosures of consumable inventory items and extended warranty service agreements with detailed descriptions of coverage must be available to all analyzer owners.

The cost of extended warranty service agreements must be updated annually and provided to the TCEQ. Future costs of the service agreement charges cannot exceed the amount published until the anniversary of the published amount.

1.5 Manufacturer Provided Services

A manufacturer-authorized repair technician is an emissions analyzer service technician that is authorized by the analyzer manufacturer to perform service on their fleet of analyzer platforms. Only manufacturer-authorized repair technicians may access the secure areas on the analyzers.

The manufacturer-authorized repair technician shall perform a gas calibration prior to returning an analyzer to service whenever a component of the emissions measurement system is repaired or replaced. Similarly, the manufacturer-authorized repair technician shall perform a leak check each time the analyzer's sample line is broken and repaired. Manufacturer-authorized repair technicians shall have a software driven menu option or other acceptable method that records the transfer of inspection station, inspector information, and other data from one analyzer to another without manual inputs or the transfer of previous data.

The TCEQ may require the manufacturer to conduct on-site or laboratory testing of the analyzer in order to document continued compliance. The manufacturer shall supply the inspection station a temporary replacement analyzer that meets the I/M program requirements if an analyzer is removed from the station for repair or testing. The manufacturer shall be responsible for any costs incurred under this requirement.

The analyzer manufacturer shall correct software features that do not meet these specifications to the satisfaction of the TCEQ. The enhancement of operational software must be specified by the TCEQ and be designed to update through modem technology. Unless authorized by the TCEQ, software enhancements must be available for beta testing within 120 days of commencement of a software update contract and receipt of an updated analyzer specification. The analyzer manufacturer shall not modify any existing analyzer software without obtaining approval from the TCEQ.

The manufacturer shall be responsible for training state officials responsible for oversight of the I/M program, including but not be limited to, the instruction on all operational, maintenance, and quality control features of the analyzer sampling system and dynamometer, full access to and use of inspection, audit, and calibration menus, and optional programs offered to inspectors. This training must be conducted at the manufacturer's expense as a condition of certification, and once per year in each I/M program area upon written request by the TCEQ.

The manufacturer shall provide the following services to the inspection station as part of any sale, lease, or loan of an analyzer:

A) Delivery, installation, calibration, and verification of the proper operating condition of the analyzer.

B) Two extra sample filters with each ASM and/or TSI analyzer, and an additional printer cartridge or a certificate redeemable for a printer cartridge for all analyzers.

C) A minimum of six hours training to the owners and operators for each analyzer purchased, leased, or upgraded.

The manufacturer shall provide the following services to the inspection station as part of the manufacturer's original warranty and thereafter as a portion of the extended warranty service agreement.

A) Full systems support and repair, including temporary provision of units of equal quality and specification.

B) Quarterly examination, calibration, and routine maintenance of the dynamometer, analyzer, and sampling systems on ASM and TSI analyzers. Annual examination must be required on OBD-only analyzers.

C) On-site service response by a manufacturer-authorized repair technician within two business days, excluding Sundays, national holidays (New Years Day, Martin Luther King, Jr. Day, President's Day, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas), and other days the purchaser's business might be closed, of a request from the inspection station. The names, toll free telephone number(s), and service facility addresses of the manufacturer's representatives responsible for equipment service must be provided to the inspection station. All system repairs, component replacements, and/or analyzer adjustments, including reset of quality control lockout systems, must be accomplished on-site within two business days after a service request has been initiated. If the completion of this work is not possible within this time period, an analyzer of equal quality and specifications must be provided until the malfunctioning unit is properly repaired and returned to service.

1.6 Electronic Transmission

1.6.1 VID Communications Overview

A required component of the I/M program is the electronic transmission of inspection data. The TCEQ has an electronic network that enables the analyzer to automatically connect to a centralized vehicle identification database (VID). The analyzer must demonstrate the ability to receive, install, use, and transmit data to and receive data from the VID using the communications protocol. The communications protocol will be provided by the TCEQ.

Each inspection station must obtain and maintain VID communication services through the VID contractor designated by the TCEQ. The analyzer must use the communications protocol to access the features of the VID communications services in order to conduct vehicle inspections. The analyzer must prevent all inspection sequences from occurring if 31 days have passed since the last successful communication with the VID.

1.6.2 Form, Manner, and Frequency of Data Transmittals for VID Communication

A) Form: The data transmittal must consist of the records described in Appendix I: *File Layout*.

B) Manner: The manner of the data transmittal must be the analyzer's modem via a dial-up connection or other TCEQ approved connection methods. The analyzer must be maintained to ensure proper operation and be connected to an operational dial-up connection during all times of operation.

C) Frequency: The analyzer must conduct two transmissions for each emissions-related inspection. The first transmission at the beginning of the inspection will exchange data for the specific vehicle under inspection, and the second transmission at the end of the inspection will transmit the inspection results. The analyzer must also be able to initiate a transmission outside the official inspection sequences.

1.7 Data and File Transfer

The analyzer must be capable of transferring all inspection related records and other analyzer files using:

- a connection method as described in Section 1.6: *Electronic Transmission*; and
- a secured removable storage media used to store backup information.

The analyzer must also allow TCEQ-authorized representatives to transfer files to their laptops through the input/output ports described in Section 2.3.1: *Required Computer Configuration*. Access to the data transfer capability must only be available to the manufacturer-authorized field representatives and TCEQ-authorized representatives.

1.8 Tamper Resistance

The controlled access design must be the responsibility of the analyzer manufacturer, but all security measures must be submitted to the TCEQ for approval. The analyzer operators, TCEQ-authorized representatives, and field representatives authorized by the analyzer manufacturer shall be prevented from creating or changing any inspection results, programs, or data contained on the analyzer. The manufacturer shall use a special basic input/output system (BIOS), partitions (or equivalent approved by the TCEQ), and other appropriate software and hardware provisions to protect the I/M files and programs. The file and program protection may consist of mechanical systems in combination with electronic and software systems. The protection features must prevent access to the secured disk drives and portions of the hard disk containing I/M programs and inspection data. The control key or its functional equivalent, which gives access to the operating system (OS), must not be activated except through the use of a password on the audit menu. The password must be chosen by the TCEQ at the time of certification testing. Other security or protection alternatives, such as more sophisticated BIOS limitations or a line printer terminal (LPT) port key, may be proposed by the manufacturer for approval by the TCEQ.

The manufacturer shall, at a minimum, develop tamper resistant features to prevent unauthorized access through the analyzer cabinet. Micro switches, keyed and software controlled locks, and software algorithms requiring the use of an access code must all be used where appropriate. At a minimum, the service access codes must be changed monthly based on a unique algorithm provided by the manufacturer. The analyzer must have sensors, such as micro switches, to detect the open and closed state of the doors and other secured areas of the analyzer. Any unauthorized access to the secured areas of the analyzer must be detected, even when the power is off. A software lockout algorithm must be activated should tampering occur, which would abort any existing inspection sequence and prevent further inspections until the lockout is cleared by a field representative authorized by the TCEQ. The manufacturer shall develop a system to allow manufacturer-authorized repair technicians to clear tamper lockouts only during authorized service calls. The lockout system must be designed so that it can be activated from the audit menu by a TCEQ-authorized representative. The manufacturer may use keyed locks on the cabinet doors to secure the disk drives as long as the locks are built-in and can be changed by authorized personnel should a security problem be identified. A software controlled solenoid lock may also be used on the secured drive door of an analyzer. The solenoid lock may be used instead of or in addition to any key or combination lock that may be provided. The analyzer software must control the solenoid lock and unlatch the doors in response to authorized requests from the audit menu while maintaining the appropriate levels of security.

A tamper file must be created that includes the date, time, type, and location of the tamper lockout, date and time the lockout was cleared, and who cleared the lockout. The tamper lockout type and location must be accessible only through the lockout function of the analyzer's audit menu.

Access to the compact disc (CD) drive must be available to station personnel at all times. However, access to the BIOS, I/M related programs, and data must be secured separate from the CD and additional drives. The manufacturer shall provide a security method approved by the TCEQ for the CD drive(s) to prevent unauthorized reads, writes, and executables. However, the manufacturer may offer analyzers with additional disk drives that can run optional software application programs.

The analyzer must prevent manufacturer-authorized repair technicians from performing the following, except in a manner approved by the TCEQ:

1) clearing a state lockout;

2) clearing a lockout for a failed three-day gas calibration or leak check;

3) adding, deleting, or modifying station information or an inspector's license number; and

4) altering the calibration gas bottle values.

1.9 Automated Inspection Process Software and Displays

The inspection process, data collection, and quality control features of the analyzer must be automated as much as possible. The software must automatically select the emission standards and the vehicle load from an internal vehicle reference table. Vehicle identification information must be derived from a database accessed over a real time data system to the analyzer. Entry of the license plate number and all or part of the vehicle identification number (VIN) must be sufficient to access the vehicle record. Provisions must be made for manual entry of data for vehicles not in the reference files of the analyzer.

2.0 HARDWARE REQUIREMENTS

2.1 Overview

The hardware requirements for the analyzer must meet or exceed specifications as published by the California Bureau of Automotive Repair (BAR) and contained in the "BAR-97 EMISSIONS INSPECTION SYSTEM SPECIFICATIONS" (BAR-97), dated May 1996. The analyzer may include all amendments made to the BAR-97 hardware specifications to present date.

2.2 General Requirements

2.2.1 Availability of Circuitry

All components, including circuit boards and integrated circuits, used in the analyzer must be types and brands that are presently in common use. Custom read-only memory (ROM) programs developed by the manufacturer for building the analyzer are allowed.

2.2.2 Clock and Calendar

The analyzer must have a clock and calendar that tracks the current date and time. The date and the start and end time of the inspection must be included in the inspection record. The start time is defined as the moment the inspector's access code is entered to access an inspection sequence. The end time is the moment when the analyzer writes the inspection record.

The analyzer must reset the clock upon each successful contact made with the VID, except for the contact made at the end of an inspection. Resetting the clock, independent of updates through VID contacts, must require controlled access. The controlled access must be available only to TCEQ-authorized representatives and manufacturer-authorized repair technicians. The analyzer must be locked out from performing all inspections and display a message indicating that service is required if the time difference between the analyzer and VID vary more than 10 minutes on more than three occasions within one month. The analyzer must check the internal clock against the VID prior to clearing any lockout.

The analyzer must be capable of simultaneously determining the amount of time elapsed in an ASM or TSI emissions inspection (overall inspection time) and in a mode within an ASM or TSI inspection (mode time).

The clock used to check the coast down time must be accurate to within 0.1 percent of reading between 0.5 and 100 seconds, with a resolution of 0.001 seconds. The inspection mode timers used must be accurate to within 0.1 percent of reading between 10 and 1000 seconds with a resolution of 0.1 seconds.

2.2.3 Accessing the OBD System

The analyzer must include hardware and software necessary to access the on-board computer systems on all model-year 1996 and newer vehicles. The equipment design and operation of the analyzer must meet the federal requirements contained in Title 40 of the Code of Federal Regulations (CFR), Chapters 85.2207-2231 and the recommended practices regarding OBD inspections contained in the J1962, J1978 and J1979 published by the Society of Automotive Engineers (SAE). The analyzer must be able to connect to the vehicle's OBD connector and access, at a minimum, the following OBD data:

- the engine revolutions per minute (RPM);

- the readiness monitor status;
- the malfunction indicator light (MIL) status;
- the OBD communications protocol;
- the electronic VIN; and
- the diagnostic trouble codes (DTCs).

At a minimum, the analyzer must also be capable of communicating with all OBD vehicles that use the following communications protocols:

- International Organization for Standardization (ISO) 9141;
- variable pulse width (VPW) as defined in the SAE's J1850;
- pulse width modulation (PWM) as defined in the SAE's J1850;
- keyword protocol 2000 (KWP); and
- controller area network (CAN) as defined in the ISO 15765-4.3:2001.

The OBD interrogation process must be fully integrated into the analyzer, automated, and require no inspector intervention to collect and record the OBD data retrieved via the OBD connector link. No separate interface may be used.

2.3 Computers and Peripheral Requirements

The analyzer functions must be controlled by a personal computer (PC), or functional equivalent, and include the hardware and software needed to perform the functions required by this specification. The TCEQ reserves the right to add additional programs and performance requirements, up to the technical limits of the hardware, to improve the I/M program.

The manufacturer may offer an analyzer with additional disk drives that can run optional software and hardware application programs, however, the computer must not be bootable from any additional drive, nor must any program run from one of these drives have access to the computer's operating system. Additional drives must be located in a limited access secured area within the analyzer cabinet. The peripheral equipment, such as bar code readers, OBD scanners, and keyboards may use wireless communication to interact with the analyzer.

2.3.1 Required Computer Configuration

NOTE: An OBD-only analyzer that does not use a standard PC configuration is required to demonstrate functional equivalency to this section in order to receive approval from the TCEQ.

A) Operating System: The analyzer must be supplied with an operating system, such as but not limited to, the International Business Machines operating system/2 (OS/2), Microsoft Windows, Linux, or an equivalent operating system that provides transmission control protocol/internet protocol (TCP/IP) capability. If the analyzer was previously certified using disk operating system (DOS) version 6.0 or

higher, then the certification must be maintained as long as the operating system has safeguards to limit access to DOS. In all cases, the analyzer must not exit to DOS, provide a "shell to DOS," or be bootable from any unsecured drive.

B) Processor: The processing speed must be equivalent to pentium class slot one processor or a TCEQ approved equivalent. The motherboard must allow for processor upgrades.

C) Random-Access Memory (RAM): The analyzer must contain at least 16 megabytes (Mb) of available RAM and be expandable to at least 512 Mb.

D) BIOS: The analyzer must include a BIOS that provides a self diagnostic routine to check the performance of critical computer components. The BIOS self diagnostics during the power-up sequence must include, at a minimum, a processor, firmware, ROM, hard disk, keyboard, clock, set up RAM, and memory that enables full use of the operating system and supports the supplied components.

E) Bidirectional Universal Switch (BUS): When equipped with the TCEQ specified options, each analyzer must provide at least one free 16-bit extended industry standard architecture (EISA) slot and universal serial bus (USB) and two peripheral component interconnect (PCI) slots for future expansion. The PCI expansion slots must be PCI ("plug-and-play") compliant and capable of mapping interrupt requests (IRQ) 14 and 15. The TCEQ may waive the requirement for the spare EISA slot if the analyzer has slots available for upgraded options designated by the manufacturer that would facilitate future expansion.

F) Monitor: The active screen area must be in color, 0.28 dot pitch or less, and measure at least 15 inches diagonally. The monitor must be interchangeable, compatible with off-the-shelf PC monitors, and capable of non-interlaced resolution up to 1024 X 768. The monitor must interface with a color graphics adapter that is compatible with the super video graphics array (SVGA) color graphics adapter. The video adapter must be equipped with at least a 64-bit accelerator chip to increase its video processing speed and is PCI or accelerated graphics port (AGP) BUS compliant. The video adapter must be equipped with at least 1 Mb RAM and easily replaceable. A screen saver program must be provided for the monitor.

G) Secured Removable Storage Media: The analyzer must come with a backup removable data storage media, such as a floppy disk or equivalent. The storage media must be located in a secured area accessible only to TCEQ-authorized and manufacturer-authorized representatives. The storage media must be protected from contamination from elements in the automotive service environment. The analyzer's cooling fan, if equipped, must not create a negative pressure in the case unless the media is sealed to prevent negative pressure from drawing dust into the media. The secured drive must be designated the "A" drive.

H) CD: The analyzer may be equipped with one CD ROM or equivalent drive approved by the TCEQ that is capable of reading a CD. The disk drive must be protected from elements in the automotive service environment. The minimum acceptable sustained transfer rate is 600 kilobytes per second (kbps) with a minimum acceptable average random access time of 225 milliseconds (ms). A means for providing security to prevent unauthorized access to lower system function levels must be submitted by the manufacturer for the TCEQ's approval. The CD drive must be designated the "H" drive.

I) Hard Disk: The analyzer must come with at least 1 gigabyte (Gb) of usable formatted uncompressed hard disk storage. The manufacturer must leave at least 2.5 Gb of usable storage for the TCEQ and 1

Gb of graphic, audio, and text storage allotted for the technician. Second-by-second emissions inspections, including graphics and vehicle data, must be stored in the TCEQ designated storage area. The analyzer must warn the technician with a screen prompt when the hard disk is within 10 percent of being full in any of the allotted storage areas. The hard disk must include a TCEQ approved method of limiting logical access to the data and programs. The hard drive's minimum acceptable external burst transfer rate must be 33 Mbs per second and sustained internal transfer rate must be 5 Mbs per second. The minimum acceptable average random access time must be no less than 12 ms. Software cache must not be used when measuring the transfer rate or access times. The hard disk containing the TCEQ programs and files must be designated the "C" drive.

J) Hard Disk Interface: The hard disk interface must be PCI BUS compliant and use an enhanced integrated drive electronics Mode 4 or greater interface, a small computer system interface (SCSI-2) or greater, or an alternative interface approved by the TCEQ. The interface must be capable of maintaining a minimum transfer rate of 16,600 kbps with all peripherals.

K) Input/Output (I/O) Ports: The analyzer must include at least two parallel printer ports or equivalent. The printer may be connected to one of these ports. The parallel ports must be capable of bi-directional communication for use by the TCEQ. One of the ports must be free and accessible for data transfer or future expansion. The software providing this port transfer capability must be provided by the manufacturer. The software must allow the TCEQ-authorized representatives to transfer files to their laptops. Any access to the data transfer capability must only be available to the manufacturer and TCEQ-authorized representatives.

The analyzer must include at least one free male serial port. The serial port must be a "D"-shaped subminiature shell with 25 contact pins (DB25) with a programmable baud rate speed of 300 to 115.2 kbps or greater and is compatible with recommended standard 232C (RS232C). The port must be unpopulated and accessible for future expansion.

Three baud rate programmable I/O serial ports using circular plastic connector (CPC) female connectors must be provided for future expansion or for use by the manufacturer upon approval by the TCEQ. All reserved I/O serial ports must use 16550 universal asynchronous receiver/transmitter (UART) chips or greater. All I/O ports must be clearly labeled, accessible, and may be shared.

L) CPC Shell Reverse Connector: The reverse connector must be shielded and compatible with an AMP 211398-1 connector, and be circuit protected from power surges greater than 0.5 amperes. The pin-outs must be as follows:

PINS	SIGNAL	
1	Ground (GND)	
2	12 volts above ground (+12V)	
3	Rts	Reset (request to send)
4	Reserved (open)	
5	Shield - GND	
6	TXD	Transmit data

7	RCV	Receive data

The CPC ports must supply 12 volts of direct current (DC) that can be switched on and off by the analyzer's software to the attached equipment. The +12V pin must provide circuit protection against shorts or overloads. The circuit protection must be in the form of a fuse, circuit breaker, or equivalent. The circuit protection must be easily accessible to the manufacturer-authorized repair technician for fuse replacement and circuit breaker reset, unless it automatically resets. The circuit must capable of handling at least 6 watts.

2.3.2 Keyboard

The keyboard must be replaceable without requiring access to a secured area within the analyzer cabinet and be interchangeable with a locally purchased off-the-shelf keyboard.

2.3.3 Modem

The modem hardware must be located in the secure area of the analyzer and must support the protocols listed below.

- Modulation: International Telecommunications Union (ITU, formerly CCITT) Version (V.) 22, V.22bis, V.32, V.32bis, or V.34
- Error control: ITU V.42, Microcom Network Protocol (MNP) 2, 3 and 4
- Compression: ITU V.42bis, MNP 5
- Connect Time: The modem must achieve a link with the VID in less than 10 seconds at 14.4 kbps baud or higher. The link time is measured from the point the line is picked up to the point of connect.

The modem must support the industry standard Hayes command set and at least baud rates of 36.6 kbps to 56 kbps asynchronous operations. The analyzer must provide a means of disabling the modem and the associated expansion BUS slot. The analyzer must also include another high speed I/O port with the intent of supporting an upgraded modem or future expansion when the modem does not use a common expansion BUS slot.

2.3.4 Printer

A laser printer or a TCEQ approved equivalent printer must be supplied with each analyzer purchased, leased, or upgraded. The analyzer's printer must be interchangeable with a locally purchased off-the-shelf laser printer. A service call is required to load any additional drivers needed to ensure the printer functions properly.

2.4 Cabinet and Peripheral Requirements

2.4.1 Power and Telephone Cord

The modem must be, at a minimum, designed to connect to the analyzer with a modular telephone connector that has a standard wiring configuration. The connector must be located on the back of the analyzer cabinet. Alternatives to this requirement may be proposed to the TCEQ for evaluation.

The telephone and power cords must be at least 25 feet long and enclosed in a protective cable meeting the Underwriter's Laboratory approval. Alternative methods to protect the telephone and power cords may be submitted to the TCEQ for approval. The manufacturer shall design the cabinet so that convenient storage is provided for the excess telephone and power cords.

2.4.2 Power Requirements

The analyzer must operate on an alternating current (AC) and must not be powered by a portable AC generating unit. Input power must be 115 volts of alternating current (VAC) with 60 hertz. The instruments must meet the specified requirements over an input voltage variation of at least +/- 12 volts. The maximum allowable performance change due to line voltage variations must not exceed one-third of the accuracy requirements. The power supply must be capable of handling at least 300 watts of additional TCEQ upgrade devices.

2.4.3 Analyzer Construction

The analyzer must be designed and constructed to provide reliable and accurate service in the automotive service environment. The analyzer must be supplied with a cabinet that is equipped with a storage area large enough to secure all accessories and operating manuals.

A) Materials: The materials used in construction of the analyzer must be resistant to corrosive substances found in the automotive service environment and be designed to last for at least the useful life of the analyzer.

B) Finish: The exterior and interior finish of the entire cabinet and console must be sufficiently durable to withstand the chemicals and environmental conditions normally encountered in the automotive service environment for the period of the warranty.

C) Mobility: The analyzer may be permanently mounted or mobile with the use of wheels. Wheels must be at least five inches in diameter and have a locking mechanism capable of preventing movement on a 15 degree incline.

   Mobile analyzers must be designed to move over rough surfaces, through three-inch deep holes, and on 15 degree inclines without tipping over. The analyzer must not tip over when placed at the center of an inclined plane and rotated 360 degrees stopping in the position where it is most likely to tip over. The incline plane must make an angle of 10 degrees with the horizontal floor. In addition, the analyzer must not become unstable or tip over when rolled straight off the edge of a two-inch high platform or when one wheel is rolled over a drain, two inches below the surface, or inside an 18-inch diameter depression.

D) Electrical Design: Fuses or circuit breakers must be used to protect individual electrical circuits in the analyzer. The main circuit breaker and fuses must be readily accessible from the exterior of the cabinet. Analyzer operation must be unaffected by electrical line noise and voltage surges. The analyzer must be protected from voltage surges to prevent damage to the internal components from a simultaneous start up of a 220 volt compressor, an arc welder, hydraulic controls, and other equipment commonly found in the typical automotive service environment.

2.4.4 Bar Code Scanner

The bar code scanner must be able to read a one-dimensional (1-D) and a two-dimensional (2-D) bar code through a windshield and use visible laser diode technology or an equivalent approved by the TCEQ. The bar code scanner must not be able to read universal product code (UPC) 1-D bar codes. The bar code scanner must be able to withstand multiple drops to concrete covering a distance of at least 4 feet and be environmentally sealed to withstand the normal operating conditions of an automotive service environment.

2.4.5 Gas Cap Tester

2.4.5.1 Equipment Specifications

The gas cap tester must be able to supply air pressure significant enough to produce and measure a leak rate of 60 cubic centimeters per min (cc/min) of air at 30 inches of water pressure. The tester must:

- be tamper resistant;
- control the air supply pressure and prevent over pressurization;
- provide a visual or digital signal that the required air supply pressure is within the acceptable range and a flow comparison test is ready to be conducted;
- be supplied with a reference passing gas cap, or equivalent, with a nominal 52-56 cc/min leak rate; and
- be supplied with a reference failing gas cap, or equivalent, with a nominal 64-68 cc/min leak rate.

The tester may use:

- a squared edged circular orifice to generate the required leak rate; and
- ambient air or any convenient low pressure source.

The gas cap tester connector must be a minimum length of 20 feet so that it can reach gas caps that are attached to vehicles.

2.4.5.2 Gas Cap Adapters

Adapters must be available for at least 95 percent of the gas caps used for the most recent 24 model-year light-duty vehicles and trucks. Varying internal volumes of the gas caps and adapter assemblies must not affect the accuracy of the inspection results. Adapters must be made available the first day of each year upon the introduction of new model-year vehicles.

2.4.5.3 Data Transmission for External Gas Cap Testers

The tester must be equipped with a serial data port to transmit pass, fail, and calibration information to the analyzer.

A CPC serial port, as described in Section 2.3.1: *Required Computer Configuration*, must be used for communication and providing the power needed to operate the gas cap tester. The connector on the analyzer and pin configuration must be as listed in Section 2.3.1: *Required Computer Configuration*. Alternate connectors may be used upon approval from the TCEQ.

2.4.6 Engine Revolutions per Minute Detection

Analyzers must be equipped with a tachometer, or equivalent software and hardware necessary to detect engine RPM from the original equipment manufacturer (OEM) ignition technologies in use at the time of certification. Possible updates may be required to enable future ignition systems to be monitored for engine RPM. A software "HELP" screen must be available to help the inspector locate an RPM signal. The cable-type connection must be at least 25 feet long (measured from the front of the analyzer).

Based on the vehicle identification information available to the inspector, the analyzer must display messages indicating when the vehicle under inspection requires a specific type or method of the tachometer pick-up connection. A digital display tachometer must be displayed to measure engine speed. For ASM and TSI analyzers, RPM readings must be recorded on a second-by-second basis for the 10 second or 5 second period that is used to determine the pass or fail status of the ASM or TSI emissions inspection, respectively. The tachometer operation must use one of the following means:

- radio frequency-type transmitter/receiver that requires no direct vehicle connection and can detect engine RPM on vehicles using distributorless ignition systems (DIS);
- cable-type connection capable of detecting engine RPM of current OEM ignition technology; or
- cable-type connection capable of detecting engine RPM via the OBD port.

During the official inspection process the analyzer must prompt the inspector to shut the engine off while connecting the cable-type RPM connection. The RPM bypass function must be made available when the live engine RPM is displayed for the first time. If the RPM cannot be obtained, the inspector shall be allowed to bypass the RPM. The inspector must simultaneously strike at least two keys to activate the RPM bypass. The bypass function must no longer be available once the emission inspection has begun.

The inspector may use the previously listed methods for 1996 and newer model-year vehicles if the OBD port is unable to detect engine RPM. Tachometer performance must be no less than a 0.5 second RPM response time with an accuracy of +/-3 percent of actual RPM.

2.5 Inspection Restrictions Based on Current Calibrations

The analyzer must:

- prevent all inspections, except safety only inspections on vehicles without emissions requirements (i.e., trailers, motorcycles, diesels), if the gas cap tester calibration has not passed in the last 24 hours;
- prevent ASM and TSI emissions inspections if the leak check has not passed in the last 24 hours;
- prevent ASM and TSI emissions inspections if the gas calibration has not passed in the last 72 hours;
- prevent ASM emissions inspections if the dynamometer calibration has not passed in the last 72 hours; and

- prevent ASM emissions inspections for front wheel drive vehicles if the restraint system is not in place.

The analyzer must display appropriate error messages that indicate when a leak check or other calibration is needed to allow inspections to be performed.

2.6 Running Changes and Other Hardware Modifications

Changes to design characteristics, component specifications, or any other modifications to the analyzer hardware must be approved by the TCEQ. The manufacturer is responsible for confirming that such changes will have no detrimental effect on performance of the analyzer. The TCEQ may require testing at TCEQ approved beta test sites prior to the release of the modifications.

All proposed hardware modifications must be thoroughly tested by a third-party before being submitted to the TCEQ, and be accompanied by a cover letter containing the following information:

- description of all of the proposed modifications to be performed, a parts list, and the installation instructions for the manufacturer-authorized repair technician;
- test data and an engineering evaluation regarding the effects of the proposed modification(s) on the performance and reliability of the analyzer for any modifications to the bench or sample system;
- timeline showing timeframe in which the modifications are expected to occur and the number of existing analyzers that will be updated;
- description of any special procedures that are needed to perform the hardware modifications; and
- documentation for any software update that would be required for the proposed hardware modifications.

2.7 Exhaust Gas Analysis Equipment Specifications

This section defines the requirements for the components needed to determine the concentrations of the exhaust gases during the ASM and TSI inspections.

2.7.1 Measured Gases

The analyzer must measure hydrocarbons (HC) as hexane in parts per million (ppm), carbon monoxide (CO), carbon dioxide (CO_2), and oxygen (O_2) in percent, and nitrogen oxides as nitric oxide (NO) in ppm. The analyzer must have a digital display for vehicle engine speed and exhaust concentrations of HC, CO, NO, and CO_2, and must be capable of measuring exhaust concentrations of HC, CO, CO_2, NO, and O_2 at a minimum sample rate of twice per second.

NOTE: ASM emissions inspection standards, calculations, concentration tables, and procedures are located in Appendix S: *ASM Inspection Standards and Calculations*, Appendix T: *ASM Concentration Tables*, and Appendix U: *ASM Inspection Procedures*. TSI emissions inspection standards and vehicle model-year groupings are located in Appendix A: *TSI Emissions Standards*.

2.7.2 Warm-up Conditions

The analyzer must reach stability within 30 minutes from startup at 35 degrees Fahrenheit (°F). The analyzer must be considered warmed-up when the internal verifications are complete and the zero and span readings for HC, CO, CO_2, and NO have stabilized within the allowable accuracy values for five minutes without adjustment. If stabilization has not been reached within an allotted time frame, then the analyzer must prevent the ASM and TSI inspection sequences and display a message instructing the inspector to call for service. Functional operation of the gas sampling system must remain disabled through an internal lockout until the instrument meets stability and warm-up requirements.

2.7.3 Sampling System Components

A) General: The sampling system must extract exhaust gas from a subject vehicle, remove particulate matter and aerosols from the sampled gas, drain the condensed water from the sample if necessary, and deliver the resultant gas sample to the analyzer's sensors for analysis. The sampling system must, at a minimum, consist of a tailpipe probe, flexible sample line, continuously draining water removal system, particulate trap, sample pump, and flow control components. Provisions must be made for the introduction of zero air and calibration gases. Materials that are in contact with the gases sampled must not contaminate or change the composition of the gases to be analyzed, including gases from vehicles not fueled by gasoline. The system must be designed to be corrosion-resistant and to withstand vehicle exhaust.

B) Sample Probe and Hose Criteria:

- Sample hose must be 25 feet in length with a tolerance of +/- 0.5 feet when measured from the front of the analyzer cabinet. The hose must be composed of non-kinking material that will not be affected by or react to the exhaust gases.

- Sample hose and probe provided with each analyzer must withstand exhaust gas temperatures at the probe tip of up to 1,100°F for 10 minutes. Use of dissimilar metals with thermal expansion factors of more than 5 percent must not be used in either the construction of probes or connectors.

- A positive means of retention must be incorporated to prevent the probe from slipping out of the tailpipe when in use.

- A thermally insulated securely attached hand grip must be provided on the probe to ensure easy probe insertion using one hand.

- The probe must be designed so that the tip extends 16 inches into the tailpipe and at least 10 inches into the vehicle's exhaust.

- The probe tip must be shielded to avoid inadvertent debris collection and sealed to prevent any sample dilution when it is inserted into the tailpipe. Use of a tailpipe extension is permitted as long as the extension does not change the exhaust back pressure by more than +/- 1 inch of water pressure.

- A straight probe tip must be provided that is bent less than 15 degrees, made of stainless steel solid-wall tubing with a 3/16 inch outside diameter, and designed so the connector between the removable probe tip and the rigid portion of tubing is up inside the tailpipe at least three inches to reduce the effects of any leak that might occur.

- A probe tip cap suitable for performing a leak check must be provided if the vacuum decay method for performing a leak check is used. Otherwise, all hoses and connectors that are necessary to perform a leak check must be provided.

- The sample system must include equipment necessary to inspect vehicles equipped with dual exhaust pipes. The flow in each leg of the dual exhaust probe sample system must be equal.

C) Particulate Filter and Water Trap:

- The particulate filter must be capable of trapping 97 percent of all particulates and aerosols five microns or larger.

- The filter must not absorb or adsorb HC.

- The filter housing must be transparent to allow the operator to observe the filter's condition without removing the housing. The filter must be removable and reliably seal after replacement.

- The water trap must be sized to remove exhaust sample water from vehicles fueled with, or a combination of gasoline, propane, compressed natural gas (CNG), oxygenated fuels, and alternative fuels, such as methanol (M85), and ethanol (E85). The filter bowl, filter, and housing must not react to these fuels or the vehicle's exhaust gases. The condensed water must be continuously and sufficiently drained from the water trap's bowl to prevent condensation in the sample system or in the optical bench's sample cell.

D) Low Flow Indicator: The analyzer must lockout official inspections when the sample flow is below the acceptable level. The analyzer's sample system must be equipped with a flow meter or equivalent device that detects sample flow degradation. The analyzer must display a low flow condition message when flow rate causes the measurement error for any gas other than NO to exceed 3 percent of the gas value used for calibration or audit or causes the analyzer response time to exceed 13 seconds to 90 percent of a step change in input, whichever is less. The sample vacuum may be continuously monitored to detect a low flow condition as an alternative.

E) The analyzer must lockout official inspections when the sample flow is below the acceptable level. The analyzer's sample system must be equipped with a flow meter or equivalent device that must indicate when sample flow degradation for any gas other than NO causes:

- the measurement error to exceed 3 percent of the gas value used for checking; or

- the analyzer response time to exceed 13 seconds for a 90 percent step change in input.

The sample vacuum may be continuously monitored to detect a low flow condition as an alternative.

2.7.4 Operating Range

The analyzer must operate within ambient dry-bulb air temperatures ranging from 35°F to 110°F and a minimum of 95 percent relative humidity.

The analyzer must be designed so that adequate air flow is provided around critical components to prevent automatic shutdown due to overheating and to maintain the reliability and durability of the

analyzer by preventing the condensation of water vapor. The analyzer must include features necessary to keep the sampling system within the specified range.

2.7.5 Humidity

Relative humidity must be measured prior to the start of every inspection in order to calculate the NO humidity correction factor and recorded in the RELATIVE_HUMIDITY field of the inspection record. Wet bulb thermometers must not be used. The humidity measuring device must have the following minimum characteristics:

- range: 5 - 95 percent relative humidity;
- accuracy: +/- 3 percent of full scale or better; and
- operating temperature range: 35 - 110°F.

2.7.6 Ambient Air Temperature Measurement

The ambient air temperature must be measured prior to the start of every inspection and recorded in the AMB_BULB_TEMP field of the inspection record. The temperature measuring device must have the following minimum characteristics:

- range: 0 - 140°F; and
- accuracy: +/- 3°F.

2.7.7 Barometric Pressure Compensation

Barometric pressure must be measured prior to the start of every inspection and must be recorded in the BARO_PRESSURE field of the inspection record. The barometric measuring device must have the following minimum characteristics:

- range: 24 - 32 inches of mercury (Hg) absolute (610 - 810 millimeters of Hg absolute);
- accuracy: +/- 3 percent of point or better; and
- operating temperature range: 35 - 110°F.

2.8 Analyzer Requirements

2.8.1 Gas Calibration

A) General: The analyzer must automatically require and successfully pass a leak check and a gas calibration for HC, CO, CO_2, O_2 and NO by a method that is approved by the TCEQ. The analyzer must not allow an error of more than 1 percent of the readings using the high and low range span gases for ASM and TSI inspections as described in Section 2.8.1.1: *Calibration Gases for ASM Analyzers* and Section 2.8.1.2: *Calibration Gases for TSI Analyzers*. The analyzer must automatically prohibit the performance of the tailpipe portion of the vehicle emissions inspection when readings exceed the 1 percent error tolerance. The analyzer channels must be adjusted to the center of the allowable tolerance range as a result of the gas calibration procedure.

The standard gases to be used to calibrate and audit the analyzer must meet the requirements in the Federal Clean Air Act, §207(b) and described in Subpart W of Part 85 of Chapter I, Title 40 of the CFR. All standard gases purchased by the inspection facility for use in the analyzer must conform to the requirements established by the BAR for emissions inspection analyzer calibration gases and the National Institute of Standards and Technology (NIST).

B) Gas Calibration Procedure:

- The analyzer must maintain accuracy between gas calibrations taking into account all errors, including noise, repeatability, drift, linearity, temperature, and barometric pressure. Also, at the conclusion of each gas calibration and leak check, the required data must be placed in the CAL.DAT file.

- The analyzer must automatically require a zero gas calibration and a high and low range gas calibration for HC, CO, CO_2, O_2, and NO, where applicable. The analyzer must record the gas reading data prior to the adjustment and other data pertinent to control charting analyzer performance.

- The gas calibration must be accomplished by the following method: Calibration gases that meet the requirements of Section 2.8.1.1: *Calibration Gases for ASM Analyzers* and Section 2.8.1.2: *Calibration Gases for TSI Analyzers* must be introduced into the calibration port of the analyzer. The pressure in the sample cell must be the same with the calibration gas flowing as with the sample flowing during an inspection. Once the pressure is the same, the analyzer must perform a zero gas calibration and a leak check. The leak check must ensure that the entire sample system does not leak.

2.8.1.1 Calibration Gases for ASM Analyzers

The following gases must be used for the two-point calibration and audit.

A) Zero Gas

O_2	=	20.7 percent
HC	<	1 ppm total hydrocarbons (THC)
CO	<	1 ppm
CO_2	<	400 ppm
NO	<	1 ppm
N2	=	Balance 99.99 percent pure

B) Low Range Calibration Gas

HC	=	200 ppm propane
CO	=	0.5 percent
CO_2	=	6.0 percent
NO	=	300 ppm
N2	=	Balance 99.99 percent pure

C) High Range Calibration Gas

HC	=	3200 ppm propane
CO	=	8.0 percent
CO_2	=	12.0 percent
NO	=	3000 ppm

N2 = Balance 99.99 percent pure

2.8.1.2 Calibration Gases for TSI Analyzers

The following gases must be used for the two-point calibration and audit. The gases listed in Section 2.8.1.1: *Calibration Gases for ASM Analyzers* may be used for the two-point calibration and audit of TSI analyzers if the gases contain propane, CO, and CO_2 in the concentrations listed in Section 2.8.1.1: *Calibration Gases for ASM Analyzers*, but do not contain NO.

A) Low Range Calibration Gas

HC = 300 ppm propane
CO = 1.0 percent
CO_2 = 6.0 percent
N2 = Balance 99.99 percent pure

B) High Range Calibration Gas

HC = 1200 ppm propane
CO = 4.0 percent
CO_2 = 12.0 percent
N2 = Balance 99.99 percent pure

2.8.2 Dilution

The flow rate of the analyzer must not cause more than 10 percent dilution during sampling of vehicle exhaust gases from a 1.6 liter engine at normal idle. Ten percent dilution is defined as a sample of 90 percent exhaust and 10 percent ambient air.

2.8.3 Calibration Prompts and Gas Usage

The analyzer must display prompts to guide the inspector through the gas calibration procedure in a manner that minimizes the amount of gas used. The analyzer must be designed to keep the loss of calibration gas to less than 0.5 liter in 24 hours when the valve on the calibration gas bottle is left open.

2.8.4 Propane Equivalency Factor

The value of the PEF must range from 0.490 to 0.540 and be displayed in a manner acceptable to the TCEQ for each gas audit and gas calibration point. If an optical bench must be replaced in the field, then the manufacturer-authorized repair technician must change any external labels to correspond to the PEF of the new bench. The analyzer must incorporate an algorithm relating PEF to HC concentration. Corrections to the PEF must be made automatically and the corrected PEF value must range from 0.470 to 0.560.

2.8.5 System Response Time Requirements

The response time from the probe to the analyzer display must not exceed:

- eight seconds for 90 percent of a step change in input for HC, CO, and CO_2;
- 12 seconds for 95 percent of a step change in input for HC, CO, and CO_2;

- 40 seconds for a step change in O_2 from 20.9 percent to 0.1 percent;
- 12 seconds for 90 percent of a step change in input for NO; and
- 12 seconds for a step change in NO from a stabilized reading to 10 percent of that reading.

2.8.6 Non-Dispersive Infrared Beam Strength

The non-dispersive infrared (NDIR) beam strength from the source to the detector for all channels must be monitored such that when the beam degrades beyond the adjustment range of the analyzer, the analyzer must set an internal lockout preventing ASM, TSI and OBD inspections. The manufacturer shall specify at what point degradation occurs whereby the signal cannot be corrected. A prompt must appear on the analyzer display indicating that degradation has occurred and a lockout has been set.

2.8.7 Detection Methods, Instrument Ranges, Accuracy, and Repeatability

The non-dispersive infrared (NDIR) beam strength from the source to the detector for all channels must be monitored such that when the beam degrades beyond the adjustment range of the analyzer, the analyzer must set an internal lockout preventing ASM, TSI and OBD inspections. The manufacturer shall specify at what point degradation occurs whereby the signal cannot be corrected. A prompt must appear on the analyzer display indicating that degradation has occurred and a lockout has been set.

HC analysis must be determined by a NDIR analyzer and must cover at least the range of 0 - 9,999 ppm HC, where ppm HC is ppm of HC volume as hexane. The accuracy of the instrument from 0 - 2,000 ppm HC must be +/- 3 percent of point or 4 ppm hexane, whichever is greater. The accuracy of the instrument between 2,001 - 5,000 ppm HC must be at least +/- 5 percent of point. The accuracy of the instrument between 5,001 - 9,999 ppm HC must be at least +/- 10 percent of point.

CO analysis must be determined by an NDIR analyzer and must cover at least the range of 0.00 - 14.00 percent CO, where percent CO is percent volume CO. The accuracy of the instrument between 0.01 - 10.00 percent CO must be +/- 3 percent of point or 0.02 percent CO, whichever is greater. The accuracy of the instrument between 10.01 - 14.00 percent must be at least +/-5 percent of point.

CO_2 analysis must be determined by an NDIR analyzer must cover at least the range of 0.0 - 18.0 percent CO_2. The accuracy of the instrument between 0.01 - 16.00 percent CO_2 must be +/- 3 percent of point or 0.3 percent CO_2, whichever is greater. The accuracy of the instrument between 16.01 - 18.00 percent CO_2 must be at least +/- 5 percent of point.

NO analysis must cover at least the range of 0 - 5,000 ppm NO. The accuracy of the instrument between 0 - 4,000 ppm must be at least +/- 4 percent of point or 25 ppm NO, whichever is greater. The accuracy of the instrument between 4,001 - 5,000 ppm must be at least +/- 8 percent of point.

O_2 analysis must cover at least the range of 0.0 - 25.0 percent O_2. The accuracy of the instrument over this range must be at least 5 percent of point or +/- 0.1 percent O_2, whichever is greater.

For HC, the repeatability for the analyzer in the range of 0 - 1,400 ppm HC must be 2 percent of point or 3 ppm HC absolute, whichever is greater. In the range of 1,400 - 2,000 ppm HC, the repeatability must be 3 percent of point. For CO, the repeatability for the analyzer in the range of 0 - 7.00 percent CO must be 2 percent of point or 0.02 percent CO absolute, whichever is greater. In the range of 7.00 - 10.00 percent CO, the repeatability must be 3 percent of point. For CO_2, the repeatability for the analyzer in the range of 0 - 10.00 percent CO_2 must be 2 percent of point or 0.1 percent CO_2 absolute, whichever is

greater. In the range of 10.00 - 16.00 percent CO_2, the repeatability must be 3 percent of point. For NO, the repeatability of the analyzer must be 3 percent of point or 20 ppm NO, whichever is greater. For O_2, the repeatability of the O_2 analyzer must be 3 percent of point or 0.1 percent O_2, whichever is greater.

Rounding of the reading values beyond the decimal places shown in Section 2.8.8: *Minimum Analyzer Display Resolution* must follow the standard mathematical practice of going to the next higher number for any numerical value of five or more. For example, if 2.00 percent CO passes and 2.01 percent CO fails, and the reading is 2.0049 percent, the value must be rounded down and decision must be a pass. If the reading is 2.0050, the value must be rounded up and the decision must be a fail. The value displayed and printed on the inspection report must be consistent with the value used for the pass/fail decision.

2.8.8 Minimum Analyzer Display Resolution

The analyzer electronics must have sufficient resolution to achieve the following:

HC	1	ppm HC as hexane
NO	1	ppm NO
CO	0.01	percent CO
CO2	0.1	percent CO2
O2	0.1	percent O2 (optional)
RPM	10	RPM
Speed	0.1	miles per hour (mph)
Vehicle Load	0.1	horsepower (hp)
Relative Humidity	1	percent relative humidity (RH)
Dry Bulb Temperature	1	°F
Barometric Pressure	1	millimeters of Hg (mm Hg)

2.8.9 Interference Effects

The interference effects from non-interest gases must not exceed +/- 4 ppm for HC, +/- 0.02 percent for CO, +/- 0.2 percent for CO_2, and +/- 20 ppm for NO. Corrections for collision-broadening effects of combined high CO and CO_2 concentrations must be taken into account in developing the factory calibration curves and are included in the accuracy specifications.

2.8.10 Acceptance Testing for the Sample System

The acceptance test procedures contained in this section apply to the exhaust gas analyzer component of the TSI and ASM inspection equipment. Inspection equipment seeking approval from the executive director will be referred to in this section as the candidate analyzer. The acceptance criteria for each test

procedure is contained in the EPA's guidance document, "Acceleration Simulation Mode Test Procedures, Emissions Standards, Quality Control Requirements, and Equipment Specifications" (EPA, 2004) or EPA's applicable update to this document.

A) Accuracy:

The accuracy test described in this section confirms the ability of the candidate analyzer to read various concentrations of gases within acceptable tolerances. The accuracy test compares the response of the instrument within the candidate analyzer with that of standard instruments and estimates the uncertainty of the readings.

The candidate analyzer must be calibrated first using zero gas and then calibrated using the high range calibration gas specified in the EPA's guidance document, "Acceleration Simulation Mode Test Procedures, Emissions Standards, Quality Control Requirements, and Equipment Specifications" (EPA, 2004) or EPA's applicable update to this document. The instrument within the candidate analyzer must be tested using propane as the surrogate for HC, CO, CO_2, and NO with a certified accuracy of +/- 1 percent, in the following concentrations: 0 percent, 10 percent, 20 percent, 30 percent, 40 percent, 50 percent, 60 percent, 70 percent, 80 percent, and 90 percent of full scale for the analyzers. Full scale is defined as at least 9,999 ppm HC as hexane, 14.00 percent CO, 18.0 percent CO_2, 5,000 ppm NO, and 25.0 percent O_2. The accuracy test is performed by completing the following sequence of steps.

1) Introduce the gases in ascending order of concentrations beginning with the zero gas. Record the readings of the standard instruments and the candidate analyzer for each concentration value.

2) After the highest concentration has been introduced and recorded, introduce the same gases to the standard instruments and the candidate analyzer in descending order, including the zero gas. Record the readings of the candidate analyzer for each gas, including negatives.

3) Repeat steps 1 and 2 four more times for the candidate analyzer, which means that the candidate analyzer will have conducted this sequence a total of five times.

4) Use the following sequence of steps to complete the accuracy test calculations that will determine the uncertainty of the candidate analyzer:

   (i) Calculate the average value of each concentration for the readings of the standard instruments.

   (ii) Calculate the mean and standard deviation of each candidate analyzer's readings for each concentration. Include both upscale and downscale readings for the same gas concentration. All calculations may not be possible for zero concentrations.

   (iii) For each concentration, calculate the difference between the mean and the standard average of the candidate analyzer.

   (iv) For each concentration, compute the Y_1 and Y_2 using the following formula:

      1. $Y_1 = x + K_{sd}$

      2. $Y_2 = x - K_{sd2}$

Where:

K_{sd} = Standard deviation * 3.5 for zero and the highest concentration value

K_{sd2} = Standard deviation * 2.5 for all other concentration values

x = Mean (arithmetic average) of the set of candidate analyzer readings

(v) Compute the uncertainty (U_1 and U_2) of the calibration curve for each concentration as using the following formula and the Y_1 and Y_2 values computed in step (iv):

(a) U_1 = Concentration value - Y_1

(b) U_2 = Concentration value - Y_2

Acceptance Criteria:

(i) For each concentration, the differences calculated in Step (iii) must be no greater than the accuracy tolerances specified in Section 2.8.7: *Detection Methods, Instrument Ranges, Accuracy, and Repeatability* for each instrument within the candidate analyzer.

(ii) For each concentration, the uncertainties, (U_1 and U_2) must be no greater than the accuracy tolerances required in Section 2.8.7: *Detection Methods, Instrument Ranges, Accuracy, and Repeatability*.

B) Repeatability

The repeatability test characterizes the ability of the instrument within the candidate analyzer to give consistent readings when repeatedly sampling the same gas concentration. The repeatability test is performed by completing the following sequence of steps.

1) Introduce the high range span gas through the calibration port. Record the readings.

2) Purge the candidate analyzer with ambient air for at least 30 seconds but no more than 60 seconds.

3) Repeat steps one and two above four more times.

4) Repeat steps one and two, introducing the gas through the sample probe.

Acceptance Criteria: The differences between the highest and lowest readings from both ports must not exceed the values specified in Section 2.8.7: *Detection Methods, Instrument Ranges, Accuracy, and Repeatability*.

C) Response Time

The response time test determines the speed of response of the instrument within the candidate analyzer when a sample is introduced at the sample probe. The response time test is performed by completing the following sequence of steps.

1) Calibrate the gas measuring instrument within the candidate analyzer per the manufacturer's instructions.

2) Using a solenoid valve or equivalent selector system, remotely introduce a high range span gas to the sample cell inlet or inlet port. The gas pressure at the entrance to the port must be equal to room ambient.

3) Measure the elapsed time required for the candidate analyzer display to read 90 percent and 95 percent of the final stabilized reading for HC, CO, CO_2, and NO. (Alternatively, the bench outputs may be recorded against a time base to determine response time.) In addition, measure the time required for the O_2 value to read 0.1% O_2. Record all times in seconds.

4) Switch the solenoid valve to zero air and purge for at least 40 seconds, but no more than 60 seconds.

5) Measure the elapsed time required for the candidate analyzer's display for NO to read 10 percent of the stabilized reading in step three.

6) Repeat steps one, two, and three, two more times to obtain three sets of readings.

Acceptance Criteria: The individual response times, which include the drop time for O_2 and NO, and the rise time for HC, CO, CO_2, and NO, from the probe to the display for HC, CO, and CO_2 must not exceed:

- eight seconds for 90 percent of a step change in input for HC, CO, and CO_2;
- 12 seconds for 95 percent of a step change in input for HC, CO, and CO_2;
- 40 seconds for a step change in O_2 from 20.9 percent to 0.1 percent;
- 12 seconds for 90 percent of a step change in input for NO; and
- 12 seconds for a step change in NO from a stabilized reading to 10 percent of that reading.

D) <u>Interference Effects:</u>

The interference effects test is performed to determine if the candidate analyzer readings for one gas adversely affects the readings of other gases. The following acceptance test procedure must be performed at 45, 75, and 105°F.

1) Calibrate the instrument within the candidate analyzer using zero gas and then calibrate using the high and low range calibration gases specified in the EPA's guidance document, "Acceleration Simulation Mode Test Procedures, Emissions Standards, Quality Control Requirements, and Equipment Specifications" (EPA, 2004) or EPA's applicable update to this document.

2) Sample the following gases for at least one minute. Record the response for HC, CO, CO_2, NO and O_2 to the presence of each of the following gases.

   (i) 16 percent CO_2 in nitrogen

   (ii) 1,600 ppm hexane in nitrogen

   (iii) 10 percent CO in nitrogen

(iv) 3,000 ppm NO in nitrogen

(v) 75 ppm sulfur dioxide in nitrogen

(vi) 75 ppm hydrogen sulfide in nitrogen

Acceptance Criteria: The interference effects from non-interest gases must not exceed the limits specified in Section 2.8.7: *Detection Methods, Instrument Ranges, Accuracy, and Repeatability*.

E) Water Saturated Hot Air: The water saturated hot air test determines the effect of hot humid air on the candidate analyzer and is performed using the following description. Water saturated hot air must be drawn through the probe from the top of a sealed vessel partially filled with water through which ambient air will be bubbled. The water saturated hot air must be flowed for at least one minute. The water must be maintained at a temperature of 122°F +/- 9°F. This test must be performed at only the 75°F and 105°F conditions.

Acceptance Criteria: The interference effects must not exceed +/- 4 ppm for HC, +/- 0.02 percent for CO, +/- 0.2 percent for CO2, and +/- 20 ppm for NO.

F) Electromagnetic Isolation and Interference

The electromagnetic isolation and interference test, which is comprised of four individual tests, measures the ability of the candidate instrument to withstand electromagnetic fields that could exist in vehicle testing and repair facilities. For all tests described below, low range calibration gas specified in the EPA's guidance document, "Acceleration Simulation Mode Test Procedures, Emissions Standards, Quality Control Requirements, and Equipment Specifications" (EPA, 2004) or EPA's applicable update to this document at atmospheric pressure is introduced through the sample probe of the candidate analyzer. The readings from the candidate analyzer are recorded during the test periods.

1) Radio Frequency Interference Test

The radio frequency interference test determines the effect of radio frequencies on the readings from the candidate analyzer and is performed using the following sequence of steps.

(i) Use a test vehicle with an engine having a high energy ignition system (or equivalent), a solid core coil wire, and a 3/8 inch air gap. Leave engine off.

(ii) Locate the candidate analyzer within five feet of the ignition coil. Calibrate the gas measuring instrument within the candidate analyzer per the manufacturer's instructions.

(iii) Introduce the sample gas specified above. Wait 20 seconds and record candidate analyzer readings.

(iv) Start the engine. With the hood open and sample gas flowing to the candidate analyzer, cycle the engine from idle through 25 mph on the dynamometer at the ASM loads specific to the test vehicle and record the candidate analyzer readings.

(v) Relocate the candidate analyzer to within six inches of one side of the vehicle near the engine compartment. Follow procedure described in step (iv) and record the candidate analyzer readings.

(vi) Relocate the instrument to within six inches of the other side of the vehicle near the engine compartment. Follow procedure described in step (iv) and record the candidate analyzer readings.

Acceptance Criteria: The candidate analyzer readings must not exceed +/- 0.5 percent full scale.

2) Induction Field Test

The induction field test determines the effect of magnetic induction on the readings from the candidate analyzer and is performed using the following description. Use a variable speed commutator type hand drill having a plastic housing and rated at three amps or more. While the candidate analyzer is sampling the gas as specified, vary the drill speed from zero to maximum while moving from the front to the sides of the instrument at various heights. Record the readings and note any change in readings.

Acceptance Criteria: The candidate analyzer readings must not exceed +/- 0.5 percent full scale.

3) Line Interference Test

The line interference test determines the effect of power line interference on the readings from the candidate analyzer and is performed using the following description. Plug the drill used in the induction field test into one outlet of a sixteen gauge, three conductor wire extension cord approximately 20 feet long. Connect the candidate analyzer into the other outlet of the extension cord. Repeat the drill speed variations and movements in the same manner described in the induction field test.

Acceptance Criteria: The candidate analyzer readings must not exceed +/- 0.5 percent full scale.

4) Very High Frequency Band Interference Test

The very high frequency band interference test determines the effect of very high frequency band interference on the readings from the candidate analyzer and is performed using the following description. Locate both a citizens' ban radio with an output equivalent to the Federal Communications Commission's legal maximum and a highway patrol transmitter (or equivalent) within 50 feet of the candidate analyzer. While the candidate analyzer is sampling the gas, press and release transmit button of both radios several times. Record the readings and note any change in readings.

Acceptance Criteria: The candidate analyzer readings must not exceed +/- 0.5 percent full scale.

G) Ambient Conditions Test

The ambient conditions test determines the accuracy of the instruments within the candidate analyzer used to measure humidity, barometric pressure, and temperature and is performed using the following description. Place a master weather station within three feet of the candidate analyzer. Display the ambient conditions on the candidate analyzer and a master weather station. Allow five minutes for the readings to stabilize and compare the readings from each system.

Acceptance Criteria: The individual instruments must be within the tolerance specified in Section 2.7.5: *Humidity*, Section 2.7.6: *Ambient Air Temperature Measurement*, and Section 2.7.7: *Barometric Pressure Compensation*.

H) Dilution

The dilution test determines the candidate analyzer's ability to accurately measure actual vehicle exhaust gases and is performed using the following sequence of steps.

1) 1) Set a vehicle with a 1.6 liter maximum engine displacement set at the factory recommended idle speed. The vehicle must have the original equipment manufacturer configuration exhaust system, transmission in neutral, and the hood up. A fan may be used to cool the engine, if needed. The vehicle's idle speed must be set to 900 RPM with a tolerance of +/- 20 RPM.

2) With a laboratory grade analyzer, sample the exhaust at 40 centimeters depth with a flow sample rate below 320 liters per hour. Allow sufficient time for the readings to stabilize. Record all HC, CO, NO, CO_2, and O_2 readings. A chart recorder or electronically stored data may be used to detect the point of stable readings.

3) While operating the candidate analyzer in a mode which has the same flow rate as the official inspection mode, record the levels of HC, CO, NO, CO_2, and O_2. Ensure that the probe is installed correctly.

4) Repeat step two.

5) If the difference of the readings between step two and four exceed 5 percent of the average of step two and step four, then repeat steps two, three, and four; otherwise average the readings from steps two and four and compare with the readings from step three.

Acceptance Criteria: The readings from step three must be within 10 percent of the average of steps two and four.

I) Dual Exhaust Probe System Flow Rate Test

The dual exhaust probe system flow rate test determines the candidate analyzer's ability to measure sample gases using the candidate analyzer's dual sample probe system and is performed using the following sequence of steps.

1) With a laboratory grade analyzer flow measurement system, allow ambient air to flow through the probes from the dual exhaust probe system.

2) Set the flow rate to the normal flow rate generated by the sample system pump.

3) Measure the flow rate in each leg of the dual probe system.

4) Set the flow rate to a flow rate equal to the onset of the low flow condition of the analyzer.

5) Measure the flow rate in each leg of the dual probe system.

Acceptance Criteria: The flow rate of the higher leg of the dual exhaust sample probe system must not exceed 15 percent of the flow rate of the lower leg. However, the flow rates in each leg of the dual probe system are expected to be equal.

2.9 Dynamometer and Auxiliary Equipment Requirements for ASM Analyzers

Dynamometers manufactured for use in the I/M program must be fully capable of performing a loaded transient emissions inspection. The dynamometers must only need a successful calibration, analyzer software modification, and minor hardware modifications in order to perform loaded transient vehicle emissions inspections.

2.9.1 Dynamometer Nameplate

A nameplate must be permanently affixed to the dynamometer housing that includes:

- the dynamometer manufacturer's name;
- the system provider's name;
- the production date;
- the model number;
- the serial number;
- the dynamometer type;
- the maximum axle weight;
- the maximum hp absorbed;
- the roll diameter and width;
- the base inertia weight; and
- the electrical requirements.

2.9.2 Two-Wheel Drive Vehicle Dynamometer

The dynamometer must accommodate all light-duty vehicles with a gross vehicle weight (GVW) less than or equal to 8,500 pounds (lbs) while the vehicle is unloaded.

2.9.3 ASM Load Horsepower

The hp load for the dynamometer must be automatically selected from reference data based on the vehicle characteristics entered by the inspector.

2.9.4 Power Absorption

2.9.4.1 Acceptable Configurations

Power absorption methods must be described in the manufacturer's certification submittal package. All configurations are subject to the TCEQ approval.

2.9.4.2 Power Absorber Range

The range of the power absorber unit (PAU) within the dynamometer must be sufficient to simulate the vehicle load required to perform both the 50/15 and the 25/25 mode of the ASM inspection on all light-duty vehicles up to 8,500 lbs GVW. For the ASM 50/15 mode, the vehicle load must be 50 percent of the maximum load required for that vehicle during the emissions inspection phase of the Federal Test Procedure (FTP). For the ASM 25/25 mode, the vehicle loading must be 25 percent of the maximum load required for that vehicle during the emission inspection phase of the FTP. All dynamometers must be capable of performing these inspections for any vehicle in its weight range. The PAU must be able to absorb, at 14 mph and above, a minimum of 25 hp continuously for 10 consecutive steady state emissions inspections where each inspection lasts at least five minutes with three minutes between subsequent inspections.

2.9.4.3 Power Absorber Accuracy

The power absorber must be adjustable in 0.1 hp increments at both 15 and 25 mph and the accuracy of the system, including the PAU plus parasitic losses, must be +/- 0.25 hp or +/- 2.0 percent of required power loading for dynamometer certification, whichever is greater, in either direction of rotation. The accuracy must be +/- 0.5 hp for field auditing.

2.9.4.4 Vehicle Load

The vehicle load used during the ASM driving cycles at 15 and 25 mph must follow the equation below.

$$IHP = TRLHP - PLHP - GTRL$$

Where:

IHP	=	the dynamometer indicated, or set, hp
TRLHP	=	the track or total hp for a particular vehicle
PLHP	=	the dynamometer parasitic loss hp
GTRL	=	generic tire roll loss of a vehicle on the dynamometer

TRLHP, PLHP, GTRL, and therefore IHP, are all expressed as three term polynomials of the type.

$$HP = A*Obmph + B*Obmph2 + C*Obmph3$$

Where:

HP	=	individual expressions relating IHP, TRLHP, PLHP, or GTRL as a function of velocity
A, B or C	=	hp coefficients for the individual expressions relating IHP, TRLHP, or GTRL as a function of velocity
Obmph	=	the velocity in mph

2.9.5 Inertia

2.9.5.1 Base Inertia

The dynamometer must be equipped with a mechanical flywheel(s), or with full inertia simulation providing a total base inertia weight of 2,000 lbs +/- 40 lbs. Any deviation from the 2,000 lbs base inertia must be quantified and the coast down time must be corrected accordingly. Any deviation from the stated inertia must be quantified and the inertia simulation must be corrected accordingly.

2.9.5.2 Inertia and Inertia Simulation

The dynamometer must be capable of conducting, as a minimum, diagnostic level transient inertia simulations with an acceleration rate between 0 to 3.3 miles per hour per second (mph/sec) with a minimum power load of 25 hp at 14 mph over the inertia weight range of 2,000 to 6,000 lbs. The 25 hp criterion is required only on acceleration for the diagnostic level inertia simulation, and required on acceleration and deceleration for the full inertia simulation option. Mechanical inertia simulation must be provided in 500 lb minimum increments. Electric inertia simulation must be provided in one pound increments. Any deviation from the stated inertia must be quantified and the inertia simulation must be corrected accordingly. Mechanical or electrical inertia simulation, or a combination of both, may be used and are subject to review and approval by the TCEQ.

Diagnostic Level Simulation:

- System Response - The torque response to a step change must be at least 90 percent of the command value within 300 ms after a step change is commanded by the dynamometer control system, and must be within 2 percent of the commanded torque by 300 ms after the command is issued. Any overshoot to the commanded torque value must not exceed 25 percent of the torque value.

- Inertia Simulation Error - An inertia simulation error (ISE) must be continuously calculated any time the dynamometer speed is between 10 and 60 mph. The ISE must be calculated using the equation below and must be within 3 percent of the inertia weight selected (IW_S) for the vehicle under diagnostics testing when driving a predetermined drive trace.

$$ISE = [(IW_s - I_t)/(IW_s)] * 100$$

$$I_t = I_m + (1/V)\int_0^t (F_m - F_{rl})dt$$

Where:

ISE	=	inertia simulation error in percent
IW_S	=	inertia weight selected
I_t	=	total inertia being simulated by the dynamometer in kilograms (kg)
I_t (lb force)	=	I_t (kg) * 2.2046
I_m	=	base mechanical inertia of the dynamometer in kg

V	=	measured roll speed in meters per second
F_m	=	force measured by the load cell and translated to the roll surface in newtons (N)
F_{rl}	=	road load force in newtons (N) required by IHP at the measured roll speed
t	=	time

2.9.6 Rolls

The dynamometer must be equipped with twin rolls and must be electrically or mechanically coupled side-to-side and front-to-rear. The dynamometer roll diameter must be between 8.5 and 21.0 inches. The spacing between the roll centers must be within +0.5 and -0.25 inches of the calculated value determined by the following equation:

Roll Spacing = (24.375 + D) * Sin 31.5

Where: D = dynamometer roll diameter

The roll speed and counts must be checked at least once per week by an independent means, such as a photo tachometer. Deviations greater than +/- 0.2 mph or a comparable tolerance in roll counts must require corrective action. Alternatively, a redundant roll speed transducer independent of the primary transducer may be used in lieu of the weekly comparison. Accuracy of redundant systems must be checked bimonthly.

Fixed dynamometer rolls must have an inside track width of no more than 30 inches and an outside track width of at least 100 inches. Other configurations may be offered but must be subject to TCEQ verification and approval. Manufacturers must ensure that inner track tire damage does not occur if narrower widths are used.

The roll size, surface finish, and hardness must be constructed to minimize tire slippage under all weather conditions, maximize water removal, maintain the specified accuracy of distance and speed measurements, and minimize tire wear and noise.

2.9.7 Dynamometer Calibration

The dynamometer must be automatically calibrated. The manufacturer's calibration procedures for the analyzer must be submitted to and approved by the TCEQ.

2.9.7.1 Accuracy Over Operating Ambient Temperature Range

After the dynamometer is warmed-up, the accuracy must not deviate by more than +/- 0.5 hp over any temperature variation within the full ambient operating temperature range of 35°F to 110°F. This may be accomplished by intrinsic design or by software correction techniques. At any constant temperature, the dynamometer must have an accuracy of +/- 0.5 hp within 15 seconds of the start of the ASM emissions inspection, and must have an accuracy of +/- 0.25 hp within 30 seconds of the end of the ASM emissions inspection.

For temperatures outside the specified range, the dynamometer must provide automatic correction or proceed with a manufacturer recommended warm-up sequence until full warm-up conditions have been reached.

2.9.7.2 Coast Down Check

Each dynamometer's calibration must be checked every 72 hours by means of an automated dynamometer coast down check procedure approved by the TCEQ. The coast down performance check must be conducted between the speeds of 30-20 mph and 20-10 mph. The coast down procedure must use a method that does not require a vehicle. If either the measured 30-20 mph coast down time or 20-10 mph coast down time is outside the window bounded by calculated coast down time (CCDT) in seconds with a tolerance of +/- 7 percent, then a lockout must be set to prevent ASM inspections until recalibration allows a passing value. The base dynamometer inertia of 2,000 lbs must be checked at two random settings between 8.0 and 18.0 hp for each speed range. A shunt resistor for a load cell performance check must not be used.

A) The analyzer must set the PAU to the randomly selected IHP_{2525} value between 8.0 and 18.0 hp, coast down the dynamometer from 30 - 20 mph, and calculate the CCDT.

$$CCDT@25mph = \frac{[(0.5 * DIW)/32.2] * (V_{30}^2 - V_{20}^2)}{550 * (IHP_{2525} + PLHP_{25})}$$

Where:

DIW	=	dynamometer inertia weight is the total inertia weight of all rotating components in the dynamometer
V_{30}	=	velocity in feet per second at 30 mph
V_{20}	=	velocity in feet per second at 20 mph
IHP_{2525}	=	randomly selected ASM_{2525} indicated hp
$PLHP_{25}$	=	parasitic loss hp for specific dynamometer at 25 mph

B) The analyzer must set the PAU to the randomly selected IHP_{5015} value between 8.0 and 18.0 hp, coast down the dynamometer from 20 - 10 mph, and calculate the CCDT.

$$CCDT@15\ mph = \frac{[(0.5 * DIW)/32.2] * (V_{20}^2 - V_{10}^2)}{550 * (IHP_{5015} + PLHP_{15})}$$

Where:

DIW	=	dynamometer inertia weight is the total inertia weight of all rotating components in the dynamometer
V_{20}	=	velocity in feet per second at 20 mph
V_{10}	=	velocity in feet per second at 10 mph
IHP_{5015}	=	randomly selected ASM_{5015} indicated hp

$PLHP_{15}$ = parasitic loss hp for specific dynamometer at 15 mph

If the dynamometer fails a coast down check or requires a recalibration, the analyzer must conduct the parasitic loss check and conduct a second coast down check. If the dynamometer fails the second coast down check, the analyzer must prompt the inspector to call for service and prevent all ASM inspections.

2.9.7.3 Parasitic Losses

Whenever a coast down check is performed, the dynamometer's parasitic loss horsepower (PLHP) must also be determined at 25 and 15 mph. The analyzer must coast the dynamometer down from 30 - 20 mph and 20 - 10 mph with IHP set to zero and use the equations in this section to calculate the PLHP at 25 and 15 mph.

A) The equation for parasitic losses at 25 mph for a dynamometer with specified diameter rollers is:

$$PLHP_{25} = \frac{[(0.5 * DIW)/32.2] * (V_{30}^2 - V_{20}^2)}{550 * (ACDT)}$$

Where:

$PLHP_{25}$ = parasitic loss hp at 25 mph

DIW = dynamometer inertia weight is the total inertia weight of all rotating components in dynamometer in pounds

V_{30} = velocity in feet per second at 30 mph

V_{20} = velocity in feet per second at 20 mph

ACDT = actual time required for dynamometer to coast down from 30 - 20 mph

B) The equation for parasitic losses at 15 mph for a dynamometer with specified diameter rollers is:

$$PLHP_{15} = \frac{[(0.5 * DIW)/32.2] * (V_{20}^2 - V_{10}^2)}{550 * (ACDT)}$$

Where:

$PLHP_{15}$ = parasitic loss hp at 15 mph

DIW = dynamometer inertia weight is the total inertia weight of all rotating components in dynamometer in pounds

V_{20} = velocity in feet per second at 20 mph

V_{10} = velocity in feet per second at 10 mph

ACDT = actual time required for dynamometer to coast down from 20 - 10 mph

2.9.8 Additional Requirements

2.9.8.1 Vehicle Restraint

The analyzer must be equipped with a means or a device for restraining front wheel drive vehicles under inspection. The primary functions of the restraint system are to limit the vehicle's lateral movement on the dynamometer rolls and to minimize vertical and horizontal forces on the drive wheels. The restraint system must be engaged when the inspection is ready to be performed and must be disengaged after the inspection has been completed. The restraint system must allow the vehicle to drive on and off the dynamometer and be capable of safely restraining the vehicle under operating conditions without damaging the vehicle's suspension system. A restraint system for a rear wheel drive vehicle is not required, but the vehicle's front wheels must be securely chocked.

2.9.8.2 Installation

Dynamometers may be installed in the floor or above the ground as long as vehicle level requirements are met. Vehicles must be level and must not exceed +/-5 degrees while being inspected on the dynamometer.

2.9.8.3 Load Measuring Device

The load measuring device must have the ability to be checked using a dead weight method and must cover at least three points over the range of loads used for ASM inspections. Dead weights must be traceable to NIST and must be accurate to within +/- 0.1 percent. The dynamometer must provide an automatic load measuring device calibration and verification feature.

2.9.8.4 Automatic Lift

Dynamometers must have an automatic lift between the rolls to allow smooth vehicle transition on and off the rolls. Alternative methods allowing smooth vehicle transitions may be submitted to the TCEQ for approval.

2.9.8.5 Augmented Braking

The dynamometer must be capable of applying augmented braking on major decelerations over two mph per second as required by the chosen drive cycle. The analyzer must inform the inspector when augmented braking is activated. The dynamometer must provide a signal output to allow the analyzer to meet this requirement.

2.9.8.6 Safety Provisions

The dynamometer must provide a means of facilitating the removal of the vehicle in case of system failure or power outage.

2.9.8.7 Dynamometer Interface and Controller

The interface and controller for the dynamometer must be designed to allow the dynamometer to meet all requirements of this specification. The inputs, outputs, and functionality of the dynamometer must:

- not vary over the operating temperature range;

- not be affected by AC voltage variations of 10 percent or less, or electromagnetic or radio frequency interference; and

- be resistant to shock and vibration.

2.9.8.8 Driver's Aid

The analyzer must be equipped with a driver's aid that must be clearly visible to the driver during the loaded mode inspection. The aid must continuously display:

- the required speed;

- the number of seconds into the inspection mode;

- the driver's actual speed and time performance showing the deviation between set point and actual drive trace;

- the engine RPM;

- the use of augmented braking; and

- any necessary prompts and alerts.

The driver's aid must also be capable of displaying inspection and equipment status, and other messages as required. Information being displayed must be refreshed at a minimum rate of twice per second. The emissions values must not be displayed during the official inspections.

2.9.8.9 Driver's Remote Control Device

Each analyzer must be equipped with a means of allowing the driver to start the inspection, perform an emergency stop, and perform other necessary functions related to the inspection while inside the vehicle.

2.9.8.10 Fan

A fan must be provided for cooling the engine of the vehicle under inspection. The fan must be mobile and adjustable in such a manner that the vehicle's catalyst is not cooled abnormally. The fan must have a maximum outer diameter of 30 inches and an on/off switch. The fan must provide at least 3,000 cubic feet per minute or at least 10 mph air velocity averaged over the cross section of the fan, whichever is greater.

2.9.9 Acceptance Testing for the Dynamometer

The acceptance test procedures contained in this section apply to the dynamometer component of the ASM analyzer. The acceptance criteria for each test procedure in this section is contained in the EPA's guidance document, "Acceleration Simulation Mode Test Procedures, Emissions Standards, Quality Control Requirements, and Equipment Specifications" (EPA, 2004) or EPA's applicable update to this document.

A) <u>Load Cell Verification (if equipped)</u>

The load cell test confirms the proper operation of the dynamometer load cell and associated systems and is performed by completing the following sequence of steps. Weights in the proper range must be supplied by the manufacturer of the candidate analyzer. Weights must be NIST traceable to 0.1 percent of point.

1) Calibrate the load cell according to the manufacturer's direction.

2) Using a dead weight method, load the test cell to 20 percent, 40 percent, 60 percent, and 80 percent (in ascending order) of the range used for ASM emissions inspections. Record the readings for each weight. Remove the weights in descending order using the same steps and record the results.

3) Perform steps one and two above two more times to collect a total of three readings for each weight. Calculate the average value for each weight. Multiply each average weight by the length of the torque arm.

Acceptance Criteria: The difference for each reading from the weight must not exceed one percent of full scale.

B) Speedometer Verification

The speedometer verification test confirms the accuracy of the dynamometer's speedometer and is performed using the following description. Set the dynamometer speed to 15 mph. Independently measure and record dynamometer speed. Repeat at 25 mph.

Acceptance Criteria: The difference for each reading from the set dynamometer speed must not exceed 0.2 mph.

C) Verification of Parasitic Losses

The verification of parasitic losses test verifies the dynamometer's parasitic losses in horsepower at 25 and 15 mph and is performed using the procedures and equations described in the EPA's guidance document, "Acceleration Simulation Mode Test Procedures, Emissions Standards, Quality Control Requirements, and Equipment Specifications" (EPA, 2004) or EPA's applicable update to this document. Time data from an independent source, such as a stopwatch, and speed data from the analyzer must be used to externally calculate the value of the parasitic losses at 25 and 15 mph. The indicated horsepower must be set to zero for the tests.

Acceptance Criteria: The difference between the externally calculated value and the machine calculated value must not exceed 10 percent of the independently measured value.

D) Verify Coast Down

The coast down verification test confirms that the dynamometer can accurately coast down from 30 to 20 mph and from 20 to 10 mph within the expected time limits and is performed using the following sequence of steps.

1) Use the coast down procedures and equations described in Section 2.9.7.2: *Coast Down Check* to verify the coast down at 25 mph.

2) Use the coast down procedures and equations described in Section 2.9.7.2: *Coast Down Check* to verify the coast down at 15 mph.

Acceptance Criteria: The measured 30 to 20 mph coast down time and the 20 to 10 mph coast down time must be inside the window bounded by CCDT in seconds with a tolerance of +/- 7 percent.

2.9.10 Acceptance Testing for the OBD Equipment

The acceptance test procedures for OBD inspection equipment apply only to the OBD communication components, which must meet all federal requirements contained in 40 CFR §§85.2207 - 85.2231 and recommended practices contained in the J1962, J1978, and J1979 published by the SAE. The acceptance test procedures and acceptance criteria are contained in the EPA's guidance document, "Performing Onboard Diagnostic System Checks as Part of a Vehicle Inspection and Maintenance Program" (EPA, 2001) or EPA's applicable update to this document.

3.0. DISPLAY PROMPTS AND PROGRAMMING CRITERIA REQUIREMENTS

This section describes the display prompts and programming criteria for the inspection sequences. These items must be standardized to facilitate training of licensed inspectors. Manufacturers may propose alternative methodologies for the presentation of information and for data entry as long as the substance and the priority of the sequence are not significantly modified. Alternative methodologies must be submitted to the TCEQ for approval. The analyzer manufacturers shall use one or more of the following options to make the analyzer more user friendly by:

- using direct cursor addressing a first letter selection versus a scrolling display;
- using the arrow and enter keys to highlight and select the appropriate screen choices;
- displaying data entry error messages; and
- displaying help screens to assist inspectors with data entry and data verification.

Data entry from one item to another must not proceed until a valid entry has been made. During reinspections, the analyzer must display the appropriate fail records. Where editing is allowed, the inspector shall have the ability to return to a previous display prompt. At that point, the inspector shall see the prior information and be permitted to insert and delete characters without having to retype the whole field.

Inspection Sequence

The analyzer software must control the inspection sequence and equipment process. This software must, at a minimum, require the inspector to proceed in the following sequence when performing a vehicle inspection:

- enter the inspector access code number;
- enter VIN;
- enter license plate number;
- conduct the emissions inspection, if applicable;
- enter the emissions repair data, if applicable; and
- update data files, send data to VID, and print the VIR.

Aborting Inspections

The analyzer must be designed so that the inspector can initiate the “ABORT” sequence by pressing the escape key. The analyzer must be designed so that the inspector is required to confirm the initial abort command after entering the applicable abort code. The inspector shall be allowed to edit the abort code up until the confirmation is made.

If “ABORT” is selected on an initial inspection, the vehicle information will be stored in the RECALL.DAT file for later recall by the inspector through main menu selection 10. Main menu selection 10 is described in Section 3.10: *Main Menu Selection “10 Recall Aborted Inspections”*.

If “ABORT” is selected, the analyzer must display the following prompt:

ENTER THE CODE THAT BEST DESCRIBES THE REASON THE TEST WAS ABORTED. SELECT AND ENTER THE APPROPRIATE ESCAPE CODE FROM THE LIST BELOW:

01 OIL SYSTEM WARNING LIGHT IS ON

02 COOLANT SYSTEM WARNING LIGHT IS ON

03 FUEL SYSTEM LEAK

04 EXCESSIVE ENGINE NOISE

05 VEHICLE DOES NOT REQUIRE INSPECTION

06 BMW, PEUGEOT, VOLVO, JAGUAR AUTOMATIC TRANSMISSION

07 ANALYZER PROBLEM

08 OTHER SAFETY PROBLEM

09 LOW FLOW RATE

99 OTHER (INDICATE REASON ON THE VEHICLE INSPECTION REPORT)

If the inspector selects abort codes “01”, “02”, “03”, “04”, or “08” then the analyzer must:

- fail the vehicle; and
- allow the inspector to edit the fee entries as appropriate because the fee is due.

If abort codes “05”, “06”, “07”, “09”, or “99” are selected then the analyzer must:

- not fail the vehicle;
- set the EMISS _INSP_COST field to $0.00 because no emissions inspection fee is due;
- mark the inspection as an aborted inspection and do not count the inspection as an initial inspection or reinspection;
- prompt the inspector to indicate if safety related repairs were conducted, if no, set the SAFE_INSP_COST field to $0.00, otherwise, allow the inspector to enter a value using the method described in Section 3.1.22: *Safety Test Fee Prompt*;

- prompt the inspector to indicate if emissions-related repairs were conducted, if no, set the REP_CST_YIS fields to $0.00, otherwise, allow the inspector to enter a value using the method described in Section 3.4.6: *Emissions Reinspection Repairs*; and

- include all entered safety and emissions-related repair costs on the VIR.

The analyzer must accept one two character abort code which must be entered by the inspector and saved to the inspection record. All of the inspection data collected before the abort was selected must be recorded in the VEHICLE.DAT file and on the VIR, where applicable.

If the emissions inspection is aborted after the sampling period has started, the last five second average or the average of the portion of the first five seconds of the sampling period has elapsed must be treated as the final value. Emissions readings must be taken during all inspection modes and the final readings must be recorded in the VEHICLE.DAT file and on the VIR. Leading zeros must be entered as necessary by the analyzer software.

The analyzer must allow the inspector to cancel the abort sequence and return to the inspection until the inspector confirms the last entry of the abort sequence. When an abort sequence is cancelled, the analyzer must return to the screen prompt that was displayed when the abort sequence was initiated and not store the unconfirmed abort sequence in the inspection records. If the abort was initiated during the emissions inspection, the analyzer must return to the beginning of the emissions inspection sequence.

Upon successful completion of the abort sequence, the analyzer must return to the main menu.

Data Entry Errors for the Abort Sequence

If the inspector makes an error entering the abort sequence data, the analyzer must display one or more of the following messages:

NO VALUE HAS BEEN ENTERED - TRY AGAIN.

INVALID ABORT CODE - TRY AGAIN.

Menus

At a minimum, the analyzer must provide the following menu choices, and allow the inspector to select a choice from the main menu main using the keyboard or the mouse. Additional menu items may be provided, and the TCEQ reserves the right to require modifications if any menu does not meet minimum requirements.

Upon successful completion of the start up diagnostics, the analyzer must display the main menu containing the following options:

1. Safety and Emissions Inspection

2. Safety Only Inspection

3. Emissions Only Inspection

4. Reinspection

5. Reprint Vehicle Inspection Report

6. Vehicle Diagnosis

7. Training Mode

8. Analyzer Maintenance

9. Audit Menu

10. Recall Aborted Inspection

11. Gas Cap Integrity Test

12. Missing, or Voided Certificates

13. Certificate Correction/Replacement

14. Technical Bulletins/Announcements

15. Communications Refresh

16. Communication Diagnostics (Loopback)

17. All data Communications

18. Inspection Log (VI-8B)

19. VI-30 Only

20. Test on Resale

The analyzer must prevent the default lane inspector from accessing main menu selections “1”, “2”, “3”, and “4”.

Programming Criteria:	**VEHICLE.DAT**	**TEST_TYPE**
		EMISS_TEST_TYPE
		EMISS_INIT_TEST
		SPECIAL_TEST
	RECALL.DAT	**TEST_TYPE**
		EMISS_TEST_TYPE
		EMISS_INIT_TEST
		SPECIAL_TEST

The analyzer will set the EMISS_TEST_TYPE field to “0” if the inspector conducts a special replacement certificate inspection, “1” if the inspector conducts an OBD emissions inspection, “2” if the inspector conducts a TSI emissions inspection, “3” if the inspector conducts an ASM emissions inspection, and “4” if the inspector conducts an OBD emissions inspection on a diesel powered vehicle which transitions out of the OBD inspection.

If the inspector selects one of the following choices from the main menu:

1 - Safety and Emission Inspection
2 - Safety Only
3 - Emissions Only
5 – Reprint

If the inspector selects “1 - Safety and Emission Inspection” or “2 - Safety Only”, the analyzer will set TEST_TYPE to the following:

1 - “A” 5 - “K”
2 - “H”

If the inspector selects “3 - Emissions Only”, the analyzer must prompt the inspector to indicate if the inspection is one of the following choices:

1 - required emission only test (decal)
2 - voluntary test
3 - test on resale
4 - remote sensing request (decal)

The analyzer will set TEST_TYPE field to the following:

1 - “O” 3 -”C”
2 - “I” 4 - “B”

<u>Test Types</u>

The inspections and their corresponding letters are cross-referenced below:

TEST_TYPE

A)	Emission & Safety Inspection	H)	Safety Only Inspection
B)	Remote Sensing Request (Decal)	I)	Voluntary Emissions Test
P)	VI-30A Only	K)	Reprint
O)	Required Emissions Only Test (Decal)		

SPECIAL_TEST

C)	Test on Resale	J)	Waiver - Individual Vehicles
D)	Accelerated Vehicle Retirement Test	L)	Waiver - Low Income Time Extension
E)	Dispute Test	M)	Parts Availability Time Extension
F)	Not currently in use	N)	Other (Special Test)
G)	Federal Test	P)	Waiver - Low Mileage
A)	Special Certificate Replacement Inspection		

3.1 Main Menu Selection “1 Safety and Emissions Inspection”

3.1.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

<u>Programming Criteria:</u>

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to "B" or "C". The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer's monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.1.1a Personal Identification Number (PIN) Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.1.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.1.3 Insurance Prompt

ENTER THE INSURANCE EXPIRATION DATE.

Programming Criteria:

Enter the insurance expiration date in the following format: MM/DD/YY. The analyzer must verify that the entry for the month is between "1" and "12", the entry for the day is between "1" and "31", and the entry for the year begins with "19" or "20". A warning message must be displayed if the insurance has expired. The analyzer will accept "000000" as a valid entry and print "000000" on any applicable form. Entries will be written to the inspection record located in the VEHICLE.DAT file.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **INSUR_EXP_DT**

3.1.4 Fuel Type Prompt

ENTER THE VEHICLE FUEL TYPE. SELECT THE APPROPRIATE FUEL TYPE CODE FROM THE LIST BELOW.

Code	Description
"G"	**Gasoline**
"B"	**Bi-Fueled (Dual-Fueled)**
"D"	**Diesel**

Programming Criteria:

Entry of one code is required. The analyzer software must be designed so that only a "G", a "B", or a "D" can be entered by the inspector for this field. The default choice must be gasoline.

If the inspector selects "B", the analyzer must display a message stating that **"YOU HAVE INDICATED THAT THIS VEHICLE IS DUAL FUELED. PLEASE CONFIRM THAT THE VEHICLE IS OPERATING ON GASOLINE FOR THE TEST WITH A 'Y'."** After confirming the result, the analyzer must go to Section 3.1.5: *Model-Year Prompt*. Otherwise, the analyzer must return to the fuel type code list.

If the inspector selects "D", the analyzer must display a message stating **"YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. PLEASE CONFIRM THIS ENTRY BY PRESSING 'Y'."** If the inspector presses something other than "Y", the analyzer must return to the fuel type code list.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **FUEL_TYPE**

3.1.4a Optional Bar Code Entry of the Texas Registration Expiration Date, Registration County, Vehicle Identification Number (VIN), License Plate Type, and License Plate Number Prompt

SCAN THE BAR CODE ON THE TXDMV WINDSHIELD STICKER (THAT CONTAINS THE LICENSE PLATE NUMBER AND TYPE, AND VIN).

OR

PRESS "ENTER/CONTINUE" TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to “A”, “B”, or “C”.

The analyzer must prompt the inspector to scan the bar code on the vehicle’s windshield issued by the Texas Department of Motor Vehicles (TxDMV), which contains the license plate type, license plate number, the VIN, the vehicle registration expiration date, and county of registration. The analyzer will disregard entries that do not fit the following format.

If the analyzer scans a 2-D bar code that contains an “X” in the first position, then the analyzer must pull the VIN, Expiration Month/Year, and license plate number from the bar code. The format of the bar code is:

Name	Length	Start	Format
Bar Code Type	1	1	Alphanumeric (X)
Bar Code Version	2	2	Numeric
Document Number	17	4	Numeric
VIN	22	21	Alphanumeric
Residence County Number	3	43	Numeric
Workstation ID (RSPS or POS)	10	46	Alphanumeric
Print County Number	3	56	Numeric
Sticker Print Date	8	59	Numeric
Registration Plate Code	8	67	Alphanumeric
Registration Sticker Code	8	75	Alphanumeric
Plate Number	7	83	Alphanumeric
Expiration Year	4	90	Numeric (YYYY)
Expiration Month	2	94	Numeric (MM)
Registration Class Code	3	96	Numeric

If the 2-D bar code is successfully scanned, the analyzer must prompt the inspector to enter the license plate number. The analyzer must compare the license plate number entered by the inspector to the value of the Plate Number.

If the 2-D bar code is successfully scanned and the inspector entered license plate number matches the Plate Number value from the TxDMV bar code, the analyzer must:

- place a “T” in the BARCODED_VIN and BARCODED_LIC_PLT fields and a “1” in the LICENSE_TYPE field of the inspection record; and

- use the values collected as entries for the license plate type, license plate number, VIN, vehicle registration expiration month and year, and county of registration.

The license plate number, VIN, vehicle registration expiration month and year, and county of registration entry values correspond to the Plate Number, VIN, Expiration Month and Expiration Year, and Residence County Number fields from the TxDMV bar code, respectively.

If the VIN retrieved from the TxDMV bar code is 17 characters long, then the VIN verification algorithm must be applied here to the VIN collected from the TxDMV bar code.

If the 2-D bar code is successfully scanned and the inspector entered license plate number does not match the Plate Number value from the TxDMV bar code, the analyzer will not use any values from the TxDMV bar code to auto fill the model year, license plate type, license plate number, registration expiration month and year, county of registration, or VIN entries.

If the VIN retrieved from the TxDMV bar code is 17 characters long and passes the VIN verification algorithm, the analyzer must auto enter the model year by decoding the 10th digit of the VIN using the table in the VINMY.DAT table. If the VIN retrieved from the TxDMV bar code is either not 17 characters long or fails the VIN verification algorithm, the analyzer must:

- not use the VIN from the TxDMV bar code;
- collect the VIN prior to contacting the VID; and
- store the VIN in the REG_VIN field of the inspection record.

If the TxDMV barcode is not scanned, the analyzer must prompt the inspector to enter the month and year from the TxDMV vehicle registration windshield sticker.

If the entered registration expiration date is prior to the inspection date (e.g., the registration is expired), the analyzer must skip the comparison calculation and not display message 2. Otherwise, the analyzer must compare the date of inspection to the registration month and year from the TxDMV bar code. If the difference between the inspection date and the last date of the registration month and year exceeds 90 days and the HB2305CHG field in the SYSTEM.DAT file is set to "C", then the analyzer will display a message 2, which advises the inspector to inform the motorist that the inspection will not count toward renewal of the vehicle registration.

Error Messages:

1. **DID NOT SCAN PROPERLY – PLEASE TRY AGAIN.**
2. **INFORM THE MOTORIST THAT THIS INSPECTION MAY NOT COUNT TOWARD REGISTRATION RENEWAL BECAUSE THE TEST DATE IS MORE THAN 90 DAYS PRIOR TO THE EXPIRATION OF THE CURRENT VEHICLE REGISTRATION.**

Associated System File: **VEHICLE.DAT**

LICENSE_TYPE	**BARCODED_LIC_PLT**
LICENSE_NUM	**BARCODED_VIN**
MODEL_YR	**REG_VIN**
REG_COUNTY	

3.1.5 Model-Year Prompt

ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

Programming Criteria:

If no value is entered, the analyzer must display Message 1 and prompt the inspector to re-enter the last two digits of the vehicle model-year. The analyzer must display Message 2 in

the event that the model-year is strictly greater than the current year plus two and prompt the inspector to re-enter the last two digits of the vehicle model-year or the entire model-year. The analyzer must require the inspector to confirm any model-year entry that is less than 1950. Message 3 will display when the entered vehicle model-year is greater than or equal to 1990 and strictly less than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file. If the VIN collected previously was 17 characters long and passed the VIN algorithm, the analyzer shall default to the corresponding model year by using the information in the VINYR.DAT file or an equivalent method. The default model year selected from the VINYR.DAT shall be the value that is the largest numerical value that is less than the current year plus 2 with a corresponding value that matches the tenth digit of the VIN.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED TRY AGAIN.**
2. **INVALID MODEL YEAR -- TRY AGAIN.**
3. **THIS VEHICLE IS NOT ELIGIBLE FOR AN OBD II ONLY EMISSIONS TEST**

Associated System Files: **VEHICLE.DAT** **MODEL_YEAR** **LOCKOUT.DAT** **ASM_TSI_LOCKOUT**

3.1.5a Gross Vehicle Weight Prompt

ENTER THE GVW OF THE VEHICLE.

Programming Criteria:

A prompt will be displayed for the inspector to enter the GVW. No default entry must be displayed. The analyzer must allow the inspector to see and edit the GVW as it is being entered. If the GVW_2TIMES is not set to "G", the analyzer will accept the entry of the GVW value as entered using the keyboard on the first attempt. If the GVW_2TIMES is set to "G", the analyzer will require the inspector to use a double blind approach to successfully enter the GVW value as listed in the following description. When the GVW has been entered, the analyzer must prompt the inspector to press "enter/continue". Then, the analyzer will clear the GVW entry window and require the inspector to enter the GVW again. The two attempts must match. If the two attempts do not match, the analyzer must display Message 4, prompt the inspector to re-enter the GVW starting again with the first attempt. The inspector shall be required to re-enter the GVW using the keyboard until two matching GVW entry attempts have been made. When the GVW value has been entered, the analyzer must complete the requirements in the following description.

If the entered GVW is less than or equal to 8,500 then the analyzer must set the GVW_TYPE field of the VEHICLE.DAT file to "1" for light-duty. If the GVW is greater than or equal to 8,501 then the analyzer must set the GVW_TYPE field in the VEHICLE.DAT file to "2" for heavy-duty.

If the inspector presses "enter/continue" and no entry has been made, the analyzer must display message 1 and prompt the inspector to enter the GVW. If the inspector enters a GVW greater than 85,000 pounds, the analyzer must display message 2 and prompt the

inspector to re-enter the GVW. If the inspector enters a GVW strictly less than 1,700 pounds, the analyzer must display message 3 and prompt the inspector to re-enter the GVW.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **MAXIMUM GVW ENTRY IS 85,000 LBS--TRY AGAIN.**
3. **WEIGHT RATING MUST BE AT LEAST 1700 LBS.--TRY AGAIN.**
4. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GVW_TYPE**
GVW_ACTUAL

3.1.5b Emissions Inspection Selection Logic

Selection of the emissions inspection is based on a combination of the entries made by the inspector and the values of the fields contained in the SYSTEM.DAT file.

Emissions Inspections Not Required

When the OBD_TESTING, ASM_TESTING, TSI_TESTING, and DSL_OBD_TESTING fields are all set to "N" in the SYSTEM.DAT file, then the analyzer must display this message, **"EMISSIONS TESTING NOT REQUIRED IN THIS COUNTY. TEST WILL END HERE."** and return to main menu when the inspector presses any key.

Default Emissions Inspection Selection

The analyzer must determine the default emissions inspection type for all diesel and gasoline powered vehicles based on the inspector entries for the GVW, fuel type, drive axle, and model-year, and the settings in the SYSTEM.DAT file.

OBD is the default inspection for diesel vehicles and gasoline vehicles. Gasoline vehicles may also default to an ASM or TSI inspection. Default ASM inspections will become TSI inspections when the entered GVW is greater than 8,500 pounds or the vehicle cannot be inspected using a two-wheel dynamometer.

Diesel Powered Vehicles

If the inspector selected "D" under the fuel type prompt and the DSL_OBD_TESTING field is set to "N", the analyzer must:

- display a message stating, **"YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. DIESEL FUELED VEHICLES ARE NOT REQUIRED TO RECEIVE EMISSIONS TESTS. THIS TEST WILL END HERE."**; and
- return to the main menu when the inspector presses any key.

The analyzer must default to an OBD inspection when:

- the DSL_OBD_TESTING field is set to “Y”, the GVW entry is less than or equal to the value in the DSL_OBD_MAX_GVW field, the model-year entry is greater than or equal to the value in the DSL_OBD_MODEL_YR field and either

  - greater than or equal to the DSL_FIXED_YR_MIN field and less than or equal to DSL_FIXED_YR_MAX field when the DSL_ROLLING_YRS field is set to “F”; or

  - less than or equal to calendar year minus the value of the DSL_BGN_ROLLN_YR field and greater than or equal to calendar year minus the value of the DSL_END_ROLLN_YR field when the DSL_ROLLING_YRS field is set to “R”; or

  - less than or equal to calendar year minus the value of the DSL_BGN_ROLLN_YR field and greater than or equal to the value of the DSL_FIXED_YR_MIN field when the DSL_ROLLING_YRS field is set to “A”; or

  - greater than or equal to calendar year minus the value of the DSL_END_ROLLN_YR field and is less than or equal to the value of the DSL_FIXED_YR_MAX field when the DSL_ROLLING_YRS field is set to “B”; or

If the analyzer determines that the diesel vehicle is not required to receive an emissions inspection because it does not meet the criteria listed above, the analyzer must display a message stating, **“YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. HOWEVER, THIS DIESEL FUELED VEHICLE IS NOT REQUIRED TO RECEIVE AN EMISSIONS TEST. THIS IS AN OPTIONAL TEST.”** and provide the option to continue or exit the inspection. If the inspector elects to exit the optional inspection, the analyzer must return to the main menu when the inspector presses the appropriate key.

If the inspector elects to continue with the optional inspection, the analyzer must:

- conduct an OBD inspection when the model-year is greater than or equal to the value in the DSL_OBD_MODEL_YR field and DSL_OBD_TESTING is set to “Y”; or

- return to the main menu when model-year is strictly less than the value in the DSL_OBD_MODEL_YR field .

<u>Gasoline Powered Vehicles</u>

If the inspector selected “G” or “B” under the fuel type prompt, the analyzer must check the value of the OBD, ASM, and TSI inspection program fields in the SYSTEM.DAT file.

The analyzer must not conduct the OBD, ASM, or TSI emissions inspection when:

- the OBD_TESTING field is set to “N” and OBD is the default emissions inspection; or

- the ASM_TESTING field is set to “N” and ASM is the default emissions inspection; or

- the TSI_TESTING field is set to “N” and TSI is the default emissions inspection, respectively.

The analyzer must conduct the OBD, ASM, or TSI emissions inspection when:

- the OBD_TESTING field is set to “Y” and OBD is the default emissions inspection; or

- the ASM_TESTING field is set to “Y” and ASM is the default emissions inspection; or

- the TSI_TESTING field is set to “Y” and TSI is the default emissions inspection, respectively.

Default OBD Inspection Programming Criteria

The analyzer must default to an OBD inspection when the OBD_TESTING field is set to “Y”, the model-year entry is greater than or equal to the value in the OBDII_MODEL_YR field, and either:

- greater or equal to the PRGM_FIXED_YR_MIN field and less than or equal to the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to “F”; or

- less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field when the PRGM_ROLLING_YRS field is set to “R”; or

- less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to the value of the PRGM_FIXED_YR_MIN field when the PRGM_ROLLING_YRS field is set to “A”; or

- greater or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field and is less than or equal to the value of the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to “B”.

Default ASM Inspection Programming Criteria

The analyzer must default to an ASM inspection when the ASM_TESTING field is set to “Y”, the GVW entry is less than or equal to 8,500, the analyzer is equipped to conduct ASM inspections, the model-year entry is less than the value in the OBDII_MODEL_YR field, and either:

- greater or equal to the PRGM_FIXED_YR_MIN field and less than or equal to the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to “F”;

- is less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field when the PRGM_ROLLING_YRS field is set to “R”; or

- is less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to the value of the PRGM_FIXED_YR_MIN field when the PRGM_ROLLING_YRS field is set to “A”; or

- is greater or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field and is less than or equal to the value of the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to “B”.

Default TSI Inspection Programming Criteria

The analyzer must default to a TSI inspection when the TSI_TESTING field is set to "Y", the analyzer is equipped to conduct TSI inspections, the model-year entry is less than the value in the OBDII_MODEL_YR field, and either:

- greater or equal to the PRGM_FIXED_YR_MIN field and less than or equal to the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to "F"; or

- less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field when the PRGM_ROLLING_YRS field is set to "R"; or

- less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to the value of the PRGM_FIXED_YR_MIN field when the PRGM_ROLLING_YRS field is set to "A"; or

- greater or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field and is less than or equal to the value of the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to "B".

Optional Inspection Programming Criteria for Gasoline Powered Vehicles

The analyzer must display a message stating **"NOT REQUIRED TO TEST VEHICLES OLDER THAN YEAR (minimum of [CURRENT YEAR - PGRM_END_ROLLN_YR, or PGRM_FIXED_YR_MIN]). IF THE VEHICLE IS NEWER THAN YEAR (maximum of [CURRENT YEAR - PGRM_BGN_ROLLN_YR, or PGRM_FIXED_YR_MAX]), REFER TO THE DPS RULES AND REGULATIONS MANUAL CHAPTER 5, PAGE 12 FOR TEST REQUIREMENTS."** when:

- the inspector selects "G" or "B" under the fuel type prompt;

- the OBD_TESTING, ASM_TESTING or TSI_TESTING field is set to "Y"; and

- the vehicle is not required to receive an emissions inspection because the entered model-year is not within the acceptable range listed above.

If the inspector elects to continue with the optional inspection, the analyzer must conduct an OBD inspection where the entered model-year is greater than or equal to the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the OBD_TESTING field is set to "Y".

If the inspector elects to continue with the optional inspection, the analyzer must conduct an ASM inspection where the entered model-year is less than the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the ASM_TESTING field is set to "Y"; or the entered model-year is greater than the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the OBD_TESTING field is set to "N", and the ASM_TESTING field is set to "Y".

If the inspector elects to continue with the optional inspection, the analyzer must conduct a TSI inspection where the entered model-year is less than the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the TSI_TESTING field is set to "Y"; or the entered model-year is greater than the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the OBD_TESTING field is set to "N", and the TSI_TESTING field is set to "Y".

The analyzer must return to the main menu if:

- the inspector elects to continue with the optional inspection and the analyzer determines that the vehicle is not eligible for an OBD, an ASM, or TSI inspection; or

- the inspector elects not to continue with the optional inspection by pressing the appropriate key.

Tailpipe Emissions Inspection Lockout Check

Since the default emissions inspection type has been determined as ASM, TSI, or OBD, the analyzer must check the status of the ASM_TSI_LOCKOUT flag in the LOCKOUT.DAT file to confirm that the analyzer is authorized to conduct a tailpipe emissions inspection. If this flag is set to "1" or "Y" and the default emissions inspection type is the ASM or TSI emissions inspection, the analyzer must:

- display a message stating that, **"The analyzer cannot continue because this vehicle is not eligible for an OBD emissions inspection and the analyzer is not authorized to perform tailpipe inspections (i.e., ASM or TSI) until it passes the gas audit."**; and

- return to the main menu when the inspector elects to continue.

3.1.5c Bar Code Entry of License Plate Type, Number, and Vehicle Identification Number (VIN) Prompt

SCAN THE BAR CODE THAT CONTAINS THE LICENSE PLATE TYPE, LICENSE PLATE NUMBER, AND TXDOT NUMBER FROM THE VEHICLE INSPECTION REPORT.

OR

PRESS "ENTER/CONTINUE" TO CONTINUE IF THE VEHICLE INSPECTION REPORT IS NOT AVAILABLE.

Programming Criteria:

The analyzer may skip this prompt if the VIN previously collected from the TxDMV bar code is being used.

The analyzer must prompt the inspector to scan the bar code which contains the license plate type, license plate number, and the Texas Department of Motor Vehicles (TxDMV) number. If a 1-D bar code is successfully scanned, the analyzer must place a "B" in the BARCODED_LIC_PLT field of the inspection record and proceed to either Section 3.1.6: *License Type Prompt* if the license plate type and license plate number were not collected or

Section 3.1.6a *Texas Registration Expiration Date Prompt* if the license plate type and license plate number were collected. If the inspector presses "enter/continue", the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record and allow the inspector to enter this information using the keyboard by proceeding to Section 3.1.6: *License Type Prompt*.

If the analyzer scans a 2-D bar code that contains an "X" in the first position, then the analyzer must pull the VIN and license plate number from the bar code. The format of the bar code is:

Name	Length	Start	Format
Bar Code Type	1	1	Alphanumeric (X)
Bar Code Version	2	2	Numeric
Document Number	17	4	Numeric
VIN	22	21	Alphanumeric
Residence County Number	3	43	Numeric
Workstation ID (RSPS or POS)	10	46	Alphanumeric
Print County Number	3	56	Numeric
Sticker Print Date	8	59	Numeric
Registration Plate Code	8	67	Alphanumeric
Registration Sticker Code	8	75	Alphanumeric
Plate Number	7	83	Alphanumeric
Expiration Month/Year	6	90	Numeric
Registration Class Code	3	96	Numeric

If the bar code is successfully scanned, the analyzer must place a "T" in the BARCODED_VIN and BARCODED_LIC_PLT fields and a "1" in the LICENSE_TYPE field of the inspection record, and proceed to Section 3.1.6a: *Texas Registration Expiration Date Prompt*.

Error Message: **DID NOT SCAN PROPERLY PLEASE TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

LICENSE_TYPE	**BARCODED_LIC_PLT**
LICENSE_NUM	**BARCODED_VIN**

3.1.6 License Type Prompt

ENTER THE TYPE OF LICENSE PLATE OF THE VEHICLE.

1.	**Texas Plate**	5.	**Exempt (Federal)**
2.	**No Plate**	6.	**Dealer Plate**
3.	**Out of State**	7.	**Temporary Buyer Tag**
4.	**Exempt (State)**	8.	**Other**

Programming Criteria:

The analyzer may skip this prompt if the license plate type previously collected from the TxDMV bar code is being used. The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type "3" or "5", the analyzer must set the

REG_COUNTY field to “000”. If the inspector selects license type “2”, “6”, “7”, or “8”, the analyzer must fill the REG_COUNTY field with spaces. If the inspector selects license type “2” or “8”, the analyzer will assign the LICENSE_NUM field in the VEHICLE.DAT a value of “V” followed by the last seven digits of the VIN and skip Section 3.1.7: *License Prompt*. If the entered VIN has less than seven characters, the entry should be a “V” followed immediately by the entered VIN without filler spaces between the “V” and the entered VIN. The analyzer will default to license type “1”.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_TYPE**
REG_COUNTY

3.1.6a Texas Registration Expiration Date Prompt

ENTER THE MONTH AND YEAR FROM THE VEHICLE REGISTRATION WINDSHIELD STICKER.

PRESS “ENTER/CONTINUE” TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to “A”, “B”, or “C”. However, the analyzer may skip this prompt if the vehicle registration month and year previously collected from the TxDMV bar code are begin used.

The analyzer must prompt the inspector to enter the month and year from the TxDMV vehicle registration windshield sticker when the previously entered license plate type is set to “1” or “4” and these values weren’t collected using the bar code scanner. The analyzer must display a note indicating that inspector should enter “00” for the month and “0000” for the year if the vehicle doesn’t have a TxDMV sticker on the windshield. If the inspector enters “00” for the month and “0000” for the year, then the analyzer must not to display the message 2.

If the registration expiration date cannot be collected either from the TxDMV barcode or the inspector-entered value, then the analyzer does not have to display message 2.

If the entered registration expiration date is prior to the inspection date (e.g. the registration is expired), the analyzer must skip the comparison calculation and not display message 2. Otherwise, the analyzer will compare the date of inspection to the registration month and year entered by the inspector. If the difference between the inspection date and the last date of the registration month and year exceeds 90 days and the HB2305CHG field in the SYSTEM.DAT file is set to “C”, then the analyzer will display a message 2 which advises the inspector to inform the motorist that the inspection will not count toward renewal of the vehicle registration.

Error Messages:

1. **DID NOT SCAN PROPERLY – PLEASE TRY AGAIN.**
2. **INFORM THE MOTORIST THAT THIS INSPECTION MAY NOT COUNT TOWARD REGISTRATION**

RENEWAL BECAUSE THE TEST DATE IS MORE THAN 90 DAYS PRIOR TO THE EXPIRATION OF THE CURRENT VEHICLE REGISTRATION.

Associated System File: **VEHICLE.DAT**

LICENSE_TYPE	**BARCODED_LIC_PLT**
LICENSE_NUM	**BARCODED_VIN**
HB2305CHG	

3.1.6b Texas Registration County Prompt

ENTER THE REGISTRATION COUNTY FROM THE VEHICLE REGISTRATION WINDSHIELD STICKER.

PRESS "ENTER/CONTINUE" TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to "A", "B", or "C", the previously entered license plate type is set to "1" or "4", and this value wasn't collected using the bar code scanner. However, the analyzer may skip this prompt if the vehicle registration county that was previously collected from the TxDMV bar code is begin used. The analyzer may also skip this prompt if the previously collected vehicle registration month and year are more than more than 1 year prior than the inspection date (i.e., the registration is expire by more than 1 year).

The analyzer must prompt the inspector to enter the vehicle's county of registration as it appears on the TxDMV vehicle registration windshield sticker. The analyzer must display a note indicating that inspector should enter "no sticker" for the county of registration if the vehicle doesn't have a TxDMV sticker on the windshield. The analyzer shall set the REG_COUNTY to spaces when the inspector enters "no sticker". The analyzer must allow for a user-friendly approach for entry of the county of registration.

For example, the analyzer may display the 17 emissions counties and an additional choice, "more counties". When "more counties" is selected, the analyzer will display the complete list of 254 Texas counties in alphabetical order and allow the inspector to either use the keyboard to enter up to three characters as criteria to search for a match in the alphabetized county list or use the arrow keys to select the correct county from the list.

Error Messages: **1. INVALID ENTRY – PLEASE TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

LICENSE_TYPE	**HB2305CHG**

3.1.7 License Prompt

ENTER THE LICENSE NUMBER OF THE VEHICLE.

Programming Criteria:

The analyzer may skip this prompt if the license plate number previously collected from the TxDMV bar code is being used. The inspector will be prompted to enter the license plate number of the vehicle. Upon confirming the license plate number entry, the vehicle information is eligible to be stored in the RECALL.DAT file. After the inspector enters the license plate number, the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_NUM**
BARCODED_LIC_PLT

3.1.8 VIN Prompt

ENTER VIN NUMBER.

Programming Criteria:

The analyzer may skip this prompt if the VIN previously collected from the TxDMV bar code is begin used. The analyzer will prompt for the VIN as it appears on the vehicle, and if available use the bar code reader to scan the bar coded VIN on the vehicle. If the VIN cannot be entered using the bar code reader, the inspector will be capable of entering the VIN using the keyboard. The analyzer must store a "B" in the BARCODED_VIN field of the VEHICLE.DAT file when the VIN is entered using the bar code reader. The analyzer must store a "K" in the BARCODED_VIN field of VEHICLE.DAT file when the VIN is not entered using the bar code reader.

The analyzer must allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the analyzer must prompt the inspector to press "enter/continue". Then, the analyzer will clear the VIN field and require the inspector to re-enter the VIN. The two attempts must match. If the two attempts do not match, the analyzer must display Message 3 and prompt the inspector to enter the VIN a third time.

A minimum of three and a maximum of 17 characters are required for this field. If the entry is not within these parameters, the analyzer must display Message 2. If no value is entered, the analyzer must display Message 1.

The VIN verification algorithm must be applied here, but only to 1981 and newer model-year vehicles. If the VIN verification fails, the inspector shall be required to re-enter the VIN using the keyboard until either it passes the VIN verification or until a total of 4 double blind matching VIN entry attempts have been made.

The analyzer will not allow the inspector to enter the letters "I", "O", or "Q" for 1981 and newer model-year vehicles. The software should suggest possible substitute letters when the DPS algorithm indicates that the VIN is bad.

Error Messages: **1. THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

2. **A MINIMUM OF 3 OR MAXIMUM OF 17 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**

3. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VIN_ID_NUM**
VIN_FLAG
BARCODED_VIN

3.1.8a VIN Verification Prompt

YOU ARE RESPONSIBLE FOR VERIFYING THAT THIS IS THE VIN FROM THE VEHICLE.

BY PRESSING CONTINUE, YOU ARE VERIFYING THAT THIS VIN, <<<display the entered VIN here>>>, MATCHES THE VIN ON THE VEHICLE UNDER INSPECTION.

Programming Criteria:

The analyzer will display this prompt when the HB2305CHG field in the SYSTEM.DAT file is set to "A", "B", or "C" and the VIN has been successfully entered using either the keyboard or bar code scanner (i.e., bar code from the vehicle, a vehicle inspection report, or the TxDMV sticker). The VIN will be displayed using a large font.

Associated System File: **VEHICLE.DAT**
REG_VIN **VIN**

3.1.8b VID Contact

The analyzer must contact the VID, retrieve all applicable vehicle information, and enter the information into the appropriate fields.

An inspection must be stopped and the analyzer must return to the main menu if the following response bits are set in the RESPONSE.DAT file received from the VID:

56 - Inspector License expired
57 - Inspector license suspended/revoked
58 - Inspector not authorized to test at this station
60 - TAS is locked out for at least one of the reasons included within "Lockout Status Record" data file

The analyzer must obtain the inspection record from the VID and search the local analyzer files for a VIN match. The analyzer must search the local inspection records, even if an inspection record is received from the VID. The local search must only consist of the records for the last 17 days. If two identical records are obtained, then the analyzer must use either record to set the EMISS_INIT_TEST and SAFE_INIT_TEST fields, and determine the eligibility status for the current inspection and the emissions inspection sequence for the reinspection, where applicable.

If the records are different, then the analyzer must set the flags as follows. The EMISS_INIT_TEST field must be set based on the value of the EMISS_PF_FLAG field in the most recent inspection record from the VID or the local analyzer files. The SAFE_INIT_TEST field must be set based on the value of the SAFE_INIT_TEST field in the most recent inspection record that was conducted at the station within the last 17 days.

The analyzer must confirm that the vehicle is eligible for an initial inspection by using the inspection record that was used to set the SAFE_INIT_TEST field.

The vehicle is eligible for an initial inspection if:

- the SAFE_INIT_TEST field in the inspection record is set to "R";
- the station number of the previous inspection station does not match the number of the station conducting the current inspection; or
- the date of this inspection is not within 16 days of the inspection date contained in the previous inspection record.

If the vehicle is not eligible for an initial inspection, the analyzer must:

- display a message indicating why the vehicle is not eligible for an initial inspection and prompt the inspector to inform the customer that they will not be charged for this inspection;
- save the vehicle information in the RECALL.DAT file;
- either perform a reinspection as described in Section 3.4: *Main Menu Selection "4 Reinspection"* or require the inspector to enter repair information about the vehicle prior to conducting the emissions inspection when the EMISS_PF_FLAG field in the inspection record of the previous inspection is set to "F"; and
- input the necessary vehicle information from the inspection record of the previous inspection to conduct the reinspection.

Upon completion of VID contact, the analyzer must:

- indicate that announcements, technical service bulletins (TSBs), and emissions recall information were transmitted by the VID;
- not display announcements until the end of the inspection;
- display a message after the end of the inspection indicating that: "**Subsequent inspections cannot be conducted until the announcement is successfully printed.**";
- display and automatically print a copy of the announcement immediately after main menu selection "1" through "4" is selected for the next inspection; and
- provide the option of displaying the TSBs, and/or emissions recall information either immediately or later in the current inspection.

The analyzer must provide the option to print, delete, and save announcements, TSBs, and emissions recall information to a predetermined file. New announcements, TSBs, and/or emissions recall information saved must overwrite the oldest information. The analyzer must not continue with the inspection until the announcements, TSBs, or recall information is successfully printed.

3.1.9 Vehicle Type Prompt

SELECT THE VEHICLE TYPE

'P' - PASSENGER CAR/STATION WAGON
'T' - TRUCK/VAN/SPORTS UTILITY VEHICLE
'M' - MOTOR HOME
'B' - BUS

Programming Criteria:

The default choice on this screen must be the "passenger car/station wagon" selection.

If the inspector selects "M" or "B", the analyzer must skip Section 3.1.9a: *Vehicle Body Type Prompt*, and use the VEHICLE_STNDS_TYPE of "T" if the vehicle receives an ASM inspection. If the inspector enters a GVW for a bus or motor home that is less than 8,501 pounds, the analyzer must set the BODY_STYLE field to "6" and perform an ASM or TSI inspection, where applicable.

If the inspector selects "P" and the previously entered GVW is strictly greater than 8,500 pounds, the analyzer must display an error message that says "**INVALID ENTRY – TRY AGAIN**," and not proceed to the next prompt until the inspector enters a value for the GVW that is less than or equal to 8,500 pounds for the "passenger car/station wagon" selection. No explanation must be given for this error message. The analyzer must display the previously entered GVW on the screen where the inspector corrects this entry and return to this prompt when an acceptable GVW value has been entered.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **VEHICLE _TYPE**

3.1.9a Vehicle Body Type Prompt

SELECT THE APPROPRIATE VEHICLE BODY TYPE FROM THE LIST BELOW:

CODE	VEHICLE BODY TYPE
1	SEDAN
2	STATION WAGON
3	PICKUP/TRUCK TRACTOR
4	SPORT/UTILITY VEHICLE
5	MINIVAN

6 FULL-SIZE VAN

Programming Criteria:

If the inspector selected "P" as the vehicle type, the default choice on this screen must be the "sedan" selection. If the inspector selected "T" as the vehicle type, the default choice on this screen must be the "pickup/truck tractor" selection. This prompt may be combined with the requirements of Section 3.1.9: *Vehicle Type Prompt*.

If the inspector selected "M" or "B" as the vehicle type, the analyzer must use the National Crime Information Center (NCIC) list to display the list of makes and models.

If the model-year, make, and model entered describe a unique vehicle which is found as a single VRT row number, the body type may be taken directly from the VRT record and the inspector does not need to be prompted to enter the body type.

The vehicle body type will be used to determine the vehicle test standards group. Vehicle body type codes "1" and "2" will be inspected as passenger cars, while body type codes "3" through "6" will be inspected as trucks.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System Files:	**VEHICLE.DAT**	**BODY_STYLE**
	TXVRT.DAT	**VEHICLE_BODY_TYPE**
		VEHICLE_STNDS_TYPE

3.1.10 Vehicle Make Prompt

ENTER THE VEHICLE MAKE.

Programming Criteria:

The analyzer must display a list of make names contained in the TXVRT.DAT file for passenger cars and trucks for vehicles whose previously entered GVW is less than or equal to 8,500 pounds. If the previously entered model-year is not in the TXVRT.DAT file, the analyzer must display the list of makes from the most recent model-year in the TXVRT.DAT file.

The analyzer must use the makes in the NCIC listings for buses, motor homes, and for vehicles whose previously entered GVW is strictly greater than 8,500 pounds.

When the inspector selects a make name from the list, the analyzer must store the NCIC code that corresponds to the selected make name in the MAKE field.

"Other" must also be a choice for the MAKE name. When the inspector selects other as the make name, the analyzer must:

- store "OTHR" in the MAKE field;
- display a message prompting the inspector to enter the full make name and least the first five characters of the model name in the space provided;

- store the inspector's entry in the MODEL field;
- leave the MODEL_CODE field blank; and
- skip the display of associated model names and proceed to Section 3.1.12: *Odometer Prompt*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MAKE**

3.1.11 Model Prompt

SELECT THE VEHICLE MODEL.

Programming Criteria:

The analyzer must display a list of vehicle model names that correspond to the previously selected vehicle make name from the TXVRT.DAT file or the NCIC listings.

If the previously entered model-year is not in the TXVRT.DAT file and the inspector selected a make name from the list of makes from the most recent model-year in the TXVRT.DAT file, then the analyzer must display the corresponding list of model names from the most recent model-year in the TXVRT.DAT file, and store the model name selected by the inspector in the MODEL field.

The analyzer must also present the option of "other" as a model name choice. When the inspector selects other, the analyzer must:

- display a message prompting the inspector to enter the full model name in the space provided; and
- store the selected make name in the MAKE field, the inspector's entry in the MODEL field, and "OTH" in the MODEL_CODE field.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL**
MODEL_CODE

3.1.12 Odometer Prompt

ENTER THE VEHICLE ODOMETER READING.

A MINIMUM OF ONE NUMERIC ENTRY IS REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.

Programming Criteria:

The analyzer must only accept numerical entries and store the entered value in the ODOMETER field.

If the analyzer is conducting this sequence as a test on resale inspection and the entered values for model-year and odometer indicate the vehicle is exempt from this requirement, the analyzer must display error message number 2.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **THIS VEHICLE IS EXEMPT FROM TEST ON RESALE BECAUSE THE MODEL YEAR IS 1996 OR NEWER AND THE ODOMETER READING IS LESS THAN 50,000 MILES. PRESS "ENTER/CONTINUE" TO RETURN TO THE MAIN MENU.**

Associated System File: **VEHICLE.DAT** **ODOMETER**

3.1.13 Injection and Carburetion Prompt

SELECT THE INJECTION/CARBURETION

F - FUEL INJECTION
C - CARBURETION
O - OTHER

Programming Criteria:

The inspector should select the appropriate injection/carburetion from the above list.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **INJECT_CARB**

3.1.14 Engine Size and Cylinder Selection Screen Prompt

SELECT THE ENGINE SIZE AND NUMBER OF CYLINDERS.

Programming Criteria:

Based on the values of the previously entered model-year, make name, and model name, the analyzer must display a list of engine sizes in liters or cubic centimeters with the corresponding cylinder count from the ENGINE_SIZE and NUMBER_CYLINDERS fields from the TXVRT.DAT file. The analyzer may proceed to Section 3.1.17: *Transmission Prompt* if the inspector selects an engine size and cylinder count pair from the list.

The corresponding cylinder count for all rotary engines in the TXVRT.DAT file is 17. The analyzer must display "rotary" as entry for the cylinder count and store an "R" in the CYLINDERS field of the inspection record if the inspector selects "rotary" as the cylinder count.

The analyzer must allow the inspector to select "other" from the list and enter a unique engine size and cylinder count combination. The entered engine size must be automatically

converted to cubic centimeters, where necessary, and stored in the ENGINE_SIZE field of the inspection record.

The default for this screen must be to the engine size that matches the value of the engine size from a previous inspection record. If a previous inspection record is not available, the default will be to the smallest engine size in the TXVRT.DAT file.

If the previously entered values for model-year, make, and model do not match the information in the TXVRT.DAT file or the search is in the NCIC table, the analyzer will either display the corresponding values from a previous inspection record or proceed directly to entry screens for the engine size and cylinder count.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

NUMBER OF CYLINDERS IS NOT VALID--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **CYLINDERS**
ENGINE SIZE

3.1.16 Cylinder Prompt

ENTER THE NUMBER OF CYLINDERS.
FOR ROTARY ENGINES, ENTER AN "R."

Programming Criteria:

The analyzer must display choice for the expected number of cylinders based on the previously entered engine size. The default for the number of cylinders to be entered must be the value contained in the CYLINDERS field in the TXVRT.DAT file. The minimum number of cylinders is "1" and the maximum is "16". Any entries out of the "1" through "16" range, or the letter "R" for rotary engines, will be rejected by the analyzer.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

NUMBER OF CYLINDERS IS NOT VALID--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **CYLINDERS**

3.1.16a Engine Units Prompt

ENTER THE UNITS OF THE ENGINE SIZE

Letter	Units
L	Liters
I	Cubic Inches
C	Cubic Centimeters

Programming Criteria:

The analyzer must prompt the inspector to enter the measurement unit for the engine size. The default for this screen must be liters. This prompt may be combined with the prompt in Section 3.3.13b: *Engine Size Prompt* to facilitate ease of entry for the lane inspector.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **INVALID ENTRY--TRY AGAIN.**

3.1.16b Engine Size Prompt

ENTER THE ENGINE SIZE

Unit: **"Display selection from previous prompt here" (i.e., Liters, Cubic Inches, Cubic Centimeters)**

Size: **_____**

Programming Criteria:

The analyzer must display the unit of measure from the previous prompt and allow the inspector to enter the engine size. The analyzer must:

- store the engine size in the first four characters of the ENGINE_SIZE field; and
- store the engine unit size character in the last position of the ENGINE_SIZE field.

The analyzer must convert the entered engine size to cubic centimeters by either multiplying the cubic inch entry by 16.387 or multiplying the liter entry by 1,000. The converted engine size must be rounded to the nearest cubic centimeter.

Error message 3 must be displayed if the inspector enters an engine size that converts to a value greater than 9,999 cubic centimeters or smaller than 655 cubic centimeters. The inspector shall be required to correct the entry or abort the inspection. If the inspection is aborted, no updates will be made to any file.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **INVALID ENTRY--TRY AGAIN.**
3. **40 CID OR 655 CC OR SMALLER ARE EXEMPT FROM THE EMISSIONS INSPECTION PROGRAM.**

Associated System File: **VEHICLE.DAT** **ENGINE_SIZE**

3.1.17 Transmission Prompt

INDICATE THE TYPE OF TRANSMISSION.

ENTER AN "M" IF IT IS MANUAL.
ENTER AN "A" IF IT IS AUTOMATIC

Programming Criteria:

Entry of the transmissions type is required. The analyzer must store an "A" or an "M" in the TRANSMISSION field of the inspection record based on the inspector's selection.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **TRANSMISSION**

3.1.18 Ignition Prompt

ENTER IGNITION TYPE.

SELECT THE APPROPRIATE IGNITION TYPE CODE FROM THE LIST BELOW:

Code	Ignition Type
"C"	**Conventional**
"D"	**Distributorless**
"Q"	**Quad 4/Wireless**

Programming Criteria:

The analyzer must store a "C" for Conventional, "D" for Distributorless, or "Q" for Quad 4/Wireless in the IGNITION field based on entry by the inspector.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **IGNITION**

3.1.18a Keyless Ignition Prompt

IS THIS A KEYLESS IGNITION VEHICLE?

SELECT THE APPROPRIATE OPTION FROM THE LIST BELOW:

NO, a key is required to start the vehicle.
YES, the vehicle starts without a key.

NOTE: If the engine starts with a factory installed keyless start, then select "Yes, the vehicle starts without a key." If the engine starts with a key, then select "No, a key is required to start the vehicle." Select "No" even if an aftermarket keyless ignition has been installed.

Programming Criteria:

Display this prompt when the previously entered model-year is greater than or equal to the value contained in the KEYLESS field in the SYSTEM.DAT file. The default selection must be the first choice in the list.

If the inspector selects "NO", proceed to Section 3.1.18b: *Hybrid Prompt*. If the inspector selects "Yes", change the value stored in the IGNITION field from "C" to "E", or "D" to "F", or "Q" to "R" based on the inspector's entry in Section 3.1.18: *Ignition Prompt*. The VIR must display "C_K", "D_K", or "Q_K", when "E", "F", or "R" is stored in the IGNITION field.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System Files:	**VEHICLE.DAT**	**IGNITION**
	SYSTEM.DAT	**KEYLESS**

3.1.18b Hybrid Prompt

IS THE VEHICLE A HYBRID ?
(i.e., Gasoline-electric engine, diesel-electric, etc.,)

SELECT THE APPROPRIATE CHOICE FROM THE LIST BELOW:

No, the vehicle only has a gasoline or diesel engine.
Yes, the vehicle is a hybrid.

Programming Criteria:

Display this prompt only when the previously enter model-year is greater than or equal to the value contained in the HYBRID field in the SYSTEM.DAT file. The default selection must be the first choice in the list.

If the inspector selects "Yes, the vehicle is a hybrid.", the analyzer will not require the RPM to be greater than zero when conducting an OBD inspection on this vehicle and place an "H" in the RPM_BYPASS field of the inspection record.

If the inspector selects "No, the vehicle has a gasoline or diesel engine.", then there are no changes to the OBD inspection.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System Files:	**VEHICLE.DAT**	**RPM_BYPASS**
	SYSTEM.DAT	**HYBRID**

3.1.19 Exhaust Prompt

DOES THE VEHICLE HAVE DUAL EXHAUST?

"Y" = YES "N" = NO

Programming Criteria:

The software must ask the inspector to indicate if the vehicle is equipped with dual exhaust.

The following instructions apply if the vehicle will receive a tailpipe emissions inspection. If the inspector selects "YES", then the analyzer must display instructions to the inspector describing how to attach the additional probe to the analyzer for this inspection and require the inspector to confirm this is complete before proceeding to the next prompt

If the inspector selects "NO", the analyzer must automatically proceed to the next prompt. The analyzer must store a "Y" or an "N" in the DUAL_EXHAUST field based on the inspector's entry.

Error Message: **INVALID ENTRY--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **DUAL_EXHAUST**

3.1.19a Vehicle 80" Width Prompt

IS THE VEHICLE AT LEAST 80 INCHES WIDE? (CHOOSE THE CORRECT SENTENCE)

1. **NO, THE VEHICLE IS LESS THAN 80 INCHES WIDE.**
2. **YES, THE VEHICLE IS AT LEAST 80 INCHES WIDE.**

Programming Criteria:

Display this prompt only when the previously entered vehicle type is "Truck/Van/Sports Utility Vehicle" or "Motorhome". If the previously entered vehicle type is "Motorhome", then the default selection is the second choice. If the previously entered vehicle type is "Truck/Van/Sports Utility Vehicle", then the default selection is the first choice. The analyzer must store a "Y" or an "N" in the 80_INCHES field based on the inspector's entry.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **80_INCHES**

3.1.19b Drive Axle Prompt

IS THE VEHICLE EQUIPPED WITH AWD OR FULL-TIME 4 WHEEL DRIVE OR NON-DISENGAGEABLE TRACTION CONTROL? PLEASE CONFIRM BY PRESSING "Y" OR "N"

Programming Criteria:

Display this prompt only when the entered vehicle model-year is less than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file.

The analyzer must not display a default value and will require the inspector to make a new entry whenever this prompt is displayed.

If "N" is selected then the analyzer must attempt to perform an ASM emissions inspection.

If "Y" is selected and OBDII_ONLY is set to "N", then the analyzer must attempt to perform a TSI inspection and display the following prompt:

PERFORM A TWO SPEED IDLE EMISSIONS INSPECTION

NOTE: TSI emissions inspection procedures are included in Appendix K: *TSI Emissions Inspection Procedures*.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System Files: **VEHICLE.DAT** **AXLE_TYPE**
STATION.DAT **OBDII_ONLY**

3.1.20 Test Type Prompt

ENTER THE TYPE OF INSPECTION

A-1 YEAR WINDSHIELD - TSI (SAFETY & EMISSIONS)
G-FMCSR (TRUCK)
L-1 YEAR WINDSHIELD - OBD (SAFETY & EMISSIONS)
M-1 YEAR WINDSHIELD - ASM (SAFETY & EMISSIONS)
N-1 YEAR WINDSHIELD - OBD/TSI (SAFETY & EMISSIONS)

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will delete the word "windshield" from the inspection types displayed on the screen.

The analyzer must only display one "1 year windshield (safety & emissions)" selection. The default for this screen must be to "A", "M", "N", or "L". For the following scenarios, "_" represents a space.

Houston and Dallas areas

The analyzer must display choices "G" and "L" when:

- the county code setting under the audit menu is NOT 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, 11_, 071, or 71_; and
- the previously entered model-year is 1996 or newer.

The analyzer must display choices "G" and "M" when:

- the county code setting under the audit menu is NOT 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, 11_, 071, or 71_; and

- the previously entered model-year is 1995 or newer.

El Paso area (El Paso County Only)

The analyzer must only display choices "G" and "A" for all model-years when the county code setting under the audit menu is 071 or 71_.

Austin area

The analyzer must only display choices "G" or "N" for all model-years when the county code setting under the audit menu is 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, or 11_.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_TEST_TYPE**

3.1.20a Confirm Vehicle Info Display

The analyzer must display the vehicle information and allow the inspector to edit the information as appropriate. If the vehicle information was populated by the VID, the inspector shall be allowed to edit all vehicle information except the VIN, the license plate type, and the license plate number. The inspector shall be required to confirm the entries before proceeding to the next screen. The vehicle information is no longer eligible to be stored in the RECALL.DAT file once the analyzer has moved to the next screen.

The analyzer must display an error message that says "INVALID GVW – PLEASE CORRECT" and prevent the inspector from proceeding to the next prompt when

- the previously entered vehicle type is set to "passenger car/station wagon" and the GVW is strictly greater than 8,500 pounds; and

- the inspector confirms the entries.

The analyzer must not proceed to the next prompt until the inspector either:

- enters a value for the GVW that is less than or equal to 8,500 pounds for the "passenger car/station wagon" vehicle type; or

- enters a vehicle type other than "passenger car/station wagon".

The analyzer must display the previously entered GVW on the screen where the inspector corrects this entry and return to this prompt when the new GVW value has been entered. The re-entry method must be approved by TCEQ prior to certification testing.

Emissions Inspection Selection Prompt Confirmation

Once the entries have been confirmed by the inspector, the analyzer must reapply the emissions inspection selection logic in Section 3.1.5b: *Emissions Inspection Selection Logic* if:

- the inspector made changes to the GVW entry, the model-year entry, and the fuel type entry on or prior to this screen; or
- the emissions inspection logic was not applied previously due to a transition from the reinspection sequence to the initial inspection sequence.

3.1.20b Vehicle Lookup Table Display

This screen must only appear if the analyzer does not find a match to the vehicle information entered by the inspector in the TXVRT.DAT file. The analyzer must display the following message or a similarly worded message that conveys the same information: **"An exact match for the vehicle under test was not found in the Vehicle Lookup Table!"** The analyzer must allow the inspector to return to the screen in Section 3.1.20a: *Confirm Vehicle Info Display* and edit the vehicle information as appropriate. The analyzer may display Vehicle lookup table records that have the same make name, model name and model-year entered by the inspector.

NOTE: This screen does not apply to safety only inspections or safety only reinspections.

3.1.20c Mud Flaps and Safety Guard Prompt 1

IS THE VEHICLE EQUIPPED WITH 4 OR MORE TIRES ON THE REARMOST AXLE?

'N' - NO, the vehicle has less than 4 tires on the rearmost axle.
'Y' - YES, the vehicle has 4 or more tires on the rearmost axle.

<u>Programming Criteria:</u>

The analyzer must be defaulted to "N". If the inspector selects "N", proceed to Section 3.1.21 and do NOT display the Mud Flaps and Safety Guards as an item of inspection. If the inspector selects "Y", then proceed to Section 3.1.20d.

The answers to the Mud Flap questions in sections 3.1.20c and 3.1.20d will not be stored in the inspection records. These answers will be used to determine if the Mud Flaps and Safety Guard safety items should be displayed for safety item sequences 1, 4, 6, 8, and 9. These answers will not affect safety item sequences 2, 3, 5, and 7. The lists of safety item sequences are contained in Appendix R: *Safety Item Sequence Lists*.

<u>Error Message:</u> **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.1.20d Mud Flaps and Safety Guard Prompt 2

IS THE VEHICLE A TRUCK TRACTOR, MOTORHOME, BUS, OR POLE TRAILER?

'N' - NO, the vehicle is NOT a truck tractor, motorhome, bus, or pole trailer.

'Y' - YES, the vehicle IS a truck tractor, motorhome, bus, or pole trailer.
'R' - Return to previous screen.

Programming Criteria:

The analyzer must be defaulted to "N". If the inspector selected "Motorhome" or "Bus" as the Vehicle Type in Section 3.1.9, then the analyzer must be defaulted to "Y". The inspector shall be allowed to return to the previous screen and edit the previous answer.

If the inspector selects "N", then display the Mud Flaps and Safety Guards as an item of inspection. If the inspector selects "Y", then do not display the Mud Flaps and Safety Guards as an item of inspection.

Proceed to Section 3.1.21.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.1.21 Safety Inspection Items

Programming Criteria:

The lists of safety item sequences are contained in Appendix R: *Safety Item Sequence Lists*.

The analyzer shall prompt the inspector to select the appropriate phrase:

- I certify that all safety items have passed inspection (continue to safety fee); or
- I want to enter failed or repaired safety items (continue to safety item list).

If the first choice is selected, the analyzer must automatically fill the appropriate safety items with "P" for pass and proceed to the safety test fee prompt. If the second choice is selected, the analyzer must display the safety item list in accordance with the following description.

The analyzer must display the appropriate list choices based on entries made by the inspector. The analyzer will require the inspector to enter the status of the safety item in the order it appears in the list. The acceptable entries are "P", for pass, "F", for fail, and "R" for repaired. The letter "N" for N/A is not an acceptable entry, however, a value of "N" in the safety item field may occur in an inspection record that is received from the VID during a reprint VIR function.

If the inspector selects "F" or "R" for any safety item in the list, a subset list of failure reasons must be displayed and the inspector shall highlight and select the failure reason or the entry that allows the inspector to return to the previous screen entry of "F" or "R" to edit this selection. The default for this display must be to the "return to previous screen" selection. The analyzer must automatically enter the appropriate alpha character based on the selections made by the inspector.

If the vehicle type = "P", and the SAFE_TEST_TYPE = "A - 1 year windshield - TSI" or "L - 1 year windshield - OBD" or "M - 1 year windshield - ASM" or "N - 1 year windshield - OBD/TSI", then the analyzer must display safety item sequence #1.

If the vehicle type = “P”, and the SAFE_TEST_TYPE = “G - FMCSR (truck)”, then the analyzer must display safety item sequence #8.

If the vehicle type = “B”, and the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, then the analyzer must display safety item sequence #3.

If the vehicle type = “B”, and the SAFE_TEST_TYPE = “G - FMCSR (truck)”, then the analyzer must display the titles of safety item sequence #7, and safety item sequence #8, allow the inspector to use the arrow keys to highlight and select the appropriate safety item sequence by pressing “enter/continue”.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, and the 80_inches = “N”, then the analyzer must display the safety item sequence #1.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, and the 80_inches = “Y”, then the analyzer must display the safety item sequence #4.

If the vehicle type = “T”, and the SAFE_TEST_TYPE = “G - FMSCR (Truck)”, (NOTE: the 80 inches wide entry is not used here to determine the appropriate safety item sequence), then the analyzer must display the titles of safety item sequence #8, and safety item sequence #5, and allow the inspector to use the arrow keys to highlight and select appropriate safety item sequence by pressing “enter/continue”.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, and the 80_inches = “N”, then the analyzer must display the safety item sequence #1.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, and the 80_inches = “Y”, then the analyzer must display the safety item sequence #4.

If the vehicle type = “M”, and the SAFE_TEST_TYPE = “G - FMSCR (Truck)”, then the analyzer must display safety item sequence #8. The 80 inches wide entry is purposely not used here to determine the appropriate safety item sequence

The inspector shall be required to press “enter/continue” after each item. These fields are required and must contain a valid entry. The analyzer does not have to display the screen heading during the inspection sequence. The analyzer must enter the date and the inspector’s driver’s license number.

The inspector should be able to access an item’s associated help screen by placing the cursor in the parentheses and pressing the “F1” key. The help screens for each type of safety inspection sequence are in Appendix D: *Safety Inspection Help Screens*.

If any safety item is entered as failing with a stored value of “A”, “C”, “E”, “H”, “J”, “L”, “O”, “S”, “U”, “W”, or “Y”, then the analyzer must set the SAFETY_PF_FLAG to “F”. Otherwise, set the SAFETY_PF_FLAG to “P” for pass.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

SAFE_1	**SAFE_2**	**SAFE_3**	**SAFE_4**	**SAFE_5**
SAFE_6A	**SAFE_6B**	**SAFE_7**	**SAFE_7A**	**SAFE_7B**
SAFE_8	**SAFE_9**	**SAFE_10A**	**SAFE_10B**	**SAFE_10C**
SAFE_10D	**SAFE_10E**	**SAFE_10F**	**SAFE_11**	**SAFE_12**
SAFE_13	**SAFE_14**	**SAFE_15**	**SAFE_16**	**SAFE_17**
SAFE_18	**SAFE_19**	**SAFE_20**	**SAFE_21**	**SAFE_22A**
SAFE_22B	**SAFE_22C**	**SAFE_22D**	**SAFE_23**	**SAFE_24**
SAFE_25	**SAFE_26**	**SAFE_27**	**SAFE_28**	**SAFE_29**
SAFE_30	**SAFETY_PF_FLAG**		**DPS_SAFE_SEQ**	

3.1.21a Safety Repair Cost Prompt

ENTER THE TOTAL COST FOR THE SAFETY-RELATED REPAIRS, INCLUDING CENTS. DO NOT INCLUDE THE SAFETY INSPECTION FEE IN THE TOTAL.

Programming Criteria:

The analyzer must display this prompt if the inspector indicates that repairs were conducted on any of the safety items shown under the Safety Inspection Items Prompt in Section 3.1.21. The inspector shall enter the total cost for all safety-related repairs. If an inspector enters a fee greater than $450 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee. The analyzer must store this amount locally to be printed on the VIR. The cost entered at the prompt must be included in the overall cost for the inspection.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

3.1.22 Safety Test Fee Prompt

ENTER THE TOTAL COST FOR THE SAFETY INSPECTION, INCLUDING CENTS. (DO NOT INCLUDE SAFETY RELATED REPAIRS.)

Programming Criteria:

The inspector shall enter the overall cost for the inspection. If an inspector enters a fee greater than $100 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**

3.1.23 Pre-Tune Prompt

DID INSPECTOR/FACILITY PERFORM ANY EMISSIONS-RELATED REPAIRS OR ADJUSTMENTS PERFORMED ON THE VEHICLE PRIOR TO THIS TEST?

"Y" - YES **"N" - NO**

Programming Criteria:

The analyzer will ask the inspector if pre-tuning was performed on this vehicle prior to this inspection. The analyzer software must be designed so that only a "Y" or an "N" can be entered by the inspector for this field.

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **PRE_TUNE**

3.1.23a Update Inspection Record

Programming Criteria:

Once the inspector has inserted the probe into the tailpipe and pressed "enter/continue", the analyzer must update the inspection record and store a "J" in the ABORT field. If the inspection sequence is not exited properly, the analyzer must be able to send the inspection record containing a "J" in the ABORT field for the affected inspection to the VID during the next communications session. If the inspection is aborted properly after "J" has been stored, the analyzer must replace the "J" in the ABORT field with an "A" and include the entered abort code.

If the emissions phase of the inspection is not aborted after "J" has been stored, the analyzer must replace the "J" in the ABORT field with a blank/space.

3.1.23b OBD Hookup

The analyzer must prompt the inspector to conduct an OBD inspection on:

- all gasoline-powered vehicles whose model-year is equal to or newer than the vehicle model-year contained in the OBDII_MODEL_YEAR field of the SYSTEM.DAT file; and

- all diesel-powered vehicles whose model-year is equal to or newer than the vehicle model-year contained in the DSL_OBD_MODEL_YEAR field of the SYSTEM.DAT file and whose entered GVW is less than or equal to the weight contained in the DSL_OBD_MAX_GVW field of the same file.

The analyzer must automatically search for vehicle-specific emissions inspection parameters in the TXVRT.DAT file when an OBD inspection is conducted. If these inspection parameters are not located in the TXVRT.DAT file, the analyzer must use the default parameters in the SYSTEM.DAT file. Unless otherwise stated, the analyzer must compare vehicle make, model, and model-year in matching records with the vehicle being inspected.

3.1.23c OBD Connector Prompt

TURN THE CAR OFF (I.E., PUT KEY IN "OFF/LOCK" POSITION)

LOCATE THE VEHICLE'S OBD DIAGNOSTIC LINK CONNECTOR.

ATTACH THE OBD II PORT TO THE VEHICLE CONNECTOR.

LEAVE CAR OFF FOR 12 SECONDS WITH CONNECTOR ATTACHED.

PRESS CONTINUE.

Programming Criteria:

The analyzer must have the ability to assist the inspector with locating the vehicle's OBD connector using an OBD connector look-up table.

If the previously entered GVW for the vehicle under inspection is strictly greater than 8,500 pounds, then the analyzer must display a yellow or orange colored warning indicator that states "**Heavy-Duty OBD II Sequence**" and provide an option on this screen that allows the inspector to indicate that the vehicle's "Connector Can Not Be Located".

This option must not be presented for any vehicle whose previously entered GVW is less than or equal to 8,500 pounds.

If the inspector selects "Connector Could Not Be Located" on this screen and the analyzer cannot establish communications with the vehicle on the first attempt under Section 3.1.23g: *OBD Connection Prompt*, then the analyzer must skip Section 3.1.23h: *OBD Connection Not Confirmed Prompt* and continue as if the inspector has selected choice number 2 from Section 3.1.23i: *OBD No Connection Reason Prompt*.

3.1.23d OBD Key On, Engine Off Prompt

TURN THE IGNITION KEY TO THE "ON' POSITION, BUT DON'T START THE ENGINE. LOCATE THE MIL (MALFUNCTION INDICATOR LIGHT) ON THE DASHBOARD.

DID THE MIL TURN ON? Note: MIL may stay on continuously or go out after only a few seconds. (CHOOSE THE CORRECT SENTENCE)

YES, the MIL did come on.
No, the MIL did NOT come on at all.

The malfunction indicator light (mil) will either display "service engine soon", "check engine", the word "check" along with the international engine symbol, or some combination of these depending on the vehicle make.

Programming Criteria:

If the vehicle was identified as a "keyless ignition vehicle" in Section 3.1.18a: *Keyless Ignition Prompt*, the analyzer must:

- not display this prompt;
- enter a "K" in the OBD2_MIL_CHECK field; and
- proceed to the next prompt.

Otherwise, the analyzer must prompt the inspector to perform a key-on, engine-off check to see if the MIL properly illuminates. The analyzer must prompt the inspector to enter a No if the MIL does not properly illuminate. The analyzer software must be designed so that the inspector can use the arrow keys to highlight his choice and press "enter/continue" to select the appropriate sentence. The analyzer software must not have a default entry for this screen. The inspector must be required press the arrow key at least once, followed by the "enter/continue" key.

The help message for this screen must contain the following text: **"The Malfunction Indicator Light (MIL) is the official term for the warning light that is illuminated by the vehicle's OBD system when a malfunction occurs. Depending on the vehicle make, the MIL will either display 'Service Engine Soon', 'Check Engine', the word 'Check' along with the international engine symbol, or some combination of these. The MIL must come on when the ignition key is turned to the "key on, engine off" position. This is to allow inspectors to check that the MIL is capable of illuminating if a malfunction were to occur. On most vehicles, the MIL will stay illuminated as long as the key is in the position. However, on some vehicles, the MIL will illuminate very briefly when the key is turned to the "key on, engine off" position and then go out."**

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OBD2_MIL_CHECK**

3.1.23e OBD Engine Running Prompt

START THE ENGINE AND ALLOW IT TO IDLE FOR AT LEAST 20 SECONDS. (I.E., PUT KEY IN "RUN" POSITION)

PRESS CONTINUE.

Programming Criteria:

The analyzer must require the inspector to confirm that the vehicle is started and idling by pressing the "enter/continue" key. The analyzer may attempt to establish communications while displaying this prompt.

3.1.23f OBD Key On, Engine Running Prompt

DID THE MIL TURN OFF? (CHOOSE THE CORRECT SENTENCE)

Yes, the MIL turned off, or never came on.
No, the MIL stayed on.

Programming Criteria:

The analyzer must prompt the inspector to perform a key on, engine running check to see if the MIL illuminates while the engine is running. The analyzer must store an "N" if the inspector indicates that the MIL stayed illuminated or a "Y" if inspector indicates that the MIL turned off or never illuminated. The analyzer software must be designed so that the inspector can use the arrow keys to highlight his choice and press "enter/continue" to select the appropriate sentence. The analyzer software must not have a default entry for this screen. The inspector must be required to press the arrow key at least once followed by the "enter/continue" key. The analyzer may attempt to establish communications while displaying this prompt.

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OBD2_MIL_ON_RUN**

3.1.23g OBD Connection Prompt

COMMUNICATION IN PROGRESS, PLEASE WAIT.

Programming Criteria:

The analyzer must display this message while attempting to establish communications with the vehicle's OBD computer.

If the inspector has pressed continue and connection cannot be confirmed, the analyzer must proceed to Section 3.1.23h: *OBD Connection Non Confirmed Prompt*. If the inspector has pressed continue and connection is confirmed, the analyzer must store the OBD communication protocol in the COMM_PROT field of the inspection record and proceed to Section 3.1.23j: *OBD Malfunction Indicator Light Status Check*. If the connection is confirmed using a wireless OBD connector, the analyzer will store a "W" in the WIRELESS_OBD field of the inspection record.

Associated System File: **VEHICLE.DAT** **COMM_PROT**
WIRELESS_OBD

3.1.23h OBD Connection Not Confirmed Prompt

THE OBD II CONNECTION CANNOT BE CONFIRMED –CHOOSE THE NEXT ACTION

1. TRY AGAIN

2. DO NOT TRY AGAIN

Programming Criteria:

The analyzer must default is to "try again".

If the inspector selects "try again", the analyzer must attempt to gain a confirmed OBD connection. The analyzer must allow the inspector unlimited attempts to gain a confirmed OBD connection.

If the inspector selects "do not try again", then the analyzer must proceed to Section 3.1.23i: *OBD No Connection Reason Prompt*.

3.1.23i OBD No Connection Reason Prompt

THE OBD II CONNECTION CANNOT BE CONFIRMED –CHOOSE THE NEXT ACTION

1. BACK TO PREVIOUS SCREEN

2. CONNECTOR CANNOT BE LOCATED

3. CONNECTOR IS MISSING, DAMAGED, OR TAMPERED.

4. CONNECTOR IS OBSTRUCTED OR INACCESSIBLE AND CONNECTION IS NOT POSSIBLE.

5. COMMUNICATION FAILED, AND OBD II PORT IS ATTACHED TO CONNECTOR.

Programming Criteria:

The analyzer must default is to phrase number "1".

If the inspector selects phrase number "1", the analyzer must return to Section 3.1.23h: *OBD Connection Not Confirmed Prompt*.

OBD Non Communication Transition Not Allowed

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N" and inspector selects phrase number "2", "3", "4", or "5", then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field indicating the status of the connector; and

2) proceed directly to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt*.

OBD Non Communication Transition Allowed

The following instructions apply to vehicles that receive an OBD inspection, fail to communicate through the OBD connector, and are allowed to transition to an ASM or TSI inspection, which is permitted when the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "Y".

If the inspector selects phrase number “2”, then the analyzer must:

1) store a “L” in the OBD2_DLC_RES field indicating the connector cannot be located; and,

2) proceed directly to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number “3”, then the analyzer must:

1) store a “D” in the OBD2_DLC_RES field indicating the connector is missing, damaged, or tampered; and,

2) proceed directly to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number “4”, then the analyzer must:

1) store an “I” in the OBD2_DLC_RES field indicating an inaccessible connector; and,

2) proceed directly to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number “5” and an “N” is stored in either the OBD2_MIL_CHECK or the OBD2_MIL_ON_RUN field, then the analyzer must:

1) store a “N” in the OBD2_DLC_RES field indicating it failed to establish communication with the vehicle; and,

2) proceed directly to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt*.

NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection, when the vehicle fails either of the bulb check questions and communications cannot be established.

If the inspector selects phrase number “5” and a “Y” is stored in both the OBD2_MIL_CHECK and the OBD2_MIL_ON_RUN fields, then the analyzer must:

1) store a “N” in the OBD2_DLC_RES field indicating it failed to establish communication with the vehicle; and,

2) proceed directly to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt* if the vehicle is a gasoline-powered heavy-duty vehicle or proceed to step 4.c. of this section if the vehicle is diesel-powered,

3) initiate an auto-zero and a HC hang-up in preparation for an emissions inspection for all gasoline powered vehicles and continue with steps 4.a., 4.b. and skip step 4.c. before proceeding to step 5 of this section,

4) a. abort the inspection, set the ABORT field to "A", and the ABORT_CODE field to "07" if the analyzer determines that emissions inspection lockouts such as dynamometer calibration or bench calibration and leak checks are needed, or

b. abort the inspection, set the ABORT field to "A" and the ABORT_CODE field to "81", and display the following message if the analyzer is an OBD-only analyzer:

SINCE THE VEHICLE DID NOT COMMUNICATE THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. PLEASE REFER THE MOTORIST TO A FULL-SERVICE STATION WITH ASM TESTING, AND DO NOT CHARGE THE CUSTOMER.

Press Any Key to Return to the Main Menu.

c. If the vehicle is diesel-powered, the analyzer will transition to the safety only inspection with no gas cap inspection in either the live testing period or beta period by proceeding directly to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt*, then to the end of the inspection. This transition is allowed when the DSL_OBD_BETA_DFLT field is set to "S" and the DSL_OBD_TESTING field is set to "Y" during beta, or the DSL_NON_CMM_2_SAFE field is set to "Y" and the DSL_OBD_TESTING field is set to "Y" during the live testing period.

When the transition is allowed during the beta period, the analyzer must abort the inspection, store the collected OBD data, an A in the ABORT field, "82", in the ABORT_CODE field in the inspection record and display a message indicating, **"The Safety and Emissions Inspection will end here because this vehicle cannot be tested through the OBD connector. Please conduct a Safety Only Inspection on this vehicle. Press any key to return to the Main Menu."** Upon pressing any key, the analyzer must return to the main menu.

When the transition is allowed during the live testing period, the analyzer must store the collected OBD data in the inspection record, jump to the end of the inspection by proceeding to the Section 3.1.28g: *End of Phase Logic* and only using the value of the SAFE_PF_FLAG field to set the OVERALL_RESULTS field and changing the EMISS_TEST_TYPE field from "1" to "4". The outcome of the OBD phase will not be used as criteria to determine if the vehicle passes or fails.

When the transition is not allowed during the live testing period, the analyzer must fail the vehicle due to no communications during the OBD phase and proceed directly to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt*, then to the end of the inspection because gas cap inspections are not required for diesel vehicles.

5) If the analyzer has not already obtained the status of the drive axle as a part of this inspection, then the analyzer must obtain this information by displaying the prompt in Section 3.1.19b: *Drive Axle Prompt* and obtain whether the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control prior to conducting the tailpipe emissions inspection.

6) a. Proceed directly to Section 3.1.23o: *ASM Emission Inspection Sequence* and perform the ASM emissions inspection when the NON_COMM_2_TAILPIPE and ASM_TESTING fields are set to "Y" during the live testing period; or

b. proceed directly to Section 3.1.24: *Preconditioned TSI Inspection Procedure* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control during the live testing period; or

c. proceed directly to Section 3.1.24: *Preconditioned TSI Inspection Procedure* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the ASM_TESTING field is set to "N" during the live testing period.

7) Convert the emissions inspection type from OBD to either ASM or TSI when the transition is allowed and print the special message (shown below), instead of OBD Print Message 11, which indicates that the vehicle's OBD system could not be checked due to unsuccessful communications.

Special Message:

Due to the inability of your vehicle to communicate with the OBD connector, your vehicle received an ASM or TSI test. The vehicle manufacturer's warranty covers the OBD device for the first 8 years or 80,000 miles of vehicle use. You will likely be required to pass the OBD test next year, and should have the vehicle examined by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

If the test date is less than the date contained in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, the analyzer must:

1) place a "L", "D", "I", or "N", in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place a blank in the OBD2_PF_FLAG field of the VEHICLE.DAT file;

3) print "FAIL" in the OBD section of the VIR;

4) print a message on the same page as the Public Awareness Statement indicating that the OBD failure is "Advisory Only", and that the vehicle's OBD system could not be checked due to: unsuccessful communications if the OBD2_DLC_RES field is set to "N", or a missing, damaged, or tampered connector if the OBD2_DLC_RES field is set to "D", the connector could not be located if the OBD2_DLC_RES field is set to "L", or an inaccessible connector if the OBD2_DLC_RES field is set to "I"; and,

5) proceed directly to Section 3.1.24: *Preconditioned TSI Inspection Procedure*.

Failure of the OBD portion of the inspection WILL NOT result in an overall inspection failure.

If the test date is equal to or greater than the date in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "Y", and the inspector selected phrase number "5" in Section 3.1.23i: *OBD No Connection Reason Prompt*, the analyzer must:

1) place an "N" in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place an "F" in the OBD2_PF_FLAG field (and later to the OVERALL_RESULTS field) of the VEHICLE.DAT file;

3) print the special message (shown below) instead of OBD Print Message 11 on the same page as the Public Awareness Statement which indicates that the vehicle's OBD system could not be checked due to unsuccessful communications;

   Special Message:

   Due to the inability of your vehicle to communicate with the OBD connector, your vehicle received an ASM or TSI test. The vehicle manufacturer's warranty covers the OBD device for the first 8 years or 80,000 miles of vehicle use. You will likely be required to pass the OBD test next year, and should have the vehicle examined by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

4) not conduct an OBD inspection; and

5) proceed either to Section 3.1.23o: *ASM Emissions Inspection Sequence*, and perform the ASM emission inspection, or to Section 3.1.24: *Preconditioned TSI Inspection Procedure*, and perform a preconditioned TSI inspection if the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control.

The failure of the resulting emissions inspection instead of the OBD portion of the inspection WILL result in an overall inspection failure.

If the test date is equal to or greater than the date in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, and the inspector did not select "Back to Previous Screen" or phrase number "5" in Section 3.1.23i: *OBD No Connection Reason Prompt*, the analyzer must:

1) place a "L", "D", or "I" in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place an "F" in the OBD2_PF_FLAG field (and later to the OVERALL_RESULTS field) of the VEHICLE.DAT file;

3) print "FAIL" in the OBD portion and the overall inspection result section of the VIR;

4) print a message on the same page as the Public Awareness Statement indicating that the vehicle's OBD system could not be checked due to: a missing, damaged, or tampered connector if the OBD2_DLC_RES field is set to "D", an unlocated connector if the OBD2_DLC_RES field is set to "L", or an inaccessible connector if the OBD2_DLC_RES field is set to "I"; and,

5) proceed to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt* and no tailpipe emissions inspection will be conducted.

The failure of the OBD portion of the inspection WILL result in an overall inspection failure.

Associated System File:	**VEHICLE.DAT**	**OBD2_DLC_RES** **OBD2_PF_FLAG** **OVERALL_RESULTS**

3.1.23j OBD Malfunction Indicator Light Status Check

Programming Criteria:

The analyzer will evaluate the MIL status based on the data returned via the OBD link from the vehicle's OBD system. The status of the MIL illumination will be recorded in the OBD2_MIL_STATUS field of the inspection record. If the vehicle was identified as a hybrid, the analyzer does not have to require the engine to be running as a condition of the OBD inspection. The analyzer must store an "H" in the RPM_BYPASS field of the inspection record.

If the MIL status of "not commanded on" is returned while the engine running, the analyzer must:

1) store a "P" in the OBD2_MIL_STATUS field; and

2) proceed to Section 3.1.23k: *OBD Readiness Evaluation*.

If the MIL status returned is "commanded on" with the engine running, the analyzer must:

1) store an "F" in the OBD2_MIL_STATUS field; and

2) proceed to Section 3.1.23k: *OBD Readiness Evaluation*.

3.1.23k OBD Readiness Evaluation

Programming Criteria:

The analyzer must collect the status of the readiness monitors from the vehicle's OBD system. If the vehicle has multiple engine control modules (ECMs), the analyzer must provide the summary of results all the readiness monitors received from the vehicle as the status of the readiness monitors.

At a minimum, the analyzer must collect the status of the following list of continuous and non-continuous readiness monitors.

- Misfire (continuous)
- Fuel system (continuous)
- Comprehensive component (continuous)
- Catalyst (non-continuous)
- Heated catalyst (non-continuous)

- Evaporative system (non-continuous)
- Secondary air system (non-continuous)
- Air conditioning system (non-continuous)
- Oxygen sensor (non-continuous)
- Oxygen sensor heater (non-continuous)
- EGR system (non-continuous) (for MY2007 and newer, EGR and/or VVT system)

For each readiness monitor in the inspection record, the analyzer must store a:

- "0" when the retrieved status is not supported or equivalent;
- "1" when the status is complete or equivalent; or
- "2" when the status is not complete.

The analyzer must determine the number of non-continuous monitors set to not complete.

If the value specified in the SYSTEM.DAT file for a particular readiness monitor is set to "Y", the status of the readiness monitor must be used for the overall readiness determination. If the value specified for a readiness monitor in the SYSTEM.DAT file is set to "N", the status of the readiness monitor must be ignored by the analyzer and not used for the overall readiness determination.

The OBD2_READY_RES field is determined by the following criteria. The vehicle must fail the OBD inspection when the number of non-continuous readiness monitors set to "not ready" exceeds the maximum number of non-continuous readiness monitors allowed to be set to "not ready". The maximum number of non-continuous readiness monitors allowed is found:

- in the MAX_NOT_READY_NUM field of the SYSTEM.DAT file when the NTRDY_FL is set to "N" or space;

- in the MAX_NUM_NOT_READY field of the TXVRT.DAT file when the NTRDY_FL field is set to "Y" and a vehicle match is not found in the TXVRT.DAT file for the vehicle under inspection; or

- in either the MAX_NOT_READY_NUM or the MAX_NTRDY_B_NUM field of the SYSTEM.DAT file when the NTRDY_FL field is set to "Y" and a vehicle match is not found in the TXVRT.DAT file for the vehicle under inspection

The status of continuous readiness monitors will be collected and stored in the inspection record, but not used as criteria for setting the OBD2_READY_RES field.

The analyzer must use the applicable model-year values contained in the MAX_NT_RDY_BGN_YR, MAX_NT_RDY_END_YR, MAX_NTRDY_B_BGN_YR, and MAX_NTRDY_B_END_YR fields of the SYSTEM.DAT file when the NTRDY_FL is set to "Y" and the maximum number of non-continuous readiness monitors allowed is not retrieved from the TXVRT.DAT file. The value in the MAX_NUM_NOT_READY field must be used with the model-years in the MAX_NT_RDY_BGN_YR and MAX_NT_RDY_END_YR fields, and the value in the MAX_NTRDY_B_NUM field must be used with the model-years in the MAX_NTRDY_B_BGN_YR and MAX_NTRDY_B_END_YR field.

For example, the analyzer must apply a maximum of two non-continuous monitors to vehicles whose model-year is 1996 through 2000, inclusively, and a maximum of one non-continuous monitor to vehicles whose model-year is 2001 and newer when the MAX_NUM_NOT_READY, MAX_NT_RDY_BGN_YR, MAX_NT_RDY_END_YR, MAX_NTRDY_B_NUM, MAX_NTRDY_B_BGN_YR, and MAX_NTRDY_B_END_YR fields are set to "2", "1996", "2000", "1", "2001", "9999", respectively. These fields will allow the analyzer to apply two maximums to two different model-year ranges.

If the number of non-continuous readiness monitors retrieved from the vehicle with a status of "not ready" is less than or equal to the maximum number of non-continuous readiness monitors allowed, then the analyzer must store a "P" in the OBD2_READY_RES field of the VEHICLE.DAT file. Otherwise, the analyzer must set the OBD2_READY_RES field to "F".

3.1.23l OBD Diagnostic Trouble Code Check

Programming Criteria:

1) The analyzer must send a request to the vehicle's on board computer for the stored emissions-related DTCs. The analyzer will repeat this cycle until the number of codes reported equals the number expected. Any codes listed in the OBD DTC table must be recorded on the inspection record and the text fault code description must be printed on the VIR.

2) If there are no DTCs, the analyzer must:

   - store a "P" in both the OBD2_FAULT_CD_RES and OBD2_PF_FLAG fields and two zeros ("00") in the DTC_STORED field of the VEHICLE.DAT file;
   - print "pass" in the OBD section of the VIR; and
   - proceed to Section 3.1.23 m: *OBD Inspection Evaluation and Messages Prompt*.

3) The analyzer must store an "F" in the OBD2_FAULT_CD_RES and OBD2_PF_FLAG fields and the first 10 DTCs that cause the MIL to be illuminated in the FAULT_CODES(DTCs) field of the VEHICLE.DAT file when one or more DTC is retrieved from the vehicle.

4) The analyzer must store the total number of stored DTCs (not pending DTCs) causing the MIL to illuminate in the DTC_STORED field of the VEHICLE.DAT file and proceed to the Section 3.1.23m: *OBD Inspection Evaluation and Messages*.

3.1.23m OBD Inspection Evaluation and Messages

Programming Criteria:

The result of the OBD inspection will be determined as follows:

- OBD2_MIL_CHECK is a manual entry
- OBD2_MIL_ON_RUN is a manual entry
- OBD2_DLC_RES is an automatic entry unless there is no communication between the vehicle and the analyzer
- OBD2_MIL_STATUS is an automatic entry

- OBD2_READY_RES is a field populated automatically.
- OBD2_FAULT_CD_RES depends if there are any stored DTCs causing the MIL to illuminate.

Rejecting OBD Inspections Due to No Communication During the Live Testing Period

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "R", the test date is greater than the date contained in the OBDII_FAIL_ST_DT field, and the inspector selects phrase number "5" when communications could not be established, then the analyzer must:

1) store an "N", as appropriate, in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the remaining OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN;

4) not print the corresponding appropriate OBD message (either "10" or "11");

5) print the following language, "**The On Board Diagnostic test could not be completed because the analyzer did not communicate with the vehicle's On Board Computer.**";

6) abort the inspection, set the ABORT field to "A" and the ABORT_CODE field to "83", print "**abort code – 83**" on the VIR as the abort reason, and display the following message:

   SINCE THE VEHICLE DID NOT COMMUNICATE THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. DO NOT CHARGE THE CUSTOMER.

   Press Any Key to Return to the Main Menu.

7) Proceed directly to the main menu, print the VIR using the aborted inspection format, and treat this aborted inspection in the same way that abort code "07 - analyzer problem" is treated.

   NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection and ends in an aborted inspection condition, when communications cannot be established.

Allowing OBD Inspection Transitions Due to No Communication during the Live Testing Period

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "Y", the test date is greater than the date contained in the OBDII_FAIL_ST_DT, an "N" is stored in either the

OBD2_MIL_CHECK or the OBD2_MIL_ON_RUN field, and the inspector selects phrase number "5" when communications could not be established, then the analyzer must:

1) store an "N", in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field,

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN; and

4) Print OBD message "10" or "11", as appropriate, and proceed directly to Section 3.1.23n: *OBD Engine Stop Prompt*.

   NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection, when the vehicle fails either of the bulb check questions, and communications cannot be established.

<u>OBD Inspection Failure Due to No Communication During the Live Testing</u>

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N", the test date is greater than the date contained in the OBDII_FAIL_ST_DT, and the inspector selects phrase number "2", "3", "4", or "5"when communications could not be established, then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN; and

4) print OBD message "10" or "11", as appropriate, and proceed directly to Section 3.1.23n: *OBD Engine Stop Prompt* in order to prevent the vehicle from receiving an ASM or TSI inspection when communications cannot be established.

<u>OBD Inspection Due to No Communication During the Beta Testing Period</u>

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N", the test date is less than the date contained in the OBD II_FAIL_ST_DT, and the inspector selects phrase number "2", "3", "4", or "5", then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field indicating the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN;

4) print OBD message "3" or "4", as appropriate; and

5) a. proceed directly to Section 3.1.23n: *OBD Engine Stop Prompt*, if the OBD_BETA_DFLT field is set to "S" and the FUEL_TYPE field is set to "G" or "B"; or

   b. proceed directly to Section 3.1.24: *Preconditioned TSI Inspection Procedure*, if the OBD_BETA_DFLT field is set to "T", the FUEL_TYPE field is set to "G" or "B", and the analyzer is equipped to conduct TSI inspections; or

   c. proceed directly to Section 3.1.23n: *OBD Engine Stop Prompt*, if the DSL_OBD_BETA_DFLT field is set to "S" and FUEL_TYPE is set to "D"; or

   d. proceed directly to Section 3.1.23n: *OBD Engine Stop Prompt*, if the OBD_BETA_DFLT field is set to "T", the FUEL_TYPE field is set to "G" or "B", and the analyzer is not equipped to conduct TSI inspections.

<u>OBD Inspection with Not Ready Condition During the Beta Testing Period</u>

If the vehicle is deemed "not ready" and the date of the inspection is less than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, the analyzer must default to the TSI inspection when the OBD_BETA_DFLT field is set to "T", the TSI_TESTING field is set to "Y", the analyzer is equipped to conduct TSI inspections, and the vehicle fails the OBD inspection. Upon completion of the TSI inspection, the analyzer must proceed to the gas cap inspection and only use the results of the TSI inspection, the safety phase and the gas cap phase to determine if the vehicle passes or fails the inspection. The analyzer must default to the safety inspection when the OBD_BETA_DFLT field is set to "S" and the vehicle fails the OBD inspection. The analyzer must proceed to the gas cap inspection and only use the results from the safety phase and the gas cap phase to determine if the vehicles passes or fails the inspection.

<u>OBD Inspection Failure due to MIL on and Fault Codes During the Live Testing Period</u>

If the MIL is commanded on with fault codes present and the date of the inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, the analyzer must fail the vehicle, even if the vehicle is deemed "not ready."

The following cases assume that the "not ready" status of the vehicle is the only failing criterion.

<u>OBD Inspection Transition with Not Ready Condition During the Live Testing Period</u>

If the vehicle is deemed "not ready," the date of inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, and an "E" is present in the NOT_RDY_TO_ASM field of the TXVRT.DAT file, the analyzer must:

1) store an "F" in the OBD2_READY_RES field indicating vehicle deemed "not ready";

2) initiate an auto-zero and a HC hang-up in preparation for an emissions inspection for all gasoline powered vehicles, however, for all diesel powered vehicles, do not perform the auto-zero or the HC hang-up and proceed to step 3.c. of this section;

3) a. abort the inspection if the analyzer determines that emissions inspection lockouts, such as dynamometer or bench calibration and leak checks, are needed by setting the ABORT field to "A", and the ABORT_CODE field to "81"), or

   b. abort the inspection if the analyzer is an OBD-only emissions analyzer, "Reject" the vehicle, store an "A" in the ABORT field, an "81" in the ABORT_CODE field, and a space in the OVERALL_RESULTS field of the inspection record, and display the following message;

   SINCE THE VEHICLE IS KNOWN TO HAVE READINESS MONITOR ISSUES, AND IS NOT READY TO BE INSPECTED THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. PLEASE REFER THE MOTORIST TO A FULL-SERVICE STATION WITH ASM TESTING, AND DO NOT CHARGE THE CUSTOMER.

   Press Any Key to Return to the Main Menu.

NOTE: Leaving the OVERALL_RESULTS field blank will indicate that this inspection is a "no-test" and will not count as an initial inspection or reinspection.

   c. If the vehicle is diesel-powered, the analyzer will not transition to an ASM or TSI emissions inspection. Instead, the analyzer must only transition to the safety only inspection with no gas cap inspection in either the live testing period or beta period. This transition is allowed when the DSL_OBD_BETA_DFLT field is set to "S" and the DSL_OBD_TESTING field is set to "Y" during beta, or the DSL_NON_CMM_2_SAFE and DSL_OBD_TESTING fields are set to "Y" during the live testing period. After the transition, the outcome of the OBD phase will not be used to as criteria to determine if the vehicle passes or fails the inspection. If this transition is not allowed, the vehicle will proceed to Section 3.1.23m: *OBD Inspection Evaluation and Messages Prompt*, and fail the OBD phase for being deemed "not ready".

4) If the analyzer has not already obtained the status of the drive axle as a part of this inspection, then the analyzer must obtain this information by displaying the prompt in Section 3.1.19b: *Drive Axle Prompt* and obtain whether the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control prior to conducting the tailpipe emissions inspection.

5) Store the results of the OBD inspection in the following fields: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_READY_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_PF_FLAG.

6) Print the special message (shown below), instead of OBD Print Message 12, on the same page as the Public Awareness Statement and,

Special Message:

Since this vehicle is known to have difficulties setting the readiness monitors to "ready," and more than 2 monitors are set to "not ready," your vehicle received an ASM or TSI test. You will likely be required to pass the OBD test next year, and should have the vehicle examined by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

7) a. Proceed directly to Section 3.1.23o: *ASM Emission Inspection Sequence* and perform the ASM emissions inspection when the NON_COMM_2_TAILPIPE and ASM_TESTING fields are set to "Y" during the live testing period; or,

b. proceed directly to Section 3.1.24: *Preconditioned TSI Inspection Procedure* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control during the live testing period; or

c. proceed directly to Section 3.1.24: *Preconditioned TSI Inspection Procedure* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the ASM_TESTING field is set to "N" during the live testing period.

8) Convert the emissions inspection type from OBD to either ASM or TSI when the transition is allowed by changing the value of the EMISS_TEST_TYPE field from "1" to "3" for ASM or from "1" to "2" for TSI.

<u>OBD Inspection Failure Due to a Not Ready Condition During the Live Testing Period</u>

If the vehicle is deemed "not ready," the date of inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, and an "E" is **<u>NOT</u>** present in the NOT_RDY_TO_ASM field of the TXVRT.DAT file, the analyzer must:

- Store an "F" in the OBD2_READY_RES field indicating that the vehicle has been deemed "not ready," complete the remaining entries to the following OBD2 fields: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_READY_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_PF_FLAG, and

- proceed to the criteria in this section under the following subheadings: *OBD Inspection Pass and Fail Criteria*, *OBD Inspection Pass and Fail Criteria for Vehicles Whose GVW Is Greater Than 8,500 Pounds*, *OBD Message Selection During the Beta Testing Period*, and *OBD Message Selection During the Live Testing Period*.

OBD Inspection Pass and Fail Criteria

The following fields of the VEHICLE.DAT file must contain a "P", "K", or "Y" in order to pass the OBD inspection sequence: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_READY_RES. The OBD2_FAULT_CD_RES field must be set to "F" if at least one of the DTCs retrieved from the vehicle's OBD system matches a value in the FAULT_CODE(DTC) field of the TXDTC.DAT file, and the corresponding FAIL_FLAG for the DTC match is set to "Y".

1) If the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields are set to "Y" or "K", the OBD2_DLC_RES and OBD2_READY_RES fields are set to "P", and **either** the OBD2_MIL_STATUS or OBD2_FAULT_CD_RES field is set to "P", then the analyzer must store a "P" in the OBD2_PF_FLAG field of the VEHICLE.DAT file and print a PASS in the OBD inspection result section on the VIR.

2) If the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field is set to "N", the OBD2_DLC_RES field is set to "D", "I", or "L", the OBD2_READY_RES field is set to "F", or **both** the OBD2_MIL_STATUS and OBD2_FAULT_CD_RES fields are set to "F", then the program will store a "F" in the OBD2_PF_FLAG field of the VEHICLE.DAT file and print a FAIL in the OBD inspection result section on the VIR.

OBD Inspection Pass and Fail Criteria for Vehicles Whose GVW Is Greater Than 8,500 Pounds

The analyzer will apply the light-duty OBD requirements under the *OBD Inspection Pass and Fail Criteria*, if the OBDHDGAS field in the SYSTEM.DAT file is set to "Y" and either:

- the previously entered GVW for the vehicle under inspection is between 8,501 and 14,000 pounds, inclusive, and the previously entered model year is 2009 or newer, or
- the previously entered GVW for the vehicle under inspection is strictly greater than 14,000 pounds and the previously entered model year is 2013 or newer.

The analyzer will apply the light-duty OBD requirements under the *OBD Inspection Pass and Fail Criteria*, if the OBDHDGAS field in the SYSTEM.DAT file is set to "Z" and either:

- the previously entered GVW for the vehicle under inspection is between 8,501 and 14,000 pounds, inclusive, and the previously entered model year is 2009 or newer.

Otherwise, the analyzer must only collect the data from the vehicle's OBD system and not use the data in the pass/fail determination. The following fields of the VEHICLE.DAT file must contain a "Y", or "K", in order to pass the OBD inspection sequence: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN.

The analyzer must only collect the data from the vehicle's OBD system and not use the data in the pass/fail determination. The following fields of the VEHICLE.DAT file must contain a "Y", or "K", in order to pass the OBD inspection sequence: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN.

OBD Message Selection During the Beta Testing Period

If the model-year of the vehicle under inspection is equal to or greater than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file and the test date is prior to the PASS/FAIL (P/F) start date for OBD inspections in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, then OBD failures will not cause the vehicle to have an OVERALL TEST FAILURE. Motorist information messages must be printed on an advisory OBD VIR to be given to the motorist informing them of problems with their vehicle's OBD system. The failing or aborted advisory OBD VIR must be printed prior to the tailpipe VIR. The analyzer must proceed to perform a TSI emission inspection on failed or aborted OBD inspections during the advisory period.

NOTE: The Texas OBD advisory period starts when the OBD software is loaded on an analyzer and ends when the test date is equal to the value stored in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file. Currently, the start date of P/F OBD is May 1, 2002.

If the value in the following fields is other than blank, "Y", "K", or "P", then the following message(s) must be printed above the public awareness statement to inform the motorist of possible problems with their vehicle.

(i) If there is an "N" in the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field, then the following must be printed:

Based on the information received during the test, there may be a problem with your On-Board Diagnostic Computer Malfunction Indicator Light. Repairing any problems that exist will likely improve performance, fuel economy, and reduce pollution. This vehicle must have the On-Board Computer functioning properly to pass the vehicle inspection to register this vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (2)

(ii) If there is a "D" or an "N" in the OBD2_DLC_RES field, the following message must be printed above the public awareness statement indicating that the vehicle's OBD system could not be checked due to a missing, inaccessible, damaged, or tampered connector:

Based on the information gathered during an attempt to perform an On- Board Diagnostic test your vehicle has a missing, tampered, or broken Diagnostic Connector. This vehicle must have the On-Board Computer functioning properly to pass the vehicle inspection to register this vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (3)

(iii) If there is an "I" in the OBD2_DLC_RES field, the following message must be printed above the public awareness statement indicating that the vehicle's OBD system could not be checked due to inaccessible connector:

Based on the information gathered during an attempt to perform an On-Board Diagnostic test your vehicle has an inaccessible Diagnostic Connector. This

vehicle must have the Diagnostic Connector accessible to allow the check of the On Board Diagnostic computer system on the vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (4)

(iv) If there is an "F" in the OBD2_READY_RES field of the VEHICLE.DAT file, the vehicle will be failed and the following message must be printed above the public awareness statement:

Based on the information obtained from the On-Board Computer in the vehicle, the system is not ready to make a determination regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be evaluated and the reinspection made next year. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

OBD PRINT MESSAGE (5)

(v) If there is an "F" stored in the OBD2_MIL_STATUS field, the following message must be printed:

Based on the results of the On-Board Diagnostic test, your vehicle indicates there is a failure that is causing higher than allowed pollution levels to be emitted into the atmosphere. The problem(s) causing the failure, when fixed, will increase performance, fuel economy, and reduce pollution. Repair of the failure(s) will be required to pass the OBD test next year. (Text subject to change)

OBD PRINT MESSAGE (6)

<u>OBD Message Selection During the Live Testing Period</u>

If the model-year of the vehicle being inspected is equal to or greater than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file and the test date is after the mandatory P/F start date as defined in the SYSTEM.DAT file, OBD inspection results will be used to evaluate the Overall PASS/FAIL result of the vehicle being inspected. The vehicle will pass if the OBD2_PF_FLAG field contains a "P", or

1) If the OBD2_PF_FLAG field is not "P" and

(i) If the result in the OBD2_DLC_RES field is an "L" (abort code 80) the following message must be printed above the public awareness statement:

Based on the information gathered during an attempt to perform an On Board Diagnostic test your vehicle has a missing Diagnostic Connector, or a Diagnostic Connector that cannot be located by the inspector. This vehicle must have the On-Board Computer Diagnostic connector available to the inspector and functioning properly to pass the vehicle inspection. If you have questions regarding this test, ask the inspector who performed this test. (Text subject to change)

OBD PRINT MESSAGE (10)

(ii) If the result in the OBD2_DLC_RES field is a "D", an "I", or an "N", the following message must be printed above the public awareness statement:

Based on the information gathered during an attempt to perform an On Board Diagnostic test your vehicle has a damaged or inaccessible Diagnostic Connector. This vehicle must have the On-Board Computer Diagnostic connector available to the inspector and functioning properly to pass the vehicle inspection. If you have questions regarding this test, ask the inspector who performed this test. (Text subject to change)

OBD PRINT MESSAGE (11)

(iii) If the result in the OBD2_READY_RES field is an "F", a "FAIL" must be printed in the OBD inspection results section of the VIR and the following message must be printed above the public awareness statement:

Based on information obtained from the On-Board Computer in the vehicle, the system is not ready to make a determination regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be evaluated and the reinspection made which will allow this vehicle to be registered. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

OBD PRINT MESSAGE (12)

2) If the value in the following fields is other than blank, "Y", "K", or "P", then the following message must be printed above the public awareness statement to inform the motorist of possible problems with their vehicle.

(i) If there is an "N" in the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field, the following must be printed above the public awareness statement:

Based on the information received during the test, there may be a problem with your On-Board Diagnostic Computer Malfunction Indicator Light. This vehicle must have the On-Board Computer system functioning properly to pass the vehicle inspection. (Text subject to change)

OBD PRINT MESSAGE (13)

(ii) If there is an "F" stored in the OBD2_MIL_STATUS field, the following message must be printed above the public awareness statement:

Based on information obtained from the On-Board Computer in the vehicle, the system has made a determination that there is a problem regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be reinspected. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

3.1.23n OBD Engine Stop Prompt

SHUT OFF THE ENGINE

Programming Criteria:

The analyzer must prompt the inspector to turn off the engine, and proceed to Section 3.1.25: *Gas Cap Missing Prompt*.

3.1.23o ASM Emissions Inspection Sequence

Programming Criteria:

The analyzer will determine if the inspector is certified to conduct ASM inspections by confirming that a "Y" is present in the ASM_ESP, ASM_SNAP, or ASM_WW field that corresponds to the first two letters of the analyzer number. The fields to analyzer number associations are:

- ASM_ESP and analyzer numbers that begin with "ES";
- ASM_SNAP and analyzer numbers that begin with "JB" and "SE"; and
- ASM_WW and analyzer numbers that begin with "WW".

If the inspector is not certified to conduct ASM inspections on this type of analyzer, then the analyzer must display an error message indicating that the inspector is not "certified" to conduct ASM inspections on this type of analyzer and return to the main menu.

Once the inspector is confirmed, the analyzer will complete the ASM emissions inspection using the procedures in Appendix U: *ASM Inspection Procedures* and the standards and calculations contained in Appendix S: *ASM Emissions Inspection Standards and Calculations*. Upon completion of an ASM emissions inspection, the analyzer must use the following logic to write the inspection record:

1) Set the EMISS_TEST_TYPE field to "3" for an ASM inspection. If there is no previous inspection for this vehicle or the EMISS_PF_FLAG field for this vehicle's previous inspection is "P", set the EMISS_INIT_TEST field to "I" for initial inspection. If the EMISS_PF_FLAG field for this vehicle's previous inspection is "F", set the EMISS_INIT_TEST field to "R". If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection, then the analyzer must set the SAFE_INIT_TEST field to "I". If the previous inspection was less than 16 days prior to this inspection, then the analyzer must set the SAFE_INIT_TEST field to "R".

2) Set the HC_PF_FLAG, CO_PF_FLAG, NO_PF_FLAG, and EMISS_PF_FLAG fields to "P" or "F", as appropriate.

3) Display the inspection results just prior to printing the rejection receipt or VIR and write the vehicle inspection record to the VEHICLE.DAT file if the entry for the EMISS_FP_FLAG field is a "P" or "F".

4) Set the RPM_BYPASS field to “B” if the inspector opted to “bypass” the RPM.

5) Set the DILUTION_PF_FLAG field to “F” if the excessive dilution causes the inspection sequence to end. Otherwise, set the DILUTION_PF_FLAG field to “P”.

6) If the emissions inspection ends due to a “time out” condition, set the TIMEOUT_FLAG field to “Y”. Otherwise, set the TIMEOUT_FLAG field to “N”.

7) Automatically enter the following fields: VERSION, TEST_DATE, TEST_START_TIME, TEST_END_TIME, STATION_NUM, ANALYZER_NUMBER, INSPECTOR_NUM, COUNTY_CODE, DILUTION (Dilution Amount in percent, $CO + CO_2$).

8) The emissions readings used to make the pass/fail decision must be recorded in the inspection record of the SECXSEC.DAT file where applicable. This data must be purged from the analyzer when the data is transmitted to the VID.

9) The final results of the inspection go in the fields that begin with “PRI”. If second chance inspections are conducted, the first chance inspection results are stored in the fields that begin with “ALT” and the second chance inspection results will be place in the “PRI” fields.

10) Proceed to Section 3.1.25: *Gas Cap Missing Prompt*.

Associated System File: **VEHICLE.DAT**

PRI_AVG_5015_CO	**PRI_AVG_5015_HC**	**PRI_AVG_5015_CO2**
PRI_AVG_5015_NO	**PRI_AVG_5015_O2**	**PRI_AVG_2525_CO**
PRI_AVG_2525_HC	**PRI_AVG_2525_NO**	**PRI_AVG_2525_CO2**
PRI_AVG_2525_O2	**ALT_AVG_5015_CO**	**ALT_AVG_5015_HC**
ALT_AVG_5015_NO	**ALT_AVG_5015_CO2**	**ALT_AVG_5015_O2**
ALT_AVG_2525_CO	**ALT_AVG_2525_HC**	**ALT_AVG_2525_NO**
ALT_AVG_2525_CO2	**ALT_AVG_2525_O2**	**PRI_AVG_2525_RPM**
PRI_AVG_5015_RPM	**ALT_AVG_2525_RPM**	**ALT_AVG_5015_RPM**
RPM_PF_FLAG	**HC_PF_FLAG**	**CO_PF_FLAG**
DILUTION_5015	**DILUTION_2525**	**HUMIDITY_CORR_5015**
DILUTION_PF_FLAG	**HUMIDITY_PF_FLAG**	**HUMIDITY_CORR_2525**
NO_PF_FLAG	**EMISS_PF_FLAG**	**TEST_TYPE**
TEST_WEIGHT	**EMISS_INIT_TEST**	**ASM_RESTART_COUNT**
TEST_DATE	**TEST_START_TIME**	**TEST_END_TIME**
STATION_NAME	**INSPECTOR_LNAME**	**INSPECTOR_FNAME**

3.1.24 Preconditioned TSI Inspection Procedure

Programming Criteria:

The analyzer will complete the TSI emissions inspection using the procedures in Appendix K: *TSI Emissions Inspection Procedures* and the standards contained in Appendix A: *TSI Emissions Standards*. Upon completion of a preconditioned TSI inspection, the analyzer must use the following logic to write the inspection record:

1) Set the EMISS_TEST_TYPE field to “2” for a TSI inspection. If there is no previous inspection for this vehicle or the EMISS_PF_FLAG field for this vehicle’s previous inspection is “P”, set the EMISS_INIT_TEST field to “I” for initial inspection. If the

EMISS_PF_FLAG field for this vehicle's previous inspection is "F", set the EMISS_INIT_TEST field to "R". If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection, set the SAFE_INIT_TEST field to "I". If the previous inspection was less than or equal to 16 days prior to this inspection, then the analyzer must set the SAFE_INIT_TEST field to "R".

2) Set the HC_PF_FLAG, CO_PF_FLAG, and EMISS_PF_FLAG fields to "P" or "F", as appropriate.

3) Display the inspection results just prior to printing the rejection receipt or VIR, update the inspection record, replace the "J" in the ABORT field with a space or blank, and write the vehicle inspection record to the VEHICLE.DAT file if the entry for the EMISS_FP_FLAG field is a "P" or an "F".

4) Set the RPM_BYPASS field to "B" if the inspector opted to "bypass" the RPM.

5) If the excessive dilution causes the inspection sequence to end, set the DILUTION_PF_FLAG field to "F". Otherwise, set the DILUTION_PF_FLAG field to "P".

6) If the emissions inspection ends due to a "time out" condition, set the TIMEOUT_FLAG field to "Y". Otherwise, set the TIMEOUT_FLAG field to "N".

7) The analyzer must automatically enter the following fields: VERSION, TEST_DATE, TEST_START_TIME, TEST_END_TIME, STATION_NUM, ANALYZER_NUMBER, INSPECTOR_NUM, COUNTY_CODE, DILUTION (Dilution Amount in percent, $CO + CO_2$).

8) Proceed to Section 3.1.24: *Gas Cap Missing Prompt*.

<u>Associated System File:</u> **VEHICLE.DAT**

PRI_CURB_IDLE_CO	**PRI_CURB_IDLE_HC**	**PRI_CURB_IDLE_CO2**
PRI_CURB_IDLE_O2	**PRI_HIGH_SPEED_CO**	**PRI_HIGH_SPEED_HC**
PRI_HIGH_SPEED_CO2	**PRI_HIGH_SPEED_O2**	**ALT_CURB_IDLE_CO**
ALT_CURB_IDLE_HC	**ALT_CURB_IDLE_CO2**	**ALT_CURB_IDLE_O2**
ALT_HIGH_SPEED_CO	**ALT_HIGH_SPEED_HC**	**ALT_HIGH_SPEED_CO2**
ALT_HIGH_SPEED_O2	**PRI_HIGH_SPEED_RPM**	**PRI_CURB_IDLE_RPM**
RPM_BYPASS	**ALT_HIGH_SPEED_RPM**	**ALT_CURB_IDLE_RPM**
DILUTION	**DILUTION_PF_FLAG**	**HC_PF_FLAG**
CO_PF_FLAG	**EMISS_PF_FLAG**	**TEST_TYPE**
EMISS_INIT_TEST	**STATION_NAME**	
INSPECTOR_LNAME	**INSPECTOR_FNAME**	

3.1.25 Gas Cap Missing Prompt

IS THE GAS CAP MISSING? ('Y' OR 'N')

<u>Programming Criteria:</u>

Gas cap inspections are not required on trailers, motorcycles, diesel powered vehicles, alternatively fueled vehicles, and gasoline powered vehicles whose model-year is either greater than the current calendar year minus two or 25 years old and older.

If inspector indicates the gas cap is missing, the analyzer must set the GAS_CAP_MISS field to "Y", set the GAS_CAP_PF_FLAG_1 field to "F" for fail, and continue with Section 3.1.28b: *End of Phase Logic*. If the inspector selects "N", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_MISS**
GAS_CAP_PF_FLAG_1

3.1.26 Gas Cap Testable Prompt

IS THE GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable, the analyzer must set the GAS_CAP_PF_FLAG_1 field to "P" for pass, set the GAS_CAP_TESTABLE field to "N", and continue with Section 3.1.28b: *End of Phase Logic*. If the inspector selects "Y", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_TESTABLE**
GAS_CAP_PF_FLAG_1

3.1.27 Gas Cap Connect Prompt

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.1.28 Gas Cap Results Prompt

ENTER THE RESULTS OF THE GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_1 field. The stored value must be either "P" for pass or "F" for fail.

If the result from the gas cap tester is “F” for fail, the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY ‘P’ OR ‘F’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG_1**

3.1.28a Second Gas Cap Prompt

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria:

This prompt must not be displayed if the inspector has indicated that the gas cap is missing or not testable. The default for this screen must be to “N”. The analyzer must only accept an entry of “Y” or “N” and the error message must be displayed if the inspector enters another character. If the inspector indicates that there is a second gas cap to be tested, the analyzer must proceed to Section 3.1.28c: *Second Gas Cap Missing Prompt*.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

3.1.28b End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_1 field is set to “P”, then the analyzer must set the GAS_CAP_PF_FLAG field to “P”. If the GAS_CAP_PF_FLAG_1 field is set to “F”, then the analyzer must set the GAS_CAP_PF_FLAG field to “F”.

For ASM and TSI inspections, if the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “F”.

For OBD inspections, if the OBD2_PF_FLAG, the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the OBD2_PF_FLAG, the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “F”.

Then, the analyzer must proceed to Section 3.1.29: *Emissions Test Fee Prompt*.

Associated System File: **VEHICLE.DAT**

EMISS_PF_FLAG	**OBD2_PF_FLAG**	**SAFETY_PF_FLAG**
GAS_CAP_PF_FLAG	**GAS_CAP_PF_FLAG_1**	**OVERALL_RESULTS**

3.1.28c Second Gas Cap Missing Prompt

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

If inspector indicates the gas cap is missing, the analyzer must set the 2ND_GAS_CAP_MISS field to "Y", set the GAS_CAP_PF_FLAG_2 field to "F", and continue with Section 3.1.28g: *End of Phase Logic*. If the inspector selects "N", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_MISS**
GAS_CAP_PF_FLAG_2

3.1.28d Second Gas Cap Testable Prompt

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable, the analyzer must set the GAS_CAP_PF_FLAG_2 field to "P", set the 2ND_GAS_CAP_TEST field to "N", and continue with Section 3.1.28g: *End of Phase Logic*. If the inspector selects "Y", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_TEST**
GAS_CAP_PF_FLAG_2

3.1.28e Second Gas Cap Connect Prompt

REMOVE THE SECOND GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.1.28f Second Gas Cap Results Prompt

ENTER THE RESULTS OF THE SECOND GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_2 field. The stored value must be either "P", or "F". If the result

from the gas cap tester is “F” for fail, the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY ‘P’ OR ‘F’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG** **GAS_CAP_PF_FLAG_1** **GAS_CAP_PF_FLAG_2**

3.1.28g End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_2 and GAS_CAP_PF_FLAG_1 fields are set to “P”, then the analyzer must set the GAS_CAP_PF_FLAG field to “P”. If either the GAS_CAP_PF_FLAG_2 or the GAS_CAP_PF_FLAG_1 field is set to “F”, then the analyzer must set the GAS_CAP_PF_FLAG field to “F”.

For ASM and TSI inspections, if the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “F”.

For an OBD inspection, if the OBD2_PF_FLAG, the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the OBD2_PF_FLAG, the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “F”.

If the county code value was not entered by the inspector (i.e., not collected from the TxDMV 2-D bar code nor manually entered), the analyzer will use the county code setting under the audit menu (i.e., the county code setting in the STATION.DAT file) as the default county of registration and use it to compare with the LIRAP fields to set the REG_FEE_CODE, where applicable. The goal of the following logic is to set the REG_FEE_CODE based on the vehicle’s registered county code entered by the inspector or on the county code where the analyzer is located when the inspector’s previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), “000”, or spaces.

The REG_FEE_CODE will be set to the same value as the SAFE_TEST_TYPE field when the SAFE_TEST_TYPE is set to “M”, “G”, “K”, “J”, “B”, “C”, or “H”. The SAFE_TEST_TYPE is set to “L” only for counties in the Dallas and Houston areas, “A” on for El Paso County, and “N” only for Travis and Williamson Counties in the Austin area. The default county conditions have been added only to the bullets where it is possible that the default county code is one of the counties in the area (i.e., El Paso, Austin, Dallas and Houston) that uses that SAFE_TEST_TYPE value. (The logic for the El Paso area LIRAP field is purposely reversed because the LIRAP program doesn’t operate in the El Paso area, so their LIRAP field value will be set to “N” for the current SAFE_TEST_TYPE value.)

If the SAFE_TEST_TYPE is set to “L”, set the REG_FEE_CODE to:

- "L" when the vehicle model year is 1996 and newer and either:

    - the county of registration (e.g., value previously entered by the inspector) matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "Y" or space; or

    - the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "Y" or space; or

- "A" if the county code value previously entered by the inspector matches the El Paso County Code (e.g., "071", "71_", etc.); or

- "N" if the county code value previously entered by the inspector matches the Travis County code, "227" or the Williamson County code, "246" and the value of corresponding LIRAP field number (e.g., LIRAP_227 or LIRAP_246) in SYSTEM.DAT file is set to "Y" or space; or

- "R" when the vehicle model year is 1996 and newer and either:

    - the county of registration (e.g., value previously entered by the inspector) matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

    - the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

- "M" if vehicle model year is 1995 and older, the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220);

- "S" if the county code value previously entered by the inspector matches the Travis County code, "227" or the Williamson County code, "246" and the value of corresponding LIRAP field number (e.g., LIRAP_227 or LIRAP_246) in SYSTEM.DAT file is set to "N" (The default county for the SAFE_TEST_TYPE field is to a Dallas or Houston area county, so the default county conditions are not needed here).

If the SAFE_TEST_TYPE is set to “A”, set the REG_FEE_CODE to:

- “A” when either:
    - the county of registration matches the El Paso County Code (e.g., “071”, “71_”, etc.) and the value of the corresponding LIRAP field number (e.g., LIRAP_071) in SYSTEM.DAT file is set to “N”; or
    - the county code setting under the audit menu is being used as the default county of registration because the inspector’s previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), “000”, or spaces; and the county of inspection matches the El Paso County Code (e.g., “071”, “71_”, etc.) and the value of the corresponding LIRAP field number (i.e., LIRAP_071) in SYSTEM.DAT file is set to “N”.
- “L” if vehicle model year is 1996 and newer, the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to “Y” or space;
- “M” if vehicle model year is 1995 and older, the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220);
- “N” if the county code value previously entered by the inspector matches the Travis County code, “227” or the Williamson County code, “246” and the value of corresponding LIRAP field number (e.g., LIRAP_227 or LIRAP_246) in SYSTEM.DAT file is set to “Y” or space;
- “R” if vehicle model year is 1996 and newer, the county code value previously entered by the inspector matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to “N”; or
- “S” if the county code value previously entered by the inspector matches the Travis County code, “227” or the Williamson County code, “246” and the value of corresponding LIRAP field number (e.g., LIRAP_227 or LIRAP_246) in SYSTEM.DAT file is set to “N”.

If the SAFE_TEST_TYPE is set to “N”, set the REG_FEE_CODE to:

- “N” when either:
    - the county of registration matches the Travis County code, “227” or the Williamson County code, “246” and the value of the corresponding LIRAP field numbers (i.e., LIRAP_227, LIRAP_246) in SYSTEM.DAT file is set to “Y” or space; or

- the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches the Travis or Williamson County Code (i.e., "227", "246") and the value of the corresponding LIRAP field number (i.e., LIRAP_227, LIRAP_246) in SYSTEM.DAT file is set to "Y" or space; or

- "A" if the county code value previously entered by the inspector matches the El Paso County Code (e.g., "071", "71_", etc.); or

- "L" if vehicle model year is 1996 and newer, if the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "Y" or space; or

- "M" if vehicle model year is 1995 and older, the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220);

- "R" if vehicle model year is 1996 and newer, if the county code value previously entered by the inspector matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

- "S" when either:

  - the county of registration (e.g., value previously entered by the inspector) matches the Travis County code, "227" or the Williamson County code, "246" and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

  - the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches the Travis County code, "227" or the Williamson County code, "246" and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N".

The analyzer must increment the TEST_REC_NUM by 1 and store this value in the inspection record.

Then, the analyzer must proceed to Section 3.1.29, *Emissions Test Fee Prompt*.

<u>Associated System File:</u> **VEHICLE.DAT** **OBD2_PF_FLAG**
GAS_CAP_PF_FLAG **SAFETY_PF_FLAG**

GAS_CAP_PF_FLAG_1	**EMISS_PF_FLAG**
GAS_CAP_PF_FLAG_2	**OVERALL_RESULTS**
SAFE_TEST_TYPE	**REG_FEE_CODE**
TEST_REC_NUM	**REG_COUNTY**

3.1.29 Emissions Test Fee Prompt

ENTER THE COST FOR THE EMISSIONS INSPECTION, INCLUDING CENTS.

Programming Criteria:

The inspector shall enter the cost for the emissions inspection, exclusive of repair costs. The analyzer must sum the emissions test fee, the safety test fee, if applicable, the applicable safety repair costs, and the applicable repair cost, to obtain the overall cost and store the value in the OVERALL_COST field. When the MAX_EMISS_FEE_FL is set to "Y", the analyzer must not accept a value greater than the value in:

- the MAX_EMISS_ONLY_FEE field if the vehicle received an OBD inspection; or
- the MAX_EMISS_ONLY_FEE2 field if the vehicle received an ASM or TSI inspection.

The analyzer must display error message 1 when the inspector attempts to proceed without entering a value. The analyzer must display error message 2 when the inspector enters a value greater than $99.99. When the MAX_EMISS_FEE_FL is set to "Y", the analyzer must display error message 3 if:

- the vehicle received an OBD inspection, and the inspector entered a value greater than the value in the MAX_EMISS_ONLY_FEE field for the county where the vehicle was inspected; or
- the vehicle received an ASM or TSI inspection, and the inspector entered a value greater than the value in the MAX_EMISS_ONLY_FEE2 field for the county where the vehicle was inspected.

The maximum emissions fee for message 3 will be the value in either the MAX_EMISS_ONLY_FEE or MAX_EMISS_ONLY_FEE2 field.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **MAXIMUM ENTRY $99.99 -- TRY AGAIN.**
3. **MAXIMUM ENTRY <enter max_emiss_fee value here in $nn.nn format> -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

EMISS_INSP_COST	**EMISS_PF_FLAG**	**OVERALL_COST**
SAFE_INSP_COST	**REP_OVERALL_COST**	

SYSTEM.DAT

MAX_EMISS_FEE_FL **MAX_EMISS_ONLY_FEE**
MAX_EMISS_ONLY_FEE2

3.1.30 Certificate Number Prompt

ENTER THE INSPECTION CERTIFICATE NUMBER.

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will not display this prompt, and proceed to Section 3.1.32: *VI-30 Selection Prompt*. If the SKIP_CERT_DECAL field is not set to "Y", then the analyzer must apply the following criteria.

If the OVERALL_RESULTS field is set to "F", then the analyzer will not display this prompt and proceed to Section 3.1.34: *Rejection Receipt*. If the OVERALL_RESULTS field is set to "P", then the analyzer must prompt the inspector to input the safety inspection sticker number. A minimum of six and maximum of nine characters are required for this field. When the certificate number entered is not a sequential number to the last certificate issued, a warning should be displayed, **"Certificate number not in sequential order. Notify DPS if a certificate is missing."** The enter key should allow the inspector to continue.

The safety certificate number consists of an alpha character, followed by eight digits. The alpha character usually does not correspond to the alpha character contained in the SAFE_TEST_TYPE field. The analyzer must take the entered certificate number, compare it to the previous certificate issued under the same safety inspection type, and determine if the entered certificate number is next in sequence for that safety inspection type.

For example, the safety certificate numbers should be in sequential order for all one year windshield inspections, two year windshield inspections, trailer/motorcycle inspections, and so forth. If the entered number is not next in sequence, the correction prompt must appear.

If the inspector enters fewer than nine characters, the analyzer must automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an "A" followed by a "123" must be converted to "A00000123" and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character certificate number entry. This nine-character value must be used during comparison testing to facilitate sequential issuance of certificates. The first character of a certificate number must be an alphabetic character. The analyzer must be able to enter the certificate number using the bar code reader.

The analyzer must restrict the alpha character to a list of acceptable alpha characters based on the particular type of certificate or decal being issued. The table of certificate types and the corresponding acceptable alpha characters is located in Appendix V: *Safety Certificate Format Table*.

For example, during a safety and emissions inspection or reinspection, if the inspector selects the "1 year windshield - ASM (safety & emissions)" certificate in Section 3.1.20: *Test Type Prompt* and the vehicle passes the inspection, the inspector may only enter an "F" or "M" as the alpha character in the certificate number entry prompt. Similarly, the acceptable alpha

characters are “E” or “P” for “1 year windshield - OBD (safety & emissions)” certificate types.

Dallas-Fort Worth and Houston-Galveston Areas

If the inspector selects a “1 year windshield - OBD (safety & emissions)” certificate, the vehicle receives the OBD inspection during the emissions phase, and the vehicle passes all the phases of the inspection, then the vehicle must receive a certificate that begins with the letter “E”, or “P”, also known as an “E-series” or “P-series” sticker, respectively. If the inspector selects a “1 year windshield - OBD (safety & emissions)” certificate, the vehicle’s model-year is 1996 or newer, and the county code under the audit menu is not “071” or “71_”, where the underscore represents a space, for El Paso County, then change the SAFE_TEST_TYPE from “A” to “L”, and restrict the acceptable alpha characters to “E” or “P”, even if the emissions inspection transitions from OBD to ASM or TSI.

If the inspector selects a “1 year windshield - ASM (safety & emissions)” certificate, the vehicle receives the ASM inspection during the emissions phase, and the vehicle passes all the phases of the inspection, then the vehicle must receive a certificate that begins with the letter “F” or “M”, also known as an “F-series” or “M-series” sticker, respectively. If the inspector selects a “1 year windshield - ASM (safety & emissions)” certificate, the vehicle’s model-year is 1995 and older and the county code under the audit menu is not “071” or “71_” (where the underscore represents a space) for El Paso County, then change the SAFE_TEST_TYPE from “A” to “M”, and restrict the acceptable alpha characters to “F” or “M”, even if the emissions inspection transitions from ASM or TSI.

El Paso Area

If the inspector selects a “1 year windshield - TSI (safety & emissions)” certificate, and the county code under the audit menu is “071” or “71_” (where the underscore represents a space) for El Paso County, then do not change the SAFE_TEST_TYPE from “A”, and restrict the acceptable alpha characters to “A”, “B”, “C”, or “D”.

Austin Area

If the inspector selects a “1 year windshield - OBD/TSI (safety & emissions)” certificate, and the county code under the audit menu is “227”, “246”, “166”, “144”, “105”, “027”, or “27_”, “016”, or “16_”, “014”, or “14_”, or “011”, or “11_” (where the underscore represents a space) for Travis, Williamson, Milam, Lee, Hays, Burnet, Blanco, Bell, or Bastrop Counties, respectively, then the analyzer must set the SAFE_TEST_TYPE to “N” and restrict the acceptable alpha characters to “A”, or “B”.

Associated System File: **VEHICLE.DAT** **CERT_NUM**

3.1.31 Certificate Number Correction Prompt

INDICATE THE CONDITION OF THE PREVIOUS CERTIFICATE

U - UNACCOUNTED FOR
C - ENTERED CERTIFICATE IS CORRECT
R - RE-ENTER CERTIFICATE NUMBER

Programming Criteria:

The analyzer must only accept "U", "C", or "R", as valid entries. The analyzer must display the entered certificate number, the safety certificate inspection type ("A" or "G" certificate) and the "previously" issued certificate number. This prompt must only appear if the entered certificate is out of sequence with the previously issued certificate number of the same safety certificate inspection type.

If "R" is entered, the analyzer must return to the previous screen prompt and allow the inspector to re-enter the current certificate. If "C" or "U" is selected, the analyzer will 1) store the entry of either "C" or "U", in the CERT_COND field of the inspection record, and 2) use the entered certificate number as the new "previous" certificate number for the next comparison. If the inspector selects "U", the analyzer must not allow any further official emissions inspections to be conducted until the inspector has "accounted for" the certificates by completing the entries required in Section 3.12: *Missing, or Voided Certificates*.

If a manufacturer lockout is used, the inspector shall be able to easily identify the reason the analyzer is preventing subsequent official inspections. The inspector shall be able to easily identify which type of certificate must be accounted for. In any case, the analyzer must not conduct any subsequent official emissions inspections until the inspector accounts for the previous certificates by answering the questions in Section 3.12.

The analyzer must store the information in the VEHICLE.DAT file and print it on the weekly inspection log report (VI-8B). The void indicator must show "VOID" if "V" is in the CERT_COND field or "MISS" if "M" is in the CERT_COND field of the record created using the Missing or Voided Certificates function.

The analyzer must store the entry of "C" in the CERT_COND field, if "C" is selected, and store the entry of the "U" in the CERT_COND field, if "U" is selected in the inspection record. The default for this screen must be "R" for re-enter certificate number.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **CERT_COND**

3.1.32 VI-30 Selection Prompt

DO YOU WISH TO ISSUE AN OUT OF STATE VERIFICATION FORM (VI-30)? ('Y' OR 'N')

Programming Criteria:

If the SKIP_VI30 field in the SYSTEM.DAT file is set to "N" or "_", then the analyzer will display this prompt, and proceed to Section 3.1.33: *VI-30 Number Prompt*. If the SKIP_VI30 field in the SYSTEM.DAT file is set to "A", then the analyzer will not display this prompt, and proceed to Section 3.1.34: *Rejection Receipt*. If the SKIP_VI30 field is set to "Y", then the analyzer will display this prompt and proceed to Section 3.1.33a: *VI-30 Test Fee Prompt*. If the SKIP_VI30 field is not set to "Y" or "A", then the analyzer must apply the following criteria.

The analyzer must give this prompt if the OVERALL_RESULTS field is set to "P". If the inspector selects "N", the analyzer must skip the next two prompts and proceed to Section 3.1.34: *Rejection Receipt*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_FLAG**

3.1.33 VI-30 Number Prompt

ENTER THE VI-30 #.

Programming Criteria:

The inspector will enter the VI-30 number that has a minimum of one character and a maximum of 10 characters. If no entry is made, the analyzer must return to Section 3.1.32: *VI-30 Selection*. The analyzer must allow the VI-30 number to be entered using the bar code scanner. The formats of the bar code are:

Formats

Name	Length	Start	Format
VI-30 Number	9	1	Numeric (existing)
VI-30 Number	6	1	Numeric (lesser used)
VI-30 Number	9	1	Alpha-numeric (ANNNNNNNN), must start with L (newly added)

The analyzer should accept entries that contain eight numbers with a leading or following space, or an "L" followed by eight numeric positions, or six numbers with no leading or following spaces in the 1-D bar code on the form. The analyzer must drop the leading or following spaces, and store only the numerical character portion of the scanned number in the VI30A_NUM field of the inspection record. Samples may be requested from the TCEQ.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_NUM**

3.1.33a VI-30 Test Fee Prompt

ENTER THE FEE FOR THE VI-30 ONLY, INCLUDING CENTS.

Programming Criteria:

The inspector shall enter the cost for the issuance of the VI-30. If an inspector enters a fee greater than $100 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee. The analyzer must add the cost entered here to the safety test fee cost entered in Section 3.1.22, Safety Test Fee Prompt, and store the sum in the SAFE_INSP_COST field of the inspection record.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**

3.1.34 Rejection Receipt

EXPLAIN THE REJECTION FULLY.

Programming Criteria:

The analyzer must only display this prompt if the SAFE_PF_FLAG or GAS_CAP_PF_FLAG field is set to "F". The analyzer must prompt the inspector to explain the rejection fully, automatically enter value of the OVERALL_COST field as the fee paid, print the rejection receipt including the inspector's explanation, where applicable, and allow the inspector to print additional copies of the rejection receipt after the initial receipt has been printed. The printed rejection receipt must use Courier or Times New Roman font. A sample rejection receipt is located in Appendix E: *Rejection Receipt*.

The analyzer must allow the inspector to type the explanation from the keyboard prior to printing the rejection receipt. The typed explanation must appear on the printed rejection report.

If the vehicle fails either the ASM, TSI, or OBD emissions inspection or the gas cap integrity inspection, then the entry for this item must be displayed. If the vehicle fails the emissions and gas cap integrity inspections, then both entries must be displayed on the rejection receipt. The preferred order of appearance is the emissions inspection entry, the gas cap integrity inspection entry, followed by the remaining safety item entries. The rejection receipt must not display more than a maximum of five items.

After printing the rejection receipt, the analyzer must proceed to Section 3.1.34a: *Print Vehicle Repair Form*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OVERALL_COST**

3.1.34a Print Vehicle Repair Form

Programming Criteria:

If the EMISS_PF_FLAG flag is set to "F", then the analyzer must print a vehicle repair form (VRF). The analyzer must print the following vehicle information on the VRF: make, model, model-year, the VIN, license plate number, and odometer reading. A sample VRF is provided in Appendix O: *Sample Vehicle Repair Form*.

3.1.34b Display and Print Emissions Recall Notices and Technical Service Bulletins

If the analyzer received TSBs and/or emissions recall information during the VID contact and the inspector opted to view this information at the end of the test sequence, then the analyzer must display the TSBs and/or emissions recall information at this time.

If the vehicle failed the emissions inspection and TSBs and/or recall information was not printed previously, the analyzer must automatically print this information. If the vehicle passed the emissions inspection, or after the automatic printing has successfully completed, the analyzer must provide the following options:

- re-print this information;
- save this information to a predetermined file; or
- continue to the next prompt.

If the inspector elects to save this information, the new TSBs or emission recall information must overwrite the oldest TSB or emissions recall information in the analyzer.

3.1.34c Print Public Awareness Statement

The public awareness statement must be printed only once. The analyzer must print the "passing" public awareness statement if the vehicle passes the emissions phase of the inspection or the "failing" public awareness statement if the vehicle fails the emissions phase of the inspection.

All OBD VIR messages (advisory and mandatory) must be printed above the public awareness statement on the same page.

3.1.34d Print AirCheckTexas Application

The AirCheckTexas application, formerly referred to as the Low-Income Repair Assistance Program (LIRAP) application, has two versions: a version used in the Austin area and a separate version used in the Dallas-Fort Worth and Houston-Galveston areas. The analyzer must determine which version to print based on the county code setting under the audit menu.

The analyzer must print:

- the Austin version of the AircheckTexas Repair and Retirement Assistance Program Application when the county code setting under audit menu is "227", "246", 166", "144", "105", "027" or "27_", "016" or "16_", "014" or "14_", or "011" or "11_", for Travis, Williamson, Milam, Lee, Hays, Burnet, Blanco, Bell, or Bastrop Counties, respectively; or
- the Dallas-Fort Worth and Houston-Galveston version of the AircheckTexas Repair and Retirement Assistance Program Application on the second page of Appendix W: *AirCheckTexas Repair and Retirement Assistance Program Application* for all remaining counties.

The printed application must include the telephone numbers listed in the LIRAP_NUM_A, and LIRAP_NUM_B fields of the SYSTEM.DAT file.

The analyzer must print the AircheckTexas Repair and Retirement Assistance Program Application when:

- the PRINT_LIRAP_APP field is set to "A", the EMISS_PF_FLAG field is set to "F" or "P", and the model-year of the vehicle is 10 years old or older; or

- the PRINT_LIRAP_APP field is set to "A", the EMISS_PF_FLAG field is set to "F", and the model-year of the vehicle is 9 years old or younger; or

- the PRINT_LIRAP_APP field is set to "Y" and the EMISS_PF_FLAG field is set to "F".

Associated System File:	**SYSTEM.DAT**	**PRINT_LIRAP_APP** **LIRAP_NUM_A** **LIRAP_NUM_B**

3.1.35 Print Vehicle Inspection Report

After the analyzer has stored the inspection record in the VEHICLE.DAT file, the following prompt must be displayed: **"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."**

Depending upon the pass/fail status of the emissions phase of the inspection, the analyzer will provide additional information to the customer as outlined in Appendix B: *Vehicle Inspection Reports*. The report must include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (TSI, ASM, OBD), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, Vehicle License Plate Number, VIN, Vehicle Make, Vehicle Model-Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation, where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the inspection, Dilution Amount (in percent, $CO + CO_2$), Dilution Results (Pass or Fail), the results of the gas cap integrity inspection, and the overall result of the inspection. The vehicle's ignition type must be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report must indicate that the inspection was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the inspection was conducted as a special Test. If the inspection was conducted as a special test, the two letter designation of "LI", "ME", "IV", "AD", "ST", "PA", or "OT" must be placed on the same line as the Test Type separated by at least two spaces or a slash and the words "Special Test" must be in the subtitle. The analyzer must print two copies of the VIR and allow the inspector to print additional copies after the initial reports have been printed.

If the inspection ends because of a time out or dilution condition, the emission standards, amounts, and results must not be printed on the report. The report must indicate that the vehicle has failed because of excessive dilution, if applicable. If the inspection should "time out" then the report must indicate that the vehicle failed because the inspection was not completed in the time allowed for completion of the inspection. After the inspection has been completed, the analyzer must contact the VID and transmit all applicable vehicle information.

If the vehicle fails the OBD emissions inspection, the report must include the following phrase, **"Your vehicle's computerized self-diagnostic system (OBD) registered the fault(s) listed above. This fault (s) is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an**

indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem."

If the inspection ends in an aborted condition, the VIR must indicate that the inspection was aborted in the overall results block and display the reason for the abort. If the inspector selects "other" as the reason for the abort, the analyzer must either print the reason entered by the inspector on the VIR or provide space for a handwritten reason if the inspector chooses not to use the keyboard to enter the abort reason.

If the emissions phase of the inspection is aborted or ends due to a timeout condition, the analyzer must print dashes on the VIR for the pass/fail indicators and the readings. The analyzer must print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO_2, and O_2, where applicable.

If the VI-30 number was issued, the analyzer must change the message on the VIR from "Safety Inspection Fee" to "Safety Insp + VI30 Fee".

The analyzer must print two bar codes on the VIR which contain the VIN, license plate number, and license plate type of the vehicle under inspection. The bar codes must be code 39 format, contain the previously mentioned information, and include the start and stop characters.

One bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"$"
License Plate Type	1	2	"1", "2", "3", "4", "5", "6", "7", or "8"
License Plate Number	8	3	Alphanumeric
TxDMV Number	10	11	Alphanumeric

The other bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"I"
VIN	17	2	Alphanumeric

Each bar code must be clearly labeled, so that the inspectors can easily identify each bar code type. The location of the bar codes on the VIR must be determined by the manufacturers.

<u>Printing OBD Message 20</u>

The analyzer must print OBD message 20 when:

- the STNDS field of the SYSTEM.DAT file is set to "C" or "D"; and
- the PRINT_LIRAP_APP field is set to "Y" or "A"; and

- either the vehicle model-year is 10 years old or older and passes or fails the emissions inspection, or the vehicle model-year is 9 years old or newer and fails the emissions inspection.

OBD message 20 must be printed:

- on a separate page when a 1995 and older vehicle passes or fails an emissions inspection, or when a 1996 and newer vehicle that is at least 10 years old passes an emissions inspection;

- at the top of the Evaluation of OBD Test Results page when the vehicle fails the OBD inspection; or

- at the top of the extra page that prints when a vehicle transitions from an OBD inspection and fails the ASM or TSI inspection.

Printing 10-year Old Vehicle Message

The analyzer must print a 10-year old vehicle message at the top of the VIR when the STNDS field of the SYSTEM.DAT file is set to:

- "B" or;

- "C" and the PRINT_LIRAP_APP field is set to "Y" or "A".

If the model-year of the vehicle is 10 years old or older, then the analyzer must print OBD message 22 from the VIRMSGS.DAT file. If the model-year of the vehicle is less 10 years old, then the analyzer must print OBD message 23 from the VIRMSGS.DAT file.

The analyzer must print an authorization code on the VIR for vehicles that pass the inspection or fail the inspection, but are issued a waiver number. The analyzer must print "N/A" instead of the authorization code where:

- the vehicle fails the inspection;

- the vehicle fails the inspection and is not issued a waiver number;

- the inspection is aborted resulting in a failing condition; or

- the inspection is aborted resulting in a no final outcome condition (aborted records should not result in a passing outcome).

The algorithm for the authorization code is available from the TCEQ upon request.

The analyzer must print the vehicle certificate type (VIR code) on the VIR for vehicles that pass the inspection. The certificate type codes that must be printed on the VIR are included in Appendix V: *Safety Certificate Format Table*. The analyzer will match the value of the REG_FEE_CODE to a value in the REG_FEE_CODE column of the safety certificate format table to identify the appropriate VIR code. The analyzer will print N/A for the VIR code for vehicles that fail the inspection. The VIR printed for vehicles that pass the inspection must use a font size acceptable to the TCEQ (e.g., minimum of 12 point for Times New Roman)

for selected elements on the VIR, including the test date and time, the certificate type, the vehicle's model year, license plate number, and VIN, the station number, analyzer number, and overall inspection result. The VIR codes, SOEO and CWEO, will not be printed on the VIR, will not be assigned a corresponding REG_FEE_CODE value, but are included in Appendix V for informational purposes only.

The analyzer must print the text, "Show report for Texas vehicle registration" in all capital letters in the top left hand corner of the VIR when:

- the HB2305CHG field in the SYSTEM.DAT file is set to "B" or "C"; and
- either the vehicle:
    - passes the inspection; or
    - is issued a waiver number, regardless of the pass or fail inspection result.

The analyzer must print the following sentence on the vehicle inspection when the SAFE_TEST_TYPE is set to "G" or "K": "I have performed an annual inspection of the above noted vehicle, which is accurate, complete, and in accordance with the inspection criteria set forth in 49 Code of Federal Regulations, Chapter 396.17 through 396.21." When the SAFE_TEST_TYPE is set to "G" or "K", the analyzer must print the inspection expiration date on the VIR. These inspections (i.e., where the SAFE_TEST_TYPE set to "G" or "K") are valid until the end of the same month as the date of inspection in the following year. For example, if the inspection is performed on June 20, 2014, then the analyzer would print June 30, 2015 as the inspection expiration date. A sample vehicle inspection report showing the inspection expiration date is available from the TCEQ upon request.

The analyzer must print the text "I certify that I have properly performed the emissions test according to state regulations and procedures manuals, and as the undersigned duly appointed inspection, hereby certify that I have physically examined the manufacturer's vehicle identification number of the motor vehicle described above." This text replaces the text regarding test performance currently being printed on the VIR.

The analyzer must print the TEST_REC_NUM on the VIR next to the fuel type value or analyzer software version.

Error Message: **NO VALUES ENTERED -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **EMISS_INSP_COST**
CERT_NUM
OVERALL_RESULTS

3.1.36 VID Contact

The analyzer must contact the VID and transmit the completed inspection record for this inspection and any other records from previous inspections that have not been sent to the VID. Upon completion of this contact, the analyzer must return to the main menu.

The analyzer must increment the no contact counter, which tracks the number of inspection s conducted without successfully contacting the VID, by one when the following bits are not set in the RESPONSE.DAT file during the communication sessions:

bit 48 - Command completed successfully (status specific to "transmit VIN/License Plate data" command); and

bit 80 - Command completed successfully (status specific to "Transmit test record(s)" command).

The no contact counter must only increment by one for each inspection completed with either response bit 48 or response bit 80 not being set.

The following bits may also be set when response bits 48 and 80 are not set. These bits provide probable explanations to why response bits 48 and 80 were not set.

8 - Invalid password (token file error)
9 - Invalid LOCKOUT.DAT file
10 - Invalid TAS telephone number
11 - Invalid station number
12 - Invalid TAS number
13 - Invalid software version number
14 - Invalid VID phone number
15 - Invalid communications port base address
16 - Invalid communications port interrupt
17 - Communication port error
18 - Dialing error
19 - No dial tone
20 - Phone line busy
21 - No answer
22 - Voice answered
23 - Security logon (to VID) failure

The no contact counter must not be incremented for any aborted inspections.

3.2 Main Menu Selection "2 Safety Only Inspection"

The analyzer must allow safety only inspections on vehicles without emissions requirements (i.e., trailers, motorcycles, diesels) even when the calibrations are not current. The analyzer must:

- not attempt to communicate with the VID during this sequence when the SAFE_COMM field of the SYSTEM.DAT file is set to space or "0"; or

- attempt to communicate with the VID at the end of the inspection sequence when the SAFE_COMM field is set to "1"; or

The communication attempts must occur in the same locations as the safety and emissions inspections. The analyzer must also allow safety only inspections when the low volume lockout is set (i.e., the LOW_VOL_STATION field in the LOCKOUT.DAT file is set to "1" or "Y").

3.2.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to "B" or "C". The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer's monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.2.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.2.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.2.3 Insurance Prompt

ENTER THE INSURANCE EXPIRATION DATE.

Programming Criteria:

Enter the insurance expiration date in the following format: MM/DD/YY. The analyzer must verify that the entry for the month is between "1" and "12", the entry for the day is between "1" and "31", and the entry for the year begins with "19" or "20". A warning message must be displayed if the insurance has expired. The analyzer will accept "000000" as a valid entry and print "000000" on any applicable form. Entries will be written to the inspection record located in the VEHICLE.DAT file.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **INSUR_EXP_DT**

3.2.3a Optional Bar Code Entry of the Texas Registration Expiration Date, Vehicle Identification Number (VIN), License Plate Type, and Number Prompt

SCAN THE BAR CODE ON THE TXDMV WINDSHIELD STICKER (THAT CONTAINS THE LICENSE PLATE NUMBER AND TYPE, AND VIN).

OR

PRESS "ENTER/CONTINUE" TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to "A", "B", or "C".

The analyzer must prompt the inspector to scan the bar code on the vehicle's windshield issued by the Texas Department of Motor Vehicles (TxDMV), which contains the license plate type, license plate number, the VIN and the vehicle registration expiration date. The analyzer will disregard entries that do not fit the following format. If the inspector presses "enter/continue" without successfully scanning a bar code, the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record.

If the analyzer scans a 2-D bar code that contains an "X" in the first position, then the analyzer must pull the VIN, Expiration Month/Year, and license plate number from the bar code. The format of the bar code is:

Name	Length	Start	Format
Bar Code Type	1	1	Alphanumeric (X)
Bar Code Version	2	2	Numeric
Document Number	17	4	Numeric
VIN	22	21	Alphanumeric
Residence County Number	3	43	Numeric
Workstation ID (RSPS or POS)	10	46	Alphanumeric
Print County Number	3	56	Numeric
Sticker Print Date	8	59	Numeric
Registration Plate Code	8	67	Alphanumeric
Registration Sticker Code	8	75	Alphanumeric
Plate Number	7	83	Alphanumeric
Expiration Year	4	90	Numeric (YYYY)
Expiration Month	2	94	Numeric (MM)
Registration Class Code	3	96	Numeric

If the 2-D bar code is successfully scanned, the analyzer must prompt the inspector to enter the license plate number. The analyzer must compare the license plate number entered by the inspector to the value of the Plate Number.

If the 2-D bar code is successfully scanned and the inspector entered license plate number matches the Plate Number value from the TxDMV bar code, the analyzer must:

- place a "T" in the BARCODED_VIN and BARCODED_LIC_PLT fields and a "1" in the LICENSE_TYPE field of the inspection record; and

- use the values collected as entries for the license plate type, license plate number, VIN, and vehicle registration expiration month and year.

The license plate number, VIN, vehicle registration expiration month and year, and county of registration entry values correspond to the Plate Number, VIN, Expiration Month and Expiration Year, and Residence County Number fields from the TxDMV bar code, respectively.

If the VIN retrieved from the TxDMV bar code is 17 characters long, then the VIN verification algorithm must be applied here to the VIN collected from the TxDMV bar code.

If the 2-D bar code is successfully scanned and the inspector entered license plate number does not match the Plate Number value from the TxDMV bar code, the analyzer will not use any values from the TxDMV bar code to auto fill the model year, license plate type, license plate number, registration expiration month and year, county of registration, or VIN entries.

If the VIN retrieved from the TxDMV bar code is 17 characters long and passes the VIN verification algorithm, the analyzer must auto enter the model year by decoding the 10th digit of the VIN using the table in the VINMY.DAT table. If the VIN retrieved from the TxDMV bar code is either not 17 characters long or fails the VIN verification algorithm, the analyzer must:

- not use the VIN from the TxDMV bar code;

- prompt the inspector for the VIN as described in Section 3.2.7: *VIN Prompt*; and

- store the VIN in the REG_VIN field of the inspection record.

If the TxDMV barcode is not scanned, the analyzer must prompt the inspector to enter the month and year from the TxDMV vehicle registration windshield sticker.

If the entered registration expiration date is prior to the inspection date (e.g., the registration is expired), the analyzer must skip the comparison calculation and not display message 2. Otherwise, the analyzer must compare the date of inspection to the registration month and year from the TxDMV bar code. If the difference between the inspection date and the last date of the registration month and year exceeds 90 days and the HB2305CHG field in the SYSTEM.DAT file is set to "C", then the analyzer will display a message 2 which advises the inspector to inform the motorist that the inspection will not count toward renewal of the vehicle registration.

<u>Error Messages:</u>

1. **DID NOT SCAN PROPERLY – PLEASE TRY AGAIN.**

2. **INFORM THE MOTORIST THAT THIS INSPECTION MAY NOT COUNT TOWARD REGISTRATION RENEWAL BECAUSE THE TEST DATE IS MORE**

THAN 90 DAYS PRIOR TO THE EXPIRATION OF THE CURRENT VEHICLE REGISTRATION.

Associated System File: **VEHICLE.DAT**

LICENSE_TYPE	**BARCODED_LIC_PLT**
LICENSE_NUM	**BARCODED_VIN**
MODEL_YR	

3.2.4 Model-Year Prompt

ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

Programming Criteria:

If no value is entered, the analyzer must display Message 1 and prompt the inspector to re-enter the last two digits of the vehicle model-year. The analyzer must display Message 2 in the event that the model-year is strictly greater than the current year plus two and prompt the inspector to re-enter the last two digits of the vehicle model-year or the entire model-year. The analyzer must require the inspector to confirm any model-year entry that is less than 1950. If the VIN collected previously was 17 characters long and passed the VIN algorithm, the analyzer shall default to the corresponding model year by using the information in the VINYR.DAT file or an equivalent method. The default model year selected from the VINYR.DAT shall be the value that is the largest numerical value that is less than the current year plus 2 with a corresponding value that matches the tenth digit of the VIN.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED TRY AGAIN.**
2. **INVALID MODEL YEAR -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL_YEAR**

3.2.4a Gross Vehicle Weight Prompt

ENTER THE GVW OF THE VEHICLE.

Programming Criteria:

A prompt will be displayed for the inspector to enter the GVW. No default entry must be displayed.

If the entered GVW is less than or equal to 8,500 then the analyzer must set the GVW_TYPE field of the VEHICLE.DAT file to “1” for light-duty. If the GVW is greater than or equal to 8,501 then the analyzer must set the GVW_TYPE field in the VEHICLE.DAT file to “2” for heavy-duty. The analyzer must allow the inspector to see and edit the GVW as it is being entered. If the GVW_2TIMES is not set to “G”, the analyzer will accept the entry of the GVW value as entered using the keyboard on the first attempt. If the GVW_2TIMES is set to “G”, the analyzer will require the inspector to use a double blind approach to successfully enter the GVW value as listed in the following description. When the GVW has been entered, the analyzer must prompt the inspector to press “enter/continue”. Then, the analyzer will clear the GVW entry window and require the inspector to enter the GVW again. The two attempts must match. If the two attempts do not match, the analyzer must display Message 2,

prompt the inspector to re-enter the GVW starting again with the first attempt. The inspector shall be required to re-enter the GVW using the keyboard until two matching GVW entry attempts have been made. When the GVW value has been entered, the analyzer must complete the requirements in the following description.

If the inspector presses "enter/continue" and no entry has been made, the analyzer must display message 1 and prompt the inspector to enter the GVW.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GVW_TYPE**
GVW_ACTUAL

3.2.5 License Type Prompt

ENTER THE TYPE OF LICENSE PLATE OF THE VEHICLE.

1.	**Texas Plate**	5.	**Exempt (Federal)**
2.	**No Plate**	6.	**Dealer Plate**
3.	**Out of State**	7.	**Temporary Buyer Tag**
4.	**Exempt (State)**	8.	**Other**

Programming Criteria:

The analyzer may skip this prompt if the license plate type previously collected from the TxDMV bar code is being used. The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type "3" or "5", the analyzer must set the REG_COUNTY field to "000". If the inspector selects license type "2", "6", "7", or "8", the analyzer must fill the REG_COUNTY field with spaces. If the inspector selects license type "2" or "8", the analyzer will assign the LICENSE_NUM field in the VEHICLE.DAT a value of "V" followed by the last seven digits of the VIN and skip Section 3.2.6: *License Prompt*. If the entered VIN has less than seven characters, the entry should be a "V" followed immediately by the entered VIN without filler spaces between the "V" and the entered VIN. The analyzer will default to license type "1".

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_TYPE**
REG_COUNTY

3.2.5a Texas Registration Expiration Date Prompt

ENTER THE MONTH AND YEAR FROM THE VEHICLE REGISTRATION WINDSHIELD STICKER.

PRESS "ENTER/CONTINUE" TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to “A”, “B”, or “C”. However, the analyzer may skip this prompt if the vehicle registration month and year previously collected from the TxDMV bar code are begin used.

The analyzer must prompt the inspector to enter the month and year from the TxDMV vehicle registration windshield sticker when the previously entered license plate type is set to “1” or “4” and these values weren’t collected using the bar code scanner. The analyzer must display a note indicating that inspector should enter “00” for the month and “0000” for the year if the vehicle doesn’t have a TxDMV sticker on the windshield. If the inspector enters “00” for the month and “0000” for the year, then the analyzer must not to display the message 2.

If the registration expiration date cannot be collected either from the TxDMV barcode or the inspector-entered value, then the analyzer does not have to display message 2.

If the entered registration expiration date is prior to the inspection date (e.g. the registration is expired), the analyzer must skip the comparison calculation and not display message 2. Otherwise, the analyzer will compare the date of inspection to the registration month and year entered by the inspector. If the difference between the inspection date and the last date of the registration month and year exceeds 90 days and the HB2305CHG field in the SYSTEM.DAT file is set to “C”, then the analyzer will display a message 2 which advises the inspector to inform the motorist that the inspection will not count toward renewal of the vehicle registration.

Error Messages:

1. **DID NOT SCAN PROPERLY – PLEASE TRY AGAIN.**
2. **INFORM THE MOTORIST THAT THIS INSPECTION MAY NOT COUNT TOWARD REGISTRATION RENEWAL BECAUSE THE TEST DATE IS MORE THAN 90 DAYS PRIOR TO THE EXPIRATION OF THE CURRENT VEHICLE REGISTRATION.**

Associated System File: **VEHICLE.DAT**

LICENSE_TYPE	**BARCODED_LIC_PLT**
LICENSE_NUM	**BARCODED_VIN**
HB2305CHG	

3.2.5b Texas Registration County Prompt

ENTER THE REGISTRATION COUNTY FROM THE VEHICLE REGISTRATION WINDSHIELD STICKER.

PRESS “ENTER/CONTINUE” TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to “A”, “B”, or “C”, the previously entered license plate type is set to “1” or “4”, and this value wasn’t collected using the bar code scanner. However, the analyzer may skip this prompt if the vehicle registration county that was previously collected from the TxDMV bar code is begin used. The analyzer may also skip

this prompt if the previously collected vehicle registration month and year are more than more than 1 year prior than the inspection date (i.e., the registration is expire by more than 1 year).

The analyzer must prompt the inspector to enter the vehicle's county of registration as it appears on the TxDMV vehicle registration windshield sticker. The analyzer must display a note indicating that inspector should enter "no sticker" for the county of registration if the vehicle doesn't have a TxDMV sticker on the windshield. The analyzer shall set the REG_COUNTY to spaces when the inspector enters "no sticker". The analyzer must allow for a user-friendly approach for entry of the county of registration.

For example, the analyzer may display the 17 emissions counties and an additional choice, "more counties". When "more counties" is selected, the analyzer will display the complete list of 254 Texas counties in alphabetical order and allow the inspector to either use the keyboard to enter up to three characters as criteria to search for a match in the alphabetized county list or use the arrow keys to select the correct county from the list.

Error Messages: **1. INVALID ENTRY – PLEASE TRY AGAIN.**

Associated System File: **VEHICLE.DAT**
LICENSE_TYPE **HB2305CHG**

3.2.6 License Prompt

"ENTER THE LICENSE NUMBER OF THE VEHICLE."

Programming Criteria:

The analyzer may skip this prompt if the license plate number previously collected from the TxDMV bar code is being used. The inspector will be prompted to enter the license plate number of the vehicle. Upon confirming the license plate number entry, the vehicle information is eligible to be stored in the RECALL.DAT file. After the inspector enters the license plate number, the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_NUM**
BARCODED_LIC_PLT

3.2.7 VIN Prompt

ENTER VIN NUMBER.

Programming Criteria:

The analyzer may skip this prompt if the VIN previously collected from the TxDMV bar code is begin used. The analyzer will prompt for the VIN as it appears on the vehicle, and if available use the bar code reader to scan the bar coded VIN on the vehicle. If the VIN cannot be entered using the bar code reader, the inspector will be capable of entering the VIN from

the keyboard. The analyzer must store a "B" in the BARCODED_VIN field of the VEHICLE.DAT file when the VIN is entered using the bar code reader. The analyzer must store a "K" in the BARCODED_VIN field of VEHICLE.DAT file when the VIN is not entered using the bar code reader.

The analyzer must allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the analyzer must prompt the inspector to press "enter/continue". The VIN field will then be will blank and the inspector must re-enter the VIN. The two attempts must match. If the two attempts do not match, the analyzer must display Message 3 and prompt the inspector to enter the VIN a third time.

A minimum of three and a maximum of 17 characters are required for this field. If the entry is not within these parameters, the analyzer must display Message 2. If no value is entered the analyzer must display Message 1.

The VIN verification algorithm must be applied here, but only to 1981 and newer model-year vehicles. The analyzer will not allow the inspector to enter the letters "I", "O", or "Q" for 1981 and newer model-year vehicles. The software should suggest possible substitute letters when the DPS algorithm indicates that the VIN is bad.

Error Messages:

1. **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
2. **A MINIMUM OF 3 OR MAXIMUM OF 17 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
3. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VIN_ID_NUM**
VIN_FLAG
BARCODED_VIN

3.2.7a VIN Verification Prompt

YOU ARE RESPONSIBLE FOR VERIFYING THAT THIS IS THE VIN FROM THE VEHICLE.

BY PRESSING CONTINUE, YOU ARE VERIFYING THAT THIS VIN, <<<display the entered VIN here>>>, MATCHES THE VIN ON THE VEHICLE UNDER INSPECTION.

Programming Criteria:

The analyzer will display this prompt when the HB2305CHG field in the SYSTEM.DAT file is set to "A", "B", or "C" and the VIN has been successfully entered using either the keyboard or bar code scanner (i.e., bar code from the vehicle, a vehicle inspection report, or the TxDMV sticker). The VIN will be displayed using a large font.

Associated System File: **VEHICLE.DAT**
REG_VIN **VIN**

3.2.7b Fuel Type Prompt

ENTER THE VEHICLE FUEL TYPE. SELECT THE APPROPRIATE FUEL TYPE CODE FROM THE LIST BELOW.

Code	Description
"G"	**Gasoline**
"B"	**Bi-Fueled (Dual-Fueled)**
"D"	**Diesel**
"A"	**Alternative Fuel (Propane, CNG, LNG, etc.)**
"N"	**None (i.e., Trailers, Electric & Electric Hybrids)**

Programming Criteria:

Entry of one code is required. The analyzer must be designed so that only a "G", a "B", a "D", an "A", or an "N" can be entered by the inspector for this field. The analyzer software must default to gasoline for this entry.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **FUEL_TYPE**

3.2.7c Vehicle Type Prompt

SELECT THE VEHICLE TYPE

'P' - PASSENGER CAR/STATION WAGON
'T' - TRUCK/VAN/SPORTS UTILITY VEHICLE
'M' - MOTOR HOME
'B' - BUS
'C' - MOTORCYCLE
'L' - TRAILER

Programming Criteria:

The default choice on this screen must be the "passenger car/station wagon" selection. If the inspector selects "M", "B", "L", or "C", skip Section 3.2.7d: *Vehicle Body Type Prompt*.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **VEHICLE _TYPE**

3.2.7d Vehicle Body Type Prompt

SELECT THE APPROPRIATE VEHICLE BODY TYPE FROM THE LIST BELOW:

CODE	VEHICLE BODY TYPE
1	SEDAN
2	STATION WAGON
3	PICKUP/TRUCK TRACTOR
4	SPORT/UTILITY VEHICLE
5	MINIVAN
6	FULL-SIZE VAN

Programming Criteria:

If the inspector selected "P" as the vehicle type, the default choice on this screen must be the "sedan" selection. If the inspector selected "T" as the vehicle type, the default choice on this screen must be the "pickup/truck tractor" selection. The analyzer may use the TXVRT.DAT to display the list of vehicle makes and models. This prompt may be combined with the requirements of Section 3.2.7b: *Vehicle Type Prompt* as long as the logic is correct.

If the inspector selected "M", "B", "L", or "C", as the vehicle type, the analyzer must use the NCIC list to display the list of makes and models.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System Files:

VEHICLE.DAT	**BODY_STYLE**
TXVRT.DAT	**VEHICLE_BODY_TYPE**
	VEHICLE_STNDS_TYPE

3.2.8 Vehicle Make Prompt

ENTER THE VEHICLE MAKE.

Programming Criteria:

The analyzer will then display a list of vehicle makes that the inspector will use to select the make of the vehicle currently under inspection. The analyzer must store the selected make name using the NCIC make definitions. The analyzer may display subsets of the make list that specifically identify all of the manufacturers of passenger vehicles, trucks, motor homes, or buses. The analyzer must use the makes contained in the TXVRT.DAT file for passenger cars and trucks for vehicles whose previously entered GVW is less than or equal to 8,500 pounds. If the entered model-year is not in the TXVRT.DAT file, the analyzer must display the list of makes from the most recent model-year in the TXVRT.DAT file, and store the NCIC code of the make selected by the inspector. The analyzer must use the makes in the NCIC list for buses, motor homes, and vehicles if the entered GVW is strictly greater than 8,500 pounds.

The analyzer must present the option of "other" as a make choice when there is no other applicable choice for the vehicle under inspection. The analyzer must:

- store "OTHR" in the MAKE field;
- skip the display of associate model names;

- put a message on the screen that instructs the inspector to enter the full make name and at least the first five characters of the model name in the space provided and that the maximum entry length is 20 characters;

- store the inspector's entry in the MODEL field; and

- leave the MODEL_CODE field blank.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MAKE**

3.2.9 Model Prompt

SELECT THE VEHICLE MODEL.

Programming Criteria:

Based on the vehicle make entry the analyzer must display the appropriate vehicle models. If the entered model-year is not in the TXVRT.DAT file and the inspector selected a make name from the list of makes from the most recent model-year in the TXVRT.DAT file, then the analyzer must display the corresponding list of model names from the most recent model-year in the TXVRT.DAT file, and store the model name selected by the inspector in the MODEL field.

The analyzer must present the option of "other" as a model definition for use when there is no other choice for the vehicle under inspection. If other is chosen, the analyzer must:

- put a message on the screen that instructs the inspector to enter the full model name in the space provided and that the maximum entry length is 20 characters; and,

- store the selected make name in the MAKE field, the inspector's entry in the MODEL field, and "OTH" in the MODEL_CODE field.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL**
MODEL_CODE

3.2.10 Odometer Prompt

ENTER THE VEHICLE ODOMETER READING.

A MINIMUM OF ONE NUMERIC ENTRY IS REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.

Programming Criteria:

Enter the vehicle odometer and do not include the tenth's digit. The analyzer must only accept numerical entries in this field.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **ODOMETER**

3.2.10a Vehicle 80" Width Prompt

IS THE VEHICLE AT LEAST 80 INCHES WIDE? (CHOOSE THE CORRECT SENTENCE)

1. **NO, THE VEHICLE IS LESS THAN 80 INCHES WIDE.**
2. **YES, THE VEHICLE IS AT LEAST 80 INCHES WIDE.**

Programming Criteria:

The analyzer must only this prompt only when the previously entered vehicle type is "truck/van/sports utility vehicle" or "motorhome" and default to phrase number "1" if the vehicle type is "truck/van/sports utility vehicle" or default to phrase number "2" if the vehicle type is "motorhome".

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **80_INCHES**

3.2.10b Confirm Vehicle Info Display

The analyzer must display the vehicle information to the inspector and allow the inspector to edit the information as appropriate. If the vehicle information was populated by the VID, the inspector shall be allowed to edit all vehicle information except the VIN, the license plate type, and the license plate number. The inspector shall be required to press "enter/continue" to proceed to the next screen. The vehicle information is no longer eligible to be stored in the RECALL.DAT file once the analyzer has moved to the next screen.

3.2.11 Test Type Prompt

ENTER THE TYPE OF INSPECTION

J-1 YEAR WINDSHIELD (SAFETY ONLY)
C-TRAILER/MOTORCYCLE
B-2 YEAR WINDSHIELD
G-FMCSR (TRUCK)
K-FMCSR (TRAILER)

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will delete the word "windshield" from the inspection types displayed on the screen.

The analyzer must default to the first choice in each scenario listed below.

If the inspector selected "P" for the vehicle type, then the analyzer must display the following certificate choices:

- “J - 1 year windshield”;
- “B - 2 year windshield”; and
- “G - FMCSR (TRUCK)”.

If the inspector selected “B” for the vehicle type, then the analyzer must display the following certificate choices:

- “J - 1 year windshield”; and
- “G - FMCSR (truck)”.

If the inspector selected “T” for the vehicle type, then the analyzer must display the following certificate choices:

- “J - 1 year windshield”;
- “B - 2 year windshield”; and
- “G - FMCSR (TRUCK)”.

If the inspector selected “M” for the vehicle type, then the analyzer must display the following certificate choices:

- “J - 1 year windshield”;
- “B - 2 year windshield”; and
- “G - FMCSR (TRUCK)”.

If the inspector selected “C” for the vehicle type, then the analyzer must display the following certificate choice:

- “C - Trailer/Motorcycle”.

If the inspector selected “L” for the vehicle type, then the analyzer must display the following certificate choices:

- “C - Trailer/Motorcycle”; and
- “K - FMSCR(Trailer)”.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_TEST_TYPE**

3.2.11a Mud Flaps and Safety Guard Prompt 1

IS THE VEHICLE EQUIPPED WITH 4 OR MORE TIRES ON THE REARMOST AXLE?

‘N’ - NO, the vehicle has less than 4 tires on the rearmost axle.
‘Y’ - YES, the vehicle has 4 or more tires on the rearmost axle.

Programming Criteria:

The analyzer must be defaulted to "N". If the inspector selects "N", proceed to Section 3.2.12 and do NOT display the Mud Flaps and Safety Guards as an item of inspection. If the inspector selects "Y", then proceed to Section 3.2.11b.

The answers to the Mud Flap questions in sections 3.2.11a and 3.2.11b will not be stored in the inspection records. These answers will be used to determine if the Mud Flaps and Safety Guard safety items should be displayed for safety item sequences 1, 4, 6, 8, and 9. These answers will not affect safety item sequences 2, 3, 5, and 7. The lists of safety item sequences are contained in Appendix R: *Safety Item Sequence Lists*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.2.11b Mud Flaps and Safety Guard Prompt 2

IS THE VEHICLE A TRUCK TRACTOR, MOTORHOME, BUS, OR POLE TRAILER?

'N' - NO, the vehicle is NOT a truck tractor, motorhome, bus, or pole trailer.
'Y' - YES, the vehicle IS a truck tractor, motorhome, bus, or pole trailer.
'R' - Return to previous screen.

Programming Criteria:

The analyzer must be defaulted to "N". If the inspector selected "Motorhome" or "Bus" as the Vehicle Type in Section 3.2.7b, then the analyzer must be defaulted to "Y". The inspector shall be allowed to return to the previous screen and edit the previous answer.

If the inspector selects "N", then display the Mud Flaps and Safety Guards as an item of inspection. If the inspector selects "Y", then do not display the Mud Flaps and Safety Guards as an item of inspection.

Proceed to Section 3.2.12.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.2.12 Safety Inspection Items

Programming Criteria:

The lists of safety item sequences are contained in Appendix R: *Safety Item Sequence Lists*.

The analyzer shall prompt the inspector to select the appropriate phrase:

- I certify that all safety items have passed inspection (continue to safety fee); or
- I want to enter failed or repaired safety items (continue to safety item list).

If the first choice is selected, the analyzer must automatically fill the appropriate safety items with "P" for pass and proceed to the safety test fee prompt. If the second choice is selected, the analyzer must display the safety item list in accordance with the following description.

The analyzer must display the appropriate list of safety items based on entries made by the inspector. The analyzer will require the inspector to enter the status of the safety item in the order it appears in the list. The acceptable entries are “P” for pass, “F” for fail, and “R” for repaired. The letter “N” for N/A is not an acceptable entry but a value of “N” in the safety item field may occur in an inspection record that is received from the VID during a reprint.

If the inspector selects “F” or “R” for any safety item in the list, a subset list of failure reasons must be displayed and the inspector shall highlight and select the failure reason or the entry that allows the inspector to return to the previous screen entry of “F” or “R” to edit this selection. The default for this display must be to “return to previous screen” selection. The analyzer must automatically enter the appropriate alpha character based on the selections made by the inspector.

If the vehicle type = “P”, and the SAFE_TEST_TYPE = “J - 1 year windshield”, then the analyzer must display safety item sequence #1.

If the vehicle type = “P”, and the SAFE_TEST_TYPE = “B - 2 year windshield”, then the analyzer must display safety item sequence #1.

If the vehicle type = “P”, and the SAFE_TEST_TYPE = “G - FMCSR (TRUCK)”, then the analyzer must display safety item sequence #8.

If the vehicle type = “B”, and the SAFE_TEST_TYPE = “J - 1 year windshield”, then the analyzer must display safety item sequence #3.

If the vehicle type = “B”, and the SAFE_TEST_TYPE = “G - FMCSR (TRUCK)”, then the analyzer must display the titles of safety item sequence #7, and safety item sequence #8, allow the inspector to use the arrow keys to highlight and select the appropriate safety item sequence by pressing “enter/continue”.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “N”, then the analyzer must display safety item sequence #1.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “Y”, then the analyzer must display the titles of safety item sequences #4 and #5, and allow the inspector to select the appropriate safety item sequence.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “B - 2 year windshield”, and the 80_inches = “N”, then the analyzer must display safety item sequence #1.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “B - 2 year windshield”, and the 80_inches = “Y”, then the analyzer must display safety item sequence #4.

If the vehicle type = “T”, and the SAFE_TEST_TYPE = “G - FMSCR (TRUCK)”, then the analyzer must display the titles of safety item sequences #8 and #5, and allow the inspector to select the appropriate safety item sequence.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “N”, then the analyzer must display safety item sequence #1.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “Y”, then the analyzer must display the safety item sequence #4.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “B - 2 year windshield”, and the 80_inches = “N”, then the analyzer must display safety item sequence #1.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “B - 2 year windshield”, and the 80_inches = “Y”, then the analyzer must display safety item sequence #4.

If the vehicle type = “M”, and the SAFE_TEST_TYPE = “G - FMSCR (TRUCK)”, then the analyzer must display safety item sequence #8.

If the vehicle type = “C”, and the SAFE_TEST_TYPE = “C - Trailer/Motorcycle”, then the analyzer must display safety item sequence #2.

If the vehicle type = “L”, and the SAFE_TEST_TYPE = “C - Trailer/Motorcycle”, then the analyzer must display safety item sequence #6.

If the vehicle type = “L”, and the SAFE_TEST_TYPE = “K - FMSCR(TRAILER)”, then the analyzer must display safety item sequence #9.

The inspector shall be required to press “enter/continue” after each item. These fields are required and must contain a valid entry. The analyzer does not have to display the screen heading during the inspection sequence. The analyzer must enter the date and the inspector’s driver’s license number.

The inspector should be able to access a safety item’s associated help screen by placing the cursor in the parentheses and pressing the “F1” key. The help screens for each type of safety inspection sequence are in Appendix D: *Safety Inspection Help Screens*.

If a safety item is entered as failing (failing stored values: “A”, “C”, “E”, “H”, “J”, “L”, “O”, “S”, “U”, “W”, or “Y”), then the analyzer must set the SAFETY_PF_FLAG to “F”. Otherwise, set the SAFETY_PF_FLAG to “P” for pass (acceptable entries: passing or repaired).

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

SAFE_1	**SAFE_2**	**SAFE_3**	**SAFE_4**	**SAFE_5**
SAFE_6A	**SAFE_6B**	**SAFE_7**	**SAFE_7A**	**SAFE_7B**
SAFE_8	**SAFE_9**	**SAFE_10A**	**SAFE_10B**	**SAFE_10C**
SAFE_10D	**SAFE_10E**	**SAFE_10F**	**SAFE_11**	**SAFE_12**
SAFE_13	**SAFE_14**	**SAFE_15**	**SAFE_16**	**SAFE_17**
SAFE_18	**SAFE_19**	**SAFE_20**	**SAFE_21**	**SAFE_22A**
SAFE_22B	**SAFE_22C**	**SAFE_22D**	**SAFE_23**	**SAFE_24**
SAFE_25	**SAFE_26**	**SAFE_27**	**SAFE_28**	**SAFE_29**
SAFE_30	**SAFETY_PF_FLAG**		**DPS_SAFE_SEQ**	

3.2.12a Safety Repair Cost Prompt

ENTER THE TOTAL COST FOR THE SAFETY-RELATED REPAIRS, INCLUDING CENTS. DO NOT INCLUDE THE SAFETY INSPECTION FEE IN THE TOTAL.

Programming Criteria:

The analyzer must display this prompt if the inspector indicates that repairs were conducted on any of the safety items shown under the Safety Inspection Items Prompt in Section 3.2.12. The inspector shall enter the total cost for all safety related repairs. If an inspector enters a fee greater than $450 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must also display a warning message that states: "**the fee seems unusually large, please confirm the amount entered or reenter the fee.**" The analyzer must store this amount locally to be printed on the VIR. The cost entered at the prompt must be included in the overall cost for the inspection.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

3.2.12b Gas Cap Missing Prompt

IS THE GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

Gas cap inspections are not required on trailers, motorcycles, diesel powered vehicles, alternatively fueled vehicles, and gasoline powered vehicles whose model-year is either greater than the current calendar year minus two or 25 years old and older.

If the inspector selected a "D", an "A", or an "N" in the fuel type prompt, the analyzer must not display this prompt and proceed to Section 3.2.12l: *End of Phase*. The analyzer must only accept a "Y" or "N" entry. If the inspector indicates the gas cap is missing, the analyzer must set the GAS_CAP_MISS field to "Y", set the GAS_CAP_PF_FLAG_1 field to "F" - fail, and continue with Section 3.2.12g: *End of Phase Logic*. If the inspector selects "N", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_MISS**
GAS_CAP_PF_FLAG_1

3.2.12c Gas Cap Testable Prompt

IS THE GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable by selecting "N", the analyzer must set the GAS_CAP_PF_FLAG_1 field to "P" - pass, set the GAS_CAP_TESTABLE field to "N",

and continue with Section 3.2.12g: *End of Phase Logic*. If the inspector selects "Y", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_TESTABLE**
GAS_CAP_PF_FLAG_1

3.2.12d Gas Cap Connect Prompt

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.2.12e Gas Cap Results Prompt

ENTER THE RESULTS OF THE GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_1 field. The stored value must be either "P" or "F". If the result from the gas cap tester is "F", the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG_1**

3.2.12f Second Gas Cap Prompt

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria:

This prompt must not be displayed if the inspector has indicated that the gas cap is missing or not testable. The default for this screen must be to "N". The analyzer must only accept an entry of "Y" or "N" and the error message must be displayed if the inspector enters another character. If the inspector indicates that there is a second gas cap to be tested, the analyzer must proceed to Section 3.2.12h: *Second Gas Cap Missing Prompt*.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

3.2.12g End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_1 field is set to "P" then the analyzer must set the GAS_CAP_PF_FLAG field to "P". If the GAS_CAP_PF_FLAG_1 field is set to "F" then the analyzer must set the GAS_CAP_PF_FLAG field to "F". If the SAFETY_PF_FLAG and the GAS_CAP_PF_FLAG fields are both set to "P" then the analyzer must set the OVERALL_RESULTS field to "P". If the SAFETY_PF_FLAG and the GAS_CAP_PF_FLAG fields are not both set to "P" then the analyzer must set the OVERALL_RESULTS field to "F". Then proceed to Section 3.2.12m: *End of Test Logic*.

Associated System File: **VEHICLE.DAT**

SAFETY_PF_FLAG	**GAS_CAP_PF_FLAG**
GAS_CAP_PF_FLAG_1	**OVERALL_RESULTS**

3.2.12h Second Gas Cap Missing Prompt

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is missing, the analyzer must set the 2ND_GAS_CAP_MISS field to "Y", set the GAS_CAP_PF_FLAG_2 field to "F", and continue with Section 3.2.12l: *End of Phase Logic*. If the inspector selects "N", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_MISS**
GAS_CAP_PF_FLAG_2

3.2.12i Second Gas Cap Testable Prompt

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable by selecting an "N", the analyzer must set the GAS_CAP_PF_FLAG_2 field to "P", set the 2ND_GAS_CAP_TEST field to "N", and continue with Section 3.2.12l: *End of Phase Logic*. If the inspector selects "Y", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_TEST**
GAS_CAP_PF_FLAG_2

3.2.12j Second Gas Cap Connect Prompt

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.2.12k Second Gas Cap Results Prompt

ENTER THE RESULTS OF THE SECOND GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_2 field. The stored value must be either "P", or "F". If the result from the gas cap tester is "F", the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG**
GAS_CAP_PF_FLAG_1 **GAS_CAP_PF_FLAG_2**

3.2.12l End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_2 and GAS_CAP_PF_FLAG_1 fields are set to "P", then the analyzer must set the GAS_CAP_PF_FLAG field to "P". If either the GAS_CAP_PF_FLAG_2 or the GAS_CAP_PF_FLAG_1 field is set to "F" then the analyzer must set the GAS_CAP_PF_FLAG field to "F". If the SAFETY_PF_FLAG and the GAS_CAP_PF_FLAG fields are all set to "P" then the analyzer must set the OVERALL_RESULTS field to "P". If the SAFETY_PF_FLAG and the GAS_CAP_PF_FLAG fields are not all set to "P", then the analyzer must set the OVERALL_RESULTS field to "F". Then, the analyzer must proceed to Section 3.2.12m: *End of Test Logic*.

The REG_FEE_CODE will be set to the same value as the SAFE_TEST_TYPE field when the SAFE_TEST_TYPE is set to "M", "G", "K", "J", "B", "C", or "H".

Associated System File: **VEHICLE.DAT**
GAS_CAP_PF_FLAG **SAFETY_PF_FLAG**
GAS_CAP_PF_FLAG_1 **GAS_CAP_PF_FLAG_2**
OVERALL_RESULTS **REG_FEE_CODE**

3.2.12m End of Test Logic

Programming Criteria:

Set the SAFE_INIT_TEST field to "I" if there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection. Set the SAFE_INIT_TEST field to "R" if the previous inspection was less than or equal to 16 days prior to this inspection. The analyzer must increment the TEST_REC_NUM by 1 and store this value in the inspection record. Then proceed to the Safety Test Fee Prompt in Section 3.2.13.

Associated System File: **VEHICLE.DAT** **SAFE_INIT_TEST**
TEST_REC_NUM

3.2.13 Safety Test Fee Prompt

ENTER THE TOTAL COST FOR THE SAFETY INSPECTION, INCLUDING CENTS. (DO NOT INCLUDE SAFETY RELATED REPAIRS.)

Programming Criteria:

The inspector shall enter the fee for the safety portion of the inspection. The analyzer must sum the safety test fee enter by the inspector and, if applicable, the safety repair costs entered at the safety repair cost prompt to obtain the overall cost and store the value in the OVERALL_COST field. If the SAFETY_PF_FLAG is set to "F", the analyzer must continue with prompt number 3.2.14. If the SAFETY_PF_FLAG is set to "P", the analyzer must continue with prompt number 3.2.15. The inspector shall be required to confirm the entry of a safety inspection fee greater than $100 dollars before proceeding to the next screen prompt. The analyzer must display a warning message which states, "**The fee seems unusually large, please confirm the amount entered or reenter the fee.**"

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**
OVERALL_COST

3.2.14 Rejection Receipt

EXPLAIN THE REJECTION FULLY.

Programming Criteria:

The analyzer must only display this prompt if the SAFE_PF_FLAG or GAS_CAP_PF_FLAG field is set to "F". The analyzer must prompt the inspector to explain the rejection fully, automatically enter value of the OVERALL_COST field as the fee paid, print the rejection receipt including the inspector's explanation, where applicable, and allow the inspector to print additional copies of the rejection receipt after the initial report has been printed. The printed rejection receipt must use Courier or Times New Roman font. A sample rejection receipt is located in Appendix E: *Rejection Receipt*.

If vehicle failed the gas cap integrity inspection, then the entry for this item must be displayed on the rejection receipt. The preferred order of appearance is the gas cap integrity inspection entry then followed by the remaining safety item entries. The maximum number of entries that can be displayed on the rejection receipt is five.

Then, the analyzer should continue to Section 3.2.19: *Print Vehicle Inspection Report*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OVERALL_COST**

3.2.15 Certificate Number Prompt

ENTER THE INSPECTION CERTIFICATE NUMBER.

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will not display this prompt, and proceed to Section 3.2.17: *VI-30 Selection Prompt*. If the SKIP_CERT_DECAL field is not set to "Y", then the analyzer must apply the following criteria.

If the SAFETY_PF_FLAG is set to "F", then the analyzer will not display this prompt and proceed to the main menu. If the SAFETY_PF_FLAG is set to "P", then the analyzer must prompt the inspector to input the safety inspection sticker number. A minimum of six and maximum of nine characters are required for this field. When the certificate number entered is not a sequential number to the last certificate issued, a warning should be displayed, **"Certificate number not in sequential order. Notify DPS if a certificate is missing."** The enter key should allow the inspector to continue.

The safety certificate number consists of an alpha character followed by eight digits. The alpha character does not correspond to the alpha character contained in the SAFE_TEST_TYPE field. The analyzer must take the entered certificate number, compare it to the previous certificate issued under the same safety inspection type, and determine if the entered certificate number is next in sequence for that safety inspection type.

For example, the safety certificate numbers should be in sequential order for all one year windshield inspections, two year windshield inspections, trailer/motorcycle inspections, and so forth. If the entered number is not next in sequence, the correction prompt must appear.

If the inspector enters fewer than nine characters, the analyzer must automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an "A" followed by a "123" must be converted to "A00000123" and displayed for the inspector to confirm the entry. The conversion will always end in a nine character certificate number entry. The first character of a certificate number must be an alphabetic character. The analyzer must be able to enter the certificate number using the bar code reader.

The analyzer must restrict the alpha character to a list of acceptable alpha characters based on the particular type of certificate or decal being issued. The table of certificate types and

corresponding acceptable alpha characters is located in Appendix V: *Safety Certificate Format Table*.

Associated System File: **VEHICLE.DAT** **CERT_NUM**

3.2.16 Certificate Number Correction Prompt

INDICATE THE CONDITION OF THE PREVIOUS CERTIFICATE

U - UNACCOUNTED FOR
C - ENTERED CERTIFICATE IS CORRECT
R - RE-ENTER CERTIFICATE NUMBER

Programming Criteria:

The analyzer must only accept "U", "C", or "R", as valid entries. The analyzer must display the entered certificate number, the safety certificate inspection type ("J", "C", "B", "K", or "G" certificate), and the previously issued certificate number. This prompt must only appear if the entered certificate is out of sequence with the previously issued certificate number of the same safety certificate inspection type.

If "R" is entered, the analyzer must allow the inspector to return to the previous screen prompt to re-enter the current certificate. If "C" or "U" is selected, the analyzer will use the entered certificate number as the new "previous" certificate number for the next comparison. If "U" is selected, the analyzer must complete the inspection, write the inspection record, transmit the results to the VID during the next emission inspection, and continue with the Certificate Type Prompt, number 3.12.2a. If the inspector selects "U", the analyzer must not allow any further official inspections to be conducted until the inspector has completed the entries required in Section 3.12: *Missing, or Voided Certificates*.

If a manufacturer lockout is used, the inspector shall be able to easily identify the reason the analyzer is preventing subsequent official inspections. The inspector shall be able to easily identify which type of certificate or decal must be accounted for. In any case, the analyzer must not conduct any subsequent official inspections until the inspector accounts for the previous certificates by answering the questions in Section 3.12.

The analyzer must store the information in the VEHICLE.DAT file and print it on the weekly VI-8B. The void indicator must show "VOID" if "V" is in the CERT_COND field or "MISS" if "M" is in the CERT_COND field of the record created using the Missing or Voided Certificates function.

The analyzer must store the entry of "C" in the CERT_COND field, if "C" is selected, and store the entry of the "U" in the CERT_COND field, if "U" is selected in the inspection record. The default for this screen must be "R" for re-enter certificate number.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **CERT_COND**

3.2.17 VI-30 Selection Prompt

DO YOU WISH TO ISSUE AN OUT OF STATE VERIFICATION FORM (VI-30)? ('Y' OR 'N')

Programming Criteria:

If the SKIP_VI30 field in the SYSTEM.DAT file is set to "N" or "_", then the analyzer will display this prompt, and proceed to Section 3.2.18: *VI-30 Number Prompt*. If the SKIP_VI30 field in the SYSTEM.DAT file is set to "A", then the analyzer will not display this prompt, and proceed to Section 3.2.19: *Print Vehicle Inspection Report*. If the SKIP_VI30 field is set to "Y", then the analyzer will display this prompt and proceed to Section 3.2.18a: *VI-30 Test Fee Prompt*. If the SKIP_VI30 field is not set to "Y" or "A", then the analyzer must apply the following criteria.

The analyzer must give this prompt if the OVERALL_RESULTS field is set to "P". If the inspector selects "N", the analyzer must proceed to the Print Vehicle Inspection Report Prompt in Section 3.2.19.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_FLAG**

3.2.18 VI-30 Number Prompt

ENTER THE VI-30 #.

Programming Criteria:

The inspector will enter the VI-30 number that has a minimum of one character and a maximum of 10 characters. If no entry is made, the analyzer must return to Section 3.2.17: *VI-30 Selection*. The analyzer must allow the VI-30 number to be entered using the bar code scanner. The formats of the bar code are:

Formats

Name	Length	Start	Format
VI-30 Number	9	1	Numeric (existing)
VI-30 Number	6	1	Numeric (lesser used)
VI-30 Number	9	1	Alpha-numeric (ANNNNNNNN), must start with L (newly added)

The analyzer should accept entries that contain eight numbers with a leading or following space, or an "L" followed by eight numeric positions, or six numbers with no leading or following spaces in the 1-D bar code on the form. The analyzer must drop the leading or following spaces, and store only the numerical character portion of the scanned number in the VI30A_NUM field of the inspection record. Samples may be requested from the TCEQ. Then, the analyzer must continue to the VI-30 Test Fee Prompt in Section 3.2.18a, then to the Print Vehicle Inspection Report Prompt in Section 3.2.19

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_NUM**

3.2.18a VI-30 Test Fee Prompt

ENTER THE FEE FOR THE VI-30 ONLY, INCLUDING CENTS.

Programming Criteria:

The inspector shall enter the cost for the issuance of the VI-30. If an inspector enters a fee greater than $100 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee. The analyzer must add the cost entered here to the safety test fee cost entered in Section 3.2.13: *Safety Test Fee Prompt* and store the sum in the SAFE_INSP_COST field of the inspection record.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**

3.2.19 Print Vehicle Inspection Report

After the analyzer has stored the inspection record in the VEHICLE.DAT file, the following prompt must be displayed. **"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."**

Depending upon the pass/fail status the OVERALL_RESULTS field for the safety inspection, the analyzer will provide additional information to the customer as outlined in Appendix B: *Vehicle Inspection Reports*. The report must include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (Safety), Test Date, Test Time, Test Cost (differentiated by Inspection Fee and Repair), Overall Cost, Inspector Name, Station Name, License Plate Number, VIN, Vehicle Make, Vehicle Model-Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Two Letter Special Test Designation, where applicable, the Results of the gas cap integrity inspection, and the overall result of the inspection. The vehicle's ignition type must be place on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report must indicate that the inspection was a Safety Only Inspection, and whether or not the inspection was conducted as a Special Test. If the inspection was conducted as a Special Test, the two letter designation of "LI", "ME", "IV", "AD", "ST", "PA", or "OT", must be placed on the same line as the Test Type separated by at least two spaces, or a slash, and the words "Special Test" must be in the subtitle. The analyzer must print two copies of the VIR and allow the inspector to print additional copies after the initial reports have been printed. Prior to returning to the main menu, the analyzer must store the results of the safely only inspection in the appropriate file structure. When the analyzer conducts and completes the next emissions inspection, the data for the safety only inspections must be transmitted to the VID.

The analyzer must print two bar codes on the VIR which contain the VIN, license plate number, and license plate type of the vehicle under inspection. The bar codes must be code

39 format, contain only the previously mentioned information, and the start and stop characters mentioned below.

The bar codes must be printed on the VIR in the following format. One bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"$"
License Plate Type	1	2	"1", "2", "3", "4", "5", "6", "7", or "8"
License Plate Number	8	3	Alphanumeric
TxDOT Number	10	11	Alphanumeric

The other bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"I"
VIN	17	2	Alphanumeric

Each bar code must be clearly labeled, so that the inspectors can easily identify each bar code type. The location of the bar codes on the VIR must be determined by the manufacturers.

If the VI-30 number was issued, and the VI-30 fee was entered, the analyzer must change the message on the VIR from "Safety Inspection Fee" to "Safety Insp + VI30 Fee".

The analyzer must print an authorization code on the VIR for vehicles that pass the inspection or fail the inspection, but are issued a waiver number. The analyzer must print "N/A" instead of the authorization code where:

- the vehicle fails the inspection;
- the vehicle fails the inspection and is not issued a waiver number;
- the inspection is aborted resulting in a failing condition; or
- the inspection is aborted resulting in a no final outcome condition (aborted records should not result in a passing outcome).

The algorithm for the authorization code is available from the TCEQ upon request.

The analyzer must print the vehicle certificate type (VIR code) on the VIR for vehicles that pass the inspection. The certificate type codes that must be printed on the VIR are included in Appendix V: *Safety Certificate Format Table*. The analyzer will match the value of the REG_FEE_CODE to a value in the REG_FEE_CODE column of the safety certificate format table to identify the appropriate VIR code. The analyzer will print N/A for the VIR code for vehicles that fail the inspection. The VIR printed for vehicles that pass the inspection must use a font size acceptable to the TCEQ (e.g., minimum of 12 point for Times New Roman) for selected elements on the VIR, including the test date and time, the certificate type, the vehicle's model year, license plate number, and VIN, the station number, analyzer number, and overall inspection result. The VIR codes, SOEO and CWEO, will not be printed on the

VIR, will not be assigned a corresponding REG_FEE_CODE value, but are included in Appendix V for informational purposes only.

The analyzer must print the text, "Show report for Texas vehicle registration" in all capital letters in the top left hand corner of the VIR when:

- the HB2305CHG field in the SYSTEM.DAT file is set to "B" or "C"; and
- either the vehicle:
    - passes the inspection; or
    - is issued a waiver number, regardless of the pass or fail inspection result.

The analyzer must print the following sentence on the vehicle inspection when the SAFE_TEST_TYPE is set to "G" or "K": "I have performed an annual inspection of the above noted vehicle, which is accurate, complete, and in accordance with the inspection criteria set forth in 49 Code of Federal Regulations, Chapter 396.17 through 396.21." When the SAFE_TEST_TYPE is set to "G" or "K", the analyzer must print the inspection expiration date on the VIR. These inspections (i.e., where the SAFE_TEST_TYPE set to "G" or "K") are valid until the end of the same month as the date of inspection in the following year. For example, if the inspection is performed on June 20, 2014, then the analyzer would print June 30, 2015 as the inspection expiration date. A sample vehicle inspection report showing the inspection expiration date is available from the TCEQ upon request.

The analyzer must print the text "I certify that I have properly performed the emissions test according to state regulations and procedures manuals, and as the undersigned duly appointed inspection, hereby certify that I have physically examined the manufacturer's vehicle identification number of the motor vehicle described above." This text replaces the text regarding test performance currently being printed on the VIR.

The analyzer must print the TEST_REC_NUM on the VIR next to the fuel type value or analyzer software version.

Error Message: **NO VALUES ENTERED -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST** **OVERALL COST** **CERT_NUM** **OVERALL_RESULTS**

3.2.20 VID Contact

If the SAFE_COMM field of the SYSTEM.DAT file is set to "0" or "_", then the analyzer will not contact the VID and skip this prompt.

If the SAFE_COMM field of the SYSTEM.DAT file is set to "1", then the analyzer must contact the VID and transmit the completed inspection record for this inspection and any other records from previous inspections that have not been sent to the VID. Upon completion of this contact, the analyzer must return to the main menu.

The analyzer must increment the no contact counter, which tracks the number of inspection s conducted without successfully contacting the VID, by one when the following bits are not set in the RESPONSE.DAT file during the communication sessions:

bit 80 - Command completed successfully (status specific to "Transmit test record(s)" command).

The no contact counter must only increment by one for each inspection completed with response bit 80 not being set.

The following bits may also be set when response bits 80 are not set. These bits provide probable explanations to why response bits 80 were not set.

8 - Invalid password (token file error)
9 - Invalid LOCKOUT.DAT file
10 - Invalid TAS telephone number
11 - Invalid station number
12 - Invalid TAS number
13 - Invalid software version number
14 - Invalid VID phone number
15 - Invalid communications port base address
16 - Invalid communications port interrupt
17 - Communication port error
18 - Dialing error
19 - No dial tone
20 - Phone line busy
21 - No answer
22 - Voice answered
23 - Security logon (to VID) failure

The no contact counter must not be incremented for any aborted inspections.

3.3 Main Menu Selection "3 Emissions Only Inspection"

3.3.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to "B" or "C". The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer's monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages: 1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**

2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.3.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages: 1. **YOUR PIN IS NOT VALID--TRY AGAIN.**

2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.3.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.3.2a Inspection Type Prompt

ENTER THE INSPECTION TYPE

1 - Required Emissions Only Test (Decal)
2 - Voluntary Test
3 - Test on Resale (Do Not Display or Use)
4 - Remote Sensing Request (Decal)

Programming Criteria:

The analyzer must display the type of inspection selected by the inspector so that the inspector can confirm the selection. The default for this screen must be the "Required Emission Only Test (Decal)" selection. Based on the inspector's selection, the analyzer must set test_type field as follows:

1 - "O"	3 - "C"
2 - "I"	4 - "B"

Associated System File: **VEHICLE.DAT** **TEST_TYPE**

3.3.3 Fuel Type Prompt

ENTER THE VEHICLE FUEL TYPE. SELECT THE APPROPRIATE FUEL TYPE CODE FROM THE LIST BELOW.

Code	Description
"G"	**Gasoline**
"B"	**Bi-Fueled (Dual-Fueled)**
"D"	**Diesel**

Programming Criteria:

Entry of one code is required. The analyzer software must be designed so that only a "G", a "B", or a "D" can be entered by the inspector for this field. The default choice must be gasoline.

If the inspector selects "B", the analyzer must display a message stating that **"YOU HAVE INDICATED THAT THIS VEHICLE IS DUAL FUELED. PLEASE CONFIRM THAT THE VEHICLE IS OPERATING ON GASOLINE FOR THE TEST WITH A 'Y'."** After confirming the result, the analyzer must go to Section 3.3.4: *Model-Year Prompt*. Otherwise, the analyzer must return to the fuel type code list.

If the inspector selects "D", the analyzer must display a message stating **"YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. PLEASE CONFIRM THIS ENTRY BY PRESSING 'Y'."** If the inspector presses something other than "Y", the analyzer must return to the fuel type code list.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **FUEL_TYPE**

3.3.3a Optional Bar Code Entry of the Texas Registration Expiration Date, Vehicle Identification Number (VIN), License Plate Type, and Number Prompt

SCAN THE BAR CODE ON THE TXDMV WINDSHIELD STICKER (THAT CONTAINS THE LICENSE PLATE NUMBER AND TYPE, AND VIN).

OR

PRESS "ENTER/CONTINUE" TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to "A", "B", or "C".

The analyzer must prompt the inspector to scan the bar code on the vehicle's windshield issued by the Texas Department of Motor Vehicles (TxDMV), which contains the license plate type, license plate number, the VIN and the vehicle registration expiration date. The analyzer will disregard entries that do not fit the following format. If the inspector presses "enter/continue" without successfully scanning a bar code, the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record.

If the analyzer scans a 2-D bar code that contains an "X" in the first position, then the analyzer must pull the VIN, Expiration Month/Year, and license plate number from the bar code. The format of the bar code is:

Name	Length	Start	Format

Bar Code Type	1	1	Alphanumeric (X)
Bar Code Version	2	2	Numeric
Document Number	17	4	Numeric
VIN	22	21	Alphanumeric
Residence County Number	3	43	Numeric
Workstation ID (RSPS or POS)	10	46	Alphanumeric
Print County Number	3	56	Numeric
Sticker Print Date	8	59	Numeric
Registration Plate Code	8	67	Alphanumeric
Registration Sticker Code	8	75	Alphanumeric
Plate Number	7	83	Alphanumeric
Expiration Year	4	90	Numeric (YYYY)
Expiration Month	2	94	Numeric (MM)
Registration Class Code	3	96	Numeric

If the 2-D bar code is successfully scanned, the analyzer must prompt the inspector to enter the license plate number. The analyzer must compare the license plate number entered by the inspector to the value of the Plate Number.

If the 2-D bar code is successfully scanned and the inspector entered license plate number matches the Plate Number value from the TxDMV bar code, the analyzer must:

- place a “T” in the BARCODED_VIN and BARCODED_LIC_PLT fields and a “1” in the LICENSE_TYPE field of the inspection record; and

- use the values collected as entries for the license plate type, license plate number, VIN, and vehicle registration expiration month and year.

The license plate number, VIN, vehicle registration expiration month and year, and county of registration entry values correspond to the Plate Number, VIN, Expiration Month and Expiration Year, and Residence County Number fields from the TxDMV bar code, respectively.

If the VIN retrieved from the TxDMV bar code is 17 characters long, then the VIN verification algorithm must be applied here to the VIN collected from the TxDMV bar code.

If the 2-D bar code is successfully scanned and the inspector entered license plate number does not match the Plate Number value from the TxDMV bar code, the analyzer will not use any values from the TxDMV bar code to auto fill the model year, license plate type, license plate number, registration expiration month and year, county of registration, or VIN entries.

If the VIN retrieved from the TxDMV bar code is 17 characters long and passes the VIN verification algorithm, the analyzer must auto enter the model year by decoding the 10th digit of the VIN using the table in the VINMY.DAT table. If the VIN retrieved from the TxDMV bar code is either not 17 characters long or fails the VIN verification algorithm, the analyzer must:

- not use the VIN from the TxDMV bar code;

- prompt the inspector for the VIN as described in Section 3.3.7: *VIN Prompt*; and

- store the VIN in the REG_VIN field of the inspection record.

If the TxDMV barcode is not scanned, the analyzer must prompt the inspector to enter the month and year from the TxDMV vehicle registration windshield sticker.

If the entered registration expiration date is prior to the inspection date (e.g., the registration is expired), the analyzer must skip the comparison calculation and not display message 2. Otherwise, the analyzer must compare the date of inspection to the registration month and year from the TxDMV bar code. If the difference between the inspection date and the last date of the registration month and year exceeds 90 days and the HB2305CHG field in the SYSTEM.DAT file is set to "C", then the analyzer will display a message 2, which advises the inspector to inform the motorist that the inspection will not count toward renewal of the vehicle registration.

Error Messages:

1. **DID NOT SCAN PROPERLY – PLEASE TRY AGAIN.**

2. **INFORM THE MOTORIST THAT THIS INSPECTION MAY NOT COUNT TOWARD REGISTRATION RENEWAL BECAUSE THE TEST DATE IS MORE THAN 90 DAYS PRIOR TO THE EXPIRATION OF THE CURRENT VEHICLE REGISTRATION.**

Associated System File: **VEHICLE.DAT**

LICENSE_TYPE	**BARCODED_LIC_PLT**
LICENSE_NUM	**BARCODED_VIN**
MODEL_YR	**REG_VIN**
REG_COUNTY	

3.3.4 Model-Year Prompt

ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

Programming Criteria:

If no value is entered, the analyzer must display Message 1 and prompt the inspector to re-enter the last two digits of the vehicle model-year. The analyzer must display Message 2 in the event that the model-year is strictly greater than the current year plus two and prompt the inspector to re-enter the last two digits of the vehicle model-year or the entire model-year. The analyzer must require the inspector to confirm any model-year entry that is less than 1950. Message 3 will display when the entered vehicle model-year is greater than or equal to 1990 and strictly less than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file. If the VIN collected previously was 17 characters long and passed the VIN algorithm, the analyzer shall default to the corresponding model year by using the information in the VINYR.DAT file or an equivalent method. The default model year selected from the VINYR.DAT shall be the value that is the largest numerical value that is less than the current year plus 2 with a corresponding value that matches the tenth digit of the VIN.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

2. **INVALID MODEL YEAR -- TRY AGAIN.**

3. **THIS VEHICLE IS NOT ELIGIBLE FOR AN OBD II ONLY EMISSIONS TEST**

Associated System Files: **VEHICLE.DAT** **MODEL_YEAR**
LOCKOUT.DAT **ASM_TSI_LOCKOUT**

3.3.4a Gross Vehicle Weight Prompt

ENTER THE GVW OF THE VEHICLE.

Programming Criteria:

A prompt will be displayed for the inspector to enter the GVW. No default entry must be displayed. The analyzer must allow the inspector to see and edit the GVW as it is being entered. If the GVW_2TIMES is not set to "G", the analyzer will accept the entry of the GVW value as entered using the keyboard on the first attempt. If the GVW_2TIMES is set to "G", the analyzer will require the inspector to use a double blind approach to successfully enter the GVW value as listed in the following description. When the GVW has been entered, the analyzer must prompt the inspector to press "enter/continue". Then, the analyzer will clear the GVW entry window and require the inspector to enter the GVW again. The two attempts must match. If the two attempts do not match, the analyzer must display Message 4, prompt the inspector to re-enter the GVW starting again with the first attempt. The inspector shall be required to re-enter the GVW using the keyboard until two matching GVW entry attempts have been made. When the GVW value has been entered, the analyzer must complete the requirements in the following description.

If the entered GVW is less than or equal to 8,500 then the analyzer must set the GVW_TYPE field of the VEHICLE.DAT file to "1" for light-duty. If the GVW is greater than or equal to 8,501 then the analyzer must set the GVW_TYPE field in the VEHICLE.DAT file to "2" for heavy-duty.

If the inspector presses "enter/continue" and no entry has been made, the analyzer must display message 1 and prompt the inspector to enter the GVW. If the inspector enters a GVW greater than 85,000 pounds, the analyzer must display message 2 and prompt the inspector to re-enter the GVW. If the inspector enters a GVW strictly less than 1,700 pounds, the analyzer must display message 3 and prompt the inspector to re-enter the GVW.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **MAXIMUM GVW ENTRY IS 85,000 LBS--TRY AGAIN.**
3. **WEIGHT RATING MUST BE AT LEAST 1700 LBS.--TRY AGAIN.**
4. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GVW_TYPE**
GVW_ACTUAL

3.3.4b Emissions Inspection Selection Logic

Selection of the emissions inspection is based on a combination of the entries made by the inspector and the values of the fields contained in the SYSTEM.DAT file.

Emissions Inspections Not Required

When the OBD_TESTING, ASM_TESTING, TSI_TESTING, and DSL_OBD_TESTING fields are all set to "N" in the SYSTEM.DAT file, then the analyzer must display this message, **"EMISSIONS TESTING NOT REQUIRED IN THIS COUNTY. TEST WILL END HERE."** and return to main menu when the inspector presses any key.

Default Emissions Inspection Selection

The analyzer must determine the default emissions inspection type for all diesel and gasoline powered vehicles based on the inspector entries for the GVW, fuel type, drive axle, and model-year, and the settings in the SYSTEM.DAT file.

OBD is the default inspection for diesel vehicles and gasoline vehicles. Gasoline vehicles may also default to an ASM or TSI inspection. Default ASM inspections will become TSI inspections when the entered GVW is greater than 8,500 pounds or the vehicle cannot be inspected using a two-wheel dynamometer.

Diesel Powered Vehicles

If the inspector selected "D" under the fuel type prompt and the DSL_OBD_TESTING field is set to "N", the analyzer must:

- display a message stating, **"YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. DIESEL FUELED VEHICLES ARE NOT REQUIRED TO RECEIVE EMISSIONS TESTS. THIS TEST WILL END HERE."**; and

- return to the main menu when the inspector presses any key.

The analyzer must default to an OBD inspection when the DSL_OBD_TESTING field is set to "Y", the GVW entry is less than or equal to the value in the DSL_OBD_MAX_GVW field, the model-year entry is greater than or equal to the value in the DSL_OBD_MODEL_YR field, and either:

- greater than or equal to the DSL_FIXED_YR_MIN field and less than or equal to DSL_FIXED_YR_MAX field when the DSL_ROLLING_YRS field is set to "F"; or

- less than or equal to calendar year minus the value of the DSL_BGN_ROLLN_YR field and greater than or equal to calendar year minus the value of the DSL_END_ROLLN_YR field when the DSL_ROLLING_YRS field is set to "R"; or

- less than or equal to calendar year minus the value of the DSL_BGN_ROLLN_YR field and greater than or equal to the value of the DSL_FIXED_YR_MIN field when the DSL_ROLLING_YRS field is set to "A"; or

- greater than or equal to calendar year minus the value of the DSL_END_ROLLN_YR field and is less than or equal to the value of the DSL_FIXED_YR_MAX field when the DSL_ROLLING_YRS field is set to "B".

If the analyzer determines that the diesel vehicle is not required to receive an emissions inspection because it does not meet the criteria listed above, the analyzer must display a message stating, **"YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. HOWEVER, THIS DIESEL FUELED VEHICLE IS NOT REQUIRED TO RECEIVE AN EMISSIONS TEST. THIS IS AN OPTIONAL TEST."** and provide the option to continue or exit the inspection. If the inspector elects to exit the optional inspection, the analyzer must return to the main menu when the inspector presses the appropriate key.

If the inspector elects to continue with the optional inspection, the analyzer must:

- conduct an OBD inspection when the model-year is greater than or equal to the value in the DSL_OBD_MODEL_YR field and DSL_OBD_TESTING is set to "Y"; or

- return to the main menu when model-year is strictly less than the value in the DSL_OBD_MODEL_YR field .

<u>Gasoline Powered Vehicles</u>

If the inspector selected "G" or "B" under the fuel type prompt, the analyzer must check the value of the OBD, ASM, and TSI inspection program fields in the SYSTEM.DAT file.

The analyzer must not conduct the OBD, ASM, or TSI emissions inspection when:

- the OBD_TESTING field is set to "N" and OBD is the default emissions inspection; or

- the ASM_TESTING field is set to "N" and ASM is the default emissions inspection; or

- the TSI_TESTING field is set to "N" and TSI is the default emissions inspection, respectively.

The analyzer must conduct the OBD, ASM, or TSI emissions inspection when:

- the OBD_TESTING field is set to "Y" and OBD is the default emissions inspection; or

- the ASM_TESTING field is set to "Y" and ASM is the default emissions inspection; or

- the TSI_TESTING field is set to "Y" and TSI is the default emissions inspection, respectively.

<u>Default OBD Inspection Programming Criteria</u>

The analyzer must default to an OBD inspection when the OBD_TESTING field is set to "Y", the model-year entry is greater than or equal to the value in the OBDII_MODEL_YR field, and either:

- greater or equal to the PRGM_FIXED_YR_MIN field and less than or equal to the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to "F"; or

- less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field when the PRGM_ROLLING_YRS field is set to “R”; or

- less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to the value of the PRGM_FIXED_YR_MIN field when the PRGM_ROLLING_YRS field is set to “A”; or

- greater or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field and is less than or equal to the value of the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to “B”.

Default ASM Inspection Programming Criteria

The analyzer must default to an ASM inspection when the ASM_TESTING field is set to “Y”, the GVW entry is less than or equal to 8,500, the analyzer is equipped to conduct ASM inspections, the model-year entry is less than the value in the OBDII_MODEL_YR field, and either:

- greater or equal to the PRGM_FIXED_YR_MIN field and less than or equal to the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to “F”;

- is less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field when the PRGM_ROLLING_YRS field is set to “R”; or

- is less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to the value of the PRGM_FIXED_YR_MIN field when the PRGM_ROLLING_YRS field is set to “A”; or

- is greater or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field and is less than or equal to the value of the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to “B”.

Default TSI Inspection Programming Criteria

The analyzer must default to a TSI inspection when the TSI_TESTING field is set to “Y”, the analyzer is equipped to conduct TSI inspections, the model-year entry is less than the value in the OBDII_MODEL_YR field, and either:

- greater or equal to the PRGM_FIXED_YR_MIN field and less than or equal to the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to “F”; or

- less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field when the PRGM_ROLLING_YRS field is set to “R”; or

- less than or equal to calendar year minus the value of the PRGM_BGN_ROLLN_YR field and greater than or equal to the value of the PRGM_FIXED_YR_MIN field when the PRGM_ROLLING_YRS field is set to "A"; or

- greater or equal to calendar year minus the value of the PRGM_END_ROLLN_YR field and is less than or equal to the value of the PRGM_FIXED_YR_MAX field when the PRGM_ROLLING_YRS field is set to "B".

Optional Inspection Programming Criteria for Gasoline Powered Vehicles

The analyzer must display a message stating **"NOT REQUIRED TO TEST VEHICLES OLDER THAN YEAR (minimum of [CURRENT YEAR - PGRM_END_ROLLN_YR, or PGRM_FIXED_YR_MIN]). IF THE VEHICLE IS NEWER THAN YEAR (maximum of [CURRENT YEAR - PGRM_BGN_ROLLN_YR, or PGRM_FIXED_YR_MAX]), REFER TO THE DPS RULES AND REGULATIONS MANUAL CHAPTER 5, PAGE 12 FOR TEST REQUIREMENTS."** when:

- the inspector selects "G" or "B" under the fuel type prompt;

- the OBD_TESTING, ASM_TESTING or TSI_TESTING field is set to "Y"; and

- the vehicle is not required to receive an emissions inspection because the entered model-year is not within the acceptable range listed above.

If the inspector elects to continue with the optional inspection, the analyzer must conduct an OBD inspection where the entered model-year is greater than or equal to the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the OBD_TESTING field is set to "Y".

If the inspector elects to continue with the optional inspection, the analyzer must conduct an ASM inspection where the entered model-year is less than the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the ASM_TESTING field is set to "Y"; or the entered model-year is greater than the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the OBD_TESTING field is set to "N", and the ASM_TESTING field is set to "Y".

If the inspector elects to continue with the optional inspection, the analyzer must conduct a TSI inspection where the entered model-year is less than the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the TSI_TESTING field is set to "Y"; or the entered model-year is greater than the value in the OBDII_MODEL_YR field of the SYSTEM.DAT file, and the OBD_TESTING field is set to "N", and the TSI_TESTING field is set to "Y".

The analyzer must return to the main menu if:

- the inspector elects to continue with the optional inspection and the analyzer determines that the vehicle is not eligible for an OBD, an ASM, or TSI inspection; or

- the inspector elects not to continue with the optional inspection by pressing the appropriate key.

Tailpipe Emissions Inspection Lockout Check

Since the default emissions inspection type has been determined as ASM, TSI, or OBD, the analyzer must check the status of the ASM_TSI_LOCKOUT flag in the LOCKOUT.DAT file to confirm that the analyzer is authorized to conduct a tailpipe emissions inspection. If this flag is set to "1" or "Y" and the default emissions inspection type is the ASM or TSI emissions inspection, the analyzer must:

- display a message stating that, **"The analyzer cannot continue because this vehicle is not eligible for an OBD emissions inspection and the analyzer is not authorized to perform tailpipe inspections (i.e., ASM or TSI) until it passes the gas audit."**; and

- return to the main menu when the inspector elects to continue.

3.3.4c Bar Code Entry of License Plate Type, Number, and VIN Prompt

SCAN THE BAR CODE THAT CONTAINS THE LICENSE PLATE TYPE, LICENSE PLATE NUMBER, AND TXDOT NUMBER FROM THE VEHICLE INSPECTION REPORT.

OR

PRESS "ENTER/CONTINUE" TO CONTINUE IF THE VEHICLE INSPECTION REPORT IS NOT AVAILABLE.

Programming Criteria:

The analyzer may skip this prompt if the VIN previously collected from the TxDMV bar code is being used.

The analyzer must prompt the inspector to scan the bar code which contains the license plate type, license plate number, and the TxDMV number. If a 1-D bar code is successfully scanned, the analyzer must place a "B" in the BARCODED_LIC_PLT field of the inspection record and proceed to either Section 3.3.5: *License Type Prompt* if the license plate type and license plate number were not collected or Section 3.3.5a *Texas Registration Expiration Date Prompt* if the license plate type and license plate number were collected. If the inspector presses "enter/continue", the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record and allow the inspector to enter this information using the keyboard by proceeding to Section 3.3.5: *License Type Prompt*.

If the analyzer scans a 2-D bar code that contains an "X" in the first position, then the analyzer must pull the VIN and license plate number from the bar code. The format of the bar code is:

Name	Length	Start	Format
Bar Code Type	1	1	Alphanumeric (X)
Bar Code Version	2	2	Numeric
Document Number	17	4	Numeric
VIN	22	21	Alphanumeric

Residence County Number	3	43	Numeric
Workstation ID (RSPS or POS)	10	46	Alphanumeric
Print County Number	3	56	Numeric
Sticker Print Date	8	59	Numeric
Registration Plate Code	8	67	Alphanumeric
Registration Sticker Code	8	75	Alphanumeric
Plate Number	7	83	Alphanumeric
Expiration Month/Year	6	90	Numeric
Registration Class Code	3	96	Numeric

If the bar code is successfully scanned, the analyzer must place a "T" in the BARCODED_VIN and BARCODED_LIC_PLT fields and a "1" in the LICENSE_TYPE field of the inspection record, and proceed to Section 3.3.5a: *Texas Registration Expiration Data Prompt*.

Error Message: **DID NOT SCAN PROPERLY PLEASE TRY AGAIN.**

Associated System File: **VEHICLE.DAT**
LICENSE_TYPE **BARCODED_LIC_PLT**
LICENSE_NUM **BARCODED_VIN**

3.3.5 License Type Prompt

ENTER THE TYPE OF LICENSE PLATE OF THE VEHICLE.

1. **Texas Plate**
2. **No Plate**
3. **Out of State**
4. **Exempt (State)**
5. **Exempt (Federal)**
6. **Dealer Plate**
7. **Temporary Buyer Tag**
8. **Other**

Programming Criteria:

The analyzer may skip this prompt if the license plate type previously collected from the TxDMV bar code is being used. The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type "3" or "5", the analyzer must set the REG_COUNTY field to "000". If the inspector selects license type "2", "6", "7", or "8", the analyzer must fill the REG_COUNTY field with spaces. If the inspector selects license type "2" or "8", the analyzer will assign the LICENSE_NUM field in the VEHICLE.DAT a value of "V" followed by the last seven digits of the VIN and skip Section 3.3.6: *License Prompt*. If the entered VIN has less than seven characters, the entry should be a "V" followed immediately by the entered VIN without filler spaces between the "V" and the entered VIN. The analyzer will default to license type "1".

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_TYPE**
REG_COUNTY

3.3.5a Texas Registration Expiration Date Prompt

ENTER THE MONTH AND YEAR FROM THE VEHICLE REGISTRATION WINDSHIELD STICKER.

PRESS "ENTER/CONTINUE" TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to "A", "B", or "C". However, the analyzer may skip this prompt if the vehicle registration month and year previously collected from the TxDMV bar code are begin used.

The analyzer must prompt the inspector to enter the month and year from the TxDMV vehicle registration windshield sticker when the previously entered license plate type is set to "1" or "4" and these values weren't collected using the bar code scanner. The analyzer must display a note indicating that inspector should enter "00" for the month and "0000" for the year if the vehicle doesn't have a TxDMV sticker on the windshield. If the inspector enters "00" for the month and "0000" for the year, then the analyzer must not to display the message 2.

If the registration expiration date cannot be collected either from the TxDMV barcode or the inspector-entered value, then the analyzer does not have to display message 2.

If the entered registration expiration date is prior to the inspection date (e.g. the registration is expired), the analyzer must skip the comparison calculation and not display message 2. Otherwise, the analyzer will compare the date of inspection to the registration month and year entered by the inspector. If the difference between the inspection date and the last date of the registration month and year exceeds 90 days and the HB2305CHG field in the SYSTEM.DAT file is set to "C", then the analyzer will display a message 2 which advises the inspector to inform the motorist that the inspection will not count toward renewal of the vehicle registration.

Error Messages:

1. **DID NOT SCAN PROPERLY – PLEASE TRY AGAIN.**
2. **INFORM THE MOTORIST THAT THIS INSPECTION MAY NOT COUNT TOWARD REGISTRATION RENEWAL BECAUSE THE TEST DATE IS MORE THAN 90 DAYS PRIOR TO THE EXPIRATION OF THE CURRENT VEHICLE REGISTRATION.**

Associated System File: **VEHICLE.DAT**

LICENSE_TYPE	**BARCODED_LIC_PLT**
LICENSE_NUM	**BARCODED_VIN**
HB2305CHG	

3.3.5b Texas Registration County Prompt

ENTER THE REGISTRATION COUNTY FROM THE VEHICLE REGISTRATION WINDSHIELD STICKER.

PRESS "ENTER/CONTINUE" TO CONTINUE.

Programming Criteria:

The analyzer must display this prompt and apply the following logic when the HB2305CHG field in the SYSTEM.DAT file is set to "A", "B", or "C", the previously entered license plate type is set to "1" or "4", and this value wasn't collected using the bar code scanner. However, the analyzer may skip this prompt if the vehicle registration county that was previously collected from the TxDMV bar code is begin used. The analyzer may also skip this prompt if the previously collected vehicle registration month and year are more than more than 1 year prior than the inspection date (i.e., the registration is expire by more than 1 year).

The analyzer must prompt the inspector to enter the vehicle's county of registration as it appears on the TxDMV vehicle registration windshield sticker. The analyzer must display a note indicating that inspector should enter "no sticker" for the county of registration if the vehicle doesn't have a TxDMV sticker on the windshield. The analyzer shall set the REG_COUNTY to spaces when the inspector enters "no sticker". The analyzer must allow for a user-friendly approach for entry of the county of registration.

For example, the analyzer may display the 17 emissions counties and an additional choice, "more counties". When "more counties" is selected, the analyzer will display the complete list of 254 Texas counties in alphabetical order and allow the inspector to either use the keyboard to enter up to three characters as criteria to search for a match in the alphabetized county list or use the arrow keys to select the correct county from the list.

Error Messages: **1. INVALID ENTRY – PLEASE TRY AGAIN.**

Associated System File: **VEHICLE.DAT**
LICENSE_TYPE **HB2305CHG**

3.3.6 License Prompt

ENTER THE LICENSE NUMBER OF THE VEHICLE.

Programming Criteria:

The analyzer may skip this prompt if the license plate number previously collected from the TxDMV bar code is being used. The inspector will be prompted to enter the license plate number of the vehicle. Upon confirming the license plate number entry, the vehicle information is eligible to be stored in the RECALL.DAT file. After the inspector enters the license plate number, the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_NUM**
BARCODED_LIC_PLT

3.3.7 VIN Prompt

ENTER VIN NUMBER.

Programming Criteria:

The analyzer may skip this prompt if the VIN previously collected from the TxDMV bar code is begin used. The analyzer will prompt for the VIN as it appears on the vehicle, and if available use the bar code reader to scan the bar coded VIN on the vehicle. If the VIN cannot be entered using the bar code reader, the inspector will be capable of entering the VIN using the keyboard. The analyzer must store a "B" in the BARCODED_VIN field of the VEHICLE.DAT file when the VIN is entered using the bar code reader. The analyzer must store a "K" in the BARCODED_VIN field of VEHICLE.DAT file when the VIN is not entered using the bar code reader.

The analyzer must allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the analyzer must prompt the inspector to press "enter/continue". Then, the analyzer will clear the VIN field and require the inspector to re-enter the VIN. The two attempts must match. If the two attempts do not match, the analyzer must display Message 3 and prompt the inspector to enter the VIN a third time.

A minimum of three and a maximum of 17 characters are required for this field. If the entry is not within these parameters, the analyzer must display Message 2. If no value is entered, the analyzer must display Message 1.

The VIN verification algorithm must be applied here, but only to 1981 and newer model-year vehicles. If the VIN verification fails, the inspector shall be required to re-enter the VIN using the keyboard until either it passes the VIN verification or until a total of 4 double blind matching VIN entry attempts have been made.

The analyzer will not allow the inspector to enter the letters "I", "O", or "Q" for 1981 and newer model-year vehicles. The software should suggest possible substitute letters when the DPS algorithm indicates that the VIN is bad.

Error Messages:

1. **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
2. **A MINIMUM OF 3 OR MAXIMUM OF 17 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
3. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VIN_ID_NUM**
VIN_FLAG
BARCODED_VIN

3.3.7a VIN Verification Prompt

YOU ARE RESPONSIBLE FOR VERIFYING THAT THIS IS THE VIN FROM THE VEHICLE.

BY PRESSING CONTINUE, YOU ARE VERIFYING THAT THIS VIN, <<<display the entered VIN here>>>, MATCHES THE VIN ON THE VEHICLE UNDER INSPECTION.

Programming Criteria:

The analyzer will display this prompt when the HB2305CHG field in the SYSTEM.DAT file is set to "A", "B", or "C" and the VIN has been successfully entered using either the keyboard or bar code scanner (i.e., bar code from the vehicle, a vehicle inspection report, or the TxDMV sticker). The VIN will be displayed using a large font.

Associated System File: **VEHICLE.DAT**
REG_VIN **VIN**

3.3.7b VID Contact

The analyzer must contact the VID, retrieve all applicable vehicle information, and enter the information into the appropriate fields.

An inspection must be stopped and the analyzer must return to the main menu if the following response bits are set in the RESPONSE.DAT file received from the VID.

56 - Inspector License expired
57 - Inspector license suspended/revoked
58 - Inspector not authorized to test at this station
60 - TAS is locked out for at least one of the reasons included within "Lockout Status Record" data file

The analyzer must obtain the inspection record from the VID and search the local analyzer files for a VIN match. The analyzer must search the local inspection records, even if an inspection record is received from the VID. The local search must only consist of the records for the last 17 days. If two identical records are obtained, then the analyzer must use either record to set the EMISS_INIT_TEST and SAFE_INIT_TEST fields, and determine the eligibility status for the current inspection and the emissions inspection sequence for the reinspection, where applicable.

If the records are different, then the analyzer must set the flags as follows. The EMISS_INIT_TEST field must be set based on the value of the EMISS_PF_FLAG field in the most recent inspection record from the VID or the local analyzer files. The SAFE_INIT_TEST field must be set based on the value of the SAFE_INIT_TEST field in the most recent inspection record that was conducted at the station within the last 17 days.

The analyzer must confirm that the vehicle is eligible for an initial inspection by using the inspection record that was used to set the SAFE_INIT_TEST field.

The vehicle is eligible for an initial inspection if:

- the SAFE_INIT_TEST field in the inspection record is set to "R";

- the station number of the previous inspection station does not match the number of the station conducting the current inspection; or

- the date of this inspection is not within 16 days of the inspection date contained in the previous inspection record.

If the vehicle is not eligible for an initial inspection, the analyzer must:

- display a message indicating why the vehicle is not eligible for an initial inspection and prompt the inspector to inform the customer that they will not be charged for this inspection;

- save the vehicle information in the RECALL.DAT file;

- either perform a reinspection as described in Section 3.4: *Main Menu Selection "4 Reinspection"* or require the inspector to enter repair information about the vehicle prior to conducting the emissions inspection when the EMISS_PF_FLAG field in the inspection record of the previous inspection is set to "F"; and

- input the necessary vehicle information from the inspection record of the previous inspection to conduct the reinspection.

Upon completion of VID contact, the analyzer must:

- indicate that announcements, TSBs, and emissions recall information were transmitted by the VID;

- not display announcements until the end of the inspection;

- display a message after the end of the inspection indicating that: "**Subsequent inspections cannot be conducted until the announcement is successfully printed.**";

- display and automatically print a copy of the announcement immediately after main menu selection "1" through "4" is selected for the next inspection; and

- provide the option of displaying the TSBs, and/or emissions recall information either immediately or later in the current inspection.

The analyzer must provide the option to print, delete, and save announcements, TSBs, and emissions recall information to a predetermined file. New announcements, TSBs, and/or emissions recall information saved must overwrite the oldest information. The analyzer must not continue with the inspection until the announcements, TSBs, or recall information is successfully printed.

3.3.8 Vehicle Type Prompt

SELECT THE VEHICLE TYPE

'P' - PASSENGER CAR/STATION WAGON
'T' - TRUCK/VAN/SPORTS UTILITY VEHICLE
'M' - MOTOR HOME
'B' - BUS

Programming Criteria:

The default choice on this screen must be the "passenger car/station wagon" selection.

If the inspector selects "M" or "B", the analyzer must skip Section 3.3.8a: *Vehicle Body Type Prompt*, and use the VEHICLE_STNDS_TYPE of "T" if the vehicle receives an ASM inspection. If the inspector enters a GVW for a bus or motor home that is less than 8,501 pounds, the analyzer must set the BODY_STYLE field to "6" and perform an ASM or TSI inspection, where applicable.

If the inspector selects "P" and the previously entered GVW is strictly greater than 8,500 pounds, the analyzer must display an error message that says "**INVALID ENTRY – TRY AGAIN**," and not proceed to the next prompt until the inspector enters a value for the GVW that is less than or equal to 8,500 pounds for the "passenger car/station wagon" selection. No explanation must be given for this error message. The analyzer must display the previously entered GVW on the screen where the inspector corrects this entry and return to this prompt when an acceptable GVW value has been entered.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **VEHICLE _TYPE**

3.3.8a Vehicle Body Type Prompt

SELECT THE APPROPRIATE VEHICLE BODY TYPE FROM THE LIST BELOW:

CODE	VEHICLE BODY TYPE
1	SEDAN
2	STATION WAGON
3	PICKUP/TRUCK TRACTOR
4	SPORT/UTILITY VEHICLE
5	MINIVAN
6	FULL-SIZE VAN

Programming Criteria:

If the inspector selected "P" as the vehicle type, the default choice on this screen must be the "sedan" selection. If the inspector selected "T" as the vehicle type, the default choice on this screen must be the "pickup/truck tractor" selection. This prompt may be combined with the requirements under Section 3.3.8: *Vehicle Type Prompt*.

If the inspector selected "M" or "B" as the vehicle type, the analyzer must use the National Crime Information Center (NCIC) list to display the list of makes and models.

If the model-year, make, and model entered describe a unique vehicle which is found as a single VRT row number, the body type may be taken directly from the VRT record and the inspector does not need to be prompted to enter the body type.

The vehicle body type will be used to determine the vehicle test standards group. Vehicle body type codes "1" and "2" will be inspected as passenger cars, while body type codes "3" through "6" will be inspected as trucks.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System Files: **VEHICLE.DAT** **BODY_STYLE**
TXVRT.DAT **VEHICLE_BODY_TYPE**
VEHICLE_STNDS_TYPE

3.3.9 Vehicle Make Prompt

ENTER THE VEHICLE MAKE.

Programming Criteria:

The analyzer must display a list of make names contained in the TXVRT.DAT file for passenger cars and trucks for vehicles whose previously entered GVW is less than or equal to 8,500 pounds. If the previously entered model-year is not in the TXVRT.DAT file, the analyzer must display the list of makes from the most recent model-year in the TXVRT.DAT file.

The analyzer must use the makes in the NCIC listings for buses, motor homes, and for vehicles whose previously entered GVW is strictly greater than 8,500 pounds.

When the inspector selects a make name from the list, the analyzer must store the NCIC code that corresponds to the selected make name in the MAKE field.

"Other" must also be a choice for the MAKE name. When the inspector selects other as the make name, the analyzer must:

- store "OTHR" in the MAKE field;
- display a message prompting the inspector to enter the full make name and least the first five characters of the model name in the space provided;
- store the inspector's entry in the MODEL field;
- leave the MODEL_CODE field blank; and
- skip the display of associated model names and proceed to Section 3.3.11: *Odometer Prompt*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MAKE**

3.3.10 Model Prompt

SELECT THE VEHICLE MODEL.

Programming Criteria:

The analyzer must display a list of vehicle model names that correspond to the previously selected vehicle make name from the TXVRT.DAT file or the NCIC listings.

If the previously entered model-year is not in the TXVRT.DAT file and the inspector selected a make name from the list of makes from the most recent model-year in the TXVRT.DAT file, then the analyzer must display the corresponding list of model names from the most recent model-year in the TXVRT.DAT file, and store the model name selected by the inspector in the MODEL field.

The analyzer must also present the option of "other" as a model name choice. When the inspector selects other, the analyzer must:

- display a message prompting the inspector to enter the full model name in the space provided; and
- store the selected make name in the MAKE field, the inspector's entry in the MODEL field, and "OTH" in the MODEL_CODE field.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL**
MODEL_CODE

3.3.11 Odometer Prompt

ENTER THE VEHICLE ODOMETER READING.

A MINIMUM OF ONE NUMERIC ENTRY IS REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.

Programming Criteria:

The analyzer must only accept numerical entries and store the entered value in the ODOMETER field.

If the analyzer is conducting this sequence as a test on resale inspection and the entered values for model-year and odometer indicate the vehicle is exempt from this requirement, the analyzer must display error message number 2.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **THIS VEHICLE IS EXEMPT FROM TEST ON RESALE BECAUSE THE MODEL YEAR IS 1996 OR NEWER AND THE ODOMETER READING IS LESS THAN 50,000 MILES. PRESS "ENTER/CONTINUE" TO RETURN TO THE MAIN MENU.**

Associated System File: **VEHICLE.DAT** **ODOMETER**

3.3.12 Injection and Carburetion Prompt

SELECT THE INJECTION/CARBURETION

F - FUEL INJECTION
C - CARBURETION
O - OTHER

Programming Criteria:

The inspector should select the appropriate injection/carburetion from the above list.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **INJECT_CARB**

3.3.12a Engine Size and Cylinder Selection Screen Prompt

SELECT THE ENGINE SIZE AND NUMBER OF CYLINDERS.

Programming Criteria:

Based on the values of the previously entered model-year, make name, and model name, the analyzer must display a list of engine sizes in liters or cubic centimeters with the corresponding cylinder count from the ENGINE_SIZE and NUMBER_CYLINDERS fields from the TXVRT.DAT file. The analyzer may proceed to Section 3.3.14: *Transmission Prompt* if the inspector selects an engine size and cylinder count pair from the list.

The corresponding cylinder count for all rotary engines in the TXVRT.DAT file is 17. The analyzer must display "rotary" as entry for the cylinder count and store an "R" in the CYLINDERS field of the inspection record if the inspector selects "rotary" as the cylinder count.

The analyzer must allow the inspector to select "other" from the list and enter a unique engine size and cylinder count combination. The entered engine size must be automatically converted to cubic centimeters, where necessary, and stored in the ENGINE_SIZE field of the inspection record.

The default for this screen must be to the engine size that matches the value of the engine size from a previous inspection record. If a previous inspection record is not available, the default will be to the smallest engine size in the TXVRT.DAT file.

If the previously entered values for model-year, make, and model do not match the information in the TXVRT.DAT file or the search is in the NCIC table, the analyzer will either display the corresponding values from a previous inspection record or proceed directly to entry screens for the engine size and cylinder count.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

NUMBER OF CYLINDERS IS NOT VALID--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **CYLINDERS**
ENGINE SIZE

3.3.13 Cylinder Prompt

ENTER THE NUMBER OF CYLINDERS.
FOR ROTARY ENGINES, ENTER AN "R."

Programming Criteria:

The analyzer must display choice for the expected number of cylinders based on the previously entered engine size. The default for the number of cylinders to be entered must be the value contained in the CYLINDERS field in the TXVRT.DAT file. The minimum number of cylinders is "1" and the maximum is "16". Any entries out of the "1" through "16" range, or the letter "R" for rotary engines, will be rejected by the analyzer.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

NUMBER OF CYLINDERS IS NOT VALID--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **CYLINDERS**

3.3.13a Engine Units Prompt

ENTER THE UNITS OF THE ENGINE SIZE

Letter	Units
L	Liters
I	Cubic Inches
C	Cubic Centimeters

Programming Criteria:

The analyzer must prompt the inspector to enter the measurement unit for the engine size. The default for this screen must be liters. This prompt may be combined with the prompt in Section 3.3.13b: *Engine Size Prompt* to facilitate ease of entry for the lane inspector.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **INVALID ENTRY--TRY AGAIN.**

3.3.13b Engine Size Prompt

ENTER THE ENGINE SIZE

Unit: **"Display selection from previous prompt here" (i.e., Liters, Cubic Inches, Cubic Centimeters)**

Size: _____

Programming Criteria:

The analyzer must display the unit of measure from the previous prompt and allow the inspector to enter the engine size. The analyzer must:

- store the engine size in the first four characters of the ENGINE_SIZE field; and
- store the engine unit size character in the last position of the ENGINE_SIZE field.

The analyzer must convert the entered engine size to cubic centimeters by either multiplying the cubic inch entry by 16.387 or multiplying the liter entry by 1,000. The converted engine size must be rounded to the nearest cubic centimeter.

Error message 3 must be displayed if the inspector enters an engine size that converts to a value greater than 9,999 cubic centimeters or smaller than 655 cubic centimeters. The inspector shall be required to correct the entry or abort the inspection. If the inspection is aborted, no updates will be made to any file.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **INVALID ENTRY--TRY AGAIN.**
3. **40 CID OR 655 CC OR SMALLER ARE EXEMPT FROM THE EMISSIONS INSPECTION PROGRAM.**

Associated System File: **VEHICLE.DAT** **ENGINE_SIZE**

3.3.14 Transmission Prompt

INDICATE THE TYPE OF TRANSMISSION.

ENTER AN "M" IF IT IS MANUAL.
ENTER AN "A" IF IT IS AUTOMATIC

Programming Criteria:

Entry of the transmission type is required. The analyzer must store an "A" or an "M" in the TRANSMISSION field of the inspection record based on the inspector's entry.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **TRANSMISSION**

3.3.15 Ignition Prompt

ENTER IGNITION TYPE.

SELECT THE APPROPRIATE IGNITION TYPE CODE FROM THE LIST BELOW:

Code	Ignition Type
"C"	**Conventional**
"D"	**Distributorless**
"Q"	**Quad 4/Wireless**

Programming Criteria:

The analyzer must store a "C" for Conventional, "D" for Distributorless, or "Q" for Quad 4/Wireless in the IGNITION field based on the inspector's entry.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **IGNITION**

3.3.15a Keyless Ignition Prompt

IS THIS A KEYLESS IGNITION VEHICLE?

SELECT THE APPROPRIATE OPTION FROM THE LIST BELOW:

NO, a key is required to start the vehicle.
YES, the vehicle starts without a key.

NOTE: If the engine starts with a factory installed keyless start, then select "Yes, the vehicle starts without a key." If the engine starts with a key, then select "No, a key is required to start the vehicle." Select "No" even if an aftermarket keyless ignition has been installed.

Programming Criteria:

Display this prompt when the previously entered model-year is greater than or equal to the value contained in the KEYLESS field in the SYSTEM.DAT file. The default selection must be the first choice in the list.

If the inspector selects "NO", proceed to Section 3.3.15b: *Hybrid Prompt*. If the inspector selects "Yes", change the value stored in the IGNITION field from "C" to "E", or "D" to "F", or "Q" to "R" based on the inspector's entry in Section 3.3.15: *Ignition Prompt*. The VIR must display "C_K", "D_K", or "Q_K", when "E", "F", or "R" is stored in the IGNITION field.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System Files: **VEHICLE.DAT** **IGNITION**
SYSTEM.DAT **KEYLESS**

3.3.15b Hybrid Prompt

IS THE VEHICLE A HYBRID ?
(i.e., Gasoline-electric engine, diesel-electric, etc.,)

SELECT THE APPROPRIATE CHOICE FROM THE LIST BELOW:

No, the vehicle only has a gasoline or diesel engine.
Yes, the vehicle is a hybrid.

Programming Criteria:

Display this prompt only when the previously enter model-year is greater than or equal to the value contained in the HYBRID field in the SYSTEM.DAT file. The default selection must be the first choice in the list.

If the inspector selects "Yes, the vehicle is a hybrid.", the analyzer will not require the RPM to be greater than zero when conducting an OBD inspection on this vehicle and place an "H" in the RPM_BYPASS field of the inspection record.

If the inspector selects "No, the vehicle has a gasoline or diesel engine.", then there are no changes to the OBD inspection.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System Files:	**VEHICLE.DAT**	**RPM_BYPASS**
	SYSTEM.DAT	**HYBRID**

3.3.16 Exhaust Prompt

DOES THE VEHICLE HAVE DUAL EXHAUST?

"Y" = YES **"N" = NO**

Programming Criteria:

The software must ask the inspector to indicate if the vehicle is equipped with dual exhaust.

The following instructions apply if the vehicle will receive a tailpipe emissions inspection. If the inspector selects "YES", then the analyzer must display instructions to the inspector describing how to attach the additional probe to the analyzer for this inspection and require the inspector to confirm this is complete before proceeding to the next prompt

If the inspector selects "NO", the analyzer must automatically proceed to the next prompt. The analyzer must store a "Y" or an "N" in the DUAL_EXHAUST field based on the inspector's entry.

Error Message: **INVALID ENTRY--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **DUAL_EXHAUST**

3.3.16a Drive Axle Prompt

IS THE VEHICLE EQUIPPED WITH AWD OR FULL-TIME 4 WHEEL DRIVE OR NON-DISENGAGEABLE TRACTION CONTROL? PLEASE CONFIRM BY PRESSING "Y" OR "N"

Programming Criteria:

Display this prompt only when the entered vehicle model-year is less than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file.

The analyzer must not display a default value and will require the inspector to make a new entry whenever this prompt is displayed.

If "N" is selected then the analyzer must attempt to perform an ASM emissions inspection.

If "Y" is selected and OBDII_ONLY is set to "N", then the analyzer must attempt to perform a TSI inspection and display the following prompt:

PERFORM A TWO SPEED IDLE EMISSIONS INSPECTION

NOTE**:** TSI emissions inspection procedures are included in Appendix K: *TSI Emissions Inspection Procedures*.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System Files: **VEHICLE.DAT** **AXLE_TYPE**
STATION.DAT **OBDII_ONLY**

3.3.17 Pre-Tune Prompt

DID INSPECTOR/FACILITY PERFORM ANY EMISSIONS-RELATED REPAIRS OR ADJUSTMENTS PERFORMED ON THE VEHICLE PRIOR TO THIS TEST?

"Y" - YES **"N" - NO**

Programming Criteria:

The analyzer will ask the inspector if pre-tuning was performed on this vehicle prior to this inspection. The analyzer software must be designed so that only a "Y" or an "N" can be entered by the inspector for this field.

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **PRE_TUNE**

3.3.19 Confirm Vehicle Info Display

The analyzer must display the vehicle information and allow the inspector to edit the information as appropriate. If the vehicle information was populated by the VID, the inspector shall be allowed to edit all vehicle information except the VIN, the license plate type, and the license plate number. The inspector shall be required to confirm the entries before proceeding to the next screen. The vehicle information is no longer eligible to be stored in the RECALL.DAT file once the analyzer has moved to the next screen.

The analyzer must display an error message that says "INVALID GVW – PLEASE CORRECT" and prevent the inspector from proceeding to the next prompt when

- the previously entered vehicle type is set to "passenger car/station wagon" and the GVW is strictly greater than 8,500 pounds; and

- the inspector confirms the entries.

The analyzer must not proceed to the next prompt until the inspector either:

- enters a value for the GVW that is less than or equal to 8,500 pounds for the "passenger car/station wagon" vehicle type; or

- enters a vehicle type other than "passenger car/station wagon".

The analyzer must display the previously entered GVW on the screen where the inspector corrects this entry and return to this prompt when the new GVW value has been entered. The re-entry method must be approved by TCEQ prior to certification testing.

<u>Emissions Inspection Selection Prompt Confirmation</u>

Once the entries have been confirmed by the inspector, the analyzer must reapply the emissions inspection selection logic in Section 3.3.4b: *Emissions Inspection Selection Logic* if:

- the inspector made changes to the GVW entry, the model-year entry, and the fuel type entry on or prior to this screen; or

- the emissions inspection logic was not applied previously due to a transition from the reinspection sequence to the initial inspection sequence.

3.3.19a Vehicle Lookup Table Display

This screen must only appear if the analyzer does not find a match to the vehicle information entered by the inspector in the TXVRT.DAT file. The analyzer must display the following message or a similarly worded message that conveys the same information: **"An exact match for the vehicle under test was not found in the Vehicle Lookup Table!"** The analyzer must allow the inspector to return to the screen in Section 3.3.19: *Confirm Vehicle Info Display* and edit the vehicle information as appropriate. The analyzer may display Vehicle lookup table records that have the same make name, model name and model-year entered by the inspector.

NOTE: This screen does not apply to safety only inspections or safety only reinspections.

3.3.19b Update Inspection Record

Programming Criteria:

Once the inspector has inserted the probe into the tailpipe and pressed "enter/continue", the analyzer must update the inspection record and store a "J" in the ABORT field. If the inspection sequence is not exited properly, the analyzer must be able to send the inspection record containing a "J" in the ABORT field for the affected inspection to the VID during the next communications session. If the inspection is aborted properly after "J" has been stored, the analyzer must replace the "J" in the ABORT field with an "A" and include the entered abort code.

If the emissions phase of the inspection is not aborted after "J" has been stored, the analyzer must replace the "J" in the ABORT field with a blank/space.

3.3.19c OBD Hookup

The analyzer must prompt the inspector to conduct an OBD inspection on:

- all gasoline-powered vehicles whose model-year is equal to or newer than the vehicle model-year contained in the OBDII_MODEL_YEAR field of the SYSTEM.DAT file; and

- all diesel-powered vehicles whose model-year is equal to or newer than the vehicle model-year contained in the DSL_OBD_MODEL_YEAR field of the SYSTEM.DAT file and whose entered GVW is less than or equal to the weight contained in the DSL_OBD_MAX_GVW field of the same file.

The analyzer must automatically search for vehicle-specific emissions inspection parameters in the TXVRT.DAT file when an OBD inspection is conducted. If these inspection parameters are not located in the TXVRT.DAT file, the analyzer must use the default parameters in the SYSTEM.DAT file. Unless otherwise stated, the analyzer must compare vehicle make, model, and model-year in matching records with the vehicle being inspected.

3.3.19d OBD Connector Prompt

TURN THE CAR OFF (I.E., PUT KEY IN "OFF/LOCK" POSITION)

LOCATE THE VEHICLE'S OBD DIAGNOSTIC LINK CONNECTOR.

ATTACH THE OBD II PORT TO THE VEHICLE CONNECTOR.

LEAVE CAR OFF FOR 12 SECONDS WITH CONNECTOR ATTACHED.

PRESS CONTINUE.

Programming Criteria:

The analyzer must have the ability to assist the inspector with locating the vehicle's OBD connector using an OBD connector look-up table.

If the previously entered GVW for the vehicle under inspection is strictly greater than 8,500 pounds, then the analyzer must display a yellow or orange colored warning indicator that states "**Heavy-Duty OBD II Sequence**" and provide an option on this screen that allows the inspector to indicate that the vehicle's "Connector Can Not Be Located".

This option must not be presented for any vehicle whose previously entered GVW is less than or equal to 8,500 pounds.

If the inspector selects "Connector Could Not Be Located" on this screen and the analyzer cannot establish communications with the vehicle on the first attempt under Section 3.3.19h: *OBD Connection Prompt*, then the analyzer must skip Section 3.3.19i: *OBD Connection Not Confirmed Prompt* and continue as if the inspector has selected choice number 2 from Section 3.3.19j: *OBD No Connection Reason Prompt*.

3.3.19e OBD Key On, Engine Off Prompt

TURN THE IGNITION KEY TO THE 'ON' POSITION, BUT DON'T START THE ENGINE. LOCATE THE MIL (MALFUNCTION INDICATOR LIGHT) ON THE DASHBOARD.

DID THE MIL TURN ON? Note: MIL may stay on continuously or go out after only a few seconds. (CHOOSE THE CORRECT SENTENCE)

YES, the MIL did come on.
No, the MIL did NOT come on at all.

The malfunction indicator light (mil) will either display "service engine soon", "check engine", the word "check" along with the international engine symbol, or some combination of these depending on the vehicle make.

<u>Programming Criteria:</u>

If the vehicle was identified as a "keyless ignition vehicle" in Section 3.3.15a: *Keyless Ignition Prompt*, the analyzer must:

- not display this prompt;
- enter a "K" in the OBD2_MIL_CHECK field; and
- proceed to the next prompt.

Otherwise, the analyzer must prompt the inspector to perform a key-on, engine-off check to see if the MIL properly illuminates. The analyzer must prompt the inspector to enter a No if the MIL does not properly illuminate. The analyzer software must be designed so that the inspector can use the arrow keys to highlight his choice and press "enter/continue" to select the appropriate sentence. The analyzer software must not have a default entry for this screen. The inspector must be required press the arrow key at least once, followed by the "enter/continue" key.

The help message for this screen must contain the following text: **"The Malfunction Indicator Light (MIL) is the official term for the warning light that is illuminated by the vehicle's OBD system when a malfunction occurs. Depending on the vehicle make, the MIL will either display 'Service Engine Soon', 'Check Engine', the word 'Check' along with the international engine symbol, or some combination of these. The MIL must come on when the ignition key is turned to the "key on, engine off" position. This is to allow inspectors to check that the MIL is capable of illuminating if a malfunction were to occur. On most vehicles, the MIL will stay illuminated as long as the key is in the position. However, on some vehicles, the MIL will illuminate very briefly when the key is turned to the "key on, engine off" position and then go out."**

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OBD2_MIL_CHECK**

3.3.19f OBD Engine Running Prompt

START THE ENGINE AND ALLOW IT TO IDLE FOR AT LEAST 20 SECONDS. (I.E., PUT KEY IN "RUN" POSITION)

PRESS CONTINUE.

Programming Criteria:

The analyzer must require the inspector to confirm that the vehicle is started and idling by pressing the "enter/continue" key. The analyzer may attempt to establish communications while displaying this prompt.

3.3.19g OBD Key On, Engine Running Prompt

DID THE MIL TURN OFF? (CHOOSE THE CORRECT SENTENCE)

Yes, the MIL turned off, or never came on.
No, the MIL stayed on.

Programming Criteria:

The analyzer must prompt the inspector to perform a key on, engine running check to see if the MIL illuminates while the engine is running. The analyzer must store an "N" if the inspector indicates that the MIL stayed illuminated or a "Y" if inspector indicates that the MIL turned off or never illuminated. The analyzer software must be designed so that the inspector can use the arrow keys to highlight his choice and press "enter/continue" to select the appropriate sentence. The analyzer software must not have a default entry for this screen. The inspector must be required to press the arrow key at least once followed by the "enter/continue" key. The analyzer may attempt to establish communications while displaying this prompt.

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OBD2_MIL_ON_RUN**

3.3.19h OBD Connection Prompt

COMMUNICATION IN PROGRESS, PLEASE WAIT.

Programming Criteria:

The analyzer must display this message while attempting to establish communications with the vehicle's OBD computer.

If the inspector has pressed continue and connection cannot be confirmed, the analyzer must proceed to Section 3.3.19i: *OBD Connection Non Confirmed Prompt*. If the inspector has pressed continue and connection is confirmed, the analyzer must store the OBD communication protocol in the COMM_PROT field of the inspection record and proceed to Section 3.3.19k: *OBD Malfunction Indicator Light Status Check*. If the connection is confirmed using a wireless OBD connector, the analyzer will store a "W" in the WIRELESS_OBD field of the inspection record.

Associated System File:	**VEHICLE.DAT**	**COMM_PROT** **WIRELESS_OBD**

3.3.19i OBD Connection Not Confirmed Prompt

THE OBD II CONNECTION CANNOT BE CONFIRMED –CHOOSE THE NEXT ACTION

1. TRY AGAIN

2. DO NOT TRY AGAIN

Programming Criteria:

The analyzer must default is to "try again".

If the inspector selects "try again", the analyzer must attempt to gain a confirmed OBD connection. The analyzer must allow the inspector unlimited attempts to gain a confirmed OBD connection.

If the inspector selects "do not try again", then the analyzer must proceed to Section 3.3.19j: *OBD No Connection Reason Prompt*.

3.3.19j OBD No Connection Reason Prompt

THE OBD II CONNECTION CANNOT BE CONFIRMED –CHOOSE THE NEXT ACTION

1. BACK TO PREVIOUS SCREEN

2. CONNECTOR CANNOT BE LOCATED

3. CONNECTOR IS MISSING, DAMAGED, OR TAMPERED.

4. **CONNECTOR IS OBSTRUCTED OR INACCESSIBLE AND CONNECTION IS NOT POSSIBLE.**

5. **COMMUNICATION FAILED, AND OBD II PORT IS ATTACHED TO CONNECTOR.**

Programming Criteria:

The analyzer must default is to phrase number "1".

If the inspector selects phrase number "1", the analyzer must return to Section 3.3.19i: *OBD Connection Not Confirmed Prompt*.

OBD Non Communication Transition Not Allowed

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N" and inspector selects phrase number "2", "3", "4", or "5", then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field indicating the status of the connector; and

2) proceed directly to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt*.

OBD Non Communication Transition Allowed

The following instructions apply to vehicles that receive an OBD inspection, fail to communicate through the OBD connector, and are allowed to transition to an ASM or TSI inspection, which is permitted when the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "Y".

If the inspector selects phrase number "2", then the analyzer must:

1) store a "L" in the OBD2_DLC_RES field indicating the connector cannot be located; and,

2) proceed directly to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number "3", then the analyzer must:

1) store a "D" in the OBD2_DLC_RES field indicating the connector is missing, damaged, or tampered; and,

2) proceed directly to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number "4", then the analyzer must:

1) store an "I" in the OBD2_DLC_RES field indicating an inaccessible connector; and,

2) proceed directly to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number "5" and an "N" is stored in either the OBD2_MIL_CHECK or the OBD2_MIL_ON_RUN field, then the analyzer must:

1) store a "N" in the OBD2_DLC_RES field indicating it failed to establish communication with the vehicle; and,

2) proceed directly to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt*.

NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection when the vehicle fails either of the bulb check questions and communications cannot be established.

If the inspector selects phrase number "5" and a "Y" is stored in both the OBD2_MIL_CHECK and the OBD2_MIL_ON_RUN fields, then the analyzer must:

1) store a "N" in the OBD2_DLC_RES field indicating it failed to establish communication with the vehicle; and,

2) proceed directly to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt* if the vehicle is a gasoline-powered heavy-duty vehicle or proceed to step 4.c. of this section if the vehicle is diesel-powered;

3) initiate an auto-zero and a HC hang-up in preparation for an emissions inspection for all gasoline powered vehicles and continue with steps 4.a., 4.b. and skip step 4.c. before proceeding to step 5 of this section,

4) a. abort the inspection, set the ABORT field to "A" and the ABORT_CODE field to "07" if the analyzer determines that emissions inspection lockouts such as dynamometer calibration or bench calibration and leak checks are needed, or

   b. abort the inspection, set the ABORT field to "A" and the ABORT_CODE field to "81", and display the following message if the analyzer is an OBD-only analyzer:

      SINCE THE VEHICLE DID NOT COMMUNICATE THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. PLEASE REFER THE MOTORIST TO A FULL-SERVICE STATION WITH ASM TESTING, AND DO NOT CHARGE THE CUSTOMER.

      Press Any Key to Return to the Main Menu.

   c. If the vehicle is diesel-powered, the analyzer will transition to the safety only inspection with no gas cap inspection in either the live testing period or beta period by proceeding directly to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt*, then to the end of the inspection. This transition is allowed when the DSL_OBD_BETA_DFLT field is set to "S" and the DSL_OBD_TESTING field is set to "Y" during beta, or the

DSL_NON_CMM_2_SAFE field is set to "Y" and the DSL_OBD_TESTING field is set to "Y" during the live testing period.

When the transition is allowed during the beta period, the analyzer must abort the inspection, store the collected OBD data, an A in the ABORT field, "82", in the ABORT_CODE field in the inspection record and display a message indicating, **"The Safety and Emissions Inspection will end here because this vehicle cannot be tested through the OBD connector. Please conduct a Safety Only Inspection on this vehicle. Press any key to return to the Main Menu."** Upon pressing any key, the analyzer must return to the main menu.

When the transition is allowed during the live testing period, the analyzer must store the collected OBD data in the inspection record, jump to the end of the inspection by proceeding to Section 3.3.24g: *End of Phase Logic* and only using the value of the SAFE_PF_FLAG field to set the OVERALL_RESULTS field and changing the EMISS_TEST_TYPE field from "1" to "4". The outcome of the OBD phase will not be used as criteria to determine if the vehicle passes or fails.

When the transition is not allowed during the live testing period, the analyzer must fail the vehicle due to no communications during the OBD phase and proceed directly to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt*, then to the end of the inspection because gas cap inspections are not required for diesel vehicles.

5) If the analyzer has not already obtained the status of the drive axle as a part of this inspection, then the analyzer must obtain this information by displaying the prompt in Section 3.3.16a: *Drive Axle Prompt* and obtain whether the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control prior to conducting the tailpipe emissions inspection.

6) a. Proceed directly to Section 3.3.19p: *ASM Emission Inspection Sequence* and perform the ASM emissions inspection when the NON_COMM_2_TAILPIPE and ASM_TESTING fields are set to "Y" during the live testing period; or

   b. proceed directly to Section 3.3.20: *Preconditioned TSI Inspection Procedure* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control during the live testing period; or

   c. proceed directly to Section 3.3.20: *Preconditioned TSI Inspection Procedure* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the ASM_TESTING field is set to "N" during the live testing period.

7) Convert the emissions inspection type from OBD to either ASM or TSI when the transition is allowed and print the special message (shown below), instead of OBD Print Message 11, which indicates that the vehicle's OBD system could not be checked due to unsuccessful communications.

Special Message:

Due to the inability of your vehicle to communicate with the OBD connector, your vehicle received an ASM or TSI test. The vehicle manufacturer's warranty covers the OBD device for the first 8 years or 80,000 miles of vehicle use. You will likely be required to pass the OBD test next year, and should have the vehicle examined by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

If the test date is less than the date contained in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, the analyzer must:

1) place a "L", "D", "I", or "N", in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place a blank in the OBD2_PF_FLAG field of the VEHICLE.DAT file;

3) print "FAIL" in the OBD section of the VIR;

4) print a message on the same page as the Public Awareness Statement indicating that the OBD failure is "Advisory Only" and that the vehicle's OBD system could not be checked due to: unsuccessful communications if the OBD2_DLC_RES field is set to "N", or a missing, damaged, or tampered connector if the OBD2_DLC_RES field is set to "D", the connector could not be located if the OBD2_DLC_RES field is set to "L", or an inaccessible connector if the OBD2_DLC_RES field is set to "I"; and,

5) proceed directly to Section 3.3.20: *Preconditioned TSI Inspection Procedure*.

Failure of the OBD portion of the inspection WILL NOT result in an overall inspection failure.

If the test date is equal to or greater than the date in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "Y", and the inspector selected phrase number "5" in Section 3.3.19j: *OBD No Connection Reason Prompt*, the analyzer will:

1) place an "N" in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place an "F" in the OBD2_PF_FLAG field (and later to the OVERALL_RESULTS field) of the VEHICLE.DAT file;

3) print the special message (shown below) instead of OBD Print Message 11 on the same page as the Public Awareness Statement which indicates that the vehicle's OBD system could not be checked due to unsuccessful communications;

Special Message:

Due to the inability of your vehicle to communicate with the OBD connector, your vehicle received an ASM or TSI test. The vehicle manufacturer's warranty covers the OBD device for the first 8 years or 80,000 miles of vehicle use. You will likely be required to pass the OBD test next year, and should have the vehicle examined

by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

4) not conduct an OBD inspection; and

5) proceed either to Section 3.3.19p: *ASM Emissions Inspection Sequence* and perform the ASM emissions inspection, or to Section 3.3.20: *Preconditioned TSI Inspection Procedure* and perform a preconditioned TSI inspection if the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control.

The failure of the resulting emissions inspection instead of the OBD portion of the inspection WILL result in an overall inspection failure.

If the test date is equal to or greater than the date in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, and the inspector did not select "Back to Previous Screen" or phrase number "5" in Section 3.3.19j: *OBD No Connection Reason Prompt*, the analyzer must:

1) place a "L", "D", or "I" in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place an "F" in the OBD2_PF_FLAG field (and later to the OVERALL_RESULTS field) of the VEHICLE.DAT file;

3) print "FAIL" in the OBD portion and the overall inspection result section of the VIR;

4) print a message on the same page as the Public Awareness Statement indicating that the vehicle's OBD system could not be checked due to: a missing, damaged, or tampered connector if the OBD2_DLC_RES field is set to "D", an unlocated connector if the OBD2_DLC_RES field is set to "L", or an inaccessible connector if the OBD2_DLC_RES field is set to "I"; and,

5) proceed to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt* and no tailpipe emissions inspection will be conducted.

The failure of the OBD portion of the inspection WILL result in an overall inspection failure.

Associated System File:	**VEHICLE.DAT**	**OBD2_DLC_RES**
		OBD2_PF_FLAG
		OVERALL_RESULTS

3.3.19k OBD Malfunction Indicator Light Status Check

Programming Criteria:

The analyzer will evaluate the MIL status based on the data returned via the OBD link from the vehicle's OBD system. The status of the MIL illumination will be recorded in the OBD2_MIL_STATUS field of the inspection record. If the vehicle was identified as a hybrid, the analyzer does not have to require the engine to be running as a condition of the OBD inspection. The analyzer must store an "H" in the RPM_BYPASS field of the inspection record.

If the MIL status of "not commanded on" is returned while the engine running, the analyzer must:

1) store a "P" in the OBD2_MIL_STATUS field; and

2) proceed to Section 3.3.19l: *OBD Readiness Evaluation*.

If the MIL status returned is "commanded on" with the engine running, the analyzer must:

1) store an "F" in the OBD2_MIL_STATUS field; and

2) proceed to Section 3.3.19l: *OBD Readiness Evaluation*.

3.3.19l OBD Readiness Evaluation

Programming Criteria:

The analyzer must collect the status of the readiness monitors from the vehicle's OBD system. If the vehicle has multiple engine control modules (ECMs), the analyzer must provide the summary of results all the readiness monitors received from the vehicle as the status of the readiness monitors.

At a minimum, the analyzer must collect the status of the following list of continuous and non-continuous readiness monitors:

- Misfire (continuous)
- Fuel system (continuous)
- Comprehensive component (continuous)
- Catalyst (non-continuous)
- Heated catalyst (non-continuous)
- Evaporative system (non-continuous)
- Secondary air system (non-continuous)
- Air conditioning system (non-continuous)
- Oxygen sensor (non-continuous)
- Oxygen sensor heater (non-continuous)
- EGR system (non-continuous) (for MY2007 and newer, EGR and/or VVT system)

For each readiness monitor in the inspection record, the analyzer must store a:

- "0" when the retrieved status is not supported or equivalent;
- "1" when the status is complete or equivalent; or
- "2" when the status is not complete.

The analyzer must determine the number of non-continuous monitors set to not complete.

If the value specified in the SYSTEM.DAT file for a particular readiness monitor is set to "Y", the status of the readiness monitor must be used for the overall readiness determination. If the value specified for a readiness monitor in the SYSTEM.DAT file is set to "N", the status of the readiness monitor must be ignored by the analyzer and not used for the overall readiness determination.

The OBD2_READY_RES field is determined by the following criteria. The vehicle must fail the OBD inspection when the number of non-continuous readiness monitors set to "not ready" exceeds the maximum number of non-continuous readiness monitors allowed to be set to "not ready". The maximum number of non-continuous readiness monitors allowed is found:

- in the MAX_NOT_READY_NUM field of the SYSTEM.DAT file when the NTRDY_FL is set to "N" or space;

- in the MAX_NUM_NOT_READY field of the TXVRT.DAT file when the NTRDY_FL field is set to "Y" and a vehicle match is not found in the TXVRT.DAT file for the vehicle under inspection; or

- in either the MAX_NOT_READY_NUM or the MAX_NTRDY_B_NUM field of the SYSTEM.DAT file when the NTRDY_FL field is set to "Y" and a vehicle match is not found in the TXVRT.DAT file for the vehicle under inspection

The status of continuous readiness monitors will be collected and stored in the inspection record, but not used as criteria for setting the OBD2_READY_RES field.

The analyzer must use the applicable model-year values contained in the MAX_NT_RDY_BGN_YR, MAX_NT_RDY_END_YR, MAX_NTRDY_B_BGN_YR, and MAX_NTRDY_B_END_YR fields of the SYSTEM.DAT file when the NTRDY_FL is set to "Y" and the maximum number of non-continuous readiness monitors allowed is not retrieved from the TXVRT.DAT file. The value in the MAX_NUM_NOT_READY field must be used with the model-years in the MAX_NT_RDY_BGN_YR and MAX_NT_RDY_END_YR fields, and the value in the MAX_NTRDY_B_NUM field must be used with the model-years in the MAX_NTRDY_B_BGN_YR and MAX_NTRDY_B_END_YR field.

For example, the analyzer must apply a maximum of two non-continuous monitors to vehicles whose model-year is 1996 through 2000, inclusively, and a maximum of one non-continuous monitor to vehicles whose model-year is 2001 and newer when the MAX_NUM_NOT_READY, MAX_NT_RDY_BGN_YR, MAX_NT_RDY_END_YR, MAX_NTRDY_B_NUM, MAX_NTRDY_B_BGN_YR, and MAX_NTRDY_B_END_YR fields are set to "2", "1996", "2000", "1", "2001", "9999", respectively. These fields will allow the analyzer to apply two maximums to two different model-year ranges.

If the number of non-continuous readiness monitors retrieved from the vehicle with a status of "not ready" is less than or equal to the maximum number of non-continuous readiness monitors allowed, then the analyzer must store a "P" in the OBD2_READY_RES field of the VEHICLE.DAT file. Otherwise, the analyzer must set the OBD2_READY_RES field to "F".

3.3.19m OBD Diagnostic Trouble Code Check

Programming Criteria:

1) The analyzer must send a request to the vehicle's on board computer for the stored emissions-related DTCs. The analyzer will repeat this cycle until the number of codes reported equals the number expected. Any codes listed in the OBD DTC table must be recorded on the inspection record and the text fault code description must be printed on the VIR.

2) If there are no DTCs, the analyzer must:

- store a "P" in both the OBD2_FAULT_CD_RES and OBD2_PF_FLAG fields and two zeros ("00") in the DTC_STORED field of the VEHICLE.DAT file;
- print "pass" in the OBD section of the VIR; and
- proceed to Section 3.3.19n: *OBD Inspection Evaluation and Messages Prompt*.

3) The analyzer must store an "F" in the OBD2_FAULT_CD_RES and OBD2_PF_FLAG fields and the first 10 DTCs that cause the MIL to be illuminated in the FAULT_CODES(DTCs) field of the VEHICLE.DAT file when one or more DTC is retrieved from the vehicle.

4) The analyzer must store the total number of stored DTCs (not pending DTCs) causing the MIL to illuminate in the DTC_STORED field of the VEHICLE.DAT file and proceed to the Section 3.3.19n: *OBD Inspection Evaluation and Messages*.

3.3.19n OBD Inspection Evaluation and Messages

Programming Criteria:

The result of the OBD inspection will be determined as follows:

- OBD2_MIL_CHECK is a manual entry
- OBD2_MIL_ON_RUN is a manual entry
- OBD2_DLC_RES is an automatic entry unless there is no communication between the vehicle and the analyzer
- OBD2_MIL_STATUS is an automatic entry
- OBD2_READY_RES is a field populated automatically.
- OBD2_FAULT_CD_RES depends if there are any stored DTCs causing the MIL to illuminate.

Rejecting OBD Inspections Due to No Communication During the Live Testing Period

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "R", the test date is greater than the date contained in the OBDII_FAIL_ST_DT field, and the inspector selects phrase number "5" when communications could not be established, then the analyzer must:

1) store an "N", as appropriate, in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the remaining OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN;

4) not print the corresponding appropriate OBD message (either “10” or “11”);

5) print the following language, “**The On Board Diagnostic test could not be completed because the analyzer did not communicate with the vehicle’s On Board Computer.**”;

6) abort the inspection, set the ABORT field to “A” and the ABORT_CODE field to “83”, print “**abort code – 83**” on the VIR as the abort reason, and display the following message:

   SINCE THE VEHICLE DID NOT COMMUNICATE THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. DO NOT CHARGE THE CUSTOMER.

   Press Any Key to Return to the Main Menu.

7) proceed directly to the main menu, print the VIR using the aborted inspection format, and treat this aborted inspection in the same way that abort code “07 - analyzer problem” is treated.

   NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection and ends in an aborted inspection condition, when communications cannot be established.

<u>Allowing OBD Inspection Transitions Due to No Communication During the Live Testing Period</u>

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to “Y”, the test date is greater than the date contained in the OBDII_FAIL_ST_DT, an “N” is stored in either the OBD2_MIL_CHECK or the OBD2_MIL_ON_RUN field, and the inspector selects phrase number “5” when communications could not be established, then the analyzer must:

1) store an “N”, in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an “F” in the OBD2_PF_FLAG field,

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN; and

4) Print OBD message “10” or “11”, as appropriate, and proceed directly to the Section 3.3.19o: *OBD Engine Stop Prompt*.

   NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection, when the vehicle fails either of the bulb check questions, and communications cannot be established.

<u>OBD Inspection Failure Due to No Communication During the Live Testing Period</u>

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N", the test date is greater than the date contained in the OBDII_FAIL_ST_DT, and the inspector selects phrase number "2", "3", "4", or "5" when communications could not be established, then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN; and

4) print OBD message "10" or "11", as appropriate, and proceed directly to the Section 3.3.19o: *OBD Engine Stop Prompt* in order to prevent the vehicle from receiving an ASM or TSI inspection when communications cannot be established.

<u>OBD Inspection with No Communication During the Beta Testing Period</u>

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N", the test date is less than the date contained in the OBD II_FAIL_ST_DT, and the inspector selects phrase number "2", "3", "4", or "5", then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field indicating the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN;

4) print OBD message "3" or "4", as appropriate; and

5) a. proceed directly to Section 3.3.19o: *OBD Engine Stop Prompt*, if the OBD_BETA_DFLT field is set to "S" and the FUEL_TYPE field is set to "G" or "B"; or

b. proceed directly to Section 3.3.20: *Preconditioned TSI Inspection Procedure*, if the OBD_BETA_DFLT field is set to "T", the FUEL_TYPE field is set to "G" or "B", and the analyzer is equipped to conduct TSI inspections; or

c. proceed directly to Section 3.3.19o: *OBD Engine Stop Prompt*, if the DSL_OBD_BETA_DFLT field is set to "S" and FUEL_TYPE is set to "D"; or

d. proceed directly to Section 3.3.19o: *OBD Engine Stop Prompt*, if the OBD_BETA_DFLT field is set to "T", the FUEL_TYPE field is set to "G" or "B", and the analyzer is not equipped to conduct TSI inspections.

<u>OBD Inspection with Not Ready Condition During the Beta Testing Period</u>

If the vehicle is deemed "not ready" and the date of the inspection is less than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, the analyzer must default to the TSI inspection when the OBD_BETA_DFLT field is set to "T", the TSI_TESTING field is set to "Y", the analyzer is equipped to conduct TSI inspections, and the vehicle fails the OBD inspection. Upon completion of the TSI inspection, the analyzer must proceed to the gas cap inspection and only use the results of the TSI inspection, the safety phase and the gas cap phase to determine if the vehicle passes or fails the inspection. The analyzer must default to the safety inspection when the OBD_BETA_DFLT field is set to "S" and the vehicle fails the OBD inspection. The analyzer must proceed to the gas cap inspection and only use the results from the safety phase and the gas cap phase to determine if the vehicles passes or fails the inspection.

<u>OBD Inspection Failure due to MIL on and Fault Codes During the Live Testing Period</u>

If the MIL is commanded on with fault codes present and the date of the inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, the analyzer must fail the vehicle, even if the vehicle is deemed "not ready."

The following cases assume that the "not ready" status of the vehicle is the only failing criterion.

<u>OBD Inspection Transition with Not Ready Condition During the Live Testing Period</u>

If the vehicle is deemed "not ready," the date of inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, and an "E" is present in the NOT_RDY_TO_ASM field of the TXVRT.DAT file, the analyzer must:

1) store an "F" in the OBD2_READY_RES field indicating vehicle deemed "not ready";

2) initiate an auto-zero and a HC hang-up in preparation for an emissions inspection for all gasoline powered vehicles, however, for all diesel powered vehicles, do not perform the auto-zero or the HC hang-up and proceed to step 3.c. of this section;

3) a. abort the inspection if the analyzer determines that emissions inspection lockouts, such as dynamometer or bench calibration and leak checks, are needed by setting the ABORT field to "A", and the ABORT_CODE field to "81"; or

   b. abort the inspection if the analyzer is an OBD-only emissions analyzer, "Reject" the vehicle, store an "A" in the ABORT field, an "81" in the ABORT_CODE

field, and a space in the OVERALL_RESULTS field of the inspection record, and display the following message;

SINCE THE VEHICLE IS KNOWN TO HAVE READINESS MONITOR ISSUES, AND IS NOT READY TO BE INSPECTED THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. PLEASE REFER THE MOTORIST TO A FULL-SERVICE STATION WITH ASM TESTING, AND DO NOT CHARGE THE CUSTOMER.

Press Any Key to Return to the Main Menu.

NOTE: Leaving the OVERALL_RESULTS field blank will indicate that this inspection is a "no-test" and will not count as an initial inspection or reinspection.

c. If the vehicle is diesel-powered, the analyzer will not transition to an ASM or TSI emissions inspection. Instead, the analyzer must only transition to the safety only inspection with no gas cap inspection in either the live testing period or beta period. This transition is allowed when the DSL_OBD_BETA_DFLT field is set to "S" and the DSL_OBD_TESTING field is set to "Y" during beta, or the DSL_NON_CMM_2_SAFE and DSL_OBD_TESTING fields are set to "Y" during the live testing period. After the transition, the outcome of the OBD phase will not be used to as criteria to determine if the vehicle passes or fails the inspection.

4) If the analyzer has not already obtained the status of the drive axle as a part of this inspection, then the analyzer must obtain this information by displaying the prompt in Section 3.3.16a: *Drive Axle Prompt* and obtain whether the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control prior to conducting the tailpipe emissions inspection.

5) Store the results of the OBD inspection in the following fields: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_READY_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_PF_FLAG.

6) Print the special message (shown below), instead of OBD Print Message "12", on the same page as the Public Awareness Statement; and,

Special Message:

Since this vehicle is known to have difficulties setting the readiness monitors to "ready," and more than 2 monitors are set to "not ready," your vehicle received an ASM or TSI test. You will likely be required to pass the OBD test next year, and should have the vehicle examined by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

7) a. Proceed directly to Section 3.3.19p: *ASM Emission Inspection Sequence* and perform the ASM emissions inspection when the NON_COMM_2_TAILPIPE and ASM_TESTING fields are set to "Y" during the live testing period; or

b. proceed directly to Section 3.3.20: *Preconditioned TSI Inspection Procedure* and perform the preconditioned TSI inspection when the

NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control during the live testing period; or

c. proceed directly to Section 3.3.20: *Preconditioned TSI Inspection Procedure* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the ASM_TESTING field is set to "N" during the live testing period.

8) Convert the emissions inspection type from OBD to either ASM or TSI when the transition is allowed by changing the value of the EMISS_TEST_TYPE field from "1" to "3" for ASM or from "1" to "2" for TSI.

<u>OBD Inspection Failure Due to a Not Ready Condition During the Live Testing Period</u>

If the vehicle is deemed "not ready," the date of inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, and an "E" is **<u>NOT</u>** present in the NOT_RDY_TO_ASM field of the TXVRT.DAT file, the analyzer must:

- store an "F" in the OBD2_READY_RES field indicating that the vehicle has been deemed "not ready";
- complete the remaining entries to the following OBD2 fields: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_READY_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_PF_FLAG; and
- proceed to the criteria in this section under the following subheadings: *OBD Inspection Pass and Fail Criteria*, *OBD Inspection Pass and Fail Criteria for Vehicles Whose GVW Is Greater Than 8,500 Pounds*, *OBD Message Selection During the Beta Testing Period*, and *OBD Message Selection During the Live Testing Period*.

<u>OBD Inspection Pass and Fail Criteria</u>

The following fields of the VEHICLE.DAT file must contain a "P", "K", or "Y" in order to pass the OBD inspection sequence: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_READY_RES. The OBD2_FAULT_CD_RES field must be set to "F" if at least one of the DTCs retrieved from the vehicle's OBD system matches a value in the FAULT_CODE(DTC) field of the TXDTC.DAT file, and the corresponding FAIL_FLAG for the DTC match is set to "Y".

1) If the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields are set to "Y" or "K", the OBD2_DLC_RES and OBD2_READY_RES fields are set to "P", and **<u>either</u>** the OBD2_MIL_STATUS or OBD2_FAULT_CD_RES field is set to "P", then the analyzer must store a "P" in the OBD2_PF_FLAG field of the VEHICLE.DAT file and print a PASS in the OBD inspection result section on the VIR.

2) If the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field is set to "N", the OBD2_DLC_RES field is set to "D", "I", or "L", the OBD2_READY_RES field is set to "F", or **<u>both</u>** the OBD2_MIL_STATUS and OBD2_FAULT_CD_RES fields are set to "F", then the analyzer must store a "F" in the OBD2_PF_FLAG field of the VEHICLE.DAT file and print a FAIL in the OBD inspection result section on the VIR.

<u>OBD Inspection Pass and Fail Criteria for Vehicles Whose GVW Is Greater Than 8,500 Pounds</u>

The analyzer will apply the light-duty OBD requirements under the *OBD Inspection Pass and Fail Criteria*, if the OBDHDGAS field in the SYSTEM.DAT file is set to "Y" and either:

- the previously entered GVW for the vehicle under inspection is between 8,500 and 14,000 pounds and the previously entered model year is 2009 or newer, or
- the previously entered GVW for the vehicle under inspection is strictly greater than 14,000 pounds and the previously entered model year is 2013 or newer.

The analyzer will apply the light-duty OBD requirements under the *OBD Inspection Pass and Fail Criteria*, if the OBDHDGAS field in the SYSTEM.DAT file is set to "Z" and either:

- the previously entered GVW for the vehicle under inspection is between 8,501 and 14,000 pounds, inclusive, and the previously entered model year is 2009 or newer.

Otherwise, the analyzer must only collect the data from the vehicle's OBD system and not use the data in the pass/fail determination. The following fields of the VEHICLE.DAT file must contain a "Y", or "K", in order to pass the OBD inspection sequence: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN.

<u>OBD Message Selection During the Beta Testing Period</u>

If the model-year of the vehicle under inspection is equal to or greater than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file and the test date is prior to the PASS/FAIL (P/F) start date for OBD inspections in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, then OBD failures will not cause the vehicle to have an overall inspection failure. Motorist information messages must be printed on an advisory OBD VIR to be given to the motorist informing them of problems with their vehicle's OBD system. The failing or aborted advisory OBD VIR must be printed prior to the tailpipe VIR. The analyzer must proceed to perform a TSI emission inspection on failed or aborted OBD inspections during the advisory period.

NOTE: The Texas OBD advisory period starts when the OBD software is loaded on an analyzer and ends when the test date is equal to the value stored in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file. Currently, the start date of P/F OBD is May 1, 2002.

If the value in the following fields is other than blank, "Y", "K", or "P", then the following message(s) must be printed above the public awareness statement to inform the motorist of possible problems with their vehicle.

(i) If there is an "N" in the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field, then the following must be printed:

Based on the information received during the test, there may be a problem with your On-Board Diagnostic Computer Malfunction Indicator Light. Repairing any problems that exist will likely improve performance, fuel economy, and reduce pollution. This vehicle must have the On-Board Computer functioning properly to pass the vehicle inspection to register this vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (2)

(ii) If there is a "D" or an "N" in the OBD2_DLC_RES field, the following message must be printed above the public awareness statement indicating that the vehicle's OBD system could not be checked due to a missing, inaccessible, damaged, or tampered connector:

Based on the information gathered during an attempt to perform an On- Board Diagnostic test your vehicle has a missing, tampered, or broken Diagnostic Connector. This vehicle must have the On-Board Computer functioning properly to pass the vehicle inspection to register this vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (3)

(iii) If there is an "I" in the OBD2_DLC_RES field, the following message must be printed above the public awareness statement indicating that the vehicle's OBD system could not be checked due to inaccessible connector:

Based on the information gathered during an attempt to perform an On-Board Diagnostic test your vehicle has an inaccessible Diagnostic Connector. This vehicle must have the Diagnostic Connector accessible to allow the check of the On Board Diagnostic computer system on the vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (4)

(iv) If there is an "F" in the OBD2_READY_RES field of the VEHICLE.DAT file, the vehicle will be failed and the following message must be printed above the public awareness statement:

Based on the information obtained from the On-Board Computer in the vehicle, the system is not ready to make a determination regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be evaluated and the reinspection made next year. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

OBD PRINT MESSAGE (5)

(v) If there is an "F" stored in the OBD2_MIL_STATUS field, the following message must be printed:

Based on the results of the On-Board Diagnostic test, your vehicle indicates there is a failure that is causing higher than allowed pollution levels to be emitted into the atmosphere. The problem(s) causing the failure, when fixed, will increase performance, fuel economy, and reduce pollution. Repair of the failure(s) will be required to pass the OBD test next year. (Text subject to change)

OBD PRINT MESSAGE (6)

<u>OBD Message Selection During the Live Testing Period</u>

If the model-year of the vehicle being inspected is equal to or greater than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file and the test date is after the mandatory P/F start date as defined in the SYSTEM.DAT file, OBD inspection results will be used to evaluate the Overall PASS/FAIL result of the vehicle being inspected.

1) If the OBD2_PF_FLAG field is not "P" and:

   (i) If the result in the OBD2_DLC_RES field is an "L" (abort code 80) the following message must be printed above the public awareness statement:

   Based on the information gathered during an attempt to perform an On Board Diagnostic test your vehicle has a missing Diagnostic Connector, or a Diagnostic Connector that cannot be located by the inspector. This vehicle must have the On-Board Computer Diagnostic connector available to the inspector and functioning properly to pass the vehicle inspection. If you have questions regarding this test, ask the inspector who performed this test. (Text subject to change)

   OBD PRINT MESSAGE (10)

   (ii) If the result in the OBD2_DLC_RES field is a "D", an "I", or an "N", the following message must be printed above the public awareness statement:

   Based on the information gathered during an attempt to perform an On Board Diagnostic test your vehicle has a damaged or inaccessible Diagnostic Connector. This vehicle must have the On-Board Computer Diagnostic connector available to the inspector and functioning properly to pass the vehicle inspection. If you have questions regarding this test, ask the inspector who performed this test. (Text subject to change)

   OBD PRINT MESSAGE (11)

   (iii) If the result in the OBD2_READY_RES field is an "F", a "FAIL" must be printed in the OBD inspection results section of the VIR and the following message must be printed above the public awareness statement:

   Based on information obtained from the On-Board Computer in the vehicle, the system is not ready to make a determination regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be evaluated and the reinspection made which will allow this vehicle to be registered. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

   OBD PRINT MESSAGE (12)

2) If the value in the following fields is other than blank, "Y", "K", or "P", then the following message must be printed above the public awareness statement to inform the motorist of possible problems with their vehicle.

(i) If there is an "N" in the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field, the following must be printed above the public awareness statement:

Based on the information received during the test, there may be a problem with your On-Board Diagnostic Computer Malfunction Indicator Light. This vehicle must have the On-Board Computer system functioning properly to pass the vehicle inspection. (Text subject to change)

OBD PRINT MESSAGE (13)

(ii) If there is an "F" stored in the OBD2_MIL_STATUS field, the following message must be printed above the public awareness statement:

Based on information obtained from the On-Board Computer in the vehicle, the system has made a determination that there is a problem regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be reinspected. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

OBD PRINT MESSAGE (14)

3.3.19o OBD Engine Stop Prompt

SHUT OFF THE ENGINE

Programming Criteria:

The analyzer must prompt the inspector to turn off the engine, and proceed to Section 3.3.21: *Gas Cap Missing Prompt.*

3.3.19p ASM Emissions Inspection Sequence

Programming Criteria:

The analyzer will determine if the inspector is certified to conduct ASM inspections by confirming that a "Y" is present in the ASM_ESP, ASM_SNAP, or ASM_WW field that corresponds to the first two letters of the analyzer number. The fields to analyzer number associations are:

- ASM_ESP and analyzer numbers that begin with "ES";
- ASM_SNAP and analyzer numbers that begin with "JB" and "SE"; and
- ASM_WW and analyzer number that begin with "WW".

If the inspector is not certified to conduct ASM inspections on this type of analyzer, then the analyzer must display an error message indicating that the inspector is not "certified" to conduct ASM inspections on this type of analyzer and return to the main menu.

Once the inspector is confirmed, the analyzer will complete the ASM emissions inspection using the procedures in Appendix U: *ASM Inspection Procedures* and the standards and calculations

contained in Appendix S: *ASM Emissions Inspection Standards and Calculations*. Upon completion of an ASM emissions inspection, the analyzer must use the following logic to write the inspection record:

1) Set the EMISS_TEST_TYPE field to "3" for an ASM inspection. If there is no previous inspection for this vehicle or the EMISS_PF_FLAG field for this vehicle's previous inspection is "P", set the EMISS_INIT_TEST field to "I" for initial inspection. If the EMISS_PF_FLAG field for this vehicle's previous inspection is "F", set the EMISS_INIT_TEST field to "R". If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection, then the analyzer must set the SAFE_INIT_TEST field to "I". If the previous inspection was less than 16 days prior to this inspection, then the analyzer must set the SAFE_INIT_TEST field to "R".

2) Set the HC_PF_FLAG, CO_PF_FLAG, NO_PF_FLAG, and EMISS_PF_FLAG fields to "P" or "F", as appropriate.

3) Display the inspection results just prior to printing the rejection receipt or VIR and write the vehicle inspection record to the VEHICLE.DAT file if the entry for the EMISS_FP_FLAG field is a "P" or "F".

4) Set the RPM_BYPASS field to "B" if the inspector opted to "bypass" the RPM.

5) Set the DILUTION_PF_FLAG field to "F" if the excessive dilution causes the inspection sequence to end. Otherwise, set the DILUTION_PF_FLAG field to "P".

6) If the emissions inspection ends due to a "time out" condition, set the TIMEOUT_FLAG field to "Y". Otherwise, set the TIMEOUT_FLAG field to "N".

7) Automatically enter the following fields: VERSION, TEST_DATE, TEST_START_TIME, TEST_END_TIME, STATION_NUM, ANALYZER_NUMBER, INSPECTOR_NUM, COUNTY_CODE, DILUTION (Dilution Amount in percent, $CO + CO_2$).

8) The emissions readings used to make the pass/fail decision must be recorded in the inspection record of the SECXSEC.DAT file where applicable. This data must be purged from the analyzer when the data is transmitted to the VID.

9) The final results of the inspection go in the fields that begin with "PRI". If second chance inspections are conducted, the first chance inspection results are stored in the fields that begin with "ALT" and the second chance inspection results will be place in the "PRI" fields.

10) Proceed to Section 3.3.21: *Gas Cap Missing Prompt*.

<u>Associated System File:</u> **VEHICLE.DAT**

PRI_AVG_5015_CO	**PRI_AVG_5015_HC**	**PRI_AVG_5015_CO2**
PRI_AVG_5015_NO	**PRI_AVG_5015_O2**	**PRI_AVG_2525_CO**
PRI_AVG_2525_HC	**PRI_AVG_2525_NO**	**PRI_AVG_2525_CO2**
PRI_AVG_2525_O2	**ALT_AVG_5015_CO**	**ALT_AVG_5015_HC**
ALT_AVG_5015_NO	**ALT_AVG_5015_CO2**	**ALT_AVG_5015_O2**
ALT_AVG_2525_CO	**ALT_AVG_2525_HC**	**ALT_AVG_2525_NO**
ALT_AVG_2525_CO2	**ALT_AVG_2525_O2**	**PRI_AVG_2525_RPM**

PRI_AVG_5015_RPM	**ALT_AVG_2525_RPM**	**ALT_AVG_5015_RPM**
RPM_PF_FLAG	**HC_PF_FLAG**	**CO_PF_FLAG**
DILUTION_5015	**DILUTION_2525**	**HUMIDITY_CORR_5015**
DILUTION_PF_FLAG	**HUMIDITY_PF_FLAG**	**HUMIDITY_CORR_2525**
NO_PF_FLAG	**EMISS_PF_FLAG**	**TEST_TYPE**
TEST_WEIGHT	**EMISS_INIT_TEST**	**ASM_RESTART_COUNT**
TEST_DATE	**TEST_START_TIME**	**TEST_END_TIME**
STATION_NAME	**INSPECTOR_LNAME**	**INSPECTOR_FNAME**

3.3.20 Preconditioned TSI Inspection Procedure

Programming Criteria:

The analyzer will complete the TSI emissions inspection using the procedures in Appendix K: *TSI Emissions Inspection Procedures* and the standards contained in Appendix A: *TSI Emissions Standards*. Upon completion of a preconditioned TSI inspection, the analyzer must use the following logic to write the inspection record:

1) Set the EMISS_TEST_TYPE field to "2" for a TSI inspection. If there is no previous inspection for this vehicle or the EMISS_PF_FLAG field for this vehicle's previous inspection is "P", set the EMISS_INIT_TEST field to "I" for initial inspection. If the EMISS_PF_FLAG field for this vehicle's previous inspection is "F", set the EMISS_INIT_TEST field to "R". If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection, set the SAFE_INIT_TEST field to "I". If the previous inspection was less than or equal to 16 days prior to this inspection, then the analyzer must set the SAFE_INIT_TEST field to "R".

2) Set the HC_PF_FLAG, CO_PF_FLAG, and EMISS_PF_FLAG fields to "P" or "F", as appropriate.

3) Display the inspection results just prior to printing the rejection receipt or VIR, update the inspection record, replace the "J" in the ABORT field with a space or blank, and write the vehicle inspection record to the VEHICLE.DAT file if the entry for the EMISS_FP_FLAG field is a "P" or an "F".

4) Set the RPM_BYPASS field to "B" if the inspector opted to "bypass" the RPM.

5) If the excessive dilution causes the inspection sequence to end, set the DILUTION_PF_FLAG field to "F". Otherwise, set the DILUTION_PF_FLAG field to "P".

6) If the emissions inspection ends due to a "time out" condition, set the TIMEOUT_FLAG field to "Y". Otherwise, set the TIMEOUT_FLAG field to "N".

7) The analyzer must automatically enter the following fields: VERSION, TEST_DATE, TEST_START_TIME, TEST_END_TIME, STATION_NUM, ANALYZER_NUMBER, INSPECTOR_NUM, COUNTY_CODE, DILUTION (Dilution Amount in percent, $CO + CO_2$).

8) Proceed to Section 3.3.21: *Gas Cap Missing Prompt*.

Associated System File: **VEHICLE.DAT**

PRI_CURB_IDLE_CO	**PRI_CURB_IDLE_HC**	**PRI_CURB_IDLE_CO2**
PRI_CURB_IDLE_O2	**PRI_HIGH_SPEED_CO**	**PRI_HIGH_SPEED_HC**
PRI_HIGH_SPEED_CO2	**PRI_HIGH_SPEED_O2**	**ALT_CURB_IDLE_CO**
ALT_CURB_IDLE_HC	**ALT_CURB_IDLE_CO2**	**ALT_CURB_IDLE_O2**
ALT_HIGH_SPEED_CO	**ALT_HIGH_SPEED_HC**	**ALT_HIGH_SPEED_CO2**
ALT_HIGH_SPEED_O2	**PRI_HIGH_SPEED_RPM**	**PRI_CURB_IDLE_RPM**
RPM_BYPASS	**ALT_HIGH_SPEED_RPM**	**ALT_CURB_IDLE_RPM**
DILUTION	**DILUTION_PF_FLAG**	**HC_PF_FLAG**
CO_PF_FLAG	**EMISS_PF_FLAG**	**TEST_TYPE**
EMISS_INIT_TEST	**STATION_NAME**	
INSPECTOR_LNAME	**INSPECTOR_FNAME**	

3.3.21 Gas Cap Missing Prompt

IS THE GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

Gas cap inspections are not required on trailers, motorcycles, diesel powered vehicles, alternatively fueled vehicles, and gasoline powered vehicles whose model-year is either greater than the current calendar year minus two or 25 years old and older.

If inspector indicates the gas cap is missing, the analyzer must set the GAS_CAP_MISS field to “Y”, set the GAS_CAP_PF_FLAG_1 field to “F” for fail, and continue with Section 3.3.24b: *End of Phase Logic*. If the inspector selects “N”, continue with the next screen prompt.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_MISS**
GAS_CAP_PF_FLAG_1

3.3.22 Gas Cap Testable Prompt

IS THE GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable, the analyzer must set the GAS_CAP_PF_FLAG_1 field to “P” for pass, set the GAS_CAP_TESTABLE field to “N”, and continue with Section 3.2.24b: *End of Phase Logic*. If the inspector selects “Y”, continue with the next screen prompt.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_TESTABLE**
GAS_CAP_PF_FLAG_1

3.3.23 Gas Cap Connect Prompt

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.3.24 Gas Cap Results Prompt

ENTER THE RESULTS OF THE GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_1 field. The stored value must be either "P" or "F". If the result from the gas cap tester is "F", the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG_1**

3.3.24a Second Gas Cap Prompt

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria:

This prompt must not be displayed if the inspector has indicated that the gas cap is missing or not testable. The default for this screen must be to "N". The analyzer must only accept an entry of "Y" or "N" and the error message must be displayed if the inspector enters another character. If the inspector indicates that there is a second gas cap to be tested, the analyzer must proceed to Section 3.3.24c: *Second Gas Cap Missing Prompt*.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

3.3.24b End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_1 field is set to "P", then the analyzer must set the GAS_CAP_PF_FLAG field to "P". If the GAS_CAP_PF_FLAG_1 field is set to "F", then the analyzer must set the GAS_CAP_PF_FLAG field to "F".

For ASM and TSI inspections, if the EMISS_PF_FLAG and GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the EMISS_PF_FLAG and GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “F”.

For OBD inspections, if the OBD2_PF_FLAG, the EMISS_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the OBD2_PF_FLAG, the EMISS_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “F”.

Then, the analyzer must proceed to Section 3.3.25: *Emissions Test Fee Prompt*.

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG_1**
EMISS_PF_FLAG **OBD2_PF_FLAG**
GAS_CAP_PF_FLAG **OVERALL_RESULTS**

3.3.24c Second Gas Cap Missing Prompt

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

If inspector indicates the gas cap is missing, the analyzer must set the 2ND_GAS_CAP_MISS field to “Y”, set the GAS_CAP_PF_FLAG_2 field to “F”, and continue with Section 3.3.24g: *End of Phase Logic*. If the inspector selects “N”, continue with the next screen prompt.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_MISS**
GAS_CAP_PF_FLAG_2

3.3.24d Second Gas Cap Testable Prompt

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable, the analyzer must set the GAS_CAP_PF_FLAG_2 field to “P”, set the 2ND_GAS_CAP_TEST field to “N”, and continue with Section 3.3.24g: *End of Phase Logic*. If the inspector selects “Y”, continue with the next screen prompt.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_TEST**
GAS_CAP_PF_FLAG_2

3.3.24e Second Gas Cap Connect Prompt

REMOVE THE SECOND GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.3.24f Second Gas Cap Results Prompt

ENTER THE RESULTS OF THE SECOND GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_2 field. The stored value must be either "P" or "F". If the result from the gas cap tester is "F", the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG** **GAS_CAP_PF_FLAG_1** **GAS_CAP_PF_FLAG_2**

3.3.24g End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_2 and GAS_CAP_PF_FLAG_1 fields are set to "P", then the analyzer must set the GAS_CAP_PF_FLAG field to "P". If either the GAS_CAP_PF_FLAG_2 or the GAS_CAP_PF_FLAG_1 field is set to "F", then the analyzer must set the GAS_CAP_PF_FLAG field to "F".

For ASM and TSI inspections, if the EMISS_PF_FLAG and GAS_CAP_PF_FLAG fields are all set to "P", then the analyzer must set the OVERALL_RESULTS field to "P". If the EMISS_PF_FLAG and GAS_CAP_PF_FLAG fields are not all set to "P", then the analyzer must set the OVERALL_RESULTS field to "F".

For an OBD inspection, if the OBD2_PF_FLAG, the EMISS_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to "P", then the analyzer must set the OVERALL_RESULTS field to "P". If the OBD2_PF_FLAG, the EMISS_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to "P", then the analyzer must set the OVERALL_RESULTS field to "F".

The REG_FEE_CODE will be set to the same value as the SAFE_TEST_TYPE field when the SAFE_TEST_TYPE is set to “M”, “G”, “K”, “J”, “B”, “C”, or “H”. The analyzer must increment the TEST_REC_NUM by 1 and store this value in the inspection record.

Then, the analyzer must proceed to Section 3.3.25: *Emissions Test Fee Prompt*.

Associated System File: **VEHICLE.DAT**

GAS_CAP_PF_FLAG	**OBD2_PF_FLAG**
GAS_CAP_PF_FLAG_1	**EMISS_PF_FLAG**
GAS_CAP_PF_FLAG_2	**OVERALL_RESULTS**
TEST_REC_NUM	**REG_FEE_CODE**

3.3.25 Emissions Test Fee Prompt

ENTER THE COST FOR THE EMISSIONS INSPECTION, INCLUDING CENTS.

Programming Criteria:

The inspector shall enter the cost for the emissions inspection, exclusive of repair costs. The analyzer must sum the emissions test fee and the applicable emission-related repair costs to obtain the overall cost and store the value in the OVERALL_COST field. The analyzer must not accept a value greater than $99.99 for this entry. When the MAX_EMISS_FEE_FL is set to “Y”, the analyzer must not accept a value greater than the value in:

- the MAX_EMISS_ONLY_FEE field if the vehicle received an OBD inspection; or
- the MAX_EMISS_ONLY_FEE2 field if the vehicle received an ASM or TSI inspection.

The analyzer must display error message 1 when the inspector attempts to proceed without entering a value. The analyzer must display error message 2 when the inspector enters a value greater than $99.99. When the MAX_EMISS_FEE_FL is set to “Y”, the analyzer must display error message 3 if:

- the vehicle received an OBD inspection, and the inspector entered a value greater than the value in the MAX_EMISS_ONLY_FEE field for the county where the vehicle was inspected; or
- the vehicle received an ASM or TSI inspection, and the inspector entered a value greater than the value in the MAX_EMISS_ONLY_FEE2 field for the county where the vehicle was inspected.

The maximum emissions fee for message 3 will be the value in either the MAX_EMISS_ONLY_FEE or MAX_EMISS_ONLY_FEE2 field.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **MAXIMUM ENTRY $99.99 -- TRY AGAIN.**

3. MAXIMUM ENTRY <enter max_emiss_only_fee value here in $nn.nn format> -- TRY AGAIN.

Associated System File: **VEHICLE.DAT**

EMISS_INSP_COST **EMISS_PF_FLAG**
OVERALL_COST **REP_OVERALL_COST**

SYSTEM.DAT

MAX_EMISS_FEE_FL **MAX_EMISS_ONLY_FEE**
MAX_EMISS_ONLY_FEE2

3.3.25a Decal Number Prompt

ENTER THE INSPECTION DECAL NUMBER.

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will not display this prompt, and proceed to Section 3.3.27: *Print Vehicle Inspection Report*. If the SKIP_CERT_DECAL field is not set to "Y", then the analyzer must apply the following criteria.

If the OVERALL_RESULTS field is set to "F", then the analyzer will not display this prompt and proceed to Section 3.3.26: *Rejection Receipt*. If the OVERALL_RESULTS field is set to "P" and the inspection is a "required emissions only test (decal)", or a "remote sensing request (decal)", then the analyzer must prompt the inspector to input the safety inspection decal number, and proceed to Section 3.3.27: *Print Vehicle Inspection Report*. A minimum of six and maximum of nine characters are required for this field. When the decal number entered is not a sequential number to the last decal issued, a warning must be displayed, **"Decal number not in sequential order. Notify DPS if a decal is missing."** The enter key should allow the inspector to continue.

If the inspection is a "required emission only test (decal)", the analyzer must store an "H" in the SAFE_TEST_TYPE field of the inspection record. Otherwise, the analyzer must leave the SAFE_TEST_TYPE field blank.

The safety decal number consists of an alpha character followed by up to eight digits. The alpha character usually does not correspond to the alpha character contained in the SAFE_TEST_TYPE field. The decal numbers should be in sequential order. The warning should appear each time the inspector changes strips for the "emissions only test (decal)" inspection. For example, a strip of decals (type "H" tests) may end with V00000050, and the next strip of decals purchased by the shop owner may begin with V00001000. The strips contain 10 sequential emissions decals.

The analyzer must take the entered decal number, auto populate the entry with leading zeroes, compare it to the previous decal issued, and determine if the entered decal number is next in sequence. If the entered number is not next in sequence, the correction prompt must appear.

If the inspector enters fewer than nine characters, the analyzer must automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an "A" followed by a "123" must be converted to

"A00000123" and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character decal number entry. This nine-character value must be used during comparison testing to facilitate sequential issuance of decals. The first character of a decal number must be an alphabetic character. The only acceptable alpha character is "V" for all decals.

The analyzer must restrict the alpha character to a list of acceptable alpha characters for a particular type of decal being issued. The changes to the certificate types does not apply to the decals. The table of certificate types and the corresponding acceptable alpha characters is located in Appendix V: *Safety Certificate Format Table*.

For example, during an emissions only inspection or reinspection, if the inspector selects the "required emissions only test (decal)" from Section 3.3.2a: *Inspection Type Prompt* and the vehicle passes the inspection, the inspector may only enter a "V" as the alpha character in the decal number entry prompt.

Associated System File: **VEHICLE.DAT** **DECAL_NUM**
SAFE_TEST_TYPE

3.3.25b Decal Number Correction Prompt

INDICATE THE CONDITION OF THE PREVIOUS DECAL

U - UNACCOUNTED FOR
C - ENTERED DECAL IS CORRECT
R - RE-ENTER DECAL NUMBER

Programming Criteria:

This prompt must only appear if the entered decal is out of sequence with the previously issued decal number. The default for this screen must be "R" for re-enter decal number. The analyzer must only accept "U", "C", or "R", as valid entries. The analyzer must display the entered decal number, the safety inspection type (decal) and the previously issued decal number.

If "R" is entered, the analyzer must return to the previous screen prompt to re-enter the current decal. If "C" or "U" is selected, the analyzer must store the entry of either "C" or "U" in the DECAL_COND field of the inspection record and use the entered decal number as the new "previous" decal number for the next comparison. If the inspector selects "U", the analyzer must not allow any further official emissions inspections to be conducted until the inspector has "accounted for" the decals by completing the entries required in Section 3.12: *Missing, or Voided Certificates*.

If a manufacturer lockout is used, the inspector shall be able to easily identify the reason the analyzer is preventing subsequent official inspections. The inspector shall be able to easily identify which decal must be accounted for.

The analyzer must store the information in the VEHICLE.DAT file and print it on the weekly VI-8B. The void indicator must show "VOID" if "V" is in the DECAL_COND field or "MISS" if "M" is in the DECAL_COND field of the record created using the Missing or Voided Certificates function.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **DECAL_COND**

3.3.26 Rejection Receipt

EXPLAIN THE REJECTION FULLY.

Programming Criteria:

The analyzer must only display this prompt if the GAS_CAP_PF_FLAG is set to "F". The analyzer must prompt the inspector to explain the rejection fully, automatically enter value of the OVERALL_COST field as the fee paid, print the rejection receipt including the inspector's explanation, where applicable, and allow the inspector to print additional copies of the rejection receipt after the initial receipt has been printed. The printed rejection receipt must use Courier or Times New Roman font. A sample rejection receipt is located in Appendix E: *Rejection Receipt*.

The analyzer must allow the inspector to type the explanation from the keyboard prior to printing the rejection receipt. The typed explanation must appear on the printed rejection report.

If the vehicle fails either the ASM, TSI, or OBD emissions inspection or the gas cap integrity inspection, then the entry for this item must be displayed. If the vehicle fails the emissions and gas cap integrity inspections, then both entries must be displayed on the rejection receipt. The preferred order of appearance is the emissions inspection entry, followed by the gas cap integrity inspection entry. The rejection receipt must not display more than a maximum of five items.

After printing the rejection receipt, the analyzer must proceed to Section 3.3.26a: *Print Vehicle Repair Form*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OVERALL_COST**

3.3.26a Print Vehicle Repair Form

Programming Criteria:

If the EMISS_PF_FLAG flag is set to "F", then the analyzer must print a VRF. The analyzer must print the following vehicle information on the VRF: make, model, model-year, the VIN, license plate number, and odometer reading. A sample VRF is provided in Appendix O: *Sample Vehicle Repair Form*.

3.3.26b Display and Print Emissions Recall Notices and Technical Service Bulletins

If the analyzer received TSBs and/or emissions recall information during the VID contact and the inspector opted to view this information at the end of the test sequence, then the analyzer must display the TSBs and/or emissions recall information at this time.

If the vehicle failed the emissions inspection and TSBs and/or recall information was not printed previously, the analyzer must automatically print this information. If the vehicle passed the emissions inspection, or after the automatic printing has successfully completed, the analyzer must provide the following options:

- re-print this information;
- save this information to a predetermined file; or
- continue to the next prompt.

If the inspector elects to save this information, the new TSBs or emission recall information must overwrite the oldest TSB or emissions recall information in the analyzer.

3.3.26c Print Public Awareness Statement

The public awareness statement must be printed only once. The analyzer must print the "passing" public awareness statement if the vehicle passes the emissions phase of the inspection or the "failing" public awareness statement if the vehicle fails the emissions phase of the inspection.

All OBD VIR messages (advisory and mandatory) must be printed above the public awareness statement on the same page.

3.3.26d Print AirCheckTexas Application

The AirCheckTexas application, formerly referred to as the LIRAP application, has two versions: a version used in the Austin area and a separate version used in the Dallas-Fort Worth and Houston-Galveston areas. The analyzer must determine which version to print based on the county code setting under the audit menu.

The analyzer must print:

- the Austin version of the AircheckTexas Repair and Retirement Assistance Program Application when the county code setting under audit menu is "227", "246", 166", "144", "105", "027" or "27_", "016" or "16_", "014" or "14_", or "011" or "11_", for Travis, Williamson, Milam, Lee, Hays, Burnet, Blanco, Bell, or Bastrop Counties, respectively; or
- the Dallas-Fort Worth and Houston-Galveston version of the AircheckTexas Repair and Retirement Assistance Program Application on the second page of Appendix W: *AirCheckTexas Repair and Retirement Assistance Program Application* for all remaining counties.

The printed application must include the telephone numbers listed in the LIRAP_NUM_A, and LIRAP_NUM_B fields of the SYSTEM.DAT file.

The analyzer must print the AircheckTexas Repair and Retirement Assistance Program Application when:

- the PRINT_LIRAP_APP field is set to "A", the EMISS_PF_FLAG field is set to "F" or "P", and the model-year of the vehicle is 10 years old or older; or

- the PRINT_LIRAP_APP field is set to "A", the EMISS_PF_FLAG field is set to "F", and the model-year of the vehicle is 9 years old or younger; or

- the PRINT_LIRAP_APP field is set to "Y" and the EMISS_PF_FLAG field is set to "F".

Associated System File:	**SYSTEM.DAT**	**PRINT_LIRAP_APP** **LIRAP_NUM_A** **LIRAP_NUM_B**

3.3.27 Print Vehicle Inspection Report

After the analyzer has stored the inspection record in the VEHICLE.DAT file, the following prompt must be displayed: **"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."**

Depending upon the pass/fail status of the emissions phase of the inspection, the analyzer will provide additional information to the customer as outlined in Appendix B: *Vehicle Inspection Reports*. The report must include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (TSI, ASM, OBD), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, Vehicle License Plate Number, VIN, Vehicle Make, Vehicle Model-Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation, where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the inspection, Dilution Amount (in percent, $CO + CO_2$), Dilution Results (Pass or Fail), the results of the gas cap integrity inspection, and the overall result of the inspection. The vehicle's ignition type must be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report must indicate that the inspection was a Required Emission Only Decal Inspection or an Emission Only Inspection, and whether or not the inspection was conducted as a special test. If the inspection was conducted as a special test, the two letter designation of "LI", "ME", "IV", "AD", "ST", "PA", or "OT" must be placed on the same line as the Test Type separated by at least two spaces or a slash and the words "Special Test" must be in the subtitle. The analyzer must print two copies of the VIR and allow the inspector to print additional copies after the initial reports have been printed.

If the inspection ends because of a time out or dilution condition, the emission standards, amounts, and results must not be printed on the report. The report must indicate that the vehicle has failed because of excessive dilution, if applicable. If the inspection should "time out" then the report must indicate that the vehicle failed because the inspection was not

completed in the time allowed for completion of the inspection. After the inspection has been completed, the analyzer must contact the VID and transmit all applicable vehicle information.

If the vehicle fails the OBD emissions inspection, the report must include the following phrase, **"Your vehicle's computerized self-diagnostic system (OBD) registered the fault(s) listed above. This fault (s) is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem."**

If the inspection ends in an aborted condition, the VIR must indicate that the inspection was aborted in the overall results block and display the reason for the abort. If the inspector selects "other" as the reason for the abort, the analyzer must either print the reason entered by the inspector on the VIR or provide space for a handwritten reason if the inspector chooses not to use the keyboard to enter the abort reason.

If the emissions phase of the inspection is aborted or ends due to a timeout condition, the analyzer must print dashes on the VIR for the pass/fail indicators and the readings. The analyzer must print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO_2, and O_2, where applicable.

The analyzer must print two bar codes on the VIR which contain the VIN, license plate number, and license plate type of the vehicle under inspection. The bar code must be code 39 format, contain the previously mentioned information, and include the start and stop characters.

One bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"$"
License Plate Type	1	2	"1", "2", "3", "4", "5", "6", "7", or "8"
License Plate Number	8	3	Alphanumeric
TxDMV Number	10	11	Alphanumeric

The other bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"I"
VIN	17	2	Alphanumeric

Each bar code must be clearly labeled, so that the inspectors can easily identify each bar code type. The location of the bar codes on the VIR must be determined by the manufacturers.

<u>Printing OBD Message 20</u>

The analyzer must print OBD message 20 when:

- the STNDS field of the SYSTEM.DAT file is set to “C” or “D”; and

- the PRINT_LIRAP_APP field is set to “Y” or “A”; and

- either the vehicle model-year is 10 years old or older and passes or fails the emissions inspection, or the vehicle model-year is 9 years old or newer and fails the emissions inspection.

OBD message 20 must be printed:

- on a separate page when a 1995 and older vehicle passes or fails an emissions inspection, or when a 1996 and newer vehicle that is at least 10 years old passes an emissions inspection;

- at the top of the Evaluation of OBD Test Results page when the vehicle fails the OBD inspection; or

- at the top of the extra page that prints when a vehicle transitions from an OBD inspection and fails the ASM or TSI inspection.

<u>Printing 10-year Old Vehicle Message</u>

The analyzer must print a 10-year old vehicle message at the top of the VIR when the STNDS field of the SYSTEM.DAT file is set to:

- “B” or;

- “C” and the PRINT_LIRAP_APP field is set to “Y” or “A”.

If the model-year of the vehicle is 10 years old or older, then the analyzer must print OBD message 22 from the VIRMSGS.DAT file. If the model-year of the vehicle is less 10 years old, then the analyzer must print OBD message 23 from the VIRMSGS.DAT file.

The analyzer must print an authorization code on the VIR for vehicles that pass the inspection or fail the inspection, but are issued a waiver number. The analyzer must print “N/A” instead of the authorization code where:

- the vehicle fails the inspection;

- the vehicle fails the inspection and is not issued a waiver number;

- the inspection is aborted resulting in a failing condition; or

- the inspection is aborted resulting in a no final outcome condition (aborted records should not result in a passing outcome).

The algorithm for the authorization code is available from the TCEQ upon request.

The analyzer must print the vehicle certificate type (VIR code) on the VIR for vehicles that pass the inspection. The certificate type codes that must be printed on the VIR are included in Appendix V: *Safety Certificate Format Table*. The analyzer will match the value of the

REG_FEE_CODE to a value in the REG_FEE_CODE column of the safety certificate format table to identify the appropriate VIR code. The analyzer will print N/A for the VIR code for vehicles that fail the inspection. The VIR printed for vehicles that pass the inspection must use a font size acceptable to the TCEQ (e.g., minimum of 12 point for Times New Roman) for selected elements on the VIR, including the test date and time, the certificate type, the vehicle's model year, license plate number, and VIN, the station number, analyzer number, and overall inspection result. The VIR codes, SOEO and CWEO, will not be printed on the VIR, will not be assigned a corresponding REG_FEE_CODE value, but are included in Appendix V for informational purposes only.

The analyzer must print the text, "Show report for Texas vehicle registration" in all capital letters in the top left hand corner of the VIR when:

- the HB2305CHG field in the SYSTEM.DAT file is set to "B" or "C"; and
- either the vehicle:
  - passes the inspection; or
  - is issued a waiver number, regardless of the pass or fail inspection result.

Since the SAFE_TEST_TYPE cannot be set to "G" or "K" during this sequence, the analyzer will not be required to print the following sentence "I have performed an annual inspection of the above noted vehicle, which is accurate, complete, and in accordance with the inspection criteria set forth in 49 Code of Federal Regulations, Chapter 396.17 through 396.21."

The analyzer must print the text "I certify that I have properly performed the emissions test according to state regulations and procedures manuals, and as the undersigned duly appointed inspection, hereby certify that I have physically examined the manufacturer's vehicle identification number of the motor vehicle described above." This text replaces the text regarding test performance currently being printed on the VIR.

The analyzer must print the TEST_REC_NUM on the VIR next to the fuel type value or analyzer software version.

Error Message: **NO VALUES ENTERED -- TRY AGAIN.**

Associated System File:	**VEHICLE.DAT**	**EMISS_INSP_COST** **CERT_NUM** **OVERALL_RESULTS**

3.3.28 VID Contact

The analyzer must contact the VID and transmit the completed inspection record for this inspection and any other records from previous inspections that have not been sent to the VID. Upon completion of this contact, the analyzer must return to the main menu.

The analyzer must increment the no contact counter, which tracks the number of inspections conducted without successfully contacting the VID, by one when the following bits are not set in the RESPONSE.DAT file during the communication sessions:

bit 48 - Command completed successfully (status specific to “transmit VIN/License Plate data” command); and

bit 80 - Command completed successfully (status specific to “Transmit test record(s)” command).

The no contact counter must only increment by one for each inspection completed with either response bit 48 or response bit 80 not being set.

The following bits may also be set when response bits 48 and 80 are not set. These bits provide probable explanations to why response bits 48 and 80 were not set.

8 - Invalid password (token file error)
9 - Invalid LOCKOUT.DAT file
10 - Invalid TAS telephone number
11 - Invalid station number
12 - Invalid TAS number
13 - Invalid software version number
14 - Invalid VID phone number
15 - Invalid communications port base address
16 - Invalid communications port interrupt
17 - Communication port error
18 - Dialing error
19 - No dial tone
20 - Phone line busy
21 - No answer
22 - Voice answered
23 - Security logon (to VID) failure

The no contact counter must not be incremented for any aborted inspections.

3.4 Main Menu Selection “4 Reinspection”

3.4.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to “B” or “C”. The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer’s monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses “enter/continue”. The analyzer must then return to the main menu.

Error Messages: 1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**

2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.4.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages: 1. **YOUR PIN IS NOT VALID--TRY AGAIN.**

2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.4.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.4.2a VID Contact Prompt

WAS THE PREVIOUS INSPECTION A SAFETY ONLY INSPECTION (NO EMISSIONS AT ALL)? (Y OR N)

Programming Criteria:

The analyzer must only accept an entry of “Y” or “N”. If the inspector indicates that the previous inspection was a Safety Only Inspection, then the analyzer must search locally for a VIN and/or license plate number match and not call the VID. If the inspector indicates that the previous inspection was not a Safety Only Inspection, the analyzer must call the VID. The analyzer must set the default for this screen to “N” for no.

The analyzer must prompt the inspector to enter the license plate number and VIN.

3.4.2b VIN Verification Prompt

YOU ARE RESPONSIBLE FOR VERIFYING THAT THIS IS THE VIN FROM THE VEHICLE.

BY PRESSING CONTINUE, YOU ARE VERIFYING THAT THIS VIN, <<<display the entered VIN here>>>, MATCHES THE VIN ON THE VEHICLE UNDER INSPECTION.

Programming Criteria:

The analyzer will display this prompt when the HB2305CHG field in the SYSTEM.DAT file is set to “A”, “B”, or “C” and the VIN has been successfully entered using either the keyboard or bar code scanner (i.e., bar code from the vehicle, a vehicle inspection report, or the TxDMV sticker). The VIN will be displayed using a large font.

Associated System File: **VEHICLE.DAT**

REG_VIN	**VIN**

3.4.2c VID Contact

The analyzer must contact the VID, retrieve all applicable vehicle information, and enter the information into the appropriate fields.

An inspection must be stopped and the analyzer must return to the main menu if the following response bits are set in the RESPONSE.DAT file received from the VID:

56 - Inspector License expired
57 - Inspector license suspended/revoked
58 - Inspector not authorized to test at this station
60 - TAS is locked out for at least one of the reasons included within "Lockout Status Record" data file

Upon completion of VID contact, the analyzer must:

- indicate that announcements, TSBs, and emissions recall information were transmitted by the VID;
- not display announcements until the end of the inspection;
- display a message after the end of the inspection indicating that: "**Subsequent inspections cannot be conducted until the announcement is successfully printed.**";
- display and automatically print a copy of the announcement immediately after main menu selection "1" through "4" is selected for the next inspection; and
- provide the option of displaying the TSBs, and/or emissions recall information either immediately or later in the current inspection.

The analyzer must provide the option to print, delete, and save announcements, TSBs, and emissions recall information to a predetermined file. New announcements, TSBs, and/or emissions recall information saved must overwrite the oldest information. The analyzer must not continue with the inspection until the announcements, TSBs, or recall information is successfully printed.

3.4.3 Display and Select Reinspection Record

Programming Criteria:

The analyzer must prompt the inspector to enter the license plate number and VIN, contact the VID, and display the record that meets the search criteria. The license plate number and VIN entry must meet the same requirements as described in Section 3.1.4a: *Optional Bar Code Entry of the Texas Registration Expiration Date, Registration County, Vehicle Identification Number (VIN), License Plate Type, and License Plate Number Prompt* through Section 3.1.8: *VIN Prompt* if the inspector selects that the previous inspection was not a safety only inspection.

If the analyzer cannot contact the VID, then, the analyzer must either search the analyzer's local files and display the record that meets the search criteria or display the license plate number and VIN of most recent 17 days worth of records currently contained in the VEHICLE.DAT file and prompt the inspector to select the desired record.

If the analyzer cannot obtain a previous inspection record from either contacting the VID or searching the files contained on the analyzer, the analyzer must:

1) prompt the inspector to enter the type of reinspection (i.e., Safety and Emissions, Safety Only, or Emissions Only);

2) prompt the inspector to enter the applicable vehicle information; and

3) set the SAFE_INIT_TEST field to "I" upon inspection completion, and set the EMISS_INIT_TEST field to "R" if an emissions inspection is conducted,

Otherwise, the analyzer must display vehicle information for verification by the inspector. The following prompt must be displayed, **"IS THIS THE CORRECT VEHICLE? ENTER "Y" FOR YES OR "N" FOR NO."** If the inspector enters an "N" indicating that the vehicle record selected is incorrect, the analyzer must display a prompt instructing the inspector to select another record. If the inspector enters a "Y" indicating that the vehicle record selected is correct, the following prompt must be displayed, **"IS THIS VEHICLE INFORMATION CORRECT? ENTER "Y" FOR YES OR "N" FOR NO."** If any of the displayed information is incorrect, the analyzer must display a prompt instructing the inspector to correct the vehicle information and press "enter/continue" when ready.

The analyzer must not allow the inspector to edit the VIN or license plate number. The analyzer must display a prompt directing the inspector to update odometer reading, and the drive axle value. The analyzer must not display a default value for the drive axle, and require the inspector to make a new entry (i.e., prevent the inspector from confirming a default value from a previous inspection record). The vehicle information is no longer eligible to be stored in the RECALL.DAT file once the analyzer has moved to the next screen.

A prompt will be displayed for the inspector to enter the GVW. No default entry must be displayed. The analyzer must allow the inspector to see and edit the GVW as it is being entered. If the GVW_2TIMES is not set to "G", the analyzer will accept the entry of the GVW value as entered using the keyboard on the first attempt. If the GVW_2TIMES is set to "G", the analyzer will require the inspector to use a double blind approach to successfully enter the GVW value as listed in the following description. When the GVW has been entered, the analyzer must prompt the inspector to press "enter/continue". Then, the analyzer will clear the GVW entry window and require the inspector to enter the GVW again. The two attempts must match. If the two attempts do not match, the analyzer must display Message 4, prompt the inspector to re-enter the GVW starting again with the first attempt. The inspector shall be required to re-enter the GVW using the keyboard until two matching GVW entry attempts have been made. When the GVW value has been entered, the analyzer must complete the requirements in the following description.

The analyzer must display an error message that says **"INVALID GVW – PLEASE CORRECT"** and prevent the inspector from proceeding to the next prompt when

- the previously entered vehicle type is set to "passenger car/station wagon" and the GVW is strictly greater than 8,500 pounds; and

- the inspector confirms the entries.

The analyzer must not proceed to the next prompt until the inspector either:

- enters a value for the GVW that is less than or equal to 8,500 pounds for the "passenger car/station wagon" vehicle type; or

- enters a vehicle type other than "passenger car/station wagon".

The analyzer must display the previously entered GVW on the screen where the inspector corrects this entry and return to this prompt when the new GVW value has been entered. The re-entry method must be approved by TCEQ prior to certification testing.

Emissions Inspection Selection Prompt Confirmation

Once the entries have been confirmed by the inspector, the analyzer must reply the emissions inspection selection logic described in Section 3.1.5b: *Emissions Inspection Selection Logic* if:

- the inspector made changes to the GVW entry, the model-year entry, or the fuel type entry on or prior to this screen; or

- the emissions inspection logic was not applied previously due to a transition from the initial inspection sequence to the reinspection sequence.

The analyzer will then begin the emissions inspection as described in Section 3.1.23b: *OBD Hookup* and continue until the completion of the inspection and gas cap integrity inspection.

After the vehicle information is confirmed, the analyzer must perform the emissions inspection and inspection type that the vehicle received during the initial inspection. However, if the vehicle was deemed "not ready" and received an ASM or TSI emissions inspection on the initial inspection, the vehicle must receive the OBD inspection on the reinspection. If the vehicle passes the OBD inspection, the vehicle must pass the emissions phase of the inspection. If the vehicle fails or is "not ready," then the vehicle will receive the ASM or TSI inspection and pass the emissions phase if the vehicle passes the ASM or TSI inspection.

The EMISS_TEST_TYPE field of the previous record indicates which emissions inspection the vehicle was performed initially, and the TEST_TYPE field can be used to indicate the previous inspection type.

Safety Only Reinspections

If the TEST_TYPE field contains an "H" - "Safety Only Inspection", the analyzer must conduct a "Safety Only Inspection" using the screen prompts from Section 3.2: *Main Menu Selection "2 Safety Only Inspection"*. The analyzer will determine if the vehicle is eligible for a reinspection by using the value contained in the SAFE_INIT_TEST field of the target record. The target record is the inspection record of the most recent previous inspection of

this type (i.e., Safety Only Inspection). If the target record was created from conducting an initial inspection, an "I" will be stored in the SAFE_INIT_TEST field. If the target record was created from conducting a reinspection, an "R" will be stored in the SAFE_INIT_TEST field.

If the vehicle has had an initial inspection at this station within the last 16 days (i.e., the SAFE_INIT_TEST is set to "I" in the previous inspection, the station number of the previous inspection station matches the number of the station conducting the current inspection, and the date of this inspection is within the last 16 days of the inspection date contained in the previous inspection record), then, the vehicle is eligible for a reinspection.

If the vehicle is not eligible for a reinspection, the analyzer must:

1) display a message indicating why the vehicle is not eligible for a "reinspection" (i.e., a reinspection has already been conducted on this vehicle), and prompt the inspector to inform the customer that they will be charged for this inspection;

2) save the vehicle information, possibly in the RECALL.DAT file for use in the initial inspection mode;

3) either transfer operation to the initial inspection mode for a safety only inspection as described in Section 3.2: *Main Menu Selection "2 Safety Only Inspection"* or cease the reinspection operation, prompt the inspector that this inspection must be conducted in the initial inspection mode; and

4) input the necessary vehicle information from the inspection record of the previous inspection once the analyzer is in the initial inspection mode.

If the reinspection is conducted on the same day (Day 1) or before the sixteenth day following the day of the initial inspection (Day 17), the analyzer must:

1) only allow the inspector to enter values in the fields that failed during the previous inspection;

2) administer the gas cap integrity inspection if the GAS_CAP_PF_FLAG was set to "F" (fail) during the previous inspection;

3) display the safety repair cost prompt only if a "B", "D", "G", "I", "K", "M", "Q", "T", "V", "X", or "Z" (repaired) is entered in an available field; and

4) display the safety test fee prompt if the station number is different from the station number of the previous inspection, if applicable.

If the reinspection is conducted on the seventeenth day (Day 17), the analyzer must:

1) conduct a complete safety only inspection requiring new entries in all fields;

2) administer the gas cap integrity inspection if the GAS_CAP_PF_FLAG was set to "F" for fail during the previous inspection; and

3) display the safety test fee prompt.

In each case, the inspection will be stored as a new record in the VEHICLE.DAT file.

Emissions Only Reinspections

If the TEST_TYPE field contains a "C" for "Test on Resale", "I" for "Voluntary Emissions Test", "O" for "Required Emissions Only Test (Decal)", or "B" for "Remote Sensing Request (Decal)", the analyzer must conduct an "Emissions Only Inspection" using the screen prompts in Section 3.3: *Main Menu Selection "3 Emissions Only Inspection"*. The analyzer will determine if the vehicle is eligible for a reinspection by using the value contained in the SAFE_INIT_TEST field of the target record. The target record is the inspection record of the most recent previous inspection of this type. If the target record was created from conducting an initial inspection, an "I" will be stored in the SAFE_INIT_TEST field. If the target record was created from conducting a reinspection, an "R" will be stored in the SAFE_INIT_TEST field.

If the vehicle has had an initial inspection at this station within the last 16 days (i.e., the SAFE_INIT_TEST is set to "I" in the previous inspection, the station number of the previous inspection station matches the number of the station conducting the current inspection, and the date of this inspection is within the last 16 days of the inspection date contained in the previous inspection record), then, the vehicle is eligible for a reinspection.

If the vehicle is not eligible for a reinspection, the analyzer must:

1) display a message indicating why the vehicle is not eligible for a "reinspection", and prompt the inspector to inform the customer that they will be charged for this inspection;

2) save the vehicle information, possibly in the RECALL.DAT file for use in the initial inspection mode;

3) either transfer operation to the initial inspection mode for an emissions only inspection as described in Section 3.3: *Main Menu Selection "3 Emissions Only Inspection"* or continue in the reinspection mode if the inspector is prompted to enter repair information about this vehicle; and

4) input the necessary vehicle information from the inspection record of the previous inspection once the analyzer is in the initial inspection mode.

If the reinspection is conducted on the same day (Day 1) or before the sixteenth day following the day of the initial inspection (Day 17), the analyzer must:

1) administer the appropriate emissions inspection if the EMISS_PF_FLAG field was set to "F" for fail, "T" for time out failure, or "D" for dilution failure during the previous inspection;

2) administer the gas cap integrity inspection if the GAS_CAP_PF_FLAG field was set to "F" during the previous inspection;

3) obtain the repair information requested in Section 3.4.6: *Emissions Reinspection Repairs* immediately prior to conducting the appropriate emissions inspection if the EMISS_PF_FLAG field is set to "F" in the target record, if applicable; and

4) display the emissions test fee prompt only if the station number is different from the station number of the previous inspection, if applicable.

If the reinspection is conducted on the seventeenth day (Day 17), the analyzer must:

1) conduct the complete emissions only inspection sequence;

2) obtain the repair information requested in Section 3.4.6: *Emissions Reinspection Repairs* immediately prior to conducting the appropriate emissions inspection if the EMISS_PF_FLAG field is set to "F" in the target record, if applicable; and

3) display the emission test fee prompt.

Safety and Emissions Reinspections

If the TEST_TYPE field contains an "A", the analyzer must conduct a "Safety and Emissions Inspection" using the screen prompts in Section 3.1: *Main Menu Selection "1 Safety and Emissions Inspection"*. The analyzer will determine if the vehicle is eligible for a reinspection by using the value contained in the SAFE_INIT_TEST field of the target record. The target record is the inspection record of the most recent previous inspection of this type. If the target record was created from conducting an initial inspection, an "I" will be stored in the SAFE_INIT_TEST field. If the target record was created from conducting a reinspection, an "R" will be stored in the SAFE_INIT_TEST field.

If the vehicle has had an initial inspection at this station within the last 16 days (i.e., the SAFE_INIT_TEST is set to "I" in the previous inspection, the station number of the previous inspection station matches the number of the station conducting the current inspection, and the date of this inspection is within the last 16 days of the inspection date contained in the previous inspection record), then, the vehicle is eligible for a reinspection.

If the vehicle is not eligible for a reinspection, the analyzer must:

1) display a message indicating why the vehicle is not eligible for a "reinspection" (i.e., a reinspection has already been conducted on this vehicle), and prompt the inspector to inform the customer that they will be charged for this inspection;

2) save the vehicle information, possibly in the RECALL.DAT file for use in the initial inspection mode;

3) either transfer operation to the initial inspection mode for a safety and emissions inspection as described in Section 3.1: *Main Menu Selection "1 Safety and Emissions Inspection"* or continue in the reinspection mode if the inspector is prompted to enter repair information about this vehicle; and

4) input the necessary vehicle information from the inspection record of the previous inspection once the analyzer is in the initial inspection mode.

If the reinspection is conducted on the same day (Day 1) or before the sixteenth day following the day of the initial inspection (Day 17), the analyzer must:

1) only allow the inspector to enter values in the fields that failed during the previous inspection, if applicable;

2) display the safety repair cost prompt only if a “B”, “D”, “G”, “I”, “K”, “M”, “Q”, “T”, “V”, “X”, or “Z” (repaired) is entered in an available field during the reinspection, if applicable;

3) obtain the repair information requested in Section 3.4.6: *OBD Hookup* immediately prior to conducting the appropriate emissions inspection if the EMISS_PF_FLAG field is set to “F” in the target record, if applicable; and

4) administer the appropriate emissions inspection if the EMISS_PF_FLAG was set to “F” for fail, “T” for time out failure, or “D” for dilution failure during the previous inspection;

5) administer the gas cap integrity inspection if the GAS_CAP_PF_FLAG was set to “F” for fail during the previous inspection; and

6) display the emission test fee prompt and the safety test fee prompt only if the station number is different from the station number of the previous inspection, if applicable.

If the reinspection is conducted on the seventeenth day (Day 17), the analyzer must:

1) conduct the complete safety and emission inspection sequence as described in Section 3.1: *Main Menu Selection “1 Safety and Emissions Inspection”*;

2) display the safety test fee prompt;

3) obtain the repair information requested in Section 3.4.6: *OBD Hookup* immediately prior to conducting the appropriate emissions inspection if the EMISS_PF_FLAG field is set to “F” in the target record, if applicable; and

4) display the emissions test fee prompt.

In all the aforementioned cases, the analyzer must prevent this vehicle from receiving a subsequent reinspection based on this record, if the vehicle passes and is issued a certificate.

3.4.3a Vehicle Lookup Table Display

This screen must only appear if the analyzer does not find a match to the vehicle information entered by the inspector in the TXVRT.DAT file. The analyzer must display the following message or a similarly worded message that conveys the same information: **“An exact match for the vehicle under test was not found in the Vehicle Lookup Table!”** The analyzer must allow the inspector to return to the confirm vehicle information display screen as described in Section 3.1.20a: *Confirm Vehicle Info Display* and edit the vehicle information as appropriate. The analyzer may display vehicle lookup table records that have the same make name, model name and model-year entered by the inspector.

NOTE: This screen does not apply to safety only inspections or safety only reinspections.

3.4.3b Mud Flaps and Safety Guard Prompt 1

IS THE VEHICLE EQUIPPED WITH 4 OR MORE TIRES ON THE REARMOST AXLE?

'N' - NO, the vehicle has less than 4 tires on the rearmost axle.
'Y' - YES, the vehicle has 4 or more tires on the rearmost axle.

Programming Criteria:

The analyzer must be defaulted to "N". If the inspector selects "N", proceed to Section 3.4.4: *Safety Inspection Items* and do NOT display the Mud Flaps and Safety Guards as an item of inspection. If the inspector selects "Y", then proceed to Section 3.4.3c.

The answers to the mud flap questions in Sections 3.4.3b: *Mud Flaps and Safety Guard Prompt 1* and Section 3.1.20d: *Mud Flaps and Safety Guard Prompt 2* will not be stored in the inspection records. These answers will be used to determine if the Mud Flaps and Safety Guard safety items should be displayed for safety item sequences 1, 4, 6, 8, and 9. These answers will not affect safety item sequences 2, 3, 5, and 7. The lists of safety item sequences are contained in Appendix R: *Safety Item Sequence Lists*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.4.3c Mud Flaps and Safety Guard Prompt 2

IS THE VEHICLE A TRUCK TRACTOR, MOTORHOME, BUS, OR POLE TRAILER?

'N' - NO, the vehicle is NOT a truck tractor, motorhome, bus, or pole trailer.
'Y' - YES, the vehicle IS a truck tractor, motorhome, bus, or pole trailer.
'R' - Return to previous screen.

Programming Criteria:

The analyzer must be defaulted to "N". If the inspector selected "Motorhome" or "Bus" as the vehicle type during the initial inspection, then the analyzer must be defaulted to "Y". The inspector shall be allowed to return to the previous screen and edit the previous answer.

If the inspector selects "N", then display the Mud Flaps and Safety Guards as an item of inspection. If the inspector selects "Y", then do not display the Mud Flaps and Safety Guards as an item of inspection.

Proceed to Section 3.4.4: *Safety Inspection Items*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.4.4 Safety Inspection Items

This prompt must not appear if the reinspection is being conducted on the same day as the initial inspection (Day1) or before the sixteenth day following the day of the initial inspection (Day 17) and the SAFETY_PF_FLAG was set to "P" during the initial inspection.

The lists of safety item sequences are contained in Appendix R: *Safety Item Sequence Lists*. The analyzer must display the appropriate item list choices based on entries made or confirmed by the inspector. The analyzer will require the inspector to enter the status of the safety item in the order it appears in the list. The acceptable entries are "P", for pass, "F", for fail, and "R" for repaired. The letter "N" for N/A is not an acceptable entry, however, a value of "N" in the safety item field may occur in an inspection record that is received from the VID during a reprint VIR function.

If the inspector selects "F" or "R" for any safety item in the list, a subset list of failure reasons must be displayed and the inspector shall highlight and select the failure reason or the entry that allows the inspector to return to the previous screen entry of "F" or "R" to edit this selection. The default for this display must be to the "return to previous screen" selection. The analyzer must automatically enter the appropriate alpha character based on the selections made by the inspector.

If the vehicle type = "P", and the SAFE_TEST_TYPE = "A - 1 year windshield - TSI" or "L - 1 year windshield - OBD" or "M - 1 year windshield - ASM" or "N - 1 year windshield - OBD/TSI", then the analyzer must display safety item sequence #1.

If the vehicle type = "P", and the SAFE_TEST_TYPE = "G - FMCSR (TRUCK)", then the analyzer must display safety item sequence #8.

If the vehicle type = "P", and the SAFE_TEST_TYPE = "J - 1 year windshield", then the analyzer must display safety item sequence #1.

If the vehicle type = "P", and the SAFE_TEST_TYPE = "B - 2 year windshield", then the analyzer must display safety item sequence #1.

If the vehicle type = "B", and the SAFE_TEST_TYPE = "A - 1 year windshield - TSI" or "L - 1 year windshield - OBD" or "M - 1 year windshield - ASM" or "N - 1 year windshield - OBD/TSI", then the analyzer must display safety item sequence #3.

If the vehicle type = "B", and the SAFE_TEST_TYPE = "G - FMCSR (TRUCK)", then the analyzer must display the titles of safety item sequence #7, and safety item sequence #8, allow the inspector to use the arrow keys to highlight and select the appropriate safety item sequence by pressing "enter/continue".

If the vehicle type = "B", and the SAFE_TEST_TYPE = "J - 1 year windshield", then the analyzer must display safety item sequence #3

If the vehicle type = "T", the SAFE_TEST_TYPE = "A - 1 year windshield - TSI" or "L - 1 year windshield - OBD" or "M - 1 year windshield - ASM" or "N - 1 year windshield - OBD/TSI", and the 80_inches = "N" (i.e., the truck is less than 80 inches wide), then the analyzer must display safety item sequence #1.

If the vehicle type = "T", the SAFE_TEST_TYPE = "A - 1 year windshield - TSI" or "L - 1 year windshield - OBD" or "M - 1 year windshield - ASM" or "N - 1 year windshield - OBD/TSI", and the 80_inches = "Y" (i.e., the truck is at least 80 inches wide), then the analyzer must display safety item sequence #4.

If the vehicle type = “T”, and the SAFE_TEST_TYPE = “G - FMSCR (TRUCK)”, (NOTE: the 80 inches wide entry is not used here to determine the appropriate safety item sequence), then the analyzer must display the titles of safety item sequence #8, and safety item sequence #5, and allow the inspector to use the arrow keys to highlight and select this safety item sequence by pressing “enter/continue”.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “N” (i.e., the truck is less than 80 inches wide), then the analyzer must display safety item sequence #1.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “Y” (i.e., the truck is at least 80 inches wide), then the analyzer must display the titles of safety item sequence #4, and safety item sequence #5, and allow the inspector to use the arrow keys to highlight and select the appropriate safety item sequence by pressing “enter/continue”.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “B - 2 year windshield”, and the 80_inches = “N” (i.e., the truck is less than 80 inches wide), then the analyzer must display safety item sequence #1.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “B - 2 year windshield”, and the 80_inches = “Y” (i.e., the truck is at least 80 inches wide), then the analyzer must display safety item sequence #4.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, and the 80_inches = “N” (i.e., the truck is less than 80 inches wide), then the analyzer must display safety item sequence #1.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, and the 80_inches = “Y” (i.e., the truck is at least 80 inches wide), then the analyzer must display safety item sequence #4.

If the vehicle type = “M”, and the SAFE_TEST_TYPE = “G - FMSCR (TRUCK)”, (NOTE: the 80 inches wide entry is not used here to determine the appropriate safety item sequence), then the analyzer must display safety item sequence #8.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “N” (i.e., the truck is less than 80 inches wide), then the analyzer must display safety item sequence #1.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “Y” (i.e., the truck is at least 80 inches wide), then the analyzer must display the safety item sequence #4.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “B - 2 year windshield”, and the 80_inches = “N” (i.e., the truck is less than 80 inches wide), then the analyzer must display safety item sequence #1.

If the vehicle type = “M”, the SAFE_TEST_TYPE = “B - 2 year windshield”, and the 80_inches = “Y” (i.e., the truck is at least 80 inches wide), then the analyzer must display safety item sequence #4.

If the vehicle type = “C”, and the SAFE_TEST_TYPE = “C - Trailer/Motorcycle”, then the analyzer must display safety item sequence #2.

If the vehicle type = “L”, and the SAFE_TEST_TYPE = “C - Trailer/Motorcycle”, then the analyzer must display safety item sequence #6.

If the vehicle type = “L”, and the SAFE_TEST_TYPE = “K - FMSCR(TRAILER)”, then the analyzer must display safety item sequence #9.

The inspector shall be required to press “enter/continue” after each item. These fields are required and must contain a valid entry. The analyzer does not have to display the screen heading during the inspection sequence. The analyzer must enter the date and the inspector’s driver’s license number.

The inspector should be able to access an item’s associated help screen by placing the cursor in the parentheses and pressing the “F1” key. The help screens for each type of safety inspection item sequence are in Appendix D: *Safety Inspection Help Screens*.

If any safety item is entered as failing with a stored value of “A”, “C”, “E”, “H”, “J”, “L”, “O”, “S”, “U”, “W”, or “Y”, then the analyzer must set the SAFETY_PF_FLAG to “F”. Otherwise, set the SAFETY_PF_FLAG to “P” for pass.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

SAFE_1	**SAFE_2**	**SAFE_3**	**SAFE_4**	**SAFE_5**
SAFE_6A	**SAFE_6B**	**SAFE_7**	**SAFE_7A**	**SAFE_7B**
SAFE_8	**SAFE_9**	**SAFE_10A**	**SAFE_10B**	**SAFE_10C**
SAFE_10D	**SAFE_10E**	**SAFE_10F**	**SAFE_11**	**SAFE_12**
SAFE_13	**SAFE_14**	**SAFE_15**	**SAFE_16**	**SAFE_17**
SAFE_18	**SAFE_19**	**SAFE_20**	**SAFE_21**	**SAFE_22A**
SAFE_22B	**SAFE_22C**	**SAFE_22D**	**SAFE_23**	**SAFE_24**
SAFE_25	**SAFE_26**	**SAFE_27**	**SAFE_28**	**SAFE_29**
SAFE_30	**SAFETY_PF_FLAG**		**DPS_SAFE_SEQ**	

3.4.4a Safety Repair Cost Prompt

ENTER THE TOTAL COST FOR THE SAFETY-RELATED REPAIRS, INCLUDING CENTS. DO NOT INCLUDE THE SAFETY INSPECTION FEE IN THE TOTAL.

Programming Criteria:

The analyzer must display this prompt if the inspector indicates that repairs were conducted on any of the safety items shown under Section 3.4.4: *Safety Inspection Items*. The inspector shall enter the total cost for all safety-related repairs. If an inspector enters a fee greater than $450 dollars, the inspector shall be required to confirm the entry before proceeding to the

next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee. The analyzer must store this amount locally to be printed on the VIR. The cost entered at the prompt must be included in the overall cost for the inspection.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.4.5 Safety Test Fee Prompt

ENTER THE TOTAL COST FOR THE SAFETY INSPECTION, INCLUDING CENTS. (DO NOT INCLUDE SAFETY RELATED REPAIRS.)

Programming Criteria:

This prompt must only appear if the reinspection is being conducted on or after the sixteenth day following the day of the initial inspection (Day 17).

The inspector shall enter the overall cost for the inspection. If an inspector enters a fee greater than $100 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**

3.4.6 Emissions Reinspection Repairs

Programming Criteria:

This prompt must only appear if:

- the current reinspection is being conducted on the same day as the initial inspection (Day1) or before the sixteenth day following the day of the initial inspection (Day 17), and the EMISS_PF_FLAG field was set to “F”, “T”, or “D” during the initial inspection; or

- the current reinspection is being conducted on or after the sixteenth day following the day of the initial inspection (Day 17).

The analyzer must prompt the inspector to provide repair information prior to conducting an emissions reinspection. The inspector shall not be able to completely bypass the screen prompts requesting repair information.

The complete list of specific repair items is provided below, and is organized according to engine/emissions system. Each time is assigned either a one-digit (0-9) or two-digit (10-99) numeric code. The analyzer must provide the inspector with the ability to print out the Numeric Repair Chart for reference purposes.

A. Fuel Supply

B. Evaporative (EVAP) Emissions Control System

C. Fuel Metering (Carbureted / Fuel Injected)

D. Idle Speed (Carbureted / Fuel Injected)

E. Air Supply

F. Ignition System

G. Electrical / Electronic

H. Emissions Systems

I. Engine Mechanical

J. Engine Exhaust

K. Engine Cooling

L. Vehicle Fluids

M. Transmission / Final Drive

N. Miscellaneous

The inspector will select the category(s) and sub menu item for any repairs done to the vehicle. The analyzer must display the associated sub-menu detailing the actual items after a repair category has been selected. The following is a list of the repair categories and associated sub-menus:

REPAIR ANALYSIS

A. Fuel Supply

1. Pump
2. Tank
3. Lines / Hoses / Filters
4. Fuel Pressure Control
5. Fuel Distribution (if applicable)

B. Evaporative (EVAP) Emissions Control System

6. Canister
7. Vent Lines / Hoses / Purge Hoses
8. Fuel Cap

9. Purge Valves / Solenoids / etc.

10. Mechanical Control System (includes vacuum)

11. Electronic Control System

C. Fuel Metering (Carbureted / Fuel Injected)

12. Mechanical Control System (includes vacuum)

13. Electronic Control System

14. Injector(s)

15. Throttle Body

16. Carburetor – Internal

17. Carburetor – External

18. Idle Mixture Control

19. Cold Start System / Choke

20. Metering Device (if applicable)

21. Oxygen Sensor (O2S), Heated Oxygen Sensor (HO2S)

22. Engine Coolant Temperature (ECT) Sensor

23. Air Flow Sensor(s) (all)

24. Inlet Air Temperature (IAT) Sensor

25. Throttle Position Sensor (TPS)

26. Manifold Absolute Pressure (MAP) Sensor, Manifold Differential Pressure Sensor, Manifold Vacuum Zone Sensor, or Barometric Pressure (BARO) Sensor

27. Crankshaft Position (CP) Sensor

28. Camshaft Position (CMP) Sensor

29. Knock Sensor (KS)

30. Vehicle Speed Sensor (VSS)

31. Other Sensor(s)

D. Idle Speed (Carbureted / Fuel Injected)

32. Idle Speed Adjustment

33. Idle Air Control (IAC) / Idle Speed Control (ISC)

E. Air Supply

34. Air Filter

35. Hot/Cold Intake-Air System and Control / Thermostatic Air Cleaner (TAC)

36. Intake Manifold / Gaskets

37. Other Vacuum / False Air Leaks

38. Turbo / SuperCharger System

F. Ignition System

39. Ignition Control Module (ICM)

40. Primary / Reference (Circuit & Components)

41. Coil(s) / Secondary

42. Spark Plug Wires

43. Spark Plugs

44. Spark Timing

G. Electrical / Electronic

45. Powertrain Control Module (PCM)
Engine Control Module (ECM)
Program Read-Only Memory (PROM) Computer Chip

46. Clear Diagnostic Trouble Codes (DTC)

47. Actuators (other)

a) Wiring (all systems)

48. Open Circuit

49. High Resistance (power / ground)

50. Shorted Circuit

51. Battery

52. Charging System

H. Emissions Systems

a) Catalytic Converter

53. Empty / Melted / Damaged

54. Low Efficiency

55. Secondary Air Injection Reaction (AIR) tube

b) Exhaust Gas Recirculation (EGR)

56. Flow Passages

57. Mechanical Control System (includes vacuum)

58. Electronic Control System

59. Valve / Actuator Assembly(ies)

c) Secondary Air Injection System (AIS)

60. Belt(s)

61. Pump(s)

62. Bypass / Diverter / Switch Valve(s)

63. Mechanical Control System (includes vacuum)

64. Electronic Control System

65. Reed, Check, and Other Valves

66. Plumbing

d) Positive Crankcase Ventilation (PCV)

67. Valve

68. Other

I. Engine Mechanical

69. Internal Short-Block

70. Cylinder Head Structure / Head Gasket

71. Camshaft(s)

72. Cam Timing / Belt / Chain

73. Valves (Mechanical)

74. Valves (Oil Seals)

75. Other (including valve adjustment)

76. Other Seals / Gaskets

J. Engine Exhaust

77. Exhaust Manifold / Gaskets

78. Back pressure

K. Engine Cooling

79. Fan

80. Thermostat

81. Radiator, Coolers, and Caps

82. Mechanical Control System (includes vacuum)

83. Electronic Control System

L. Vehicle Fluids

84. Engine Coolant

85. Engine Crankcase Oil

86. Fuel

M. Transmission / Final Drive

87. Internal (hydraulic / mechanical)

88. Electronic Control System

89. External Control (vacuum, cables)

90. Final Drive Ratio

91. Tire Size

N. Miscellaneous

92-98. Reserved for future use

99. All other types of repairs

HELP SCREEN - INSTRUCTIONS FOR ENTERING EMISSIONS REPAIR INFORMATION

- **Complete repair data must be entered BEFORE an emissions reinspection can be performed.**

- **When reporting repair information, use one or more of the following items:**

  - **your Inspection Station's own records;**

  - **receipts from other repair facilities;**

  - **parts receipts provided by the motorist; and/or**

  - **questions asked of the motorist.**

- **If repairs were done in more than one category (i.e., Fuel System, and Ignition/Electrical System), select the category whose cost is the largest percentage of the total repair cost. The category that would have cost the most if the repairs were done separately. However, enter the total cost of the repairs (since the last inspection) in question #2.**

- **Depending on where emissions repairs were performed on the vehicle, please enter the appropriate information in one the following categories:**

  1) Recognized Emissions Repair Facility (completed repairs);

  2) Other Repair Facility (Non-Recognized); or

  3) Motorist (Self-Performed).

- **If two or more non-recognized repair facilities performed repairs on the vehicle, just select the Other Repair Technician (Non-Recognized) category and enter the total of the repair costs in the question #2.**

- **If two or more Recognized Emissions Repair Facilities performed repairs on this vehicle, just enter the total of the repair costs in the question #2, and select the Recognized Emissions Repair Facility category.**

- **Please provide as much of the requested repair information as possible. Please note that an abnormally high amount of incomplete repair information entries may result in an audit of your Inspection Station.**

Press Enter or type "C" to Continue

SCREEN 1 - EMISSIONS REPAIR QUESTIONS

Question #1:

Please select the system that was replaced or repaired from the following list:

Fuel System (Supply & Metering Systems including O2S)
Ignition/Electrical System (Battery, Spark plugs, Spark plug wires, timing, ECM, etc.,)
Emissions System (Catalytic Converter, EGR, AIS, PCV, EVAP, TAC, etc.,)

Engine Mechanical (Engine Valve, Camshaft, Block, etc.,)
Miscellaneous (Trans./Final Drive, Vehicle Fluids, Eng. Cooling, Engine Exhaust, etc.)
No Repairs Performed on Vehicle

Response Format:

The analyzer must prompt the inspector to select a choice from the list, and store the inspector's selection in the REP_GRP field of the inspection record. If the inspector selects "No Repairs Performed on Vehicle", the analyzer must prompt the inspector to enter the source of the info (motorist, or self), and re-enter the inspector's access code and PIN. The analyzer must continue to the applicable emissions inspection in Section 3.4.6a: *OBD Hookup* or Section 3.4.7: *Reinspection Test Completion* after the access code and PIN have been entered, even if the entries do not match the entries from the beginning of the inspection.

Question #2:

What is the total cost of emissions repairs performed on this vehicle?

Response Format:

Total Repair Cost (Diagnostics, Parts, & Labor): $ _ _ , _ _ _ . _ _

Question #3:

Please indicate where the emissions repairs on this vehicle were performed:

1) Recognized Emissions Repair Facility (completed repairs);

2) Other Repair Facility (Non-Recognized); or

3) Motorist (Self-Performed).

Response Format:

The analyzer must prompt the inspector to select a choice from the list must store the inspector's selection in the PERF_REPAIRS field of the inspection record. If the inspector selects "2", the analyzer must skip "Question #3a". If the inspector selects "3", the analyzer must skip "Question #3a" and "Question #4".

The analyzer must display entries of the three questions, and prompt the inspector to confirm the entries by pressing continue. The total repair cost entered in "Question 2" will be stored in the REP_OVERALL_COST field. The same value will be stored in the REP_CST_RRF field, the REP_CST_NRF field, or the REP_CST_MSP field, when the inspector selects "1", "2", or "3", respectively.

Question #3a:

Please enter the Recognized Facility ID and Recognized Tech ID number

Facility ID #:

Tech ID #:

Response Format:

The analyzer must provide windows to enter these values. The Recognized Facility ID must be 11 numeric characters, and the Recognized Tech ID number must be 6 numeric characters. These are required fields that must be entered to proceed to "Question #4". The analyzer hall provide the format mask for the Facility ID number entry, however, the inspector shall be able to complete the entry by entering 11 consecutive number characters. The Facility ID will be stored as 1- _ _ _ _ _ - _ _ _ _ _ _. The Recognized Emission Repair Technician ID number will be stored as 2-_ _ _ _ _ _ - _ _ _ _ _ _, where the middle six characters of the Technician ID is always the same as the last six characters of the RERF_ID_NUM field, and the last six characters are the entry from the inspector. For example, when inspector types a facility ID of "77087-123765" and the Technician ID as "389842", the values will be stored as "1-77087-123765", and "2-123765-389842" in the RERF_ID_NUM, and RERT_ID_NUM fields of the VEHICLE.DAT.

Question #4:

Choose the appropriate sentence:

- **Yes, repairs were done at this station. Repair costs will be added to the overall inspection costs and displayed on the VIR.**

- **No, repairs were not done at this station. Repair costs will not be added to the overall inspection costs nor displayed on VIR.**

Response Format:

The analyzer must prompt the inspector to select the appropriate sentence. If the inspector selects "1", then the analyzer must:

1) store the value entered in "Question #2" in the REP_CST_YIS and REP_OVERALL_COST fields;

2) calculate the sum of the values stored in the REP_OVERALL_COST field, the EMISS_INSP_COST field, the value entered at the safety repair cost prompt, and the SAFE_INSP_COST field, where applicable, to arrive at the total inspection cost and store the sum in the OVERALL_COST field,

3) Print the repair costs, the emissions costs, and the safety costs, where applicable, on the VIR.

If the inspector selects "2", then the analyzer must:

1) store the value entered in "Question #2" in the REP_OVERALL_COST field but do not use them to calculate the total inspection cost;

2) calculate the sum of the values stored in the EMISS_INSP_COST field, the value entered at the safety repair cost prompt, and the SAFE_INSP_COST field, where

applicable, to arrive at the total inspection cost and store the sum in the OVERALL_COST field;

3) print the repair cost on the VIR as "0.00", and print the emissions costs, and the safety costs, where applicable, on the VIR.

After the inspector makes the selection, the analyzer must display the entries of the five questions, prompt the inspector to confirm the entries by pressing continue, and proceed to the OBD or tailpipe emissions inspection.

Programming Criteria:

- For each question or data request, pressing the enter key after the response is typed-in should indicate completeness.
- Provide the inspector with the ability to print out the Numeric Repair Chart for reference purposes (such as posting next to the monitor).
- Even though recognized facilities will have copies of blank VRFs, provide the inspector with the ability to print one out when necessary. A draft VRF format is provided in Appendix O: *Sample Vehicle Repair Form*.
- At a later date, recognized repair technicians may have the opportunity to enter their own repair data through either one or both of the following methods:
    - having direct access to the VID; and
    - touch-tone entry from a telephone.

The analyzer will accumulate all costs entered above for use in cost waiver determination. The total repair cost will be stored in the REP_OVERALL_COST field of the VEHICLE.DAT file. The cost of repairs done at this station must be added to the EMISS_INSP_COST field, the applicable safety repair costs, and the SAFE_INSP_COST field, if applicable, and stored in the OVERALL_COST field of the VEHICLE.DAT file.

Associated System File: **VEHICLE.DAT**

ANALYZER_NUMBER	**STATION_NUM**	**INSPECTOR_NUM**
TEST_ DATE	**VIN_ID_NUM**	**LICENSE_NUM**
REP_CST_YIS	**REP_CST_CRF**	**REP_CST_NRF**
REP_CST_MSP	**REP_ITM_YIS**	**REP_ITM_CRF_AFR**
REP_ITM_CRF_ADL	**REP_ITM_CRF_REC**	**REP_ITM_NRF**
REP_ITM_MSP	**CERF_ID_NUM**	**CERT_ID_NUM**
VH_AF_BR	**VH_AF_AR**	**VH_OB_SR**
REP_OVERALL_COST	**RERF_ID_NUM**	**RERT_ID_NUM**
EMISS_INSP_COST	**SAFE_INSP_COST**	**OVERALL_COST**

3.4.6a OBD Hookup

The appropriate emissions inspection, OBD in this case, must be conducted only if:

- the current reinspection is being conducted on the same day as the initial inspection (Day1) or before the sixteenth day following the day of the initial inspection (Day 17), and the EMISS_PF_FLAG field was set to “F”, “T”, or “D” during the initial inspection; or

- the current reinspection is being conducted on or after the sixteenth day following the day of the initial inspection (Day 17).

The analyzer must prompt the inspector to conduct an OBD inspection on:

- all gasoline-powered vehicles whose model-year is equal to or newer than the vehicle model-year contained in the OBDII_MODEL_YEAR field of the SYSTEM.DAT file; and

- all diesel-powered vehicles whose model-year is equal to or newer than the vehicle model-year contained in the DSL_OBD_MODEL_YEAR field of the SYSTEM.DAT file and whose entered GVW is less than or equal to the weight contained in the DSL_OBD_MAX_GVW field of the same file.

The analyzer must automatically search for vehicle-specific emissions inspection parameters in the TXVRT.DAT file when an OBD inspection is conducted. If these inspection parameters are not located in the TXVRT.DAT file, the analyzer must use the default parameters in the SYSTEM.DAT file. Unless otherwise stated, the analyzer must compare vehicle make, model, and model-year in matching records with the vehicle being inspected.

The analyzer must proceed to Section 3.4.7: *Reinspection Test Completion* in when the vehicle is not eligible for an OBD inspection.

3.4.6b OBD Connector Prompt

TURN THE CAR OFF (I.E., PUT KEY IN “OFF/LOCK” POSITION)

LOCATE THE VEHICLE’S OBD DIAGNOSTIC LINK CONNECTOR.

ATTACH THE OBD II PORT TO THE VEHICLE CONNECTOR.

LEAVE CAR OFF FOR 12 SECONDS WITH CONNECTOR ATTACHED.

PRESS CONTINUE.

<u>Programming Criteria:</u>

The analyzer must have the ability to assist the inspector with locating the vehicle’s OBD connector using an OBD connector look-up table.

If the previously entered GVW for the vehicle under inspection is strictly greater than 8,500 pounds, then the analyzer must display a yellow or orange colored warning indicator that states “**Heavy-Duty OBD II Sequence**” and provide an option on this screen that allows the inspector to indicate that the vehicle’s “Connector Can Not Be Located”.

This option must not be presented for any vehicle whose previously entered GVW is less than or equal to 8,500 pounds.

If the inspector selects "Connector Could Not Be Located" on this screen and the analyzer cannot establish communications with the vehicle on the first attempt under Section 3.4.6f: *OBD Connection Prompt*, then the analyzer must skip Section 3.4.6g: *OBD Connection Not Confirmed Prompt* and continue as if the inspector has selected choice number 2 from Section 3.4.6h: *OBD No Connection Reason Prompt*.

3.4.6c OBD Key On, Engine Off Prompt

TURN THE IGNITION KEY TO THE 'ON' POSITION, BUT DON'T START THE ENGINE. LOCATE THE MIL (MALFUNCTION INDICATOR LIGHT) ON THE DASHBOARD.

DID THE MIL TURN ON? Note: MIL may stay on continuously or go out after only a few seconds. (CHOOSE THE CORRECT SENTENCE)

YES, the MIL did come on.
No, the MIL did NOT come on at all.

The malfunction indicator light (mil) will either display "service engine soon", "check engine", the word "check" along with the international engine symbol, or some combination of these depending on the vehicle make.

Programming Criteria:

If the vehicle was identified as a "keyless ignition vehicle", the analyzer must:

- not display this prompt;
- enter a "K" in the OBD2_MIL_CHECK field; and
- proceed to the next prompt.

Otherwise, the analyzer must prompt the inspector to perform a key-on, engine-off check to see if the MIL properly illuminates. The analyzer must prompt the inspector to enter a "No" if the MIL does not properly illuminate. The analyzer software must be designed so that the inspector can use the arrow keys to highlight his choice and press "enter/continue" to select the appropriate sentence. The analyzer software must not have a default entry for this screen. The inspector must be required press the arrow key at least once, followed by the "enter/continue" key.

The help message for this screen must contain the following text: **"The Malfunction Indicator Light (MIL) is the official term for the warning light that is illuminated by the vehicle's OBD system when a malfunction occurs. Depending on the vehicle make, the MIL will either display 'Service Engine Soon', 'Check Engine', the word 'Check' along with the international engine symbol, or some combination of these. The MIL must come on when the ignition key is turned to the "key on, engine off" position. This is to allow inspectors to check that the MIL is capable of illuminating if a malfunction were to occur. On most vehicles, the MIL will stay illuminated as long as the key is in the**

position. However, on some vehicles, the MIL will illuminate very briefly when the key is turned to the "key on, engine off" position and then go out."

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OBD2_MIL_CHECK**

3.4.6d OBD Engine Running Prompt

START THE ENGINE AND ALLOW IT TO IDLE FOR AT LEAST 20 SECONDS. (I.E., PUT KEY IN "RUN" POSITION)

PRESS CONTINUE.

Programming Criteria:

The analyzer must require the inspector to confirm that the vehicle is started and idling by pressing the "enter/continue" key. The analyzer may attempt to establish communications while displaying this prompt.

3.4.6e OBD Key On, Engine Running Prompt

DID THE MIL TURN OFF? (CHOOSE THE CORRECT SENTENCE)

Yes, the MIL turned off, or never came on.
No, the MIL stayed on.

Programming Criteria:

The analyzer must prompt the inspector to perform a key on, engine running check to see if the MIL illuminates while the engine is running. The analyzer must store an "N" if the inspector indicates that the MIL stayed illuminated or a "Y" if inspector indicates that the MIL turned off or never illuminated. The analyzer software must be designed so that the inspector can use the arrow keys to highlight his choice and press "enter/continue" to select the appropriate sentence. The analyzer software must not have a default entry for this screen. The inspector must be required to press the arrow key at least once followed by the "enter/continue" key. The analyzer may attempt to establish communications while displaying this prompt.

Error Message: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OBD2_MIL_ON_RUN**

3.4.6f OBD Connection Prompt

COMMUNICATION IN PROGRESS, PLEASE WAIT.

Programming Criteria:

The analyzer must display this message while attempting to establish communications with the vehicle's OBD computer.

If the inspector has pressed continue and connection cannot be confirmed, the analyzer must proceed to Section 3.4.6g: *OBD Connection Non Confirmed Prompt*. If the inspector has pressed continue and connection is confirmed, the analyzer must store the OBD communication protocol in the COMM_PROT field of the inspection record and proceed to Section 3.4.6i: *OBD Malfunction Indicator Light Status Check*. If the connection is confirmed using a wireless OBD connector, the analyzer will store a "W" in the WIRELESS_OBD field of the inspection record.

Associated System File:	**VEHICLE.DAT**	**COMM_PROT** **WIRELESS_OBD**

3.4.6g OBD Connection Not Confirmed Prompt

THE OBD II CONNECTION CANNOT BE CONFIRMED –CHOOSE THE NEXT ACTION

1. TRY AGAIN

2. DO NOT TRY AGAIN

Programming Criteria:

The analyzer must default is to "try again".

If the inspector selects "try again", the analyzer must attempt to gain a confirmed OBD connection. The analyzer must allow the inspector unlimited attempts to gain a confirmed OBD connection.

If the inspector selects "do not try again", then the analyzer must proceed to the Section 3.4.6h: *OBD No Connection Reason Prompt*.

3.4.6h OBD No Connection Reason Prompt

THE OBD II CONNECTION CANNOT BE CONFIRMED –CHOOSE THE NEXT ACTION

1. BACK TO PREVIOUS SCREEN

2. CONNECTOR CANNOT BE LOCATED

3. CONNECTOR IS MISSING, DAMAGED, OR TAMPERED.

4. CONNECTOR IS OBSTRUCTED OR INACCESSIBLE AND CONNECTION IS NOT POSSIBLE.

5. COMMUNICATION FAILED, AND OBD II PORT IS ATTACHED TO CONNECTOR.

Programming Criteria:

The analyzer must default is to phrase number "1".

If the inspector selects phrase number "1", the analyzer must return to Section 3.4.6g: *OBD Connection Not Confirmed Prompt*.

OBD Non Communication Transition Not Allowed

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N" and inspector selects phrase number "2", "3", "4", or "5", then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field indicating the status of the connector; and

2) proceed directly to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt*.

OBD Non Communication Transition Allowed

The following instructions apply to vehicles that receive an OBD inspection, fail to communicate through the OBD connector, and are allowed to transition to an ASM or TSI inspection, which is permitted when the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "Y".

If the inspector selects phrase number "2", then the analyzer must:

1) store a "L" in the OBD2_DLC_RES field indicating the connector cannot be located; and,

2) proceed directly to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number "3", then the analyzer must:

1) store a "D" in the OBD2_DLC_RES field indicating the connector is missing, damaged, or tampered; and,

2) proceed directly to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number "4", then the analyzer must:

1) store an "I" in the OBD2_DLC_RES field indicating an inaccessible connector; and,

2) proceed directly to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt*.

If the inspector selects phrase number "5" and an "N" is stored in either the OBD2_MIL_CHECK or the OBD2_MIL_ON_RUN field, then the analyzer must:

1) store a "N" in the OBD2_DLC_RES field indicating it failed to establish communication with the vehicle; and,

2) proceed directly to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt*.

NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection, when the vehicle fails either of the bulb check questions and communications cannot be established.

If the inspector selects phrase number "5" and a "Y" is stored in both the OBD2_MIL_CHECK and the OBD2_MIL_ON_RUN fields, then the analyzer must:

1) store a "N" in the OBD2_DLC_RES field indicating it failed to establish communication with the vehicle; and,

2) proceed directly to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt* if the vehicle is a gasoline-powered heavy-duty vehicle or proceed to step 4.c. of this section if the vehicle is diesel-powered;

3) initiate an auto-zero and a HC hang-up in preparation for an emissions inspection for all gasoline powered vehicles and continue with steps 4.a., 4.b. and skip step 4.c. before proceeding to step 5 of this section,

4) a. abort the inspection, set the ABORT field to "A", and the ABORT_CODE field to "07" if the analyzer determines that emissions inspection lockouts such as dynamometer calibration or bench calibration and leak checks are needed, or

   b. abort the inspection, set the ABORT field to "A" and the ABORT_CODE field to "81", and display the following message if the analyzer is an OBD-only analyzer:

   SINCE THE VEHICLE DID NOT COMMUNICATE THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. PLEASE REFER THE MOTORIST TO A FULL-SERVICE STATION WITH ASM TESTING, AND DO NOT CHARGE THE CUSTOMER.

   Press Any Key to Return to the Main Menu.

   c. If the vehicle is diesel-powered, the analyzer will transition to the safety only inspection with no gas cap inspection in either the live testing period or beta period by proceeding directly to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt*, then to the end of the inspection. This transition is allowed when the DSL_OBD_BETA_DFLT field is set to "S" and the DSL_OBD_TESTING field is set to "Y" during beta, or the DSL_NON_CMM_2_SAFE field is set to "Y" and the DSL_OBD_TESTING field is set to "Y" during the live testing period.

   When the transition is allowed during the beta period, the analyzer must abort the inspection, store the collected OBD data, an A in the ABORT field, "82", in the ABORT_CODE field in the inspection record and display a message indicating, **"The Safety and Emissions Inspection will end here because this vehicle cannot be tested through the OBD connector. Please conduct a Safety Only Inspection on this vehicle. Press any key to return to the Main Menu."** Upon pressing any key, the analyzer must return to the main menu.

   When the transition is allowed during the live testing period, the analyzer must store the collected OBD data in the inspection record, jump to the end of the inspection by proceeding to Section 3.4.11g: *End of Phase Logic* and only using the value of the SAFE_PF_FLAG field to set the OVERALL_RESULTS field and changing the EMISS_TEST_TYPE field from "1" to "4". The outcome of

the OBD phase will not be used as criteria to determine if the vehicle passes or fails.

When the transition is not allowed during the live testing period, the analyzer must fail the vehicle due to no communications during the OBD phase and proceed directly to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt*, then to the end of the inspection because gas cap inspections are not required for diesel vehicles.

5) If the analyzer has not already obtained the status of the drive axle as a part of this inspection, then the analyzer must obtain this information by displaying the prompt in Section 3.1.19b: *Drive Axle Prompt* and obtain whether the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control prior to conducting the tailpipe emissions inspection.

6) a. Proceed directly to Section 3.4.7: *Reinspection Test Completion* and perform the ASM emissions inspection when the NON_COMM_2_TAILPIPE and ASM_TESTING fields are set to "Y" during the live testing period; or

   b. proceed directly to Section 3.4.7: *Reinspection Test Completion* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control during the live testing period; or

   c. proceed directly to Section 3.4.7: *Reinspection Test Completion* and perform the preconditioned TSI inspection as described in Section 3.1.24: *Preconditioned TSI Inspection Procedure* when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the ASM_TESTING field is set to "N" during the live testing period.

7) Convert the emissions inspection type from OBD to either ASM or TSI when the transition is allowed and print the special message (shown below), instead of OBD Print Message 11, which indicates that the vehicle's OBD system could not be checked due to unsuccessful communications.

   Special Message:

   Due to the inability of your vehicle to communicate with the OBD connector, your vehicle received an ASM or TSI test. The vehicle manufacturer's warranty covers the OBD device for the first 8 years or 80,000 miles of vehicle use. You will likely be required to pass the OBD test next year, and should have the vehicle examined by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

If the test date is less than the date contained in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, the analyzer must:

1) place a "L", "D", "I", or "N", in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place a blank in the OBD2_PF_FLAG field of the VEHICLE.DAT file;

3) print "FAIL" in the OBD section of the VIR;

4) print a message on the same page as the Public Awareness Statement indicating that the OBD failure is "Advisory Only", and that the vehicle's OBD system could not be checked due to: unsuccessful communications if the OBD2_DLC_RES field is set to "N", or a missing, damaged, or tampered connector if the OBD2_DLC_RES field is set to "D", the connector could not be located if the OBD2_DLC_RES field is set to "L", or an inaccessible connector if the OBD2_DLC_RES field is set to "I"; and,

5) proceed directly to Section 3.4.7: *Reinspection Test Completion*, and perform a preconditioned TSI inspection as described in Section 3.1.24: *Preconditioned TSI Inspection Procedure*.

Failure of the OBD portion of the inspection WILL NOT result in an overall inspection failure.

If the test date is equal to or greater than the date in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "Y", and the inspector selected phrase number "5" in Section 3.4.6h: *OBD No Connection Reason Prompt*, the analyzer must:

1) place an "N" in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place an "F" in the OBD2_PF_FLAG field (and later to the OVERALL_RESULTS field) of the VEHICLE.DAT file;

3) print the special message (shown below) instead of OBD Print Message 11 on the same page as the Public Awareness Statement which indicates that the vehicle's OBD system could not be checked due to unsuccessful communications;

   Special Message:

   Due to the inability of your vehicle to communicate with the OBD connector, your vehicle received an ASM or TSI test. The vehicle manufacturer's warranty covers the OBD device for the first 8 years or 80,000 miles of vehicle use. You will likely be required to pass the OBD test next year, and should have the vehicle examined by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

4) not conduct an OBD inspection; and

5) proceed directly to Section 3.4.7: *Reinspection Test Completion* and either perform the ASM emission inspection as described in Section 3.1.23o: *ASM Emissions Inspection Sequence*, or perform the preconditioned TSI inspection as described in Section 3.1.24: *Preconditioned TSI Inspection Procedure* if the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control.

The failure of the resulting emissions inspection instead of the OBD portion of the inspection WILL result in an overall inspection failure.

If the test date is equal to or greater than the date in the OBD2_FAIL_ST_DT field in the SYSTEM.DAT file, and the inspector did not select "Back to Previous Screen" or phrase number "5" in Section 3.4.6h: *OBD No Connection Reason Prompt*, the analyzer must:

1) place a "L", "D", or "I" in the OBD2_DLC_RES field of the VEHICLE.DAT file;

2) place an "F" in the OBD2_PF_FLAG field (and later to the OVERALL_RESULTS field) of the VEHICLE.DAT file;

3) print "FAIL" in the OBD portion and the overall inspection result section of the VIR;

4) print a message on the same page as the Public Awareness Statement indicating that the vehicle's OBD system could not be checked due to: a missing, damaged, or tampered connector if the OBD2_DLC_RES field is set to "D", an unlocated connector if the OBD2_DLC_RES field is set to "L", or an inaccessible connector if the OBD2_DLC_RES field is set to "I"; and,

5) proceed to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt* and no tailpipe emissions inspection will be conducted.

The failure of the OBD portion of the inspection WILL result in an overall inspection failure.

Associated System File:	**VEHICLE.DAT**	**OBD2_DLC_RES**
		OBD2_PF_FLAG
		OVERALL_RESULTS

3.4.6i OBD Malfunction Indicator Light Status Check

Programming Criteria:

The analyzer will evaluate the MIL status based on the data returned via the OBD link from the vehicle's OBD system. The status of the MIL illumination will be recorded in the OBD2_MIL_STATUS field of the inspection record. If the vehicle was identified as a hybrid, the analyzer does not have to require the engine to be running as a condition of the OBD inspection. The analyzer must store an "H" in the RPM_BYPASS field of the inspection record.

If the MIL status of "not commanded on" is returned while the engine running, the analyzer must:

1) store a "P" in the OBD2_MIL_STATUS field; and

2) proceed to Section 3.4.6j: *OBD Readiness Evaluation.*

If the MIL status returned is "commanded on" with the engine running, the analyzer must:

1) store an "F" in the OBD2_MIL_STATUS field; and

2) proceed to Section 3.4.6j: *OBD Readiness Evaluation.*

3.4.6j OBD Readiness Evaluation

Programming Criteria:

The analyzer must collect the status of the readiness monitors from the vehicle's OBD system. If the vehicle has multiple engine control modules (ECMs), the analyzer must provide the summary of results all the readiness monitors received from the vehicle as the status of the readiness monitors.

At a minimum, the analyzer must collect the status of the following list of continuous and non-continuous readiness monitors:

- Misfire (continuous)
- Fuel system (continuous)
- Comprehensive component (continuous)
- Catalyst (non-continuous)
- Heated catalyst (non-continuous)
- Evaporative system (non-continuous)
- Secondary air system (non-continuous)
- Air conditioning system (non-continuous)
- Oxygen sensor (non-continuous)
- Oxygen sensor heater (non-continuous)
- EGR system (non-continuous) (for MY2007 and newer, EGR and/or VVT system)

For each readiness monitor in the inspection record, the analyzer must store a:

- "0" when the retrieved status is not supported or equivalent;
- "1" when the status is complete or equivalent; or
- "2" when the status is not complete.

The analyzer must determine the number of non-continuous monitors set to not complete.

If the value specified in the SYSTEM.DAT file for a particular readiness monitor is set to "Y", the status of the readiness monitor must be used for the overall readiness determination. If the value specified for a readiness monitor in the SYSTEM.DAT file is set to "N", the status of the readiness monitor must be ignored by the analyzer and not used for the overall readiness determination.

The OBD2_READY_RES field is determined by the following criteria. The vehicle must fail the OBD inspection when the number of non-continuous readiness monitors set to "not ready" exceeds the maximum number of non-continuous readiness monitors allowed to be set to "not ready". The maximum number of non-continuous readiness monitors allowed is found:

- in the MAX_NOT_READY_NUM field of the SYSTEM.DAT file when the NTRDY_FL is set to "N" or space;

- in the MAX_NUM_NOT_READY field of the TXVRT.DAT file when the NTRDY_FL field is set to "Y" and a vehicle match is not found in the TXVRT.DAT file for the vehicle under inspection; or

- in either the MAX_NOT_READY_NUM or the MAX_NTRDY_B_NUM field of the SYSTEM.DAT file when the NTRDY_FL field is set to "Y" and a vehicle match is not found in the TXVRT.DAT file for the vehicle under inspection

The status of continuous readiness monitors will be collected and stored in the inspection record, but not used as criteria for setting the OBD2_READY_RES field.

The analyzer must use the applicable model-year values contained in the MAX_NT_RDY_BGN_YR, MAX_NT_RDY_END_YR, MAX_NTRDY_B_BGN_YR, and MAX_NTRDY_B_END_YR fields of the SYSTEM.DAT file when the NTRDY_FL is set to "Y" and the maximum number of non-continuous readiness monitors allowed is not retrieved from the TXVRT.DAT file. The value in the MAX_NUM_NOT_READY field must be used with the model-years in the MAX_NT_RDY_BGN_YR and MAX_NT_RDY_END_YR fields, and the value in the MAX_NTRDY_B_NUM field must be used with the model-years in the MAX_NTRDY_B_BGN_YR and MAX_NTRDY_B_END_YR field.

For example, the analyzer must apply a maximum of two non-continuous monitors to vehicles whose model-year is 1996 through 2000, inclusively, and a maximum of one non-continuous monitor to vehicles whose model-year is 2001 and newer when the MAX_NUM_NOT_READY, MAX_NT_RDY_BGN_YR, MAX_NT_RDY_END_YR, MAX_NTRDY_B_NUM, MAX_NTRDY_B_BGN_YR, and MAX_NTRDY_B_END_YR fields are set to "2", "1996", "2000", "1", "2001", "9999", respectively. These fields will allow the analyzer to apply two maximums to two different model-year ranges.

If the number of non-continuous readiness monitors retrieved from the vehicle with a status of "not ready" is less than or equal to the maximum number of non-continuous readiness monitors allowed, then the analyzer must store a "P" in the OBD2_READY_RES field of the VEHICLE.DAT file. Otherwise, the analyzer must set the OBD2_READY_RES field to "F".

3.4.6k OBD Diagnostic Trouble Code Check

Programming Criteria:

1) The analyzer must send a request to the vehicle's on board computer for the stored emissions-related DTCs. The analyzer will repeat this cycle until the number of codes reported equals the number expected. Any codes listed in the OBD DTC table must be recorded on the inspection record and the text fault code description must be printed on the VIR.

2) If there are no DTCs, the analyzer must:

   - store a "P" in both the OBD2_FAULT_CD_RES and OBD2_PF_FLAG fields and two zeros ("00") in the DTC_STORED field of the VEHICLE.DAT file;
   - print "pass" in the OBD section of the VIR; and
   - proceed to Section 3.4.6l: *OBD Inspection Evaluation and Messages Prompt*.

3) The analyzer must store an "F" in the OBD2_FAULT_CD_RES and OBD2_PF_FLAG fields and the first 10 DTCs that cause the MIL to be illuminated in the FAULT_CODES(DTCs) field of the VEHICLE.DAT file when one or more DTC is retrieved from the vehicle.

4) The analyzer must store the total number of stored DTCs (not pending DTCs) causing the MIL to illuminate in the DTC_STORED field of the VEHICLE.DAT file and proceed to the Section 3.4.6l: *OBD Inspection Evaluation and Messages*.

3.4.6l OBD Inspection Evaluation and Messages

Programming Criteria:

The result of the OBD inspection will be determined as follows:

- OBD2_MIL_CHECK is a manual entry
- OBD2_MIL_ON_RUN is a manual entry
- OBD2_DLC_RES is an automatic entry unless there is no communication between the vehicle and the analyzer
- OBD2_MIL_STATUS is an automatic entry
- OBD2_READY_RES is a field populated automatically.
- OBD2_FAULT_CD_RES depends if there are any stored DTCs causing the MIL to illuminate.

Rejecting OBD Inspections Due to No Communication During the Live Testing Period

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "R", the test date is greater than the date contained in the OBDII_FAIL_ST_DT field, and the inspector selects phrase number "5" when communications could not be established, then the analyzer must:

1) store an "N", as appropriate, in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the remaining OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN;

4) not print the corresponding appropriate OBD message (either "10" or "11");

5) print the following language, "**The On Board Diagnostic test could not be completed because the analyzer did not communicate with the vehicle's On Board Computer.**";

6) abort the inspection, set the ABORT field to "A" and the ABORT_CODE field to "83", print "**abort code – 83**" on the VIR as the abort reason, and display the following message:

SINCE THE VEHICLE DID NOT COMMUNICATE THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. DO NOT CHARGE THE CUSTOMER.

Press Any Key to Return to the Main Menu.

7) Proceed directly to the main menu, print the VIR using the aborted inspection format, and treat this aborted inspection in the same way that abort code "07 - analyzer problem" is treated.

NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection and ends in an aborted inspection condition, when communications cannot be established.

Allowing OBD Inspection Transitions Due to No Communication During the Live Testing Period

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "Y", the test date is greater than the date contained in the OBDII_FAIL_ST_DT, an "N" is stored in either the OBD2_MIL_CHECK or the OBD2_MIL_ON_RUN field, and the inspector selects phrase number "5" when communications could not be established, then the analyzer must:

1) store an "N", in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field,

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN; and

4) Print OBD message "10" or "11", as appropriate, and proceed directly to Section 3.4.6m: *OBD Engine Stop Prompt*.

NOTE: This will allow the analyzer to prevent the vehicle from receiving an ASM or TSI inspection, when the vehicle fails either of the bulb check questions, and communications cannot be established.

OBD Inspection Failure Due to No Communication During the Live Testing Period

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N", the test date is greater than the date contained in the OBDII_FAIL_ST_DT, and the inspector selects phrase number "2", "3", "4", or "5"when communications could not be established, then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field to indicate the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN; and

4) print OBD message "10" or "11", as appropriate, and proceed directly to Section 3.4.6m: *OBD Engine Stop Prompt* in order to prevent the vehicle from receiving an ASM or TSI inspection when communications cannot be established.

<u>OBD Inspection with No Communication During the Beta Testing Period</u>

If the NON_COMM_2_TAILPIPE field of the SYSTEM.DAT file is set to "N", the test date is less than the date contained in the OBD II_FAIL_ST_DT, and the inspector selects phrase number "2", "3", "4", or "5", then the analyzer must:

1) store a "L", "D", "I", or "N", as appropriate, in the OBD2_DLC_RES field indicating the status of the connector;

2) store the entries to the bulb check questions in the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields, and an "F" in the OBD2_PF_FLAG field;

3) fill the following OBD2 fields with spaces/blanks or zeros, as appropriate: OBD2_READY_RES, OBD2_FAULT_CD_RES, OBD2_MIL_STATUS, OBD2_DLC_RES, MISFIRE_READY, FUEL_SYS_READY, COMPR_COMPNT_RDY, CATALYST_READY, HEATED_CAT_READY, EVAP_SYS_RDY, SEC_AIR_SYS_RDY, AIR_COND_SYS_RDY, O2_SENSOR_READY, O2_SENSOR_HTR_RDY, EGR_SYS_READY, COMM_PROT, FAULT_CODES(DTCs), DTC_STORED, OBD2_RPM, PID_COUNT, PCM_ID, OBD_VIN, CAL_ID and CVN;

4) print OBD message "3" or "4", as appropriate; and

5) a. proceed directly to Section 3.4.6m: *OBD Engine Stop Prompt*, if the OBD_BETA_DFLT field is set to "S" and the FUEL_TYPE field is set to "G" or "B"; or

   b. proceed directly to Section 3.4.7: *Reinspection Test Completion*, if the OBD_BETA_DFLT field is set to "T", the FUEL_TYPE field is set to "G" or "B", and the analyzer is equipped to conduct TSI inspections; or

   c. proceed directly to Section 3.4.6m: *OBD Engine Stop Prompt*, if the DSL_OBD_BETA_DFLT field is set to "S" and FUEL_TYPE is set to "D"; or

   d. proceed directly to Section 3.4.6m: *OBD Engine Stop Prompt*, if the OBD_BETA_DFLT field is set to "T", the FUEL_TYPE field is set to "G" or "B", and the analyzer is not equipped to conduct TSI inspections.

OBD Inspection with Not Ready Condition During the Beta Testing Period

If the vehicle is deemed "not ready" and the date of the inspection is less than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, the analyzer must default to the TSI inspection when the OBD_BETA_DFLT field is set to "T", the TSI_TESTING field is set to "Y", the analyzer is equipped to conduct TSI inspections, and the vehicle fails the OBD inspection. Upon completion of the TSI inspection, the analyzer must proceed to the gas cap inspection and only use the results of the TSI inspection, the safety phase and the gas cap phase to determine if the vehicle passes or fails the inspection. The analyzer must default to the safety inspection when the OBD_BETA_DFLT field is set to "S" and the vehicle fails the OBD inspection. The analyzer must proceed to the gas cap inspection and only use the results from the safety phase and the gas cap phase to determine if the vehicles passes or fails the inspection.

OBD Inspection Failure due to MIL on and Fault Codes During the Live Testing Period

If the MIL is commanded on with fault codes present and the date of the inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, the analyzer must fail the vehicle, even if the vehicle is deemed "not ready."

The following cases assume that the "not ready" status of the vehicle is the only failing criterion.

OBD Inspection Transition with Not Ready Condition During the Live Testing Period

If the vehicle is deemed "not ready," the date of inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, and an "E" is present in the NOT_RDY_TO_ASM field of the TXVRT.DAT file, the analyzer must:

1) store an "F" in the OBD2_READY_RES field indicating vehicle deemed "not ready";

2) initiate an auto-zero and a HC hang-up in preparation for an emissions inspection for all gasoline powered vehicles, however, for all diesel powered vehicles, do not perform the auto-zero or the HC hang-up and proceed to step 3.c. of this section;

3) a. abort the inspection if the analyzer determines that emissions inspection lockouts, such as dynamometer or bench calibration and leak checks, are needed by setting the ABORT field to "A", and the ABORT_CODE field to "81", or

   b. abort the inspection if the analyzer is an OBD-only emissions analyzer, "Reject" the vehicle, store an "A" in the ABORT field, an "81" in the ABORT_CODE field, and a space in the OVERALL_RESULTS field of the inspection record, and display the following message;

SINCE THE VEHICLE IS KNOWN TO HAVE READINESS MONITOR ISSUES, AND IS NOT READY TO BE INSPECTED THROUGH THE OBD CONNECTOR, YOU WILL NOT BE ABLE TO COMPLETE THE INSPECTION. PLEASE REFER THE MOTORIST TO A FULL-SERVICE STATION WITH ASM TESTING, AND DO NOT CHARGE THE CUSTOMER.

Press Any Key to Return to the Main Menu.

NOTE: Leaving the OVERALL_RESULTS field blank will indicate that this inspection is a "no-test" and will not count as an initial inspection or reinspection.

c. If the vehicle is diesel-powered, the analyzer will not transition to an ASM or TSI emissions inspection. Instead, the analyzer must only transition to the safety only inspection with no gas cap inspection in either the live testing period or beta period. This transition is allowed when the DSL_OBD_BETA_DFLT field is set to "S" and the DSL_OBD_TESTING field is set to "Y" during beta, or the DSL_NON_CMM_2_SAFE and DSL_OBD_TESTING fields are set to "Y" during the live testing period. After the transition, the outcome of the OBD phase will not be used to as criteria to determine if the vehicle passes or fails the inspection.

4) If the analyzer has not already obtained the status of the drive axle as a part of this inspection, then the analyzer must obtain this information by displaying the prompt in Section 3.1.19b: *Drive Axle Prompt* and obtain whether the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control prior to conducting the tailpipe emissions inspection.

5) Store the results of the OBD inspection in the following fields: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_READY_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_PF_FLAG.

6) Print the special message (shown below), instead of OBD Print Message 12, on the same page as the Public Awareness Statement and,

Special Message:

Since this vehicle is known to have difficulties setting the readiness monitors to "ready," and more than 2 monitors are set to "not ready," your vehicle received an ASM or TSI test. You will likely be required to pass the OBD test next year, and should have the vehicle examined by a qualified repair technician to make sure the vehicle and its OBD system are operating properly.

7) a. Proceed directly to Section 3.4.7: *ASM Emission Inspection Sequence* and perform the ASM emissions inspection when the NON_COMM_2_TAILPIPE and ASM_TESTING fields are set to "Y" during the live testing period; or

b. proceed directly to Section 3.4.7: *Reinspection Test Completion* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the vehicle is equipped with all-wheel drive, full-time 4-wheel drive, or non-disengageable traction control during the live testing period; or

c. proceed directly to Section 3.4.7: *Reinspection Test Completion* and perform the preconditioned TSI inspection when the NON_COMM_2_TAILPIPE and TSI_TESTING fields are set to "Y" and the ASM_TESTING field is set to "N" during the live testing period.

8) Convert the emissions inspection type from OBD to either ASM or TSI when the transition is allowed by changing the value of the EMISS_TEST_TYPE field from "1" to "3" for ASM or from "1" to "2" for TSI.

OBD Inspection Failure Due to a Not Ready Condition During the Live Testing Period

If the vehicle is deemed "not ready," the date of inspection is greater than the date contained in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, and an "E" is **NOT** present in the NOT_RDY_TO_ASM field of the TXVRT.DAT file, the analyzer must:

- Store an "F" in the OBD2_READY_RES field indicating that the vehicle has been deemed "not ready";
- complete the remaining entries to the following OBD2 fields: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_READY_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_PF_FLAG; and
- proceed to the criteria in this section under the following subheadings: *OBD Inspection Pass and Fail Criteria*, *OBD Inspection Pass and Fail Criteria for Vehicles Whose GVW Is Greater Than 8,500 Pounds*, *OBD Message Selection During the Beta Testing Period*, and *OBD Message Selection During the Live Testing Period*.

OBD Inspection Pass and Fail Criteria

The following fields of the VEHICLE.DAT file must contain a "P", "K", or "Y" in order to pass the OBD inspection sequence: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN, OBD2_DLC_RES, OBD2_MIL_STATUS, OBD2_FAULT_CD_RES, and OBD2_READY_RES. The OBD2_FAULT_CD_RES field must be set to "F" if at least one of the DTCs retrieved from the vehicle's OBD system matches a value in the FAULT_CODE(DTC) field of the TXDTC.DAT file, and the corresponding FAIL_FLAG for the DTC match is set to "Y".

1) If the OBD2_MIL_CHECK and OBD2_MIL_ON_RUN fields are set to "Y" or "K", the OBD2_DLC_RES and OBD2_READY_RES fields are set to "P", and **either** the OBD2_MIL_STATUS or OBD2_FAULT_CD_RES field is set to "P", then the analyzer must store a "P" in the OBD2_PF_FLAG field of the VEHICLE.DAT file and print a PASS in the OBD inspection result section on the VIR.

2) If the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field is set to "N", the OBD2_DLC_RES field is set to "D", "I", or "L", the OBD2_READY_RES field is set to "F", or **both** the OBD2_MIL_STATUS and OBD2_FAULT_CD_RES fields are set to "F", then the analyzer must store a "F" in the OBD2_PF_FLAG field of the VEHICLE.DAT file and print a FAIL in the OBD inspection result section on the VIR.

OBD Inspection Pass and Fail Criteria for Vehicles Whose GVW Is Greater Than 8,500 Pounds

The analyzer will apply the light-duty OBD requirements under the *OBD Inspection Pass and Fail Criteria*, if the OBDHDGAS field in the SYSTEM.DAT file is set to "Y" and either:

- the previously entered GVW for the vehicle under inspection is between 8,500 and 14,000 pounds and the previously entered model year is 2009 or newer, or
- the previously entered GVW for the vehicle under inspection is strictly greater than 14,000 pounds and the previously entered model year is 2013 or newer.

The analyzer will apply the light-duty OBD requirements under the *OBD Inspection Pass and Fail Criteria*, if the OBDHDGAS field in the SYSTEM.DAT file is set to "Z" and either:

- the previously entered GVW for the vehicle under inspection is between 8,501 and 14,000 pounds, inclusive, and the previously entered model year is 2009 or newer.

Otherwise, the analyzer must only collect the data from the vehicle's OBD system and not use the data in the pass/fail determination. The following fields of the VEHICLE.DAT file must contain a "Y", or "K", in order to pass the OBD inspection sequence: OBD2_MIL_CHECK, OBD2_MIL_ON_RUN.

<u>OBD Message Selection During the Beta Testing Period</u>

If the model-year of the vehicle under inspection is equal to or greater than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file and the test date is prior to the PASS/FAIL (P/F) start date for OBD inspections in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file, then OBD failures will not cause the vehicle to have an OVERALL TEST FAILURE. Motorist information messages must be printed on an advisory OBD VIR to be given to the motorist informing them of problems with their vehicle's OBD system. The failing or aborted advisory OBD VIR must be printed prior to the tailpipe VIR. The analyzer must proceed to perform a TSI emission inspection on failed or aborted OBD inspections during the advisory period.

NOTE: The Texas OBD advisory period starts when the OBD software is loaded on an analyzer and ends when the test date is equal to the value stored in the OBDII_FAIL_ST_DT field of the SYSTEM.DAT file. Currently, the start date of P/F OBD is May 1, 2002.

If the value in the following fields is other than blank, "Y", "K", or "P", then the following message(s) must be printed above the public awareness statement to inform the motorist of possible problems with their vehicle.

(i) If there is an "N" in the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field, then the following must be printed:

Based on the information received during the test, there may be a problem with your On-Board Diagnostic Computer Malfunction Indicator Light. Repairing any problems that exist will likely improve performance, fuel economy, and reduce pollution. This vehicle must have the On-Board Computer functioning properly to pass the vehicle inspection to register this vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (2)

(ii) If there is a "D" or an "N" in the OBD2_DLC_RES field, the following message must be printed above the public awareness statement indicating that the vehicle's OBD system could not be checked due to a missing, inaccessible, damaged, or tampered connector:

Based on the information gathered during an attempt to perform an On- Board Diagnostic test your vehicle has a missing, tampered, or broken Diagnostic Connector. This vehicle must have the On-Board Computer functioning properly

to pass the vehicle inspection to register this vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (3)

(iii) If there is an "I" in the OBD2_DLC_RES field, the following message must be printed above the public awareness statement indicating that the vehicle's OBD system could not be checked due to inaccessible connector:

Based on the information gathered during an attempt to perform an On-Board Diagnostic test your vehicle has an inaccessible Diagnostic Connector. This vehicle must have the Diagnostic Connector accessible to allow the check of the On Board Diagnostic computer system on the vehicle next year. (Text subject to change)

OBD PRINT MESSAGE (4)

(iv) If there is an "F" in the OBD2_READY_RES field of the VEHICLE.DAT file, the vehicle will be failed and the following message must be printed above the public awareness statement:

Based on the information obtained from the On-Board Computer in the vehicle, the system is not ready to make a determination regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be evaluated and the reinspection made next year. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

OBD PRINT MESSAGE (5)

(v) If there is an "F" stored in the OBD2_MIL_STATUS field, the following message must be printed:

Based on the results of the On-Board Diagnostic test, your vehicle indicates there is a failure that is causing higher than allowed pollution levels to be emitted into the atmosphere. The problem(s) causing the failure, when fixed, will increase performance, fuel economy, and reduce pollution. Repair of the failure(s) will be required to pass the OBD test next year. (Text subject to change)

OBD PRINT MESSAGE (6)

<u>OBD Message Selection During the Live Testing Period</u>

If the model-year of the vehicle being inspected is equal to or greater than the value contained in the OBDII_MODEL_YR field of the SYSTEM.DAT file and the test date is after the mandatory P/F start date as defined in the SYSTEM.DAT file, OBD inspection results will be used to evaluate the Overall PASS/FAIL result of the vehicle being inspected.

1) If the OBD2_PF_FLAG field is not "P" and

(i) If the result in the OBD2_DLC_RES field is an "L" (abort code 80) the following message must be printed above the public awareness statement:

Based on the information gathered during an attempt to perform an On Board Diagnostic test your vehicle has a missing Diagnostic Connector, or a Diagnostic Connector that cannot be located by the inspector. This vehicle must have the On-Board Computer Diagnostic connector available to the inspector and functioning properly to pass the vehicle inspection. If you have questions regarding this test, ask the inspector who performed this test. (Text subject to change)

OBD PRINT MESSAGE (10)

(ii) If the result in the OBD2_DLC_RES field is a "D", an "I", or an "N", the following message must be printed above the public awareness statement:

Based on the information gathered during an attempt to perform an On Board Diagnostic test your vehicle has a damaged or inaccessible Diagnostic Connector. This vehicle must have the On-Board Computer Diagnostic connector available to the inspector and functioning properly to pass the vehicle inspection. If you have questions regarding this test, ask the inspector who performed this test. (Text subject to change)

OBD PRINT MESSAGE (11)

(iii) If the result in the OBD2_READY_RES field is an "F", a "FAIL" must be printed in the OBD inspection results section of the VIR and the following message must be printed above the public awareness statement:

Based on information obtained from the On-Board Computer in the vehicle, the system is not ready to make a determination regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be evaluated and the reinspection made which will allow this vehicle to be registered. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

OBD PRINT MESSAGE (12)

2) If the value in the following fields is other than blank, "Y", "K", or "P", then the following message must be printed above the public awareness statement to inform the motorist of possible problems with their vehicle.

(i) If there is an "N" in the OBD2_MIL_CHECK or OBD2_MIL_ON_RUN field, the following must be printed above the public awareness statement:

Based on the information received during the test, there may be a problem with your On-Board Diagnostic Computer Malfunction Indicator Light. This vehicle must have the On-Board Computer system functioning properly to pass the vehicle inspection. (Text subject to change)

OBD PRINT MESSAGE (13)

(ii) If there is an "F" stored in the OBD2_MIL_STATUS field, the following message must be printed above the public awareness statement:

Based on information obtained from the On-Board Computer in the vehicle, the system has made a determination that there is a problem regarding the pollution control system on the vehicle. This situation must be corrected before the OBD system can be reinspected. See your owner's manual for information on "OBD/Readiness driving procedures" or contact your vehicle service advisor. (Text subject to change)

OBD PRINT MESSAGE (14)

3.4.6m OBD Engine Stop Prompt

SHUT OFF THE ENGINE

Programming Criteria:

The analyzer must prompt the inspector to turn off the engine and proceed to Section 3.4.8: *Gas Cap Missing Prompt*.

3.4.7 Reinspection Test Completion

Programming Criteria:

The appropriate emissions inspection, either ASM or TSI in this case, must be conducted only if:

- the current reinspection is being conducted on the same day as the initial inspection (Day1) or before the sixteenth day following the day of the initial inspection (Day 17), and the EMISS_PF_FLAG field was set to "F", "T", or "D" during the initial inspection; or

- the current reinspection is being conducted on or after the sixteenth day following the day of the initial inspection (Day 17).

Upon completion of the appropriate emissions inspection, the analyzer must use the following logic to write an inspection record:

1) Set the EMISS_TEST_TYPE field to "4" for OBD inspections on diesel-powered vehicles that successfully transition from the OBD inspection, "1" for OBD inspections on gasoline vehicles, "2" for TSI inspections, "3" for the ASM inspections (0 is not used since special replacement certificate inspections are not eligible to be "reinspected"). If there is no previous inspection for this vehicle, or the EMISS_PF_FLAG field for this vehicle's previous inspection is "P", set the EMISS_INIT_TEST field to "I" for initial inspection. If the EMISS_PF_FLAG field for this vehicle's previous inspection is "F", set the EMISS_INIT_TEST field to "R". If there is no previous inspection for this vehicle, the previous inspection was a reinspection, or the previous inspection was more than 16 days prior to this inspection,

set the SAFE_INIT_TEST field to “I”. If the previous inspection was less than or equal to 16 days prior to this inspection, then the analyzer must set the SAFE_INIT_TEST field to “R”. The analyzer must set the flag indicating that the free reinspection has been completed if applicable.

2) Set the HC_PF_FLAG, CO_PF_FLAG, and EMISS_PF_FLAG fields to “P” or “F”, as appropriate.

3) Display the inspection results just prior to printing the rejection receipt or VIR, update the inspection record, replace the “J” in the ABORT field with a space or blank, and write the vehicle inspection record to the VEHICLE.DAT file, if the entry for the EMISS_PF_FLAG field is set to “P” or “F”.

4) Set the RPM_BYPASS field to “B”, if the inspector opted to “bypass” the RPM.

5) If the excessive dilution causes the inspection sequence to end, set the DILUTION_PF_FLAG field to “F”. Otherwise, set the DILUTION_PF_FLAG field to “P”.

6) If the emissions inspection ends due to a “time out” condition, set the TIMEOUT_FLAG field to “Y”. Otherwise, set the TIMEOUT_FLAG field to “N”.

7) The analyzer will automatically enter the following fields: VERSION, TEST_DATE, TEST_START_TIME, TEST_END_TIME, STATION_NUM, ANALYZER_NUMBER, INSPECTOR_NUM, COUNTY_CODE, DILUTION (Dilution Amount in percent, $CO + CO_2$).

8) Proceed to Section 3.4.8: *Gas Cap Missing Prompt*.

3.4.8 Gas Cap Missing Prompt

IS THE GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

Gas cap inspections are not required on trailers, motorcycles, diesel powered vehicles, alternatively fueled vehicles, and gasoline powered vehicles whose model-year is either greater than the current calendar year minus two or 25 years old and older.

If inspector indicates the gas cap is missing, the analyzer must set the GAS_CAP_MISS field to “Y”, set the GAS_CAP_PF_FLAG_1 field to “F” for fail, and continue with Section 3.4.11b: *End of Phase Logic*. If the inspector selects “N”, continue with the next screen prompt.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_MISS**
GAS_CAP_PF_FLAG_1

3.4.9 Gas Cap Testable Prompt

IS THE GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable, the analyzer must set the GAS_CAP_PF_FLAG_1 field to "P" for pass, set the GAS_CAP_TESTABLE field to "N", and continue with Section 3.4.11b: *End of Phase Logic* Section. If the inspector selects "Y", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_TESTABLE**
GAS_CAP_PF_FLAG_1

3.4.10 Gas Cap Connect Prompt

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.4.11 Gas Cap Results Prompt

ENTER THE RESULTS OF THE GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_1 field. The stored value must be either "P" or "F". If the result from the gas cap tester is "F", the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG_1**

3.4.11a Second Gas Cap Prompt

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria:

This prompt must not be displayed if the inspector has indicated that the gas cap is missing or not testable. The default for this screen must be to "N". The analyzer must only accept an entry of "Y" or "N" and the error message must be displayed if the inspector enters another character. If the inspector indicates that there is a second gas cap to be tested, the analyzer must proceed to Section 3.4.11c: *Second Gas Cap Missing Prompt*.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

3.4.11b End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_1 field is set to "P", then the analyzer must set the GAS_CAP_PF_FLAG field to "P". If the GAS_CAP_PF_FLAG_1 field is set to "F", then the analyzer must set the GAS_CAP_PF_FLAG field to "F".

For ASM and TSI inspections, if the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to 'P", then the analyzer must set the OVERALL_RESULTS field to 'P". If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to "P", then the analyzer must set the OVERALL_RESULTS field to "F".

For OBD inspections, if the OBD2_PF_FLAG, the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to "P", then the analyzer must set the OVERALL_RESULTS field to "P". If the OBD2_PF_FLAG, the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to "P", then the analyzer must set the OVERALL_RESULTS field to "F".

Then, the analyzer must proceed to Section 3.4.12: *Emissions Test Fee Prompt*.

Associated System File: **VEHICLE.DAT**

EMISS_PF_FLAG	**OBD2_PF_FLAG**	**SAFETY_PF_FLAG**
GAS_CAP_PF_FLAG	**GAS_CAP_PF_FLAG_1**	**OVERALL_RESULTS**

3.4.11c Second Gas Cap Missing Prompt

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

If inspector indicates the gas cap is missing, the analyzer must set the 2ND_GAS_CAP_MISS field to "Y", set the GAS_CAP_PF_FLAG_2 field to "F", and continue with Section 3.4.11g: *End of Phase Logic*. If the inspector selects "N", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_MISS**
GAS_CAP_PF_FLAG_2

3.4.11d Second Gas Cap Testable Prompt

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable, the analyzer must set the GAS_CAP_PF_FLAG_2 field to "P", set the 2ND_GAS_CAP_TEST field to "N", and continue with Section 3.4.11g: *End of Phase Logic*. If the inspector selects "Y", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_TEST**
GAS_CAP_PF_FLAG_2

3.4.11e Second Gas Cap Connect Prompt

REMOVE THE SECOND GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.4.11f Second Gas Cap Results Prompt

ENTER THE RESULTS OF THE SECOND GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_2 field. The stored value must be either "P" or "F". If the result from the gas cap tester is "F", the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG**
GAS_CAP_PF_FLAG_1 **GAS_CAP_PF_FLAG_2**

3.4.11g End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_2 and GAS_CAP_PF_FLAG_1 fields are set to “P”, then the analyzer must set the GAS_CAP_PF_FLAG field to “P”. If either the GAS_CAP_PF_FLAG_2 or the GAS_CAP_PF_FLAG_1 field is set to “F”, then the analyzer must set the GAS_CAP_PF_FLAG field to “F”.

For ASM and TSI inspections, if the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “F”.

For an OBD inspection, if the OBD2_PF_FLAG, the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the OBD2_PF_FLAG, the EMISS_PF_FLAG, the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS to “F”.

If the county code value was not entered by the inspector (i.e., not collected from the TxDMV 2-D bar code nor manually entered), the analyzer will use the county code setting under the audit menu (i.e., the county code setting in the STATION.DAT file) as the default county of registration and use it to compare with the LIRAP fields to set the REG_FEE_CODE, where applicable. The goal of the following logic is to set the REG_FEE_CODE based on the vehicle’s registered county code entered by the inspector or on the county code where the analyzer is located when the inspector’s previous entries caused the REG_COUNTY to be is set to “000” or spaces.

If the county code value was not entered by the inspector (i.e., not collected from the TxDMV 2-D bar code nor manually entered), the analyzer will use the county code setting under the audit menu (i.e., the county code setting in the STATION.DAT file) as the default county of registration and use it to compare with the LIRAP fields to set the REG_FEE_CODE, where applicable. The goal of the following logic is to set the REG_FEE_CODE based on the vehicle’s registered county code entered by the inspector or on the county code where the analyzer is located when the inspector’s previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), “000”, or spaces.

The REG_FEE_CODE will be set to the same value as the SAFE_TEST_TYPE field when the SAFE_TEST_TYPE is set to “M”, “G”, “K”, “J”, “B”, “C”, or “H”. The SAFE_TEST_TYPE is set to “L” only for counties in the Dallas and Houston areas, “A” on for El Paso County, and “N” only for Travis and Williamson Counties in the Austin area. The default county conditions have been added only to the bullets where it is possible that the default county code is one of the counties in the area (i.e., El Paso, Austin, Dallas and Houston) that uses that SAFE_TEST_TYPE value. (The logic for the El Paso area LIRAP field is purposely reversed because the LIRAP program doesn’t operate in the El Paso area, so their LIRAP field value will be set to “N” for the current SAFE_TEST_TYPE value.)

If the SAFE_TEST_TYPE is set to “L”, set the REG_FEE_CODE to:

- “L” when the vehicle model year is 1996 and newer and either:

- the county of registration (e.g., value previously entered by the inspector) matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "Y" or space; or

- the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "Y" or space; or

- "A" if the county code value previously entered by the inspector matches the El Paso County Code (e.g., "071", "71_", etc.); or

- "N" if the county code value previously entered by the inspector matches the Travis County code, "227" or the Williamson County code, "246" and the value of corresponding LIRAP field number (e.g., LIRAP_227 or LIRAP_246) in SYSTEM.DAT file is set to "Y" or space; or

- "R" when the vehicle model year is 1996 and newer and either:

  - the county of registration (e.g., value previously entered by the inspector) matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

  - the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

- "M" if vehicle model year is 1995 and older, the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220);

- "S" if the county code value previously entered by the inspector matches the Travis County code, "227" or the Williamson County code, "246" and the value of corresponding LIRAP field number (e.g., LIRAP_227 or LIRAP_246) in SYSTEM.DAT file is set to "N" (The default county for the SAFE_TEST_TYPE field is to a Dallas or Houston area county, so the default county conditions are not needed here).

If the SAFE_TEST_TYPE is set to "A", set the REG_FEE_CODE to:

- "A" when either:

    - the county of registration matches the El Paso County Code (e.g., "071", "71_", etc.) and the value of the corresponding LIRAP field number (e.g., LIRAP_071) in SYSTEM.DAT file is set to "N"; or

    - the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches the El Paso County Code (e.g., "071", "71_", etc.) and the value of the corresponding LIRAP field number (i.e., LIRAP_071) in SYSTEM.DAT file is set to "N".

- "L" if vehicle model year is 1996 and newer, the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "Y" or space;

- "M" if vehicle model year is 1995 and older, the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220);

- "N" if the county code value previously entered by the inspector matches the Travis County code, "227" or the Williamson County code, "246" and the value of corresponding LIRAP field number (e.g., LIRAP_227 or LIRAP_246) in SYSTEM.DAT file is set to "Y" or space;

- "R" if vehicle model year is 1996 and newer, the county code value previously entered by the inspector matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

- "S" if the county code value previously entered by the inspector matches the Travis County code, "227" or the Williamson County code, "246" and the value of corresponding LIRAP field number (e.g., LIRAP_227 or LIRAP_246) in SYSTEM.DAT file is set to "N".

If the SAFE_TEST_TYPE is set to "N", set the REG_FEE_CODE to:

- "N" when either:

    - the county of registration matches the Travis County code, "227" or the Williamson County code, "246" and the value of the corresponding LIRAP field numbers (i.e., LIRAP_227, LIRAP_246) in SYSTEM.DAT file is set to "Y" or space; or

    - the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be

is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches the Travis or Williamson County Code (i.e., "227", "246") and the value of the corresponding LIRAP field number (i.e., LIRAP_227, LIRAP_246) in SYSTEM.DAT file is set to "Y" or space; or

- "A" if the county code value previously entered by the inspector matches the El Paso County Code (e.g., "071", "71_", etc.); or

- "L" if vehicle model year is 1996 and newer, if the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "Y" or space; or

- "M" if vehicle model year is 1995 and older, the county code value previously entered by the inspector matches the a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220);

- "R" if vehicle model year is 1996 and newer, if the county code value previously entered by the inspector matches a Houston or Dallas county code (i.e., 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, or 220) and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

- "S" when either:

  - the county of registration (e.g., value previously entered by the inspector) matches the Travis County code, "227" or the Williamson County code, "246" and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N"; or

  - the county code setting under the audit menu is being used as the default county of registration because the inspector's previous entries caused the REG_COUNTY to be is set to either a county code that does not match a Houston, Dallas, El Paso, Travis, or Williamson County code (e.g. 020, 043, 057, 061, 070, 079, 084, 101, 126, 129, 170, 184, 199, 220, 071, 227, or 246), "000", or spaces; and the county of inspection matches the Travis County code, "227" or the Williamson County code, "246" and the value of the corresponding LIRAP field numbers (e.g., LIRAP_220, LIRAP_070, etc.,) in SYSTEM.DAT file is set to "N".

The analyzer must increment the TEST_REC_NUM by 1 and store this value in the inspection record.

Then, the analyzer must proceed to Section 3.4.12: *Emissions Test Fee Prompt*.

Associated System File:	**VEHICLE.DAT**	**OBD2_PF_FLAG**
	GAS_CAP_PF_FLAG	**SAFETY_PF_FLAG**
	GAS_CAP_PF_FLAG_1	**EMISS_PF_FLAG**
	GAS_CAP_PF_FLAG_2	**OVERALL_RESULTS**

TEST_REC_NUM **REG_FEE_CODE**
REG_COUNTY

3.4.12 Emissions Test Fee Prompt

ENTER THE COST FOR THE EMISSIONS INSPECTION, INCLUDING CENTS.

Programming Criteria:

The analyzer must display this prompt when the reinspection is being conducted:

- on or after the sixteenth day (Day 17) after the initial inspection; or
- before the sixteenth day (Day 17) after the initial inspection, and the EMISS_PF_FLAG was set to "F" during the initial inspection.

When displayed, the analyzer must prompt the inspector to enter the cost for the emissions inspection, exclusive of repair costs. The analyzer must sum the emissions test fee, the safety test fee, if applicable, the applicable safety repair costs, and the applicable repair cost, to obtain the overall cost and store the value in the OVERALL_COST field. The analyzer must not accept a value greater than $99.99 for this entry.

When the MAX_EMISS_FEE_FL is set to "Y", the analyzer must not accept a value greater than the value in:

- the MAX_EMISS_ONLY_FEE field if the vehicle received an OBD inspection; or
- the MAX_EMISS_ONLY_FEE2 field if the vehicle received an ASM or TSI inspection.

The analyzer must display error message 1 when the inspector attempts to proceed without entering a value. The analyzer must display error message 2 when the inspector enters a value greater than $99.99. When the MAX_EMISS_FEE_FL is set to "Y", the analyzer must display error message 3 if:

- the vehicle received an OBD inspection, and the inspector entered a value greater than the value in the MAX_EMISS_ONLY_FEE field for the county where the vehicle was inspected; or
- the vehicle received an ASM or TSI inspection, and the inspector entered a value greater than the value in the MAX_EMISS_ONLY_FEE2 field for the county where the vehicle was inspected.

The maximum emissions fee for message 3 will be the value in either the MAX_EMISS_ONLY_FEE or MAX_EMISS_ONLY_FEE2 field.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**
2. **MAXIMUM ENTRY $99.99 -- TRY AGAIN.**

3. **MAXIMUM ENTRY <enter max_safe_emiss_fee value here in $nn.nn format> -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

EMISS_INSP_COST **EMISS_PF_FLAG** **OVERALL_COST**
SAFE_INSP_COST **REP_OVERALL_COST**

SYSTEM.DAT

MAX_EMISS_FEE_FL **MAX_EMISS_ONLY_FEE**
MAX_EMISS_ONLY_FEE2

3.4.13 Certificate Number Prompt

ENTER THE INSPECTION CERTIFICATE NUMBER.

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will not display this prompt, and proceed to Section 3.4.15: *VI-30 Selection Prompt*. If the SKIP_CERT_DECAL field is not set to "Y", then the analyzer must apply the following criteria.

The analyzer will not display this prompt, leave the SAFE_TEST_TYPE field blank, and proceed to Section 3.4.18: *Print Vehicle Inspection Report* when an emissions only reinspection is conducted and the TEST_TYPE field is set to "C" or "I" in the initial inspection record.

The analyzer must prompt the inspector to **"ENTER THE INSPECTION DECAL NUMBER"**, set the SAFE_TEST_TYPE to "H", and proceed to Section 3.4.18: *Print Vehicle Inspection Report*, when a "Required Emissions Only Test (Decal)" or a "Remote Sensing Request (Decal)" reinspection is conducted and the TEST_TYPE field in the initial inspection record is set to "O", or "B", respectively.

If the OVERALL_RESULTS field is set to "F", then the analyzer will not display the inspector this prompt and proceed to Section 3.4.17: *Rejection Receipt*.

If the OVERALL_RESULTS field is set to "P", then the analyzer must prompt the inspector to input the safety inspection sticker number. A minimum of six and maximum of nine characters are required for this field. When the certificate number entered is not a sequential number to the last certificate issued, a warning should be displayed, **"Certificate number not in sequential order. Notify DPS if a certificate is missing."** The enter key should allow the inspector to continue.

The safety certificate number consists of an alpha character, followed by eight digits. The alpha character usually does not correspond to the alpha character contained in the SAFE_TEST_TYPE field. The analyzer must take the entered certificate number, compare it to the previous certificate issued under the same safety inspection type, and determine if the entered certificate number is next in sequence for that safety inspection type.

For example, the safety certificate numbers should be in sequential order for all one year windshield inspections, two year windshield inspections, trailer/motorcycle inspections, and so forth. If the entered number is not next in sequence, the correction prompt must appear.

If the inspector enters fewer than nine characters, the analyzer must automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an "A" followed by a "123" must be converted to "A00000123" and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character certificate number entry. This nine-character value must be used during comparison testing to facilitate sequential issuance of certificates. The first character of a certificate number must be an alphabetic character. The analyzer must be able to enter the certificate number using the bar code reader.

The analyzer must restrict the alpha character to a list of acceptable alpha characters based on the particular type of certificate or decal being issued. The table of certificate types and the corresponding acceptable alpha characters is located in Appendix V: *Safety Certificate Format Table*.

For example, during a safety and emissions inspection or reinspection, if the inspector selects the "1 year windshield - ASM (safety & emissions)" certificate in Section 3.1.20: *Test Type Prompt* and the vehicle passes the inspection, the inspector may only enter an "F" or "M" as the alpha character in the certificate number entry prompt. Similarly, the acceptable alpha characters are "E" or "P" for "1 year windshield - OBD (safety & emissions)" certificate types.

<u>Dallas-Fort Worth and Houston-Galveston Areas</u>

If the inspector selects a "1 year windshield - OBD (safety & emissions)" certificate, the vehicle receives the OBD inspection during the emissions phase, and the vehicle passes all the phases of the inspection, then the vehicle must receive a certificate that begins with the letter "E" or "P", also known as an "E-series" or "P-series" sticker, respectively. If the inspector selects a "1 year windshield - OBD (safety & emissions)" certificate, the vehicle's model-year is 1996 or newer, and the county code under the audit menu is not "071" or "71_", where the underscore represents a space, for El Paso County, then change the SAFE_TEST_TYPE from "A" to "L", and restrict the acceptable alpha characters to "E" or "P", even if the emissions inspection transitions from OBD to ASM or TSI.

If the inspector selects a "1 year windshield - ASM (safety & emissions)" certificate, the vehicle receives the ASM inspection during the emissions phase, and the vehicle passes all the phases of the inspection, then the vehicle must receive a certificate that begins with the letter "F" or "M", also known as an "F-series" or "M-series" sticker, respectively. If the inspector selects a "1-year windshield - ASM (safety & emissions)" certificate, the vehicle's model-year is 1995 and older and the county code under the audit menu is not "071" or "71_" (where the underscore represents a space) for El Paso County, then change the SAFE_TEST_TYPE from "A" to "M", and restrict the acceptable alpha characters to "F" or "M", even if the emissions inspection transitions from ASM or TSI.

<u>El Paso Area</u>

If the inspector selects a "1 year windshield - TSI (safety & emissions)" certificate, and the county code under the audit menu is "071" or "71_" (where the underscore represents a space) for El Paso County, then do not change the SAFE_TEST_TYPE from "A", and restrict the acceptable alpha characters to "A", "B", "C", or "D".

<u>Austin Area</u>

If the inspector selects a “1 year windshield - OBD/TSI (safety & emissions)” certificate, and the county code under the audit menu is “227”, “246”, 166”, “144”, “105”, “027” or “27_”, “016” or “16_”, “014” or “14_”, or “011” or “11_” (where the underscore represents a space) for Travis, Williamson, Milam, Lee, Hays, Burnet, Blanco, Bell, or Bastrop Counties, respectively, then the analyzer must set the SAFE_TEST_TYPE to “N” and restrict the acceptable alpha characters to “A” or “B”.

Associated System File: **VEHICLE.DAT** **CERT_NUM**

3.4.14 Certificate Number Correction Prompt

INDICATE THE CONDITION OF THE PREVIOUS CERTIFICATE

U - UNACCOUNTED FOR
C - ENTERED CERTIFICATE IS CORRECT
R - RE-ENTER CERTIFICATE NUMBER

Programming Criteria:

This prompt must only appear if:

- the entered certificate number is out of sequence with the previously issued certificate number of the same safety certificate inspection type; or

- the entered decal number is out of sequence with the previously issued decal number.

The default for this screen must be “R” for re-enter certificate or decal number. The analyzer must only accept “U”, “C”, or “R”, as valid entries. If the inspector selects “U”, the analyzer must not allow any further official emissions inspections to be conducted until the inspector has “accounted for” the certificates or decals by completing the entries required in Section 3.12: *Missing, or Voided Certificates*.

If a manufacturer lockout is used, the inspector shall be able to easily identify the reason the analyzer is preventing subsequent official inspections. The inspector shall be able to easily identify which type of certificate must be accounted for.

Certificates

The analyzer must display the entered certificate number, the “previously” issued certificate number, and the corresponding safety certificate inspection type (“A”, “J”, “C”, “B”, “K”, “G” certificate). The analyzer must store the entry of “C” in the CERT_COND field, if “C” is selected, and store the entry of the “U” in the CERT_COND field, if “U” is selected in the inspection record.

If “R” is entered, the analyzer must return to the previous screen prompt and allow the inspector to re-enter the current certificate. If “C” or “U” is selected, the analyzer must store the entry of either “C” or “U” in the CERT_COND field of the inspection record and use the entered certificate number as the new “previous” certificate number for the next comparison.

The analyzer must store the information in the VEHICLE.DAT file and print it on the weekly VI-8B. The void indicator must show “VOID” if “V” is in the CERT_COND field or

"MISS" if "M" is in the CERT_COND field of the record created using the Missing or Voided Certificates function.

Decals

The analyzer must prompt the inspector to **"INDICATE THE CONDITION OF THE PREVIOUS DECAL NUMBER"**, display the entered decal number, the previously issued decal number, and the safety inspection type (decal) when a "Required Emissions Only Test (Decal)" or a "Remote Sensing Request (Decal)" reinspection is conducted and the TEST_TYPE field in the initial inspection record is set to "O", or "B", respectively.

If "R" is entered, the analyzer must return to the previous screen prompt and allow the inspector to re-enter the current decal. If "C" or "U" is selected, the analyzer must store the entry of either "C" or "U" in the DECAL_COND field of the inspection record and use the entered decal number as the new "previous" decal number for the next comparison.

The analyzer must store the information in the VEHICLE.DAT file and print it on the weekly VI-8B. The void indicator must show "VOID" if "V" is in the DECAL_COND field or "MISS" if "M" is in the DECAL_COND field of the record created using the Missing or Voided Certificates function.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **CERT_COND**
DECAL_COND

3.4.15 VI-30 Selection Prompt

DO YOU WISH TO ISSUE AN OUT OF STATE VERIFICATION FORM (VI-30)? ('Y' OR 'N')

Programming Criteria:

If the SKIP_VI30 field in the SYSTEM.DAT file is set to "N" or "_", then the analyzer will display this prompt, and proceed to Section 3.4.16: *VI-30 Number Prompt*. If the SKIP_VI30 field in the SYSTEM.DAT file is set to "A", then the analyzer will not display this prompt, and proceed to Section 3.4.17: *Rejection Receipt*. If the SKIP_VI30 field is set to "Y", then the analyzer will display this prompt and proceed to Section 3.4.16a: *VI-30 Test Fee Prompt*. If the SKIP_VI30 field is not set to "Y" or "A", then the analyzer must apply the following criteria.

The analyzer must give this prompt if the OVERALL_RESULTS field is set to "P". If the inspector selects "N", the analyzer must skip the next two prompts and proceed to Section 3.4.17: *Rejection Receipt*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_FLAG**

3.4.16 VI-30 Number Prompt

ENTER THE VI-30 #.

Programming Criteria:

The inspector will enter the VI-30 number that has a minimum of one character and a maximum of 10 characters. If no entry is made, the analyzer must return to Section 3.4.15: *VI-30 Selection*. The analyzer must allow the VI-30 number to be entered using the bar code scanner. The formats of the bar code are:

Formats

Name	Length	Start	Format
VI-30 Number	9	1	Numeric (existing)
VI-30 Number	6	1	Numeric (lesser used)
VI-30 Number	9	1	Alpha-numeric (ANNNNNNNN), must start with L (newly added)

The analyzer should accept entries that contain eight numbers with a leading or following space, or an "L" followed by eight numeric positions, or six numbers with no leading or following spaces in the 1-D bar code on the form. The analyzer must drop the leading or following spaces, and store only the numerical character portion of the scanned number in the VI30A_NUM field of the inspection record. Samples may be requested from the TCEQ.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_NUM**

3.4.16a VI-30 Test Fee Prompt

ENTER THE FEE FOR THE VI-30 ONLY, INCLUDING CENTS.

Programming Criteria:

The inspector shall enter the cost for the issuance of the VI-30. If an inspector enters a fee greater than $100 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee. The analyzer must add the cost entered here to the safety test fee cost entered in Section 3.4.5: *Safety Test Fee Prompt* and store the sum in the SAFE_INSP_COST field of the inspection record.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**

3.4.17 Rejection Receipt

EXPLAIN THE REJECTION FULLY.

Programming Criteria:

The analyzer must only display this prompt if the SAFE_PF_FLAG or GAS_CAP_PF_FLAG field is set to "F". The analyzer must prompt the inspector to explain the rejection fully, automatically enter value of the OVERALL_COST field as the fee paid, print the rejection receipt including the inspector's explanation, where applicable, and allow the inspector to print additional copies of the rejection receipt after the initial receipt has been printed. The printed rejection receipt must use Courier or Times New Roman font. A sample rejection receipt is located in Appendix E: *Rejection Receipt*.

The analyzer must allow the inspector to type the explanation from the keyboard prior to printing the rejection receipt. The typed explanation must appear on the printed rejection report.

If the vehicle fails either the ASM, TSI, or OBD emissions inspection or the gas cap integrity inspection, then the entry for this item must be displayed. If the vehicle fails the emissions and gas cap integrity inspections, then both entries must be displayed on the rejection receipt. The preferred order of appearance is the emissions inspection entry, the gas cap integrity inspection entry, followed by the remaining safety item entries. The rejection receipt must not display more than a maximum of five items.

After printing the rejection receipt, the analyzer must proceed to Section 3.4.17a: *Print Vehicle Repair Form*, followed by Section 3.4.18: *Print Vehicle Inspection Report*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **OVERALL_COST**

3.4.17a Print Vehicle Repair Form

Programming Criteria:

If the EMISS_PF_FLAG flag is set to "F", then the analyzer must print a VRF. The analyzer must print the following vehicle information on the VRF: make, model, model-year, the VIN, license plate number, and odometer reading. A sample VRF is provided in Appendix O: *Sample Vehicle Repair Form*.

3.4.14b Display and Print Emissions Recall Notices and Technical Service Bulletins

If the analyzer received TSBs and/or emissions recall information during the VID contact and the inspector opted to view this information at the end of the test sequence, then the analyzer must display the TSBs and/or emissions recall information at this time.

If the vehicle failed the emissions inspection and TSBs and/or recall information was not printed previously, the analyzer must automatically print this information. If the vehicle passed the emissions inspection, or after the automatic printing has successfully completed, the analyzer must provide the following options:

- re-print this information;

- save this information to a predetermined file; or

- continue to the next prompt.

If the inspector elects to save this information, the new TSBs or emission recall information must overwrite the oldest TSB or emissions recall information in the analyzer.

3.4.17c Print Public Awareness Statement

The public awareness statement must be printed only once. The analyzer must print the "passing" public awareness statement if the vehicle passes the emissions phase of the inspection or the "failing" public awareness statement if the vehicle fails the emissions phase of the inspection.

All OBD VIR messages (advisory and mandatory) must be printed above the public awareness statement on the same page.

3.4.17d Print AirCheckTexas Application

The AirCheckTexas application, formerly referred to as the LIRAP application, has two versions: a version used in the Austin area and a separate version used in the Dallas-Fort Worth and Houston-Galveston areas. The analyzer must determine which version to print based on the county code setting under the audit menu.

The analyzer must print:

- the Austin version of the AircheckTexas Repair and Retirement Assistance Program Application when the county code setting under audit menu is "227", "246", 166", "144", "105", "027" or "27_", "016" or "16_", "014" or "14_", or "011" or "11_", for Travis, Williamson, Milam, Lee, Hays, Burnet, Blanco, Bell, or Bastrop Counties, respectively; or

- the Dallas-Fort Worth and Houston-Galveston version of the AircheckTexas Repair and Retirement Assistance Program Application on the second page of Appendix W: *AirCheckTexas Repair and Retirement Assistance Program Application* for all remaining counties.

The printed application must include the telephone numbers listed in the LIRAP_NUM_A, and LIRAP_NUM_B fields of the SYSTEM.DAT file.

The analyzer must print the AircheckTexas Repair and Retirement Assistance Program Application when:

- the PRINT_LIRAP_APP field is set to "A", the EMISS_PF_FLAG field is set to "F" or "P", and the model-year of the vehicle is 10 years old or older; or

- the PRINT_LIRAP_APP field is set to "A", the EMISS_PF_FLAG field is set to "F", and the model-year of the vehicle is 9 years old or younger; or

- the PRINT_LIRAP_APP field is set to "Y" and the EMISS_PF_FLAG field is set to "F".

Associated System File:	**SYSTEM.DAT**	**PRINT_LIRAP_APP** **LIRAP_NUM_A** **LIRAP_NUM_B**

3.4.18 Print Vehicle Inspection Report

After the analyzer has stored the inspection record in the VEHICLE.DAT file, the following prompt must be displayed: **"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."**

Depending upon the pass/fail status of the emissions phase of the inspection, the analyzer will provide additional information to the customer as outlined in Appendix B: *Vehicle Inspection Reports*. The report must include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (TSI, ASM, OBD), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, Vehicle License Plate Number, VIN, Vehicle Make, Vehicle Model-Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation, where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the emissions inspection, Dilution Amount (in percent, $CO + CO_2$), Dilution Results (Pass or Fail), the results of the gas cap integrity inspection, and the overall result of the inspection. The vehicle's ignition type must be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report must indicate that the inspection was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the inspection was conducted as a special Test. If the inspection was conducted as a special test, the two letter designation of "LI", "ME", "IV", "AD", "ST", "PA", or "OT" must be placed on the same line as the Test Type separated by at least two spaces or a slash and the words "Special Test" must be in the subtitle. The analyzer must print two copies of the VIR and allow the inspector to print additional copies after the initial reports have been printed.

If the inspection ends because of a time out or dilution condition, the emission standards, amounts, and results must not be printed on the report. The report must indicate that the vehicle has failed because of excessive dilution, if applicable. If the inspection should "time out" then the report must indicate that the vehicle failed because the inspection was not completed in the time allowed for completion of the inspection. After the inspection has been completed, the analyzer must contact the VID and transmit all applicable vehicle information.

If the vehicle fails the OBD emissions inspection, the report must include the following phrase, **"Your vehicle's computerized self-diagnostic system (OBD) registered the fault(s) listed above. This fault (s) is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem."**

If the inspection ends in an aborted condition, the VIR must indicate that the inspection was aborted in the overall results block and display the reason for the abort. If the inspector selects "other" as the reason for the abort, the analyzer must either print the reason entered by the inspector on the VIR or provide space for a handwritten reason if the inspector chooses not to use the keyboard to enter the abort reason.

If the emissions phase of the inspection is aborted or ends due to a timeout condition, the analyzer must print dashes on the VIR for the pass/fail indicators and the readings. The analyzer must print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO_2, and O_2, where applicable.

If the VI-30 number was issued, the analyzer must change the message on the VIR from "Safety Inspection Fee" to "Safety Insp + VI30 Fee".

The analyzer must print two bar codes on the VIR that contain the VIN, license plate number, and license plate type of the vehicle under inspection. The bar codes must be code 39 format, contain the previously mentioned information, and include the start and stop characters.

One bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"$"
License Plate Type	1	2	"1", "2", "3", "4", "5", "6", "7", or "8"
License Plate Number	8	3	Alphanumeric
TxDMV Number	10	11	Alphanumeric

The other bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"I"
VIN	17	2	Alphanumeric

Each bar code must be clearly labeled, so that the inspectors can easily identify each bar code type. The location of the bar codes on the VIR must be determined by the manufacturers.

<u>Printing OBD Message 20</u>

The analyzer must print OBD message 20 when:

- the STNDS field of the SYSTEM.DAT file is set to "C" or "D"; and
- the PRINT_LIRAP_APP field is set to "Y" or "A"; and
- either the vehicle model-year is 10 years old or older and passes or fails the emissions inspection, or the vehicle model-year is 9 years old or newer and fails the emissions inspection.

OBD message 20 must be printed:

- on a separate page when a 1995 and older vehicle passes or fails an emissions inspection, or when a 1996 and newer vehicle that is at least 10 years old passes an emissions inspection;

- at the top of the Evaluation of OBD Test Results page when the vehicle fails the OBD inspection; or

- at the top of the extra page that prints when a vehicle transitions from an OBD inspection and fails the ASM or TSI inspection.

Printing 10-year Old Vehicle Message

The analyzer must print a 10-year old vehicle message at the top of the VIR when the STNDS field of the SYSTEM.DAT file is set to:

- "B" or;

- "C" and the PRINT_LIRAP_APP field is set to "Y" or "A".

If the model-year of the vehicle is 10 years old or older, then the analyzer must print OBD message 22 from the VIRMSGS.DAT file. If the model-year of the vehicle is less 10 years old, then the analyzer must print OBD message 23 from the VIRMSGS.DAT file.

The analyzer must print an authorization code on the VIR for vehicles that pass the inspection or fail the inspection, but are issued a waiver number. The analyzer must print "N/A" instead of the authorization code where:

- the vehicle fails the inspection;

- the vehicle fails the inspection and is not issued a waiver number;

- the inspection is aborted resulting in a failing condition; or

- the inspection is aborted resulting in a no final outcome condition (aborted records should not result in a passing outcome).

The algorithm for the authorization code is available from the TCEQ upon request.

The analyzer must print the vehicle certificate type (VIR code) on the VIR for vehicles that pass the inspection. The certificate type codes that must be printed on the VIR are included in Appendix V: *Safety Certificate Format Table*. The analyzer will match the value of the REG_FEE_CODE to a value in the REG_FEE_CODE column of the safety certificate format table to identify the appropriate VIR code. The analyzer will print N/A for the VIR code for vehicles that fail the inspection. The VIR printed for vehicles that pass the inspection must use a font size acceptable to the TCEQ (e.g., minimum of 12 point for Times New Roman) for selected elements on the VIR, including the test date and time, the certificate type, the vehicle's model year, license plate number, and VIN, the station number, analyzer number, and overall inspection result. The VIR codes, SOEO and CWEO, will not be printed on the VIR, will not be assigned a corresponding REG_FEE_CODE value, but are included in Appendix V for informational purposes only.

The analyzer must print the text, "Show report for Texas vehicle registration" in all capital letters in the top left hand corner of the VIR when:

- the HB2305CHG field in the SYSTEM.DAT file is set to "B" or "C"; and
- either the vehicle:
  - passes the inspection; or
  - is issued a waiver number, regardless of the pass or fail inspection result.

The analyzer must print the following sentence on the vehicle inspection when the SAFE_TEST_TYPE is set to "G" or "K": "I have performed an annual inspection of the above noted vehicle, which is accurate, complete, and in accordance with the inspection criteria set forth in 49 Code of Federal Regulations, Chapter 396.17 through 396.21." When the SAFE_TEST_TYPE is set to "G" or "K", the analyzer must print the inspection expiration date on the VIR. These inspections (i.e., where the SAFE_TEST_TYPE set to "G" or "K") are valid until the end of the same month as the date of inspection in the following year. For example, if the inspection is performed on June 20, 2014, then the analyzer would print June 30, 2015 as the inspection expiration date. A sample vehicle inspection report showing the inspection expiration date is available from the TCEQ upon request.

The analyzer must print the text "I certify that I have properly performed the emissions test according to state regulations and procedures manuals, and as the undersigned duly appointed inspection, hereby certify that I have physically examined the manufacturer's vehicle identification number of the motor vehicle described above." This text replaces the text regarding test performance currently being printed on the VIR.

The analyzer must print the TEST_REC_NUM on the VIR next to the fuel type value or analyzer software version.

Error Message: **NO VALUES ENTERED -- TRY AGAIN.**

Associated System File:	**VEHICLE.DAT**	**EMISS_INSP_COST**
		CERT_NUM
		OVERALL_RESULTS

3.5 Main Menu Selection "5 Re-Print Vehicle Inspection Report"

There are no requirements to write an inspection record for reprinting a VIR. An analyzer that writes an inspection record for reprints is acceptable.

3.5.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to “B” or “C”. The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer’s monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses “enter/continue”. The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.5.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses “enter/continue”. The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.5.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.5.2a Retrieve Previous Records Prompt

SELECT THE SEARCH LOCATION

SEARCHING THE ANALYZER SYSTEM FILES (LOCAL SEARCH)

SEARCHING THE TEXAS INFORMATION MANAGEMENT SYSTEM (CALL DATABASE)

Note: The database search will only return results of the most recent inspection.

Programming Criteria:

The analyzer must prompt the inspector to indicate that the search will be performed on system files or by contacting the VID. A message must be displayed indicating that a search of the VID will only return the results of the most recent inspection.

3.5.2b VIN Prompt

ENTER VIN NUMBER.

Programming Criteria:

The analyzer will prompt for the VIN as it appears on the vehicle. Where available, the inspector will enter the VIN by using the bar code reader to scan the bar coded VIN on the vehicle. If a bar code reader is not available, the inspector will be capable of entering the VIN from the keyboard. The analyzer will place a "B" in the BARCODED_VIN field of the inspection record, if the VIN is entered using the bar code reader. Otherwise, the analyzer will place a "K" in the BARCODED_VIN field of the inspection record.

The analyzer must allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the analyzer must prompt the inspector to press "enter/continue". The inspector shall press "enter/continue", the screen will blank the VIN and ask the operator to re-enter the VIN under the same conditions as the previous entry. The two attempts must match. If the two attempts do not match, the analyzer must display Message 3 and prompt the inspector to enter the VIN a third time. A minimum of three and maximum of 17 characters are required for this field. If the entry is not within these parameters, then the analyzer must display Message 2. If no value is entered, the analyzer must display Message 1. The VIN verification algorithm must be applied here. The algorithm must be supplied under separate cover by the TCEQ. The VIN verification must only be applied to 1981 and newer model-year vehicles. The analyzer will not allow the inspector to enter the letters "I", "O", or "Q" for 1981 and newer model year vehicles. The software should suggest possible substitute letters when the DPS algorithm indicates that the VIN is bad. For example, the software could ask if the entered "8" could be a "B".

Error Messages:

1. **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
2. **A MINIMUM OF 3 OR MAXIMUM OF 17 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
3. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VIN_ID_NUM**
VIN_FLAG
BARCODED_VIN

3.5.2c License Prompt

"ENTER THE LICENSE NUMBER OF THE VEHICLE."

Programming Criteria:

The inspector will be prompted to enter the license plate number of the vehicle. The analyzer must proceed to Section 3.5.2d: *Display and Select Pass Records*, if the inspector previously elected to contact the VID, or proceed to Section 3.5.3c: *Display and Select Pass Records*, if the inspector previously elected to search the analyzer's local files.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE.**

Associated System File: **VEHICLE.DAT** **LICENSE_NUM**

3.5.2d VID Contact

The analyzer must contact the VID, retrieve all applicable vehicle information, and enter the information into the appropriate fields.

Upon completion of this contact, the analyzer must:

- indicate that announcements were transmitted by the VID,
- display a message indicating that "subsequent inspections cannot be conducted until the announcement is successfully printed", and
- display and automatically print a copy of the announcement immediately after main menu choice "1" through "4" is selected for the next inspection.

When announcements are displayed, the analyzer must provide the option to print, delete, or save this information to a predetermined file. If a newly received announcement has not been successfully printed, it cannot be deleted, and inspections cannot be conducted after this inspection is complete. Any new announcements saved must overwrite the oldest information.

3.5.3 Display and Select Pass Records

Programming Criteria:

The analyzer will then display vehicle information for verification by the inspector.

3.5.3a Reprint Prompt

"DO YOU WANT TO REPRINT THIS VIR?" (Y OR N)

Programming Criteria:

If the inspector selects "N", the analyzer must return to the main menu.

Error Message: **INVALID ENTRY--TRY AGAIN.**

3.5.3b Print Vehicle Inspection Report

The analyzer must display the following prompt: **"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."**

The analyzer will print the original date of the initial inspection on the reprint VIR. The analyzer will print the VIR based on the data contained in the inspection record received from the VID. The analyzer must print "TIMS Reprint" on the line for station address, and "N/A" on the lines for station city and station zip code.

Depending upon the pass/fail status of the emissions phase of the inspection, the analyzer will provide additional information to the customer as outlined in Appendix B: *Vehicle Inspection Reports*. The report must include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (TSI, ASM, OBD), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, License Plate Number, VIN, Vehicle Make, Vehicle Model-Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation, where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the inspection, Dilution Amount (in percent, $CO + CO_2$), Dilution Results (Pass or Fail), the results of the gas cap integrity inspection, and the overall result of the inspection. The vehicle's ignition type must be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report must indicate that the inspection was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the inspection was conducted as a special Test. If the inspection was conducted as a special test, the two letter designation of "LI", "ME", "IV", "AD", "ST", "PA", or "OT" must be placed on the same line as the Test Type separated by at least two spaces or a slash and the words "Special Test" must be in the subtitle. The analyzer must print two copies of the VIR and allow the inspector to print additional copies after the initial reports have been printed.

If the inspection ends because of a time out or dilution condition, the emission standards, amounts, and results must not be printed on the report. The report must indicate that the vehicle has failed because of excessive dilution, if applicable. If the inspection should "time out" then the report must indicate that the vehicle failed because the inspection was not completed in the time allowed for completion of the inspection.

Since there is no place to store the safety related repair costs in the inspection record, the reprinted VIR will be deemed acceptable if the safety related repair cost amount is not printed. However, the other costs (i.e., overall cost, emissions fee, safety fee, and emissions repair cost) must be printed as received in the inspection record. This may mean that the VIR math will be incorrect for inspections where safety related repair costs were entered. Manufacturers may leave blanks for this amount or may print the amount if they perform the math to deduce this value (i.e., overall cost - (safety fee + emissions fee + emission repair costs)).

If the vehicle fails the OBD emissions inspection, the report must include the following phrase, **"Your vehicle's computerized self-diagnostic system (OBD) registered the fault(s) listed above. This fault (s) is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem."**

If the inspection ends in an aborted condition, the VIR must indicate that the inspection was aborted in the overall results block and display the reason for the abort. If the inspector selects "other" as the reason for the abort, the analyzer must either print the reason entered by the inspector on the VIR or provide space for a handwritten reason if the inspector chooses not to use the keyboard to enter the abort reason.

If the emissions phase of the inspection is aborted or ends due to a timeout condition, the analyzer must print dashes on the VIR for the pass/fail indicators and the readings. The analyzer must print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO_2, and O_2, where applicable.

If the VI-30 number was issued, the analyzer must change the message on the VIR from "Safety Inspection Fee" to "Safety Insp + VI30 Fee".

The analyzer must print two bar codes on the VIR which contain the VIN, license plate number, and license plate type of the vehicle under inspection. The bar codes must be code 39 format, contain only the previously mentioned information, and include the start and stop characters.

One bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"$"
License Plate Type	1	2	"1", "2", "3", "4", "5", "6", "7", or "8"
License Plate Number	8	3	Alphanumeric
TxDMV Number	10	11	Alphanumeric

The other bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"I"
VIN	17	2	Alphanumeric

Each bar code must be clearly labeled, so that the inspectors can easily identify each bar code type. The location of the bar codes on the VIR must be determined by the manufacturers.

If the inspection record is not emissions-related, the analyzer must print the VIR in the safety only format as described in Section 3.2.19: *Print Vehicle Inspection Report*. The analyzer may offer to re-print the rejection receipt.

If the inspection record is emissions related, the analyzer must print the 10-year old vehicle message on the VIR. The analyzer may offer to re-print OBD Message 20, the Evaluation of OBD Inspection Results, the VRF, the LIRAP application, and the rejection receipt.

<u>Printing OBD Message 20</u>

The analyzer must print OBD message 20 when:

- the STNDS field of the SYSTEM.DAT file is set to "C" or "D"; and

- the PRINT_LIRAP_APP field is set to “Y” or “A”; and

- either the vehicle model-year is 10 years old or older and passes or fails the emissions inspection, or the vehicle model-year is 9 years old or newer and fails the emissions inspection.

OBD message 20 must be printed:

- on a separate page when a 1995 and older vehicle passes or fails an emissions inspection, or when a 1996 and newer vehicle that is at least 10 years old passes an emissions inspection;

- at the top of the Evaluation of OBD Test Results page when the vehicle fails the OBD inspection; or

- at the top of the extra page that prints when a vehicle transitions from an OBD inspection and fails the ASM or TSI inspection.

Printing 10-year Old Vehicle Message

The analyzer must print a 10-year old vehicle message at the top of the VIR when the STNDS field of the SYSTEM.DAT file is set to:

- “B” or;

- “C” and the PRINT_LIRAP_APP field is set to “Y” or “A”.

If the model-year of the vehicle is 10 years old or older, then the analyzer must print OBD message 22 from the VIRMSGS.DAT file. If the model-year of the vehicle is less 10 years old, then the analyzer must print OBD message 23 from the VIRMSGS.DAT file.

The analyzer must print an authorization code on the VIR for vehicles that pass the inspection or fail the inspection, but are issued a waiver number. The analyzer must print “N/A” instead of the authorization code where:

- the vehicle fails the inspection;

- the vehicle fails the inspection and is not issued a waiver number;

- the inspection is aborted resulting in a failing condition; or

- the inspection is aborted resulting in a no final outcome condition (aborted records should not result in a passing outcome).

The algorithm for the authorization code is available from the TCEQ upon request.

The analyzer must print the vehicle certificate type (VIR code) on the VIR for vehicles that pass the inspection. The certificate type codes that must be printed on the VIR are included in Appendix V: *Safety Certificate Format Table*. The analyzer will match the value of the REG_FEE_CODE to a value in the REG_FEE_CODE column of the safety certificate format table to identify the appropriate VIR code. The analyzer will print N/A for the VIR code for

vehicles that fail the inspection. The VIR printed for vehicles that pass the inspection must use a font size acceptable to the TCEQ (e.g., minimum of 12 point for Times New Roman) for selected elements on the VIR, including the test date and time, the certificate type, the vehicle's model year, license plate number, and VIN, the station number, analyzer number, and overall inspection result. The VIR codes, SOEO and CWEO, will not be printed on the VIR, will not be assigned a corresponding REG_FEE_CODE value, but are included in Appendix V for informational purposes only.

The analyzer must print the text, "Show report for Texas vehicle registration" in all capital letters in the top left hand corner of the VIR when:

- the HB2305CHG field in the SYSTEM.DAT file is set to "B" or "C"; and
- either the vehicle:
    - passes the inspection; or
    - is issued a waiver number, regardless of the pass or fail inspection result.

The analyzer must print the following sentence on the vehicle inspection when the SAFE_TEST_TYPE is set to "G" or "K": "I have performed an annual inspection of the above noted vehicle, which is accurate, complete, and in accordance with the inspection criteria set forth in 49 Code of Federal Regulations, Chapter 396.17 through 396.21." When the SAFE_TEST_TYPE is set to "G" or "K", the analyzer must print the inspection expiration date on the VIR. These inspections (i.e., where the SAFE_TEST_TYPE set to "G" or "K") are valid until the end of the same month as the date of inspection in the following year. For example, if the inspection is performed on June 20, 2014, then the analyzer would print June 30, 2015 as the inspection expiration date. A sample vehicle inspection report showing the inspection expiration date is available from the TCEQ upon request.

The analyzer must print the text "I certify that I have properly performed the emissions test according to state regulations and procedures manuals, and as the undersigned duly appointed inspection, hereby certify that I have physically examined the manufacturer's vehicle identification number of the motor vehicle described above." This text replaces the text regarding test performance currently being printed on the VIR.

The analyzer must print the TEST_REC_NUM on the VIR next to the fuel type value or analyzer software version.

When the analyzer has completed printing the reprinted VIR, and the inspector chooses not to print additional copies, the analyzer must return to the main menu.

3.5.3c Display and Select Pass Records

Programming Criteria:

The analyzer must either prompt the inspector to enter the license plate number, pass/fail status (optional), and VIN, and/or certificate number, as search criteria, or the analyzer must display the license plate number, VIN, and test date of all records currently contained in the VEHICLE.DAT, and allow the inspector to select the desired record.

After the inspector has selected the record, the analyzer must display vehicle information for verification by the inspector, and print the original date of the initial inspection on the reprint VIR after verification.

3.5.4 Reprint Prompt

"DO YOU WANT TO REPRINT THIS VIR?" (Y OR N)

Programming Criteria:

If the inspector selects "N", the analyzer must return to the main menu.

Error Message: **INVALID ENTRY--TRY AGAIN.**

3.5.5 Print Vehicle Inspection Report

The analyzer must display the following prompt: **"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."**

The analyzer will print the original date of the initial inspection on the reprint VIR. The analyzer will print the VIR based on the data contained in the inspection record selected by the inspector. The analyzer must print "Local Reprint" on the line for station address, and "N/A" on the lines for station city and station zip code.

Depending upon the pass/fail status of the emissions phase of the inspection, the analyzer will provide additional information to the customer as outlined in Appendix B: *Vehicle Inspection Reports*. The report must include, but not be limited to, the following information: Test Type (Initial or Reinspection), Test (TSI, ASM, OBD), Test Date, Test Time, Test Cost (differentiated by Emission and Safety), Overall Cost, Inspector Name, Station Name, License Plate Number, VIN, Vehicle Make, Vehicle Model-Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Ignition, Two Letter Special Test Designation, where applicable, Emissions Standard (by pollutant), Vehicle Actual Emissions Amounts (by pollutant), Emissions Result (by pollutant), all final RPM values for the inspection, Dilution Amount (in percent, $CO + CO_2$), Dilution Results (Pass or Fail), the results of the gas cap integrity inspection, and the overall result of the inspection. The vehicle's ignition type must be placed on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report must indicate that the inspection was a Safety and Emissions Inspection, Safety Only Inspection, Required Emission Only Decal Inspection or Emission Only Inspection, and whether or not the inspection was conducted as a special Test. If the inspection was conducted as a special test, the two letter designation of "LI", "ME", "IV", "AD", "ST", "PA", or "OT" must be placed on the same line as the Test Type separated by at least two spaces or a slash and the words "Special Test" must be in the subtitle. The analyzer must print two copies of the VIR and allow the inspector to print additional copies after the initial reports have been printed.

If the inspection ends because of a time out or dilution condition, the emission standards, amounts, and results must not be printed on the report. The report must indicate that the vehicle has failed because of excessive dilution, if applicable. If the inspection should "time out" then the report must indicate that the vehicle failed because the inspection was not completed in the time allowed for completion of the inspection.

Since there is no place to store the safety related repair costs in the inspection record, the reprinted VIR will be deemed acceptable if the safety related repair cost amount is not printed. However, the other costs (i.e., overall cost, emissions fee, safety fee, and emissions repair cost) must be printed as received in the inspection record. This may mean that the VIR math will be incorrect for inspections where safety related repair costs were entered. Manufacturers may leave blanks for this amount or may print the amount if they perform the math to deduce this value (i.e., overall cost - (safety fee + emissions fee + emission repair costs)).

If the vehicle fails the OBD emissions inspection, the report must include the following phrase, **"Your vehicle's computerized self-diagnostic system (OBD) registered the fault(s) listed above. This fault (s) is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem."**

If the inspection ends in an aborted condition, the VIR must indicate that the inspection was aborted in the overall results block and display the reason for the abort. If the inspector selects "other" as the reason for the abort, the analyzer must either print the reason entered by the inspector on the VIR or provide space for a handwritten reason if the inspector chooses not to use the keyboard to enter the abort reason.

If the emissions phase of the inspection is aborted or ends due to a timeout condition, the analyzer must print dashes on the VIR for the pass/fail indicators and the readings. The analyzer must print the RPM value, the dilution standard, the dilution reading and result, and the standards for HC, CO, CO_2, and O_2, where applicable.

If the VI-30 number was issued, the analyzer must change the message on the VIR from "Safety Inspection Fee" to "Safety Insp + VI30 Fee".

The analyzer must print two bar codes on the VIR which contain the VIN, license plate number, and license plate type of the vehicle under inspection. The bar codes must be code 39 format and contain only the previously mentioned information, and the start and stop characters mentioned below.

One bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"$"
License Plate Type	1	2	"1", "2", "3", "4", "5", "6", "7", or "8"
License Plate Number	8	3	Alphanumeric
TxDMV Number	10	11	Alphanumeric

The other bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"I"

VIN	17	2	Alphanumeric

Each bar code must be clearly labeled, so that the inspectors can easily identify each bar code type. The location of the bar codes on the VIR must be determined by the manufacturers.

If the inspection record is not emissions-related, the analyzer must print the VIR in the safety only format as described in Section 3.2.19: *Print Vehicle Inspection Report*. The analyzer may offer to re-print the rejection receipt.

If the inspection record is emissions related, the analyzer must print the 10-year old vehicle message on the VIR. The analyzer may offer to re-print OBD Message 20, the Evaluation of OBD Inspection Results, the VRF, the LIRAP application, and the rejection receipt.

Printing OBD Message 20

The analyzer must print OBD message 20 when:

- the STNDS field of the SYSTEM.DAT file is set to "C" or "D"; and
- the PRINT_LIRAP_APP field is set to "Y" or "A"; and
- either the vehicle model-year is 10 years old or older and passes or fails the emissions inspection, or the vehicle model-year is 9 years old or newer and fails the emissions inspection.

OBD message 20 must be printed:

- on a separate page when a 1995 and older vehicle passes or fails an emissions inspection, or when a 1996 and newer vehicle that is at least 10 years old passes an emissions inspection;
- at the top of the Evaluation of OBD Test Results page when the vehicle fails the OBD inspection; or
- at the top of the extra page that prints when a vehicle transitions from an OBD inspection and fails the ASM or TSI inspection.

Printing 10-year Old Vehicle Message

The analyzer must print a 10-year old vehicle message at the top of the VIR when the STNDS field of the SYSTEM.DAT file is set to:

- "B" or;
- "C" and the PRINT_LIRAP_APP field is set to "Y" or "A".

If the model-year of the vehicle is 10 years old or older, then the analyzer must print OBD message 22 from the VIRMSGS.DAT file. If the model-year of the vehicle is less 10 years old, then the analyzer must print OBD message 23 from the VIRMSGS.DAT file.

The analyzer must print an authorization code on the VIR for vehicles that pass the inspection or fail the inspection, but are issued a waiver number. The analyzer must print "N/A" instead of the authorization code where:

- the vehicle fails the inspection;
- the vehicle fails the inspection and is not issued a waiver number;
- the inspection is aborted resulting in a failing condition; or
- the inspection is aborted resulting in a no final outcome condition (aborted records should not result in a passing outcome).

The algorithm for the authorization code is available from the TCEQ upon request.

The analyzer must print the vehicle certificate type (VIR code) on the VIR for vehicles that pass the inspection. The certificate type codes that must be printed on the VIR are included in Appendix V: *Safety Certificate Format Table*. The analyzer will match the value of the REG_FEE_CODE to a value in the REG_FEE_CODE column of the safety certificate format table to identify the appropriate VIR code. The analyzer will print N/A for the VIR code for vehicles that fail the inspection. The VIR printed for vehicles that pass the inspection must use a font size acceptable to the TCEQ (e.g., minimum of 12 point for Times New Roman) for selected elements on the VIR, including the test date and time, the certificate type, the vehicle's model year, license plate number, and VIN, the station number, analyzer number, and overall inspection result. The VIR codes, SOEO and CWEO, will not be printed on the VIR, will not be assigned a corresponding REG_FEE_CODE value, but are included in Appendix V for informational purposes only.

The analyzer must print the text, "Show report for Texas vehicle registration" in all capital letters in the top left hand corner of the VIR when:

- the HB2305CHG field in the SYSTEM.DAT file is set to "B" or "C"; and
- either the vehicle:
    - passes the inspection; or
    - is issued a waiver number, regardless of the pass or fail inspection result.

The analyzer must print the following sentence on the vehicle inspection when the SAFE_TEST_TYPE is set to "G" or "K": "I have performed an annual inspection of the above noted vehicle, which is accurate, complete, and in accordance with the inspection criteria set forth in 49 Code of Federal Regulations, Chapter 396.17 through 396.21." When the SAFE_TEST_TYPE is set to "G" or "K", the analyzer must print the inspection expiration date on the VIR. These inspections (i.e., where the SAFE_TEST_TYPE set to "G" or "K") are valid until the end of the same month as the date of inspection in the following year. For example, if the inspection is performed on June 20, 2014, then the analyzer would print June 30, 2015 as the inspection expiration date. A sample vehicle inspection report showing the inspection expiration date is available from the TCEQ upon request.

The analyzer must print the text "I certify that I have properly performed the emissions test according to state regulations and procedures manuals, and as the undersigned duly appointed inspection, hereby certify that I have physically examined the manufacturer's vehicle identification number of the motor vehicle described above." This text replaces the text regarding test performance currently being printed on the VIR.

The analyzer must print the TEST_REC_NUM on the VIR next to the fuel type value or analyzer software version.

When the analyzer has completed printing the reprinted VIR, and the inspector chooses not to print additional copies, the analyzer must return to the main menu.

3.6 Main Menu Selection "6 Vehicle Diagnosis"

When the analyzer meets the warm-up criteria, selection of the vehicle diagnosis mode from the main menu must cause the analyzer to conduct an automated electronic zero and span and then begin taking emissions readings. The emissions readings must be displayed in the following format using characters large enough to be easily read by a person with 20/20 vision from a distance of eight feet.

Emission	Reading
HC	XXXX
CO	XX.XX
CO_2	XX.X
O_2	XX.X

3.7 Main Menu Selection "7 Training Mode"

The analyzer must contain a feature that will allow an inspector or student to go through the complete inspection procedure without generating an official emissions VIR. This feature will be used by the auditors for evaluating inspector performances, by the manufacturers for training purchasers of analyzers, or by analyzer owners to train new employees. The training mode selection must not require the user's access code or allow access to secured areas of hardware or software. The display must show a message throughout the inspection that this is a training exercise and not an official inspection. The VIR must indicate to the satisfaction of the TCEQ that they are for training only.

3.8 Main Menu Selection "8 Analyzer Maintenance"

Upon selection of this menu, the analyzer must display the following list:

1. Three-day gas calibration and leak check
2. Gas Calibration
3. Leak Check
4. Status Screen
5. Gas Cap Integrity Tester Calibration

99. Return to Main Menu

For each required calibration, the analyzer must bring up the procedures that are user friendly; indicate every step needed to properly perform the calibration; display to the calibration result to the screen; and automatically record the results in the CAL.DAT file. If the analyzer fails a required calibration, then the analyzer must display a message indicating that the calibration failed, official emissions-related inspections must be precluded, where applicable, and prompting the inspector to call for service. The message will include the toll free telephone number during the warranty period. When the required calibration sequence is completed, the analyzer must return to the analyzer maintenance menu.

3.8.1 Three-day Gas Calibration and Leak Check

When the inspector selects choice number one, the analyzer must initiate a three-day gas calibration and leak check sequence that brings up a set of both gas calibration and leak check procedures. The gas calibration procedures must indicate when it is necessary to turn the calibration gas bottle valve on and off. The analyzer must prevent the start of the gas calibration until the entered concentrations values from the calibration gas bottles are within the acceptable ranges shown in Section 2.8.1: *Gas Calibration*. The leak check procedures must indicate when it is necessary to apply and remove the sample probe cap. The record in the CAL.DAT file for the three-day gas calibration and leak check will contain before and after calibration readings.

3.8.2 Gas Calibration

When the inspector selects choice number two, the analyzer must initiate a gas calibration sequence that brings up a set of gas calibration procedures. The procedures must indicate when it is necessary to turn the calibration gas bottle valve on and off. The analyzer must prevent the start of the gas calibration until the entered concentrations values from the calibration gas bottle are within the acceptable ranges shown in Section 2.8.1: *Gas Calibration*. The record in the CAL.DAT file for the gas calibration will contain before and after calibration readings.

3.8.3 Leak Check

When the inspector has selects choice number three, the analyzer must initiate a leak check sequence that brings up a set of leak check procedures. The procedures must indicate when it is necessary to apply and remove the sample probe cap.

3.8.4 Status Screen

When the inspector selects choice number four, the analyzer must display the status screen using information stored in the CAL.DAT file and other sources. At a minimum, the screen will contain the following items:

Station Number
Analyzer Number
PEF
Span Gas Cylinder Valves
Date/time of last gas calibration and leak check

Remaining space will store approximately _____inspection records (the analyzer should fill in the blank with a number.)
Date analyzer was last serviced
Current date and time
Software Version Number, and

Weather Info (i.e., temperature (°F), barometric pressure (inches of Hg), and humidity (%))

The analyzer must post a recurring warning when sufficient space remains to store 200 records.

3.8.5 Gas Cap Integrity Tester Calibration

When the inspector selects choice number five, the analyzer must initiate the procedures to perform the gas cap tester calibration. The procedures must indicate when it is necessary to identify which the reference cap is being attached, and when to switch reference caps. The affected fields are CAL_DATE, CAL_TIME, and GAS_CAP_CHECK_RSLT.

3.9 Main Menu Selection "9 Audit Menu"

The information in the analyzer related to inspections should be accessible to an auditor for the purposes of conducting an audit. The analyzer must display the following prompts when choice number nine audit menu is selected from the main menu:

TCEQ/DPS Access Code Prompt

ENTER TCEQ/DPS ID NUMBER

Programming Criteria:

The analyzer must prompt the auditor to enter their ID number. The analyzer may accept the ID number when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the ID number will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to "B". The keyboard or bar code scanner entered value must match an entry in the AUD_DL_NUM field of the AUDITOR.DAT file. Bar code specifications, formats, and samples are available from the TCEQ.

If an invalid ID number is entered, the analyzer will write a record to the AUDITLOG.DAT file containing the date, time, and a "U" for unauthorized login attempt and return to the main menu.

Upon successful validation of the ID number, the auditor shall be prompted to enter his five digit PIN. If the five digit PIN entered by the auditor does not match a value in the PIN_NO field of the AUDITOR.DAT file, the analyzer must write a record containing a "U" in the BAD_DPS_ID field of the AUDITLOG.DAT file and return to the main menu. If the five digit PIN matches a value in the AUDITOR.DAT file, the analyzer must write a record

containing an “A” in the BAD_DPS_ID field of the AUDITLOG.DAT file and display the audit menu. The analyzer must report the auditor’s last name to complete the VI-8B. Then, the audit menu will be displayed as follows:

1. Station Evaluation Report

2. Station Performance Report

3. Inspector Evaluation Report

4. Analyzer Maintenance

5. Gas Audit

6. Update Station and Inspector Information

7. Install New Data Disk

8. Reset Date, Time and Telephone Numbers

9. Analyzer Lockout/Station Lockout

10. Software Updates

11. Practical Test

12. Auditor's Notes

13. Search and Retrieve Test Records

14. Analyzer Tampering/Access Report

15. History Report

16. System Settings

17. Reprint VIR

18. Communications Refresh

19. Copy/Download Test Records

20. Missing, or Voided Certificates Function

21. Certificate Correction/Replacement Function

22. Status Page

99. Return to Main Menu

For each audit menu selection made by the auditor, the analyzer must write a record in the AUDTMENU.DAT file containing:

- the audit menu selection number in the MENU_NUMBER field;
- an “I” or “O” in the MENU_IN_OUT field indicating whether the auditor was entering or exiting the audit menu selection;
- the date and time of the audit menu selection in the DATE and TIME fields;
- the station number and analyzer number; and
- the time that the auditor successfully entered the audit menu in the TIME_IN field that should match the value in the TIME field of the AUDITLOG.DAT file.

The analyzer must only allow audit menu selections “6” and “99” to function when the default auditor information in present in the AUDITOR.DAT file.

The auditor shall have the option of printing all reports and items displayed on the audit menu selections to the printer. The analyzer will make provisions for the date and signature of the station manager and the I/M auditor at the end of every report.

Upon exiting the audit menu, the analyzer must write a record in the AUDTMENU.DAT file to record the time the auditor exited the audit menu. The record must contain:

- the value of “99” in the MENU_NUMBER field;
- an “O” in the MENU_IN_OUT field; and
- appropriate values in the remaining fields: DATE, TIME, STATION_NUM, ANALYZER_NUMBER, and TIME_IN.

The analyzer must store the changes made by the auditor in the appropriate file structure. The records in the AUDITLOG.DAT and AUDTMENU.DAT files must be transmitted during the next successful communication between the analyzer and the VID.

3.9.1 Audit Menu Selection “1 Station Evaluation Report”

When the auditor selects audit menu selection one, the station evaluation report must be initiated. The analyzer must display a screen that lists the Station Evaluation Report Menu as the header and allow the auditor to select one of the following choices:

Comparison Report

Multi-day Report

30 Day Report

60 Day Report

90 Day Report

The Multi-day Report must have a date entry screen that allows the auditor to enter the specific starting and ending dates. The date entry screen must require the auditor to only enter number characters. The analyzer must display the following blank date entry prompts:

Starting Date: _ _/_ _/_ _ _ _

Ending Date: _ _/_ _/_ _ _ _

The auditor shall not be required to enter the separation slashes. The format of the date must be MMDDYYYY. If the auditor elects to print the report, then the analyzer must print the reports as shown below. The header must contain:

- a title which indicates the type of report, such as 30 day or 60 day on the first line;
- the date and time of the report;
- the station name;
- the station number; and
- the analyzer identification number.

The column headings, at a minimum, must be underlined, and a border is not required. The printed report must use one of the following fonts: ten or twelve point using courier or times new roman.

The analyzer must:

- use the queries listed below the sample station evaluation report to generate the inspection counts used in the report; and
- display the complete evaluation report.

Sample Station Evaluation Report

60 DAY REPORT STATION NAME and NUMBER DATE/TIME ANALYZER NUMBER			
DESCRIPTION	INITIAL	REINSPECTION	TOTAL
Total Inspections Total TSI Inspections Total OBD Inspections Total ASM Inspections Total Safety Only Inspections Initial Repair Safety (R in Safety Item) Fail Emission Fail Gas Cap Fail Safety % Fail Emission Abort Sequence (No Test) Abort Sequence (Failure) Abort Sequence (Referral) Bypass RPM (no abort tests) Bypass Gas Cap Heavy-Duty Emissions Inspections Traction Control Inspections			

Total Inspections are where TEST_TYPE = “A”, “H”, “O”, “I”, “B”, and OVERALL_RESULTS is not null.

Total Initial Inspections are where TEST_TYPE = “A”, “H”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and SAFE_INIT_TEST = “I”

Total Reinspection Inspections are where TEST_TYPE = “A”, “H”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and SAFE_INIT_TEST = “R”

Total TSI Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “2”

Total TSI Initial Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “2” and SAFE_INIT_TEST = “I”

Total TSI Reinspections Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “2” and SAFE_INIT_TEST = “R”

Total OBD Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1”

Total OBD Initial Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1” and SAFE_INIT_TEST = “I”

Total OBD Reinspections Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1” and SAFE_INIT_TEST = “R”

Total ASM Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “3”

Total ASM Initial Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “3” and SAFE_INIT_TEST = “I”

Total ASM Reinspections Inspections are where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “3” and SAFE_INIT_TEST = “R”

Total Safety Only Inspections are where TEST_TYPE = “H”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE is null

Total Safety Only Initial Inspections are where TEST_TYPE = “H”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE is null and SAFE_INIT_TEST = “I”

Total Safety Only Reinspections Inspections are where TEST_TYPE = “H”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE is null and SAFE_INIT_TEST = “R”

Total Repair Safety Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, and OVERALL_RESULTS is not null and SAFE_1 through SAFE_30 or SAFE_33 through SAFE_36 = “B”, “D”, “G”, “I”, “K”, “M”, “Q”, “T”, “V”, “X”, “Z”.

Total Repair Safety Initial Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, and OVERALL_RESULTS is not null and SAFE_1 through SAFE_30 or SAFE_33 through SAFE_36 = “B”, “D”, “G”, “I”, “K”, “M”, “Q”, “T”, “V”, “X”, “Z”, and SAFE_INIT_TEST = “I”

Total Repair Safety Reinspections Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, and OVERALL_RESULTS is not null and SAFE_1 through SAFE_30 or SAFE_33 through SAFE_36 = “B”, “D”, “G”, “I”, “K”, “M”, “Q”, “T”, “V”, “X”, “Z”, and SAFE_INIT_TEST = “R”

Total Fail Emissions Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_PF_FLAG <> “P”

Total Fail Emissions Initial Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_PF_FLAG <> “P”, and SAFE_INIT_TEST = “I”

Total Fail Emissions Reinspection Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and EMISS_PF_FLAG <> “P”, and SAFE_INIT_TEST = “R”

Total Fail Gas Cap Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and GAS_CAP_PF_FLAG = “F”

Total Fail Gas Cap Initial Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and GAS_CAP_PF_FLAG = “F”, and SAFE_INIT_TEST = “I”

Total Fail Gas Cap Reinspections Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, “O”, “I”, “B”, and OVERALL_RESULTS is not null and GAS_CAP_PF_FLAG = “F”, and SAFE_INIT_TEST = “R”

Total Fail Safety Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, and OVERALL_RESULTS is not null and SAFETY_PF_FLAG = “F”

Total Fail Safety Initial Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, and OVERALL_RESULTS is not null and SAFETY_PF_FLAG = “F”, and SAFE_INIT_TEST = “I”

Total Fail Safety Reinspections Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, and OVERALL_RESULTS is not null and SAFETY_PF_FLAG = “F”, and SAFE_INIT_TEST = “R”

Total % Fail Emissions Inspections is a count of the Total Fail Emissions Inspections (i.e., where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_PF_FLAG <> “P”) divided by the count of Total Inspections (i.e., where TEST_TYPE = “A”, “O”, “I”, “B”, and OVERALL_RESULTS is not null.)

Total % Fail Emissions Initial Inspections is a count of the Total Fail Emissions Initial Inspections (i.e., where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_PF_FLAG <> “P”, and SAFE_INIT_TEST = “I”) divided by the count of Total Initial Inspections (i.e., where TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and SAFE_INIT_TEST = “I”).

Total % Fail Emissions Reinspections Inspections is a count of the Total Fail Emissions Reinspection Inspections (i.e., where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_PF_FLAG <> “P”, and SAFE_INIT_TEST = “R”) divided by the count of Total Reinspection Inspections (i.e., where TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and SAFE_INIT_TEST = “R”).

Total Abort Sequence (No Test) Inspections are where ABORT = “A”, and ABORT CODE = “05”, “06”, “07”, “09”, “99”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is null.

Total Abort Sequence (No Test) Initial Inspections are where ABORT = “A”, and ABORT CODE = “05”, “06”, “07”, “09”, “99”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is null and SAFE_INIT_TEST = “I”

Total Abort Sequence (No Test) Reinspection Inspections are where ABORT = “A”, and ABORT CODE = “05”, “06”, “07”, “09”, “99”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is null and SAFE_INIT_TEST = “R”

Total Abort Sequence (Failure) Inspections are where ABORT = “A”, and ABORT CODE = “01”, “02”, “03”, “04”, “08”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS = “F”.

Total Abort Sequence (Failure) Initial Inspections are where ABORT = “A”, and ABORT CODE = “01”, “02”, “03”, “04”, “08”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS = “F” and SAFE_INIT_TEST = “I”

Total Abort Sequence (Failure) Reinspection Inspections are where ABORT = “A”, and ABORT CODE = “01”, “02”, “03”, “04”, “08”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS = “F” and SAFE_INIT_TEST = “R”

Total Abort Sequence (Referral) Inspections are where ABORT = “A”, and ABORT CODE = “81”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is null.

Total Abort Sequence (Referral) Initial Inspections are where ABORT = “A”, and ABORT CODE = “81”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is null and SAFE_INIT_TEST = “I”

Total Abort Sequence (Referral) Reinspection Inspections are where ABORT = “A”, and ABORT CODE = “81”, and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is null and SAFE_INIT_TEST = “R”

Total Bypass RPM Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “2” or “3” and RPM_BYPASS = “B”

Total Bypass RPM Initial Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “2” or “3” and RPM_BYPASS = “B” and SAFE_INIT_TEST = “I”

Total Bypass RPM Reinspection Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “2” or “3”, and RPM_BYPASS = “B” and SAFE_INIT_TEST = “R”

Total Bypass Gas Cap Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and GAS_CAP_MISS = N and GAS_CAP_TESTABLE = N

Total Bypass Gas Cap Initial Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and GAS_CAP_MISS = N and GAS_CAP_TESTABLE = N and SAFE_INIT_TEST = “I”

Total Bypass Gas Cap Reinspection Inspections are where ABORT is null and TEST_TYPE = “A”, “H”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and GAS_CAP_MISS = N and GAS_CAP_TESTABLE = N and SAFE_INIT_TEST = “R”

Total Heavy-Duty Emissions Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1”, “2”, or “3”, and GVW_ACTUAL > 8500

Total Heavy-Duty Emissions Initial Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1”, “2”, or “3”, and GVW_ACTUAL > 8500 and SAFE_INIT_TEST = “I”

Total Heavy-Duty Emissions Reinspection Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1”, “2”, or “3”, and GVW_ACTUAL > 8500 and SAFE_INIT_TEST = “R”

Total Traction Control Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1”, “2”, or “3”, and AXLE_TYPE = “Y”

Total Traction Control Initial Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1”, “2”, or “3”, and AXLE_TYPE = “Y” and SAFE_INIT_TEST = “I”

Total Traction Control Reinspection Inspections are where ABORT is null and TEST_TYPE = “A”, “O”, “I”, or “B”, and OVERALL_RESULTS is not null and EMISS_TEST_TYPE = “1”, “2”, or “3”, and AXLE_TYPE = “Y” and SAFE_INIT_TEST = “R”

3.9.2 Audit Menu Selection “2 Station Performance Report”

When the auditor selects two from the audit menu, the station performance report sequence must be initiated. The analyzer must display the following four choices, and allow the auditor to use the arrow keys to highlight the appropriate choice and press “enter/continue” to select the type of station contact:

1. Compliance Audit
2. Administrative Contact
3. Investigation
4. Certification Contact

The analyzer must store the value of the selected choice in the AUD_TYPE field of the PERFORM.DAT file and display the station performance report to the screen. The type of station contact must appear as a subheading or hyphenated heading when the station performance report is displayed. The analyzer must complete the following fields automatically:

- station name;
- station number;
- analyzer number;
- date the report was generated;
- the date of the last report;
- the date of the last three-day calibration and leak check; and

- the most recent gas audit report.

The analyzer must display the most recent auditor's notes entry, and allow the auditor to:

- review and edit previous entries and create a new free form entry in the auditor's notes window;
- enter "P" for pass or "F" for fail for each item on the station equipment checklist;
- enter Y" for yes or "N" for no for each item on the audit procedures checklist.

The analyzer must allow the free form entry of at least five violation codes, corrective action codes, and ticket numbers. At the completion of the entries for the audit procedures checklist, the analyzer must display the following prompt:

"Do you wish to enter any deficiency information? (Yes or No)".

The default for this prompt must be no. The analyzer must display the report to the screen to allow the auditor to confirm that the entries are correct if "no" is selected. After the entries are confirmed, the analyzer must:

- prompt the auditor to select the number of copies to be printed "1", "2", or "3";
- print the desired number of performance reports; and
- return to the audit menu.

The analyzer must allow the auditor to enter the violation code or codes if "yes" is selected on the deficiency information prompt.

If auditor does not enter a code and presses continue, the analyzer must display a prompt asking the auditor to select one of the following actions:

Return to the Violation Code Entry Screen

Violation Code Entry Completed

Skip the Deficiency Information - Go to Confirmation Screen

If the auditor selects the first action, the analyzer will go back to the violation code entry screen. The second action must not be displayed until at least one deficiency code has been properly entered. If the deficiency code is entered and auditor selects the second action, the analyzer must proceed to the action code entry prompt. If the last action is selected by the auditor, the analyzer must go to the confirmation screen.

If the entered deficiency code does not match a code contained in the DEFLK.DAT file, the analyzer must display an error message indicating that the code is not acceptable and to try again. The analyzer must display the list of codes in numerical order when the auditor presses the "F5" function key, display the list of codes in alphabetical order when the auditor presses the "F6" function key, or display the list of codes as they appear in the DEFLK.DAT file. No matter what list is displayed, the analyzer must allow the inspector to use the arrow

keys to highlight the different choices, and use the "enter/continue" key to select the appropriate code.

Once the code is selected, the analyzer must return to the prompt requesting the auditor to enter the violation code. The 40 most used violation codes will be contained in the DEFLK.DAT file that is received by the analyzer from the VID. The format of the violation codes is alphanumeric of length five.

The analyzer must allow the auditor to enter the action codes using the following prompt:

ENTER THE ACTION CODES: _ _

'C' - Citation Issued,
'W'- Warning Issued,
'S' - Suspension Recommended, and
'R' - Revocation Recommended.

At least one entry must be made. If the auditor presses "enter/continue" after the first successful entry is made, the analyzer must display a confirmation screen which lists the entered action codes, as well as two action choices:

Continue

Go back to make changes

The default choice must be "continue". When the auditor selects "continue", the analyzer must proceed to the ticket number prompt. Action codes are alphanumeric of length two, and expected to contain a "C", a "W", an "S", or an "R".

The analyzer must prompt the auditor to enter the ticket number.

ENTER THE TICKET NUMBER: _ _ _ _ _ _ _ _ _ _ _ _ _ _

Press 'enter/continue' when done entering the ticket number.

The analyzer must allow the free form entry of fourteen alphanumeric characters. The analyzer must require the auditor to press "enter/continue" when the entry of the ticket number is complete. When the auditor presses "enter/continue", the analyzer must display the entered number and two action choices:

Continue

Go back to make changes

The default choice must be "continue". When the auditor selects "continue", the analyzer must display the completed report and prepare to print the necessary number of copies. The format of the ticket numbers is alphanumeric of length 14.

The report generated from this selection will be stored in the PERFORM.DAT file.

The Station Performance Report must contain the following items:

A. Station Name
B. Station Number
C. Analyzer Number
D. Today's Date
E. Date of the last Station Performance Report
F. The date and time of the last three-day calibration
G. The date and time of the last leak check
H. The date and time of the most recent gas audit
I. The Station Equipment Checklist
J. The Audit Procedures Checklist
K. The Auditor's Notes

Station Equipment: Entry of “P” or “F” required.

1. Station Sign
2. Certificate of Appointment
3. Display Board
4. Flex Probes
5. Approved Bar 90 Gases
6. Rules and Regulations Manual
7. Brake Test Area
8. Required Equipment (Laundry Marking Pen, Scraping Device, Tread Depth Gauge, Measuring Devices, ¼” Round-Hole Punch)
9. Tachometer Lead
10. Gas Cap Tester
11. Inspector on Duty
12. Inspection Bay
13. Approved Window Tint meter
14. Analyzer, Printer & Supplies
15. Overall Result

Audit Procedures: Entry of “Y” or “N” required

1. New data disk
2. Reset tamper
3. Software updates
4. Station lockout
5. Inspector lockout
6. Letter delivered
7. Technical Bulletins

Deficiencies: No entries required

1. Violation Code
2. Action Taken
3. Ticket #

Sample Station Performance Report

Station Performance Report - Compliance Audit
Station Name (e.g., FRIDAYS AUTOMOTIVE)
Today's Date (e.g., 01/12/2000)

Station Number	1P10753
Analyzer Number	TX123654
Today's Date	12/21/1999
Last Station Performance Report	09/21/1999
Last Three-Day Gas Calibration	12/19/1999 8:00 a.m.
Last Leak Check	12/20/1999 7:45 a.m.

Last Gas Audit Report

09/21/1999 11:30				HC HangUp: ppm		
Gas	Low Label	Low Reading	P/F	Mid Label	Mid Reading	P/F
CO HC (ppm) CO_2 NO_X						

Station Equipment	Pass	Fail	Audit Procedures	Pass	Fail
1. Station Sign 2. Certificate of Appointment 3. Display Board 4. Flex Probes 5. Approved Bar 90 Gases 6. Rules and Regulations Manual 7. Brake Test Area 8. Required Equipment (Laundry Marking Pen, Scraping Device, Tread Depth Gauge, Measuring Devices, ¼" Round-Hole Punch) 9. Tachometer Lead 10. Fuel Cap Tester 11. Inspector on Duty 12. Inspection Bay 13. Approved Window Tint meter 14. Analyzer, Printer & Supplies 15. Overall Result			1. New data disk 2. Reset tamper 3. Software updates 4. Station lockout 5. Inspector lockout 6. Letter delivered 7. Technical Bulletins		

Auditor Notes

01/12/2000	CA Cksheet - OK, Tint Meter - OK, Gas Cap Tester - OK, Analyzer Audit - Pass 1/2

Deficiencies

Violation Code (5 Digits)					Action Taken	Ticket #

Station Manager: _____ Date: _____

DPS Auditor: _____ Date: _____

3.9.3 Audit Menu Selection "3 Inspector Evaluation Report"

When the auditor selects three from the audit menu, the analyzer must display:

1. **Inspector Evaluation Report**
2. **Multiple Repairs**
3. **Fast Testing**
4. **Emissions Reductions**
5. **After Hours Test**
6. **Consecutive Test Comparison**

When the auditor selects option one, "Inspector Evaluation Report," the analyzer must display a screen that lists the Inspector Evaluation Report Menu as the Header and lists the following choices:

Comparison Report

Multi-day Report

30 Day Report

60 Day Report

90 Day Report

The analyzer must provide the auditor with the option to see a report with data for an individual inspector or with all inspectors. The auditor shall be able to select the desired report and inspector criteria. The analyzer must calculate the evaluation using stored inspection information and display the report.

If the auditor selects the Multi-day Report, the analyzer must display a date entry screen that allows the auditor to enter the specific starting and ending dates. The date entry screen must require the auditor to only enter number characters. The analyzer must display the following blank date entry prompts:

Starting Date: _ _/_ _/_ _ _ _

Ending Date: _ _/_ _/_ _ _ _

The auditor shall not be required to enter the separation slashes. The format of the date must be MMDDYYYY. If the auditor elects to print the report, then the analyzer must print the reports as shown below. The header must contain:

- a title which indicates the type of report, such as 30 day or 60 day on the first line;
- the date and time of the report;
- the inspector name;
- the inspector number; and
- the analyzer number.

The column headings, at a minimum, must be underlined, and a border is not required. The printed report must use one of the following fonts: ten or twelve point Courier or Times New Roman.

The analyzer must:

- use the queries listed below the sample station evaluation report to generate the inspection counts used in the report; and
- display the complete evaluation report.

Sample Inspector Evaluation Report for all analyzer types:

60 DAY REPORT INSPECTOR NAME and NUMBER DATE/TIME ANALYZER NUMBER			
DESCRIPTION	INITIAL	REINSPECTION	TOTAL
Total Inspections Total TSI Inspections Total OBD Inspections Total ASM Inspections Total Safety Only Inspections Initial Repair Safety (R in Safety Item) Fail Emission Fail Gas Cap Fail Safety % Fail Emission Abort Sequence (No Test) Abort Sequence (Failure) Abort Sequence (Referral) Bypass RPM (no abort tests) Bypass Gas Cap Heavy-Duty Emissions Inspections Traction Control Inspections			

When the auditor selects option two, "Multiple Repairs," the analyzer must display a prompt that asks if the auditor wants to see all the inspectors/repair technicians or an individual inspector/repair technician. After the auditor makes this selection, a screen showing the number of vehicles with reinspections and the number and percent of those which have more than one reinspection will be displayed.

If the auditor selects all, the statistics are displayed for the station as a whole and for each individual inspector.

The vehicles reinspected by an inspector can be called from this screen and vehicle data on repairs, emissions levels, and time of inspection can be compared.

The purpose of this report is to allow the auditor to detect repair technicians who are not repairing vehicles to manufacturer's specifications, but are just tweaking carburetors.

When the auditor selects option three, "Fast Testing," the analyzer must ask if all or individual statistics are desired. The analyzer must display:

The "median" time between inspections

The average time for a complete inspection

The percent of inspections started within 5 minutes of the end of the previous inspection

All displays should have effective graphics. Do not include OBD data for "Fast Testing" criteria.

When the auditor selects option four, "Emissions Reductions," the analyzer must ask if the auditor wants all or individual inspectors. The following three categories of repair effectiveness will be evaluated:

- "super clean repairs";
- "possible cutpoint repairs"; and
- "indeterminate repairs."

Super clean repairs are for catalyst equipped vehicles model-year 75-80 CO less than .40 percent and HC less than 100 ppm; 81 to 84 CO .30 percent and HC 75 ppm; 85 and newer CO less than .20 percent and HC less than 50 ppm.

Possible cutpoint repairs are those in which the CO or the HC is within 25 percent of the cutpoint.

Indeterminate repairs are those which are not in either of the other categories.

A repair is defined as any vehicle that has a passing and a failing record stored in the analyzer.

The screen should display the percent of repairs that were made on catalyst vehicles and the percent of those that were made to super clean conditions. The screen should display the total number of repairs and the percent that are possible cutpoint and the percent that are indeterminate. Also average emissions reductions for all repairs and for catalyst and non-catalyst vehicles should be displayed.

An option should allow the auditor to use all repairs, or just those repaired at the station.

When the auditor selects option five, "After Hours Test," the analyzer must display any inspections that have been conducted outside of normal business hours. The auditor will be prompted to enter these hours.

When the auditor selects option six, "Consecutive Test Comparison," the analyzer must asks if the auditor wants to display all or individual statistics. If all statistics is selected, the analyzer must give the auditor the option to enter a date range and select one of the following choices:

All inspections

Reinspections

All passing reinspections

The screen will display the consecutive CO, HC, and model-year values. CO and HC levels should be reported in percent of actual values for the applicable model-year standard. If CO or HC is greater than 110 percent of the standard, then the analyzer must display values as 110 percent. The analyzer must be able to calculate this comparison report for model-year 1981 and newer vehicles, for model-year 1971 to 1980 vehicles, or for all vehicles. This report is designed to help auditors detect and discourage the use of a single vehicle for all inspections.

3.9.4 Audit Menu Selection "4 Analyzer Maintenance"

The analyzer maintenance menu must be activated when the auditor selects four from the audit menu. The analyzer must present the set of maintenance functions that may be performed. Upon selection of the analyzer Maintenance the analyzer must display the following options:

1. **Three-Day Gas Calibration and Leak Check**
2. **Gas Calibration**
3. **Leak Check**
4. **Gas Cap Integrity Tester Calibration**
5. **Return to Audit Menu**

For each required calibration, the analyzer must:

- bring up the procedures that are user friendly;
- indicate every step needed to properly perform the calibration; and
- display to the calibration result to the screen; and
- automatically record the results in the CAL.DAT file.

If the analyzer fails a required calibration, then a message must be displayed indicating that the calibration has failed and the emissions-related inspections that will be prevent until the calibration passes and providing instructions regarding how to call for repairs. The message will include the toll free telephone number. When the required calibration sequence is completed, the analyzer must return to the audit menu.

A) When the auditor selects choice number one, the analyzer must initiate a three-day gas calibration and leak check sequence that brings up a set of both gas calibration and leak check procedures. The gas calibration procedures must indicate when it is necessary to turn the calibration gas bottle valve on and off. The analyzer must prevent the start of the gas calibration until the entered concentrations values from the calibration gas bottles are within the acceptable ranges shown in Section 2.8.1: *Gas Calibration*. The leak check procedures must indicate when it is necessary to apply and remove the sample probe cap. The record in the CAL.DAT file for the three-day gas calibration and leak check will contain before and after calibration readings.

B) When the auditor selects choice number two, the analyzer must initiate a gas calibration sequence that brings up a set of gas calibration procedures. The procedures must indicate when it is necessary to turn the calibration gas bottle valve on and off. The analyzer must prevent the start of the gas calibration until the entered concentrations

values from the calibration gas bottle are within the acceptable ranges shown in Section 2.8.1: *Gas Calibration*. The record in the CAL.DAT file for the gas calibration will contain before and after calibration readings.

C) When the auditor selects choice number three, the analyzer must initiate a leak check sequence that brings up a set of leak check procedures. The procedures must indicate when it is necessary to apply and remove the sample probe cap.

D) When the auditor selects choice number four, the analyzer must initiate the procedures to perform the gas cap tester calibration. The procedures must indicate when it is necessary to identify which the reference cap is being attached, and when to switch reference caps. The analyzer must store the result of the gas cap tester in the GAS_CAP_CHECK_RSLT field.

E) When the auditor selects choice number five, the analyzer must display the audit menu.

3.9.5 Audit Menu Selection "5 Gas Audit"

The gas audit sequence must be initiated when choice number five is selected from the audit menu. The analyzer must store all readings from the gas audit in the AUDITGAS.DAT file.

A) The analyzer must display the current audit gas values, low range and mid range, and must ask the auditor **"Do you want to change the Audit Gas Values?"** If no is selected, the analyzer must proceed with the gas audit. If yes is selected, the analyzer must allow entry of the new low range and mid range audit gas values, and then ask the auditor **"Are the Audit Gas Values correct?"** If no is selected, the analyzer must allow for reentry of the gas values. If yes is selected, the analyzer must record the new values and proceed with the gas audit.

B) The analyzer must conduct a sixty second sample system purge followed by an automated electronic zero using zero air connected to the analyzer, and record the readings. The analyzer must prompt the auditor to select whether the audit gas will be entered through the probe or through the calibration port. The analyzer must default to the entry through the probe. If the auditor selects entry of the audit gas through the calibration port, the analyzer will place a "C" in the CAL_PORT field, and leave the HC_HANGUP field blank. If the auditor indicates that the gas must be entered through the probe, the analyzer must display a prompt that states **"Ready to conduct a Gas Audit. Please ensure that NOTHING is attached to Sample Probe. Press Enter to take HC Hang-up reading."** After the auditor presses "enter", the analyzer must measure the HC hang-up for 10 seconds, record the average HC hang-up value, and proceed with the gas audit.

C) The analyzer must display the audit gas values, the average HC hang-up, the analyzer sample system pump status, and the sample readings. The HC sample readings displayed must be the value of the HC raw reading minus the average HC hang-up.

PEF .XXX	Average HC HANG-UP XX PPM	Sample Pump: On/Off
Low Audit Gas Values	Sample Readings	Result
HC XXXX	HC XXXX	(P/F)

CO	XX.XX	CO	XX.XX	(P/F)
CO_2	XX.X	CO_2	XX.X	(P/F)
NO	XXXX	NO	XXXX	(P/F)
O_2	XX.X	O_2	XX.X	(N/A)

The analyzer must also display a clock indicating the elapsed time in the format of minutes and seconds (MM:SS), and a prompt which states **"Please attach the Low Audit Gas to the Sample Probe and press "Enter" when ready to begin sampling"**. The sample system pump should be on when this prompt is displayed. While this message is displayed, the auditor will introduce the sample and balance the flow using the balloon. When enter is pressed, the analyzer must reset the clock to zero, begin counting the elapsed time, and display the following message **"To capture readings, press "Enter.""** When enter is pressed, the analyzer must display an audit phase confirmation screen that includes the elapsed time, the bottle values, sample readings, and pass/fail result for each pollutant, HC, CO, CO_2, and NO. The pass/fail result for O_2 must be displayed as "N/A". The analyzer must also display two choices **"Readings Confirmed,"** or **"Return to Sampling"**. The default choice must be "Return to Sampling". If the auditor selects "Readings Confirmed," the analyzer must proceed to the Mid Level testing phase, regardless of the pass/fail outcome of this phase. If the auditor selects "Return to Sampling", the gas audit continues where it left off.

Mid Audit Gas Values		Sample Readings		Result
HC	XXXX	HC	XXXX	(P/F)
CO	XX.XX	CO	XX.XX	(P/F)
CO_2	XX.X	CO_2	XX.X	(P/F)
NO	XXXX	NO	XXXX	(P/F)
O_2	XX.X	O_2	XX.X	(N/A)

The analyzer must display the mid audit gas values, the average HC hang-up, the analyzer sample system pump status, the elapsed time clock, and the sample readings, and a prompt which states **"Please attach the Mid Audit Gas to the Sample Probe and press "Enter" when ready to begin sampling"**. The sample system pump should be "on" when this prompt is displayed. While this message is displayed, the auditor will introduce the sample and balance the flow using the balloon. When enter is pressed, the analyzer must reset the clock to zero, begin counting the elapsed time, and display the following message: **"To capture readings, press "Enter.""** When enter is pressed, the analyzer must display an audit phase confirmation screen that includes the elapsed time, the bottle values, sample readings, and pass/fail result for each pollutant, HC, CO, CO_2, and NO. The pass/fail result for O_2 must be displayed as "N/A". The analyzer must also display two choices **"Readings Confirmed,"** or **"Return to Sampling"**. The default choice must be "Return to Sampling". If the auditor selects "Return to Sampling", the gas audit continues where it left off. If the auditor selects "Readings Confirmed," the analyzer must display a message stating **"Gas Audit Complete. Please disconnect all attachments, and press "Enter.""** When "Enter" is pressed, the pump should turn off, and the analyzer must display a gas audit phase completion screen that includes readings, bottle values, and Pass/Fail results from both the Low Audit Gas Phase, and the Mid Audit Gas Phase.

PEF .XXX Sample Pump: On/Off

Low Audit Gas				Mid Audit Gas			
	Values	Bottle	Result		Value	Bottle	Results
HC	XXXX	XXXX	(P/F)	HC	XXXX	XXXX	(P/F)
CO	XX.XX	XX.XX	(P/F)	CO	XX.XX	XX.XX	(P/F)
CO_2	XX.X	XX.X	(P/F)	CO_2	XX.X	XX.X	(P/F)
NO	XXXX	XXXX	(P/F)	NO	XXXX	XXXX	(P/F)
O_2	XX.X	XXX	(N/A)	O_2	XX.X	XX.X	(N/A)

HC Hang-up Value: XX PPM

This screen must remain displayed until the auditor presses "Enter".

The analyzer must compare the HC, CO, NO, and CO_2 sample readings to the audit gas values and determine pass/fail status based on a five percent accuracy tolerance for each of the four gases. The five percent tolerance will be calculated using the formula below and rounded to the nearest whole percent:

Tolerance % = 100 *[(Reading - Cylinder Value)/Cylinder Value]

If the tolerance percentage is greater than five percent for any gas, which indicates a failure, the analyzer must require a three-day calibration and leak check prior to performing any emissions inspection. The analyzer must display the pass or fail status at the completion of the gas audit.

After the gas audit phase has been completed and the auditor has pressed "enter" to continue, the analyzer must prompt the auditor to conduct the gas cap tester calibration and complete the calibration according to the manufacturer specifications. The gas cap tester will pass the results of the calibration to the analyzer automatically. If the analyzer fails the gas cap tester calibration, the auditor shall be allowed to re-try the fuel cap calibration sequence. The analyzer will not limit the number of attempts needed to pass the gas cap tester calibration. If the analyzer passes the gas cap tester calibration or the auditor chooses not to retry the gas cap calibration, then the analyzer must display a gas audit completion screen that includes the result of the gas cap tester calibration. ASM analyzers are required to display weather station data on this screen in addition to the results of the gas audit and the gas cap tester calibration. An example of the gas audit completion screen for an ASM analyzer is shown below.

PEF .XXX Sample Pump: On/Off

Low Audit Gas				Mid Audit Gas			
	Values	Bottle	Result		Value	Bottle	Results
HC	XXXX	XXXX	(P/F)	HC	XXXX	XXXX	(P/F)
CO	XX.XX	XX.XX	(P/F)	CO	XX.XX	XX.XX	(P/F)
CO_2	XX.X	XX.X	(P/F)	CO_2	XX.X	XX.X	(P/F)
NO	XXXX	XXXX	(P/F)	NO	XXXX	XXXX	(P/F)
O_2	XX.X	XXX	(N/A)	O_2	XX.X	XX.X	(N/A)

HC Hang-up Value: XX PPM Fuel Cap Tester Result: P/F
Temperature: XXX°F Humidity: XX.XX% Barometer Pressure: XX

The results of the gas cap calibration, either "P" for pass or "F" for fail must be saved in the GAS_CAP_CHECK_RSLT field, and the values from the weather station must be stored in the AMB_BULB_TEMP, BARO_PRESSURE, and RELATIVE_HUMIDITY fields.

When the auditor presses "enter" on the gas audit completion screen that includes the gas cap tester result, the gas audit is complete and the analyzer must return to the audit menu.

3.9.6 Audit Menu Selection "6 Update Station and Inspector Information"

The update station and inspector information sequence must be initiated when choice number six is selected from the audit menu. If the analyzer detects the presence of the default auditor, the analyzer must only allow the auditor to edit the station number and analyzer number under this menu selection.

A) The analyzer must provide an option that will display the station information contained in the STATION.DAT file, and a list of inspectors contained in the INSPECTR.DAT file using the format shown below. The analyzer must be able to store information for up to 100 inspectors.

STATION.DAT
Station Number: ____char(7)
Station Name: _____char(25)
Station Street Address: _____char(20)
City: _____char(13) Zip: _____num(10)
Analyzer Number: ____num(7) -___ (extension, where applicable)
Station Exp Date _____num(6)(display format: MM/DD/YY)
Station Lockout _____char(1)
Hours of Operation (M-F): Open___num(4) Close: ___num(4)
Hours of Operation (Sat.): Open___num(4) Close: ___num(4)
Hours of Operation (Sun.): Open___num(4) Close: ___num(4)
(display format for Hours is HH:MM)
Mailing Street Address:_____char(20)
City: _____ char(13) Zip:_____num(10)
Email address:_____ char(50)

INSPECTR.DAT					
Inspector Last Name	Inspector First Name	Access Code	Inspector Number	Expiration Date	Lockout Flag

B) Inspector access codes must be displayed as Xs and may be displayed only while holding down a key specified by the manufacturer.

C) The analyzer must allow the auditor to set or clear the station lockout or an inspector lockout, but not allow the auditor to add, change, or delete any of the remaining station or inspector information. Permanent changes to the station or inspector information must be accomplished through updates received from the VID during a successful communications refresh.

D) If the auditor chooses to lockout an inspector, the analyzer must allow the auditor to select the affected inspector from the displayed list and enter the lockout status of "Y" or "N".

E) The analyzer must include a method of encryption so that the stored PIN for each inspector cannot be read as text or printed. The encryption method will be left to manufacturers' discretion and must be demonstrated during certification testing.

3.9.7 Audit Menu Selection "7 Install New Data Disk"

The install new data disk sequence must be initiated when choice number seven is selected from the audit menu.

The analyzer must describe the steps needed to change the secure floppy disk or equivalent storage media and ensure that the new media is properly installed and formatted. When the installation is complete and the analyzer security devices are secure, the analyzer must return to the audit menu.

3.9.8 Audit Menu Selection "8 Reset Date and Time"

The reset date and time sequence must be initiated when choice number eight is selected from the audit menu.

The analyzer must display the date and time update screen and allow the auditor to update this information as needed. The analyzer must automatically switch back and forth between daylight savings time and central standard time. Changes to the analyzer date and time made under this menu choice must remain until the analyzer successfully communicates with the VID. Upon a successful update, the analyzer must return to the audit menu.

3.9.9 Audit Menu Selection "9 Analyzer and Station Lockout"

The lockout sequence must be initiated when choice number nine is selected from the audit menu.

The analyzer must allow the auditor to set the lockouts listed below for items “1”, “6”, “7”, and “10”, and clear the lockouts for items “1”, “2”, “3”, “5”, “6”, “7”, “8”, “9”, or “10”, with the understanding that these lockouts could be reset during a communications session with the VID; allow the VID to set the lockouts in items “1”, “4”, “6”, “7”, “8”, “9”, or “10”, and clear the lockouts in items “1”, “4” through “10”; and allow the manufacturer’s service technician to clear items “2” or “3”. The analyzer may display the station name, station number and the analyzer number on this screen.

Lockout Status Screen

1. State Lockout
2. Cabinet Tamper
3. Floppy Tamper
4. Communications Failure to Pay
5. Station Certification Expired
6. Station Certification Suspended
7. Station Certification Revoked
8. Maximum Tests w/o Comm.
9. Maximum OBD II Tests (LOW_VOL_STATION)
10. ASM_TSI Lockout (ASM_TSI_LOCKOUT)

No Contact Limit: XXX
Number of Test w/o Communications: XXX

The analyzer must also display appropriate error messages in the event of an error or a failure of the following components:

- floppy disk failure;
- gas analyzer tamper;
- gas calibration failure;
- hard disk failure;
- gas analyzer failure;
- leak check failure;
- internal clock failure; and
- warm-up failure.

3.9.10 Audit Menu Selection “10 Software Update”

The analyzer must perform a software update when menu choice number 10 is selected from the audit menu.

When software updates are required between TCEQ requested software updates, the manufacturer is responsible for developing the update and providing the update to the TCEQ. The TCEQ may install the update, but reserves the right to have it done by the manufacturer.

The update process must be made as simple as possible for the auditor. Software updates will cause the software version number to change. When the software update is complete, the analyzer will automatically reboot and return to main menu.

3.9.11 Audit Menu Selection "11 Practical Test"

This item is optional if the Training Mode can be operated from the main menu. The analyzer must perform a practical test when menu choice number 11 is selected from the audit menu.

This function allows the auditor to have an inspector perform an inspection without generating an actual VIR. This function is very similar to the training mode option under the main menu.

3.9.12 Audit Menu Selection "12 Auditor's Notes"

The analyzer must bring up the auditor notes function when menu choice number 12 is selected from the audit menu.

The analyzer must allow the auditor to make and review free form entries. This function allows the auditor to enter notes and comments without having to complete the station performance report. The entries made using this function must be reviewable under the station performance report menu choice.

Associated System File:	**AUDIT.NOT**	**DATE MMDDYY**
		TIME HHMM
		NOTES

3.9.13 Audit Menu Selection "13 Search and Retrieve Test Records"

The search and retrieve test records menu must be activated when menu choice number 13 is selected from the audit menu. The analyzer must allow the auditor to view individual inspection records in an open format or multiple inspection records using the VI-8B format.

When the auditor selects the VI-8B search under Section 3.9.13, the record for the successful login in the AUDITLOG.DAT file must be appended with a "Y" in the SEARCH field, and the time of the search in the TIME field when the auditor presses "enter/continue". This selection by the auditor shall cause the "audited by" line to appear in the VI-8B in chronological order with the entries caused by the inspection records.

If the auditor selects the test type search while under Section 3.9.13, the items must appear in the VI -8B format displayed in Appendix G: *Inspection Log Format*. The items must be displayed in sequential order according to the certificate number for all items that meet the search criteria. The analyzer must place an indicator or flag (i.e., an asterisk, question mark, etc.) beside any item whose certificate number is not next in sequence to the previous item. The auditor shall be given the option of printing the results of the search on the printer. The auditor shall press a key designated by the manufacturer to return to the audit menu.

Under the complete inspection record format, the analyzer must allow the auditor to review and print the complete record of an inspection. The analyzer must search the VEHICLE.DAT file for inspection records that match the entered search criteria for the

license plate number, the VIN, and date range. When a match is found, the auditor shall be able to review data in the matching inspection record, the previous chronological inspection records, and the subsequent chronological inspection records. The auditor shall be given the option of continuing the search for the next matching inspection record. The analyzer must allow the auditor to print each inspection record under review. After the record is printed, the analyzer must return to the audit menu.

Under the VI-8B format, the auditor shall be able to conduct an inspection log review on the analyzer for all inspection certificate types by selecting option one, or for a unique inspection certificate type by selecting option two. The analyzer must provide the following prompt:

SELECT THE SEARCH METHOD: **1 - INSPECTION LOG**
2 - TEST TYPE

If the auditor selects "1", the analyzer must search the VEHICLE.DAT file for inspection records based on the values entered for inspector's identification number, the license plate number, VIN, date/time, approximate week ending or certificate number issued to the vehicle. The analyzer must be able to locate, display, and print out the inspection record(s). The information must be displayed in the format outlined in Appendix G: *Inspection Log Format*, inclusive of the "audited by" line, where applicable. The auditor shall be given the option of printing the results of the search on the printer. The auditor shall press a key designated by the manufacturer to return to the audit menu.

The analyzer must be able to print VI-8Bs that are identical to the VI-8Bs printed by the station manager. The data entry screens for this function must be identical to screens used by the station manager. The analyzer must be deemed acceptable if the auditor is allowed to enter the station manager's menu by using the State Access Code.

If the auditor selects "2", the analyzer must provide the following prompt:

ENTER THE SAFETY INSPECTION TYPE

L-1 YEAR WINDSHIELD - OBD (SAFETY & EMISSIONS)	**M-1 YEAR WINDSHIELD - ASM (SAFETY & EMISSIONS)**
A-1 YEAR WINDSHIELD - TSI (SAFETY & EMISSIONS)	**J-1 YEAR WINDSHIELD (SAFETY ONLY)**
B-2 YEAR WINDSHIELD	**H-EMISSIONS DECAL**
C-TRAILER/MOTORCYCLE	**G-FMCSR (TRUCK)**
N-1 YEAR WINDSHIELD - OBD/TSI (SAFETY & EMISSION)	**K-FMCSR (TRAILER)**

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will delete the word "windshield" from the inspection types displayed on the screen.^

Once the auditor has selected the safety inspection type, the analyzer must prompt the auditor for one or more of the following search criteria: license plate number, VIN, inspector identification number, date/time, or certificate number. If the date/time is selected as the

search criterion, the analyzer must allow the auditor to enter a start date and an end date that will allow the report to contain inspection items and certificate numbers, where applicable, for the entered date range. The analyzer must search the VEHICLE.DAT file for inspection records that match the search criteria. The items must be displayed in the format displayed in Appendix G: *Inspection Log Format*, inclusive of the "audited by" line, where applicable. The items must be listed in chronological order according to inspection start date/time.

Since the I/M program design requires the certificates to be issued sequentially, most, if not all, certificate numbers will appear in sequential order. The analyzer must place an indicator or flag, such as an asterisk, question mark, or similar symbol, beside any item whose certificate number is not next in sequence to the previous certificate. The auditor shall be given the option of printing the results of the search on the printer. The auditor shall press a key designated by the manufacturer to return to the audit menu.

3.9.14 Audit Menu Selection "14 Analyzer Tampering and Access Report"

When the auditor selects menu choice 14 from the audit menu, the analyzer must display the analyzer tampering/access report, which contains the history of tampers and lockouts for the previous year. The report must indicate the name of the lockout or a description of the location of the tamper, whether the tamper or lockout is currently set or clear, the date and time is was set or cleared, and whether it was set or cleared by the analyzer, state personnel, or manufacturer-authorized repair technician.

3.9.15 Audit Menu Selection "15 History Report"

When the auditor selects menu choice 15 from the audit menu, the analyzer must display a report that allows the auditor to review all gas calibration records, tamper history, leak check records, gas cap tester calibration history, and gas audit records stored for at least the past 180 days.

3.9.16 Audit Menu Selection "16 System Settings"

When the auditor selects menu choice number 16 from the audit menu, the analyzer must display:

Type Station: _____
County Setting: _____
Station Volume: _____

Settings Prompt: ENTER THE SETTING YOU WISH TO CHANGE.

1. **Type Station**
2. **County Code Setting**
3. **Station Volume**
4. **Special Testing (i.e. waiver tests, arbitration tests, etc.)**
5. **Return to Audit Main Menu**

The analyzer must complete the display from the information contained in the STATION.DAT file. The type station must display “Public”, “Government”, or “Fleet”. The “County Setting” must display the name of the county in which the station is to be used. The “Station Volume” must display “Low” or “High”. The auditor shall be able to access the type station selection by entering “1”, the county code setting selection by entering “2”, the station volume selection by entering “3”, and the special testing selection by entering “4”. The auditor shall be returned to the audit main menu by entering “5”, the <Esc> key, or a key designated by the manufacturer.

Type Station

The type station selection should access the following selections:

“P” - Public	(Lockout until print VI-8B log weekly)
“F” - Fleet	(Lockout until print VI-8B log weekly)
“G” - Government	(Lockout until print VI-8B log weekly)

After the auditor has selected the type station, the analyzer must automatically return to the system settings display screen menu.

County Code Setting

The county code setting selection must give the following prompt:

County Code Prompt: **ENTER SELECT THE COUNTY WHERE THE ANALYZER WILL BE USED.**

Dallas - 057	**Denton - 061**	**Parker - 184**
El Paso - 071	**Fort Bend - 079**	**Johnson - 126**
Harris - 101	**Galveston - 084**	**Ellis - 070**
Collin - 043	**Brazoria - 020**	**Kaufman - 129**
Liberty - 146	**Chambers - 036**	**Rockwall - 199**
Tarrant - 220	**Montgomery - 170**	**Bexar - 015**
Waller - 237	**Travis - 227**	**Comal - 046**
Hays - 105	**Williamson - 246**	**Bastrop - 011**
Wilson - 247	**Guadalupe - 094**	**Smith - 213**
Nueces - 178	**San Patricio - 205**	**Kleberg - 137**
Milam - 166	**Lee - 144**	**Bastrop - 011**
Burnet - 027	**Blanco - 016**	**Bell - 014**
Other - 999	**Out of State or Federal - 000**	

The analyzer must provide the list of counties shown above, excluding the codes. The auditor shall be able to select the appropriate county by using the arrows keys. The auditor shall highlight the appropriate county and press the “enter/continue” key to confirm the selection. The analyzer must convert the selection to the corresponding three digit code shown above and store the code in the COUNTY_CODE field in the STATION.DAT file. The analyzer must be designed to have the county code set by the VID. The county selection will correspond to the county in which the analyzer is to be used. After the auditor has selected the county code, the analyzer must automatically return to the system settings display screen menu.

Station Volume Setting

When the auditor selects "3" from the system settings prompt, the analyzer must display the following prompt:

Station Volume Setting: **ENTER THE STATION VOLUME DESIGNATION**

1 - HIGH VOLUME
2 - LOW VOLUME

The analyzer must allow the auditor to select the station designation as a high volume station or a low volume station. The analyzer must be designed to default to the low volume setting. The station volume setting must control the defaults for the minimum frequency for gas calibrations and leak checks. A low volume designation must require that gas calibrations will be conducted at least every 72 hours, and a leak check is conducted every 24 hours. A high volume designation must require that gas calibrations will be conducted at least every 24 hours, and a leak check is conducted every 4 hours. After the auditor has selected the station volume, the analyzer must automatically return to the system settings display screen menu.

Special Testing

When the auditor selects "4" from the system settings prompt, the analyzer must display:

Special Testing Prompt: **SELECT THE TYPE OF TEST TO BE CONDUCTED FROM THE LIST BELOW.**

1.	**LOW INCOME TIME EXTENSION**	**(LI)**
2.	**WAIVER - LOW MILEAGE**	**(LM)**
3.	**WAIVER - INDIVIDUAL VEHICLE**	**(IV)**
4.	**ARBITRATION/DISPUTE TEST**	**(AD)**
5.	**ACCELERATED VEHICLE RETIREMENT TEST**	**(ST)**
6.	**PARTS AVAILABILITY TIME EXTENSION**	**(PA)**
7.	**SPECIAL REPLACEMENT CERTIFICATE INSPECTION**	**(RF)**
8.	**OTHER**	**(OT)**

The analyzer must provide the list of inspections shown above. The auditor shall be able to select the appropriate inspection and press the "enter/continue" key to confirm the selection. The analyzer must store the letter that corresponds with each choice in the SPECIAL_TEST field.

"L" for choice "1"

"P" for choice "2"

"J" for choice "3"

"E" for choice "4"

"D" for choice "5"

"M" for choice "6"

“A” for choice “7”

“N” for choice “8”

The analyzer must record the results of the inspection and allow the inspector to enter the certificate number issued to the vehicle, regardless of the actual pass or fail result. The auditor shall be able to return to the audit main menu by pressing the <Esc> key or a key determined by the manufacturer.

After the auditor has selected confirmed his selection, the analyzer must prompt the auditor:

THE (TEST NAME) HAS BEEN SELECTED. PRESS ‘ENTER/CONTINUE’ TO CONFIRM. PRESS ANY OTHER KEY TO CHANGE YOUR SELECTION.

If the auditor does not press “enter/continue”, the analyzer must return to the special testing prompt screen. If the auditor confirms the selection of the “special replacement certificate inspection” sequence, the analyzer must not display the special menu and proceed to the sequence in Section 3.21. If the auditor presses “enter/continue” to confirm the selection of the remaining choices on the special testing prompt, the analyzer must proceed to a special menu to allow the inspector to conduct the applicable emissions inspection.

The special menu must consist of the following two selections:

- Safety and Emissions Inspection (main menu selection “1”); or
- Emissions Only Inspection (main menu selection “3”).

The special menu may also contain a third selection called “3) Reinspection (main menu selection “4”)” to compensate for customers entitled to a free reinspection.

If the customer is eligible for a free reinspection, the analyzer must recognize this situation and use the menu selections from Section 3.4: *Main Menu Selection “4 Reinspection”*. The analyzer must look for the information needed to make the determination from two sources:

- data transmitted by the VID; or
- data contained in the analyzer.

After the reinspection is conducted and a complete inspection record is written, the analyzer must return to standard operation.

The analyzer must not print a rejection receipt for any of the special tests regardless of the actual outcome of the inspection. The analyzer must print a VIR for all special tests regardless of the actual outcome of the inspection. The analyzer must place a two digit code next to the test type to indicate the type of special test being conducted. The two digit codes are in parenthesis next to the list of special tests displayed in the special testing prompt.

For all special tests, the analyzer must provide the inspector with the option of entering a safety certificate/decal number regardless of the actual outcome of the inspection. When the vehicle fails the inspection and the inspector is prompted to enter the safety certificate/decal number, a warning message must be displayed instructing the inspector to leave this screen

blank if a safety certificate or decal will not be issued to the vehicle. The analyzer must prompt the auditor to enter the waiver number for all special tests, except the arbitration/dispute test, selection number "4" and the special replacement certificate inspection, selection number "7". The waiver number is an alphanumeric entry of length seven. The analyzer must make the auditor enter a minimum of four characters, press "enter/continue", and reconfirm the entry before proceeding to the next screen (VI-30 Prompt). The analyzer must print the waiver number on the VIR, preferably on the same line as the certificate number, if entered.

3.9.17 Audit Menu Selection "17 Reprint Vehicle Inspection Report"

When the auditor selects menu choice number 17 from the audit menu, the analyzer must reprint a VIR using information from a previous inspection record. The screen prompts must be identical to Section 3.5, beginning with the display records prompts in Section 3.5.3. The analyzer must search for all records that match the entered criteria whether the vehicle passed or failed.

3.9.18 Audit Menu Selection "18 Communications Refresh"

When the auditor selects menu choice number 18 from the audit menu, the analyzer must conduct a communications refresh as described in main menu selection "15" in Section 3.15, except that the entry of an access code is not required.

3.9.19 Audit Menu Selection "19 Copy and Download Test Records"

When the auditor selects menu choice number 19 from the audit menu, the analyzer must allow the auditor to copy the VEHICLE.DAT, VEHICLE.HST, AUDITLOG.DAT, and AUDITLOG.HST files to an auditor installed storage media. The analyzer must prompt the auditor to enter a date range and the analyzer must identify the inspection records and the audit log records that were created on or prior to the entered download date and copy them onto the storage media. If the storage media fills up prior to the copying all the records the analyzer must display the date of the last record and the number of records copied. The last record date must be displayed until the auditor presses "enter/continue". The analyzer must allow the inspector to run the download procedures again. After the data requested is downloaded onto the storage media then display one the following:

The date of the oldest inspection record on the hard drive

The 180 day maximum default date

A message stating all inspection records have been copied

The analyzer may prompt the auditor to format the storage media prior to copying the records. The analyzer may erase or write over any preexisting information on the target media. If it is necessary to remove the state data disk prior to copying the files, the analyzer must provide instructions for the auditor to follow to remove the data disk and reinstall the data disk after the copy procedure is complete.

3.9.20 Audit Menu Selection "20 Missing or Voided Certificates"

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will disable this function.

When the auditor selects menu choice number 20 from the audit menu, the analyzer must allow the auditor to enter missing and voided inspection certificates or decals by completing the following sequence.

3.9.20a Access Code Entry

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must be designed to automatically place the auditor's six digit employee identification number in the INSPECTOR_NUM field of the inspection record when this function is successfully completed.

Associated System File: **VEHICLE.DAT** **REPL_ID_NUM**

3.9.20b Certificate Type Prompt

INDICATE THE TYPE OF INSPECTION CERTIFICATE(S).

A-1 YEAR WINDSHIELD - TSI (SAFETY & EMISSIONS)	**J-1 YEAR WINDSHIELD (SAFETY ONLY)**
B-2 YEAR WINDSHIELD	**K-FMCSR (TRAILER)**
C-TRAILER/MOTORCYCLE	**G-FMCSR (TRUCK)**
L-1 YEAR WINDSHIELD - OBD (SAFETY & EMISSIONS)	**H-EMISSIONS TEST ONLY DECAL**
N-1 YEAR WINDSHIELD - OBD/TSI (SAFETY & EMISSIONS)	**M-1 YEAR WINDSHIELD - ASM (SAFETY & EMISSIONS)**

Programming Criteria:

The analyzer must only accept the following entries: "A", "B", "C", "D", "E", "G", "H", "J", "K", "L", "M", or "N". Each entry must be followed by pressing the "enter/continue" key. The analyzer must display the previous two entries and the type of certificate or decal that caused the lockout or prevention of subsequent official inspections and needs to be accounted for.

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will delete the word "windshield" from the inspection types displayed on the screen.

Associated System File: **VEHICLE.DAT** **SAFE_TEST_TYPE**

3.9.20c Certificate Condition Prompt

INDICATE THE CONDITION OF THE INSPECTION CERTIFICATE(S).

V - VOIDED **M - MISSING**

Programming Criteria:

The analyzer must only accept the following entries: "V" - voided or "M" - missing. Each entry must be followed by pressing the "enter/continue" key.

Associated System File: **VEHICLE.DAT** **CERT_COND**
DECAL_COND

3.9.20d Number of Certificates Prompt

INDICATE HOW MANY CERTIFICATES/DECALS ARE AFFECTED.

1 - ONE **2 - MORE THAN ONE**

Programming Criteria:

If the auditor selects "1", display the next prompt. If the auditor selects "2", the analyzer must display prompt number 3.9.20f.

3.9.20e Certificate Number Prompt

ENTER THE INSPECTION CERTIFICATE/DECAL NUMBER.

Programming Criteria:

A minimum of six and maximum of nine characters are required for this field. The analyzer must write an inspection record in the VEHICLE.DAT file that includes the current date in the TEST_DATE field, the six-digit employee identification number of the auditor voiding the certificates/decals in the REPL_ID_NUM field, the type of certificate in the SAFE_TEST_TYPE field, the entered certificate number in the CERT_NUM field, and the previously entered condition of the certificates in the CERT_COND field, or the entered decal number in the DECAL_NUM field, and the previously entered condition of the decal in the DECAL_COND field.

If the miss/void function is being conducted using the station manager menu, the value of "9999999999" must be stored in the REPL_ID_NUM field. The record must be stored on the analyzer and transmitted to the VID along with the next emissions inspection. The analyzer will print the information on the weekly VI-8B. The void indicator must show "VOID" if "V" is in the CERT_COND or DECAL_COND field, or show "MISS" if "M" is in the CERT_COND or DECAL_COND field.

The records for missing or voided certificates/decals must contain entries in the following fields, at a minimum, to be accepted as a valid inspection record:

VERSION LICENSE_NUM (Set to "MISSVOID")

TEST_DATE	(Date of Entry)	SAFE_TEST_TYPE	
TEST_START_TIME	(Time of Entry)	TIMEOUT_FLAG	(Set to "N")
TEST_END_TIME	(Time of Entry)	CERT_NUM	(Beginning Certificate Number)
STATION_NUM		CERT_NUM_2	(Ending Certificate Number)
STATION_NAME		CERT_COND	
ANALYZER_NUMBER		TIME_REDO	(Set to "N")
INSPECTOR_NUM		DECAL_NUM	(Beginning Decal Number)
INSPECTOR_LNAME			
INSPECTOR_FNAME		DECAL_COND	
COUNTY_CODE			
VIN_ID_NUM	(Set to "MISSVOID")	REPL_ID_NUM	(ID # of Miss/Void auditor)

All other fields must be appropriately filled with blanks, spaces and zeros.

The analyzer must complete the VIN_ID_NUM and LICENSE_NUM fields automatically and return to the audit menu after the complete record has been written.

Associated System File: **VEHICLE.DAT** **CERT_NUM**
TEST_DATE **CERT_COND** **DECAL_NUM**
DECAL_COND **REPL_ID_NUM** **SAFE_TEST_TYPE**

3.9.20f Certificate Number Prompt

ENTER THE SERIES OF CERTIFICATE/DECAL NUMBERS.

BEGINNING:_____ ENDING: _____

Programming Criteria:

A minimum of six and maximum of nine characters are required for each certificate number or decal number field. The analyzer must write an inspection record in the VEHICLE.DAT file that includes the current date in the TEST_DATE field, the six digit employee identification number of the auditor voiding the certificates/decals in the REPL_ID_NUM field, the type of certificate in the SAFE_TEST_TYPE field, the entered beginning certificate number in the CERT_NUM field, the entered ending certificate number in the CERT_NUM_2 field, and the previously entered condition of the certificates in the CERT_COND field, or the entered beginning decal number in the DECAL_NUM field, the entered ending certificate number in the DECAL_NUM_2 field, and the previously entered condition of the decal in the DECAL_COND field.

If the miss/void function is being conducted using the station manager menu, the value of "9999999999" must be stored in the REPL_ID_NUM field. The record must be stored on the analyzer and transmitted to the VID along with the next emissions inspection. The analyzer will print the information on the weekly VI-8B. Each certificate number in the range must appear on the VI-8B as a separate entry. For example, the range of certificates numbered "001" to "005" must appear on the VI-8B on five separate lines. Each line will have the same

void indicator. The void indicator must show “VOID” if “V” is in the CERT_COND or DECAL_COND field or “MISS” if “M” is in the CERT_COND or DECAL_COND field.

The analyzer must limit the range of certificates that can be voided based on the beginning certificate number that is entered by the auditor. The maximum ending certificate number must be the next multiple of 50. For example, if the auditor enters “A00238432”, the maximum entry is “A00238450”. If the auditor enters “A32985353”, the maximum entry is “A32985400”. For decals, the maximum ending decal number must be the next multiple of 10. If the auditor enters “V32994822”, the maximum entry is “V32994830”.

The records for missing or voided certificates/decals must contain entries in the following fields, at a minimum, to be accepted as a valid inspection record:

VERSION		LICENSE_NUM	(Set to “MISSVOID”)
TEST_DATE	(Date of Entry)	SAFE_TEST_TYPE	
TEST_START_TIME	(Time of Entry)	TIMEOUT_FLAG	(Set to “N”)
TEST_END_TIME	(Time of Entry)	CERT_NUM	(Beginning Certificate Number)
STATION_NUM		CERT_NUM_2	(Ending Certificate Number)
STATION_NAME		CERT_COND	
ANALYZER_NUMBER		TIME_REDO	(Set to “N”)
INSPECTOR_NUM		DECAL_NUM	(Beginning Decal Number)
INSPECTOR_LNAME		DECAL_NUM_2	(Ending Decal Number)
INSPECTOR_FNAME		DECAL_COND	
COUNTY_CODE			
VIN_ID_NUM	(Set to “MISSVOID”)	REPL_ID_NUM	(ID # of Miss/Void auditor)

All other fields must be appropriately filled with blanks, spaces, and zeros.

The analyzer must complete the VIN_ID_NUM and LICENSE_NUM fields automatically and return to the audit menu after the complete record has been written.

<u>Associated System File:</u> **VEHICLE.DAT** **CERT_NUM**
CERT_NUM_2 **TEST_DATE** **CERT_COND**
DECAL_NUM **DECAL_NUM_2** **DECAL_COND**
REPL_ID_NUM **SAFE_TEST_TYPE**

3.9.21 Audit Menu Selection “21 Certificate Correction and Replacement”

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to “Y”, then the analyzer will disable this function.

When the auditor selects menu choice number 21 from the audit menu, the analyzer must allow the auditor to replace a previously issued inspection certificate or decal by completing the following sequence.

3.9.21a Certificate Search Prompt

ENTER THE SEARCH CRITERIA.

CERTIFICATE/DECAL NUMBER: _____
CERTIFICATE/DECAL TYPE: _____
VEHICLE VIN: _____
VEHICLE PLATE NUMBER: _____

Programming Criteria:

The analyzer must allow the auditor to enter one or more of the search criteria. The analyzer must search the stored inspection records to locate the vehicle's most recent passing inspection. If the certificate/decal type criterion is the only search criterion entered, then the analyzer must require the auditor to make an entry in one of the remaining search criteria fields prior to performing the search.

Associated System File: **VEHICLE.DAT** **CERT_NUM**
DECAL_NUM **VIN_ID_NUM**
LICENSE_NUM **SAFE_TEST_TYPE**

3.9.21b Certificate Number Prompt

ENTER THE REPLACEMENT INSPECTION CERTIFICATE/DECAL NUMBER.

Programming Criteria:

A minimum of six and maximum of nine characters are required for this field. Upon confirmation of the replacement certificate/decal number, the analyzer must write one inspection record in the VEHICLE.DAT file.

The inspection record must contain the current date and time in the TEST_DATE and TEST_START_TIME field, the date and time of the target record in the ORIG_TEST_DATE, and ORIG_TEST_TIME fields, the six digit employee identification number of the auditor replacing the certificate/decal in the REPL_ID_NUM field, and the type of certificate in the SAFE_TEST_TYPE field. If the replacement is being conducted using the station manager menu, the value of "9999999999" must be stored in the REPL_ID_NUM field.

The certificate replacement record must be a duplicate of the target inspection record with an "R" in the CERT_COND field, the replacement certificate number in the CERT_NUM field, and the certificate number of the target inspection record (the voided certificate number) in the CERT_NUM_2 field. The decal replacement record must be a duplicate of the target inspection record with an "R" in the DECAL_COND field, the replacement decal number in the DECAL_NUM field, the certificate number of the target inspection record (the voided decal number) in the DECAL_NUM_2 field.

The analyzer will print the information on the weekly VI-8B. The entry must appear on two separate lines on the VI-8B. The first line must contain the date of the original inspection, the type of certificate or decal, the void indicator displaying "VOID", and the voided certificate

or decal number of the target inspection record. The second line must contain the entries from the duplicate inspection record using the replacement certificate number as the valid certificate number, and include "REPL" as the void indicator. The analyzer must transmit the inspection record to the VID and return to the audit menu.

Associated System File: **VEHICLE.DAT** **CERT_NUM**
CERT_NUM_2 **TEST_DATE** **CERT_COND**
DECAL_NUM **DECAL_NUM_2** **DECAL_COND**
REPL_ID_NUM **SAFE_TEST_TYPE**

3.9.22 Audit Menu Selection "22 Status Screen"

When the auditor selects menu choice number 22 from the audit menu, the analyzer must allow the auditor to view information regarding the status of the analyzer using information stored in the analyzer's files to generate the status screen.

On one screen, the analyzer must:

- display the station, analyzer, and software version numbers;
- display the status of each lockout;
- display the weather information including temperature, barometric pressure, and humidity);
- display the contact limit, and the value of the no-contact limit counter; and
- display the date of the last gas calibration, leak check, and gas cap tester calibration.

Sample Status Screen

1. Station number
2. Analyzer number
3. PEF (N/A for OBD analyzers)
4. Span gas cylinder values (N/A for OBD analyzers)
5. Date and time of last gas calibration and leak check (N/A for OBD analyzers)
6. Remaining space will store approximately inspection records (the analyzer should fill in the blank with a number.)
7. Date analyzer was last serviced
8. Current date and time
9. Software Version Number
10. Weather information

Lockout Status Screen

1. State Lockout
2. Cabinet Tamper
3. Floppy Tamper
4. Communications Failure to Pay
5. Station Certification Expired
6. Station Certification Suspended
7. Station Certification Revoked
8. Maximum Tests w/o Comm.
9. Maximum OBD II Tests (LOW_VOL_STATION)
10. ASM_TSI Lockout (ASM_TSI_LOCKOUT)

No Contact Limit: XXX
Number of Test w/o Communications: XXX

The analyzer must also display appropriate error messages in the event of an error or a failure of the following components:

- the floppy disk or other approved storage media,
- the analyzer's tamper detection system;
- the gas calibration system;
- the hard disk;
- the analyzer's gas measurement system;
- the leak check system;
- the internal clock; and
- the analyzer's warm-up system.

3.10 Main Menu Selection "10 Recall Aborted Inspection"

3.10.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to "B" or "C". The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the

INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer's monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.10.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.10.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.10.3 Display and Select Aborted Inspection Record

Programming Criteria:

The analyzer must display the license plate number and VIN of all records currently contained in RECALL.DAT file. When the inspector selects the desired record, the analyzer must display vehicle information for confirmation or modification by the inspector.

3.10.4 Recall Aborted Inspection Logic

Programming Criteria:

The analyzer will perform the appropriate inspection sequence based on the value of the TEST_TYPE field in inspection record selected from the RECALL.DAT file.

Associated System Files:	**RECALL.DAT**	**TEST_TYPE**

3.11 Main Menu Selection "11 Gas Cap Integrity Test"

The gas cap integrity check is an integral part of the analyzer, and must be a fully automatic feature of the analyzer.

3.11.1 Gas Cap Connect Prompt

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.12 Main Menu Selection "12 Missing, or Voided Certificates"

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will disable this function.

This selection works better using two submenus to accommodate accounting for inspection certificates, and/or emissions only decals.

3.12.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to "B" or "C". The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer's monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.12.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.12.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.12.2a Certificate Type Prompt

INDICATE THE TYPE OF INSPECTION CERTIFICATE(S).

A-1 YEAR WINDSHIELD - TSI (SAFETY & EMISSIONS)	**J-1 YEAR WINDSHIELD (SAFETY ONLY)**
B-2 YEAR WINDSHIELD	**K-FMCSR (TRAILER)**
C-TRAILER/MOTORCYCLE	**G-FMCSR (TRUCK)**
L-1 YEAR WINDSHIELD - OBD (SAFETY & EMISSIONS)	**H-EMISSIONS TEST ONLY DECAL**
N-1 YEAR WINDSHIELD - OBD/TSI (SAFETY & EMISSIONS)	**M-1 YEAR WINDSHIELD - ASM (SAFETY & EMISSIONS)**

Programming Criteria:

The analyzer must only accept the following entries: “A”, “B”, “C”, “D”, “E”, “G”, “H”, “J”, “K”, “L”, or “M”. Each entry must be followed by pressing the “enter/continue” key. The analyzer must display the previous two entries, and the type of certificate or decal caused the lockout or prevention of subsequent official inspections, and needs to be accounted for.

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to “Y”, then the analyzer will delete the word “windshield” from the inspection types displayed on the screen.

Associated System File: **VEHICLE.DAT** **SAFE_TEST_TYPE**

3.12.3 Certificate Condition Prompt

INDICATE THE CONDITION OF THE INSPECTION CERTIFICATE(S).

V - VOIDED **M - MISSING**

Programming Criteria:

The analyzer must only accept the following entries: V-voided, or M - missing. Each entry must be followed by pressing the "enter/continue" key.

Associated System File: **VEHICLE.DAT** **CERT_COND**
DECAL_COND

3.12.4 Number of Certificates Prompt

INDICATE HOW MANY CERTIFICATES/DECALS ARE AFFECTED.

1 - ONE **2 - MORE THAN ONE**

Programming Criteria:

If the inspector selects "1", the analyzer must display the next prompt. If the inspector selects "2", the analyzer must display prompt number 3.12.6.

3.12.5 Certificate Number Prompt

ENTER THE INSPECTION CERTIFICATE/DECAL NUMBER.

Programming Criteria:

A minimum of six and maximum of nine characters are required for this field. The analyzer must write an inspection record in the VEHICLE.DAT file that includes the current date in the TEST_DATE field, the six-digit employee identification number of the auditor voiding the certificates/decals in the REPL_ID_NUM field, the type of certificate in the SAFE_TEST_TYPE field, and either the entered certificate number in the CERT_NUM field and previously entered condition of the certificates in the CERT_COND field, or the entered decal number in the DECAL_NUM field and previously entered condition of the decal in the DECAL_COND field.

If the miss/void function is being conducted using the station manager menu, the value of "9999999999" must be stored in the REPL_ID_NUM field. The record must be stored on the analyzer and transmitted to the VID along with the next emissions inspection. The analyzer must print the information on the weekly VI-8B. The void indicator must show "VOID" if "V" is in the CERT_COND or DECAL_COND field or show "MISS" if "M" is in the CERT_COND or DECAL_COND field.

The records for missing or voided certificates/decals must contain entries in the following fields, at a minimum, to be accepted as a valid inspection record:

VERSION		LICENSE_NUM	(Set to "MISSVOID")
TEST_DATE	(Date of Entry)	SAFE_TEST_TYPE	
TEST_START_TIME	(Time of Entry)	TIMEOUT_FLAG	(Set to "N")
TEST_END_TIME	(Time of Entry)	CERT_NUM	(Beginning Certificate Number)
STATION_NUM		CERT_NUM_2	(Ending Certificate Number)
STATION_NAME		CERT_COND	
ANALYZER_NUMBER		TIME_REDO	(Set to "N")

INSPECTOR_NUM		DECAL_NUM	(Beginning Decal Number)
INSPECTOR_LNAME			
INSPECTOR_FNAME		DECAL_COND	
COUNTY_CODE			
VIN_ID_NUM	(Set to "MISSVOID")	REPL_ID_NUM	(ID # of Miss/Void auditor)

All other fields must be appropriately filled with blanks/spaces and zeros.

The analyzer must complete the VIN_ID_NUM and LICENSE_NUM fields automatically when this function is conducted by the inspector.

<u>Associated System File:</u> **VEHICLE.DAT CERT_NUM TEST_DATE CERT_COND DECAL_NUM DECAL_COND REPL_ID_NUM SAFE_TEST_TYPE**

3.12.6 Certificate Number Prompt

ENTER THE SERIES OF CERTIFICATE/DECAL NUMBERS.

BEGINNING:_____ ENDING:_____

<u>Programming Criteria:</u>

A minimum of six and maximum of nine characters are required for this field. The analyzer must write an inspection record in the VEHICLE.DAT file that includes the current date in the TEST_DATE field, the six-digit employee identification number of the auditor voiding the certificates/decals in the REPL_ID_NUM field, the type of certificate in the SAFE_TEST_TYPE field, the entered certificate number in the CERT_NUM field, and the previously entered condition of the certificates in the CERT_COND field, or the entered decal number in the DECAL_NUM field, and the previously entered condition of the decal in the DECAL_COND field.

If the miss/void function is being conducted using the station manager menu, the value of "9999999999" must be stored in the REPL_ID_NUM field. The record must be stored on the analyzer and transmitted to the VID along with the next emissions inspection. The analyzer will print the information on the weekly VI-8B. The void indicator must show "VOID" if "V" is in the CERT_COND or DECAL_COND field, or show "MISS" if "M" is in the CERT_COND or DECAL_COND field.

The analyzer must limit the range of certificates that can be voided based on the beginning certificate number that is entered by the inspector. The maximum ending certificate number must be the next multiple of 50. For example, if the inspector enters A00238432, the maximum entry is A00238450. If the inspector enters A32985353, the maximum entry is A32985400. For decals, the maximum ending decal number must be the next multiple of 10. For example, if the inspector enters V32994822, the maximum entry is V32994830.

The records for missing or voided certificates/decals must contain entries in the following fields, at a minimum, to be accepted as a valid inspection record:

VERSION		LICENSE_NUM	(Set to “MISSVOID”)
TEST_DATE	(Date of Entry)	SAFE_TEST_TYPE	
TEST_START_TIME	(Time of Entry)	TIMEOUT_FLAG	(Set to “N”)
TEST_END_TIME	(Time of Entry)	CERT_NUM	(Beginning Certificate Number)
STATION_NUM		CERT_NUM_2	(Ending Certificate Number)
STATION_NAME		CERT_COND	
ANALYZER_NUMBER		TIME_REDO	(Set to “N”)
INSPECTOR_NUM		DECAL_NUM	(Beginning Decal Number)
INSPECTOR_LNAME		DECAL_NUM_2	(Ending Decal Number)
INSPECTOR_FNAME		DECAL_COND	
COUNTY_CODE			
VIN_ID_NUM	(Set to “MISSVOID”)	REPL_ID_NUM	(ID # of Miss/Void auditor)

All other fields must be appropriately filled with blanks/spaces and zeros.

The analyzer must complete the VIN_ID_NUM and LICENSE_NUM fields automatically when this function is conducted by the inspector.

Associated System File: **VEHICLE.DAT** **CERT_NUM**
CERT_NUM_2 **TEST_DATE** **CERT_COND**
DECAL_NUM **DECAL_NUM_2** **DECAL_COND**
REPL_ID_NUM **SAFE_TEST_TYPE**

3.13 Main Menu Selection “13 Certificate Correction and Replacement”

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to “Y”, then the analyzer will disable this function.

This selection works better using two submenus to accommodate replacing inspection certificates, and emissions only decals.

3.13.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to “B” or “C”. The keyboard or bar code scanner entered value

must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer's monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.13.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.13.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.13.3 Certificate Search Prompt

ENTER THE SEARCH CRITERIA.

CERTIFICATE/DECAL NUMBER: _____
CERTIFICATE/DECAL TYPE: _____
VEHICLE VIN: _____
VEHICLE PLATE NUMBER: _____

Programming Criteria:

The analyzer must allow the auditor to enter one or more of the search criteria. The analyzer must search the stored inspection records to locate the vehicle's most recent passing inspection. If the certificate/decal type criterion is the only search criterion entered, then the analyzer must require the auditor to make an entry in one of the remaining search criteria fields prior to performing the search.

Associated System File:	**VEHICLE.DAT**	**CERT_NUM**
	DECAL_NUM	**VIN_ID_NUM**

LICENSE_NUMSAFE_ TEST_TYPE

3.13.4 Certificate Number Prompt

ENTER THE REPLACEMENT INSPECTION CERTIFICATE/DECAL NUMBER.

Programming Criteria:

A minimum of six and maximum of nine characters are required for this field. Upon confirmation of the replacement certificate/decal number, the analyzer must write one inspection record in the VEHICLE.DAT file.

The inspection record must contain the current date and time in the TEST_DATE and TEST_START_TIME fields, the date and time of the target record in the ORIG_TEST_DATE and ORIG_TEST_TIME fields, the six digit employee identification number of the auditor replacing the certificate/decal in the REPL_ID_NUM field, and the type of certificate in the SAFE_TEST_TYPE field. If the replacement is being conducted using the station manager menu, the value of "9999999999" must be stored in the REPL_ID_NUM field.

The certificate replacement record must be a duplicate of the target inspection record with an "R" in the CERT_COND field, the replacement certificate number in the CERT_NUM field, and the certificate number of the target inspection record (the voided certificate number) in the CERT_NUM_2 field. The decal replacement record must be a duplicate of the target inspection record with an "R" in the DECAL_COND field, the replacement decal number in the DECAL_NUM field, and the decal number of the target inspection record (the voided decal number) in the DECAL_NUM_2 field.

The analyzer will print the information on the weekly VI-8B. The entry must appear on two separate lines on the VI-8B. The first line must contain the date of the original inspection, the type of certificate or decal, the void indicator displaying "VOID", and the voided certificate or decal number of the target inspection record. The second line must contain the entries from the duplicate inspection record using the replacement certificate number as the valid certificate number, and include "REPL" as the void indicator. The analyzer must transmit the inspection record to the VID and return to the audit menu.

Associated System File: **VEHICLE.DAT** **CERT_NUM**
CERT_NUM_2 **TEST_DATE** **CERT_COND**
DECAL_NUM **DECAL_NUM_2** **DECAL_COND**
REPL_ID_NUM **SAFE_TEST_TYPE**

3.14 Main Menu Selection "14 Technical Bulletins and Announcements"

The analyzer must be able to receive and display TSBs and announcements transmitted from the VID. When the announcement and/or TSB is displayed, the analyzer must allow the inspector three options:

- print the announcement/TSB;

- save the announcement/TSB to the announcement file; or

- delete the announcement/TSB.

When main menu item number 14 is selected, the analyzer must display the most recent announcement/TSB received from the VID. The analyzer must save the announcement/TSB for a maximum of 180 days from the date of receipt on the analyzer or until another announcement/TSB replaces it.

If the announcement is received during the initial contact with the VID the analyzer must:

- indicate that announcements, TSBs, and/or emissions recall information were transmitted by the VID;

- not display announcements until after the end of the inspection;

- display a message after the end of this inspection indicating that "subsequent inspections cannot be conducted until the announcement is successfully printed";

- display and automatically print a copy of the announcement immediately after main menu choice "1" through "4" is selected for the next inspection; and

- provide the option of displaying the TSBs, and/or emissions recall information either immediately, or later during the inspection.

Emissions-related recall information, if available, must be transmitted by the VID for use during emissions-related inspections and be displayed by the analyzer. The initial information that will appear on the analyzer screen will be the pertinent vehicle information as provided by the VID. The inspector shall review this information to ensure its accuracy.

The TSB information may contain multiple bulletins. The analyzer must display TSB information at the time of, and immediately following, the display of the emissions-related recall information.

3.15 Main Menu Selection "15 Communications Refresh"

3.15.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or

- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to “B” or “C”. The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer’s monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses “enter/continue”. The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.15.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses “enter/continue”. The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.15.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.15.3 VID Communications

Programming Criteria:

The analyzer must contact the VID to send and receive updates to applicable files. After the update is complete, the analyzer must return to the main menu.

3.16 Main Menu Selection "16 Communications Diagnostics"

The analyzer must contact the VID and transmit diagnostics test information that causes the VID to transmit an echo of the information sent by the analyzer. After the communications session is complete, the analyzer must display the status of the communications diagnostics and return to the main menu.

3.17 Main Menu Selection "17 Repair Data Communications"

(Reserved for future use)

3.18 Main Menu Selection "18 Inspection Log"

The inspection log (VI-8B) must print after the analyzer's power-up sequence or warm-up is complete. The analyzer will not conduct any official inspections until the VI-8B has printed. The analyzer must print one copy of the VI-8B, and the operator shall be able to print additional copies after the initial copy have printed. The analyzer must print the log every Monday morning. The analyzer must locally store the date when the last VI-8B was printed, so that if the unit is powered up on a day other than Monday, the analyzer will know to print this report and/or prevent inspections until the VI-8B is printed.

If the station has not conducted any inspections since printing of the previous VI-8B, the analyzer must print a VI-8B reflecting that no inspections have been conducted during the reporting period. The analyzer must allow an inspector or station manager to print the VI-8B from the main menu by pressing a key determined by the manufacturer, preferably "F8". The analyzer must allow the inspector or station manager to print VI-8Bs from previous weeks by entering the appropriate week ending date. The VI-8Bs from previous weeks must be based on the information available on the analyzer at the time of the request. The analyzer must also allow an inspector or station manager to print a VI-8B for one inspector. The inspector or station manager shall be required to input the upcoming week ending date, and the inspector's identification number. The analyzer must be able to display all inspections conducted by the inspector and print the inspections in the VI-8B format.

The items must be displayed in the format displayed in Appendix G: *Inspection Log Format*, inclusive of the "audited by" line, where applicable. The items must be listed in chronological order according to the inspection date. The analyzer must place an indicator or flag such as an asterisk or question mark, beside any item whose certificate or decal number is not next in sequence to the previous item. The analyzer must determine sequential issuance by comparing the number of an issued certificate to the number of the previously issued certificate of the same type. Also, the number on an issued decal must only be compared to the number of the previously issued decal.

For example, the analyzer must compare the number of a one year safety and emissions certificate to the number of the previously issued one year safety and emissions certificate of the same type, and place the indicator beside the item if the numbers are not sequential. The analyzer must not compare a one year safety and emissions certificate to any other type of issued certificate or decal to determine sequential issuance.

The words "FAIL:", and/or "REPAIR:" must appear only if fail codes or repair codes, respectively, are to be displayed. Fail codes are defined as the corresponding numerical value of a safety inspection item field name in which the stored value is an "A", "C", "E", "H", "J", "L", "O", "S", "U", "W", or "Y". For example, if the SAFE_1 contains an "A", then the fail code that must be displayed is "1_". The ending space is optional. However, a space is required between each fail code for an inspection record that contains multiple failing entries. A repair code is defined as the corresponding numerical value of a safety inspection item field name in which the stored value is an "B", "D", "G", "I", "K", "M", "Q", "T", "V", "X", or "Z". For example, if the SAFE_16A, and the SAFE_22B contained values of B and D, respectively, then the repair codes that are to be displayed are "16A_22B_". Again, the ending space is optional. These fail codes and repair codes are in addition to the failure code numbers that must be displayed vehicle that fail the emissions phase or gas cap integrity phase of the inspection. The preference is to print the fail code for the emissions phase, followed by the fail code for the gas cap integrity phase, followed by the failing codes for the

safety items. The repair codes are not affected by the emissions and gas cap integrity failures. However, the blank line must remain when there are no fail or repair codes to be displayed. Also, the analyzer must print 12 three-line entries per page on the VI-8B. Count the "audited by" line as a three-line entry.

The analyzer must indicate emissions phase failures on the Texas Department of Public Safety for VI-8b, which prints out weekly. The analyzer must display:

- failure code number "31" if a vehicle fails the emissions phase of the inspection; and
- failure code "32" if a vehicle fails the gas cap integrity inspection.

3.19 Main Menu Selection "19 VI-30 Only"

If the SKIP_VI30 field in the SYSTEM.DAT file is set to "N" or "_", then the analyzer will display this main menu selection, and proceed to Section 3.19.1: *Access Code Prompt*. If the SKIP_VI30 field in the SYSTEM.DAT file is set to "A", then the analyzer will not display this main menu selection. If the SKIP_VI30 field is set to "Y", then the analyzer will display this main menu selection, but not display the prompt in Section 3.19.13: *VI-30 Number Prompt*.

3.19.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to "B" or "C". The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer's monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.19.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.19.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.19.3 Model-Year Prompt

ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

Programming Criteria:

If no value is entered, the analyzer must display Message 1 and prompt the inspector to re-enter the last two digits of the vehicle model-year. The analyzer must display Message 2 in the event that the model-year is strictly greater than the current year plus two and prompt the inspector to re-enter the last two digits of the vehicle model-year or the entire model-year. The analyzer must require the inspector to confirm any model-year entry that is less than 1950.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED TRY AGAIN.**

2. **INVALID MODEL YEAR -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL_YEAR**

3.19.4 License Type Prompt

ENTER THE TYPE OF LICENSE PLATE OF THE VEHICLE.

1.	**Texas Plate**	5.	**Exempt (Federal)**
2.	**No Plate**	6.	**Dealer Plate**
3.	**Out of State**	7.	**Temporary Buyer Tag**
4.	**Exempt (State)**	8.	**Other**

Programming Criteria:

The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type “2” or “8”, the analyzer will assign the LICENSE_NUM field in the VEHICLE.DAT a value of “V” followed by the last seven digits of the VIN and skip Section 3.19.5: *License Prompt*. If the entered VIN has less than seven characters, the entry should be a “V” followed immediately by the entered VIN without filler spaces between the “V” and the entered VIN. The analyzer will default to license type “1”.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_TYPE**

3.19.5 License Prompt

ENTER THE LICENSE NUMBER OF THE VEHICLE.

Programming Criteria:

The inspector will be prompted to enter the license number of the vehicle. Upon confirming the license plate number entry, the vehicle information is eligible to be stored in the RECALL.DAT file. After the inspector enters the license plate number, the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_NUM**
BARCODED_LIC_PLT

3.19.6 VIN Prompt

ENTER VIN NUMBER.

Programming Criteria:

The analyzer will prompt for the VIN as it appears on the vehicle and if available, use the bar code reader to scan the bar coded VIN on the vehicle. If the VIN cannot be entered using the bar code reader, the inspector will be capable of entering the VIN from the keyboard. The analyzer must store a "B" in the BARCODED_VIN field of the VEHICLE.DAT file when the VIN is entered using the bar code reader. The analyzer must store a "K" in the BARCODED_VIN field of VEHICLE.DAT file when the VIN is not entered using the bar code reader.

The analyzer must allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the analyzer must prompt the inspector to press "enter/continue". The VIN field will then be will blank and the inspector must re-enter the VIN. The two attempts must match. If the two attempts do not match, the analyzer must display Message 3 and prompt the inspector to enter the VIN a third time.

A minimum of three and a maximum of 17 characters are required for this field. If the entry is not within these parameters, the analyzer must display Message 2. If no value is entered, the analyzer must display Message 1.

The VIN verification algorithm must be applied here, but only to 1981 and newer model-year vehicles. The analyzer will not allow the inspector to enter the letters "I", "O", or "Q" for 1981 and newer model-year vehicles. The software should suggest possible substitute letters when the DPS algorithm indicates that the VIN is bad.

Error Messages:

1. **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
2. **A MINIMUM OF 3 OR MAXIMUM OF 17 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
3. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VIN_ID_NUM**
VIN_FLAG
BARCODED_VIN

3.19.7 Vehicle Type Prompt

SELECT THE VEHICLE TYPE

'P' - PASSENGER CAR/STATION WAGON
'T' - TRUCK/VAN/SPORTS UTILITY VEHICLE
'M' - MOTOR HOME
'B' - BUS
'C' - MOTORCYCLE
'L' - TRAILER

Programming Criteria:

The default choice on this screen must be the "passenger car/station wagon" selection.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **VEHICLE _TYPE**

3.19.8 Vehicle Make Prompt

ENTER THE VEHICLE MAKE.

Programming Criteria:

The analyzer will then display a list of vehicle makes that the inspector will use to select the make of the vehicle currently under inspection. The analyzer must store the selected make name using the NCIC make definitions. The analyzer may display subsets of the make list that specifically identify all of the manufacturers of passenger vehicles, trucks, motor homes, or buses. The analyzer must use the makes contained in the TXVRT.DAT file for passenger cars and trucks for vehicles whose previously entered GVW is less than or equal to 8,500 pounds. If the entered model-year is not in the TXVRT.DAT file, the analyzer must display the list of makes from the most recent model-year in the TXVRT.DAT file, and store the NCIC code of the make selected by the inspector. The analyzer must use the makes in the NCIC list for buses, motor homes, and vehicles if the entered GVW is strictly greater than 8,500 pounds.

The analyzer must present the option of "other" as a make choice when there is no other applicable choice for the vehicle under inspection. The analyzer must:

- store "OTHR" in the MAKE field;
- skip the display of associated model names;
- put a message on the screen that instructs the inspector to enter the full make name and at least the first five characters of the model name in the space provided and that the maximum entry length is 20 characters;
- store the inspector's entry in the MODEL field; and
- leave the MODEL_CODE field blank.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MAKE**

3.19.9 Model Prompt

SELECT THE VEHICLE MODEL.

Programming Criteria:

Based on the vehicle make entry the analyzer must display the appropriate vehicle models. If the entered model-year is not in the TXVRT.DAT file and the inspector selected a make name from the list of makes from the most recent model-year in the TXVRT.DAT file, then the analyzer must display the corresponding list of model names from the most recent model-year in the TXVRT.DAT file, and store the model name selected by the inspector in the MODEL field.

The analyzer must present the option of "other" as a model definition for use when there is no other choice for the vehicle under inspection. If other is chosen, the analyzer must:

- put a message on the screen that instructs the inspector to enter the full model name in the space provided and that the maximum entry length is 20 characters; and,
- store the selected make name in the MAKE field, the inspector's entry in the MODEL field, and "OTH" in the MODEL_CODE field.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL**
MODEL_CODE

3.19.10 Odometer Prompt

ENTER THE VEHICLE ODOMETER READING.

A MINIMUM OF ONE NUMERIC ENTRY IS REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.

Programming Criteria:

Enter the vehicle odometer and do not include the tenth's digit. The analyzer must only accept numerical entries in this field.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **ODOMETER**

3.19.11 Test Type Prompt

IF THE INSPECTION CERTIFICATE ON THE VEHICLE WASN'T ISSUED WITHIN THE LAST 30 DAYS, A COMPLETE INSPECTION IS REQUIRED. VERIFY THAT INSPECTION CERTIFICATE ON THE VEHICLE WAS ISSUED WITHIN THE LAST 30 DAYS.

ENTER THE TYPE OF INSPECTION CERTIFICATE ON THE VEHICLE.

L-1 YEAR WINDSHIELD - OBD (SAFETY & EMISSIONS)
M-1 YEAR WINDSHIELD - ASM (SAFETY & EMISSIONS)
A-1 YEAR WINDSHIELD - TSI (SAFETY & EMISSIONS)
N-1 YEAR WINDSHIELD - OBD/TSI (SAFETY & EMISSIONS)
J-1 YEAR WINDSHIELD (SAFETY ONLY)
C-TRAILER/MOTORCYCLE
B-2 YEAR WINDSHIELD
G-FMCSR (TRUCK)
K-FMCSR (TRAILER)

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will not display this prompt, and proceed to Section 3.19.11a: *Modified Test Type Prompt*. If the SKIP_CERT_DECAL field is not set to "Y", then the analyzer must apply the following criteria.

The analyzer must only display one "1 year windshield (safety & emissions)" selection and only one FMCSR selection. For the FMCSR selection, the analyzer must display only choice "G" if the vehicle type is a truck, and only choice "K" if the vehicle type is a trailer. The default for this screen must be to either "L", "M", "A", or "N". For the following scenarios, "_" represents a space.

Houston and Dallas areas

The analyzer must display choice "L" when:

- the county code setting under the audit menu is NOT 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, 11_, 071, or 71_; and

- the previously entered model-year is 1996 or newer.

The analyzer must display choice “M” when:

- the county code setting under the audit menu is NOT 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, 11_, 071, or 71_; and

- the previously entered model-year is 1995 or newer.

El Paso area (El Paso County Only)

The analyzer must display choice “A” for all model-years when the county code setting under the audit menu is 071 or 71_.

Austin area

The analyzer must display choice “N” for all model-years when the county code setting under the audit menu is 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, or 11_.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_TEST_TYPE**

3.19.11a Modified Test Type Prompt

VERIFY THAT THE VEHICLE HAS PASSED THE INSPECTION WITHIN THE LAST 30 DAYS. IF THE VEHICLE HASN’T PASSED THE INSPECTION WITHIN THE LAST 30 DAYS, A COMPLETE INSPECTION IS REQUIRED.

Programming Criteria:

The analyzer must

- display the message shown above;

- require the inspector to confirm that a complete inspection was performed on the vehicle within the last 30 days; and

- proceed to Section 3.19.13: *VI-30 Number Prompt*.

3.19.12 Certificate Number Prompt

ENTER THE NUMBER OF THE VALID INSPECTION CERTIFICATE THAT IS PRESENT ON THE VEHICLE.

Programming Criteria:

A minimum of six and maximum of nine characters are required for this field. This certificate number must not have any sequential issuance requirements because a certificate is not being issued. Do not use this certificate entry for any sequential issuance comparisons. The inspector shall be required to confirm/verify the certificate number entry.

The safety certificate number consists of an alpha character, followed by eight digits. The alpha character usually does not correspond to the alpha character contained in the SAFE_TEST_TYPE field.

For example, the safety certificate numbers should be in sequential order for all one year windshield inspections, two year windshield inspections, trailer/motorcycle inspections, and so forth. If the entered number is not next in sequence, the correction prompt must appear.

If the inspector enters fewer than nine characters, the analyzer must automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an "A" followed by a "123" must be converted to "A00000123" and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character certificate number entry. This nine-character value must be used during comparison testing to facilitate sequential issuance of certificates. The first character of a certificate number must be an alphabetic character. The analyzer must be able to enter the certificate number using the bar code reader.

The analyzer must restrict the alpha character to a list of acceptable alpha characters based on the particular type of certificate or decal being issued. The table of certificate types and the corresponding acceptable alpha characters is located in Appendix V: *Safety Certificate Format Table*.

For example, during a safety and emissions inspection or reinspection, if the inspector selects the "1 year windshield - ASM (safety & emissions)" certificate on the type of inspection prompt in Section 3.1.20 and the vehicle passes the inspection, the inspector may only enter an "F" or "M" as the alpha character in the certificate number entry prompt. Similarly, the acceptable alpha characters are "E", or "P" for "1 year windshield - OBD (safety & emissions)" certificate types.

<u>Dallas-Fort Worth and Houston-Galveston Areas</u>

If the inspector selects a "1 year windshield - OBD (safety & emissions)" certificate, the vehicle receives the OBD inspection during the emissions phase, and the vehicle passes all the phases of the inspection, then the vehicle must receive a certificate that begins with the letter "E", or "P", also known as an "E-series" or "P-series" sticker, respectively. If the inspector selects a "1 year windshield - OBD (safety & emissions)" certificate, the vehicle's model-year is 1996 or newer, and the county code under the audit menu is not "071" or "71_", where the underscore represents a space, for El Paso County, then change the SAFE_TEST_TYPE from "A" to "L", and restrict the acceptable alpha characters to "E" or "P", even if the emissions inspection transitions from OBD to ASM or TSI.

If the inspector selects a "1 year windshield - ASM (safety & emissions)" certificate, the vehicle receives the ASM inspection during the emissions phase, and the vehicle passes all the phases of the inspection, then the vehicle must receive a certificate that begins with the letter "F" or "M", also known as an "F-series" or "M-series" sticker, respectively. If the inspector selects a "1 year windshield - ASM (safety & emissions)" certificate, the vehicle's model-year is 1995 and older and the county code under the audit menu is not "071" or "71_" (where the underscore represents a space) for El Paso County, then change the SAFE_TEST_TYPE from "A" to "M", and restrict the acceptable alpha characters to "F" or "M", even if the emissions inspection transitions from ASM or TSI.

El Paso Area

If the inspector selects a “1 year windshield - TSI (safety & emissions)” certificate, and the county code under the audit menu is “071” or “71_” (where the underscore represents a space) for El Paso County, then do not change the SAFE_TEST_TYPE from “A”, and restrict the acceptable alpha characters to “A”, “B”, “C”, or “D”.

Austin Area

If the inspector selects a “1 year windshield - OBD/TSI (safety & emissions)” certificate, and the county code under the audit menu is “227”, “246”, 166”, “144”, “105”, “027”, or “27_”, “016”, or “16_”, “014”, or “14_”, or “011”, or “11_” (where the underscore represents a space) for Travis, Williamson, Milam, Lee, Hays, Burnet, Blanco, Bell, or Bastrop Counties, respectively, then the analyzer must set the SAFE_TEST_TYPE to “N” and restrict the acceptable alpha characters to “A”, or “B”.

Associated System File: **VEHICLE.DAT** **CERT_NUM**

3.19.13 VI-30 Number Prompt

ENTER THE VI-30 #.

Programming Criteria:

If the SKIP_VI30 field in the SYSTEM.DAT file is set to “N” or “_”, then the analyzer will display this prompt, and proceed to Section 3.19.14: *Safety Test Fee Prompt*. If the SKIP_VI30 field in the SYSTEM.DAT file is set to “A”, then the analyzer will not display this prompt, and proceed to Section 3.19.15: *Confirm Vehicle Info Display*. If the SKIP_VI30 field is set to “Y”, then the analyzer will skip this prompt and proceed to Section 3.19.14: *Safety Test Fee Prompt*. If the SKIP_VI30 field is not set to “Y” or “A”, then the analyzer must apply the following criteria.

The inspector will enter the VI-30 number that has a minimum of one character and a maximum of 10 characters. If no entry is made, the analyzer must display the error message. The analyzer must allow the VI-30 number to be entered using the bar code scanner. The formats of the bar code are:

Formats

Name	Length	Start	Format
VI-30 Number	9	1	Numeric (existing)
VI-30 Number	6	1	Numeric (lesser used)
VI-30 Number	9	1	Alpha-numeric (ANNNNNNNN), must start with L (newly added)

The analyzer should accept entries that contain eight numbers with a leading or following space, or an “L” followed by eight numeric positions, or six numbers with no leading or following spaces in the 1-D bar code on the form. The analyzer must drop the leading or following spaces, and store only the numerical character portion of the scanned number in the VI30A_NUM field of the inspection record. Samples may be requested from the TCEQ.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_NUM**

3.19.14 Safety Test Fee Prompt

ENTER THE TOTAL COST FOR THE SAFETY INSPECTION, INCLUDING CENTS. (DO NOT INCLUDE SAFETY RELATED REPAIRS.)

Programming Criteria:

The inspector shall enter the cost for the issuance of the VI-30. If an inspector enters a fee greater than $100 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**

3.19.15 Confirm Vehicle Info Display

The analyzer must display the entered information and allow the inspector to edit the information as appropriate.

3.19.16 End of Test Logic

Programming Criteria:

The analyzer must increment the TEST_REC_NUM by 1 and store this value in the inspection record.

After the results are stored the results in the inspection record, the analyzer must return to the main menu. The inspection record created for the VI-30 issuance must be transmitted to the VID when the analyzer conducts and completes the next emissions inspection.

Associated System File: **VEHICLE.DAT** **SAFE_INIT_TEST**
TEST_REC_NUM

3.20 Main Menu Selection “20 Test on Resale Inspection”

3.20.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to “B” or “C”. The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer’s monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses “enter/continue”. The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.20.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses “enter/continue”. The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**
2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.20.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:	**INSPECTR.DAT**	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.20.3 Test on Resale Exempt Prompt

VEHICLES ARE EXEMPT FROM THE TEST-ON-RESALE REQUIREMENT IF THE MODEL YEAR IS 1996 OR NEWER AND THE ODOMETER READING IS LESS THAN 50,000 MILES. Do you wish to continue?

YES, CONTINUE WITH THE INSPECTION. (This vehicle is not exempt.)

NO, STOP THE TEST AND RETURN TO THE MAIN MENU.

Programming Criteria:

The analyzer must display the message listed above, and require the inspector to select the appropriate choice. The default must be to the "yes, continue with the inspection". If the inspector selects "no, stop the inspection and return to the main menu", the analyzer will end the sequence at this prompt and return to the main menu. Otherwise, the inspection will continue to the next prompt.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED TRY AGAIN.**
2. **THIS VEHICLE IS EXEMPT FROM TEST-ON-RESALE BECAUSE THE MODEL YEAR IS 1996 OR NEWER AND THE ODOMETER READING IS LESS THAN 50,000 MILES. PRESS "ENTER/CONTINUE" TO RETURN TO THE MAIN MENU.**

3.20.4 Test on Resale Prompt

SELECT THE TYPE OF INSPECTION

1. **SAFETY & EMISSIONS INSPECTION**
2. **EMISSIONS ONLY**

Programming Criteria:

If the inspector selects "1", the analyzer will conduct a safety and emissions inspection beginning with Section 3.1.3: *Insurance Expiration Prompt*. The analyzer will set the TEST_TYPE field to "A", and the SPECIAL_TEST field to "C".

If the inspector selects "2", the analyzer will conduct an emissions only inspection beginning with Section 3.3.3: *Fuel Type Prompt*. The analyzer will set the SPECIAL_TEST field to "C", and set the TEST_TYPE field to "C".

The default for this prompt is selection number one.

Error Message: **NO VALUE HAS BEEN ENTERED TRY AGAIN.**

Associated System Files:

VEHICLE.DAT	**TEST_TYPE**	
		EMISS_TEST_TYPE
		EMISS_INIT_TEST
		SPECIAL_TEST
RECALL.DAT	**TEST_TYPE**	
		EMISS_TEST_TYPE
		EMISS_INIT_TEST
		SPECIAL_TEST

3.21 Main Menu Selection "21 Special Replacement Certificate Inspection"

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will disable this function. (Note: After March 1, 2015, this feature will not be needed.) The changes requested for this sequence will include use of the TEST_REC_NUM field, correction of the error in the format of the 2-d bar code listed in Section 3.32.5b, addition of

the word minimum in the odometer prompt to be consistent with the odometer prompts in other sequences, and changes to the VIR format currently listed. The references to the REG_FEE_CODE field should be ignored.)

3.21.1 Access Code Prompt

ENTER YOUR INSPECTOR'S ACCESS CODE

Programming Criteria:

The analyzer must require the inspector to enter their access code for every inspection. The analyzer may accept the access code when:

- entered using the keyboard, or
- an appropriate 1-D bar code or 2-D bar code is scanned using the bar code scanner.

Keyboard entry of the access code will not be allowed when the KEYBOARD_ACC field of the SYSTEM.DAT file is set to "B" or "C". The keyboard or bar code scanner entered value must match an entry in either the ACCESS_CODE or INSPECTOR_NUM field of the INSPECTR.DAT file and the analyzer must not accept duplicate access codes for different inspectors. Bar code specifications, formats, and samples are available from the TCEQ.

The access code must not be displayed on the analyzer's monitor or printed on the VIR. The analyzer must allow three attempts to enter a valid access code. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR ACCESS CODE IS NOT VALID--TRY AGAIN.**
2. **THE ACCESS CODE ENTERED IS NOT VALID. VERIFY YOUR ACCESS CODE NUMBER WITH YOUR LOCAL DPS OFFICE.**

Associated System File: **INSPECTR.DAT** **ACCESS_CODE**
INSPECTOR_NUM

3.21.1a PIN Prompt

ENTER YOUR INSPECTOR'S PIN NUMBER

Programming Criteria:

The analyzer must be designed to require the entry of a unique PIN by the certified inspector before an official emissions inspection can begin. The PIN will be verified and linked to an existing I/M inspector number contained in the INSPECTR.DAT file. The PIN must not be printed on the VIR and will be encrypted on the analyzer.

The analyzer must allow three attempts to enter a valid PIN. Following each of the first two attempts, error message 1 must be displayed. Error Message 2 must be displayed for five

minutes following the third attempt or until the inspector presses "enter/continue". The analyzer must then return to the main menu.

Error Messages:

1. **YOUR PIN IS NOT VALID--TRY AGAIN.**

2. **THE PIN ENTERED IS NOT VALID. CONTACT YOUR LOCAL DPS OFFICE TO RESET YOUR PIN.**

Associated System File: **INSPECTR.DAT** **PIN_NO**

3.21.2 Date Expiration Prompt

YOUR STATION/INSPECTOR CERTIFICATION EXPIRATION DATE IS MM/DD/YY

Programming Criteria:

The analyzer will check the certification expiration date and lockout flag for the inspector in the INSPECTR.DAT file. The station certification renewal date and lockout flag will then be checked in the STATION.DAT file.

If either the station or inspector certification expiration date is within 60 days of the current date, the analyzer must display Message 1. The analyzer must display Message 2 if the station or inspector certification expiration dates have passed. The analyzer must countdown the final five days prior to the expiration date of the station or inspector certification. The analyzer must display Message 3 in addition to Message 1 or 2 during the five day countdown. The analyzer will set the station lockout flag in the STATION.DAT file or the inspector lockout flag in the INSPECTR.DAT file to "Y" when the current date is more than 30 days past the station or inspector expiration date.

If either the station or the inspector lockout flag is set, the analyzer must display a message that indicates a lockout has occurred and return to the main menu.

Error Messages:

1. **YOUR (STATION/INSPECTOR) CERTIFICATION EXPIRES MM/DD/YY.**

2. **YOUR STATION /OR INSPECTOR CERTIFICATION EXPIRED (date). YOU ARE NOT AUTHORIZED TO PERFORM ANY EMISSIONS INSPECTION AT THIS TIME. PLEASE CONTACT YOUR LOCAL DPS OFFICE.**

3. **YOUR (STATION/INSPECTOR) CERTIFICATION WILL EXPIRE IN X (5, 4, 3, 2, 1) DAY(S).**

Associated System Files:		
	INSPECTR.DAT	**INSP_EXP_DATE**
	STATION.DAT	**STAT_EXP_DATE**
	LOCKOUT.DAT	**INSP_LOCKOUT_FLAG**
		STATE_LOCKOUT

3.21.3 Insurance Prompt

ENTER THE INSURANCE EXPIRATION DATE.

Programming Criteria:

Enter the insurance expiration date in the following format: MM/DD/YY. The analyzer must verify that the entry for the month is between "1" and "12", the entry for the day is between "1" and "31", and the entry for the year begins with "19" or "20". A warning message must be displayed if the insurance has expired. The analyzer will accept "000000" as a valid entry and print "000000" on any applicable form. Entries will be written to the inspection record in the VEHICLE.DAT file.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **INSUR_EXP_DT**

3.21.4 Fuel Type Prompt

ENTER THE VEHICLE FUEL TYPE. SELECT THE APPROPRIATE FUEL TYPE CODE FROM THE LIST BELOW.

Code	Description
"G"	**Gasoline**
"B"	**Bi-Fueled (Dual-Fueled)**
"D"	**Diesel**
"A"	**Alternative Fuel (Propane, CNG, LNG, etc.)**
"N"	**None (i.e., Trailers, Electric & Electric Hybrids)**

Programming Criteria:

Entry of one code is required. The analyzer must be designed so that only a "G", a "B", a "D", an "A", or an "N" can be entered by the inspector for this field. The default choice must be gasoline.

If the inspector selects "B", the analyzer must display a message stating that **"YOU HAVE INDICATED THAT THIS VEHICLE IS DUAL FUELED. PLEASE CONFIRM THAT THE VEHICLE IS OPERATING ON GASOLINE FOR THE TEST WITH A 'Y'."** After confirming the result, the analyzer must go to Section 3.21.5: *Model-Year Prompt*. Otherwise, the analyzer must return to the fuel type code list.

If the inspector selects "D", the analyzer must display a message stating **"YOU HAVE INDICATED THAT THIS VEHICLE IS DIESEL FUELED. PLEASE CONFIRM THIS ENTRY BY PRESSING 'Y'."** If the inspector presses something other than "Y", the analyzer must return to the fuel type code list.

Error Messages: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **FUEL_TYPE**

3.21.5 Model-Year Prompt

ENTER THE LAST TWO DIGITS OF THE VEHICLE MODEL YEAR.

Programming Criteria:

If no value is entered, the analyzer must display Message 1 and prompt the inspector to re-enter the last two digits of the vehicle model-year. The analyzer must display Message 2 in the event that the model-year is strictly greater than the current year plus two and prompt the inspector to re-enter the last two digits of the vehicle model-year or the entire model-year. The analyzer must require the inspector to confirm any model-year entry that is less than 1950.

Error Messages:

1. **NO VALUE HAS BEEN ENTERED TRY AGAIN.**
2. **INVALID MODEL YEAR -- TRY AGAIN.**

Associated System Files: **VEHICLE.DAT** **MODEL_YEAR**

3.21.5a Gross Vehicle Weight Prompt

ENTER THE GVW OF THE VEHICLE.

Programming Criteria:

A prompt will be displayed for the inspector to enter the GVW. No default entry must be displayed.

If the entered GVW is less than or equal to 8,500 then the analyzer must set the GVW_TYPE field of the VEHICLE.DAT file to "1" for light-duty. If the GVW is greater than or equal to 8,501 then the analyzer must set the GVW_TYPE field in the VEHICLE.DAT file to "2" for heavy-duty.

If the inspector presses "enter/continue" and no entry has been made, the analyzer must display message 1 and prompt the inspector to enter the GVW.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GVW_TYPE**
GVW_ACTUAL

3.21.5b Bar Code Entry of License Plate Type, Number, and VIN Prompt

SCAN THE BAR CODE THAT CONTAINS THE LICENSE PLATE TYPE, LICENSE PLATE NUMBER, AND TXDOT NUMBER FROM THE VEHICLE INSPECTION REPORT.

OR

PRESS "ENTER/CONTINUE" TO CONTINUE IF THE VEHICLE INSPECTION REPORT IS NOT AVAILABLE.

Programming Criteria:

The analyzer must prompt the inspector to scan the bar code which contains the license plate type, license plate number, and the TxDMV number. If a 1-D bar code is successfully scanned, the analyzer must place a "B" in the BARCODED_LIC_PLT field of the inspection record and proceed to Section 3.21.8: *VIN Prompt*. If the inspector presses "enter/continue", the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record and allow the inspector to enter this information using the keyboard by proceeding to Section 3.21.6: *License Type Prompt*.

If the analyzer scans a 2-D bar code that contains an "X" in the first position, then the analyzer must pull the VIN and license plate number from the bar code. The format of the bar code is:

Name	Length	Start	Format
Bar Code Type	1	1	Alphanumeric (X)
Bar Code Version	2	2	Numeric
Document Number	17	4	Numeric
VIN	22	21	Alphanumeric
Residence County Number	3	43	Numeric
Workstation ID (RSPS or POS)	10	46	Alphanumeric
Print County Number	3	56	Numeric
Sticker Print Date	8	59	Numeric
Registration Plate Code	8	67	Alphanumeric
Registration Sticker Code	8	75	Alphanumeric
Plate Number	7	83	Alphanumeric
Expiration Month/Year	6	90	Numeric
Registration Class Code	3	96	Numeric

If the bar code is successfully scanned, the analyzer must place a "T" in the BARCODED_VIN and BARCODED_LIC_PLT fields and a "1" in the LICENSE_TYPE field of the inspection record, and proceed to Section 3.21.8: *VIN Prompt*.

Error Message: **DID NOT SCAN PROPERLY PLEASE TRY AGAIN.**

Associated System File: **VEHICLE.DAT**
LICENSE_TYPE **BARCODED_LIC_PLT**
LICENSE_NUM **BARCODED_VIN**

3.21.6 License Type Prompt

ENTER THE TYPE OF LICENSE PLATE OF THE VEHICLE.

1. **Texas Plate**
2. **No Plate**
3. **Out of State**
4. **Exempt (State)**
5. **Exempt (Federal)**
6. **Dealer Plate**
7. **Temporary Buyer Tag**
8. **Other**

Programming Criteria:

The inspector will be prompted to enter the license type of the vehicle. If the inspector selects license type "2" or "8", the analyzer will assign the LICENSE_NUM field in the VEHICLE.DAT a value of "V" followed by the last seven digits of the VIN and skip Section 3.21.7: *License Prompt*. If the entered VIN has less than seven characters, the entry should be a "V" followed immediately by the entered VIN without filler spaces between the "V" and the entered VIN. The analyzer will default to license type "1".

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_TYPE**

3.21.7 License Prompt

ENTER THE LICENSE NUMBER OF THE VEHICLE.

Programming Criteria:

The inspector will be prompted to enter the license plate number of the vehicle. Upon confirming the license plate number entry, the vehicle information is eligible to be stored in the RECALL.DAT file. After the inspector enters the license plate number, the analyzer must place a "K" in the BARCODED_LIC_PLT field of the inspection record.

Error Message: **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**

Associated System File: **VEHICLE.DAT** **LICENSE_NUM**
BARCODED_LIC_PLT

3.21.8 VIN Prompt

ENTER VIN NUMBER.

Programming Criteria:

The analyzer will prompt for the VIN as it appears on the vehicle, and if available use the bar code reader to scan the bar coded VIN on the vehicle. If the VIN cannot be entered using the bar code reader, the inspector will be capable of entering the VIN from the keyboard. The analyzer must store a "B" in the BARCODED_VIN field of the VEHICLE.DAT file when the VIN is entered using the bar code reader. The analyzer must store a "K" in the BARCODED_VIN field of VEHICLE.DAT file when the VIN is not entered using the bar code reader.

The analyzer must allow the inspector to see and edit the VIN as it is being entered. When all characters of the VIN have been entered, the analyzer must prompt the inspector to press "enter/continue". The VIN field will then be will blank and the inspector must re-enter the VIN. The two attempts must match. If the two attempts do not match, the analyzer must display Message 3 and prompt the inspector to enter the VIN a third time.

A minimum of three and a maximum of 17 characters are required for this field. If the entry is not within these parameters, the analyzer must display Message 2. If no value is entered the analyzer must display Message 1.

The VIN verification algorithm must be applied here, but only to 1981 and newer model-year vehicles. The analyzer will not allow the inspector to enter the letters "I", "O", or "Q" for 1981 and newer model-year vehicles. The software should suggest possible substitute letters when the DPS algorithm indicates that the VIN is bad.

Error Messages:

1. **THIS FIELD MUST BE ENTERED TO CONTINUE WITH THE TEST.**
2. **A MINIMUM OF 3 OR MAXIMUM OF 17 CHARACTERS ARE NEEDED FOR THIS ENTRY--TRY AGAIN.**
3. **ENTRIES DO NOT MATCH -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VIN_ID_NUM**
VIN_FLAG
BARCODED_VIN

3.21.8a VID Contact

The analyzer must contact the VID, retrieve all applicable vehicle information, and enter the information into the appropriate fields.

An inspection must be stopped and the analyzer must return to the main menu if the following response bits are set in the RESPONSE.DAT file received from the VID:

56 - Inspector License expired
57 - Inspector license suspended/revoked
58 - Inspector not authorized to test at this station
60 - TAS is locked out for at least one of the reasons included within "Lockout Status Record" data file

The analyzer must obtain the inspection record from the VID and search the local analyzer files for a VIN match. The analyzer must search the local inspection records, even if an inspection record is received from the VID. The local search must only consist of the records for the last 17 days. The analyzer must set the EMISS_TEST_TYPE field to "0", set the EMISS_INIT_TEST and SAFE_INIT_TEST fields to "I".

Upon completion of VID contact, the analyzer must:

- indicate that announcements, TSBs, and emissions recall information were transmitted by the VID;
- not display announcements until the end of the inspection;
- display a message after the end of the inspection indicating that: "**Subsequent inspections cannot be conducted until the announcement is successfully printed.**";

- display and automatically print a copy of the announcement immediately after main menu selection “1” through “4” is selected for the next inspection; and

- provide the option of displaying the TSBs, and/or emissions recall information either immediately or later in the current inspection.

The analyzer must provide the option to print, delete, and save announcements, TSBs, and emissions recall information to a predetermined file. New announcements, TSBs, and/or emissions recall information saved must overwrite the oldest information. The analyzer must not continue with the inspection until the announcements, TSBs, or recall information is successfully printed.

3.21.9 Vehicle Type Prompt

SELECT THE VEHICLE TYPE

'P' - PASSENGER CAR/STATION WAGON
'T' - TRUCK/VAN/SPORTS UTILITY VEHICLE
'M' - MOTOR HOME
'B' - BUS
'C' - MOTORCYCLE
'L' - TRAILER

Programming Criteria:

The default choice on this screen must be the “passenger car/station wagon” selection.

If the inspector selects “M” or “B”, the analyzer must skip Section 3.21.9a: *Vehicle Body Type Prompt* and use the VEHICLE_STNDS_TYPE of “T” if the vehicle is eligible to receive an ASM inspection. If the inspector enters a GVW for a bus or motor home that is less than 8,501 pounds, the analyzer must set the BODY_STYLE field to “6” and perform an ASM or TSI inspection, where applicable.

The analyzer will accept the of passenger cars with GVW values strictly greater than 8,500 pounds since access to this inspection sequence is restricted to auditors and does not involve performing an emissions inspection.

If the inspector selects “L”, or “C”, the analyzer must skip Section 3.21.9a: *Vehicle Body Type Prompt*.

Error Messages: **NO VALUES HAVE BEEN ENTERED--TRY AGAIN.**

INVALID ENTRY--TRY AGAIN.

Associated System File: **VEHICLE.DAT** **VEHICLE _TYPE**

3.21.9a Vehicle Body Type Prompt

SELECT THE APPROPRIATE VEHICLE BODY TYPE FROM THE LIST BELOW:

CODE	VEHICLE BODY TYPE
1	SEDAN
2	STATION WAGON
3	PICKUP/TRUCK TRACTOR
4	SPORT/UTILITY VEHICLE
5	MINIVAN
6	FULL-SIZE VAN

Programming Criteria:

If the inspector selected "P" as the vehicle type, the default choice on this screen must be the "sedan" selection. If the inspector selected "T" as the vehicle type, the default choice on this screen must be the "pickup/truck tractor" selection. This prompt may be combined with the requirements under Section 3.21.9: *Vehicle Type Prompt*.

If the inspector selected "M" or "B" as the vehicle type, the analyzer must use the National Crime Information Center (NCIC) list to display the list of makes and models.

If the model-year, make, and model entered describe a unique vehicle which is found as a single VRT row number, the body type may be taken directly from the VRT record and the inspector does not need to be prompted to enter the body type.

The vehicle body type will be used to determine the vehicle test standards group. Vehicle body type codes "1" and "2" will be inspected as passenger cars, while body type codes "3" through "6" will be inspected as trucks.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System Files:

VEHICLE.DAT	**BODY_STYLE**
TXVRT.DAT	**VEHICLE_BODY_TYPE**
	VEHICLE_STNDS_TYPE

3.21.10 Vehicle Make Prompt

ENTER THE VEHICLE MAKE.

Programming Criteria:

The analyzer must display a list of make names contained in the TXVRT.DAT file for passenger cars and trucks for vehicles whose previously entered GVW is less than or equal to 8,500 pounds. If the previously entered model-year is not in the TXVRT.DAT file, the analyzer must display the list of makes from the most recent model-year in the TXVRT.DAT file.

The analyzer must use the makes in the NCIC listings for buses, motor homes, and for vehicles whose previously entered GVW is strictly greater than 8,500 pounds.

When the inspector selects a make name from the list, the analyzer must store the NCIC code that corresponds to the selected make name in the MAKE field.

"Other" must also be a choice for the MAKE name. When the inspector selects other as the make name, the analyzer must:

- store "OTHR" in the MAKE field;
- display a message prompting the inspector to enter the full make name and least the first five characters of the model name in the space provided;
- store the inspector's entry in the MODEL field;
- leave the MODEL_CODE field blank; and
- skip the display of associated model names and proceed to Section 3.21.12: *Odometer Prompt*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MAKE**

3.21.11 Model Prompt

SELECT THE VEHICLE MODEL.

Programming Criteria:

The analyzer must display a list of vehicle model names that correspond to the previously selected vehicle make name from the TXVRT.DAT file or the NCIC listings.

If the previously entered model-year is not in the TXVRT.DAT file and the inspector selected a make name from the list of makes from the most recent model-year in the TXVRT.DAT file, then the analyzer must display the corresponding list of model names from the most recent model-year in the TXVRT.DAT file, and store the model name selected by the inspector in the MODEL field.

The analyzer must also present the option of "other" as a model name choice. When the inspector selects other, the analyzer must:

- display a message prompting the inspector to enter the full model name in the space provided; and
- store the selected make name in the MAKE field, the inspector's entry in the MODEL field, and "OTH" in the MODEL_CODE field.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **MODEL**
MODEL_CODE

3.21.12 Odometer Prompt

ENTER THE VEHICLE ODOMETER READING.

A MINIMUM OF ONE NUMERIC ENTRY IS REQUIRED. DO NOT ENTER THE TENTH'S DIGIT.

Programming Criteria:

The analyzer must only accept numerical entries and store the entered value in the ODOMETER field.

Error Messages: **1. NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT ODOMETER**

3.21.19a Vehicle 80" Width Prompt

IS THE VEHICLE AT LEAST 80 INCHES WIDE? (CHOOSE THE CORRECT SENTENCE)

1. **NO, THE VEHICLE IS LESS THAN 80 INCHES WIDE.**
2. **YES, THE VEHICLE IS AT LEAST 80 INCHES WIDE.**

Programming Criteria:

Display this prompt only when the previously entered vehicle type is "Truck/Van/Sports Utility Vehicle" or "Motorhome". If the previously entered vehicle type is "Motorhome", then the default selection is the second choice. If the previously entered vehicle type is "Truck/Van/Sports Utility Vehicle", then the default selection is the first choice. The analyzer must store a "Y" or an "N" in the 80_INCHES field based on the inspector's entry.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT 80_INCHES**

3.21.20 Test Type Prompt

ENTER THE TYPE OF INSPECTION

J-1 YEAR WINDSHIELD (SAFETY ONLY)	**M-1 YEAR WINDSHIELD - ASM (SAFETY & EMISSIONS)**
L-1 YEAR WINDSHIELD - OBD (SAFETY & EMISSIONS)	**A-1 YEAR WINDSHIELD - TSI (SAFETY & EMISSIONS)**
N-1 YEAR WINDSHIELD - OBD/TSI (SAFETY & EMISSIONS)	
C-TRAILER/MOTORCYCLE	**B-2 YEAR WINDSHIELD**
K-FMCSR (TRAILER)	**G-FMCSR (TRUCK)**

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will delete the word "windshield" from the inspection types displayed on the screen.

The analyzer must display selections “J”, “B”, and “C”, where applicable, one “1 year windshield (safety & emissions)” selection, and one FMCSR selection. The default for this screen must be to choice “J”, or “C”, where appropriate. For the FMCSR selection, the analyzer must display only choice “K”, if the vehicle type is a trailer. For all other vehicle types except motorcycle, the analyzer must display only choice “G”. The analyzer must not display a FMCSR selection, if the vehicle type is motorcycle.

If the inspector selected “P” for the vehicle type, then the analyzer must display the following certificate choices:

> “J - 1 year windshield”,
> “L”, or “M”, or “A”, or “N”, (1 year windshield (safety & emissions)-obd, asm, tsi, or obd/tsi), respectively,
> “B - 2 year windshield”, and
> “G - FMCSR (truck)”.

If the inspector selected “B” for the vehicle type, then the analyzer must display the following certificate choices:

> “J - 1 year windshield”,
> “L”, or “M”, or “A”, or “N”, (1 year windshield (safety & emissions)-obd, asm, tsi, or obd/tsi), respectively, and
> “G - FMCSR (truck)”.

If the inspector selected “T” for the vehicle type, then the analyzer must display the following certificate choices:

> “J - 1 year windshield”,
> “L”, or “M”, or “A”, or “N”, (1 year windshield (safety & emissions)-obd, asm, tsi, or obd/tsi), respectively,
> “B - 2 year windshield”, and
> “G - FMCSR (truck)”.

If the inspector selected “M” for the vehicle type, then the analyzer must display the following certificate choices:

> “J - 1 year windshield”,
> “L”, or “M”, or “A”, or “N”, (1 year windshield (safety & emissions)-obd, asm, tsi, or obd/tsi), respectively,
> “B - 2 year windshield”, and
> “G - FMCSR (truck)”.

If the inspector selected “C” for the vehicle type, then the analyzer must display the following certificate choice:

> “C - Trailer/Motorcycle”.

If the inspector selected “L” for the vehicle type, then the analyzer must display the following certificate choices:

> “C - Trailer/Motorcycle”, and

"K - FMSCR(Trailer)".

<u>'1 Year Windshield (Safety & Emissions)' Certificate Selection Criteria</u>

Houston and Dallas areas

The analyzer must display choice "L" when:

- the county code setting under the audit menu is NOT 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, 11_, 071, or 71_; and
- the previously entered model-year is 1996 or newer.

The analyzer must display choice "M" when:

- the county code setting under the audit menu is NOT 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, 11_, 071, or 71_; and
- the previously entered model-year is 1995 or newer.

El Paso area (El Paso County Only)

The analyzer must display choice "A" for all model-years when the county code setting under the audit menu is 071 or 71_.

Austin area

The analyzer must display choice "N" for all model-years when the county code setting under the audit menu is 227, 246, 166, 144, 105, 027, 27_, 016, 16_, 014, 14_, 011, or 11_.

<u>Error Message:</u> **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

<u>Associated System File:</u> **VEHICLE.DAT** **SAFE_TEST_TYPE**

3.21.20a Confirm Vehicle Information Display

The analyzer must display the vehicle information to the inspector and allow the inspector to edit the information as appropriate. If the vehicle information was populated by the VID, the inspector shall be allowed to edit all vehicle information except the VIN, the license plate type, and the license plate number. The inspector shall be required to confirm the entries before proceeding to the next screen. The vehicle information is no longer eligible to be stored in the RECALL.DAT file once the analyzer has moved to the next screen.

NOTE: The analyzer will accept the of passenger cars with GVW values strictly greater than 8,500 pounds since access to this inspection sequence is restricted to auditors and does not involve performing an emissions inspection. In addition, the analyzer is not required to recheck the default emissions inspection type.

3.21.20b Mud Flaps and Safety Guard Prompt 1

IS THE VEHICLE EQUIPPED WITH 4 OR MORE TIRES ON THE REARMOST AXLE?

'N' - NO, the vehicle has less than 4 tires on the rearmost axle.
'Y' - YES, the vehicle has 4 or more tires on the rearmost axle.

Programming Criteria:

The analyzer must be defaulted to "N". If the inspector selects "N", proceed to Section 3.21.21 and do NOT display the Mud Flaps and Safety Guards as an item of inspection. If the inspector selects "Y", then proceed to Section 3.21.20c: *Mud Flaps and Safety Guard Prompt 2*.

The answers to the Mud Flap questions in sections 3.21.20b and 3.21.20c will not be stored in the inspection records. These answers will be used to determine if the Mud Flaps and Safety Guard safety items should be displayed for safety item sequences 1, 4, 6, 8, and 9. These answers will not affect safety item sequences 2, 3, 5, and 7. The lists of safety item sequences are contained in Appendix R: *Safety Item Sequence Lists*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.21.20c Mud Flaps and Safety Guard Prompt 2

IS THE VEHICLE A TRUCK TRACTOR, MOTORHOME, BUS, OR POLE TRAILER?

'N' - NO, the vehicle is NOT a truck tractor, motorhome, bus, or pole trailer.
'Y' - YES, the vehicle IS a truck tractor, motorhome, bus, or pole trailer.
'R' - Return to previous screen.

Programming Criteria:

The analyzer must be defaulted to "N". If the inspector selected "Motorhome" or "Bus" as the Vehicle Type in Section 3.21.9, then the analyzer must be defaulted to "Y". The inspector shall be allowed to return to the previous screen and edit the previous answer.

If the inspector selects "N", then display the Mud Flaps and Safety Guards as an item of inspection. If the inspector selects "Y", then do not display the Mud Flaps and Safety Guards as an item of inspection.

Proceed to Section 3.21.21.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

3.21.21 Safety Inspection Items

The lists of safety item sequences are contained in Appendix R: *Safety Item Sequence Lists*.

The analyzer must display the appropriate list choices based on entries made by the inspector. The analyzer will require the inspector to enter the status of the safety item in the order it appears in the list. The acceptable entries are “P”, for pass, “F”, for fail, and “R” for repaired. The letter “N” for N/A is not an acceptable entry, however, a value of “N” in the safety item field may occur in an inspection record that is received from the VID during a reprint VIR function.

If the inspector selects “F” or “R” for any safety item in the list, a subset list of failure reasons must be displayed and the inspector shall highlight and select the failure reason or the entry that allows the inspector to return to the previous screen entry of “F” or “R” to edit this selection. The default for this display must be to the “return to previous screen” selection. The analyzer must automatically enter the appropriate alpha character based on the selections made by the inspector.

If the vehicle type = “P”, and the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI” or “J - 1 year windshield” or “B - 2 year windshield”, then the analyzer must display safety item sequence #1.

If the vehicle type = “P”, and the SAFE_TEST_TYPE = “G - FMCSR (TRUCK)”, then the analyzer must display safety item sequence #8.

If the vehicle type = “B”, and the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI” or “J - 1 year windshield”, then the analyzer must display safety item sequence #3.

If the vehicle type = “B”, and the SAFE_TEST_TYPE = “G - FMCSR (TRUCK)”, then the analyzer must display the titles of safety item sequence #7, and safety item sequence #8, allow the inspector to use the arrow keys to highlight and select the appropriate safety item sequence by pressing “enter/continue”.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, or “J - 1 year windshield” or “B - 2 year windshield” and the 80_inches = “N” (i.e., the truck is less than 80 inches wide), then the analyzer must display the safety item sequence #1.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “A - 1 year windshield - TSI” or “L - 1 year windshield - OBD” or “M - 1 year windshield - ASM” or “N - 1 year windshield - OBD/TSI”, or “B - 2 year windshield” and the 80_inches = “Y” (i.e., the truck is at least 80 inches wide), then the analyzer must display the safety item sequence #4.

If the vehicle type = “T”, the SAFE_TEST_TYPE = “J - 1 year windshield”, and the 80_inches = “Y” (i.e., the truck is at least 80 inches wide), then the analyzer must display the titles of safety item sequence #4, and safety item sequence #5, and allow the inspector to use the arrow keys to highlight and select the appropriate safety item sequence by pressing “enter/continue”.

If the vehicle type = “T”, and the SAFE_TEST_TYPE = “G - FMSCR (TRUCK)”, (NOTE: the 80 inches wide entry is not used here to determine the appropriate safety item sequence), then the analyzer must display the titles of safety item sequence #8, and safety item sequence

#5, and allow the inspector to use the arrow keys to highlight and select appropriate safety item sequence by pressing "enter/continue".

If the vehicle type = "M", the SAFE_TEST_TYPE = "A - 1 year windshield - TSI" or "L - 1 year windshield - OBD" or "M - 1 year windshield - ASM" or "N - 1 year windshield - OBD/TSI", or "J - 1 year windshield" or "B - 2 year windshield" and the 80_inches = "N", then the analyzer must display the safety item sequence #1.

If the vehicle type = "M", the SAFE_TEST_TYPE = "A - 1 year windshield - TSI" or "L - 1 year windshield - OBD" or "M - 1 year windshield - ASM" or "N - 1 year windshield - OBD/TSI" or "J - 1 year windshield" "B - 2 year windshield", and the 80_inches = "Y", then the analyzer must display the safety item sequence #4.

If the vehicle type = "M", and the SAFE_TEST_TYPE = "G - FMSCR (TRUCK)", (NOTE: the 80 inches wide entry is not used here to determine the appropriate safety item sequence), then the analyzer must display safety item sequence #8.

If the vehicle type = "C", and the SAFE_TEST_TYPE = "C - Trailer/Motorcycle", then the analyzer must display safety item sequence #2.

If the vehicle type = "L", and the SAFE_TEST_TYPE = "C - Trailer/Motorcycle", then the analyzer must display safety item sequence #6.

If the vehicle type = "L", and the SAFE_TEST_TYPE = "K - FMSCR(TRAILER)", then the analyzer must display safety item sequence #9.

The inspector shall be required to press "enter/continue" after each item. These fields are required and must contain a valid entry. The analyzer does not have to display the screen heading during the inspection sequence. The analyzer must enter the date and the inspector's driver's license number.

The inspector should be able to access an item's associated help screen by placing the cursor in the parentheses and pressing the "F1" key. The help screens for each type of safety inspection item sequence are in Appendix D: *Safety Inspection Help Screens*.

If any safety item is entered as failing with a stored value of "A", "C", "E", "H", "J", "L", "O", "S", "U", "W", or "Y", then the analyzer must set the SAFETY_PF_FLAG to "F". Otherwise, set the SAFETY_PF_FLAG to "P" for pass.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

SAFE_1	**SAFE_2**	**SAFE_3**	**SAFE_4**	**SAFE_5**
SAFE_6A	**SAFE_6B**	**SAFE_7**	**SAFE_7A**	**SAFE_7B**
SAFE_8	**SAFE_9**	**SAFE_10A**	**SAFE_10B**	**SAFE_10C**
SAFE_10D	**SAFE_10E**	**SAFE_10F**	**SAFE_11**	**SAFE_12**
SAFE_13	**SAFE_14**	**SAFE_15**	**SAFE_16**	**SAFE_17**
SAFE_18	**SAFE_19**	**SAFE_20**	**SAFE_21**	**SAFE_22A**
SAFE_22B	**SAFE_22C**	**SAFE_22D**	**SAFE_23**	**SAFE_24**
SAFE_25	**SAFE_26**	**SAFE_27**	**SAFE_28**	**SAFE_29**

SAFE_30 SAFETY_PF_FLAG DPS_SAFE_SEQ

3.21.21a Safety Repair Cost Prompt

ENTER THE TOTAL COST FOR THE SAFETY-RELATED REPAIRS, INCLUDING CENTS. DO NOT INCLUDE THE SAFETY INSPECTION FEE IN THE TOTAL.

Programming Criteria:

The analyzer must display this prompt if the inspector indicates that repairs were conducted on any of the safety items shown in Section 3.21.21: *Safety Inspection Items*. The inspector shall enter the total cost for all safety-related repairs. If an inspector enters a fee greater than $450 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee. The analyzer must store this amount locally to be printed on the VIR. The cost entered at the prompt must be included in the overall cost for the inspection.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT**

3.21.23a Update Inspection Record

Programming Criteria:

Once the inspector has inserted the probe into the tailpipe and pressed “enter/continue”, the analyzer must update the inspection record and store a “J” in the ABORT field. If the inspection sequence is not exited properly, the analyzer must be able to send the inspection record containing a “J” in the ABORT field for the affected inspection to the VID during the next communications session. If the inspection is aborted properly after “J” has been stored, the analyzer must replace the “J” in the ABORT field with an “A” and include the entered abort code.

If the emissions phase of the inspection is not aborted after “J” has been stored, the analyzer must replace the “J” in the ABORT field with a blank/space.

NOTE: At this point, this sequence deviates from the sequence shown in Section 3.1: *Safety and Emissions Inspection*, and will skip the emissions-related prompts, which include the repair data and fee entry and the emissions inspection, and proceed immediately to Section 3.21.25: *Gas Cap Missing Prompt*.

3.21.25 Gas Cap Missing Prompt

IS THE GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

Gas cap inspections are not required on trailers, motorcycles, diesel powered vehicles, alternatively fueled vehicles, and gasoline powered vehicles whose model-year is either greater than the current calendar year minus two or 25 years old and older.

If inspector indicates the gas cap is missing, the analyzer must set the GAS_CAP_MISS field to "Y", set the GAS_CAP_PF_FLAG_1 field to "F" for fail, and continue with Section 3.21.28b: *End of Phase Logic*. If the inspector selects "N", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_MISS**
GAS_CAP_PF_FLAG_1

3.21.26 Gas Cap Testable Prompt

IS THE GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable, the analyzer must set the GAS_CAP_PF_FLAG_1 field to "P" for pass, set the GAS_CAP_TESTABLE field to "N", and continue with Section 3.21.28b: *End of Phase Logic*. If the inspector selects "Y", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_TESTABLE**
GAS_CAP_PF_FLAG_1

3.21.27 Gas Cap Connect Prompt

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.21.28 Gas Cap Results Prompt

ENTER THE RESULTS OF THE GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_1 field. The stored value must be either "P" or "F". If the result from

the gas cap tester is “F”, the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY ‘P’ OR ‘F’ WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG_1**

3.21.28a Second Gas Cap Prompt

IS THERE A SECOND FUEL CAP TO BE TESTED? ('Y' OR 'N')

Programming Criteria:

This prompt must not be displayed if the inspector has indicated that the gas cap is missing or not testable. The default for this screen must be to “N”. The analyzer must only accept an entry of “Y” or “N”. The error message must be displayed, if the inspector enters something other than “Y” or “N”. If the inspector indicates that there is a second gas cap to be tested, the analyzer must proceed to Section 3.21.28c: *Second Gas Cap Missing Prompt*.

Error Message: **ONLY ‘Y’ OR ‘N’ WILL BE ACCEPTED--TRY AGAIN.**

3.21.28b End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_1 field is set to “P”, then the analyzer must set the GAS_CAP_PF_FLAG field to “P”. If the GAS_CAP_PF_FLAG_1 field is set to “F”, then the analyzer must set the GAS_CAP_PF_FLAG field to “F”.

If the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “P”. If the SAFETY_PF_FLAG, and the GAS_CAP_PF_FLAG fields are not all set to “P”, then the analyzer must set the OVERALL_RESULTS field to “F”.

The analyzer must increment the TEST_REC_NUM by 1 and store this value in the inspection record.

Then, the analyzer must proceed to Section 3.21.28h: *Safety Test Fee Prompt*.

Associated System File: **VEHICLE.DAT**
SAFETY_PF_FLAG **GAS_CAP_PF_FLAG**
GAS_CAP_PF_FLAG_1 **OVERALL_RESULTS**
TEST_REC_NUM

3.21.28c Second Gas Cap Missing Prompt

IS THE SECOND GAS CAP MISSING? ('Y' OR 'N')

Programming Criteria:

If inspector indicates the gas cap is missing, the analyzer must set the 2ND_GAS_CAP_MISS field to "Y", set the GAS_CAP_PF_FLAG_2 field to "F", and continue with Section 3.21.28g: *End of Phase Logic*. If the inspector selects "N", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_MISS**
GAS_CAP_PF_FLAG_2

3.21.28d Second Gas Cap Testable Prompt

IS THE SECOND GAS CAP TESTABLE? ('Y' OR 'N')

Programming Criteria:

If the inspector indicates the gas cap is not testable, the analyzer must set the GAS_CAP_PF_FLAG_2 field to "P", set the 2ND_GAS_CAP_TEST field to "N", and continue with Section 3.21.28g: *End of Phase Logic*. If the inspector selects "Y", continue with the next screen prompt.

Error Message: **ONLY 'Y' OR 'N' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **2ND_GAS_CAP_TEST**
GAS_CAP_PF_FLAG_2

3.21.28e Second Gas Cap Connect Prompt

REMOVE THE GAS CAP FROM THE VEHICLE AND CONNECT IT TO THE GAS CAP TESTER. REFER TO THE OPERATOR'S MANUAL, IF REQUIRED.

Programming Criteria:

The analyzer must prompt the inspector to press "enter/continue" to conduct the inspection.

Error Message: **ONLY 'CONTINUE/ENTER' WILL BE ACCEPTED--TRY AGAIN.**

3.21.28f Second Gas Cap Results Prompt

ENTER THE RESULTS OF THE SECOND GAS CAP INTEGRITY TEST. ('P' OR 'F')

Programming Criteria:

The analyzer must automatically enter the results of the gas cap integrity inspection in the GAS_CAP_PF_FLAG_2 field. The stored value must be either "P" or "F". If the result from the gas cap tester is "F", the analyzer must allow the inspector to conduct the gas cap integrity inspection again or continue to the next prompt.

Error Message: **ONLY 'P' OR 'F' WILL BE ACCEPTED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **GAS_CAP_PF_FLAG**
GAS_CAP_PF_FLAG_1 **GAS_CAP_PF_FLAG_2**

3.21.28g End of Phase Logic

Programming Criteria:

If the GAS_CAP_PF_FLAG_2 and GAS_CAP_PF_FLAG_1 fields are set to "P", then the analyzer must set the GAS_CAP_PF_FLAG field to "P". If either the GAS_CAP_PF_FLAG_2 or GAS_CAP_PF_FLAG_1 field is set to "F", then the analyzer must set the GAS_CAP_PF_FLAG field to "F".

If the SAFETY_PF_FLAG and the GAS_CAP_PF_FLAG fields are both set to "P", then the analyzer must set the OVERALL_RESULTS field to "P" for pass. If the SAFETY_PF_FLAG and GAS_CAP_PF_FLAG fields are not both set to "P", then the analyzer must set the OVERALL_RESULTS field to "F".

The analyzer must increment the TEST_REC_NUM by 1 and store this value in the inspection record.

Then, the analyzer must proceed to Section 3.21.28h: *Safety Test Fee Prompt*.

Associated System File: **VEHICLE.DAT** **SAFETY_PF_FLAG**
GAS_CAP_PF_FLAG **OVERALL_RESULTS**
GAS_CAP_PF_FLAG_1 **GAS_CAP_PF_FLAG_2**
TEST_REC_NUM

3.21.28h Safety Test Fee Prompt

ENTER THE TOTAL COST FOR THE SAFETY INSPECTION, INCLUDING CENTS. (DO NOT INCLUDE SAFETY RELATED REPAIRS.)

Programming Criteria:

The inspector shall enter the overall cost for the inspection. If an inspector enters a fee greater than $100 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the fee.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**

3.21.29 Emissions Test Fee Prompt

Deleted per Note in 3.21.23a

3.21.30 Certificate Number Prompt

ENTER THE INSPECTION CERTIFICATE NUMBER.

Programming Criteria:

If the SKIP_CERT_DECAL field in the SYSTEM.DAT file is set to "Y", then the analyzer will not display this prompt, and proceed to Section 3.21.32: *VI-30 Selection Prompt*. If the SKIP_CERT_DECAL field is not set to "Y", then the analyzer must apply the following criteria.

The analyzer must display this prompt regardless of the status of the OVERALL_RESULTS field because this is a special test function. The analyzer must prompt the inspector to input the safety inspection sticker number. This entry may be left blank. If the entry is not left blank, a minimum of six and maximum of nine characters are required for this field. The enter key should allow the inspector to continue.

The requirement for sequential certificate issuance, and first alpha characters are purposely not applied since the certificate is being issued using this special test function. However, the certificate must maintain the format of "ANNNNNNNN", where "A" is an alpha character, and "N" is a numeric character

The safety certificate number consists of an alpha character, followed by eight digits. If the inspector enters fewer than nine characters, the analyzer must automatically load leading zeros to the numerical entry and show the analyzer number after the entry is confirmed. For example, an entry of an "A" followed by a "123" must be converted to "A00000123" and displayed for the inspector to confirm the entry. The conversion will always end in a nine-character certificate number entry. This nine-character value must be used during comparison testing to facilitate sequential issuance of certificates. The first character of a certificate number must be an alphabetic character. The analyzer must be able to enter the certificate number using the bar code reader.

The analyzer must set the cert_cond field to "A" for this inspection sequence. The analyzer must set the TEST_TYPE field to "H" for Safety only, and the SPECIAL_TEST field to "A".

Associated System File: **VEHICLE.DAT**

CERT_NUM	**CERT_COND**
TEST_TYPE	**SPECIAL_TEST**

3.21.32 VI-30 Selection Prompt

DO YOU WISH TO ISSUE AN OUT OF STATE VERIFICATION FORM (VI-30)? ('Y' OR 'N')

Programming Criteria:

If the SKIP_VI30 field in the SYSTEM.DAT file is set to "N" or "_", then the analyzer will display this prompt, and proceed to Section 3.21.33: *VI-30 Number Prompt*. If the SKIP_VI30 field in the SYSTEM.DAT file is set to "A", then the analyzer will not display this prompt, and proceed to Section 3.21.33b: *Outcome Display Prompt*. If the SKIP_VI30 field is set to "Y", then the analyzer will display this prompt and proceed to Section 3.21.33a:

VI-30 Test Fee Prompt. If the SKIP_VI30 field is not set to "Y" or "A", then the analyzer must apply the following criteria.

The analyzer must give this prompt if the OVERALL_RESULTS field is set to "P". If the inspector selects "N", the analyzer must skip the next two prompts and continue to Section 3.21.33b: *Outcome Display Prompt*.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_FLAG**

3.21.33 VI-30 Number Prompt

ENTER THE VI-30 #.

Programming Criteria:

The inspector will enter the VI-30 number that has a minimum of one character and a maximum of 10 characters. If no entry is made, the analyzer must return to Section 3.21.32: *VI-30 Selection Prompt*. The analyzer must allow the VI-30 number to be entered using the bar code scanner. The formats of the bar code are:

Formats

Name	Length	Start	Format
VI-30 Number	9	1	Numeric (existing)
VI-30 Number	6	1	Numeric (lesser used)
VI-30 Number	9	1	Alpha-numeric (ANNNNNNNN), must start with L (newly added)

The analyzer should accept entries that contain eight numbers with a leading or following space, or an "L" followed by eight numeric positions, or six numbers with no leading or following spaces in the 1-D bar code on the form. The analyzer must drop the leading or following spaces, and store only the numerical character portion of the scanned number in the VI30A_NUM field of the inspection record. Samples may be requested from the TCEQ.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **VI30A_NUM**

3.21.33a VI-30 Test Fee Prompt

ENTER THE FEE FOR THE VI-30 ONLY, INCLUDING CENTS.

Programming Criteria:

The inspector shall enter the cost for the issuance of the VI-30. If an inspector enters a fee greater than $100 dollars, the inspector shall be required to confirm the entry before proceeding to the next screen prompt. The analyzer must display a warning message which states that the fee seems unusually large, please confirm the amount entered or re-enter the

fee. The analyzer must add the cost entered here to the safety test fee cost entered in Section 3.21.28h: *Safety Test Fee Prompt*, and store the sum in the SAFE_INSP_COST field of the inspection record.

Error Message: **NO VALUE HAS BEEN ENTERED--TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**

3.21.33b Outcome Display Prompt

The analyzer must display the vehicle information, inspection outcome, certificate type entry, original certificate date, and certificate number if available from the inspection record. The analyzer must show dashes, if original certificate date and original certificate number are not available.

3.21.35 Print Vehicle Inspection Report

Since this is a special test, the analyzer must use the Safety only VIR format to print the outcome of this inspection.

After the analyzer has stored the inspection record in the VEHICLE.DAT file, the following prompt must be displayed. **"READY TO PRINT VEHICLE INSPECTION REPORT? ENTER "Y" FOR YES OR "N" FOR NO."**

Depending upon the pass/fail status the OVERALL_RESULTS field for the safety inspection, the analyzer will provide additional information to the customer as outlined in Appendix B: *Vehicle Inspection Reports*. The report must include, but not be limited to, the following information: Test Type (Initial), Test (Safety), Test Date, Test Time, Test Cost (differentiated by Inspection Fee and Repair), Overall Cost, Inspector Name, Station Name, License Plate Number, VIN, Vehicle Make, Vehicle Model-Year, Vehicle Type, Engine Size, Cylinders, Transmission, Odometer, Gross Vehicle Weight, Two Letter Special Test Designation, where applicable, the results of the gas cap integrity inspection, and the Overall Result of the Inspection. The vehicle's ignition type must be place on the same line as the number of cylinders separated by at least two spaces or a slash. The subtitle of the report must indicate that the inspection was a Safety Only Inspection, and whether or not the inspection was conducted as a Special Test. If the inspection was conducted as a Special Test, the two letter designation of "LI", "ME", "IV", "AD", "ST", "PA", or "OT", must be placed on the same line as the Test Type separated by at least two spaces, or a slash, and the words "Special Test" must be in the subtitle. The analyzer must print two copies of the VIR and allow the inspector to print additional copies after the initial reports have been printed. After the reports have been printed, the analyzer must proceed to the next prompt.

If the inspection ends in an aborted condition, the VIR must indicate that the inspection was aborted in the overall results block and display the reason for the abort. If the inspector selects "other" as the reason for the abort, the analyzer must either print the reason entered by the inspector on the VIR or provide space for a handwritten reason if the inspector chooses not to use the keyboard to enter the abort reason.

If the VI-30 number was issued, and the VI-30 fee was entered, the analyzer must change the message on the VIR from "Safety Inspection Fee" to "Safety Insp + VI30 Fee".

The analyzer must print two bar codes on the VIR which contain the VIN, license plate number, and license plate type of the vehicle under inspection. The bar codes must be code 39 format and contain only the previously mentioned information, and the start and stop characters mentioned below.

One bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"$"
License Plate Type	1	2	"1", "2", "3", "4", "5", "6", "7", or "8"
License Plate Number	8	3	Alphanumeric
TxDMV Number	10	11	Alphanumeric

The other bar code must be formatted as follows:

Name	Length	Start	Format
Identifier	1	1	"I"
VIN	17	2	Alphanumeric

Each bar code must be clearly labeled, so that the inspectors can easily identify each bar code type. The location of the bar codes on the VIR must be determined by the manufacturers.

The analyzer must not print OBD Message 20 because an emissions inspection was not performed during this sequence. However, the analyzer may print the 10-year old vehicle message only if it meets the requirements listed below:

<u>Printing 10-year Old Vehicle Message</u>

The analyzer must print a 10-year old vehicle message at the top of the VIR when the STNDS field of the SYSTEM.DAT file is set to:

- "B" or;
- "C" and the PRINT_LIRAP_APP field is set to "Y" or "A".

If the model-year of the vehicle is 10 years old or older, then the analyzer must print OBD message 22 from the VIRMSGS.DAT file. If the model-year of the vehicle is less 10 years old, then the analyzer must print OBD message 23 from the VIRMSGS.DAT file.

The analyzer must print an authorization code on the VIR for vehicles that pass the inspection or fail the inspection, but are issued a waiver number. The analyzer must print "N/A" instead of the authorization code where:

- the vehicle fails the inspection;
- the vehicle fails the inspection and is not issued a waiver number;
- the inspection is aborted resulting in a failing condition; or

- the inspection is aborted resulting in a no final outcome condition (aborted records should not result in a passing outcome).

The algorithm for the authorization code is available from the TCEQ upon request.

The analyzer may print the vehicle certificate type (VIR code) on the VIR for vehicles that pass the inspection. The certificate type codes that must be printed on the VIR are included in Appendix V: *Safety Certificate Format Table*. The VIR printed for vehicles that pass the inspection must use a font size acceptable to the TCEQ (e.g., minimum of 12 point for Times New Roman) for selected elements on the VIR, including the test date and time, the certificate type, the vehicle's model year, license plate number, and VIN, the station number, analyzer number, and overall inspection result.

The analyzer must print the text, "Show report for Texas vehicle registration" in all capital letters in the top left hand corner of the VIR when:

- the HB2305CHG field in the SYSTEM.DAT file is set to "B" or "C"; and
- either the vehicle:
  - passes the inspection; or
  - is issued a waiver number, regardless of the pass or fail inspection result.

The analyzer must print the following sentence on the vehicle inspection when the SAFE_TEST_TYPE is set to "G" or "K": "I have performed an annual inspection of the above noted vehicle, which is accurate, complete, and in accordance with the inspection criteria set forth in 49 Code of Federal Regulations, Chapter 396.17 through 396.21." When the SAFE_TEST_TYPE is set to "G" or "K", the analyzer must print the inspection expiration date on the VIR. These inspections (i.e., where the SAFE_TEST_TYPE set to "G" or "K") are valid until the end of the same month as the date of inspection in the following year. For example, if the inspection is performed on June 20, 2014, then the analyzer would print June 30, 2015 as the inspection expiration date. A sample vehicle inspection report showing the inspection expiration date is available from the TCEQ upon request.

The analyzer must print the text "I certify that I have properly performed the emissions test according to state regulations and procedures manuals, and as the undersigned duly appointed inspection, hereby certify that I have physically examined the manufacturer's vehicle identification number of the motor vehicle described above." This text replaces the text regarding test performance currently being printed on the VIR.

The analyzer must print the TEST_REC_NUM on the VIR next to the fuel type value or analyzer software version.

Error Message: **NO VALUES ENTERED -- TRY AGAIN.**

Associated System File: **VEHICLE.DAT** **SAFE_INSP_COST**
OVERALL COST **CERT_NUM** **OVERALL_RESULTS**

3.21.36 VID Contact

The analyzer must contact the VID and transmit the completed inspection record for this inspection and any other records from previous inspections that have not been sent to the VID. Upon completion of this contact, the analyzer must return to the main menu.

The analyzer must increment the no contact counter, which tracks the number of inspection s conducted without successfully contacting the VID, by one when the following bits are not set in the RESPONSE.DAT file during the communication sessions:

bit 48 - Command completed successfully (status specific to "transmit VIN/License Plate data" command); and

bit 80 - Command completed successfully (status specific to "Transmit test record(s)" command).

The no contact counter must only increment by one for each inspection completed with either response bit 48 or response bit 80 not being set.

The following bits may also be set when response bits 48 and 80 are not set. These bits provide probable explanations to why response bits 48 and 80 were not set.

8 - Invalid password (token file error)
9 - Invalid LOCKOUT.DAT file
10 - Invalid TAS telephone number
11 - Invalid station number
12 - Invalid TAS number
13 - Invalid software version number
14 - Invalid VID phone number
15 - Invalid communications port base address
16 - Invalid communications port interrupt
17 - Communication port error
18 - Dialing error
19 - No dial tone
20 - Phone line busy
21 - No answer
22 - Voice answered
23 - Security logon (to VID) failure

The no contact counter must not be incremented for any aborted inspections.

Appendix A

TSI Emissions Standards

Emissions Standards

Light-Duty Gasoline Vehicle and Light-Duty Gasoline Trucks Up to 8,500 GVW Preconditioned Idle Inspection

MODEL-YEAR	**CO, percent**	**HC, ppm**
1981 and newer	1.2	220
1980	4.0	400
1979	6.0	600
1978	6.5	650
1977	7.5	750
1976	7.5	750
1975	7.5	750
1974	8.0	800
1973	8.0	800
1972	8.5	850
1971	8.5	850

Emissions Standards

Heavy-Duty Gasoline vehicle 8,501-80,000 GVW Preconditioned Idle Inspection

MODEL-YEAR	**CO, percent**	**HC, ppm**
1994 and newer	3.0	300
1993	3.0	300
1992	3.0	300
1991	3.0	300
1990	3.0	300
1989	3.0	300
1988	3.0	300
1987	3.0	300
1986	3.0	300
1985	3.0	300
1984	5.0	500
1983	5.0	500
1982	5.0	500
1981	7.0	700
1980	7.0	700
1979	7.0	700
1978	9.0	900
1977	9.0	900
1976	9.0	900
1975	9.0	900
1974	9.0	900
1973	9.0	900
1972	9.0	900
1971	9.0	900

Appendix B

Vehicle Inspection Reports

Customer Comments/Explanations
to be printed on
Vehicle Inspection Reports

(Reserved)

Appendix C

(Reserved)

Appendix D

Safety Inspection Help Screens

Safety Inspection
Item: Horn
Help Screen # 1

Inspect for:

a. Mounting.
b. Wiring and actuating device.
c. Harsh sound and audibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Vehicle is not equipped with a horn.
b. Horn or horn switch is not securely fastened.
c. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor connection.
d. Horn switch not readily accessible to vehicle operator.
e. Horn is actuated by grounding two naked wires or similar method.
f. Sound is not audible under normal conditions for 200 feet.
g. Horn emits an unusually loud or harsh sound or whistle.
h. Operation of the horn interferes with the operation of any other circuit.
i. Horn switch missing or inoperative.

Safety Inspection
Item: Windshield Wipers
Help Screen #2

Inspect for:

a. Required number of wipers.
b. Condition of wiper blade.
c. Free operation, making contact and control.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Vehicle is not equipped with the number of wipers with which it was originally equipped.
b. Wiper is inoperative, does not operate freely, or is improperly adjusted.
c. Wiper blade has damaged, hardened or badly worn rubber elements.
d. The portion of the rubber element that contacts the windshield is torn more than one inch on one end or is torn a total of one inch on both ends.
e. Any part of the rubber element is torn loose from the metal backing or blade base.
f. Metal parts of wiper blades or arms are damaged or come in contact with the windshield.
g. Wiper is incapable of adequately cleaning the windshield.
h. Wiper blades are not making proper contact with windshield.
i. Wiper controls are not operating properly or are located beyond the driver's reach.

Safety Inspection
Item: Mirror
Help Screen #3

Inspect for:

a. Mounting & view to the rear.
b. Condition of reflecting surface.
c. Cracked or broken glass.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Mirror does not provide the driver with a clear view to the rear of 200 feet.
b. Vehicle is not equipped with at least one mirror.
c. Mirror offers unsafe interference with driver's forward vision.
d. Reflective surface of mirror is cracked, broken, peeled, or tarnished, or has sharp edges.
e. Mirror is not mounted securely to prevent swing or excessive vibration unless the vehicle is equipped with another mirror which meets requirement.

NOTE: An inside mirror would meet all the above requirements. If the vehicle is equipped with more than one mirror, only one, either inside or outside, needs to meet all requirements.

Safety Inspection
Item: Steering System
Help Screen # 4

Inspect for:

a. Lash and free movement without jamming.
b. Mounting and condition of steering mechanism.
c. Fluid level and visible leaks in power steering unit.
d. Small or modified steering wheel.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. There is more than 2 inches of lash measured on the outside periphery of steering wheel rims 18 inches or less in diameter.
b. There is more than 3 inches of lash measured on the outside periphery of steering wheel rims over 18 inches in diameter.
c. It is impossible to turn the steering wheel from full right to full left without binding or jamming other than at wheel stops.
d. Steering mechanism is not firmly attached and free of frame cracks or missing bolts.
e. Modification of the steering systems so as to affect the proper steering of the vehicle or steering wheel has been modified or replaced with one that is noticeably smaller than original factory equipment.
f. Any excessively worn or broken parts in the steering system.
g. Visible leaks in power steering unit or hoses.
h. Power steering belt is cracked, frayed, or has pieces missing or tension is not adequate.
i. Fluid in power steering unit is below manufacturer recommended level. Do not overfill.
j. On motorcycles and motor driven cycles, handlebars or steering head is bent, loose, broken or damaged so as cause unsafe condition in steering.
k. On motorcycles and motor driven cycles, handlebars grips extend to a height in excess of 15 inches above the saddle level.

NOTE: On vehicles equipped with power steering, engine must be running and the fluid level, belt tension and condition must be adequate before testing.

Safety Inspection
Item: Seat Belts
Help Screen #5

Inspect for:

a. Presence of front seat belts (when required).
b. Unsafe belts, attachment fittings and buckles.
c. Anchor bolts.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Front lap seat belts are required and not present.
b. Seat belt webbing is frayed, spilt, or torn.
c. Belt anchorages or attachment fittings are loose, badly corroded, missing or not fastened to belt.
d. Belt buckles loose or inoperative.
e. All seat belt anchor bolts are not securely fastened to floor or are missing.
f. Pelvic restraint is not present.
g. Seat belt will not adjust to allow proper fit.

Safety Inspection
Item: Service Brake System
Help Screen #6A

Inspect for:

a. Visible leaks in brake lines, wheel cylinders or other part of the system.
b. Frayed or leaking hoses or cables, or unsafe mechanical parts.
c. Pedal reserve.
d. Stopping distance and equalization.
e. Fluid level in master cylinder.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Vehicle is not equipped with required service brakes.
b. Upon first application, there is less than 2 inches of pedal reserve as determined by the use of an accurate measurement on the fully applied brake pedal of vehicles equipped with conventional brakes.
c. Upon first application, there is less than 1 inch of pedal reserve as determined by the use of an accurate measurement on the fully applied brake pedal of vehicles with power brakes (power must be on and operating when tested).
d. On service brakes that cannot be checked with the use of an accurate measurement, there is less than a reserve of one third of the total travel distance of the brake actuator.
e. Brake pedal height cannot be maintained under moderate foot force (40 to 60 pounds for conventional - 15 to 20 pounds for power) for a period of 1 minute.
f. There is visible leakage or audible seepage in hydraulic lines and cylinders, or any other part of the service brake system.
g. Fluid level in the master cylinder is more than 1 inch below the top of the reservoir or below manufacture's recommended level.
h. Hoses or cables are restricted, abraded, crimped, cracked, leaking, frayed, or broken.
i. Brake rods or mechanical parts are missing, broken, badly worn or misaligned.
j. Brake operating levers or control cables do not operate freely, improperly positioned, or misaligned.

k. Any part of the service brake system has been removed, disconnected, rendered inoperative.
l. There is an obvious metal to metal contact sound when brakes are applied, and upon investigation, drum or disk is being scored.
m. The service brakes do not develop the required total braking force as determined by machine tests.
n. Brakes do not meet requirements for stopping distances for the class of vehicle.
o. The brakes are not equalized as determined from road testing or by machine tests of the vehicle.
p. Brake warning lamp or signal comes on during test.

NOTE: It is imperative that brake system reservoir cover and the surrounding area be thoroughly cleaned before cover is removed for inspection to assure that NO DIRT OR WATER is mixed with the brake fluid.

Safety Inspection
Item: Parking Brake System
Help Screen #6B

Inspect for:

(Required on all motor vehicles beginning with year model 1960).

a. Operating mechanism.
b. Condition of mechanical parts and pull cables.
c. Holding ability.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Motor vehicle is not equipped with a parking brake.
b. Operating mechanism, when fully applied, does not hold the vehicle.
c. Actuating mechanism is not fully released when the release control is operated.
d. Any mechanical parts are missing, broken, badly worn or not operating properly.
e. Pull cables are badly worn, stretched, frayed, or not operating freely.
f. Parking brake will not hold the vehicle in place when, with the engine running, the vehicle is placed in forward gear and the engine is accelerated enough to cause a pull on the braking mechanism.

Safety Inspection
Item: Tires
Help Screen #7

Inspect for:

a. Worn spot that exposes ply or cord through the tread.
b. Tread cuts, fabric breaks, snags and sidewall cracks.
c. Visible bumps, bulges or knots.
d. Tread wear less than 2/32" in any two adjacent major grooves at one location.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Any tire with a localized worn spot that exposes the ply or cord through the tread.
b. Any tire with tread or sidewall cracks, cuts, or snags (as measured on the outside on the tire) in excess of one inch in any direction and deep enough to expose the body cords.
c. Any tire which has any visible bumps, bulges, or knots apparently related to tread or sidewall separation or partial failure of the tire structure, including bead area.
d. Any tire which has been regrooved or recut below the original groove depth, except special (regroovable) tires which have extra undertread rubber for this purpose (commercial vehicles only) and are identified as such.
e. Any dual wheel assembly where the side of one tire is in contact with the other. (Any duel tires that contact each other).
f. Any tire that is marked "Not for Highway Use", "Farm Use Only," "For Racing Purposes Only" or with other use restrictions that would indicate the tire is not meant for highway use. This includes temporary spares, inflatables, or small high pressure spares.
g. Any tire which has been repaired temporarily by the use of blowout patches and boots. Nail hole plugs or patched are not cause for rejection.
h. Any tire without tread wear indicators worn so that less than 2/32 (1/16) of an inch of tread design depth remain when measured (with a tread depth gauge) at the lowest points in any two adjacent major grooves in the center or middle of the tire.
i. Any tire with tread wear indicators worn so that the tread wear indicators contact the road in any two adjacent major grooves in the center or middle of the tire.

Safety Inspection
Item: Wheel Assembly
Help Screen #8

Inspect for:

a. Defective or bent rim flanges; loose, missing or damaged bolts, nuts, studs or lugs.
b. Defects and cracks that may impair safe mounting and proper retention of tires.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Loose, missing, or damaged wheel studs, bolts, nuts or lugs.
b. Any part of the wheel bent, cracked, rewelded, or damaged so as to affect safe operation of the vehicle.
c. Wheel nuts, studs, and clamps which are loose, broken, missing, or mismatched. Adequate thread engagement is imperative. Stud and nut threads on wheel lugs must engage completely through the entire threaded portion of the nut.
d. Rims and rings which are mismatched, bent, sprung, or otherwise damaged. Check for evidence of rim slippage - this is an indication of wear of loose nuts.
e. Disc wheels with elongated bolts, holes, or cracks between hand holes or stud holes, or both.
f. Cast wheels with cracks, evidence of wear in the clamp area, or both.
g. Rims have defects or cracks to the extent that they impair the safe mounting and proper retention of tires.
h. Any wheel cannot be securely fastened to the hub of the vehicle.
i. On motorcycles and motor-driven cycles, any spokes are bent, loose, broken, or missing.

Safety Inspection
Item: Exhaust System
Help Screen #9

Inspect for:

a. Loose or leaking joints.
b. Holes, leaking seams or patches.
c. System or its elements not securely fastened to vehicle.
d. Any part of exhaust system passes through (or terminates beneath) the passenger compartment.
e. Tail pipe broken, pinched or eroded off allowing fumes to penetrate passenger compartment.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Vehicle is not equipped with a muffler.
b. Any joint is loose or leaking, including manifolds. Does not include minor leakage at exhaust control valve (manifold damper or heat riser valve).
c. Manifold is cracked or broken causing leakage.
d. Holes, leaking seams, or patches on the muffler, resonators, exhaust pipe, tail pipe, or catalytic converter.
e. Exhaust system is not secured to the vehicle by mounting brackets designed for exhaust systems (wire is not acceptable).
f. Any brackets are loose, broken, or missing.
g. There is excessive vibration of exhaust line.
h. Any part of the exhaust system passes through the passenger compartment.
i. The tail pipe is broken, pinched, or eroded off to extent to allow exhaust fumes to penetrate into the interior of the passenger compartment.
j. The tail pipe fails to discharge exhaust from the rear, side or top of the passenger compartment of the vehicle.

NOTE: Holes in the exhaust system made by the manufacturer for drainage are not cause for rejection. The tail pipe must direct the exhaust fumes out from under the passenger compartment.

Safety Inspection
Item: Emission System
Help Screen #10

Inspect for:

(Required on motor vehicles equipped by manufacturer beginning with 1968 models).

a. Examine visually for presence of system.
b. Plumbing is loose, broken, leaking or improperly routed.
c. Systems has been altered, removed, or disconnected.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. The exhaust emission system has been removed.
b. The exhaust emission system has been disconnected.
c. The plumbing or hoses are loose, broken, leaking, or improperly routed.
d. Air pump (air injection type) belt is loose, removed, cracked, frayed, or has pieces missing.
e. The exhaust emission system has been altered in any manner to make it ineffective.
f. The catalytic converter has been removed, leaking, or disconnected on a 1984 or later model vehicle.

Safety Inspection
Item: Beam Indicator
Help Screen #11

Inspect for:

(Required on all motor vehicles beginning with 1948 models, except motorcycles and motor-driven cycles).

a. Proper switching indication.
b. Visibility without glare.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Vehicle not equipped with a beam indicator.
b. Improper switching indication.
c. Produces glaring light.
d. Inoperative for any reason.

Safety Inspection
Item: Tail Lamp
Help Screen #12

Inspect for:

a. Mounting visibility and required number.
b. Color and condition of lens.
c. Wiring and visibility.
d. Connected to burn when headlamps burn.
e. Any lamp projects a white light to the rear (except license plate lamp and backup lamp).

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Required lamp or lamps are not present.
b. Lamp is not securely mounted to vehicle.
c. Lamp does not completely emit a red light plainly visible 1,000 feet to the rear.
d. Lamp lens is cracked, broken, painted, missing, discolored, or does not fit properly.
e. Wiring is shoddy or electrical connections are poor.
f. Lamp is not wired so as to be lighted when head lamps or auxiliary driving lamps are lighted.
g. Lamp is obstructed by any part of body.
h. Lamp lens is not red color.
i. Lamps are not mounted on the same level and as widely spaced laterally as practicable.
j. Lamps are not mounted on rear of vehicle.
k. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Stop Lamp
Help Screen #13

Inspect for:

a. Mounting, visibility and required number.
b. Color and condition of lens.
c. Actuation by application of service brakes.
d. Wiring and visibility.
e. Glaring or dazzling light.
f. Any lamps projects a white light to the rear (except license plate lamp and backup lamp).

NOTE: Lamp lens cannot be repaired with repair tape or repair kit.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Required lamp or lamps are not present.
b. Lamp is not securely mounted to the vehicle.
c. Lamp does not emit a red or amber light which is actuated on application of the service (foot) brake.
d. Lamp is not visible from a minimum distance of 300 feet to the rear of the vehicle to which it is attached.
e. Lamp lens is cracked, broken, painted, missing, discolored, or does not fit properly.
f. Wiring is shoddy or electrical connections are poor.
g. Lamp projects a glaring or a dazzling light.
h. Lamp is not mounted on rear of vehicle.
i. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: License Plate Lamp
Help Screen #14

Inspect for:

a. Mounting and wiring.
b. Illumination of license plate.
c. Lighting when headlamps are lighted.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamp is not present.
b. Lamp is not securely mounted to the vehicle.
c. Lamp is not placed to illuminate with a white light the rear registration plate.
d. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
e. Lamp is not wired so as to be lighted when head lamps or auxiliary driving lamps are lighted.
f. Lamp emits a glaring light to the rear.
g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Rear Reflectors
Help Screen #15

Inspect for:

a. Color, location and condition of lens.
b. Mounting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Reflector is not present.
b. Reflector is not of red color.
c. Reflector is not properly and/or securely mounted to the vehicle.
d. Reflector is cracked to the extent that the reflecting ability is impaired.
e. Reflector is discolored, deteriorated, or painted.
f. Visibility distance is not as required.
g. Requirements shown on lighting diagram are not met.

Safety Inspection
Item: Turn Signal Lamps
Help Screen #16

Inspect for:

(When required according to Rules and Regulations Manual).

a. Mounting, visibility and approved type.
b. Color and condition of lens.
c. Wiring, switch, telltale and proper indications.
d. Self-illumination and automatic flashing.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are required and not present.
b. Device is not securely mounted or properly located on the vehicle.
c. Device is not of a type meeting Department standards.
d. Lamp lens is cracked, broken, discolored, or missing.
e. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
f. Switch is not convenient to driver or indicator light does not operate.
g. Signal shows any color other than white or amber to the front, or signal shows any color other than red or amber to the rear.
h. Signal does not flash or is not operating properly.
i. Signal is not clearly visible to the front and to the rear of the vehicle.
j. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

NOTE: Selector switch must lock in proper turn position when applied but need not cancel automatically.

Safety Inspection
Item: Headlamps
Help Screen #17

Inspect for:

a. Mounting and approved type.
b. Improper connections, switching and dimmer switch.
c. Cracked, broken or missing lens.
d. Wiring.
e. Physical damage that would obviously cause a headlight beam to fail to sufficiently illuminate the roadway ahead of the vehicle.
f. Dirt moisture, contaminations or discolorations.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamp or lamp assembly is not securely fastened to the vehicle.
b. Lamp is improperly connected and does not light the proper filament for different switch positions.
c. Lamp lens is cracked, broken, discolored, or missing. (Exception: Composite or halogen type lamps will not be rejected for being cracked unless the reflector material in side the lamp is discolored or deteriorated).
d. Lamp is not of a type meeting Department standards.
e. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electric connections.
f. Lamp lens is rotated, upside down, canted, or is marked “Right”, “Left”, #1 or #2 and not appropriately installed.
g. Lamp fails to function properly in any manner.
h. Lamp has dirt or any contamination or discoloration inside or moisture except condensed moisture in composite head lamps or nonsealed beam halogen lamps.
i. Lamp switch or dimmer switch does not operate properly and is not convenient to the driver.
j. Foreign material placed on head lamp lens, such as shields, half of lens, paint, tape, etc., that interferes with the light beam of the lamp.
k. Vehicle is not equipped with head lamps as required.
l. Lamp can be moved easily by hand, due to a broken fender or loose support.
m. Lamp is missing.
n. Lens is other than clear (white).

o. Any filament in head lamps fails to burn except composite lamps with more than one bulb when both upper and lower beam burn when selected.
p. Wiring is dangling or connections are loose.
q. A good ground is not made by the lamp mounting.
r. Lamp is mounted on vehicle more than or less than prescribed mounting heights.
s. Head lamp is covered by any lens or cover located in front of the head lamp which is any shade or color other than clear.
t. There is physical damage that would obviously cause a headlight beam to fail to illuminate the roadway ahead of the vehicle sufficiently.

Safety Inspection
Item: Clearance Lamps
Help Screen #18

Inspect for:

a. Mounting and location.
b. Required color.
c. Cracked, broken or missing lens.
d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are not present.
b. Lamps are not securely mounted and properly located.
c. Lamps do not emit required color; lens or bulb painted.
d. Visibility requirements are not met.
e. Lenses are cracked, broken, discolored, or missing.
f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Side Marker Lamps
Help Screen #19

Inspect for:

a. Mounting and location.
b. Required color.
c. Cracked, broken, or missing lens.
d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are not present.
b. Lamps are not securely mounted and properly located.
c. Lamps do not emit required color; lens or bulb painted.
d. Visibility requirements are not met.
e. Lenses are cracked, broken, discolored or missing.
f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light form the bulb to emit through the crack or break.

Safety Inspection
Item: Cab Lamps
Help Screen #20

Inspect for:

(Truck tractors only)

a. Mounting and location.
b. Required color.
c. Cracked, broken or missing lens.
d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are required and not present.
b. Lamp is not securely mounted and properly located.
c. Lamp does not emit required color; lens or bulb painted.
d. Lamp lens is cracked, broken, discolored, or missing.
e. Lamp is not visible from distance between 500 feet and 50 feet.
f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

Safety Inspection
Item: Side Reflectors
Help Screen #21

Inspect for:

a. Color, location and condition of lens.
b. Mounting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Reflectors are not present.
b. Reflectors are not of the required color for its location on the vehicle.
c. Reflectors are not properly and/or securely mounted to the vehicle or if visibility distance is not as required.
d. Reflector is cracked to the extent that the reflecting ability is impaired.
e. Reflectors are discolored, deteriorated, or painted.
f. Requirements shown on lighting diagram are not met.

Safety Inspection
Item: School Buses
Help Screen #22

Inspect for:

a. School bus signs.
b. Fire extinguisher.
c. Warning lamps.
d. Convex crossover mirror.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. All equipment required by size, weight, or class of the vehicle does not meet requirements.
b. Signs are not present, readable, and of proper height.
c. Fire extinguisher is not of required capacity, proper type, or in good condition and properly located.
d. School bus RED signal lamps are not present, properly working, and in good condition.
e. Crossover mirror mounting is loose or will not adjust to different positions or will not hold firm after adjustment.
f. Crossover mirror offers unsafe interference with driver's forward vision or hides either front turn signal from view of oncoming driver.
g. Crossover mirror's reflective surface is cracked, broken, peeled, or tarnished, or has sharp edges.

NOTE: Some school buses may be equipped with eight warning signal lamps, four red and four amber, working in an automatic integrated system. This system of alternately flashing warning lamps will be accepted provided it has two red lamps on the front and two red lamps on the rear.

Safety Inspection
Item: Safety Guards or Flaps
Help Screen #23

Inspect for:

a. Mounting, condition and location.
b. Construction and material.
c. Height and width.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Safety guard or flap is not present.
b. Safety guard or flap is not securely mounted.
c. Safety guard or flap is not as wide as the tire that it is protecting.
d. Safety guard or flap is spilt or torn to the extent that it is ineffective.
e. The bottom edge of safety guard or flap is more than twelve (12) inches from the surface of the roadway.

Safety Inspection
Item: Sun-Screening
Help Screen #24

Inspect for:

a. 1988 model & later.
b. Light transmission.
c. Color (must not be red or amber).
d. Tint is below AS-1 line or 5" if no AS-1 line is present.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Glass coating or sunscreening devices on windshields;
   1) Extends downward past the AS-1 line or more than five inches from top of windshield on vehicles without an AS-1 line; or
   2) Is red or amber in color.
b. Glass coating or sunscreening devices on windows;
   1) windows immediately to the right and left of the driver which opens has less than 20 percent light transmittance.
c. Check calibrations before rejecting vehicles

EXEMPTIONS:

a. The following will not be considered as sunscreening or glass coating devices:
   1) Rearview mirror
   2) Sun Visors
   3) Motor carrier destination signs
   4) Rear Window wipers and motors
   5) Trunk lid handle or hinge.
   6) Luggage racks.
b. Do not inspect glass coating on vehicles used to transport passengers on a regular basis for a fee, i.e., taxi, limousine, and buses.
c. Vehicles used by persons with medical permits. Drivers of these vehicles must present a letter of authorization from the Texas Department of Public Safety to gain his exemption.
d. Multipurpose vehicles may be equipped with any non-reflective film on the side windows that is to the rear of the driver. No label required. (Those motor vehicles designed to carry 10 or fewer persons constructed either on a truck chassis or with special features for occasional off-road use.)

FMCSR Inspection
Item: Horn
Help Screen #1

Inspect for:

a. Mounting.
b. Wiring and actuating device.
c. Harsh sound and audibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Vehicle is not equipped with a horn.
b. Horn or horn switch is not securely fastened.
c. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor connection.
d. Horn switch not readily accessible to vehicle operator.
e. Horn is actuated by grounding two naked wires or similar method.
f. Sound is not audible under normal conditions for 200 feet.
g. Horn emits an usually loud or harsh sound or whistle.
h. Operation of the horn interferes with the operation of any other circuit.
i. Horn switch missing or inoperative.

FMCSR Inspection
Item: Windshield Wipers
Help Screen #2

Inspect for:

a. Required number of wipers.
b. Condition of wiper blade.
c. Free operation, making contact and control.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Vehicle is not equipped with the number of wipers with which it was originally equipped.
b. Wiper is inoperative, does not operate freely, or is improperly adjusted.
c. Wiper blade has damaged, hardened or badly worn rubber elements.
d. The portion of the rubber element that contacts the windshield is torn more than one inch on one end or is torn a total of one inch on both ends.
e. Any part of the rubber element is torn loose from the metal backing or blade base.
f. Metal parts of wiper blades or arms are damaged or come in contact with the windshield.
g. Wiper is incapable of adequately cleaning the windshield.
h. Wiper blades are not making proper contact with windshield.
i. Wiper controls are not operating properly or are located beyond the driver's reach.

FMCSR Inspection
Item: Mirrors
Help Screen #3

Inspect for:

a. Mounting and view to the rear.
b. Condition of reflecting surface.
c. Cracked or broken glass.
d. Required number.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Proper number of mirrors.
b. Clear view of 200 feet to rear
c. Interference of driver's forward vision
d. Reflective surface of mirrors is cracked, broken, peeled, or tarnished.
e. Not mounted securely to prevent swing or excessive vibration.

FMCSR Inspection
Item: Steering System
Help Screen #4

Inspect for:

a. Lash and free movement without jamming.
b. Mounting and condition of steering mechanism.
c. Fluid level and visible leaks in power steering unit.
d. Small or modified steering wheel.
e. Cracks and welds on steering axle and gear bow.
f. Loose Pitman arm.
g. Loose power assist cylinder on power steering unit.
h. Motion between linkage member and attachment point.
i. Loose clamps or bolts on tie rods or drag links.
j. Any modification or other condition that interferes with free movement of any steering component.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Steering Lash
b. Steering column.
   1. Any absence or looseness of U-bolt(s) or positioning part(s).
   2. Worn, faulty or obviously welded universal joint(s).
   3. Steering wheel not properly secured.
c. Front Axle beam and all steering components other than steering column.
   1. Any crack(s).
   2. Any obvious welded repair(s).
d. Steering Gear Box.
   1. Any mounting bolt(s) loose or missing.
   2. Any crack(s) in gear box or mounting brackets.
e. Pitman Arm.
   1. Any looseness of the pitman arm on the steering gear output shaft.
f. Power Steering.
   1. Auxiliary power assist cylinder loose.
g. Ball and Socket Joints.
   1. Any movement under steering load of a stud nut.
   2. Any motion, other than rotational, between any linkage member and its attachment point of more than 1/4 inch.
h. Tie rods and drag links.
   1. Loose clamp(s) or clamp bolt(s) on tie rods or drag links.
   2. Any looseness in any threaded joint.
i. Nuts. Nut(s) loose or missing on tie rods, pitman arm, drag link, steering arm or tie rod arm.
j. Steering System. Any modification or other condition that interferes with free movement of any steering component.

FMCSR Inspection
Item: Seat Belts
Help Screen #5

Inspect for:

a. Presence of front seat belts (when required).
b. Unsafe belts, attachment fittings and buckles.
c. Anchor bolts.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Front lap seat belts are required and not present.
b. Seat belt webbing is frayed, spilt, or torn.
c. Belt anchorages or attachment fittings are loose, badly corroded, missing or not fastened to belt.
d. Belt buckles loose or inoperative.
e. All seat belt anchor bolts are not securely fastened to floor or are missing.
f. Pelvic restraint is not present.
g. Seat belt will not adjust to allow proper fit.

FMCSR Inspection
Item: Brake System
Help Screen #6A

Inspect for:

a. Present of required number of brakes.
b. Stopping distance.
c. Equalization.
d. Fluid level.
e. Frayed, leaking, damaged hoses or cables.
f. Visible leaks or audible leaks in brake lines and wheel cylinders.
g. Missing or broken mechanical components (shoes, pads, linings, anchor pins, etc.).
h. Readjustment limits.
i. Condition of linings and pads.
j. Mismatch air chamber sizes and slack adjuster length.
k. Cracks on brake drums and rotors.
l. Improper repair of hoses.
m. Tubing cracked, broken, or crimped.
n. Low pressure warning device.
o. Loose air compressor mounting bolts.
p. Broken or loose pulleys and brackets.
q. Break away device.
r. Low fluid warning light.
s. Vacuum reserve.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Absence of braking action on any axle required to have brakes upon application of the service brakes (such as missing brakes or brake shoe(s) failing to move upon application of a wedge, S-cam, or disc brake).
b. Missing or broken mechanical components including: shoes, lining, pads, springs, anchor pins, spiders, cam rollers, push rods, and air chamber mounting bolts.
c. Loose brake components including air chambers, spiders, and cam shaft support brackets.
d. Audible air leak at brake chamber (Example-ruptured diaphragm, loose chamber clamp, etc.).
e. Any brake stroke is at the readjustment limit.
f. Brake linings or pads.
    1. Lining or pad is not firmly attached to the shoe.
    2. Saturated with oil, grease, or brake fluid.
    3. Non-steering axles: Lining with a thickness less than 1/4 inch at the shoe center for air drum brakes, 1/16 inch or less at the shoe center for hydraulic and electric drum brakes and less than 1/8 inch air disc brakes.
    4. Steering axles: Lining with a thickness less than 1/4 inch at the shoe center for drum brakes, less than 1/8 inch for air disc brakes and 1/16 inch or less for hydraulic disc and electric brakes.
g. Brake is missing on any axle required to have brakes.
h. Mismatch across any power unit steering axle of:
    1. Air chamber sizes.
    2. Slack adjuster length.

i. Parking Brake System.
   1. In accordance with Chapter 3.

j. Brake drums or rotors.
   1. Any external crack or cracks that open upon brake application (do not confuse short hairline heat check cracks with flexural cracks).
   2. Any portion of the drum or rotor is missing.

k. Brake Hose.
   1. Hose with any damage extending through the outer reinforcement ply.
   2. Bulge or swelling when air pressure is applied.
   3. Any audible leaks.
   4. Two hoses improperly joined (such as a splice made by sliding the hose ends over a piece of tubing and clamping the hose to the tube).
   5. Air hose cracked, broken or crimped.

l. Brake Tubing.
   1. Any audible leak.
   2. Tubing cracked, broken or crimped.

m. Low pressure warning device.
   1. Missing, inoperative, or does not operate at 55 psi and below, or the governor cut-out pressure, whichever is less.

n. Tractor protection valve.
   1. Inoperable or missing tractor protection valve(s) on power unit.

o. Air Compressor.
   1. Compressor drive belts cracked or frayed.
   2. Loose compressor mounting bolts.
   3. Cracked, broken or loose pulley.
   4. Cracked or broken mounting brackets, braces or adapters.

p. Electric brakes.
   1. Absence of braking action on any wheel required to have brakes.
   2. Missing or inoperable breakaway braking device.

q. Hydraulic Brakes. (Including power assist over hydraulic and engine drive hydraulic booster).
   1. Master cylinder fluid level is 1 inch or more below the top of the reservoir or below manufacturers recommended level.
   2. No pedal reserve with engine running except by pumping pedal.
   3. Power assist unit fails to operate.
   4. Seeping or swelling brake hose(s) under application of pressure.
   5. Missing or inoperative check valve.
   6. Has any visually observed leaking hydraulic fluid in the brake system.
   7. Has hydraulic hose(s) abraded (chafed) through outer cover -to-fabric layer.
   8. Fluid lines or connections leaking, restricted, crimped, cracked or broken.
   9. Brake failure or low fluid warning light on and/or inoperative.

r. Vacuum Systems.
   1. Has insufficient vacuum reserve to permit one full brake application after engine is shut off.
   2. Has vacuum hose(s) or line(s) restricted, abraded (chafed) through outer cover to cord ply, crimped, cracked, broken or has collapsed of vacuum hoses(s) when vacuum is applied.
   3. Lacks an operative low-vacuum warning device as required.

FMCSR Inspection
Item: Parking Brake System
Help Screen #6B

Inspect for:

(Required on all motor vehicles beginning with model-year 1960).

a. Operating mechanism.
b. Condition of mechanical parts and pull cable.
c. Holding ability.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Motor vehicle is not equipped with a parking brake.
b. Operating mechanism, when fully applied, does not hold the vehicle.
c. Actuating mechanism is not fully released when the release control is operated.
d. Any mechanical parts are missing, broken, badly worn, or not operating properly.
e. Pull cables are badly worn, stretched, frayed, or not operating freely.
f. Parking brake will not hold the vehicle in place when, with the engine running, the vehicle is placed in forward gear and the engine is accelerated enough to cause a pull on the braking mechanism.

FMCSR Inspection
Item: Steering Axle Tires
Help Screen #7A

Inspect for:

a. Worn spot that exposes ply or cord through the tread.
b. Tread cuts, fabric breaks, snags, sidewall cracks or separation.
c. Visible bumps bulges or knots.
d. 4/32" tread.
e. Mixed tire construction.
f. Boot, blowout patch or other ply repair.
g. Tire inflation.
h. Regrooved tires.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. With less than 4/32 inch tread when measured at any point on a major tread groove.
b. Has body ply or belt material exposed through the tread or sidewall.
c. Has any tread or sidewall separation.
d. Has a cut where the ply or belt material is exposed.
e. Labeled "Not for Highway Use" or displaying other marking which would exclude use of steering axle.
f. A bus operated with regrooved, recapped or retreaded tires on the front wheels.
g. A truck or truck tractor with regrooved tires on the front wheels.
h. A tube-type radial tire without radial tube stem markings. These markings include a red band around the tube stem, the word "radial" embossed in metal stems, or the word "radial" molded in rubber stems.
i. Mixing bias and radial tires on the same axle.
j. Tire flap protrudes through valve slot in rim and touches stem.
k. Regrooved tire except motor vehicles used solely in urban or suburban service (see exception 393.75 (e))
l. Boot, blowout patch or other ply repair.
m. Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure.
n. Tire is flat or has noticeable (e.g., can be heard or felt) leak.
o. So mounted or inflated that it comes in contact with any part of the vehicle.

FMCSR Inspection
Item: Tires (all other)
Help Screen #7B

Inspect for:

a. Worn spot that exposes ply or cord through the tread.
b. Tread cuts, fabric break, snags or sidewall cracks.
c. Visible bumps, bulges, or knots.
d. Tread wear less than 2/32" in any two adjacent major grooves at one location.
e. Tire inflation.
f. Spare tire secured to vehicle.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Weight carried exceeds tire load limit. This includes overloaded tire resulting from low air pressure.
b. Tire is flat or has noticeable (e.g., can be heard or felt) leak.
c. Has body ply or belt material exposed through the tread or sidewall.
d. Has any tread or sidewall separation.
e. Has a cut where ply or belt materials is exposed.
f. So mounted or inflated that it comes in contact with any part of the vehicle. (This includes a tire that contacts its mate.)
g. Is marked "Not for highway use" or otherwise marked and having like meaning.
h. With less than 2/32 inch tread when measured at any point on a major tread groove.

FMCSR Inspection
Item: Wheel Assembly
Help Screen #8

Inspect for:

a. Defective or bent rim flanges, loose, missing or damaged bolts, nuts, studs or lugs.
b. Defects and cracks that may impair safe mounting and proper retention of tires.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Loose, missing, or damaged wheel studs, bolts, nuts, or lugs.
b. Any part of the wheel bent, cracked, rewelded, or damaged so as to affect safe operation of the vehicle.
c. Wheel nuts, studs, and clamps which are loose, broken, missing, or mismatched. Adequate thread engagement is imperative. Stud and nut threads on wheel lugs must engage completely through the entire threaded portion of the nut.
d. Rims and rings which are mismatched, bent, sprung, or otherwise damaged. Check for evidence of rim slippage - this is an indication of wear of loose nuts.
e. Disc wheels with elongated bolts, holes, or cracks between hand holes or stud holes, or both.
f. Cast wheels with cracks, evidence of wear in the clamp area, or both.
g. Rims have defects or cracks to the extent that they impair the safe mounting and proper retention of tires.
h. Any wheel cannot be securely fastened to the hub of the vehicle.
i. On motorcycles and motor-driven cycles, any spokes are bent, loose, broken, or missing.

FMCSR Inspection
Item: Exhaust System
Help Screen #9

Inspect for:

a. Loose or leaking joints.
b. Holes, leaking seams or patches.
c. System or its elements not securely fastened to vehicle.
d. Any part of exhaust system passes through (or terminates beneath) the passenger compartment.
e. Tail pipe broken, pinched or eroded off allowing fumes to penetrate passenger compartment.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Vehicle is not equipped with a muffler.
b. Any joint is loose or leaking, including manifolds. Does not include minor leakage at exhaust control valve (manifold damper or heat riser valve).
c. Manifold is cracked or broken causing leakage.
d. Holes, leaking seams, or patches on the muffler, resonators, exhaust pipe, tail pipe or catalytic converter.
e. Exhaust system is not secured to the vehicle by mounting brackets designed for exhaust systems (wire is not acceptable).
f. Any brackets are loose, broken, or missing.
g. There is excessive vibration of exhaust line.
h. Any part of the exhaust system passes through the passenger compartment.
i. The tail pipe is broken, pinched, or eroded off to extent to allow exhaust fumes to penetrate into the interior of the passenger compartment.
j. The tail pipe fails to discharge exhaust from the rear, sides or top of the passenger compartment of the vehicle.

NOTE: Holes in the exhaust system made by the manufacturer for drainage are not cause for rejection. The tail pipe must direct the exhaust fumes out from under the passenger compartment.

FMCSR Inspection
Item: Emission System
Help Screen #10

Inspect for:

(Required on motor vehicles equipped by manufacturer beginning with 1968 models).

a. Examine visually for presence of system.
b. Plumbing is loose, broken, leaking, or improperly routed.
c. System has been altered, removed, or disconnected.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. The exhaust emission system has been removed.
b. The exhaust emissions system has been disconnected.
c. The plumbing or hoses are loose, broken, leaking, or improperly routed.
d. Air pump (air injection type) belt is loose, removed, cracked, frayed, or has pieces missing.
e. The exhaust emission system has been altered in any manner to make it ineffective.
f. The catalytic converter has been removed, leaking, or disconnected on a 1984 or later model vehicle.

FMCSR Inspection
Item: Beam Indicator
Help Screen #11

Inspect for:
(Required on all motor vehicles beginning with 1948 models, except motorcycles and motor-driven cycles).

a. Proper switching indication.
b. Visibility without glare.

NOTE: For more details, see Rules and Regulations Manual.

Reject if: (when required)

a. Vehicle not equipped with a beam indicator.
b. Improper switching indication.
c. Produces glaring light.
d. Inoperative for any reason.

FMCSR Inspection
Item: Tail Lamp
Help Screen #12

Inspect for:

a. Mounting, visibility and required number.
b. Color and condition of lens.
c. Wiring and visibility.
d. Connected to burn when headlamps burn.
e. Any lamp projects a white light to the and rear (except license plate lamp backup lamp).

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Required lamp or lamps are not present.
b. Lamp is not securely mounted to vehicle.
c. Lamp does not completely emit a red light plainly visible 1,000 feet to the rear.
d. Lamp lens is cracked, broken, painted, missing, discolored, or does not fit properly.
e. Wiring is shoddy or electrical connections are poor.
f. Lamp is not wired so as to be lighted when headlamps or auxiliary driving lamps are lighted.
g. Lamp is obstructed by any part of the body.
h. Lamp lens is not red color.
i. Lamps are not mounted on the same level and as widely spaced laterally as practicable.
j. Lamps are not mounted on rear of vehicle.
k. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection
Item: Stop Lamp
Help Screen #13

Inspect for:

a. Mounting, visibility and required number.
b. Color and condition of lens.
c. Actuation by application of service brakes.
d. Wiring and visibility.
e. Glaring or dazzling light.
f. Any lamps projects a white light to the rear (except license plate lamp and backup lamp).

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Required lamp or lamps are not present.
b. Lamps is not securely mounted to the vehicle.
c. Lamp does not emit a red or amber light which is actuated on application of the service (foot) brake.
d. Lamp is not visible from a minimum distance of 300 feet to the rear of the vehicle to which it is attached.
e. Lamp lens is cracked, broken, painted, missing, discolored, or does not fit properly.
f. Wiring is shoddy or electrical connections are poor.
g. Lamp projects a glaring or a dazzling light.
h. Lamp is not mounted on rear of vehicle.
i. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

NOTE: Lamps lenses cannot be repaired with repair tape or repair kit.

FMCSR Inspection
Item: License Plate Lamp
Help Screen #14

Inspect for:

a. Mounting and wiring.
b. Illumination of license plate.
c. Lighting when headlamps are lighted.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamp is not present.
b. Lamp is not securely mounted to the vehicle.
c. Lamp is not placed to illuminate with a white light the rear registration plate.
d. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
e. Lamp is not wired so as to be lighted when head lamps or auxiliary driving lamps are lighted.
f. Lamp emits a glaring light to the rear.
g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection
Item: Rear Reflectors
Help Screen #15

Inspect for:

a. Color, location and condition of lens.
b. Mounting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Reflector is not present.
b. Reflector is not of red color.
c. Reflector is not properly and/or securely mounted to the vehicle.
d. Reflector is cracked to the extent that the reflecting ability is impaired.
e. Reflector is discolored, deteriorated, or painted.
f. Visibility distance is not as required.
g. Requirements shown on lighting diagram are not met.

FMCSR Inspection
Item: Turn Signal Lamps
Help Screen #16

Inspect for:

a. Mounting, visibility and approved type.
b. Color and condition of lens.
c. Wiring, switch, telltale and proper indications.
d. Self-illumination and automatic flashing.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are required and not present.
b. Device is not securely mounted or properly located on the vehicle.
c. Device is not of a type meeting Department standards.
d. Lamp lens is cracked, broken, discolored, or missing.
e. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
f. Switch is not convenient to driver or indicator light does not operate.
g. Signal shows any color other than white or amber to the front, or signal shows any color other than red or amber to the rear.
h. Signal does not flash or is not operating properly.
i. Signal is not clearly visible to the front and to the rear of the vehicle.
j. Lens is cracked or broken to the extent that a portion of the lens is missing an/or separated, permitting light from the bulb to emit through the crack or break.

NOTE: Selector switch must lock in proper turn position when applied but need not cancel automatically.

FMCSR Inspection
Item: Headlamps
Help Screen #17

Inspect for:

a. Mounting and approved type.
b. Improper connections, switching and dimmer switch.
c. Cracked, broken or missing lens.
d. Wiring.
e. Physical damage that would obviously cause a headlight beam to fail to sufficiently illuminate the roadway ahead of the vehicle.
f. Dirt, moisture, contaminations or discolorations.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamp or lamp assembly is not securely fastened to the vehicle.
b. Lamp is improperly connected and does not light the proper filament for different switch positions.
c. Lamp lens is cracked, broken, discolored, or missing (Exception: Composite or halogen type lamps will not be rejected for being cracked unless the reflector material inside the lamp is discolored or deteriorated).
d. Lamp is not of a type meeting Department standards.
e. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
f. Lamp lens is rotated, upside down, canted, or is marked “right”, “left”, #1 or #2 and not appropriately installed.
g. Lamp fails to function properly in any manner.
h. Lamp has dirt or any contamination or discoloration inside or moisture except condensed moisture in composite head lamps or nonsealed beam halogen lamps.
i. Lamp switch or dimmer switch does not operate properly and is not convenient to the driver.
j. Foreign material placed on head lamp lens, such as shields, half of lens, paint, tape, etc., that interferes with the light beam of the lamp.
k. Vehicle is not equipped with headlamps as required.
l. Lamp can be moved easily by hand, due to a broken fender or loose support.
m. Lamp is missing.
n. Lens is other than clear (white).

o. Any filament in head lamps fails to burn except composite lamps with more than one bulb when both upper and lower beam burn when selected.
p. Wiring is dangling or connections are loose.
q. A good ground is not made by the lamp mounting.
r. Lamp is mounted on vehicle more than or less than prescribed mounting heights.
s. Headlamp is covered by any lens or cover located front of the headlamp which is any shade or color other than clear.
t. There is physical damage that would obviously cause a headlight beam to fail to illuminate the roadway ahead of the vehicle sufficiently.

FMCSR Inspection
Item: Clearance Lamps
Help Screen #18

Inspect for:

a. Mounting and location.
b. Required color.
c. Cracked, broken, or missing lens.
d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are not present.
b. Lamps are not securely mounted and properly located.
c. Lamps do not emit required color; lens or bulb painted.
d. Visibility requirements are not met.
e. Lenses are cracked, broken, discolored, or missing.
f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection Item:
Side Marker Lamps
Help Screen #19

Inspect for:

a. Mounting and location.
b. Required color.
c. Cracked, broken, or missing lens.
d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are not present.
b. Lamps are not securely mounted and properly located.
c. Lamps do not emit required color; lens or bulb painted.
d. Visibility requirements are not met.
e. Lenses are cracked, broken, discolored, or missing.
f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection
Item: Cab Lamps
Help Screen #20

Inspect for:

(Truck tractors only)

a. Mounting and location.
b. Required color.
c. Cracked, broken, or missing lens.
d. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are required and not present.
b. Lamp is not securely mounted and properly located.
c. Lamp does not emit required color; lens or bulb painted.
d. Lamp lens is cracked, broken, discolored, or missing.
e. Lamp is not visible from distance between 500 feet and 50 feet.
f. Wiring insulation is worn, rubbed bare, or shows any evidence of burning, short circuiting, or poor electrical connections.
g. Lens is cracked or broken to the extent that a portion of the lens is missing and/or separated, permitting light from the bulb to emit through the crack or break.

FMCSR Inspection
Item: Side Reflectors
Help Screen #21

Inspect for:

a. Color, location and condition of lens.
b. Mounting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Reflectors are not present.
b. Reflectors are not of the required color for its location on the vehicle.
c. Reflectors are not properly and/or securely mounted to the vehicle or if visibility distance is not as required.
d. Reflector is cracked to the extent that the reflecting ability is impaired.
e. Reflectors are discolored, deteriorated, or painted.
f. Requirements shown on lighting diagram are not met.

FMCSR Inspection
Item: School Buses
Help Screen #22

Inspect for:

a. School bus signs.
b. Fire extinguisher.
c. Warning lamps.
d. Convex crossover mirror.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. All equipment required by size, weight, or class of the vehicle does not meet requirement.
b. Signs are not present, readable, and of proper height.
c. Fire extinguisher is not of required capacity, proper type, or in good condition and properly located.
d. School bus RED signal lamps are not present, properly working, and in good condition.
e. Crossover mirror mounting is loose or will not adjust to different positions or will not hold firm after adjustment.
f. Crossover mirror offers unsafe interference with driver's forward vision or hides either front turn signal from view of oncoming driver.
g. Crossover mirror's reflective surface is cracked, broken, peeled, or tarnished, or has sharp edges.

NOTE: Some school buses may be equipped with eight warning signal lamps, four red and four amber, working in an automatic integrated system. This system of alternately flashing warning lamps will be accepted provided it has two red lamps on the front and two red lamps on the rear.

FMCSR Inspection Item:
Safety Guards Or Flaps
Help Screen #23

Inspect for:

a. Mounting, condition and location.
b. Construction and material.
c. Height and width.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Safety guard or flap is not present.
b. Safety guard or flap is not securely mounted.
c. Safety guard or flap is not as wide as the tire that it is protecting.
d. Safety guard or flap is split or torn to the extent that it is ineffective.
e. The bottom edge of safety guard or flap is more than twelve (12) inches from the surface of the roadway.

FMCSR Inspection
Item: Window Tinting or Coating
Help Screen #24

Inspect for:

a. Tinting on either side of the driver compartment.
b. Tint or coating extended more than 2" below the top of the windshield.
c. Tinting or coating has more than a 1" border at each side of windshield.
d. Tinting or coating or any other visor restricting materials are not above the top most portion of the steering wheel.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Tint or coating is extending more than 2 inches below the top of the windshield.
b. Tint or coating has more than 1 inch border at each side of windshield.
c. Tinting or coating and any vision restricting materials are not above the top most portion of the steering wheel.
d. No tinting is allowed on either side of the driver's compartment.

FMCSR Inspection
Item: ID Lamps
Help Screen #25

Inspect for:

a. Presence of lamps.
b. Mounting and location.
c. Required color.
d. Cracked, broken or missing lens.
e. Wiring and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are not present.
b. Not securely mounted and properly located.
c. Lamp does not emit proper color; lamp or bulb painted.
d. Lens cracked, broken, discolored or missing.
e. Wiring insulation is worn, rubbed bare or evidence of burning, short circuiting or poor connection.
f. Visibility requirements not met.
g. Lens is cracked or broken.

FMCSR Inspection Item:
Hazardous Warning Lamps
Help Screen #25

Inspect for:

a. Presence of lamps.
b. Mounting.
c. Required color.
d. Cracked, broken, or missing lens.
e. Visibility and wiring.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are not present.
b. Not securely mounted and properly located.
c. Lamp does not emit proper color; lamp or bulb painted.
d. Lens cracked, broken, discolored or missing.
e. Wiring insulation is worn, rubbed bare or evidence of burning, short circuiting or poor connection.
f. Visibility requirements not met.
g. Lens is cracked or broken.

FMCSR Inspection
Item: Backup Lamps
Help Screen #25

Inspect for:

a. Presence of lamps.
b. Mounting.
c. Required color.
d. Cracked, broken, or missing lens.
e. Visibility and wiring.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Lamps are not present.
b. Not securely mounted and properly located.
c. Lamp does not emit proper color; lamp or bulb painted.
d. Lens cracked, broken, discolored or missing.
e. Wiring insulation is worn, rubbed bare or evidence of burning, short circuiting or poor connection.
f. Visibility requirements not met.
g. Lens is cracked or broken.
h. Lamps are not activated properly when vehicle is in reverse.

FMCSR Inspection
Item: Coupling Devices
Help Screen #26

Inspect for:

a. Mounting.
b. Movement between components.
c. Fasteners missing or defective.
d. Any welds or metal cracks.
e. Pivot bracket pin missing.
f. Movement between pivot and bracket pin.
g. Any fore or aft stop missing or not securely attached.
h. Movement between slider bracket and slider base.
i. Horizontal movement between upper corner of 5th wheel halves.
j. Operating handle in closed or locked position.
k. King pin properly engaged.
l. All locking mechanism must be in good working order.
m. Any leaking air or hydraulic cylinder, hoses, or chambers.
n. Unattached or incapable of secure attachment (includes spare tire).
o. Any worn or repaired chains or cables or any safety devices missing.

NOTE: For more details, see rules and regulations manual.

Reject if:

1. Inspect fifth wheel for and reject if:
   a. Any fasteners missing or ineffective.
   b. Any movement between mounting components.
   c. Any mounting angle iron cracked or broken.
   d. Any fasteners missing or ineffective on mounting plates and pivot brackets.
   e. Any welds or parent metal cracked.
   f. More than 3/8 inch horizontal movement between pivot bracket pin and bracket.
   g. Pivot bracket pin missing or not secured.
   h. Any latching fasteners missing or ineffective on sliders.
   i. Any fore or aft stop missing or not securely attached.
   j. Movement more than 3/8 inch between slider bracket and slider base.
   k. Any slider component cracked in parent metal or weld.
   l. Horizontal movement between the upper and lower fifth wheel halves exceeds ½ inch on lower coupler.
   m. Operating handle not in closed or locked position.
   n. Kingpin not properly engaged.
   o. Separation between upper and lower coupler allowing light to show through from side to side.
   p. Cracks in the fifth wheel plate. Exceptions: Cracks in fifth wheel approach ramps and casting shrinkage crack in the ribs of the body of a cast fifth wheel.
   q. Locking mechanism parts missing, broken, or deformed to the extent the kingpin is not securely held.

2. Inspect Pintle Hooks for and reject if:
   a. Any missing or ineffective fasteners (a fastener is not considered missing if there is an empty hole in the device but not corresponding hole in the frame or vice versa).
   b. Mounting surface cracks extending from point of attachment (e.g., cracks in the frame at mounting bolt holes).
   c. Loose mounting.
   d. Frame cross member providing pintle hook attachment cracked.
   e. Cracks anywhere in pintle hook assembly.
   f. Any welded repairs to the pintle hook.
   g. Any part of the horn section reduced by more than 20 percent.
   h. Latch insecure.
3. Inspect Drawbar/Towbar Eye for and reject if:
   a. Any cracks in attachment welds.
   b. Any missing or ineffective fasteners.
   c. Any part of the eye reduced by more than 20 percent.
4. Inspect Drawbar/Towbar Tongue for and reject if:
   a. Ineffective latching mechanism.
   b. Missing or ineffective stop.
   c. Movement of more than 1/4 inch between slider and housing.
   d. Any leaking, air or hydraulic cylinders, hoses, or chambers, (other than slight oil weeping normal with hydraulic seals).
   e. Any cracks.
   f. Movement of 1/4 inch between subframe and drawbar at point of attachment.

5. Inspect Safety Devices for and reject if:
    a. Safety devices missing.
    b. Unattached or incapable of secure attachment.
    c. Chains and hooks.
        1) Worn to the extent of a measurable reduction in link cross section.
        2) Improper repairs including welding, wire, small bolts, rope and tape.
    d. Cable
        1) Kinked or broken cable strands.
        2) Improper clamps or clamping.
6. Inspect Saddle-Mounts for and reject if:
    a. Any missing or ineffective fasteners.
    b. Loose mountings.
    c. Any cracks or breaks in a stress or load bearing member.
    d. Horizontal movement between upper and lower saddle-mount halves exceeds 1/4 inch.

FMCSR Inspection
Item: Fuel System
Help Screen #27

Inspect for:

a. Visible leaks.
b. Filler cap presence.
c. Properly mounted fuel tank.
d. LPG decal.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Visible leaks.
b. Filter cap missing.
c. Fuel tank not securely mounted.
d. No valid Liquefied Petroleum Gas Tax Decal Issued by the State Comptroller for LPG powered vehicles.

FMCSR Inspection
Item: Suspension System
Help Screen #28

Inspect for:

a. Any cracked broken, missing or loose parts on any part of the suspension system.
b. Deflated air suspension.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. U-bolt, spring hanger or other axle parts are cracked broken, loose or missing.
b. Any leaf spring assembly leaves broken or missing.
c. Coil spring broken.
d. Rubber spring missing.
e. Any leaves displaced that could cause contact with a tire, rim, brake drum, or frame.
f. Broken torsion bar spring.
g. Deflated air suspension.
h. Torque, radius, or tracking component cracked, loose, broken or missing.

FMCSR Inspection
Item: Frame
Help Screen #29

Inspect for:

a. Any part of frame member is cracked, broken loose or sagging.
b. Any loose or missing fasteners to any body of mechanical part.
c. Body or frame contact with tire or wheel assembly.
d. Any missing or non-engaged locking pins or adjustable axle assemblies.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Any part of frame member is cracked, broken, loose, or sagging.
b. Fasteners attaching the engine, transmission, steering gear, suspension, body parts and fifth wheel loose or missing.
c. Any condition that causes the body or frame to be in contact with a tire or wheel assembly.
d. Locking pins missing or not engaged on adjustable axle assemblies.

FMCSR Inspection
Item: Commercial Windshield
Help Screen #30

Inspect for:

a. Cracked or damaged.
b. Tinting and visibility.

NOTE: For more details, see Rules and Regulations Manual.

Reject if:

a. Any crack over 1/4 inch wide.
b. Any damaged area of 3/4 inch or more in diameter.
c. Damage area is closer than 3 inches to any other damaged area.
d. Any crack less than 1/4 inch wide intersecting with any other crack.

Appendix E

Rejection Receipt

VEHICLE INSPECTION REJECTION RECEIPT

Date _____ Vehicle Make_____ Model year _____

Vehicle License #_____ Inspection Station#_____

Inspection Station Name_____

REJECTED FOR DEFECTIVE

Turn Signals - Mounting, operation, and approved type

Window Tinting and Sunscreening - Tint or Coating out of Specifications

Turn Signal Switch and Indicator Lamp - Switch accessible & locks in position

Emissions System - Excessive Emissions (see VIR)

Gas Cap Test - Fails Pressure Test

EXPLAIN REJECTION FULLY: (Inspector's explanation goes here)_____

_____

_____

_____

_____

_____

_____

Certified Inspector Making Inspection: _____

THIS IS NOT A PERMIT TO DRIVE A DEFECTIVE VEHICLE OR TO DRIVE A VEHICLE WITHOUT A CURRENT VALID INSPECTION CERTIFICATE.

Fee Paid $_____

VI-7(rev. 2000) Texas Department of Public Safety

Appendix F

Inspection Log Help Screens

Help Screens
for the VI - 8B Inspection Log

(Reserved)

Appendix G

Inspection Log Format

Format for
VI - 8B Inspection Log

```
                    TEXAS DEPARTMENT OF PUBLIC SAFETY
                     VEHICLE INSPECTION STATION LOG
                   NANNNNN  EEEEEEEEEEEEEEEEEEEEEEEE
                     WEEK ENDING, SATURDAY, MMDDYY
-------------------------------------------------------------------------------
NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
    FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
    $9,999.99  INSPECTOR: EEEEEEEEEEEEEEEEEE _________________________________

                 AUDITED BY AAAAAAAAAAAAAAA ON MMDDYYYY @ HHMM
-------------------------------------------------------------------------------

STATION REPRESENTATIVE: ____________________________________________  PAGE NN OF NN

*****************************************************************************************
```

N = Numeric Character
A = Alpha Character
E = Either Alpha or Numeric Character
MM = Month (Date)
DD = Day (Date)
YY = Year (Date)
VOID = Void Indicator
YYYY = Year including century (Vehicle Year Model)
$9,999.99 = Cost/Fee

****

Header Fields (Top to Bottom, Left to Right)

Line 1 (Centered)

No Variable Fields
Text: "**TEXAS DEPARTMENT OF PUBLIC SAFETY**"

Line 2 (Centered)

No Variable Fields
Text: "**VEHICLE INSPECTION STATION LOG**"

Line 3 (Centered)

Two Variable Fields: Station Number and Station Name
Field #1: Station Number - Characters 7; ***NANNNNN***
Field #2: Station Name - Characters 25; ***EEEEEEEEEEEEEEEEEEEEEEEEE***

Line 4 **(Centered)**

One Variable Field
Text: "**WEEK ENDING, SATURDAY**"
Field #1: Date - Characters 6; ***MMDDYY***

Line 5

No Variable Fields

Text: "----------"

Record Fields (Top to Bottom, Left to Right)

Line 1

One Counter Field, Ten Variable Fields, No Text

Counter Field: Record Number - Characters 3; ***NNN*** (Sequentially numbered beginning with 001 for each week, include leading zeroes).

Field #1: Date of Inspection - Characters 5; ***MM/DD***

Field #2: Void Indicator - Characters 4; ***AAAA*** (Read ***VOID, MISS, or REPL*** if cert_cond field is set to "V", "M", or "R", respectively, blank and strip if cert_cond is blank).

Field #3: Type of Test - Characters 1; ***A***

Field #4: Certificate or Decal Number - Characters 9; ***ANNNNNNNN***

Field #5: VI-30 Number - Characters 10; ***NNNNNNNNNN***

Field #6: Vehicle Registration Number - Characters 8; ***EEEEEEEE***

Field #7: Vehicle Identification Number - Characters 17; ***EEEEEEEEEEEEEEEEE***

Field #8: Vehicle Year Model - Characters 4; ***NNNN***

Field #9: Vehicle Make - Characters 4; ***AAAA***

Field #10: Odometer Reading - Characters 6; ***NNNNNN***

Line 2 (Begin at column 5)

Two Variable Fields with Dependant Text

Text: "**FAIL:** " (Should only appear if there are fail codes to display)

Field #1: Fail Codes - Characters up to 4 with separators; NNA/... (Maximum field length: 30 characters)

Text: "**REPAIR:** " (Should only appear if there are repair codes to display)

Field #2: Repair Codes - Characters up to 4 with separators; NNA/... (Maximum field length: 30 characters)

If there are no fail or repair codes to display this line should be left blank and stripped from the record.

Line 3 (Begin at column 5)

Two Variable Fields with Text

Field #1: Cost - Characters 9; ***$9,999.99***

Text: " **INSPECTOR:** "

Field #2: Inspector Driver License Number - Characters 20; ***EEEEEEEEEEEEEEEEEEEE***

Text: " _____"

There should be a blank line inserted after each record to separate them from one another, unless it is the last record on the page. There should be no partial records on a page. If it will not fit on the page, the whole record should be printed on the next page.

Footer Fields (Top to Bottom, Left to Right)

Line 1

No Variable Fields
Text: "**----------**"

Line 2

To be left Blank

Line 3

Two Counter Fields with Text
Text: "**STATION REPRESENTATIVE:**
_____ PAGE "
Counter Field #1: Page Number - Characters 2; ***NN***
Text: " **OF** "
Counter Field #2: Total Number of Pages - Characters 2; ***NN***

TEXAS DEPARTMENT OF PUBLIC SAFETY
VEHICLE INSPECTION STATION LOG
NANNNNN EEEEEEEEEEEEEEEEEEEEEEEE
WEEK ENDING, SATURDAY, MMDDYY

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

AUDITED BY AAAAAAAAAAAAAA ON MMDDYYYY @ HHMM

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

NNN MM/DD VOID A ANNNNNNNN NNNNNNNNNN EEEEEEEE EEEEEEEEEEEEEEEE YYYY AAAA NNNNNN
FAIL: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE REPAIR: EEEEEEEEEEEEEEEEEEEEEEEEEEEEE
$9,999.99 INSPECTOR: EEEEEEEEEEEEEEEEEEE _____

STATION REPRESENTATIVE: _____ PAGE NN OF NN

Appendix H

Inspection Certificate Help Screens

(Reserved)

Appendix I

File Layout

Appendix I

FILE LAYOUT
(Subject to Change based on
EPA Guidance)

The following terms are used in describing the files found in this appendix.

TERM	DESCRIPTION
NUM (X)	The field is X bytes long and can contain only number characters "0" - "9" and any fixed characters specified in the format description. Number fields will be filled.
CHAR(X)	The field is X bytes long and can contain any alphanumeric character unless otherwise specified. Character fields are left justified and filled with spaces.
: . / -	These are fixed characters which are always placed in the same place within the field as indicated in the format description.

A term will be followed by a format description which indicated any fixed character location. For example the format description HH:MM indicates a fixed decimal point location with '.' being located in the 4th byte of the field. An "e" in the left margin indicated that the field contains safety and emissions information. An "s" in the left margin indicated that the field contains safety and emissions information. The offsets for each field are in the left margin listed prior to the e's and s's.

All records must be prepared by first blank filling them. All numeric data fields must be prepared by zero filling them.

When a new floppy disk or equivalent storage media is initialized by the auditor, the following hard disk files will be copied to the floppy disk. The purpose of backing up the data files to the floppy disk or equivalent storage media is to allow analyzers to be exchanged.

<u>HARD DISK FILES COPIED TO FLOPPY</u>

STATION.DAT
INSPECTR.DAT
REINSPEC.DAT
CAL.DAT
AUDITGAS.DAT
AUDITNOT.DAT
AUDITLOG.DAT
LOCKOUT.DAT
PERFORM.DAT

STATION.DAT This is both, hard disk and floppy disk/other equivalent storage media based file, assessed through the audit screen, containing data specific to the individual station. Record length is 512 bytes.

0,e	STATION_NUM	CHAR(7)	Entered by the DPS under the audit menu.
7,e	ANALYZER_NUM	CHAR(8)	Entered by the DPS under the audit menu.
15,e	STATION_NAME	CHAR(8)	Entered by the DPS under the audit menu.
40,e	ST_ADDRESS	CHAR(20)	The street address of the station.
60,e	CITY	CHAR(13)	The city in which the station is located.
73,e	ZIP	CHAR(10)	The zip code of the station.
83,e	STAT_TX_PHONE	CHAR(12)	The analyzer phone number that is tied to the analyzer XXX-XXX-XXXX.
95,e	STAT_PHONE	CHAR(12)	The station's telephone number.
107,e	STAT_EXP_DATE	NUM(8)	(MMDDYYYY)
115,e	SAFE_STATION_TYPE	CHAR(1)	Default to "P" – "Public" Set to "F" –"Fleet" or "G" – "Government" by state representative under audit
116,e	M-F_HR_OPEN	NUM(4)	(HHMM) Time the station opens Mondays-Fridays Value of positions one and two (hour) must not be greater than "24". Value of positions three and four (minute)must not be greater than "59".
120,e	M-F_HR_CLOSE	NUM(4)	(HHMM) Time the station closes Mondays-Fridays Value of positions one and two (hour) must not be greater than "24". Value of positions three and four (minute) must not be greater than "59".
124,e	SAT_HR_OPEN	NUM(4)	(HHMM) Time the station opens on Saturday. Value of positions one and two (hour) must not be greater than "24". Value of positions three and four (minute) must not be greater than "59".
128,e	SAT_HR_CLOSE	NUM(4)	(HHMM) Time the station closes on Saturday. Value of positions one and two (hour) must not be greater than "24". Value of positions three and four (minute) must not be greater than "59".

132,e	SUN_HR_OPEN	NUM(4)	(HHMM) Time the station opens on Sunday. Value of positions one and two (hour) must not be greater than “24”. Value of positions three and four (minute) must not be greater than “59”.
136,e	SUN_HR_CLOSE	NUM(4)	(HHMM) Time the station closes on Sunday. Value of positions one and two (hour) must not be greater than “24”. Value of positions three and four (minute) must not be greater than “59”.
140,e	COUNTY_CODE	CHAR(3)	The county where inspected.

Dallas - 057, 57_	Denton - 061, 61_	Parker - 184
El Paso - 071, 71_	Fort Bend - 079, 79_	Johnson - 126
Harris - 101	Galveston - 084, 84_	Ellis - 070, 70_
Collin - 043, 43_	Brazoria - 020, 20_	Kaufman - 129
Liberty - 146	Chambers - 036, 36_	Rockwall - 199
Tarrant - 220	Montgomery - 170	Bexar - 015, 15_
Waller - 237	Travis - 227	Comal - 046, 46_
Hays - 105	Williamson - 246	Bastrop - 011, 11_
Wilson - 247	Guadalupe - 094, 94_	Smith - 213
Nueces - 178	San Patricio - 205	Kleberg - 137
Milam - 166	Lee - 144	Bastrop - 011
Burnet - 027	Blanco - 016	Bell - 014
Other - 999	Out of State or Federal - 000	

NOTE: The VID will transmit county codes with values less that 100 in the following format: NN_, where the “_” represents a space. For example, the county code for Denton will be received as “61_”.

143,e	OBDII_ONLY	CHAR(1)	“Y” - OBD only station, do not allow any tailpipe inspections. “N” - Not an OBD only station, allow tailpipe inspections.
144,e	MAIL_ST_ADDRESS	CHAR(20)	The station or corporate office mailing address.
164,e	MAIL_CITY	CHAR(13)	The station or corporate office mailing address city.
177,e	MAIL_ZIP	CHAR(10)	The station or corporate office mailing address zip code.
187,e	EMAIL_ADDRESS	CHAR(50)	Email address of the station or corporate office.
237,e	ANALYZER_NO_EXT	CHAR(3)	Analyzer extension for Server/node solution, entered by the DPS under the audit menu.
240,e	SPACE	CHAR(270)	
510,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

SYSTEM.DAT This is both, hard disk and floppy disk/other equivalent storage media based file containing data specific to the individual station. Record length is 256 bytes.

0,e	OBDII_MODEL_YR	NUM(4)	Received from VID. Threshold model-year for OBD inspections on gas vehicles. If less than, do tailpipe. Otherwise, do OBD.
4,e	OBDII_FAIL_ST_DT	NUM(8)	(MMDDYYY)
12,e	MISFIRE_MON	CHAR(1)	OBD Readiness Monitor for engine Misfire "Y" - Yes, use as pass/fail criteria for OBD phase "N" - No, do not use as pass/fail criteria for OBD phase
13,e	FUEL_SYS_MON	CHAR(1)	OBD Readiness Monitor for Fuel System "Y" - Yes, use as pass/fail criteria for OBD phase "N" - No, do not use as pass/fail criteria for OBD phase
14,e	COMPR_COMPR_MON	CHAR(1)	OBD Readiness Monitor for the Comprehensive Components "Y" - Yes, use as pass/fail criteria for OBD phase "N" - No, do not use as pass/fail criteria for OBD phase
15,e	CATALYST_MON	CHAR(1)	OBD Readiness Monitor for Catalytic Convertor "Y" - Yes, use as pass/fail criteria for OBD phase "N" - No, do not use as pass/fail criteria for OBD phase
16,e	HEAT_CATALYST_MON	CHAR(1)	OBD Readiness Monitor for the Heated Catalytic Convertor "Y" - Yes, use as pass/fail criteria for OBD phase "N" - No, do not use as pass/fail criteria for OBD phase
17,e	EVAP_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Evaporative System "Y" - Yes, use as pass/fail criteria for OBD phase "N" - No, do not use as pass/fail criteria for OBD phase

18,e	SEC_AIR_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Secondary Air System “Y” - Yes, use as pass/fail criteria for OBD phase “N” - No, do not use as pass/fail criteria for OBD phase
19,e	AIR_COND_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Air Conditioner System “Y” - Yes, use as pass/fail criteria for OBD phase “N” - No, do not use as pass/fail criteria for OBD phase
20,e	OXYGEN_SENSOR_MON	CHAR(1)	OBD Readiness Monitor for the Oxygen Sensor “Y” - Yes, use as pass/fail criteria for OBD phase “N” - No, do not use as pass/fail criteria for OBD phase
21,e	HEAT_O2_SENS_MON	CHAR(1)	OBD Readiness Monitor for the Oxygen Sensor Heater “Y” - Yes, use as pass/fail criteria for OBD phase “N” - No, do not use as pass/fail criteria for OBD phase
22,e	EGR_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Exhaust Gas Recirculation (EGR) Valve “Y” - Yes, use as pass/fail criteria for OBD phase “N” - No, do not use as pass/fail criteria for OBD phase
23,e	THERMOSTAT_MON	CHAR(1)	OBD Readiness Monitor for the Thermostat (beginning with M/Y 2000) “Y” - Yes, use as pass/fail criteria for OBD phase “N” - No, do not use as pass/fail criteria for OBD phase
24,e	PCV_MON	CHAR(1)	OBD Readiness Monitor for the PCV Valve (beginning with M/Y 2002) “Y” - Yes, use as pass/fail criteria for OBD phase “N” - No, do not use as pass/fail criteria for OBD phase
25,e	SECXSEC_FLAG	CHAR(1)	“Y”- Yes, collect second-by-second data for this inspection.

			"N"- No, do not collect second-by-second data.
26,e	MAX_NOT_READY_NUM	NUM(2)	Maximum number of OBD readiness monitors that an be set to "not ready" during a valid OBD inspection.
28,e	MAX_NT_RDY_BGN_YR	CHAR(4)	YYYY- max number of readiness monitors applies to vehicles whose model-year is greater than or equal to the year contained in this field
32,e	MAX_NT_RDY_END_YR	CHAR(4)	YYYY- max number of readiness monitors applies to vehicles whose model-year is less than or equal to the year contained in this field
36,e	COUNTY_CODE	CHAR(3)	The county where inspected.

Dallas - 057, 57_	Denton - 061, 61_	Parker - 184
El Paso - 071, 71_	Fort Bend - 079, 79_	Johnson - 126
Harris - 101	Galveston - 084, 84_	Ellis - 070, 70_
Collin - 043, 43_	Brazoria - 020, 20_	Kaufman - 129
Liberty - 146	Chambers - 036, 36_	Rockwall - 199
Tarrant - 220	Montgomery - 170	Bexar - 015, 15_
Waller - 237	Travis - 227	Comal - 046, 46_
Hays - 105	Williamson - 246	Bastrop - 011, 11_
Wilson - 247	Guadalupe - 094, 94_	Smith - 213
Nueces - 178	San Patricio - 205	Kleberg - 137
Milam - 166	Lee - 144	Bastrop - 011
Burnet - 027	Blanco - 016	Bell - 014
Other - 999	Out of State or Federal - 000	

NOTE: The VID will transmit county codes with values less than 100 in the following format: NN_, where the "_" represents a space. For example, the county code for Denton will be received as "61_".

39,e	COUNTY_NAME	CHAR(15)	Name of corresponding Texas County
54,e	PRINT_LIRAP_APP	CHAR(1)	"Y" - Print the LIRAP application for vehicles that fail the emission inspection in this county. "N" – Do NOT print the LIRAP application for vehicles that fail the emission inspection in this county. "A" – Print the LIRAP for 1) vehicles that fail the emissions inspection and 2) for vehicles 10 years old and older that pass or fail the emissions inspection in this county. (In other words, model-years < 10 yrs and F, or model-years >= 10 yrs and P/F)
55,e	OBD_TESTING	CHAR(1)	"Y" - OBD inspections conducted in this county. "N" - OBD inspections not conducted in this county.

56,e	NON_COMM_2_TAILPIPE	CHAR(1)	"Y" - Yes, OBD non-comm may transition to tailpipe inspections "N" - No, OBD non-comm may not transition to tailpipe inspections. "R" - No, OBD non-comm may not transition to tailpipe inspections, vehicle is rejected, and not failed.
57,e	PGRM_ROLLING_YRS	CHAR(1)	"R" - use Rolling years coverage for emissions inspections. "F" - use Fixed model-year coverage for emissions inspections. "A" - limits are begin rolling year and fixed year Minimum. "B" - limits are end rolling year and fixed year Maximum.
58,e	PGRM_BGN_ROLLN_YR	NUM(2)	Calendar year minus this value equals largest model-year vehicle to be required to receive emissions inspection.
60,e	PGRM_END_ROLLN_YR	NUM(2)	Calendar year minus this value equals smallest model-year vehicle to be required to receive emissions inspection.
62,e	PGRM_FIXED_YR_MIN	CHAR(4)	Minimum model-year vehicle required to receive emissions inspection. If using rolling year, fixed yr will be left blank.
66,e	PGRM_FIXED_YR_MAX	CHAR(4)	Maximum model-year vehicle to be required to receive emissions inspection. If using rolling year, fixed yr will be left blank.
70,e	TSI_TESTING	CHAR(1)	"Y" - TSI inspections conducted in this county. "N" - TSI inspections not conducted in this county.
71,e	TSI_FAIL_ST_DT	NUM(8)	(MMDDYYYY)
79,e	TSI_BETA_DFLT	CHAR(1)	"S" - Safety and Gas Cap Result
80,e	ASM_BETA_DFLT	CHAR(1)	"S" - Safety and Gas Cap Result "T" - TSI Result, Safety Result, and Gas Cap Result
81,e	OBD_BETA_DFLT	CHAR(1)	"S" - Safety and Gas Cap Result "T" - TSI Result, Safety Result, and Gas Cap Result
82,e	DSL_OBD_BETA_DFLT	CHAR(1)	"S" - Safety and Gas Cap Result

83,e	ASM_TESTING	CHAR(1)	"Y" - ASM inspections conducted in this county. "N" - ASM inspections not conducted in this county.
84,e	ASM_FAIL_ST_DT	NUM(8)	(MMDDYYYY)
92,e	DSL_OBD_TESTING	CHAR(1)	"Y" - OBD inspections conducted on diesel vehicles in this county. "N" - OBD inspections not conducted on diesel vehicles in this county.
93,e	DSL_FAIL_ST_DT	NUM(8)	(MMDDYYYY)
101,e	DSL_ROLLING_YRS	CHAR(1)	"R" - use Rolling years coverage for emissions inspections. "F" - use Fixed model-year coverage for emissions inspections. "A" - limits are begin rolling year and fixed year Minimum. "B" - limits are end rolling year and fixed year Maximum.
102,e	DSL_BGN_ROLLN_YR	NUM(2)	Calendar year minus this value equals largest model-year vehicle to be required to receive emissions inspection.
104,e	DSL_END_ROLLN_YR	NUM(2)	Calendar year minus this value equals smallest model-year vehicle to be required to receive emissions inspection.
106,e	DSL_FIXED_YR_MIN	CHAR(4)	Minimum model-year vehicle required to receive emissions inspection. If using rolling year, fixed yr will be left blank.
110,e	DSL_FIXED_YR_MAX	CHAR(4)	Maximum model-year vehicle to be required to receive emissions inspection. If using rolling year, fixed yr will be left blank.
114,e	DSL_OBD_MAX_GVW	NUM(4)	"8500" - diesel vehicle below this value are OBD compliant.
118,e	DSL_NON_CMM_2_SAFE	CHAR(1)	"Y" - Yes, OBD non-comm may default to safety result. "N" - No, OBD non-comm may not default to safety result.
119,e	DSL_OBD_MODEL_YR	NUM(4)	Threshold Model-year for diesel vehicles. If greater than, do OBD inspection, if less than, do nothing.

123,e	HYBRID	NUM(4)	Minimum vehicle model-year to display hybrid question.
127,e	KEYLESS	NUM(4)	Minimum vehicle model-year to display question regarding factory installed remote engine start or keyless ignition start.
131,e	MAX_NTRDY_B_NUM	NUM(2)	Maximum number of OBD readiness monitors that can be set to "not ready" during a valid OBD inspection.
133,e	MAX_NTRDY_B_BGN_YR	CHAR(4)	YYYY-max number of readiness monitors applies to vehicles whose model-year is greater than or equal to the year contained in this field.
137,e	MAX_NTRDY_B_END_YR	CHAR(4)	YYYY-max number of readiness monitors applies to vehicles whose model-year is less than or equal to the year contained in this field.
141,e	LIRAP_NUM_A	CHAR(14)	LIRAP program number A. Format will be a 10 digit phone number listed as "(512)_239-2069" or "(800)_295-0414", with parenthesis, but without a leading "1". Please understand that the underscore, "_", in the mask represents a space, or blank.
155,e	LIRAP_NUM_B	CHAR(14)	LIRAP program number B. Format will be a 10 digit phone number listed as "(512)_239-2069" or "(800)_295-0414", with parenthesis, but without a leading "1". Please understand that the underscore, "_", in the mask represents a space, or blank.
169,e	NTRDY_FL	CHAR(1)	Y, N, "_",
170,e	STNDS	CHAR(1)	A, or "_" - Do not print the 10-yr message on the VIR, and do not print the obd msg 20. Please understand that the underscore, "_", in the mask represents a space, or blank. B - print the 10-yr message on the VIR, but not the obd msg 20. C - print the 10-yr message on the VIR, and the obd msg 20. D -print the obd msg 20, but not the 10-yr message

171,e	SKIP_CERT_DECAL	CHAR(1)	"N", or "_" - require certificate or decal number entry on all passing inspections "Y" - do not require certificate or decal number entry on all passing inspections
172,e	SKIP_VI30	CHAR(1)	"N", or "_" - request VI-30 number entry on all passing inspections "A" - do not request entry of the VI-30 number or VI-30 fee on passing inspections "Y" - do not request VI-30 number entry, but request VI-30 fee on passing inspections
173,e	MAX_EMISS_FEE_FL	CHAR(1)	"N", or "_" - No, do not activate maximum emissions test fee feature. "Y" - Yes, activate maximum emissions test fee feature.
174,e	MAX_EMISS_ONLY_FEE	NUM(5)	99.99 Maximum emissions fee amount allowed during an OBD inspection in HGB/DFW - $27.25, or an emissions inspection in Austin - $16.25 or El Paso - $14.25.
179,e	MAX_EMISS_ONLY_FEE2	NUM(5)	99.99 Maximum emissions fee amount for an ASM inspection in HGB/DFW - $27.25, or an emissions inspection in Austin - $16.25 or El Paso - $14.25.
184,e	KEYBOARD_ACC	CHAR(1)	"_" - allow inspector access code and auditor id number to be entered using keyboard "B" - requires inspector code access and auditor id number to be entered using the bar code scanner "C" - requires only inspector code access to be entered using the bar code scanner and auditor to use keyboard.
185, e	OBDHDGAS	CHAR(1)	"_" - do not apply light-duty OBD standards during OBD inspections on gasoline vehicles whose GVW is greater than 8,500 pounds. "Y" - apply light-duty OBD standards during OBD inspections on gasoline vehicles with GVW greater than 8,500 pounds. "Z" - apply light duty OBD standards during OBD inspections on gasoline vehicles with GVW between 8,501 and 14,000, inclusive.

186,e	SAFE_COMM	CHAR(1)	Number of communication attempts during a safety only inspection sequence. "0", "_" - no communication attempts. "1" - communicate at the end of the inspection.
187,e	GVW_2TIMES	CHAR(1)	"G" - require double blind entry of the GVW
188,e	HB2305CHG	CHAR(1)	"_" for no changes added. "A" for beta testing, add registration expiration date entries, and VIR changes (minus the box) "B" for live testing, add registration expiration date entries, VIR changes plus the box (1st year synch up), but no 90-day registration message "C" for live testing, add registration expiration date entries, VIR changes plus the box, and the 90-day registration message
189,e	LIRAP_020	CHAR(1)	"Y" if Brazoria County participates in the LIRAP program "N" if Brazoria County does not participate in the LIRAP program.
190,e	LIRAP_043	CHAR(1)	"Y" if Collin County participates in the LIRAP program "N" if Collin County does not participate in the LIRAP program.
191,e	LIRAP_057	CHAR(1)	"Y" if Dallas County participates in the LIRAP program "N" if Dallas County does not participate in the LIRAP program.
192,e	LIRAP_061	CHAR(1)	"Y" if Denton County participates in the LIRAP program "N" if Denton County does not participate in the LIRAP program.
193,e	LIRAP_071	CHAR(1)	"Y" if El Paso County participates in the LIRAP program "N" if El Paso County does not participate in the LIRAP program.
194,e	LIRAP_070	CHAR(1)	"Y" if Ellis County participates in the LIRAP program "N" if Ellis County does not participate in the LIRAP program.

195,e	LIRAP_079	CHAR(1)	"Y" if Fort Bend County participates in the LIRAP program "N" if Fort Bend County does not participate in the LIRAP program.
196,e	LIRAP_084	CHAR(1)	"Y" if Galveston County participates in the LIRAP program "N" if Galveston County does not participate in the LIRAP program.
197,e	LIRAP_101	CHAR(1)	"Y" if Harris County participates in the LIRAP program "N" if Harris County does not participate in the LIRAP program.
198,e	LIRAP_126	CHAR(1)	"Y" if Johnson County participates in the LIRAP program "N" if Johnson County does not participate in the LIRAP program.
199,e	LIRAP_129	CHAR(1)	"Y" if Kaufman County participates in the LIRAP program "N" if Kaufman County does not participate in the LIRAP program.
200,e	LIRAP_170	CHAR(1)	"Y" if Montgomery County participates in the LIRAP program "N" if Montgomery County does not participate in the LIRAP program.
201,e	LIRAP_184	CHAR(1)	"Y" if Parker County participates in the LIRAP program "N" if Parker County does not participate in the LIRAP program.
202,e	LIRAP_199	CHAR(1)	"Y" if Rockwall County participates in the LIRAP program "N" if Rockwall County does not participate in the LIRAP program.
203,e	LIRAP_220	CHAR(1)	"Y" if Tarrant County participates in the LIRAP program "N" if Tarrant County does not participate in the LIRAP program.
204,e	LIRAP_227	CHAR(1)	"Y" if Travis County participates in the LIRAP program "N" if Travis County does not participate in the LIRAP program.

205,e	LIRAP_246	CHAR(1)	"Y" if Williamson County participates in the LIRAP program "N" if Williamson County does not participate in the LIRAP program.
206,e	SPACE	CHAR(48)	
254,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

INSPECTR.DAT This is both hard disk and floppy based file accessed through the audit screen containing information about the stations inspectors. Record length is 512 bytes.

0,e	INSPECTOR_NUM	CHAR(20)	Number assigned by the DPS through the audit screen.
20,e	INSPECTOR_LNAME	CHAR(15)	Inspector's last name.
35,e	INSPECTOR_FNAME	CHAR(10)	Inspector's first name.
45,e	ACCESS_CODE	CHAR(5)	This is the access code/password for the inspector which is verified prior to each inspection.
50,e	INSP_EXP_DATE	NUM(8)	(MMDDYYYY) The date the inspector's license expires. This is checked along with the access_code prior to each inspection.
58,e	INSP_LOCKOUT_FLAG	CHAR(1)	This flag is set to prevent an individual inspector from performing inspections. Set to "Y" automatically by the analyzer or manually from the audit screen. Set to "N" manually from the audit screen or automatically by electronic transmission.
59,e	ASM_ESP	CHAR(1)	Inspector is certified to do ASM inspections on an ESP analyzer. "Y" - certified, "N" - not certified
60,e	ASM_SNAP	CHAR(1)	Inspector is certified to do ASM inspections on an Snapon analyzer. "Y" - certified, "N" - not certified
61,e	ASM_SPX	CHAR(1)	Inspector is certified to do ASM inspections on an SPX analyzer. "Y" - certified, "N" - not certified
62,e	ASM_WW	CHAR(1)	Inspector is certified to do ASM inspections on an Worldwide analyzer. "Y" - certified, "N" - not certified
63,e	PIN_NO	CHAR(5)	Encrypted access number known only by the inspector.
68,e	SPACE	CHAR(442)	
510,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

VEHICLE.DAT This is both a hard disk and floppy, or equivalent media storage, based file containing all information for each inspection conducted. The analyzer must automatically purge any record in this file older than 180 days. Record length is 1024 bytes.

0,e	VERSION	CHAR(4)	XXXX This is the software version in use.
4,e	TEST_DATE	NUM(8)	(MMDDYYYY) This is the date of the inspection. First two positions of test_date must be between "01" and less than "12" (inclusive) Date (positions 2 and 3) must not be greater than the number of days in a given month Date (positions 2 and 3) must not be greater than 29 if the given month is February in leap year
12,e	TEST_START_TIME	NUM(6)	(HHMMSS) This is the time the inspection started. Value of test_start_time positions one and two (hour) must not be greater than "24". Value of test_start_time positions three and four (minute) must not be greater that "59". Value of test_start_time positions five and six (second) must not be greater than "59".
18,e	TEST_END_TIME	NUM(6)	(HHMMSS) This is the time the inspection ended.
24,e	EMISS_TEST_TYPE	CHAR(1)	Set the EMISS_TEST_TYPE field to "1" if the inspector conducts an OBD emissions inspection, "2" if the inspector conducts a TSI emissions inspection, or "3" if the inspector conducts an ASM emissions inspection. Set to "0" if the inspector conducts a Special Certificate Replacement Inspection or "4" if the inspector conducts an OBD emissions inspection on a diesel-powered vehicle that transitions and doesn't conduct an emissions inspection.
25,e	TEST_TYPE	CHAR(1)	If the inspector selects one of the following choices from the main menu: 1 - Safety & Emission Inspection 2 - Safety Only 3 - Emissions Only 4 - Reinspection 5 - Reprint The analyzer will set TEST_TYPE field to the following:

1 - “A” 5 - “K”
2 - “H”

If 3 - Emissions Only is selected, the analyzer must prompt the inspector to indicate if the inspection is a:

1 - required emission only test (decal)
2 - voluntary test
3 - test on resale
4 - remote sensing request (decal)

The analyzer will set TEST_TYPE field to the following:

1 - “O” 3 - “C”
2 - “I” 4 - “B”

The analyzer will default/highlight selection number 1 in all of the scenarios.

NOTE: The tests and their corresponding letters are cross-referenced below:

TEST_TYPE

A) Emission & Safety Test
B) Remote Sensing Request (Decal)
P) VI-30 Only
H) Safety Only Test
I) Voluntary Emissions Test
K) Reprint
O) Required Emissions Only Test (Decal)

SPECIAL_TEST

C) Test on Resale
D) Accelerated Vehicle Retirement Test
E) Dispute Test
F) Not currently in use
G) Federal Test
A) Special Certificate Replacement Inspection
J) Waiver - Individual Vehicles
L) Waiver - Low Income Time Extension
M) Parts Availability Time Extension
N) Other (Special Test)
P) Waiver - Low Mileage

26,e SPECIAL_TEST CHAR(1) Reserved for character mentioned above. Choice “G” is reserved for “federal tests”. Choice “D” and choice “E” are reserved for accelerated vehicle retirement tests, tests, and arbitration/dispute tests, respectively. Choice “J” is reserved for “individual vehicle waiver tests. Choice “L”, “M”, and “N”, are reserved for “low income time extension tests”, “parts availability time extension tests”, and “other special tests”, respectively. Choice “C” is reserved for Test on Resale tests. Otherwise, left blank.

27,e	VID_ID_NUM	CHAR(11)	Sent by VID.
38,e	EMISS_INIT_TEST	CHAR(1)	After an inspection has been completed, the analyzer will set INITIAL_TEST_TYPE to "I" for initial inspection. After an reinspection has been completed, the analyzer must set INITIAL_TEST_TYPE to "R" for reinspection inspection. Otherwise, left blank.
39,e	SAFE_INIT_TEST	CHAR(1)	If there is no previous inspection for this vehicle, or the previous inspection was more than sixteen days prior to this inspection, set the SAFE_INIT_TEST field to "I". If the previous inspection was less than sixteen days prior to this inspection, set the SAFE_INIT_TEST field to "R". Otherwise, left blank.
40,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
47,e	STATION_NAME	CHAR(25)	Entered by the DPS under the audit menu.
72,e	ANALYZER_NUMBER	CHAR(8)	This field must be the analyzer number from the STATION.DAT file.
80,e	INSPECTOR_NUM	CHAR(20)	This is the inspector number from INSPECTR.DAT associated with the inspector's access code.
100,e	INSPECTOR_LNAME	CHAR(15)	Inspector's last name.
115,e	INSPECTOR_FNAME	CHAR(10)	Inspector's first name.
125,e	MODEL_YEAR	CHAR(4)	YYYY Model-year of the vehicle.
129,e	COUNTY_CODE	CHAR(3)	The county where inspected.

Dallas - 057	Denton - 061	Parker - 184
El Paso - 071	Fort Bend - 079	Johnson - 126
Harris - 101	Galveston - 084	Ellis - 070
Collin - 043	Brazoria - 020	Kaufman - 129
Liberty - 146	Chambers - 036	Rockwall - 199
Tarrant - 220	Montgomery - 170	Bexar - 015
Waller - 237	Travis - 227	Comal - 046
Hays - 105	Williamson - 246	Bastrop - 011
Wilson - 247	Guadalupe - 094	Smith - 213
Nueces - 178	San Patricio - 205	Kleberg - 137
Milam - 166	Lee - 144	Bastrop - 011
Burnet - 027	Blanco - 016	Bell - 014
Other - 999	Out of State or Federal - 000	

132,e	VIN_ID_NUM	CHAR(17)	The VIN of the vehicle.
149,e	VIN_FLAG	CHAR(1)	If DPS check digit algorithm indicates bad VIN, set to “B”-bad. If not, leave blank.
150,e	LICENSE_NUM	CHAR(8)	License plate number of the vehicle or dealer number if unlicensed.
158,e	LICENSE_TYPE	NUM(1)	This is type of plate. 1 - Texas Plate 2 - No Plate 3 - Out of state 4 - Exempt (State) 5 - Exempt (Federal) 6 - Dealer Plate (Metal/Hard) 7 - Temporary Sticker (Paper) 8 - Other After selecting number “2” or “8”, the license_num field should be set to “V” followed by the last seven characters of the VIN. The default for this field is number “1”.
159,e	INJECT_CARB	CHAR(1)	Injection/carburetion. “F” - Fuel Injection “C” - Carburetion “O” - Other Otherwise, left blank.
160,e	VEHICLE_TYPE	CHAR(1)	“P” - Passenger Car/Station Wagon “T” - Truck/Van/Bus/Sports Utility Vehicle “M” - Motor home “B” - Bus “C” - Motorcycle “L” - Trailer
161,e	GVW_TYPE	NUM(1)	GVW class. “1” - Light “2” - Heavy Otherwise, zero (0) filled.
162,e	GVW_ACTUAL	NUM(5)	Actual GVW rating. Otherwise, left blank.
167,e	MAKE	CHAR(4)	Vehicle make selected from possible list using NCIC make definitions.
171,e	MODEL	CHAR(20)	Vehicle model type is selected based on the vehicle make entry.

191,e	ENGINE_SIZE	CHAR(5)	Values converted to cubic centimeters by the analyzer. Otherwise, left blank.
196,e	CYLINDERS	CHAR(2)	The number of cylinders, “1”-”16”. “R” - Rotary This entry is made by the inspector if the vehicle inspected is equipped by a rotary engine. Otherwise, left blank.
198,e	TRANSMISSION	CHAR(1)	Transmission type. “A” - Automatic “M” - Manual Otherwise, left blank.
199,e	ODOMETER	NUM(6)	The odometer reading excluding tenths.
205,e	FUEL_TYPE	CHAR(1)	The fuel type “G” - Gas “D” - Diesel “B” - Bi-fueled (Dual Fueled) “A” - Alternative Fuel (Propane, CNG, LNG, etc.) “N” - None Otherwise, left blank.
206,e	IGNITION	CHAR(1)	The ignition type. “C” - Conventional “D” - Distributorless “Q” - Quad4 “E” - Keyless Start with Conventional Ignition “F” - Keyless Start with Distributorless Ignition “R” - Keyless Start with Quad4 Otherwise, left blank.
207,e	DUAL_EXHAUST	CHAR(1)	“Y” for Yes or “N” for No. Otherwise, left blank.
208,e	PRE-TUNE	CHAR(1)	“Y” for Yes or “N” for No in response to the question “Was pre-tuning done on this vehicle prior to this inspection?” Otherwise, left blank.
209,s	SAFE_TEST_TYPE	CHAR(1)	Safety Inspection Type. The inspector will select “A” through “N” excluding “I” from the keyboard. If the selection is not “G” or “K”, then fields SAFE_25 through SAFE_30 will be left blank. Valid entries for this field are “A” through “N”, excluding “I”. Otherwise, left blank.

210,s	SAFE_1	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair (B, D, G, I, K, M, Q, T, V, X, Z) “N” - NA Acceptable entries are (A, B, P, F, R, N) Otherwise, left blank.
211,s	SAFE_2	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair (B, D, G, I, K, M, Q, T, V, X, Z) “N” - NA Acceptable entries are (A, B, C, D P, F, R, N) Otherwise, left blank.
212,s	SAFE_3	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, P, F, R, N)
213,s	SAFE_4	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, E, G, H, I, J, K, P, F, R, N)
214,s	SAFE_5	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, E, G, P, F, R, N)
215,s	SAFE_6A	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, E, G, H, I, J, K, L, M, O, P, Q, S, T, U, V, F, R, N)
216,s	SAFE_6B	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA

			Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
217,s	SAFE_7	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
218,s	SAFE_7A	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, E, G, P, F, R, N)
219,s	SAFE_7B	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, E, G, P, F, R, N)
220,s	SAFE_8	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, E, G, P, F, R, N)
221,s	SAFE_9	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, E, G, P, F, R, N)
222,e	SAFE_10A	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (P, F, R, N)
223,e	SAFE_10B	CHAR(1)	“P” - Pass

			“F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (P, F, R, N)
224,e	SAFE_10C	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (P, F, R, N)
225,e	SAFE_10D	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (P, F, R, N)
226,e	SAFE_10E	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (P, F, R, N)
227,e	SAFE_10F	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (P, F, R, N)
228,s	SAFE_11	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
229,s	SAFE_12	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
230,s	SAFE_13	CHAR(1)	“P” - Pass “F” - Fail

			“R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
231,s	SAFE_14	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
232,s	SAFE_15	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
233,s	SAFE_16	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
234,s	SAFE_17	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, E, G, H, I, J, K, P, F, R, N)
235,s	SAFE_18	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
236,s	SAFE_19	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
237,s	SAFE_20	CHAR(1)	“P” - Pass “F” - Fail

			“R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
238,s	SAFE_21	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
239,s	SAFE_22A	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Acceptable entries are (A, B, C, D, P, F, R, N)
240,s	SAFE_22B	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
241,s	SAFE_22C	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (P, F, R, N)
242,s	SAFE_22D	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
243,s	SAFE_23	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
244,s	SAFE_24	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA

			Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)	
245,s	SAFE_25	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (P, F, R, N)	
246,s	SAFE_26	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, P, F, R, N)	
247,s	SAFE_27	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)	
248,s	SAFE_28	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, P, F, R, N)	
249,s	SAFE_29	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (E, G, P, F, R, N)	
250,s	SAFE_30	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, P, F, R, N)	
251,e	PRI_CURB_IDLE_CO	NUM(5)	XX.XX	Otherwise, zero filled.
256,e	PRI_CURB_IDLE_HC	NUM(4)	XXXX	Otherwise, zero filled.
260,e	PRI_CURB_IDLE_CO2	NUM(4)	XX.X	Otherwise, zero filled.

264,e	PRI_CURB_IDLE_O	NUM(4)	XX.X	Otherwise, zero filled.
268,e	PRI_CURB_IDLE_RPM	NUM(4)	XXXX	Otherwise, zero filled.
272,e	PRI_HIGH_SPEED_CO	NUM(5)	XX.XX	Otherwise, zero filled.
277,e	PRI_HIGH_SPEED_HC	NUM(4)	XXXX	Otherwise, zero filled.
281,e	PRI_HIGH_SPEED_CO2	NUM(4)	XX.X	Otherwise, zero filled.
285,e	PRI_HIGH_SPEED_O2	NUM(4)	XX.X	Otherwise, zero filled.
289,e	PRI_HIGH_SPEED_RPM	NUM(4)	XXXX	Otherwise, zero filled.
293,e	ALT_CURB_IDLE_CO	NUM(5)	XX.XX	Otherwise, zero filled.
298,e	ALT_CURB_IDLE_HC	NUM(4)	XXXX	Otherwise, zero filled.
302,e	ALT_CURB_IDLE_CO2	NUM(4)	XX.X	Otherwise, zero filled.
306,e	ALT_CURB_IDLE_O2	NUM(4)	XX.X	Otherwise, zero filled.
310,e	ALT_CURB_IDLE_RPM	NUM(4)	XXXX	Otherwise, zero filled.
314,e	ALT_HIGH_SPEED_CO	NUM(5)	XX.XX	Otherwise, zero filled.
319,e	ALT_HIGH_SPEED_HC	NUM(4)	XXXX	Otherwise, zero filled.
323,e	ALT_HIGH_SPEED_CO2	NUM(4)	XX.X	Otherwise, zero filled.
327,e	ALT_HIGH_SPEED_O2	NUM(4)	XX.X	Otherwise, zero filled.
331,e	ALT_HIGH_SPEED_RPM	NUM(4)	XXXX	Otherwise, zero filled.
335,e	DILUTION	NUM(4)	XX.X	Otherwise, zero filled.
339,e	DILUTION_PF_FLAG	CHAR(1)	“P” - Pass “F” - Fail Otherwise, left blank.	
340,e	DILUTION_LIMIT	NUM(4)	The applicable dilution criteria for the vehicle. Otherwise, zero filled.	
344,e	HC_CUTPOINT_HI	NUM(4)	The applicable HC cutpoint/standard for the vehicle. Otherwise, zero filled.	
348,e	CO_CUTPOINT_HI	NUM(5)	The applicable CO cutpoint/standard for the vehicle.	
353,e	RPM_BYPASS	CHAR(1)	“B” - Bypass	

			If the rpm bypass selection is selected, then fill this field with the letter “b”. “H” - Hybrid was selected for an OBD inspection. Otherwise, left blank.
354,e	TIMEOUT_FLAG	CHAR(1)	“Y” - Yes “N” - No If the emissions inspection ended due to time out conditions, set TIMEOUT_FLAG to “Y”. Otherwise, set to “N”. If no emissions inspection, left blank.
355,e	HC_PF_FLAG	CHAR(1)	“P” - Pass “F” - Fail Otherwise, left blank.
356,e	CO_PF_FLAG	CHAR(1)	“P” - Pass “F” - Fail Otherwise, left blank.
357,s	INSUR_EXP_DT	NUM(8)	(MMDDYYYY) This is the expiration date of the vehicle owner’s proof of insurance. Otherwise, zero filled.
365,s	SPACE	CHAR(7)	
372,s	VI30A_FLAG	CHAR(1)	“Y” - Yes, indicates if VI-30 is applicable. “N” - No Otherwise, left blank.
373,s	SAFETY_PF_FLAG	CHAR(1)	“P” - Pass “F” - Fail Otherwise, left blank.
374,e	EMISS_PF_FLAG	CHAR(1)	“P” - Pass “F” - Fail “T” - Time ran out during inspection. “D” - Dilution condition ended inspection Otherwise, left blank.
375,e	GAS_CAP_MISS	CHAR(1)	“Y” - Yes “N” - No Otherwise, left blank.
376,e	GAS_CAP_TESTABLE	CHAR(1)	“Y” - Yes “N” - No Otherwise, left blank.
377,e	GAS_CAP_PF_FLAG	CHAR(1)	“P” - Pass “F” - Fail

			Otherwise, left blank.
378,e	CERT_NUM	CHAR(9)	Certificate number entry. If no certificate issued, left blank.
387,e	CERT_NUM_2	CHAR(9)	Certificate number entry. If no certificate issued, left blank.
396,e	CERT_COND	CHAR(1)	Condition of previous certificate, “V” - voided, “M” - missing, “C” - correct, “R” - replacement, “U” - unaccounted for, “A” - special certificate replacement function. Otherwise, left blank.
397,e	EMISS_INSP_COST	NUM(5)	99.99 Emission inspection price (market driven, fixed). Otherwise, zero filled.
402,s	SAFE_INSP_COST	NUM(7)	9999.99 Safety inspection cost plus applicable safety related repairs. Otherwise, zero filled.
409,e	OVERALL_COST	CHAR(7)	9999.99 Sum of all costs associated with the inspection including repair costs, where applicable. Otherwise, zero filled.
416,e	OVERALL_RESULTS	CHAR(1)	“P” - Pass “F” - Fall This is the overall inspection result of the vehicle inspected.
417,e	REP_CST_YIS	NUM(8)	99999.99 - Total cost of repairs performed at the same facility where inspection was performed. Otherwise, zero filled.
425,e	REP_CST_RRF	NUM(8)	99999.99 - Total cost of repairs performed at a Recognized Emissions Repair Facility. Otherwise, zero filled.
433,e	REP_CST_NRF	NUM(8)	99999.99 - Total cost of repairs performed at a non-recognized repair facility. Otherwise, zero filled.
441,e	REP_CST_MSP	NUM(8)	99999.99 - Total parts costs for self-performed repairs by the motorist. Otherwise, zero filled.
449,e	CAL_ID	CHAR(16)	Calibration Id from the Obd vehicle
465,e	CVN	CHAR(8)	Calibration verification number from the vehicle
473,e	OBD2_STATUS	CHAR(12)	

485,e	OBD2_FIRMWARE	CHAR(12)	
497,e	INSUR_CONFIRM	CHAR(1)	
498,e	WIRELESS_OBD	CHAR(1)	"W" - Wireless OBD connector used. Otherwise, space.
499,e	REG_VIN	CHAR(22)	VIN from the TxDMV bar code
521,e	REG_COUNTY	CHAR(3)	County of Vehicle Registration from the TxDMV bar code. Formatted to be consistent with county field in this file and SYSTEM.DAT.
524,e	REG_FEE_CODE	CHAR(1)	The inspector will select "A" through "N" excluding "I" from the keyboard. Valid entries for this field are "A" through "N", "R" and "S", but excluding "I", "O", and "Q". "R" and "S" will be used to address counties that opt out of the LIRAP program. Otherwise, left blank.
525, e	SPACE	CHAR(44)	
569,e	RERF_ID_NUM	CHAR(14)	Identification number for a Recognized Emission Repair Facility. Format for number is 1-_ _ _ _ _ - _ _ _ _ _ _. Otherwise, left blank.
583,e	RERT_ID_NUM	CHAR(15)	Identification number for a Recognized Emission Repair Technician. Format for number is 2-_ _ _ _ _ _ - _ _ _ _ _ _, where the middle six characters always the same as the last six characters of the RERF_ID_NUM field, and the last six characters are the entry from the inspector.
598,e	SPACE	CHAR(3)	
601,e	REP_OVERALL_COST	NUM(8)	99999.99 Otherwise, zero filled.
609,e	ABORT	CHAR(1)	"J" - Before sampling, "A" - Aborted inspection. Blank, if inspection completed and not aborted.
610,e	ABORT_CODE	NUM(2)	01 OIL SYSTEM LEAK WARNING LIGHT IS ON 02 COOLANT SYSTEM LEAK WARNING LIGHT IS ON 03 FUEL SYSTEM LEAK

			04 EXCESSIVE ENGINE NOISE 05 VEHICLE DOES NOT REQUIRE INSPECTION 06 BMW, PEUGEOT, VOLVO AUTOMATIC TRANSMISSION 99 OTHER (INDICATE REASON ON THE VIR) 81 Transition on OBD-only unit, referred to ASM unit. 82 Transition on diesel that was unsuccessful. 83 Transition from OBD to tailpipe prevented, vehicle rejected. Otherwise, left blank.
612,e	MODEL_CODE	CHAR(3)	The NCIC model code or acceptable TCEQ code. Otherwise, left blank.
615,e	TIMEOUT_REDO	CHAR(1)	"Y" - Yes "N" - No If after 290 seconds a valid inspection condition was not obtained, and the inspector elects to restart the emissions inspection, set this field to "Y". Otherwise, set to "N".
616,e	ORIG_TEST_DATE	NUM(8)	MMDDYYYY Otherwise, zero filled.
624,e	ORIG_TEST_TIME	NUM(6)	HHMMSS Otherwise, zero filled.
630,e	REPL_ID_NUM	CHAR(20)	ID number of the individual that conducts the replacement. INSP_NUM for inspectors, DPS_NUM for Auditors, and "9999999999" (10 9's) for Managers. Otherwise, left blank.
650,e	HC_CUTPOINT_LOW	NUM(4)	HC cutpoint for the low speed idle portion of the emissions phase of the inspection. Otherwise, zero filled.

654,e	CO_CUTPOINT_LOW	NUM(5)	CO cutpoint for the low speed idle portion of the emissions phase of the inspection. Otherwise, zero filled.
659,e	DECAL_NUM	CHAR(9)	Safety Emissions Decal number. Otherwise, left blank.
668,e	DECAL_NUM_2	CHAR(9)	Safety Emissions Decal number for replacements. Otherwise, left blank.
677,e	DECAL_COND	CHAR(1)	Condition of previous decal, “V” - voided, “M” - missing, “C” - correct, “R” - replacement. Otherwise, left blank.
678,e	TXDOT_NUM	CHAR(10)	TxDOT number entered by inspector when Texas plate present. Otherwise, left blank.
688,e	WAIVER_NUM	CHAR(7)	Waiver number entered by auditor if a waiver is issued. Otherwise, left blank.
695,e	2ND_GAS_CAP_MISS	CHAR(1)	“Y” - Yes “N” - No Blank, if only one gas cap tested.
696,e	2ND_GAS_CAP_TEST	CHAR(1)	“Y” - Yes “N” - No Blank, if only one gas cap tested.
697,e	GAS_CAP_PF_FLAG_1	CHAR(1)	“P” - Pass “F” - Fail Blank, if gas cap not tested.
698,e	GAS_CAP_PF_FLAG_2	CHAR(1)	“P” - Pass “F” - Fail Blank, if only one gas cap tested.
699,e	REP_GRP	CHAR(1)	“1” - Fuel System, “2” - Ignition/Electrical System, “3” - Emissions System, “4” - Engine Mechanical, “5” - Miscellaneous, “6” - No Repairs Performed on Vehicle
700,e	PERF_REPAIRS	CHAR(1)	“1” - Recognized Emissions Repair Tech “2” - Other Repair Technician (Non-Recognized) “3” - Motorist (Self-Repair)
701,e	BARCODED_VIN	CHAR(1)	

702,e	BARCODED_TXDOT_NO	CHAR(1)	
703,e	BARCODED_LIC_PLT	CHAR(1)	
704,e	OBD2_MIL_CHECK	CHAR(1)	“Y” - Yes “N” - No “K” - Question skipped due to keyless start
705,e	OBD2_MIL_ON_RUN	CHAR(1)	“Y”, “N”
706,e	OBD2_PF_FLAG	CHAR(1)	“P”, “F”
707,e	OBD2_READY_RES	CHAR(1)	“P”, “F” - Outcome of OBD Readiness Monitors
708,e	OBD2_FAULT_CD_RES	CHAR(1)	
709,e	OBD2_MIL_STATUS	CHAR(1)	
710,e	OBD2_DLC_RES	CHAR(1)	“D” - Damaged “N” - No communication/signal “L” - Connector could not be located “I” - Inaccessible/obstructed connector “P” - Pass
711,e	MISFIRE_READY	CHAR(1)	
712,e	FUEL_SYS_READY	CHAR(1)	
713,e	COMPR_COMPNT_RDY	CHAR(1)	
714,e	CATALYST_READY	CHAR(1)	
715,e	HEATED_CAT_READY	CHAR(1)	
716,e	EVAP_SYS_RDY	CHAR(1)	
717,e	SEC_AIR_SYS_RDY	CHAR(1)	
718,e	AIR_COND_SYS_RDY	CHAR(1)	
719,e	O2_SENSOR_READY	CHAR(1)	
720,e	O2_SENSOR_HTR_RDY	CHAR(1)	
721,e	EGR_SYS_READY	CHAR(1)	
722,e	COMM_PROT	CHAR(1)	“V” - J1850 VPW, “P” - J1850 PWM, “I” - ISO 9141, “K” - KWP 2000, “C” - CAN (11 bit id), “D” - CAN (29 bit id), “N” - not identified,

			other comm, "_" - for all non-OBD inspections. Formerly Thermostat_Rdy, but never used.	
723,e	SPARE	CHAR(1)	formerly PCV_RDY, but never used.	
724,e	FAULT_CODES(DTCs)	CHAR(50)		
774,e	DTC_STORED	NUM(2)		
776,e	OBD2_RPM	NUM(4)		
780,e	PID_COUNT	CHAR(2)		
782,e	PCM_ID	CHAR(2)		
784,e	OBD_VIN	CHAR(17)	VIN from the OBD computer, where available	
801,e	80_INCHES	CHAR(1)	"Y" - Yes, the vehicle is at least 80" wide "N" - No, the vehicle is less than 80" wide	
802,e	PRI_AVG_5015_CO	NUM(5)	XX.XX	Otherwise, zero filled.
807,e	PRI_AVG_5015_HC	NUM(4)	XXXX	Otherwise, zero filled.
811,e	PRI_AVG_5015_CO2	NUM(4)	XX.X	Otherwise, zero filled.
815,e	PRI_AVG_5015_NO	NUM(4)	XXXX	Otherwise, zero filled.
819,e	PRI_AVG_5015_O2	NUM(4)	XX.X	Otherwise, zero filled.
823,e	PRI_AVG_2525_CO	NUM(5)	XX.XX	Otherwise, zero filled.
828,e	PRI_AVG_2525_HC	NUM(4)	XXXX	Otherwise, zero filled.
832,e	PRI_AVG_2525_CO2	NUM(4)	XX.X	Otherwise, zero filled.
836,e	PRI_AVG_2525_NO	NUM(4)	XXXX	Otherwise, zero filled.
840,e	PRI_AVG_2525_O2	NUM(4)	XX.X	Otherwise, zero filled.
844,e	ALT_AVG_5015_CO	NUM(5)	XX.XX	Otherwise, zero filled.
849,e	ALT_AVG_5015_HC	NUM(4)	XXXX	Otherwise, zero filled.
853,e	ALT_AVG_5015_CO2	NUM(4)	XX.X	Otherwise, zero filled.
857,e	ALT_AVG_5015_NO	NUM(4)	XXXX	Otherwise, zero filled.
861,e	ALT_AVG_5015_O2	NUM(4)	XX.X	Otherwise, zero filled.

865,e	ALT_AVG_2525_CO	NUM(5)	XX.XX	Otherwise, zero filled.
870,e	ALT_AVG_2525_HC	NUM(4)	XXXX	Otherwise, zero filled.
874,e	ALT_AVG_2525_CO2	NUM(4)	XX.X	Otherwise, zero filled.
878,e	ALT_AVG_2525_NO	NUM(4)	XXXX	Otherwise, zero filled.
882,e	ALT_AVG_2525_O2	NUM(4)	XX.X	Otherwise, zero filled.
886,e	PRI_AVG_5015_RPM	NUM(4)	XXXX	Otherwise, zero filled.
890,e	PRI_AVG_2525_RPM	NUM(4)	XXXX	Otherwise, zero filled.
894,e	ALT_AVG_5015_RPM	NUM(4)	XXXX	Otherwise, zero filled.
898,e	ALT_AVG_2525_RPM	NUM(4)	XXXX	Otherwise, zero filled.
902,e	ASM_RESTART_CNTR	NUM(1)	X, Number of restarts during the inspection procedure.	
903,e	SPACE	CHAR(1)		
904,e	DILUTION_5015	NUM(4)	X.XX	Dilution Correction Factor. Otherwise, zero filled.
908,e	DILUTION_2525	NUM(4)	X.XX	Dilution Correction Factor. Otherwise, zero filled.
912,e	SPACE	CHAR(1)		
913,e	RELATIVE_HUMIDITY	NUM(5)	XX.XX	Otherwise, zero filled
918,e	HUMIDITY_CORR_5015	NUM(4)	X.XX	Otherwise, zero filled.
922,e	HUMIDITY_CORR_2525	NUM(4)	X.XX	Otherwise, zero filled.
926,e	SPACE	CHAR(1)		
927,e	ACCEL_VIOLAT_5015	NUM(1)	The number of acceleration violations during the ASM 5015 Mode.	
928,e	ACCEL_VIOLAT_2525	NUM(1)	The number of acceleration violations during the ASM 25/25 Mode.	
929,e	THP_5015	NUM(4)	XX.X Total Horsepower used to set the dynamometer.	
933,e	THP_2525	NUM(4)	XX.X Total Horsepower used to set the dynamometer.	

937,e	AMB_BULB_TEMP	NUM(3)	XXX Otherwise, zero filled. Ambient dry bulb temperature in °F prior to each inspection.
940,e	BARO_PRESSURE	NUM(3)	XXX Otherwise, zero filled. Barometric Pressure (Absolute) measured in mm of Hg prior to each inspection.
943,s	SAFE_10	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
944,s	SAFE_16A	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
945,s	SAFE_16B	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
946,s	SAFE_33	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (J, K, E, G, P, F, R, N)
947,s	SAFE_34	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
948,s	SAFE_35	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank.

			Acceptable entries are (A, B, C, D, P, F, R, N)
949,s	SAFE_36	CHAR(1)	“P” - Pass “F” - Fail “R” - Repair “N” - NA Otherwise, left blank. Acceptable entries are (A, B, C, D, P, F, R, N)
950,e	NO_PF_FLAG	CHAR(1)	“P” - Pass “F” - Fail Otherwise, left blank.
951,e	TEST_WEIGHT	CHAR(5)	
956,e	SPACE	CHAR(5)	
961,e	AXLE_TYPE	CHAR(1)	“Y” - vehicle has AWD, Full-Time Four Wheel Drive or non-disengageable traction control. “N” - vehicle can be inspected using the ASM two wheel dynamometer.
962,e	TEST_REC_NUM	NUM(6)	Analyzer based test record number, incremented by 1 after every completed inspection without regard to result (e.g., pass, fail, or aborted).
968,e	TAILPIPE_START_TIME	NUM(6)	(HHMMSS) This is the time the tailpipe (ASM or TSI) inspection started. Value of test_start_time positions one and two (hour) must not be greater than “24”. Value of test_start_time positions three and four (minute) must not be greater that “59”. Value of test_start_time positions five and six (second) must not be greater than “59”.
974,e	TAILPIPE_END_TIME	NUM(6)	(HHMMSS) This is the time the tailpipe (ASM or TSI) inspection ended.
980,e	BODY_STYLE	CHAR(1)	Vehicle Body style for ASM inspection.
981,e	ANALYZER_NO_EXT	CHAR(3)	Analyzer extension for server/node solution, entered from the VID or by the DPS under the audit menu .
984,e	DPS_SAFE_SEQ	CHAR(1)	Number of the DPS safety item sequence selected by the lane inspector.
985,e	HC_CUTPOINT_2525	NUM(4)	XXXX

989,e	CO_CUTPOINT_2525	NUM(5)	XX.XX
994,e	NO_CUTPOINT_2525	NUM(4)	XXXX
998,e	HC_CUTPOINT_5015	NUM(4)	XXXX
1002,e	CO_CUTPOINT_5015	NUM(5)	XX.XX
1007,e	NO_CUTPOINT_5015	NUM(4)	XXXX
1011,s	VI30A_NUM	CHAR(10)	This is the safety inspection's VI-30 number, if applicable. Otherwise, left blank.
1021,e	REC_FRMT	CHAR(1)	'_' - format prior to July 2013 with spares from offset 449 through 568 'A' - format after July 2013, reuses spares at offset 449
1022,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

RECALL.DAT This is both a hard disk and floppy/equivalent storage media based file containing vehicle information for inspections aborted after the vehicle information is entered and prior to initiating sampling for the official emissions inspection. The analyzer will automatically purge any record in this file on both hard and floppy disk older than 72 hours. Record length is 204 bytes long.

0,e	TEST_DATE	NUM(8)	(MMDDYYYY) This is the date of the inspection. First two positions of test_date must be between "01" and less than "12" (inclusive) Date (positions 2 and 3) must not be greater than the number of days in a given month Date (positions 2 and 3) must not be greater than "29" if the given month is February in leap year
8,e	EMISS_TEST_TYPE	CHAR(1)	The analyzer will set the EMISS_TEST_TYPE field to "1" if the inspector conducts an OBD emissions inspection, "2" if the inspector conducts a TSI emissions inspection, or "3" if the inspector conducts an ASM emissions inspection. Set to "0" if the inspector conducts a Special Certificate Replacement Inspection or "4" if the inspector conducts an OBD emissions inspection on a diesel-powered vehicle that transitions and doesn't conduct an emissions inspection.
9,e	TEST_TYPE	CHAR(1)	If the inspector selects one of the following choices from the main menu: 1 - Safety & Emission Inspection 2 - Safety Only 3 - Emissions Only 4 - Reinspection 5 - Reprint The analyzer will set TEST_TYPE field to the following: 1 - "A" 5 - "K" 2 - "H" If "3 - Emissions Only" is selected, prompt the inspector to indicate if the test is a: 1 - required emission only test (decal) 2 - voluntary test 3 - test on resale 4 - remote sensing request (decal)

The analyzer will set TEST_TYPE field to the following:

1 - “O”	3 - “C”
2 - “I”	4 - “B”

The analyzer will default/highlight selection number 1 in all of the scenarios.

The tests and their corresponding letters are cross-referenced below:

TEST_TYPE

A) Emission & Safety Test
B) Remote Sensing Request (Decal)
P) VI-30 Only
H) Safety Only Test
I) Voluntary Emissions Test
K) Reprint
O) Required Emissions Only Test (Decal)

SPECIAL_TEST

C) Test on Resale
D) Accelerated Vehicle Retirement Test
E) Dispute Test
F) Not currently in use
G) Federal Test
A) Special Certificate Replacement Inspection
J) Waiver - Individual Vehicles
L) Waiver - Low Income Time Extension
M) Parts Availability Time Extension
N) Other (Special Test)
P) Waiver - Low Mileage

10,e	SPECIAL_TEST	CHAR(1)	Reserved for character mentioned above. Choice “G” is reserved for “federal tests”. Choice “D” and choice “E” are reserved for accelerated vehicle retirement tests, and arbitration/dispute tests, respectively. Choice “J” is reserved for “individual vehicle waiver tests. Choice “L”, “M”, and “N”, are reserved for “low income time extension tests”, “parts availability time extension tests”, and “other special tests”, respectively.
11,e	VID_ID_NUM	CHAR(11)	Sent by the VID.
22,e	EMISS_INIT_TEST	CHAR(1)	After an inspection has been completed, the analyzer will set the INITIAL_TEST_TYPE to “I” for initial inspection. After a reinspection has been completed, the analyzer must set INITIAL_TEST_TYPE to “R” for reinspection inspection.
23,e	SAFE_INIT_TEST	CHAR(1)	If there is no previous inspection for this vehicle or the previous inspection was more than sixteen days prior to this inspection, set the SAFE_INIT_TEST field to “I”. If the previous

			inspection was less than sixteen days prior to this inspection, set the SAFE_INIT_TEST field to “R”.
24,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
31,e	STATION_NAME	CHAR(25)	Entered by the DPS under the audit menu.
56,e	ANALYZER_NUMBER	CHAR(8)	This field must be the analyzer number from the STATION.DAT file.
64,e	INSPECTOR_NUM	CHAR(20)	This is the inspector number from INSPECTR.DAT associated with the inspector’s access code.
84,e	INSPECTOR_LNAME	CHAR(15)	Inspector’s last name.
99,e	INSPECTOR_FNAME	CHAR(10)	Inspector’s first name.
109,e	MODEL_YEAR	CHAR(4)	YYYY Model-year of the vehicle.
113,e	COUNTY_CODE	CHAR(3)	The county where inspected.

Dallas - 057	Denton - 061	Parker - 184
El Paso - 071	Fort Bend - 079	Johnson - 126
Harris - 101	Galveston - 084	Ellis - 070
Collin - 043	Brazoria - 020	Kaufman - 129
Liberty - 146	Chambers - 036	Rockwall - 199
Tarrant - 220	Montgomery - 170	Bexar - 015
Waller - 237	Travis - 227	Comal - 046
Hays - 105	Williamson - 246	Bastrop - 011
Wilson - 247	Guadalupe - 094	Smith - 213
Nueces - 178	San Patricio - 205	Kleberg - 137
Milam - 166	Lee - 144	Bastrop - 011
Burnet - 027	Blanco - 016	Bell - 014
Other - 999	Out of State or Federal - 000	

116,e	VIN_ID_NUM	CHAR(17)	The VIN of the vehicle.
133,e	VIN_FLAG	CHAR(1)	If DPS check digit algorithm indicates bad VIN, set to “B”-bad. If not, leave blank.
134,e	LICENSE_NUM	CHAR(8)	License plate number of the vehicle or dealer number if unlicensed.
142,e	LICENSE_TYPE	NUM(1)	This is type of plate. 1 - Texas Plate 2 - No Plate 3 - Out of state

			4 - Exempt (State) 5 - Exempt (Federal) 6 - Dealer Plate (Metal/Hard) 7 - Temporary Sticker (Paper) 8 - Other After selecting number “2”or “8”, the license_num field should be set to “V” followed by the last seven characters of the VIN. The default for this field is number “1”.
143,e	INJECT_CARB	CHAR(1)	Injection/carburetion. “F” - Fuel Injection “C” - Carburetion “O” - Other
144,e	VEHICLE_TYPE	CHAR(1)	“P” - Passenger Car/Station Wagon “T” - Truck/Van/Bus/Sports Utility Vehicle “M” - Motor home
145,e	GVW_TYPE	NUM(1)	GVW class. “1” - Light “2” - Heavy Otherwise, zero (0) filled.
146,e	GVW_ACTUAL	NUM(5)	Actual GVW rating.
151,e	MAKE	CHAR(4)	Vehicle make selected from possible list using NCIC make definitions.
155,e	MODEL	CHAR(20)	Vehicle model type is selected based on the vehicle make entry.
175,e	ENGINE_SIZE	CHAR(5)	Values converted to cubic centimeters by the analyzer.
180,e	CYLINDERS	CHAR(2)	The number of cylinders, “1” through “16”. “R” - Rotary This entry is made by the inspector if the vehicle inspected is equipped by a rotary engine.
182,e	TRANSMISSION	CHAR(1)	Transmission type. “A” - Automatic “M” - Manual
183,e	ODOMETER	NUM(6)	The odometer reading excluding tenths.
189,e	FUEL_TYPE	CHAR(1)	The fuel type “G” - Gas “D” - Diesel “B” - Bi-fueled (Dual Fueled)

			"A" - Alternative Fuel (Propane, CNG, LNG, etc.) "N" - None
190,e	IGNITION	CHAR(1)	The ignition type. "C" - Conventional "D" - Distributorless "Q" - Quad4 "E" - Keyless Start with Conventional Ignition "F" - Keyless Start with Distributorless Ignition "R" - Keyless Start with Quad4
191,e	DUAL_EXHAUST	CHAR(1)	"Y" for Yes or "N" for No.
192,e	PRE-TUNE	CHAR(1)	"Y" for Yes or "N" for No in response to the question "Was pre-tuning done on this vehicle prior to this inspection?"
193 ,s	SAFE_TEST_TYPE	CHAR(1)	Safety Inspection Type. The inspector will select "A" through "M" excluding "I" from the keyboard. If the selection is not "G" or "K", then fields SAFE_25 through SAFE_30 will be left blank. Valid entries for this field are "A" through "M", excluding "I". Otherwise, left blank.
194,s	INSUR_EXP_DT	NUM(8)	(MMDDYYYY) This is the expiration date of the vehicle owner's proof of insurance.
202,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

CAL.DAT This is both a hard disk and floppy based file containing all gas calibration records. The analyzer must periodically purge any record older than 12 months from the hard disk. Record length is 640 bytes.

GAS CALIBRATION RECORD

	Automatic Input		
0,e	GAS_CAL_INDICATOR	CHAR(1)	"W" - Weekly 3 day calibration "L" - Leak check "O" - Any other calibration (including six month calibration)
1,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
8,e	ANALYZER_NUMBER	CHAR(8)	
16,e	CAL_DATE	NUM(8)	(MMDDYYYY). This is the date of the gas calibration.
24,e	CAL_TIME (24-hour clock)	NUM(6)	(HHMMSS). This is the time the gas calibration started.
30,e	PEF	CHAR(3)	This must be a three digit numeric, which contains a decimal point. The decimal will not be stored.
	Calibration Gases		
33,e	HC LOW SPAN GAS (propane ppm)	NUM(4)	XXXX
37,e	CO LOW SPAN GAS (%)	NUM(5)	XX.XX
42,e	CO2 LOW SPAN GAS (%)	NUM(4)	XX.X
46,e	NO LOW SPAN GAS (propane ppm)	NUM(4)	XXXX
50,e	HC MID SPAN GAS (Propane ppm)	NUM(4)	XXXX
54,e	CO MID SPAN GAS (%)	NUM(5)	XX.XX
59,e	CO2 MID SPAN GAS (%)	NUM(4)	XX.X
63,e	NO MID SPAN GAS (propane ppm)	NUM(4)	XXXX
	Before Calibration Readings		

67,e	HC ZERO READING	NUM(5)	XXXXX
72,e	CO ZERO READING	NUM(6)	XXX.XX
78,e	CO2 ZERO READING	NUM(5)	XXX.X
83,e	NO ZERO READING	NUM(5)	XXXXX
88,e	O2 READING	NUM(4)	XX.X
92,e	HC LOW SPAN READING	NUM(5)	XXXXX
97,e	CO LOW SPAN READING	NUM(5)	XX.XX
102,e	CO2 LOW SPAN READING	NUM(5)	XXX.X
107,e	NO LOW SPAN READING	NUM(5)	XXXXX
112,e	HC MID SPAN READING	NUM(5)	XXXXX
117,e	CO MID SPAN READING	NUM(5)	XX.XX
122,e	CO2 MID SPAN READING	NUM(5)	XXX.X
127,e	NO MID SPAN READING	NUM(5)	XXXXX
	Calibration Results		
132,e	HC ZERO READING	NUM(5)	XXXXX
137,e	CO ZERO READING	NUM(6)	XXX.XX
143,e	CO2 ZERO READING	NUM(5)	XXX.X
148,e	NO ZERO READING	NUM(5)	XXXXX
153,e	O2 READING	NUM(4)	XX.X
157,e	HC LOW SPAN READING	NUM(5)	XXXXX
162,e	CO LOW SPAN READING	NUM(5)	XX.XX
167,e	CO2 LOW SPAN READING	NUM(5)	XXX.X
172,e	NO LOW SPAN READING	NUM(5)	XXXXX
177,e	HC MID SPAN READING	NUM(5)	XXXXX
182,e	CO MID SPAN READING	NUM(5)	XX.XX

187,e	CO2 MID SPAN READING	NUM(5)	XXX.X
192,e	NO MID SPAN READING	NUM(5)	XXXXX
197,e	SPAN TEST RESULTS (P/F)	CHAR(1)	“P” - Pass “F” - Fail “N” - Not done
198,e	LEAK CHECK RESULT	CHAR(1)	“P” - Pass “F” - Fail “N” - Not done
199,e	GAS_CAP_CHECK_RSLT	CHAR(1)	“P” - Pass “F” - Fail “N” - Not done

DYNAMOMETER CALIBRATION RECORD

Automatic Input

200,e	DYNO_CAL_DATE	NUM(8)	(MMDDYYYY). Date of the dynamometer calibration.
208,e	CAL_START_TIME	NUM(6)	(HHMMSS). Time the dynamometer calibration starts.
214,e	CAL_END_TIME	NUM(6)	(HHMMSS). Time the dynamometer calibration ends.
220,e	ROLL_DIAMETER	NUM(4)	XX.X in inches
224,e	BASE_INERTIA	NUM(4)	XXXX
228,e	COASTDWN_HP_2525	NUM(4)	XX.X
232,e	COASTDWN_TIME_2525	NUM(3)	XXX in seconds
235,e	COASTDWN_HP_5015	NUM(4)	XX.X
239,e	COASTDWN_TIME_5015	NUM(3)	XXX in seconds
242,e	PARASITIC_HP_LOSS_2525	NUM(4)	X.XX
246,e	PARASITIC_HP_LOSS_5015	NUM(4)	X.XX
250,e	DYNO_CAL_RESULT	CHAR(1)	“P” - Pass “F” - Fail “N” - Not done

251,e	VERSION	CHAR(4)	XXXX. This is the software version in use.
255,e	SPACE	CHAR(383)	
638,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

AUDITGAS.DAT This is both a hard disk and floppy based file containing the gas audit. The analyzer must periodically purge any record older than 180 days in this file. Only gas audit records are to be stored in this file. Record length is 640 bytes.

0,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
7,e	STATION_NAME	CHAR(25)	This field must be the station name from the STATION.DAT file.
32,e	ANALYZER_NUMBER	CHAR(8)	
40,e	AUDIT_DATE	NUM(8)	(MMDDYYYY) The analyzer will enter the date automatically when the auditor accesses the gas audit selection under the audit menu.
48,e	AUDIT_TIME	NUM(4)	(HHMM) The analyzer will enter the time automatically when the auditor accesses the gas audit selection from the audit menu.
52,e	CAL_PORT	CHAR(1)	"C", if the audit gas is entered through the calibration port. Otherwise, left blank.
53,e	HC_HANGUP	NUM(3)	No entry if CAL_PORT contains a "C". Otherwise, average HC hang-up value.
56,e	DPS_REP_ID	CHAR(6)	This field must be the authorized DPS representative/technician identification number from the AUDITOR.DAT file.

GAS AUDIT RECORD

	Automatic Input		
62,e	PEF	CHAR(3)	This must be a 3 digit numeric, which contains a decimal point. The decimal will not be stored.
	Audit Gases Bottle Values		
65,e	HC ZERO SPAN GAS (propane ppm)	NUM(4)	XXXX
69,e	CO ZERO SPAN GAS (%)	NUM(5)	XX.XX
74,e	CO2 ZERO SPAN GAS (%)	NUM(4)	XX.X
78,e	NO ZERO SPAN GAS (propane ppm)	NUM(4)	XXXX

82,e	O2 ZERO SPAN GAS	NUM(4)	XX.X
86,e	HC LOW SPAN GAS (propane ppm)	NUM(4)	XXXX
90,e	CO LOW SPAN GAS (%)	NUM(5)	XX.XX
95,e	CO2 LOW SPAN GAS (%)	NUM(4)	XX.X
99,e	NO LOW SPAN GAS (propane ppm)	NUM(4)	XXXX
103,e	HC MID1 SPAN GAS (Propane ppm)	NUM(4)	XXXX
107,e	CO MID1 SPAN GAS (%)	NUM(5)	XX.XX
112,e	CO2 MID1 SPAN GAS (%)	NUM(4)	XX.X
116,e	NO MID1 SPAN GAS (propane ppm)	NUM(4)	XXXX
120,e	HC MID2 SPAN GAS (Propane ppm)	NUM(4)	XXXX
124,e	CO MID2 SPAN GAS (%)	NUM(5)	XX.XX
129,e	CO2 MID2 SPAN GAS (%)	NUM(4)	XX.X
133,e	NO MID2 SPAN GAS (propane ppm)	NUM(4)	XXXX
137,e	HC HIGH SPAN GAS (Propane ppm)	NUM(4)	XXXX
141,e	CO HIGH SPAN GAS (%)	NUM(5)	XX.XX
146,e	CO2 HIGH SPAN GAS (%)	NUM(4)	XX.X
150,e	NO HIGH SPAN GAS (propane ppm)	NUM(4)	XXXX
	Audit Readings		
154,e	HC ZERO READING	NUM(5)	XXXXX
159,e	CO ZERO READING	NUM(6)	XXX.XX
165,e	CO2 ZERO READING	NUM(5)	XXX.X

170,e	NO ZERO READING	NUM(5)	XXXXX
175,e	O2 READING	NUM(4)	XX.X
179,e	HC LOW SPAN READING	NUM(5)	XXXXX
184,e	CO LOW SPAN READING	NUM(5)	XX.XX
189,e	CO2 LOW SPAN READING	NUM(5)	XXX.X
194,e	NO LOW SPAN READING	NUM(5)	XXXXX
199,e	HC MID1 SPAN READING	NUM(5)	XXXXX
204,e	CO MID1 SPAN READING	NUM(5)	XX.XX
209,e	CO2 MID1 SPAN READING	NUM(5)	XXX.X
214,e	NO MID1 SPAN READING	NUM(5)	XXXXX
219,e	HC MID2 SPAN READING	NUM(5)	XXXXX
224e	CO MID2 SPAN READING	NUM(5)	XX.XX
229,e	CO2 MID2 SPAN READING	NUM(5)	XXX.X
234,e	NO MID2 SPAN READING	NUM(5)	XXXXX
239,e	HC HIGH SPAN READING	NUM(5)	XXXXX
244,e	CO HIGH SPAN READING	NUM(5)	XX.XX
249,e	CO2 HIGH SPAN READING	NUM(5)	XXX.X
254,e	NO HIGH SPAN READING	NUM(5)	XXXXX
259,e	SPAN TEST RESULTS (P/F)	CHAR(1)	“P” - if gas results pass, “F” - if gas results fail
260,e	LEAK CHECK RESULT	CHAR(1)	“P” - Pass “F” - Fail “N” - Not done
261,e	GAS_CAP_CHECK_RSLT	CHAR(1)	“P” - Pass “F” - Fail “N” - Not done

DYNAMOMETER CALIBRATION RECORD
Automatic Input

262,e	DYNO_CAL_DATE	NUM(8)	(MMDDYYYY)
270,e	CAL_START_TIME	NUM(6)	(HHMMSS)
276,e	CAL_END_TIME	NUM(6)	(HHMMSS)
282,e	ROLL_DIAMETER	NUM(4)	XX.X in inches
286,e	BASE_INERTIA	NUM(4)	XXXX
290,e	COASTDWN_HP_2525	NUM(4)	XX.X
294,e	COASTDWN_TIME_2525	NUM(3)	XXX in seconds
297,e	COASTDWN_HP_5015	NUM(4)	XX.X
301,e	COASTDWN_TIME_5015	NUM(3)	XXX in seconds
304,e	PARASITIC_HP_LOSS_2525	NUM(4)	X.XX
308,e	PARASITIC_HP_LOSS_5015	NUM(4)	X.XX
312,e	DYNO_CAL_RESULT	CHAR(1)	“P” - Pass “F” - Fail “N” - Not done
313,e	OVERALL_RESULTS	CHAR(1)	“P” - Pass “F” - Fail
314,e	AMB_BULB_TEMP	NUM(3)	XXX Ambient dry bulb temperature in °F from each gas audit.
317,e	BARO_PRESSURE	NUM(3)	XXX Barometric Pressure (Absolute) measured in mm of Hg from each audit.
320,e	RELATIVE_HUMIDITY	NUM(5)	XX.XX Relative Humidity in Percent from each audit.
325,e	SPACE	CHAR(313)	
638,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

AUDITNOT.DAT This is both a hard disk and floppy based file containing all auditor's notes. The auditor's notes will be maintained on the hard disk until it is deleted by the auditor. Record length is 361 bytes.

0,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
7,e	ANALYZER_NUMBER	CHAR(8)	This field must be the authorized analyzer number from the STATION.DAT file.
15,e	DATE	NUM(8)	(MMDDYYYY) Date the auditor's note entry was created
23,e	TIME	NUM(6)	(HHMM) Time the auditor's note was created.
29,e	SPACE	CHAR(4)	Former DPS representative/technician ID number.
33e	NOTES	CHAR(319)	Text of auditor's notes. Record length may vary (maximum 319 characters).
352,e	GAS_CAP_CAL_RES	CHAR(1)	Gas Cap Tester Calibration Results "P" - Pass "F" - Fail "N" - Not Done
353,e	DPS_REP_ID	CHAR(6)	DPS representative/technician ID number, new length
359,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

AUDITLOG.DAT This is both a hard disk and floppy based file containing all audit menu login attempts. Records will be maintained on hard disk for 180 days. The analyzer must automatically purge the any collected record older than 180 days from this file. Record length is 64 bytes.

0,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
7,e	ANALYZER_NUMBER	CHAR(8)	This field must be the authorized analyzer number from the STATION.DAT file.
15,e	DATE	NUM(8)	(MMDDYYYY) Date of the login attempt.
23,e	TIME	NUM(4)	(HHMM) Time of the login attempt.
27,e	LOGON	CHAR(1)	"U" - Unauthorized login attempt "A" - Authorized login attempt
28,e	DPS_REP_ID	CHAR(4)	old DPS representative/technician ID format.
32,e	SEARCH	CHAR(1)	"Y" - Yes, otherwise, blank.
33,e	TIME	NUM(4)	(HHMM) Time of the DPS search request. Zero filled if SEARCH is blank.
37,e	BAD_DPS_ID	CHAR(1)	"U" - Did not match DPS_REP_ID in AUDITOR.DAT file, login unauthorized. "A" - Matched value in DPS_REP_ID, login authorized
38,e	DPS_REP_ID	CHAR(6)	DPS representative/technician ID number, new length
44,e	SPACE	CHAR(18)	
62,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

AUDITOR.DAT This is both a hard disk and floppy based file containing all DPS representatives/inspectors authorized to access the audit menu. Records will be maintained on hard disk. Record length is 64 bytes.

0,e	DPS_REP_ID	CHAR(6)	DPS representative/technician ID number, new length
6,e	AUDITOR_LNAME	CHAR(15)	DPS representative/auditor's last name.
21,e	AUDITOR_FNAME	CHAR(10)	DPS representative/auditor's first name.
31,e	AUD_DL_NUM	CHAR(8)	Texas number assigned by the DPS through the VID. Currently, this number only has 8 digits.
39,e	PIN_NO	CHAR(5)	Encrypted access number known only by the DPS auditor.
44,e	SPACE	CHAR(18)	
62,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

AUDTMENU.DAT This is both a hard disk and floppy based file containing activity of the DPS representatives/inspectors during the authorized access of the audit menu. Records will be maintained on hard disk. Once this file is successfully transmitted to the VID, it may be erased. Record length is 64 bytes.

0,e	DPS_REP_ID	CHAR(6)	DPS Representative/technician ID number, new length
6,e	MENU_NUMBER	CHAR(2)	Audit menu selection number
8,e	MENU_IN_OUT	CHAR(1)	"I" - In the menu. "O" - Out of the menu.
9,e	DATE	NUM(8)	(MMDDYYYY) Date the auditor entered or exited the audit menu selection.
17,e	TIME	NUM(4)	(HHMM) Time the auditor entered or exited the audit menu selection.
21,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
28,e	ANALYZER_NUMBER	CHAR(8)	This field must be the authorized analyzer number for the STATION.DAT file.
36,e	TIME_IN	NUM(4)	(HHMM) Time the auditor successfully accessed the audit menu.
40,e	SPACE	CHAR(22)	
62,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

DEFLK.DAT This is both a hard disk and floppy based file containing the top forty used deficiency codes that will be entered by the DPS representatives/inspectors during the authorized access of the audit menu. Records will be maintained on hard disk. Record length is 256 bytes.

0,e	LK_CODE	NUM(5)	This field contained the DPS deficiency code number.
5,	SPACE	NUM(3)	
8,e	LK_DESC_TXT	CHAR(200)	DPS deficiency code description for the corresponding code number.
208,e	SPACE	CHAR(46)	
254,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

LOCKOUT.DAT This is a hard disk based file containing lockout information. The record will be maintained on the hard disk and updated by the VID. Only lockout information is to be stored in this file. The fields in this file must toggle between entries of Y's and N's or 1's and 0's. A lockout is active or "on" if the field contains a "1" or "Y". The lockout is disabled or "off" if the field contains a "0" or an "N". If the analyzer uses 0's and 1's in this file, the lockout status screen must display N's or No's and Y's or Yes's. The logic by which the lockouts are set and cleared must not be affected. Record length is 15 bytes.

0,e	STATE_LOCKOUT	CHAR(1)	Set to "1" or "Y" by audit screen. Set to "N" by electronic transmission.
1,e	CABINET_TAMPER	CHAR(1)	Set to "1" or "Y" by the analyzer. Set to "0" or "N" by service technician, or audit screen.
2,e	FLOPPY_TAMPER	CHAR(1)	Set to "1" or "Y" by the analyzer. Set to "0" or "N" by service technician, or audit screen.
3,e	STAT_CERT_EXP	CHAR(1)	Set to "1" or "Y" by the analyzer. Set to "0" or "N" by electronic transmission.
4,e	STAT_CERT_SUSP	CHAR(1)	Set to "1" or "Y" by the analyzer. Set to "0" or "N" by electronic transmission.
5,e	STAT_CERT_REVOK	CHAR(1)	Set to "1" or "Y" by the analyzer. Set to "0" or "N" by electronic transmission.
6,e	COMM_FAIL_PAY	CHAR(1)	Set to "1" or "Y" or to "0" or "N" by electronic transmission.
7,e	MAX_TEST_WO_COMM	CHAR(1)	Set to "1" or "Y" by the analyzer or electronic transmission. Set to "0" or "N" by electronic transmission.
8,e	NO_CONTACT_LIMIT	NUM(3)	Set by VID. The maximum number of inspections the analyzer can conduct without contacting the VID.
11,e	LOW_VOL_STATION	CHAR(1)	Set to "1" or "Y" or to "0" or "N" by electronic transmission
12,e	ASM_TSI_LOCKOUT	CHAR(1)	Set to "1" or "Y" by audit menu. Set to "0" or "N" by electronic transmission or audit screen.
13,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

ESC.DAT This is a hard disk based file containing emissions standards. Records will be maintained on the hard disk and updated by the VID. Only emissions standards are to be stored in this file. Record length is 64 bytes.

0,e	EMISS_STND_CAT	NUM(2)	Ranges from 1 to 50
2,e	START_YEAR	NUM(4)	XXXX
6,e	END_YEAR	NUM(4)	XXXX
10,e	GVW_TYPE	NUM(1)	1 - Light-duty, or 2 - Heavy-duty
11,e	AVG_HC_IDLE_PASS	NUM(4)	Reserved for future use. (XXXX)
15,e	AVG_CO_ILDE_PASS	NUM(5)	Reserved for future use. (XX.XX)
20,e	AVG_HC_HIGH_PASS	NUM(4)	Reserved for future use. (XXXX)
24,e	AVG_CO_HIGH_PASS	NUM(5)	Reserved for future use. (XX.XX)
29,e	MAX_HC_IDLE	NUM(4)	(XXXX)
33,e	MAX_CO_IDLE	NUM(5)	(XX.XX)
38,e	MAX_HC_HIGH	NUM(4)	(XXXX)
42,e	MAX_CO_HIGH	NUM(5)	(XX.XX)
47,e	MIN_CO+CO2	NUM(5)	(XX.XX)
52,e	MAX_IDLE_RPM	NUM(4)	(XXXX)
56,e	SPACE	CHAR(6)	
62,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

TXVRT.DAT This is a hard disk based file containing vehicle test parameters. Records will be maintained on the hard disk and updated by the VID. Only vehicle test parameters are to be stored in this file. Record length is 247 bytes. The analyzer must be able receive a compressed file from the TIMS, extract this file, and install it on the system, or have an equivalent system for updating the complete VRT table via phone or internet communication at no cost to the state.

0,e	VRT_RECORD_ID	NUM(5)	VRT identifier
5,e	MODEL_YR	NUM(4)	(YYYY) Vehicle Model-year
9,e	VEHICLE_BODY_TYPE	NUM(1)	1 - Sedan, 2 - Station Wagon, 3 - Pickup, 4 - Sport/Utility Vehicle, 5 - Minivan, 6 - Full-Size Van
10,e	VEHICLE_STNDS_TYPE	CHAR(1)	“P” - passenger, “T” - truck
11,e	VEHICLE_MAKE	CHAR(17)	Vehicle make selected from possible list using the Sierra Lookup Table naming convention
28,e	MAKE	CHAR(4)	Vehicle make selected from possible list using NCIC make definitions.
32,e	VEHICLE_MODEL_NM	CHAR(23)	Vehicle model selected from possible list using the Sierra Lookup Table naming convention
55,e	MODEL	CHAR(20)	Vehicle model type is selected based on the vehicle make entry.
75,e	MODEL_CODE	CHAR(3)	The NCIC model code or acceptable TCEQ code. Otherwise, left blank.
78,e	NUMBER_CYLINDERS	NUM(2)	Number of cylinders: valid numbers 3-17 (17 stands for rotary)
80,e	ENGINE_SIZE	NUM(4)	Engine Size in cubic centimeters (cc)
84,e	TRANSMISSION	CHAR(1)	“A” - Auto, “M” - Manual, “E” - Either
85,e	VEHICLE_REF_NO	CHAR(8)	Row source reference
93,e	GVWR	NUM(5)	GVW from inspector entry
98,e	VEHICLE_TEST_WT	NUM(4)	Weight from table
102,e	ASM_HP_2525	NUM(4)	test hp 25/25
106,e	ASM_HP_5015	NUM(4)	test hp 5015

110,e	DYNO_TEST_AVAIL	CHAR(1)	“Y” - Yes, “N” - No, “M” - Maybe
111,e	FUEL_CAP_ADAP	CHAR(1)	“A” - Dark blue, “B” - Yellow, “C” - Red, “E” - Green, “F” - Black, “G” - Gray, “H” - Threaded, “L” - Light blue, “O” - Orange, “T” - Tan/Brown, “Z” - Varies, “U” - Untestable, “N” - unknown or no adapter required
112,e	ASM_CUTPT_ROW_ID	NUM(5)	
117,e	MISFIRE_MON	CHAR(1)	OBD Readiness Monitor for engine Misfire
118,e	FUEL_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Fuel System
119,e	COMPR_COMPR_MON	CHAR(1)	OBD Readiness Monitor for the Comprehensive Components
120,e	CATALYST_MON	CHAR(1)	OBD Readiness Monitor for the Catalytic Converter
121,e	HEAT_CATALYST_MON	CHAR(1)	OBD Readiness Monitor for the Heated Catalytic Converter
122,e	EVAP_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Evaporative System
123,e	SEC_AIR_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Secondary Air System
124,e	AIR_COND_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Air Conditioner System
125,e	OXYGEN_SENSOR_MON	CHAR(1)	OBD Readiness Monitor for the Oxygen Sensor
126,e	HEAT_O2_SENS_MON	CHAR(1)	OBD Readiness Monitor for the Oxygen Sensor Heater
127,e	EGR_SYS_MON	CHAR(1)	OBD Readiness Monitor for the Exhaust Gas Recirculation (EGR) Valve
128,e	THERMOSTAT_MON	CHAR(1)	OBD Readiness Monitor for the Thermostat (beginning with model-year 2000)
129,e	PCV_MON	CHAR(1)	OBD Readiness Monitor for the PCV Valve (beginning with model-year 2002)
130,e	EXEMPT_MK_OBD2TST	CHAR(17)	(NCIC) Make to exempt OBD inspection
147,e	EXEMPT_MD_OBD2TST	NUM(23)	(999) Model code for Model to exempt from OBD inspection

170,e	MAX_NUM_NOT_READY	NUM(1)	Maximum number of monitors set to not ready and allow the vehicle to pass the OBD inspection
171,e	DLC_LOCATION	NUM(1)	Location of DLC, number 1 - 9, per EPA locator grid
172,e	DLC_COVERED	CHAR(1)	“Y” - DLC is covered, “N” - No cover per EPA locator grid
173,e	FORCE_TEST_TYPE	CHAR(1)	“A” - ASM, “T” - TSI, “O” - OBD, or blank (default test based on model-year of vehicle being inspected)
174,e	NOT_RDY_TO_ASM	CHAR(1)	“E” - if present, and vehicle deemed not ready, then transition to tailpipe emissions inspection.
175,e	FUEL_TYPE	CHAR(1)	“G” - gasoline, “D” - diesel
176,e	SPACE	CHAR(61)	
237,e	ROW_DATE	NUM(8)	MMDDYYYY - Date of the last VRT update.
245,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

DFLTHP.DAT This is a hard disk based file containing vehicle test parameters. Records will be maintained on the hard disk until updated by the VID. Only vehicle test parameters are to be stored in this file. Record length is 247 bytes.

0,e	VEHICLE_BODY_TYPE	NUM(1)	1 - Sedan, 2 - Station Wagon, 3 - Pickup, 4 - Sport/Utility Vehicle, 5 - Minivan, 6 - Full-Size Van
1,e	NUMBER_CYLINDERS	NUM(2)	Number of cylinders: valid numbers 3-17 (17=rotary)
3,	SPACE	CHAR(4)	
7,e	DYNO_ROLL_SIZE	NUM(4)	XX.X, either “08.6”, or “20.0”
11,e	ASM_HP_5015	NUM(4)	test hp 5015
15,e	SPACE	CHAR(4)	
19,e	ASM_HP_2525	NUM(4)	test hp 25/25
23,e	SPACE	CHAR(4)	
27,e	VEHICLE_TEST_WT	NUM(4)	Weight from table
31,e	SPACE	CHAR(214)	
245,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

PERFORM.DAT This is both hard disk and floppy based file accessed through the audit screen. The analyzer will purge records older than 180 days automatically from the hard disk. Record length is 768 bytes.

0,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
7,e	STATION_NAME	CHAR(25)	This field must be the station name from the STATION.DAT file.
32,e	ANALYZER_NUMBER	CHAR(8)	This field must be the authorized analyzer number from the STATION.DAT file.
40,e	TODAY'S DATE	NUM(8)	(MMDDYYYY) Date of the current station performance report.
48,e	DATE_LAST_REPORT	NUM(8)	(MMDDYYYY) Date of the previous station performance report.
56,e	DATE_LAST_CALIBRAT	NUM(8)	(MMDDYYYY) Date of the last three-day gas calibration and leak check.
64,e	STATION_ SIGN	CHAR(1)	"P" - Pass "F" - Fail
65,e	PRICE POSTED	CHAR(1)	"P" - Pass "F" - Fail
66,e	HOURS POSTED	CHAR(1)	"P" - Pass "F" - Fail
67,e	CERT_OF_APPT	CHAR(1)	"P" - Pass "F" - Fail
68,e	INSPECTOR LICENSE	CHAR(1)	"P" - Pass "F" - Fail
69,e	DISPLAY_BOARD	CHAR(1)	"A" - Pass "B" - Fail
70,e	CURR_EMISS_MANUAL	CHAR(1)	"P" - Pass "F" - Fail
71,e	CERTIFICATES	CHAR(1)	"P" - Pass "F" - Fail
72,e	PUBLIC RELATION PAMPHLET	CHAR(1)	"P" - Pass "F" - Fail

73,e	TUNE-UP TOOLS	CHAR(1)	“P” - Pass “F” - Fail
74,e	PROPANE ENRICH- MENT KIT	CHAR(1)	“P” - Pass “F” - Fail
75,e	FUEL INLET RESTRICTOR GAUGE	CHAR(1)	“P” - Pass “F” - Fail
76,e	FLEX PROBES	CHAR(1)	“P” - Pass “F” - Fail
77,e	APPVD_BAR90_GAS	CHAR(1)	“A” - Pass “B” - Fail
78,e	RULES_REGS_MANUAL	CHAR(1)	“P” - Pass “F” - Fail
79,e	BRAKE_TEST_AREA	CHAR(1)	“P” - Pass “F” - Fail
80,e	REQUIRED_EQUIP	CHAR(1)	“A” - Pass “B” - Fail
81,e	TACHOMETER_LEAD	CHAR(1)	“A” - Pass “B” - Fail
82,e	GAS_CAP_TESTER	CHAR(1)	“A” - Pass “B” - Fail
83,e	INSP_ON_DUTY	CHAR(1)	“A” - Pass “B” - Fail
84,e	INSPECTION_BAY	CHAR(1)	“A” - Pass “B” - Fail
85,e	APPR_WIN_TINT_MTR	CHAR(1)	“P” - Pass “F” - Fail
86,e	ANLYZR_PRNTR_SUPPL	CHAR(1)	“A” - Pass “B” - Fail
87,e	OVERALL_RESULT	CHAR(1)	“P” - Pass “F” - Fail
88,e	CHANGE ACCESS CODE	CHAR(1)	“Y” - Yes “N” - No
89,e	NEW DATA DISK	CHAR(1)	“Y” - Yes “N” - No

90,e	RESET TAMPER	CHAR(1)	“Y” - Yes “N” - No
91,e	SOFTWARE UPDATE	CHAR(1)	“Y” - Yes “N” - No
92,e	STATION LOCKOUT	CHAR(1)	“Y” - Yes “N” - No
93,e	INSPECTOR LOCKOUT	CHAR(1)	“Y” - Yes “N” - No
94,e	LETTER DELIVERED	CHAR(1)	“Y” - Yes “N” - No
95,e	TECHNICAL BULLETINS	CHAR(1)	“Y” - Yes “N” - No
96,e	DPS_REP_ID	CHAR(6)	DPS representative/technician ID number, new length
102,e	BARCODE_SCANNER	CHAR(1)	“Y” - Yes, “N” - No, can also be edited under the manufacturer-authorized repair technician’s menu also known as the field service representative’s (FSR) menu
103,e	CD_ROM	CHAR(1)	“Y” - Yes, “N” - NO, can also be edited under the FSR menu
104,e	DVD	CHAR(1)	“Y” - Yes, “N” - NO, can also be edited under the FSR menu
105,e	MODEL_NUM	CHAR(15)	Analyzer model number, can also be edited under the FSR menu
120,e	SERIAL_NUMBER_1	CHAR(15)	Primary analyzer serial number, can also be edited under the FSR menu
135,e	SERIAL_NUMBER_2	CHAR(15)	Secondary analyzer serial number, can also be edited under the FSR menu
150,e	MANU_ID	CHAR(20)	Free text for Manu ID, can also be edited under the FSR menu
170,e	VIOLATION_CDS	CHAR(25)	These are the violation codes entered by the DPS auditor.
195,e	ACTION_CDS	CHAR(10)	These are the action codes entered by the DPS auditor. Each action code is alphanumeric of

			length 2, and has expected values of “C” - for Citation Issued, “W” for Warning Issued, “S” for Suspension Recommended, and “R” for Revocation Recommended, or a combination of these values.
205,e	TICKET_NOS	CHAR(70)	The ticket numbers entered by the DPS auditor.
275,e	NOTES	CHAR(319)	Record length may vary (maximum 320 characters). Copy of the NOTES field in AUDITNOT.DAT file for transmission to VID.
594,e	AUD_TYPE	CHAR(1)	“1” - Compliance Audit, “2” - Administrative Contact “3” - Investigation, “4” - Certification Contact, “_” - performance audit not conducted, (underscore is a space)
595,e	SPACE	CHAR(171)	
766,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

VIRMSGS.DAT This is both a hard disk and floppy based file containing the messages that will be printed on the VIR at the conclusion of an inspection. Records will be maintained on hard disk. Record length is variable.

0,e	MESSAGE_DELIMIT	CHAR(3)	&*&
3,e	MESSAGE_NUM	NUM(2)	Record number of this message block in file.
5,e	NUM_MSG_BLKS	NUM(2)	Total number of message blocks in file.
7,e	MESSAGE_ID	CHAR(8)	Message Identifier
15,e	DATE_UPDATE	NUM(8)	MMDDYYYY, date of last update.
23,e	MESSG_LN_COUNT	NUM(2)	Message line count
25,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	<CR><LF>
27,e	MESSAGE_TEXT	CHAR(Var)	ASCII text with up to 76 characters per line for screen messages/ 110 characters per line for printed messages. 1000 bytes/message. Each message line terminates with <CR><LF>.

SECXSEC.DAT This is both a hard disk and floppy based file containing the second by second data from the last ASM test. Records will be maintained on hard disk. This file may be erased once it is successfully transmitted to the VID. Record length is 64 bytes.

0,e	TEST_REC_NUM	NUM(6)	
6,e	STATION_NUM	CHAR(7)	This field must be the authorized station number from the STATION.DAT file.
13,e	ANALYZER_NUM	CHAR(8)	This field must be the authorized analyzer number from the STATION.DAT file.
21,e	TIME_INCREMENT	NUM(3)	“001” - “270”
24,e	VEHICLE_SPEED	NUM(4)	XX.X, vehicle speed during the inspection.
28,e	HC	NUM(4)	HC reading in ppm (Not DCF Adjusted), XXXX
32,e	CO	NUM(5)	CO reading in ppm (Not DCF Adjusted), XX.XX
37,e	CO2	NUM(4)	CO_2 reading in ppm (Not DCF Adjusted), XX.X
41,e	NO	NUM(4)	NO reading in ppm (Not DCF Adjusted), XXXX
45,e	O2	NUM(4)	O_2 reading in ppm (Not DCF Adjusted), XX.X
49,e	AIR_FUEL_RATIO	NUM(4)	Air Fuel Ratio, XX.X
53,e	SPACE	CHAR(9)	
62,e	CONTROL_CHARS	CHAR(2)	<CR><LF>, 2 BYTES

TXDTC.DAT This is both a hard disk and floppy based file containing the OBD DTCs that, if present when the malfunction indicator light is commanded on, will result in failure of the emissions phase of the inspection. This file will be received from the VID. Records will be maintained on hard disk. Record length is 128 bytes.

0,e	FAULT_CODE(DTC)	CHAR(5)	Value of the DTC.
5,e	FAULT_CD_DESC	CHAR(66)	Written description of the DTC.
71,e	FAIL_FLAG	CHAR(1)	"Y" - Yes, fail the vehicle if this code is present, when MIL commanded on. "N" - No, do not fail the vehicle if this code is present, when the MIL is commanded on.
72,e	DTC_RECORD_ID	NUM(5)	DTC table identifier
77,e	SPACE	CHAR(41)	
118,e	DTC_ROW_DATE	NUM(8)	Date the DTC row was last updated.
126,e	CONTROL_CHARS	CHAR(2)	<CR><LF>, 2 BYTES

ESC_ASM.DAT This is a hard disk based file containing emissions standards. Records will be maintained on the hard disk until updated by the VID. Only emissions standards are to be stored in this file. Record length is 64 bytes.

0,e	ASM_CUTPT_ROW_ID	NUM(5)	
5,e	MODEL_YEAR	NUM(4)	XXXX
9,e	VEHICLE_TEST_WT	NUM(4)	XXXX
13,e	VEHICLE_STNDS_TYPE	CHAR(1)	“P” - passenger, or “T” - truck
14,e	MIN_GVWR	NUM(4)	Minimum GVW rating in pounds
18,e	MAX_GVWR	NUM(4)	Maximum GVW rating in pounds
22,e	HC_CUTPOINT_2525	NUM(4)	XXXX
26,e	CO_CUTPOINT_2525	NUM(5)	XX.XX
31,e	NO_CUTPOINT_2525	NUM(4)	XXXX
35,e	HC_CUTPOINT_5015	NUM(4)	XXXX
39,e	CO_CUTPOINT_5015	NUM(5)	XX.XX
44,e	NO_CUTPOINT_5015	NUM(4)	XXXX
48,e	DATE	DATE(8)	MMDDYYYY Date of last update to the emissions standard table
56,e	SPACE	CHAR(6)	
62,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

VINMY.DAT This is a hard disk based file containing vehicle model years and VIN characters. Records will be maintained on the hard disk until updated by a software update or by VID if equipped. Only default model year entries and VIN characters are to be stored in this file. Record length is 64 bytes

0,e	MODEL_YEAR	NUM(4)	XXXX, starting with 1980
4,e	VIN_CHAR	CHAR(1)	X, starting with “A”
5,e	SPACE	CHAR(57)	
62,e	CARRIAGE RETURN AND LINE FEED	CHAR(2)	2 BYTES

Appendix J

Sample Vehicle Inspection Report

(Available Upon Request)

Appendix K

TSI Emissions Inspection Procedures

The analyzer must conduct a preconditioned TSI emissions inspection using the emission standards located in Appendix A: *TSI Emissions Standards*.

General Requirements

The inspection sequence must include at least the following parameters: HC, CO, CO_2, and engine RPM. The analyzer must have help screens to assist the inspector with suggested methods of picking up the RPM. If the RPM cannot be obtained, the analyzer must allow the inspector to bypass the RPM signal attachment. The RPM bypass function must be made available, when the analyzer displays live engine RPM for the first time. To activate the RPM bypass, the inspector must strike at least two keys simultaneously. Once the emission inspection has begun, the bypass function must no longer be available. The option to bypass may not be available to all makes and models. The analyzer must set RPM_BYPASS to "B". The analyzer must prompt the inspector to inspect the vehicle in the as-received condition, all accessories turned off, and the engine running at normal operating temperature based on a temperature gauge reading or a touch inspection on the radiator hose and visual observation for overheating. The inspector shall insert the sample probe into the tailpipe and the inspection sequence must begin. The inspection timer governing the overall inspection sequence must begin at the start of sampling. A separate mode timer must govern the modes within the inspection sequence and must start when the specified conditions are met. The anti-dilution criterion must be a minimum combined CO and CO_2 concentration of six percent for all light-duty vehicles and light-duty trucks, or five percent for all heavy-duty trucks.

Initial Inspection

The initial inspection must have an overall maximum inspection time of 290 seconds. If a valid inspection condition has not been obtained after 290 seconds, the analyzer must prompt the inspector to restart the emissions inspection or fail this portion of the inspection and continue to the next phase of the inspection. If the inspector elects to continue on to the next phase of the inspection, the inspection must end and be reported as a FAILED inspection in the inspection record and on the VIR. If the inspector elects to restart the emissions inspection, the analyzer must restart the emissions inspection from the beginning, reset the time out flag, and write the emissions readings from the invalid inspection condition in the inspection record in the bytes that begin "ALT_", and the next set of emissions readings in the inspection record in the bytes that begin "PRI_". If after 290 seconds a valid inspection condition has not been obtained after the restart, the inspection must end and be reported as a FAILED inspection in the inspection record and on the VIR. The procedure will not proceed to the second chance section. This condition could be caused by invalid RPM or Dilution.

High-Speed Mode

The mode timer must start when engine speed is between 2200 and 2800 RPM and exhaust CO + CO_2 is at least six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks). The mode must last 90 seconds. If engine speed falls below 2200 RPM or exceeds 2800 RPM for more than two seconds in one excursion, or more than six seconds over all excursions, within 30 seconds of final readings, the readings must be invalid and the mode must continue. If CO + CO_2 falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer must

display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode, and resume sampling once a valid inspection condition is achieved.

The pass/fail analysis must begin after an initial time delay of 10 seconds. The emissions level for HC and CO must be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emissions levels over the last five seconds. Readings must be taken as running averages.

The pass/fail determination is made based on a comparison of the HC and CO readings to the high-speed emissions standard selected for the particular vehicle. If the HC and CO readings show passing values for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the high-speed mode.

If the vehicle passes, the printed and recorded values must be the passing readings, for which HC + (151*CO) is a minimum among all passing readings. In addition to storing these readings, the analyzer must also store the start time of the readings. If the vehicle fails, calculate the scores in the same manner and enter the values for the HC and CO into the record from the lowest score. Proceed to the second chance inspection and report only the scores obtained from it.

Idle-Mode

This mode must be performed immediately following the high-speed mode. The mode timer must start when the engine speed is between 350 and 1200 RPM and the concentration of CO + CO_2 is at least six percent. This mode must last a minimum of 30 seconds as engine speed is between 350 and 1200 RPM, CO + CO_2 level is above six percent, idle mode time is less than 90 seconds, and passing readings have not been obtained. If engine rpm exceeds 1200 RPM or falls below 350 RPM, the mode timer must reset to zero and resume timing. If the engine stalls, the inspection must abort resulting in a FAILED inspection. If CO + CO_2 falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer must display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode, and resume sampling once a valid inspection condition is achieved.

The pass/fail analysis must begin after an initial time delay of 10 seconds. The emissions level for HC and CO must be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings must be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle must pass and the mode must end immediately. Otherwise, the mode must continue for at least 30 seconds and not more than 90 seconds, stopping between these two limits whenever local program cutpoints are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to idle emissions standard selected for the particular vehicle. If the HC and CO readings show passing values for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the idle mode.

If the vehicle passes, the printed and recorded values must be the passing readings, for which HC + (151*CO) is a minimum among all passing readings. In addition to storing these readings, the analyzer must also store the start time of the readings. If the vehicle fails, calculate the scores in the same manner and enter the values for the HC and CO into the record from the lowest score. Proceed to the second chance inspection and report only the scores obtained from it.

Second-Chance Inspection

If the vehicle fails either mode, the inspection timer must restart and a second-chance inspection must be performed. The second-chance inspection must be performed for only the mode(s) that failed.

If the vehicle failed only the initial high-speed mode, the second-chance inspection must consist of the high-speed inspection mode only. The overall inspection time limit for this sequence is 280 seconds. If the vehicle failed only the idle mode, the second-chance high-speed mode is for preconditioning only. If both modes were failed initially, a complete inspection is conducted. The second-chance idle inspection mode must be performed if a vehicle has failed both its initial and second-chance high-speed inspections. If the vehicle failed only the idle mode, the second-chance inspection must consist of the preconditioning mode followed by the idle mode. The overall inspection time limit for these sequences must be 425 seconds.

Second-Chance High-Speed Mode Without Subsequent Idle Mode

The engine must be shut off and be restarted for 1981-1987 Ford Motor Company products and 1984-1985 Honda Preludes, but no other vehicles. A prompt must notify the inspector of this requirement. If necessary to reduce analyzer fouling, remove the probe from the tailpipe or turn off the sample pump during the restart procedure.

The mode timer must start when engine speed is between 2200 and 2800 RPM and exhaust $CO + CO_2$ is at least six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks). The mode must last a minimum of 15 seconds and a maximum of 180 seconds. If engine speed falls below 2200 RPM or exceeds 2800 RPM for more than two seconds in one excursion, or for more than six seconds over all excursions within 30 seconds of the current final readings, the readings must be invalid and the mode must continue. If $CO + CO_2$ falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer must display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode, and resume sampling once a valid inspection condition is achieved.

The pass/fail analysis must begin after an initial time delay of 10 seconds. The emissions level for HC and CO must be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings must be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle must pass and the mode must end immediately. Otherwise, the mode must continue for at least 30 seconds and not more than 180 seconds, stopping between these two limits whenever local program cutpoints are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to high-speed emissions standard selected for the particular vehicle. If the HC and CO readings show passing values for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the inspection.

If the vehicle fails, the printed and recorded values must be the readings for which HC + (151*CO) is a minimum. If the vehicle passes, the reported scores must be the passing readings for which HC + (151*CO) is a minimum among all passing readings. In addition to storing these readings, the analyzer must also store the start time of the readings.

Second-Chance Preconditioning Mode With Subsequent Idle Mode

The mode timer must initiate when engine speed is between 2200 and 2800 RPM. The mode must continue for 180 seconds. If engine speed falls below 2200 RPM, or exceeds 2800 RPM for more than five seconds in any one excursion, or 15 seconds over all excursions, the mode timer must reset to zero and resume timing.

Second-Chance Idle Mode

The second-chance idle mode must be performed immediately following the second-chance preconditioning mode. The engine must be shut off and restarted for 1981-1987 Ford Motor Company products and 1984-1985 Honda Preludes, but no other vehicles. A prompt will notify the inspector of this requirement. If necessary to reduce analyzer fouling, remove the probe from the tailpipe or turn off the sample pump during the restart procedure.

The mode must initiate when the engine speed is between 350 and 1200 RPM, and the concentration of CO + CO_2 is at least six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks and alternate fuel vehicles). The mode must last a minimum of 30 seconds and a maximum of 90 seconds. The idle mode must continue as long as engine speed is between 350 and 1200 RPM, CO + CO_2 level is above six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks and alternate fuel vehicles), idle mode time is less than 90 seconds and passing readings have not been obtained. If engine rpm exceeds 1200 RPM or falls below 350 RPM, the mode timer must reset to zero and resume timing. If the engine stalls, the inspection must abort. If CO + CO_2 falls below six percent (for all light-duty vehicles and light-duty trucks, five percent for all heavy-duty trucks) at any time, the analyzer must display a warning message indicating the dilution condition, prompt the inspector to check the probe for proper insertion, visually reinspect the analyzer hoses, check the vehicle's exhaust system for leaks, return to the beginning of the mode, and resume sampling once a valid inspection condition is achieved.

The pass/fail analysis must begin after an initial time delay of 10 seconds. The emissions level for HC and CO must be analyzed at a minimum sampling rate of 2 Hz. A reading is a simple average of the emission levels over the last five seconds. Readings must be taken as running averages. If readings less than or equal to 100 ppm HC and 0.5 percent CO are obtained before the 30-second point, the vehicle must pass and the mode must end immediately. Otherwise, the mode must continue for at least 30 seconds and not more than 90 seconds, stopping between these two limits whenever local program cut points are met.

The pass/fail determination is made based on a comparison of the HC and CO readings to idle emissions standard selected for the particular vehicle. If the HC and CO readings show

passing scores for both HC and CO, then the vehicle has passed. If all readings fail for either HC, CO, or both, then the vehicle has failed the inspection.

If the vehicle fails, the printed and recorded values must be the readings for which HC + (151*CO) is a minimum. If the vehicle passes, the reported scores must be the passing readings for which HC + (151*CO) is a minimum among all passing readings. In addition to storing these readings, the analyzer must also store the start time of the readings.

Graphic Illustration of Preconditioned TSI Inspection

(Reserved)

Inspection Sequence for BMW/Peugeot/Volvo/Jaguar

The inspection sequence must follow the procedure described in 40 CFR Part 51, Subpart S, Appendix B: *Vehicle Inspection Reports*, (I) Idle Test with the following modifications.

Given the problems with the ZF automatic transmission, the I/M Program prefers that the affected vehicles be inspected at their dealerships. Accordingly, if the inspector enters an "A" (for automatic) for the transmission type, and if the vehicle make, model and model-year match BMW/Peugeot/Volvo/Jaguar criteria, the analyzer must display the following message:

> **BECAUSE OF THE POSSIBILITY OF TRANSMISSION DAMAGE TO THIS VEHICLE, THE TCEQ/DPS PREFERS THAT IT BE INSPECTED AT ITS DEALERSHIP. IF YOU STILL WISH TO PERFORM THE INSPECTION, YOU MAY DO SO AT YOUR OWN RISK. PRESS "ENTER" TO CONTINUE. IF NOT, PRESS "ESC" TO ABORT THE TEST. (ENTER ABORT CODE 6.)**

If the inspector chooses to continue inspecting this vehicle, display the following message before beginning the inspection sequence.

> **BEFORE BEGINNING THE EMISSIONS TEST, MAKE SURE THE ENGINE IS A NORMAL OPERATING TEMPERATURE. IF NOT, THE VEHICLE SHOULD BE DRIVEN UNTIL IT IS. DO NOT WARM THE ENGINE BY RAISING THE RPM ABOVE IDLE WHILE THE TRANSMISSION IS IN PARK OR NEUTRAL.**
>
> **AFTER THE ENGINE REACHES NORMAL OPERATING TEMPERATURE, PUT THE TRANSMISSION IN PARK AND TURN THE ENGINE OFF FOR 30 SECONDS. RESTART THE ENGINE. AFTER THE ENGINE IS STARTED, DO NOT MOVE THE GEAR SHIFT SELECTOR THROUGH THE FORWARD OR REVERSE GEARS BEFORE OR DURING THE TEST SEQUENCE. DO NOT EXCEED 2000 RPM.**

Inspection period: 90 seconds, no second stage (second chance).

Inspection Stage: Idle RPM (see standards for maximum).

Units of inspection results: Concentration measurements: HC PPM, CO percent, CO_2 percent, O_2 percent.

All 1984-87 BMW's with automatic transmission, 1983-88 Volvo 740s with automatic transmission, 1984-89 Jaguar XjS's, and the 1986-92 Peugeot 505s with automatic transmission must be inspected using this inspection sequence or the latest inspection sequence supplied by the TCEQ.

Preconditioning Modes for BMW/Peugeot/Volvo/Jaguar

In addition to the preconditioning modes described for Ford Motor Company and Honda vehicles, the emissions inspection must include the following preconditioning modes or the latest preconditioning modes supplied by the TCEQ. There are no preconditioning modes for vehicles that match the BMW/Peugeot/Volvo/Jaguar criteria.

Appendix L

Flow Charts

(Reserved)

Appendix M

Acceptance Test Procedures

(Available Upon Request)

Appendix N

Example Public Awareness Statements

(Draft/Sample - Subject to revisions as needed)
(Emissions Passed)

PUBLIC AWARENESS STATEMENT PASSING VEHICLE

CONGRATULATIONS, your vehicle has passed the emissions (I/M) test portion of your annual safety inspection! By maintaining your car in good working condition you are doing your share for clean air. You are also saving money on gas and extending the life of your vehicle because your emissions control equipment is working as it should.

There is an air pollution problem in many Texas cities and cars and trucks cause a large amount of that pollution. High levels of air pollution affect the health and welfare of many citizens. Identifying cars and trucks that are not working properly and ensuring that they are repaired helps in the air pollution battle. Thanks for doing your part, continue to follow your vehicle manufacturers' maintenance schedule, and drive safely!

If you have any additional questions regarding the I/M test, call your local Department of Public Safety Motor Vehicle Inspection Office.

I certify that I have performed the Emissions Test according to state regulations and procedures manuals.

Inspector_____

(Draft/Sample - Subject to revisions as needed)
(Emissions Failed)

PUBLIC AWARENESS STATEMENT FAILED VEHICLE

Your vehicle has failed the emissions (I/M) portion of your annual safety inspection. The rating your vehicle received indicates that emissions-related components are not operating at highest efficiency and repairs are needed.

The inspector should provide you with a list of Recognized Emissions Repair Facilities and a fact sheet of additional information on what you should do next. Vehicles that fail the test must be repaired and pass a retest before an inspection sticker can be issued. Some newer vehicles that fail the I/M test may be covered by manufacturers' warranties. Consult your owner's manual or your dealer for details.

The fact sheet you receive also includes information on various waivers available, retest details and referee services. Feel free to go over this information with your inspector. This information is also available in more detail on the Department of Public Safety's website at www.aircheckttexas.com. If you have any additional questions regarding the I/M test, call your local Department of Public Safety Motor Vehicle Inspection Waiver Office.

There is an air pollution problem in many Texas cities and poorly running cars and trucks cause a large part of that pollution. By having the proper repairs made you will be doing your share for clean air. Also, keeping your vehicle in good repair will improve performance, give you better fuel economy, and extend the life of your vehicle.

I certify that I have performed the emissions test according to state regulations and procedures manuals and have provided additional information to the customer on repairs, retest and waivers.

Inspector_____

TSI Analyzers Only

(Draft/Sample - Subject to revisions as needed)
(Emissions Passed, OBD Failed)

ON-BOARD DIAGNOSTIC (OBD) ADVISORY STATEMENT

Your vehicle's computerized self-diagnostic system (OBD) registered a fault(s) indicated by the MIL light being illuminated while the engine is running. This is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem.

MOTORIST ALERT

Beginning May, 2002, the On-Board Diagnostic systems (OBD) on 1996 and newer vehicles will be checked as part of the annual vehicle emissions inspection program in Texas. When the Malfunction Indicator Light (MIL) of the OBD system of your vehicle is on, this may indicate a malfunction of an emission component(s) and may cause the vehicle to fail the annual inspection. Therefore, proper diagnosis and correction of this condition is recommended.

(See Handout)

PUBLIC AWARENESS STATEMENT PASSING VEHICLE

CONGRATULATIONS, your vehicle has passed the emissions (I/M) test portion of your annual safety inspection! By maintaining your car in good working condition you are doing your share for clean air. You are also saving money on gas and extending the life of your vehicle because your emissions control equipment is working as it should.

There is an air pollution problem in many Texas cities and cars and trucks cause a large amount of that pollution. High levels of air pollution affect the health and welfare of many citizens. Identifying cars and trucks that are not working properly and ensuring that they are repaired helps in the air pollution battle. Thanks for doing your part, continue to follow your vehicle manufacturers' maintenance schedule, and drive safely!

If you have any additional questions regarding the I/M test, call your local Department of Public Safety Motor Vehicle Inspection Office.

I certify that I have performed the Emissions Test according to state regulations and procedures manuals.

Inspector_____

TSI Analyzers Only

(Draft/Sample - Subject to revisions as needed)
(Emissions Failed, OBD Failed)

ON-BOARD DIAGNOSTIC (OBD) ADVISORY STATEMENT

Your vehicle's computerized self-diagnostic system (OBD) registered a fault(s) indicated by the MIL light being illuminated while the engine is running. This is probably an indication of a malfunction of an emission component. However, multiple and/or seemingly unrelated faults may be an indication of an emission-related problem that occurred previously but upon further evaluation by the OBD system was determined to be only temporary. Therefore, proper diagnosis by a qualified technician is required to positively identify the source of any emission-related problem.

MOTORIST ALERT

Beginning May, 2002, the On-Board Diagnostic systems (OBD) on 1996 and newer vehicles will be checked as part of the annual vehicle emissions inspection program in Texas. When the Malfunction Indicator Light (MIL) of the OBD system of your vehicle is on, this may indicate a malfunction of an emission component(s) and may cause the vehicle to fail the annual inspection. Therefore, proper diagnosis and correction of this condition is recommended.

(See Handout)

PUBLIC AWARENESS STATEMENT FAILED VEHICLE

Your vehicle has failed the emissions (I/M) portion of your annual safety inspection. The rating your vehicle received indicates that emissions-related components are not operating at highest efficiency and repairs are needed.

The inspector should provide you with a fact sheet of additional information on what you should do next. Vehicles that fail the test must be repaired and pass a retest before a safety sticker can be issued. Some newer vehicles that fail the I/M test may be covered by manufacturers' warranties. Consult your owner's manual or your dealer for details.

The fact sheet you receive should also include information on various waivers available, retest details and referee services. Feel free to go over this information with your inspector.

There is an air pollution problem in many Texas cities and poorly running cars and trucks cause a large part of that pollution. By having the proper repairs made you will be doing your share for clean air. Also, keeping your vehicle in good repair will improve performance, give you better fuel economy, and extend the life of your vehicle.

If you have any additional questions regarding the I/M test, call your local Department of Public Safety Motor Vehicle Inspection Office.

I certify that I have performed the emissions test according to state regulations and procedures manuals and have provided additional information to the customer on repairs, retest and waivers.

Inspector_____

Appendix O

Sample Vehicle Repair Form

TEXAS DEPARTMENT OF PUBLIC SAFETY
VEHICLE REPAIR FORM (VRF)

VEHICLE REPAIR FORM
Vehicle Information

Vehicle Make | Model | Yr Model

VIN | License Plate # | Mileage

Repairs made by:
Recognized Repair Facility

Recognized Facility ID#

☐ AirCheckTexas Repair & Replacement Program Vehicle

Recognized Tech ID# (last six digits)

☐ Non-Recognized Repair Facility ☐ Self

Repair Information

Repair Date _____/_____/_____
MM DD YY

☐ **Fuel System** (100)
- ☐ Fuel Pump(110)
- ☐ Fuel Filter (120)
- ☐ Injectors (130)
- ☐ Throttle body (140)
- ☐ O2 Sensor (150)

☐ **Ignition/Electrical System** (200)
- ☐ Battery/Charging System (210)
- ☐ Spark plugs (220)
- ☐ Spark plug wires (230)
- ☐ Spark Timing (240)
- ☐ PCM (250)

☐ **Emissions System** (300)
- ☐ Cat (310)
- ☐ EGR (320)
- ☐ AIS (330)
- ☐ PCV (340)
- ☐ EVAP (350)
- ☐ TAC (360)

☐ **Engine Mechanical** (400)
- ☐ Engine Block (410)
- ☐ Camshaft (420)
- ☐ Cylinder Head (430)
- ☐ Valves (Mech.) (440)
- ☐ Valves (Oil Seals) (450)

☐ **Miscellaneous** (500)
- ☐ Trans/Final Drive (510)
- ☐ Vehicle Fluids (520)
- ☐ Eng. Cooling (530)
- ☐ Engine Exhaust (540)

Total repair Cost (Diagnosis, Parts & Labor)

☐ **At the discretion of the motorist, NOT all recommended repairs were performed** $

1. **This form must be completed upon return for re-inspection.**
2. **Present this form and all repair/parts receipts if applying for a waiver.**

For more repair and waiver information visit www.aircheckcktexas.com

VIE-7 (6/07)

Appendix P

(Reserved)

Appendix Q

OBD Diagnostic Link Connector

Mapping Diagram

Diagnostic Link Connector (DLC) Mapping Diagram Explanation

The mapping diagram of DLC locations contains a divided instrument panel (IP) with numbered areas. Each numbered area represents specific sections of the IP where manufacturers may have located DLCs. This document briefly clarifies the numbered locations on the mapping diagram. We will use this mapping diagram to catalog manufacturer responses to the recent 208 letter requesting OBD DLC locations for model-year 1996 and newer vehicles. Areas "1" through "3" fall within the preferred DLC location while the remaining areas, "4" through "8", fall into the allowable DLC location according to EPA requirements. Areas "4" through "8" require that manufacturers label the vehicle in the preferred location to notify parties of the alternate connector location.

Preferred Location(s)

Location #1
This location represents a DLC positioned on the underside of the IP directly under the steering column (or approximately 150mm left or right of the steering column). Visualizing the underside of an IP divided into three equal parts from inside the passenger compartment, this represents the center section.

Location #2
This location represents a DLC positioned on the underside of the IP between the steering column and the driver's side passenger door. Visualizing the underside of an IP divided into three equal parts from inside the passenger compartment, this represents the left section.

Location #3
This location represents a DLC positioned on the underside of the IP between the steering column and the center console. Visualizing the underside of an IP divided into three equal parts from inside the passenger compartment, this represents the right section.

Allowable Location(s)

Location #4
This location represents a DLC positioned on the upper part of the IP between the steering column and the center console (but not on the center console, see location #6).

Location #5
This location represents a DLC positioned on the upper part of the IP between the steering column and the driver side, passenger door.

Location #6
This location represents a DLC positioned on the vertical section of the center console and left of the vehicle center line.

Location #7
This location represents a DLC positioned 300 mm right of the vehicle centerline either on the vertical section of the center console or on the passenger side of the vehicle.

Location #8
This location represents a DLC positioned on the horizontal section of the center console either left or right of the vehicle center line. This does not include the horizontal section of the center console that extends into the rear passenger area (see location #9).

Location #9

This location, not shown, represents any DLC positioned in an area other than those mentioned above (e.g., in the rear passenger area on the driver side armrest).

Appendix R

Safety Item Sequence Lists

Safety Screen Lists
Entry Item Sequences

**(HS represents "help screen,"
so HS - 5 = help screen #5.
FHS represents "FMCSR help screen,"
so FHS - 5 = FMCSR help screen #5)**

INSPECTION PROCEDURE (Sequence #1)
PASSENGER CAR/MOTOR HOME/TRUCKS UNDER 80" WIDTH

Seat Belts (SAFE_5)(display HS - 5)
Presence (Failed - A, Repaired - B)
Cut or frayed (Failed - C, Repaired - D)
Mounting (Failed - E, Repaired - G)
Parking Brake System (SAFE_6B)(display HS - 6B)
Does not hold vehicle (Failed - A, Repaired - B)
Missing/Broken parts (Failed - C, Repaired - D)
Horn (SAFE_1)(display HS - 1)
Operation (Failed - A, Repaired - B)
Turn Signal Switch and Indicator Lamp (SAFE_16B) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Switch accessible and locks in position (Failed - A, Repaired - B)
Indicator lamp operation (Failed - C, Repaired - D)
Beam Indicator (SAFE_11)(display HS - 11)
High beam indicator (Failed - A, Repaired - B)
Switch mounting (Failed - C, Repaired - D)
Wipers (SAFE_2)(display HS - 2)
Switch and Operation (Failed - C, Repaired - D)
Blade condition (Failed - A, Repaired - B)
Rear view mirror (SAFE_3)(display HS - 3)
Presence (Failed - A, Repaired - B)
Window Tinting and Sunscreening (SAFE_24)(display HS - 24)
Light transmission (Failed - A, Repaired - B)
Tint or Coating out of Specifications (Failed - C, Repaired - D)
Headlamps (SAFE_17)(display HS - 17)
Mounting, operation, & approved type (Failed - A, Repaired - B)
Lens cracked, broken, or discolored (Failed - C, Repaired - D)
Reflective material discolored or deteriorated (Failed - E, Repaired - G)
Lamp contaminated (Failed - H, Repaired - I)
Liquid (Failed - J, Repaired - K)
Turn Signals (SAFE_16A) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Tail Lamps (SAFE_12)(display HS - 12)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Stop Lamps (SAFE_13)(display HS - 13)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Rear Reflectors (SAFE_15)(display HS - 15)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
License Plate Lamp (SAFE_14)(display HS - 14)
Operation (Failed - A, Repaired - B)
Lens cracked or broken (Failed - C, Repaired - D)
Tires (SAFE_7)(display HS - 7)

Cuts, tears, cord exposed, visible bulges (Failed - C, Repaired - D)
Excessive tire wear (Failed - A, Repaired - B)

Wheel Assembly (SAFE_8)(display HS - 8)

Bent, broken, cracked (Failed - C, Repaired - D)

Missing lugs or studs (Failed - A, Repaired - B)

Mud Flaps/Safety Guards (SAFE_23)

(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")

Presence/condition (Failed - A, Repaired - B)

Mounting (Failed - C, Repaired - D)

Brake System (SAFE_6A)(display HS - 6A)

Leaks (Failed - E, Repaired - G)

Brake cables (Failed - J, Repaired - K)

Stopping distance (Failed - A, Repaired - B)

Pulling right or left (Failed - C, Repaired - D)

Metal on Metal (Failed - O, Repaired - Q)

Exhaust System (SAFE_9)(display HS - 9)

Required muffler, clamps and hangers (Failed - C, Repaired - D)

Leaks (Failed - A, Repaired - B)

Emission System (SAFE_10) new

(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")

Components presence (Failed - A, Repaired - B)

Components disconnected/disabled (Failed - C, Repaired - D)

Power Steering System (SAFE_4)(display HS - 4)

Fluid level and belt condition (Failed - H, Repaired - I)

Fluid leaks (Failed - J, Repaired - K)

Excessive lash (Failed - A, Repaired - B)

Modification (Failed - C, Repaired - D)

Binding/jamming (Failed - E, Repaired - G)

Master Cylinder (SAFE_33) new

(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")

Fluid level (Failed - J, Repaired - K)

Fluid leaks (Failed - E, Repaired - G)

INSPECTION PROCEDURE (Sequence #2)
MOTORCYCLE/MOTOR-DRIVEN CYCLE/MOPED

Horn (SAFE_1)(display HS - 1)
Operation (Failed - A, Repaired - B)
Rear View Mirror (SAFE_3)(display HS - 3)
Presence (Failed - A, Repaired - B)
Steering System (SAFE_4)(display HS - 4)
Handlebar height (Failed - H, Repaired - I)
Binding/jamming (Failed - E, Repaired - G)
Service Brake System (SAFE_6A)(display HS - 6A)
Stopping Distance (Failed - A, Repaired - B)
Missing/Broken parts (Failed - L, Repaired - M)
Leaks (Failed - E, Repaired - G)
Metal on Metal (Failed - O, Repaired - Q)
Tires (SAFE_7)(display HS - 7)
Cuts/Tears (Failed - C, Repaired - D)
Excessive tire wear (Failed - A, Repaired - B)
Wheel Assembly (SAFE_8)(display HS - 8)
Bent, broken, cracked (Failed - C, Repaired - D)
Missing lugs or studs (Failed - A, Repaired - B)
Spokes (Failed - E, Repaired - G)
Exhaust System (SAFE_9)(display HS - 9)
Required muffler, clamps and hangers (Failed - C, Repaired - D)
Leaks (Failed - A, Repaired - B)
Tail Lamp (SAFE_12)(display HS - 12)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Stop Lamp (SAFE_13)(display HS - 13)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
License Plate Lamp (SAFE_14)(display HS - 14)
Operation (Failed - A, Repaired - B)
Lens cracked or broken (Failed - C, Repaired - D)
Rear Reflectors (SAFE_15)(display HS - 15)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Headlamps (SAFE_17)(display HS - 17)
Mounting, operation, & approved type (Failed - A, Repaired - B)
Lens cracked, broken, or discolored (Failed - C, Repaired - D)
Reflective material discolored or deteriorated (Failed - E, Repaired - G)
Lamp contaminated (Failed - H, Repaired - I)
Liquid (Failed - J, Repaired - K)

INSPECTION PROCEDURE (Sequence #3)
SCHOOL BUS-SAFETY INSPECTION

Horn (SAFE_1)(display HS - 1)
Operation (Failed - A, Repaired - B)
Wipers (SAFE_2)(display HS - 2)
Switch and Operation (Failed - C, Repaired - D)
Blade condition (Failed - A, Repaired - B)
Rear View Mirror (SAFE_3)(display HS - 3)
Presence (Failed - A, Repaired - B)
Steering System (SAFE_4)(display HS - 4)
Modification (Failed - C, Repaired - D)
Binding/jamming (Failed - E, Repaired - G)
Excessive lash (Failed - A, Repaired - B)
Fluid level and belt condition (Failed - H, Repaired - I)
Fluid leaks (Failed - J, Repaired - K)
Seat Belts-Driver Only (SAFE_5)(display HS - 5)
Presence (Failed - A, Repaired - B)
Cut or frayed (Failed - C, Repaired - D)
Mounting (Failed - E, Repaired - G)
Service Brake System (SAFE_6A)(display HS - 6A)
Stopping distance (Failed - A, Repaired - B)
Pull left or right (Failed - C, Repaired - D)
Missing/Broken parts (Failed - L, Repaired - M)
Leaks (Failed - E, Repaired - G)
Metal to Metal (Failed - O, Repaired - Q)
Parking Brake System (SAFE_6B)(display HS - 6B)
Does not hold vehicle (Failed - A, Repaired - B)
Missing/Broken parts (Failed - C, Repaired - D)
Tires (SAFE_7)(display HS - 7)
Cuts, tears, cord exposed, visible bulges (Failed - C, Repaired - D)
Excessive wear (Failed - A, Repaired - B)
Approval type (Failed -E, Repaired - G)
Wheel Assembly (SAFE_8)(display HS - 8)
Bent, broken, cracked (Failed - C, Repaired - D)
Missing lugs/studs (Failed - A, Repaired - B)
Exhaust System (SAFE_9)(display HS - 9)
Required muffler, clamps, and hangers (Failed - C, Repaired - D)
Leaks (Failed - A, Repaired - B)
Emission System (SAFE_10)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Components presence (Failed - A, Repaired - B)
Components disconnected or disabled (Failed - C, Repaired - D)
Beam Indicator (SAFE_11)(display HS - 11)
High beam indicator (Failed - A, Repaired - B)
Switch mounting (Failed - C, Repaired - D)
Headlamps (SAFE_17)(display HS - 17)
Mounting, operation, & approved type (Failed - A, Repaired - B)
Lens cracked, broken, or discolored (Failed - C, Repaired - D)
Reflective material discolored or deteriorated (Failed - E, Repaired - G)
Lamp contaminated (Failed - H, Repaired - I)
Liquid (Failed - J, Repaired - K)

Tail Lamps (SAFE_12)(display HS - 12)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Stop Lamps (SAFE_13)(display HS - 13)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
License Plate Lamp (SAFE_14)(display HS - 14)
Operation (Failed - A, Repaired - B)
Lens cracked or broken (Failed - C, Repaired - D)
Rear Reflectors (SAFE_15)(display HS - 15)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Turn Signals (SAFE_16A) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Turn Signal Switch and Indicator Lamp (SAFE_16B) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Switch accessible and locks in position (Failed - A, Repaired - B)
Indicator lamp operation (Failed - C, Repaired - D)
Clearance Lamps (SAFE_18)(display HS - 18)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Marker Lamps (SAFE_19)(display HS - 19)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Reflectors (SAFE_21)(display HS - 21)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
School Bus Signs (SAFE_22A)(display HS - 22)
Size (Failed - A, Repaired - B)
Location (Failed - C, Repaired - D)
Hazard Warning Lighting (SAFE_35) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation, approved type (Failed - A, Repaired - B)
Color and condition of lens (Failed - C, Repaired - D)
Convex Mirror (SAFE_22D)(display HS - 22)
Mounting (Failed - A, Repaired - B)
Condition (Failed - C, Repaired - D)
Fire Extinguisher (SAFE_22B)(display HS - 22)
Presence (Failed - A, Repaired - B)
Approved type (Failed -C, Repaired - D)

INSPECTION PROCEDURE (Sequence #4)
TRUCKS/MOTOR HOMES OVER 80" WIDTH

Seat Belts (SAFE_5)(display HS - 5)
Presence (Failed - A, Repaired - B)
Cut or frayed (Failed - C, Repaired - D)
Mounting (Failed - E, Repaired - G)
Service Brake System (SAFE_6A)(display HS - 6A)
Stopping distance (Failed - A, Repaired - B)
Pulling right or left (Failed - C, Repaired - D)
Metal on Metal (Failed - O, Repaired - Q)
Leaks (Failed - E, Repaired - G)
Parking Brake System (SAFE_6B)(display HS - 6B)
Does not hold vehicle (Failed - A, Repaired - B)
Missing/Broken parts (Failed - C, Repaired - D)
Horn (SAFE_1)(display HS - 1)
Operation (Failed - A, Repaired - B)
Turn Signal Switch and Indicator Lamp (SAFE_16B) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Switch accessible and locks in position (Failed - A, Repaired - B)
Indicator lamp operation (Failed - C, Repaired - D)
Beam Indicator (SAFE_11)(display HS - 11)
High beam indicator (Failed - A, Repaired - B)
Switch mounting (Failed - C, Repaired - D)
Wipers (SAFE_2)(display HS - 2)
Switch and Operation (Failed - C, Repaired - D)
Blade condition (Failed - A, Repaired - B)
Rear view mirror (SAFE_3)(display HS - 3)
Presence (Failed - A, Repaired - B)
Window Tinting and Sunscreening (SAFE_24)(display HS - 24)
Light transmission (Failed - A, Repaired - B)
Tint or Coating out of Specifications (Failed - C, Repaired - D)
Headlamps (SAFE_17)(display HS - 17)
Mounting, operation, & approved type (Failed - A, Repaired - B)
Lens cracked, broken, or discolored (Failed - C, Repaired - D)
Reflective material discolored or deteriorated (Failed - E, Repaired - G)
Lamp contaminated (Failed - H, Repaired - I)
Liquid (Failed - J, Repaired - K)
Turn Signals (SAFE_16A) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Tail Lamps (SAFE_12)(display HS - 12)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Stop Lamps (SAFE_13)(display HS - 13)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Rear Reflectors (SAFE_15)(display HS - 15)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)

Clearance Lamps (SAFE_18)(display HS - 18)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Marker Lamps (SAFE_19)(display HS - 19)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Cab Lamps (SAFE_20)(display HS - 20)
Operation (Failed - A, Repaired - B)
Presence (Failed - C, Repaired - D)
Side Reflectors (SAFE_21)(display HS - 21)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Reflective Tape (SAFE_34) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Presence (Failed - A, Repaired - B)
Location (Failed - C, Repaired - D)
License Plate Lamp (SAFE_14)(display HS - 14)
Operation (Failed - A, Repaired - B)
Lens cracked or broken (Failed - C, Repaired - D)
Tires (SAFE_7)(display HS - 7)
Cuts, tears, cord exposed, visible bulges (Failed - C, Repaired - D)
Excessive tire wear (Failed - A, Repaired - B)
Wheel Assembly (SAFE_8)(display HS - 8)
Bent, broken, cracked (Failed - C, Repaired - D)
Missing lugs or studs (Failed - A, Repaired - B)
Mud Flaps/Safety Guards (SAFE_23)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Presence/condition (Failed - A, Repaired - B)
Mounting (Failed - C, Repaired - D)
Exhaust System (SAFE_9)(display HS - 9)
Required muffler, clamps and hangers (Failed - C, Repaired - D)
Leaks (Failed - A, Repaired - B)
Emission System (SAFE_10) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Components presence (Failed - A, Repaired - B)
Components disconnected/disabled (Failed - C, Repaired - D)
Power Steering System (SAFE_4)(display HS - 4)
Fluid level and belt condition (Failed - H, Repaired - I)
Fluid leaks (Failed - J, Repaired - K)
Excessive lash (Failed - A, Repaired - B)
Modification (Failed - C, Repaired - D)
Binding/jamming (Failed - E, Repaired - G)
Master Cylinder (SAFE_33) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Fluid level (Failed - J, Repaired - K)
Fluid leaks (Failed - E, Repaired – G

INSPECTION PROCEDURE (Sequence #5)
TRUCK TRACTOR

Horn (SAFE_1)(display HS - 1 or FHS - 1)
Operation (Failed - A, Repaired - B)
Wipers (SAFE_2)(display HS - 2 or FHS - 2)
Switch and Operation (Failed - C, Repaired - D)
Blade condition (Failed - A, Repaired - B)
Rear View Mirrors (SAFE_3)(display HS - 3 or FHS - 3)
Presence (Failed - A, Repaired - B)
Steering System (SAFE_4)(display HS - 4 or FHS - 4)
Excessive lash (Failed - A, Repaired - B)
Modification (Failed - C, Repaired - D)
Binding/jamming (Failed - E, Repaired - G)
Fluid level and belt condition (Failed - H, Repaired - I)
Fluid leaks (Failed - J, Repaired - K)
Turn Signal Switch and Indicator Lamp (SAFE_16B) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Switch accessible and locks in position (Failed - A, Repaired - B)
Indicator lamp operation (Failed - C, Repaired - D)
Seat Belts - (SAFE_5)(display HS - 5 or FHS - 5)
Presence (Failed - A, Repaired - B)
Cut or frayed (Failed - C, Repaired - D)
Mounting (Failed - E, Repaired - G)
Service Brake System (SAFE_6A)(display HS - 6A or FHS - 6A)
Stopping distance (Failed - A, Repaired - B)
Pulling right or left (Failed - C, Repaired - D)
Metal on Metal (Failed - O, Repaired - Q)
Leaks (Failed - E, Repaired - G)
Parking Brake System (SAFE_6B)(display HS - 6B or FHS -6B)
Does not hold vehicle (Failed - A, Repaired - B)
Missing/Broken parts (Failed - C, Repaired - D)
Tires (SAFE_7)(display HS - 7 or, for FMCSR(Truck), either "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual," or both FHS - 7A and FHS - 7B)
Cuts, Tears, Cord Exposed, Visible Bulges (Failed - C, Repaired - D)
Excessive Wear (Failed - A, Repaired - B)
Wheel Assembly (SAFE_8)(display HS - 8 or FHS - 8)
Bent, broken, cracked (Failed - C, Repaired - D)
Missing lugs or studs (Failed - A, Repaired - B)
Exhaust System (SAFE_9)(display HS - 9 or FHS - 9)
Required muffler, clamps and hangers (Failed - C, Repaired - D)
Leaks (Failed - A, Repaired - B)
Emission System (SAFE_10)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Components presence (Failed - A, Repaired - B)
Components disconnected or disabled (Failed - C, Repaired - D)
Beam Indicator (SAFE_11)(display HS - 11 or FHS - 11)
High beam indicator (Failed - A, Repaired - B)
Switch mounting (Failed - C, Repaired - D)
Tail Lamps (SAFE_12)(display HS - 12 or FHS - 12)

Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)

Stop Lamps (SAFE_13)(display HS - 13 or FHS - 13)

Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)

Rear Reflectors (SAFE_15)(display HS - 15 or FHS - 15)

Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)

Turn Signals (SAFE_16A) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")

Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)

Cab Lamps (SAFE_20)(display HS - 20 or FHS - 20)

Operation (Failed - A, Repaired - B)
Color Condition of Lens (Failed - C, Repaired - D)

Headlamps (SAFE_17)(display HS - 17 or FHS - 17)

Mounting, operation, & approved type (Failed - A, Repaired - B)
Lens cracked, broken, or discolored (Failed - C, Repaired - D)
Reflective material discolored or deteriorated (Failed - E, Repaired - G)
Lamp contaminated (Failed - H, Repaired - I)
Liquid (Failed - J, Repaired - K)

Hazard Warning Lighting (SAFE_35) new (display only if during a FMCSR (TRUCK) inspection)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")

Mounting, operation, approved type (Failed - A, Repaired - B)
Color and condition of lens (Failed - C, Repaired - D)

Coupling Devices (SAFE_26)(display FHS - 26) (display only if during a FMCSR (TRUCK) inspection)

Loose, cracked, excessive wear (Failed - A, Repaired - B)

Fuel System (SAFE_27)(display FHS - 27) (display only if during a FMCSR (TRUCK) inspection)

Leaks (Failed - A, Repaired - B)
Mounting (Failed - C, Repaired - D)

Suspension (SAFE_28)(display FHS - 28) (display only if during a FMCSR (TRUCK) inspection)

Broken, loose, missing parts (Failed - A, Repaired - B)

Frame (SAFE_29)(display FHS - 29) (display only if during a FMCSR (TRUCK) inspection)

Cracked, broken, loose, sagging (Failed - E, Repaired - G)

Window Tinting and Sunscreening (SAFE_24)(display HS - 24 or FHS - 24)

Light transmission (Failed - A, Repaired - B)
Tint or Coating out of Specifications (Failed - C, Repaired - D)

INSPECTION PROCEDURE (Sequence #6)
SAFETY TRAILER & MOBILE HOME

Service Brake System (SAFE_6A)(display HS - 6A)
Stopping distance (Failed - A, Repaired - B)
Leaks (Failed - E, Repaired - G)
Wiring (Failed - H, Repaired - I)
Metal on Metal (Failed - O, Repaired - Q)
Tires (SAFE_7)(display HS - 7)
Cuts, Tears, Cord Exposed, Visible Bulges (Failed - C, Repaired - D)
Excessive Wear (Failed - A, Repaired - B)
Wheel Assembly (SAFE_8)(display HS - 8)
Bent, broken, cracked (Failed - C, Repaired - D)
Missing lugs or studs (Failed - A, Repaired - B)
Mud Flaps/Safety Guards (SAFE_23)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Presence/condition (Failed - A, Repaired - B)
Mounting (Failed - C, Repaired - D)
Tail Lamps (SAFE_12)(display HS - 12)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Stop Lamps (SAFE_13)(display HS - 13)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
License Plate Lamp (SAFE_14)(display HS - 14)
Operation (Failed - A, Repaired - B)
Lens cracked or broken (Failed - C, Repaired - D)
Rear Reflectors (SAFE_15)(display HS - 15)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Turn Signals (SAFE_16A) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Clearance Lamps (SAFE_18)(display HS - 18)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Marker Lamps (SAFE_19)(display HS - 19)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)

INSPECTION PROCEDURE (Sequence #7)
SCHOOL BUS-F.M.C.S.R INSPECTION

Horn (SAFE_1)(display FHS - 1)
Operation (Failed - A, Repaired - B)
Wipers (SAFE_2)(display FHS - 2)
Switch and Operation (Failed - C, Repaired - D)
Blade condition (Failed - A, Repaired - B)
Windshield (SAFE_30)(display FHS - 30)
Excessive cracks (Failed - A, Repaired - B)
Rear View Mirror (SAFE_3)(display FHS - 3)
Presence (Failed - A, Repaired - B)
Steering System (SAFE_4)(display FHS - 4)
Modification (Failed - C, Repaired - D)
Binding/jamming (Failed - E, Repaired - G)
Excessive lash (Failed - A, Repaired - B)
Fluid level and belt condition (Failed - H, Repaired - I)
Fluid leaks (Failed - J, Repaired - K)
Seat Belts-Driver Only (SAFE_5)(display FHS - 5)
Presence (Failed - A, Repaired - B)
Cut or frayed (Failed - C, Repaired - D)
Mounting (Failed - E, Repaired - G)
Service Brake System (SAFE_6A)(display FHS - 6A)
Stopping distance (Failed - A, Repaired - B)
Pull left or right (Failed - C, Repaired - D)
Missing/Broken parts (Failed - L, Repaired - M)
Leaks (Failed - E, Repaired - G)
Metal to Metal (Failed - O, Repaired - Q)
Low air warning device (Failed - S, Repaired - T)
Wiring (Failed - H, Repaired - I)
Parking Brake System (SAFE_6B)(display FHS - 6B)
Does not hold vehicle (Failed - A, Repaired - B)
Missing/Broken parts (Failed - C, Repaired - D)
Steering Axle Tires (SAFE_7A)(display FHS - 7A)
Cuts, tears, cord exposed, visible bulges (Failed - C, Repaired - D)
Excessive wear (Failed - A, Repaired - B)
Approval type (Failed -E, Repaired - G)
All Other Tires (SAFE_7B)(display FHS - 7B)
Cuts, tears, cord exposed, visible bulges (Failed - C, Repaired - D)
Excessive wear (Failed - A, Repaired - B)
Approval type (Failed -E, Repaired - G)
Wheel Assembly (SAFE_8)(display FHS - 8)
Bent, broken, cracked (Failed - C, Repaired - D)
Missing lugs or studs (Failed - A, Repaired - B)
Exhaust System (SAFE_9)(display FHS - 9)
Required muffler, clamps and hangers (Failed - C, Repaired - D)
Leaks (Failed - A, Repaired - B)
Emission System (SAFE_10)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Components presence (Failed - A, Repaired - B)
Components disconnected or disabled (Failed - C, Repaired - D)

Beam Indicator (SAFE_11)(display FHS - 11)
High beam indicator (Failed - A, Repaired - B)
Switch mounting (Failed - C, Repaired - D)
Headlamps (SAFE_17)(display FHS - 17)
Mounting, operation, & approved type (Failed - A, Repaired - B)
Lens cracked, broken, or discolored (Failed - C, Repaired - D)
Reflective material discolored or deteriorated (Failed - E, Repaired - G)
Lamp contaminated (Failed - H, Repaired - I)
Liquid (Failed - J, Repaired - K)
Tail Lamps (SAFE_12)(display FHS - 12)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Stop Lamps (SAFE_13)(display FHS - 13)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
License Plate Lamp (SAFE_14)(display FHS - 14)
Operation (Failed - A, Repaired - B)
Lens cracked or broken (Failed - C, Repaired - D)
Rear Reflectors (SAFE_15)(display FHS - 15)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Turn Signals (SAFE_16A) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Turn Signal Switch and Indicator Lamp (SAFE_16B) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Switch accessible and locks in position (Failed - A, Repaired - B)
Indicator lamp operation (Failed - C, Repaired - D)
Clearance Lamps (SAFE_18)(display FHS - 18)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Marker Lamps (SAFE_19)(display FHS - 19)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Reflectors (SAFE_21)(display FHS - 21)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
School Bus Signs (SAFE_22A)(display FHS - 22)
Size (Failed - A, Repaired - B)
Location (Failed - C, Repaired - D)
Hazard Warning Lighting (SAFE_35) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation, approved type (Failed - A, Repaired - B)
Color and condition of lens (Failed - C, Repaired - D)
Back-up Lamps (SAFE_36) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation and approved type (Failed - A, Repaired - B)

Color, condition of lens, visibility (Failed - C, Repaired - D)

Fuel System (SAFE_27)(display FHS - 27)
Leaks (Failed - A, Repaired - B)
Mounting (Failed - C, Repaired - D)
Suspension (SAFE_28)(display FHS - 28)
Broken, loose, missing parts (Failed - A, Repaired - B)
Frame (SAFE_29)(display FHS - 29)
Cracked, broken, loose, sagging (Failed - E, Repaired - G)
Window Tinting and Sunscreening (SAFE_24)(display FHS - 24)
Light transmission (Failed - A, Repaired - B)
Tint or Coating out of Specifications (Failed - C, Repaired - D)
Convex Mirror (SAFE_22D)(display FHS - 22)
Mounting (Failed - A, Repaired - B)
Condition (Failed - C, Repaired - D)
Fire Extinguisher (SAFE_22B)(display FHS - 22)
Presence (Failed - A, Repaired - B)
Approved type (Failed -C, Repaired - D)

INSPECTION PROCEDURE (Sequence #8)
FMCSR VEHICLES

Horn (SAFE_1)(display FHS - 1)
Operation (Failed - A, Repaired - B)
Wipers (SAFE_2)(display FHS - 2)
Switch and Operation (Failed - C, Repaired - D)
Blade condition (Failed - A, Repaired - B)
Windshield (SAFE_30)(display FHS - 30)
Excessive cracks (Failed - A, Repaired - B)
Rear View Mirror (SAFE_3)(display FHS - 3)
Presence (Failed - A, Repaired - B)
Beam Indicator (SAFE_11)(display FHS - 11)
High beam indicator (Failed - A, Repaired - B)
Switch mounting (Failed - C, Repaired - D)
Seat Belts (SAFE_5)(display FHS - 5)
Presence (Failed - A, Repaired - B)
Cut or frayed (Failed - C, Repaired - D)
Mounting (Failed - E, Repaired - G)
Steering System (SAFE_4)(display FHS - 4)
Modification (Failed - C, Repaired - D)
Binding/jamming (Failed - E, Repaired - G)
Excessive lash (Failed - A, Repaired - B)
Fluid level and belt condition (Failed - H, Repaired - I)
Fluid leaks (Failed - J, Repaired - K)
Service Brake System (SAFE_6A)(display FHS - 6A)
Stopping distance (Failed - A, Repaired - B)
Pull left or right (Failed - C, Repaired - D)
Missing/Broken parts (Failed - L, Repaired - M)
Metal to Metal (Failed - O, Repaired - Q)
Low air warning device (Failed - S, Repaired - T)
Tractor protection device (Failed - U, Repaired - V)
Leaks (Failed - E, Repaired - G)
Wiring (Failed - H, Repaired - I)
Parking Brake System (SAFE_6B)(display FHS - 6B)
Does not hold vehicle (Failed - A, Repaired - B)
Missing/Broken parts (Failed - C, Repaired - D)
Steering Axle Tires (SAFE_7A)(display FHS - 7A)
Cuts, tears, cord exposed, visible bulges (Failed - C, Repaired - D)
Excessive wear (Failed - A, Repaired - B)
Approval type (Failed -E, Repaired - G)
All Other Tires (SAFE_7B)(display FHS - 7B)
Cuts, tears, cord exposed, visible bulges (Failed - C, Repaired - D)
Excessive wear (Failed - A, Repaired - B)
Approval type (Failed -E, Repaired - G)
Wheel Assembly (SAFE_8)(display FHS - 8)
Bent, broken, cracked (Failed - C, Repaired - D)
Missing, loose, lugs or studs (Failed - A, Repaired - B)
Mud Flaps/Safety Guards (SAFE_23)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Presence/condition (Failed - A, Repaired - B)
Mounting (Failed - C, Repaired - D)

Exhaust System (SAFE_9)(display FHS - 9)
Required muffler, clamps and hangers (Failed - C, Repaired - D)
Leaks (Failed - A, Repaired - B)
Emission System (SAFE_10)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Components presence (Failed - A, Repaired - B)
Components disconnected or disabled (Failed - C, Repaired - D)
Tail Lamps (SAFE_12)(display FHS - 12)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Stop Lamps (SAFE_13)(display FHS - 13)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
License Plate Lamp (SAFE_14)(display FHS - 14)
Operation (Failed - A, Repaired - B)
Lens cracked or broken (Failed - C, Repaired - D)
Turn Signals (SAFE_16A) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Turn Signal Switch and Indicator Lamp (SAFE_16B) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Switch accessible and locks in position (Failed - A, Repaired - B)
Indicator lamp operation (Failed - C, Repaired - D)
Rear Reflectors (SAFE_15)(display FHS - 15)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Clearance Lamps (SAFE_18)(display FHS - 18)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Marker Lamps (SAFE_19)(display FHS - 19)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Cab Lamps (SAFE_20)(display FHS - 20)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Reflectors (SAFE_21)(display FHS - 21)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Headlamps (SAFE_17)(display FHS - 17)
Mounting, operation, & approved type (Failed - A, Repaired - B)
Lens cracked, broken, or discolored (Failed - C, Repaired - D)
Reflective material discolored or deteriorated (Failed - E, Repaired - G)
Lamp contaminated (Failed - H, Repaired - I)
Liquid (Failed - J, Repaired - K)
Hazard Warning Lighting (SAFE_35) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation, and approved type (Failed - A, Repaired - B)

Color and condition of lens (Failed - C, Repaired - D)

Back-up Lamps (SAFE_36) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")

Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)

Coupling Devices (SAFE_26)(display FHS - 26)

Loose, cracked, excessive wear (Failed - A, Repaired - B)

Fuel System (SAFE_27)(display FHS - 27)

Leaks (Failed - A, Repaired - B)
Mounting (Failed - C, Repaired - D)

Suspension (SAFE_28)(display FHS - 28)

Broken, loose, missing parts (Failed - A, Repaired - B)

Frame (SAFE_29)(display FHS - 29)

Cracked, broken, loose, sagging (Failed - E, Repaired - G)

Window Tinting and Sunscreening (SAFE_24)(display FHS - 24)

Light transmission (Failed - A, Repaired - B)
Tint or Coating out of Specifications (Failed - C, Repaired - D)

INSPECTION PROCEDURE (Sequence #9)
COMMERCIAL TRAILER

Service Brake System (SAFE_6A)(display FHS - 6A)
Stopping distance (Failed - A, Repaired - B)
Leaks (Failed - E, Repaired - G)
Wiring (Failed - H, Repaired - I)
Metal on Metal (Failed - O, Repaired - Q)
Tires (SAFE_7)(display FHS - 7B)
Cuts, Tears, Cord Exposed, Visible Bulges (Failed - C, Repaired - D)
Excessive Wear (Failed - A, Repaired - B)
Wheel Assembly (SAFE_8)(display FHS - 8)
Bent, broken, cracked (Failed - C, Repaired - D)
Missing lugs or studs (Failed - A, Repaired - B)
Mud Flaps/Safety Guards (SAFE_23)
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Presence/condition (Failed - A, Repaired - B)
Mounting (Failed - C, Repaired - D)
Tail Lamps (SAFE_12)(display FHS - 12)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Stop Lamps (SAFE_13)(display FHS - 13)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
License Plate Lamp (SAFE_14)(display FHS - 14)
Operation (Failed - A, Repaired - B)
Lens cracked or broken (Failed - C, Repaired - D)
Rear Reflectors (SAFE_15)(display FHS - 15)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Turn Signals (SAFE_16A) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Clearance Lamps (SAFE_18)(display FHS - 18)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Marker Lamps (SAFE_19)(display FHS - 19)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Side Reflectors (SAFE_21)(display FHS - 21)
Mounting, operation and approved type (Failed - A, Repaired - B)
Color, condition of lens, visibility (Failed - C, Repaired - D)
Reflective Tape (Vehicles Over 80" Width) (SAFE_34) new
(display "For help with this item, please see the Texas Department of Public Safety Rules and Regulations Manual.")
Presence (Failed - A, Repaired - B)
Location (Failed - C, Repaired - D)
Coupling Devices (SAFE_26)(display FHS - 26)
Loose, cracked, excessive wear (Failed - A, Repaired - B)
Suspension (SAFE_28)(display FHS - 28)

Broken, loose, missing parts (Failed - A, Repaired - B)

Frame (SAFE_29)(display FHS - 29)

Cracked, broken, loose, sagging (Failed - E, Repaired - G)

Appendix S

ASM Emissions Inspection Standards and Calculations

See Technical Document:
Environmental Protection Agency's
"Acceleration Simulation Mode Test Procedures, Emission Standards,
Quality Control Requirements, and Equipment Specifications
Final Technical Guidance"
(EPA420-B-04-011 July 2004)

85.1 Test Standards and Calculations

(a) Emissions Standards

(1) Start-up ASM Standards. Start-up standards should be used during the first cycle of the program. The exhaust emissions standards for the following model-years and vehicle types are cross-referenced by the number in the column in A1(a)(3), as noted in the column headings:

(i) Light-duty Vehicles

Model-Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1994+ Tier 1	1	21	41
1991-1995	2	22	42
1983-1990	4	23	43
1981-1982	4	26	43
1980	4	26	48
1977-1979	11	30	48
1975-1976	11	30	50
1974	13	34	50

(ii) Light-duty Trucks 1 (less than 6000 pounds GVW)

Model-Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1994+Tier 1≤3750 LVW	1	21	41
1994+Tier 1>3750 LVW	2	22	42
1991-1995	5	26	43
1988-1990	7	29	44
1984-1987	7	29	49
1979-1983	11	31	49
1975-1978	12	32	50
1974	13	34	50

(iii) Light-duty Trucks 2 (greater than 6000 pounds GVW)

Model-Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1994+Tier 1≤5750 LVW	2	22	42
1994+Tier 1>5750 LVW	5	26	45
1991-1995	5	26	46
1988-1990	7	29	47
1984-1987	7	29	49

(iii) Light-duty Trucks 2 (greater than 6000 pounds GVW) cont.

Model-Years	Hydrocarbons	Carbon Monoxide	Oxides of Nitrogen
1979-1983	11	31	49
1975-1978	12	32	50
1974	13	34	50

(2) ASM 25/25 and 50/15 Mode Concentration Tables

Please find concentration tables in Appendix T: *ASM Concentration Tables.*

(i) ASM 25/25 Mode and ASM 50/15 Mode Hydrocarbon (ppm C6) Table
(ii) ASM 25/25 Mode and ASM 50/15 Mode Carbon Monoxide (%CO) Table
(iii) ASM 25/25 Mode and ASM 50/15 Mode Nitric Oxide (%NO) Table

(b) Test Score Calculation

(1) Exhaust Gas Measurement Calculation

(i) Measurement Start. The analysis and recording of exhaust gas concentrations must begin 15 seconds after the applicable test mode begins, or sooner if the analyzer response time (to 100%) is less than 15 seconds. The analysis and recording of exhaust gas concentrations must not begin sooner than the time period equivalent to the response time of the slowest transducer.

(ii) Sample Rate. Exhaust gas concentrations must be analyzed at a minimum rate of once per second.

(iii) Negative Values. Negative gram per second readings must be integrated as zero and recorded as such.

(iv) Emissions Measurement Calculations. Partial stream (concentration) emissions must be calculated based on a running 10 second average. The values used for HC(j), CO(j), and NO(j) are the raw (uncorrected) tailpipe concentrations.

$$\text{(A) AvgHC} = \frac{\sum_{j-10}^{j} HC(j) * DCF(j)}{10}$$

$$\text{(B) AvgCO} = \frac{\sum_{j-10}^{j} CO(j) * DCF(j)}{10}$$

$$\text{(C) AvgNO} = \frac{\sum_{j-10}^{j} NO(j) * DCF(j)}{10}$$

(iv) Dilution Correction Factor. The analyzer software must multiply the raw emissions values by the Dilution Correction Factor (DCF) during any valid ASM emissions inspection. The DCF accounts for exhaust sample dilution (either intentional or unintentional) during an emissions inspection. The analyzer software must calculate the DCF using the following procedure and

must select the appropriate vehicle fuel formula. If the calculated DCF exceeds 3.0 then a default value of 3.0 must be used.

(A) $$X = \frac{[CO_2]\text{measured}}{[CO_2\text{measured} + [CO]\text{measured}}$$

Where $[CO_2]$measured and [CO]measured are the instantaneous ASM emissions inspection readings.

(B) Calculate $[CO_2]$adjusted using the following formula.

For Gasoline:
$[CO_2]\text{adjusted} = [X/(4.644+1.88X)] * 100$

(C) Calculate the DCF using the following formula:

$$DCF = \frac{[CO_2]\text{adjusted}}{[CO_2]\text{measured}}$$

(v) NO Humidity Correction Factor. The NO measurement must be adjusted based on relative humidity using a correction factor Kh, calculated as follows:

(A) $$Kh = \frac{1}{1 - 0.0047(H-75)}$$

(B) H = Absolute humidity in grains of water per pound of dry air

$$= \frac{(43.478)Ra*Pd}{PB-(Pd*Ra/100)}$$

(C) Ra = Relative humidity of the ambient air, percent.

(D) Pd = Saturated vapor pressure, mm Hg at the ambient dry bulb temperature. If the temperature is above 86_F, then it must be used in lieu of the higher temperature, until EPA supplies final correction factors.

(E) PB = Barometric pressure, mm Hg.

(2) Pass/Fail Determination. A pass or fail determination must be made for each applicable test mode based on a comparison of the applicable emissions inspection standards and the measured value for HC, CO, and NO as described in A1(b)(1)(iii). A vehicle must pass the test mode if the emission values for HC, CO, and NO are simultaneously below or equal to the applicable short emissions inspection standards for all three pollutants. A vehicle must fail the test mode if the values for HC, CO, or NO, or any combination or the three, are above the applicable standards at the expiration of the test time.

Appendix T

ASM Concentration Tables

ASM 25/25 Mode and ASM 50/15 Mode Hydrocarbon Table (ppm C6)

Column	1	1	2	2	3	3	4	4
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
1750	142	136	224	216	257	249	291	282
1875	134	129	212	205	243	236	275	266
2000	127	123	201	194	230	223	260	252
2125	121	116	191	184	219	212	246	239
2250	115	111	182	175	208	201	234	227
2375	109	106	173	167	198	192	223	216
2500	105	101	166	160	189	183	212	206
2625	100	97	159	153	181	175	203	197
2750	96	93	152	147	173	168	194	189
2875	92	89	146	141	167	161	187	181
3000	89	86	141	136	160	155	180	174
3125	86	83	136	132	155	150	173	168
3250	83	80	132	127	149	145	167	162
3375	81	78	128	123	145	140	162	157
3500	78	76	124	120	140	136	157	152
3625	76	74	120	117	136	132	152	148
3750	74	72	117	114	133	129	148	144
3875	72	70	114	111	129	125	144	140
4000	71	68	112	108	126	122	140	137
4125	69	67	109	106	123	119	137	133
4250	67	65	107	103	120	117	134	130
4375	66	64	104	101	118	114	131	127
4500	65	63	102	99	115	112	128	124

Column	1	1	2	2	3	3	4	4
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
4625	63	61	100	97	113	109	125	122
4750	62	60	98	95	110	107	122	119
4875	61	59	96	93	108	105	120	117
5000	60	58	94	92	106	103	117	114
5125	58	57	93	90	104	101	115	112
5250	57	56	91	88	102	99	112	110
5375	56	55	89	86	100	97	110	107
5500	55	54	87	85	98	95	108	105
5625	54	53	86	83	96	93	106	103
5750	53	52	84	82	94	91	104	101
5875	52	51	83	80	92	90	102	99
6000	51	50	81	79	90	88	100	97
6125	50	49	80	78	89	86	98	95
6250	50	48	79	76	87	85	96	94
6375	49	48	77	75	86	84	95	92
6500	48	47	76	74	85	83	93	91
6625	48	46	76	74	84	82	92	90
6750	47	46	75	73	83	81	91	89
6875	47	46	75	73	83	81	91	89
7000	47	46	74	72	83	80	91	88
7125	47	46	74	72	82	80	90	88
7250	47	46	74	72	82	80	90	88
7375	47	46	74	72	82	80	90	88
7500	47	46	74	72	82	80	90	88

Column	5	5	6	6	7	7	8	8
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
1750	324	315	374	364	390	381	407	397
1875	306	297	353	344	368	359	384	375
2000	289	281	333	325	348	339	363	354
2125	274	267	316	308	329	321	343	335
2250	260	253	299	292	312	305	325	318
2375	247	241	284	277	297	290	309	302
2500	236	230	271	264	283	276	294	288
2625	225	219	259	252	270	263	281	274
2750	216	210	247	241	258	252	269	262
2875	207	201	237	231	247	241	257	251
3000	199	194	228	222	237	232	247	241
3125	191	186	219	214	228	223	238	232
3250	185	180	211	206	220	215	229	224
3375	179	174	204	199	213	208	221	216
3500	173	169	198	193	206	201	214	209
3625	168	164	192	187	200	195	207	203
3750	163	159	186	182	194	189	201	197
3875	159	155	181	177	188	184	196	191
4000	155	151	176	172	183	179	191	186
4125	151	147	172	168	179	175	186	181
4250	147	143	167	164	174	170	181	177
4375	144	140	164	160	170	166	177	173
4500	141	137	160	156	166	162	172	169

Column	5	5	6	6	7	7	8	8
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
4625	137	134	156	152	162	159	169	165
4750	134	131	153	149	159	155	165	161
4875	132	128	149	146	155	152	161	157
5000	129	126	146	143	152	148	157	154
5125	126	123	143	139	148	145	154	150
5250	123	120	140	136	145	142	150	147
5375	121	118	137	133	142	139	147	144
5500	118	115	134	130	139	136	144	141
5625	116	113	131	128	136	133	141	138
5750	113	111	128	125	133	130	138	135
5875	111	108	125	122	130	127	135	132
6000	109	106	123	120	127	124	132	129
6125	107	104	120	118	125	122	129	126
6250	105	102	118	115	123	120	127	124
6375	103	101	116	113	120	118	125	122
6500	102	99	114	112	119	116	123	120
6625	101	98	113	110	117	114	121	119
6750	100	97	112	109	116	113	120	117
6875	99	97	111	109	115	113	119	117
7000	99	96	111	108	115	112	119	116
7125	98	96	111	108	115	112	119	116
7250	98	96	111	108	115	112	119	116
7375	98	96	111	108	115	112	119	116

7500	98	96	111	108	115	112	119	116

Column	9	9	10	10	11	11	12	12
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
1750	457	447	706	694	774	761	843	828
1875	431	421	665	653	729	717	794	780
2000	407	398	627	616	688	676	749	736
2125	385	376	592	582	650	638	707	695
2250	365	357	560	551	615	604	669	658
2375	346	339	531	522	583	573	635	624
2500	329	322	505	496	554	544	603	593
2625	314	307	481	472	528	518	574	564
2750	300	294	459	451	503	495	548	539
2875	287	281	439	431	481	473	524	515
3000	276	270	420	413	461	453	502	493
3125	265	260	404	397	443	435	482	474
3250	256	250	388	382	426	419	464	456
3375	247	241	374	368	411	404	447	440
3500	239	234	362	355	397	390	432	424
3625	231	226	350	344	384	377	418	411
3750	224	220	339	333	372	365	405	398
3875	218	213	329	323	361	355	393	386
4000	212	208	320	314	351	345	382	375
4125	206	202	311	305	341	335	371	365
4250	201	197	303	297	332	326	361	355
4375	196	192	295	290	323	318	352	346
4500	192	188	287	282	315	310	343	337

Column	9	9	10	10	11	11	12	12
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
4625	187	183	280	275	308	302	335	329
4750	183	179	273	269	300	295	327	321
4875	179	175	267	262	293	288	319	313
5000	175	171	260	256	286	281	311	305
5125	171	167	254	250	279	274	304	298
5250	167	163	248	244	272	267	296	291
5375	163	159	242	238	266	261	289	284
5500	159	156	236	232	259	255	282	277
5625	156	152	231	226	253	248	276	271
5750	152	149	225	221	247	243	269	264
5875	149	146	220	216	241	237	263	258
6000	146	143	215	211	236	232	257	252
6125	143	140	210	206	231	227	251	247
6250	140	137	206	202	226	222	246	242
6375	138	135	202	198	222	218	242	237
6500	136	133	199	195	218	214	238	233
6625	134	131	196	192	215	211	234	230
6750	132	129	194	190	213	209	232	227
6875	132	129	193	189	211	207	230	225
7000	131	128	192	188	211	207	229	225
7125	131	128	192	188	211	206	229	225

7250	131	128	192	188	211	206	229	225
7375	131	128	192	188	211	206	229	225
7500	131	128	192	188	211	206	229	225

Column	13	13
ETW	50/15	25/25
1750	1118	1098
1875	1052	1034
2000	992	975
2125	938	921
2250	887	872
2375	841	827
2500	800	786
2625	761	748
2750	726	714
2875	695	683
3000	666	654
3125	639	628
3250	615	604
3375	593	583
3500	573	563
3625	554	544
3750	537	527
3875	521	512
4000	506	497
4125	492	484
4250	479	471
4375	467	459
4500	455	447

Column	13	13
ETW	50/15	25/25
4625	444	436
4750	433	425
4875	423	415
5000	412	405
5125	402	395
5250	393	386
5375	383	376
5500	374	367
5625	365	359
5750	357	350
5875	348	342
6000	341	334
6125	333	327
6250	326	320
6375	320	314
6500	315	309
6625	310	304
6750	307	301
6875	305	299
7000	304	298
7125	304	298
7250	304	298
7375	304	298
7500	304	298

ASM 25/25 Mode and ASM 50/15 Mode Carbon Monoxide Table (% CO)

Column	21	21	22	22	23	23	24	24
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
1750	0.80	0.77	1.26	1.22	1.64	1.83	2.02	2.43
1875	0.75	0.73	1.19	1.16	1.55	1.72	1.91	2.29
2000	0.71	0.69	1.13	1.09	1.47	1.63	1.81	2.17
2125	0.68	0.66	1.07	1.04	1.39	1.54	1.71	2.05
2250	0.64	0.62	1.02	0.99	1.32	1.47	1.62	1.94
2375	0.61	0.59	0.97	0.94	1.26	1.39	1.54	1.85
2500	0.59	0.57	0.93	0.90	1.20	1.33	1.47	1.76
2625	0.56	0.54	0.89	0.86	1.15	1.27	1.41	1.68
2750	0.54	0.52	0.85	0.82	1.10	1.21	1.34	1.60
2875	0.52	0.50	0.82	0.79	1.05	1.16	1.29	1.54
3000	0.50	0.48	0.79	0.76	1.01	1.12	1.24	1.48
3125	0.48	0.46	0.76	0.73	0.98	1.08	1.19	1.42
3250	0.46	0.45	0.73	0.71	0.94	1.04	1.15	1.37
3375	0.45	0.43	0.71	0.69	0.91	1.00	1.11	1.32
3500	0.44	0.42	0.69	0.67	0.88	0.97	1.08	1.28
3625	0.42	0.41	0.67	0.65	0.86	0.94	1.05	1.24
3750	0.41	0.40	0.65	0.63	0.83	0.92	1.02	1.20
3875	0.40	0.39	0.63	0.61	0.81	0.89	0.99	1.17
4000	0.39	0.38	0.62	0.60	0.79	0.87	0.96	1.14
4125	0.38	0.37	0.60	0.58	0.77	0.85	0.94	1.11
4250	0.37	0.36	0.59	0.57	0.75	0.83	0.92	1.08
4375	0.36	0.35	0.58	0.56	0.74	0.81	0.89	1.06
4500	0.36	0.35	0.57	0.55	0.72	0.79	0.87	1.03

Column	21	21	22	22	23	23	24	24
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
4625	0.35	0.34	0.55	0.54	0.70	0.77	0.85	1.01
4750	0.34	0.33	0.54	0.53	0.69	0.76	0.84	0.99
4875	0.34	0.33	0.53	0.52	0.67	0.74	0.82	0.97
5000	0.33	0.32	0.52	0.51	0.66	0.73	0.80	0.95
5125	0.32	0.31	0.51	0.50	0.65	0.71	0.78	0.92
5250	0.32	0.31	0.50	0.49	0.63	0.70	0.77	0.90
5375	0.31	0.30	0.49	0.48	0.62	0.68	0.75	0.89
5500	0.30	0.30	0.48	0.47	0.61	0.67	0.73	0.87
5625	0.30	0.29	0.47	0.46	0.59	0.65	0.72	0.85
5750	0.29	0.29	0.46	0.45	0.58	0.64	0.70	0.83
5875	0.29	0.28	0.45	0.44	0.57	0.63	0.69	0.81
6000	0.28	0.28	0.44	0.44	0.56	0.62	0.67	0.80
6125	0.28	0.27	0.44	0.43	0.55	0.61	0.66	0.78
6250	0.27	0.27	0.43	0.42	0.54	0.60	0.65	0.77
6375	0.27	0.26	0.42	0.42	0.53	0.59	0.64	0.76
6500	0.26	0.26	0.42	0.41	0.52	0.58	0.63	0.74
6625	0.26	0.26	0.41	0.41	0.52	0.57	0.62	0.73
6750	0.26	0.26	0.41	0.41	0.51	0.57	0.61	0.73
6875	0.26	0.25	0.40	0.40	0.51	0.56	0.61	0.72
7000	0.25	0.25	0.40	0.40	0.51	0.56	0.61	0.72
7125	0.25	0.25	0.40	0.40	0.51	0.56	0.61	0.72
7250	0.25	0.25	0.40	0.40	0.50	0.56	0.61	0.72
7375	0.25	0.25	0.40	0.40	0.50	0.56	0.61	0.72
7500	0.25	0.25	0.40	0.40	0.50	0.56	0.61	0.72

Column	25	25	26	26	27	27	28	28
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
1750	2.21	2.73	2.78	3.64	2.97	3.94	3.16	4.24
1875	2.09	2.58	2.63	3.43	2.81	3.71	2.98	4.00
2000	1.97	2.43	2.48	3.24	2.65	3.51	2.82	3.77
2125	1.87	2.30	2.35	3.06	2.51	3.32	2.67	3.57
2250	1.77	2.18	2.23	2.90	2.38	3.14	2.53	3.38
2375	1.69	2.07	2.12	2.76	2.26	2.98	2.40	3.21
2500	1.61	1.97	2.02	2.62	2.15	2.84	2.29	3.05
2625	1.53	1.88	1.92	2.50	2.05	2.70	2.18	2.91
2750	1.47	1.80	1.84	2.39	1.96	2.58	2.09	2.78
2875	1.41	1.72	1.76	2.29	1.88	2.47	2.00	2.66
3000	1.35	1.66	1.69	2.19	1.80	2.37	1.92	2.55
3125	1.30	1.59	1.63	2.11	1.74	2.28	1.84	2.45
3250	1.26	1.53	1.57	2.03	1.67	2.20	1.78	2.36
3375	1.21	1.48	1.52	1.96	1.62	2.12	1.72	2.28
3500	1.17	1.43	1.47	1.89	1.56	2.05	1.66	2.20
3625	1.14	1.39	1.42	1.84	1.52	1.98	1.61	2.13
3750	1.11	1.35	1.38	1.78	1.47	1.92	1.56	2.07
3875	1.08	1.31	1.34	1.73	1.43	1.87	1.52	2.01
4000	1.05	1.28	1.31	1.68	1.39	1.82	1.48	1.95
4125	1.02	1.24	1.27	1.64	1.36	1.77	1.44	1.90
4250	1.00	1.21	1.24	1.60	1.32	1.72	1.40	1.85
4375	0.97	1.18	1.21	1.56	1.29	1.68	1.37	1.81
4500	0.95	1.16	1.18	1.52	1.26	1.64	1.34	1.76

Column	25	25	26	26	27	27	28	28
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
4625	0.93	1.13	1.15	1.48	1.23	1.60	1.30	1.72
4750	0.91	1.10	1.13	1.45	1.20	1.57	1.28	1.68
4875	0.89	1.08	1.10	1.42	1.17	1.53	1.25	1.64
5000	0.87	1.05	1.08	1.38	1.15	1.49	1.22	1.60
5125	0.85	1.03	1.05	1.35	1.12	1.46	1.19	1.57
5250	0.83	1.01	1.03	1.32	1.10	1.43	1.16	1.53
5375	0.81	0.99	1.01	1.29	1.07	1.39	1.14	1.50
5500	0.80	0.97	0.99	1.26	1.05	1.36	1.11	1.46
5625	0.78	0.94	0.97	1.24	1.03	1.33	1.09	1.43
5750	0.76	0.92	0.94	1.21	1.01	1.30	1.07	1.40
5875	0.75	0.91	0.92	1.18	0.98	1.27	1.04	1.37
6000	0.73	0.89	0.91	1.16	0.96	1.25	1.02	1.34
6125	0.72	0.87	0.89	1.13	0.94	1.22	1.00	1.31
6250	0.71	0.85	0.87	1.11	0.93	1.20	0.98	1.28
6375	0.69	0.84	0.86	1.09	0.91	1.18	0.96	1.26
6500	0.68	0.83	0.84	1.08	0.90	1.16	0.95	1.24
6625	0.67	0.82	0.83	1.06	0.88	1.14	0.94	1.23
6750	0.67	0.81	0.82	1.05	0.88	1.13	0.93	1.21
6875	0.66	0.80	0.82	1.04	0.87	1.12	0.92	1.20
7000	0.66	0.80	0.82	1.04	0.87	1.12	0.92	1.20
7125	0.66	0.80	0.81	1.04	0.87	1.12	0.92	1.20
7250	0.66	0.80	0.81	1.04	0.86	1.12	0.92	1.20
7375	0.66	0.80	0.81	1.04	0.86	1.12	0.92	1.20

7500	0.66	0.80	0.81	1.04	0.86	1.12	0.92	1.20

Column	29	29	30	30	31	31	32	32
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
1750	3.54	4.85	3.92	5.45	4.31	6.06	5.07	7.26
1875	3.34	4.57	3.70	5.14	4.06	5.70	4.78	6.84
2000	3.16	4.31	3.49	4.85	3.83	5.38	4.51	6.45
2125	2.99	4.08	3.31	4.58	3.63	5.09	4.26	6.10
2250	2.83	3.86	3.13	4.34	3.44	4.82	4.04	5.78
2375	2.69	3.66	2.98	4.12	3.26	4.57	3.83	5.48
2500	2.56	3.48	2.83	3.91	3.10	4.35	3.65	5.21
2625	2.44	3.32	2.70	3.73	2.96	4.14	3.48	4.96
2750	2.33	3.17	2.58	3.56	2.83	3.95	3.32	4.73
2875	2.23	3.03	2.47	3.41	2.71	3.78	3.18	4.53
3000	2.14	2.91	2.37	3.27	2.60	3.62	3.05	4.34
3125	2.06	2.79	2.28	3.14	2.50	3.48	2.93	4.17
3250	1.99	2.69	2.20	3.02	2.40	3.35	2.82	4.01
3375	1.92	2.60	2.12	2.91	2.32	3.23	2.72	3.87
3500	1.86	2.51	2.05	2.82	2.24	3.12	2.63	3.74
3625	1.80	2.43	1.99	2.73	2.17	3.02	2.55	3.62
3750	1.74	2.36	1.93	2.64	2.11	2.93	2.47	3.51
3875	1.69	2.29	1.87	2.57	2.05	2.85	2.40	3.40
4000	1.65	2.22	1.82	2.49	1.99	2.77	2.33	3.31
4125	1.61	2.16	1.77	2.43	1.94	2.69	2.27	3.22
4250	1.56	2.11	1.73	2.36	1.89	2.62	2.21	3.13
4375	1.53	2.06	1.68	2.31	1.84	2.55	2.16	3.05
4500	1.49	2.01	1.64	2.25	1.80	2.49	2.11	2.98

Column	29	29	30	30	31	31	32	32
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
4625	1.46	1.96	1.61	2.19	1.76	2.43	2.06	2.90
4750	1.42	1.91	1.57	2.14	1.72	2.37	2.01	2.83
4875	1.39	1.87	1.53	2.09	1.68	2.32	1.96	2.77
5000	1.36	1.82	1.50	2.04	1.64	2.26	1.92	2.70
5125	1.33	1.78	1.46	2.00	1.60	2.21	1.87	2.64
5250	1.30	1.74	1.43	1.95	1.56	2.16	1.83	2.58
5375	1.27	1.70	1.40	1.90	1.53	2.11	1.79	2.51
5500	1.24	1.66	1.37	1.86	1.49	2.06	1.75	2.46
5625	1.21	1.62	1.34	1.82	1.46	2.01	1.71	2.40
5750	1.19	1.59	1.31	1.78	1.43	1.96	1.67	2.34
5875	1.16	1.55	1.28	1.74	1.40	1.92	1.63	2.29
6000	1.14	1.52	1.25	1.70	1.37	1.88	1.60	2.24
6125	1.11	1.49	1.23	1.66	1.34	1.84	1.57	2.19
6250	1.09	1.46	1.20	1.63	1.31	1.80	1.54	2.15
6375	1.07	1.43	1.18	1.60	1.29	1.77	1.51	2.11
6500	1.06	1.41	1.16	1.57	1.27	1.74	1.48	2.07
6625	1.04	1.39	1.15	1.55	1.25	1.72	1.46	2.04
6750	1.03	1.37	1.14	1.54	1.24	1.70	1.45	2.02
6875	1.02	1.36	1.13	1.52	1.23	1.68	1.44	2.00
7000	1.02	1.36	1.12	1.52	1.23	1.68	1.43	2.00
7125	1.02	1.36	1.12	1.52	1.22	1.68	1.43	2.00

7250	1.02	1.36	1.12	1.52	1.22	1.68	1.43	2.00
7375	1.02	1.36	1.12	1.52	1.22	1.68	1.43	2.00
7500	1.02	1.36	1.12	1.52	1.22	1.68	1.43	2.00

Column	33	33	34	34
ETW	50/15	25/25	50/15	25/25
1750	5.26	7.44	8.02	9.90
1875	4.96	7.05	7.56	9.90
2000	4.68	6.68	7.14	9.90
2125	4.43	6.34	6.75	9.66
2250	4.20	6.00	6.40	9.14
2375	3.98	5.69	6.07	8.67
2500	3.79	5.41	5.78	8.25
2625	3.61	5.15	5.51	7.85
2750	3.45	4.92	5.26	7.50
2875	3.30	4.70	5.03	7.17
3000	3.17	4.51	4.83	6.87
3125	3.04	4.33	4.64	6.60
3250	2.93	4.17	4.47	6.35
3375	2.83	4.02	4.31	6.13
3500	2.73	3.88	4.17	5.92
3625	2.65	3.76	4.04	5.73
3750	2.57	3.64	3.91	5.55
3875	2.49	3.54	3.80	5.39
4000	2.43	3.44	3.70	5.24
4125	2.36	3.34	3.60	5.09
4250	2.30	3.25	3.51	4.96
4375	2.24	3.17	3.42	4.83
4500	2.19	3.09	3.34	4.71

Column	33	33	34	34
ETW	50/15	25/25	50/15	25/25
4625	2.14	3.02	3.26	4.60
4750	2.09	2.95	3.18	4.49
4875	2.04	2.87	3.11	4.38
5000	1.99	2.81	3.03	4.28
5125	1.95	2.74	2.97	4.18
5250	1.90	2.68	2.90	4.08
5375	1.86	2.61	2.83	3.98
5500	1.82	2.55	2.77	3.89
5625	1.77	2.49	2.70	3.80
5750	1.74	2.43	2.64	3.71
5875	1.70	2.38	2.59	3.62
6000	1.66	2.33	2.53	3.54
6125	1.63	2.28	2.48	3.47
6250	1.60	2.23	2.43	3.40
6375	1.57	2.19	2.39	3.34
6500	1.54	2.15	2.35	3.28
6625	1.52	2.12	2.32	3.23
6750	1.50	2.10	2.29	3.20
6875	1.49	2.08	2.28	3.17

7000	1.49	2.08	2.27	3.17
7125	1.49	2.08	2.27	3.17
7250	1.49	2.08	2.27	3.17
7375	1.49	2.08	2.27	3.17
7500	1.49	2.08	2.27	3.17

ASM 25/25 Mode and ASM 50/15 Mode Nitric Oxide Table (ppm NO)

Column	41	41	42	42	43	43	44	44
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
1750	1212	1095	1819	1642	2272	2114	2725	2587
1875	1142	1031	1713	1547	2181	1991	2649	2435
2000	1077	973	1616	1460	2058	1877	2499	2295
2125	1018	920	1527	1380	1944	1774	2360	2167
2250	964	871	1446	1307	1839	1678	2232	2050
2375	915	827	1372	1240	1744	1592	2115	1943
2500	869	786	1304	1179	1657	1512	2009	1845
2625	828	749	1242	1123	1577	1440	1912	1756
2750	791	715	1186	1072	1504	1374	1823	1675
2875	756	684	1134	1026	1438	1313	1742	1601
3000	725	656	1088	984	1378	1258	1668	1533
3125	696	630	1045	945	1323	1208	1601	1471
3250	670	607	1006	910	1273	1163	1539	1415
3375	647	585	970	878	1227	1121	1483	1363
3500	625	566	937	848	1184	1082	1432	1316
3625	605	547	907	821	1146	1047	1384	1273
3750	586	531	879	796	1110	1014	1340	1233
3875	569	515	853	773	1077	984	1300	1195
4000	553	501	829	751	1046	956	1262	1161
4125	538	487	807	731	1017	930	1227	1128
4250	524	475	786	712	990	905	1194	1098
4375	510	463	766	694	964	882	1162	1069
4500	498	451	747	677	939	859	1132	1042

Column	41	41	42	42	43	43	44	44
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
4625	486	440	728	661	916	838	1104	1015
4750	474	430	711	645	893	818	1076	990
4875	463	420	694	630	872	798	1049	966
5000	452	410	677	615	850	778	1023	942
5125	441	400	661	600	830	760	998	919
5250	431	391	646	586	810	741	974	896
5375	420	382	631	573	790	723	950	874
5500	410	373	616	559	771	706	926	853
5625	401	364	601	546	752	689	904	832
5750	391	356	587	534	734	673	882	812
5875	383	348	574	522	717	657	860	793
6000	374	340	561	510	701	642	840	774
6125	366	333	549	499	685	628	822	757
6250	359	326	538	489	671	615	804	741
6375	352	320	528	480	658	604	788	727
6500	346	315	519	473	647	593	775	714
6625	341	311	512	466	638	585	763	704
6750	338	307	507	461	631	578	755	696
6875	335	305	503	458	626	574	749	691
7000	335	305	502	457	624	573	747	689
7125	335	305	502	457	625	573	747	689
7250	335	305	502	457	625	573	747	689
7375	335	305	502	457	625	573	747	689
7500	335	305	502	457	625	573	747	689

Column	45	45	46	46	47	47	48	48
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
1750	3178	3060	3631	3532	4084	4005	4990	4950
1875	3117	2879	3586	3323	4054	3767	4990	4655
2000	2941	2713	3383	3131	3824	3548	4707	4384
2125	2776	2561	3192	2955	3609	3348	4441	4136
2250	2625	2422	3018	2794	3411	3165	4197	3909
2375	2487	2295	2859	2646	3231	2998	3974	3701
2500	2361	2179	2714	2512	3066	2845	3771	3512
2625	2246	2073	2581	2389	2916	2706	3585	3339
2750	2142	1976	2460	2277	2779	2579	3416	3181
2875	2046	1888	2350	2175	2654	2463	3261	3037
3000	1959	1808	2249	2082	2539	2357	3120	2906
3125	1879	1734	2157	1997	2435	2260	2992	2787
3250	1806	1667	2073	1920	2340	2172	2874	2677
3375	1740	1606	1997	1849	2253	2092	2767	2577
3500	1679	1550	1926	1784	2174	2018	2668	2486
3625	1623	1498	1862	1724	2100	1950	2578	2401
3750	1571	1451	1802	1669	2033	1887	2494	2323
3875	1523	1407	1747	1618	1970	1829	2417	2251
4000	1479	1365	1695	1570	1912	1775	2345	2184
4125	1437	1327	1647	1526	1857	1724	2277	2122
4250	1398	1291	1602	1484	1806	1677	2214	2063
4375	1360	1257	1559	1444	1757	1632	2154	2007
4500	1325	1224	1518	1406	1711	1589	2096	1953

Column	45	45	46	46	47	47	48	48
ETW	50/15	25/25	50/15	25/25	50/15	25/25	50/15	25/25
4625	1291	1193	1479	1370	1666	1548	2042	1903
4750	1259	1163	1441	1336	1624	1508	1989	1854
4875	1227	1134	1405	1302	1583	1470	1938	1806
5000	1196	1106	1369	1269	1542	1433	1889	1760
5125	1167	1078	1335	1237	1503	1397	1840	1715
5250	1138	1051	1301	1206	1465	1362	1793	1672
5375	1109	1025	1269	1176	1428	1327	1747	1629
5500	1082	1000	1237	1147	1392	1294	1703	1587
5625	1055	975	1206	1118	1357	1261	1659	1547
5750	1029	951	1176	1090	1323	1230	1617	1508
5875	1004	928	1147	1064	1290	1199	1577	1471
6000	980	906	1120	1039	1259	1171	1539	1435
6125	958	886	1094	1015	1230	1144	1503	1401
6250	937	867	1070	993	1203	1119	1469	1371
6375	919	850	1049	973	1179	1096	1439	1343
6500	902	835	1030	956	1158	1077	1413	1318
6625	889	823	1014	941	1140	1060	1391	1298
6750	879	813	1003	931	1127	1048	1374	1283
6875	872	807	995	924	1118	1040	1364	1273
7000	870	805	992	921	1115	1037	1360	1269
7125	870	805	992	921	1115	1037	1360	1269
7250	870	805	992	921	1115	1037	1360	1269
7375	870	805	992	921	1115	1037	1360	1269

7500	870	805	992	921	1115	1037	1360	1269

Column	49	49	50	50	51	51
ETW	50/15	25/25	50/15	25/25	50/15	25/25
1750	4990	4960	4990	4980	4990	4990
1875	4990	4738	4990	4906	4990	4990
2000	4778	4535	4919	4838	4990	4990
2125	4578	4349	4853	4776	4990	4990
2250	4395	4179	4792	4720	4990	4990
2375	4228	4024	4736	4668	4990	4990
2500	4076	3881	4685	4620	4990	4990
2625	3936	3752	4639	4577	4990	4990
2750	3809	3579	4596	4374	4990	4772
2875	3669	3417	4484	4176	4892	4556
3000	3510	3270	4290	3996	4680	4359
3125	3366	3135	4114	3832	4488	4180
3250	3234	3012	3952	3681	4311	4016
3375	3113	2899	3804	3544	4150	3866
3500	3002	2796	3669	3418	4002	3728
3625	2900	2701	3544	3302	3867	3602
3750	2806	2614	3429	3195	3741	3485
3875	2719	2533	3323	3096	3625	3377
4000	2638	2457	3224	3003	3517	3276
4125	2562	2387	3131	2917	3416	3182
4250	2490	2320	3044	2836	3321	3094
4375	2423	2258	2961	2759	3230	3010
4500	2359	2198	2883	2686	3145	2930

Column	49	49	50	50	51	51
ETW	50/15	25/25	50/15	25/25	50/15	25/25
4625	2297	2140	2807	2616	3063	2854
4750	2238	2085	2735	2549	2983	2780
4875	2180	2032	2665	2483	2907	2709
5000	2125	1980	2597	2420	2833	2640
5125	2070	1930	2530	2359	2760	2573
5250	2017	1881	2466	2298	2690	2507
5375	1966	1833	2403	2240	2621	2443
5500	1916	1786	2341	2183	2554	2381
5625	1867	1740	2282	2127	2489	2321
5750	1820	1697	2224	2074	2426	2262
5875	1774	1654	2168	2022	2366	2206
6000	1731	1614	2116	1973	2308	2152
6125	1690	1577	2066	1927	2254	2102
6250	1653	1542	2020	1884	2204	2056
6375	1619	1510	1979	1846	2159	2014
6500	1590	1483	1943	1813	2119	1977
6625	1565	1460	1913	1785	2087	1947
6750	1546	1443	1890	1764	2062	1924
6875	1534	1432	1875	1750	2046	1909
7000	1530	1428	1870	1745	2040	1904
7125	1531	1428	1874	1745	2045	1904

7250	1531	1428	1874	1745	2045	1904
7375	1531	1428	1874	1745	2045	1904
7500	1531	1428	1874	1745	2045	1904

Appendix U

ASM Inspection Procedures

The analyzer must complete the steps listed below to conduct an ASM emissions inspection, and use the ASM emission inspection standards, and calculations listed in the , and Procedures (EPA) also located in Appendix U: *ASM Inspection Procedures*.

1. RPM Signal

The analyzer must prompt the technician to select the RPM pick-up type to be used while performing the emissions inspection.

SELECT RPM PICK-UP DEVICE

1. CONTACT
2. NON-CONTACT
3. OBD II PORT
4. OTHER

Programming Criteria:

- Beginning with the 1996 model-year vehicles, the analyzer must be prompted to detect engine RPM via the OBD port after 1/4/99.

- The technician shall be given the opportunity to select another RPM pick-up device and continue with the current inspection (without causing the inspection to abort), if the RPM is not detected.

- RPM must be displayed during the emissions inspection. Instability must be immediately detected and displayed on the screen.

UNSTABLE RPM SIGNAL - - CHECK OR CHANGE PICK-UP

Programming Criteria:

1. A stable RPM signal is required to complete the emissions inspection. Manufacturers may propose an error tolerance factor to be used when inspecting vehicles with unstable RPM signals.

2. For "OTHER" RPM pick-up devices, the analyzer manufacturer may develop a unique engine RPM pick-up. If the analyzer manufacturer provides this option, a written explanation/procedure regarding this option must be submitted to TCEQ for approval.

2. General Procedure for ASM Mode Preconditioning

1. Safety Checks: The software must prompt the technician to perform any equipment manufacturer-required safety checks.

2. Vehicle Alignment:

Programming Criteria:

Prompt the inspector to drive the vehicle onto the dynamometer and laterally stabilize, restrain, and chock the vehicle.

3. Vehicle Equivalent Test Weight (ETW) Selection: Select a test weight based upon the following criteria:

Programming Criteria:

The prompt must only be displayed if the vehicle is eligible to receive the ASM emissions inspection and the vehicle's test weight cannot be determined from the value in the VEHICLE_TEST_WT field of the TXVRT.DAT file or data received from the VID. The test weight must be selected from the VRT row number chosen in the vehicle information entry process. The analyzer must use the model-year, make, model, engine size, cylinders, and GVW entries to determine test weight. The analyzer must use these fields in the following order to identify the specific VRT row: model-year, vehicle make, model, body type/style, number of cylinders, engine size, and then GVW rating. If a specific VRT row cannot be matched, the default VRT test horsepower and test weight values based on the vehicle year, type, number of cylinders, etc., must be used.

The ETW must be recorded in the TEST_WEIGHT field of the inspection record and printed on the VIR.

4. Restrain the Vehicle:

Display Prompt:

IS THE VEHICLE A FRONT-WHEEL DRIVE? (YES/NO)

Programming Criteria:

1) If Yes is entered, the analyzer must:

Prompt the driver to laterally stabilize, restrain and chock the vehicle on the dynamometer if it has not already been done.

Display Prompt:

FRONT-WHEEL DRIVE VEHICLE: LATERALLY STABILIZE, RESTRAIN AND CHOCK.

Where possible, verify that the restraints are engaged prior to proceeding to the next step.

NOTE: Provisions must be made to ensure that restraints which control side-to-side movement are used on all front-wheel drive vehicles and that the vehicles are not just tied to some fixed object. If the restraint system does not control forward to backward movement, the analyzer must prompt the technician to place wheel chocks or equivalent.

2) If No entered, prompt the driver to restrain the vehicle.

Display Prompt:

REAR-WHEEL DRIVE VEHICLE: RESTRAIN AND CHOCK.

5. **Horsepower Applied During the ASM Cycle:** During the ASM inspection, the torque will remain constant during each mode of the inspection. The torque to apply will be derived from the dynamometer-applied horsepower for both the 50/15 and the 25/25 portions of the inspection using the following equation:

   Torque = 5252 × [applied hp @ 25 mph] / [roll RPM]

   Torque = 5252 × [applied hp @ 15 mph] / [roll RPM]

   Dynamometer-applied horsepower for each mode of the ASM inspection must be calculated using the appropriate weights located in the TXVRT.DAT file, or if unavailable, must default to EPA supplied horsepower settings determined by engine cylinder as contained in the DFLTHP.DAT file. The default horsepower contains the following cylinder numbers: 3, 4, 5, 6, 8, and 9. Cylinder numbers 3, 4, 5, 6, and 8 are exact engine cylinder counts. Cylinder number 9 should be used for all engines that have more than 8 cylinders. Cylinder number 4 should be used for all rotary engines.

6. **Cooling Fan:** The analyzer must prompt the technician to turn on the fan and to place it in position if the ambient temperature is above 72°F.

7. **Probe and Tachometer Hookups:** The software must prompt the technician to insert the sample probe into the tailpipe and attach the selected RPM pick-up device.

8. **Gear Selection:** The technician shall be prompted, as appropriate, on transmission type:

   1. Automatic Transmissions

      Display Prompt:

      PLACE THE TRANSMISSION IN DRIVE. IF THE ENGINE RPM EXCEEDS _____, PLACE THE TRANSMISSION IN OVERDRIVE.

   <u>Programming Criteria:</u>

   The software must prompt the technician to place the transmission in drive. Engine RPM during the inspection mode must not exceed the following:

      a) Engine size less than or equal to 3.0L: RPM may not exceed 3000 RPM.

      b) Engine size greater than 3.0L: RPM may not exceed 2500 RPM.

   2. Manual Transmissions

      Display Prompt:

      PLACE THE TRANSMISSION IN SECOND GEAR.

      KEEP ENGINE RPM BETWEEN ____ AND ____RPM.

   <u>Programming Criteria:</u>

The software must prompt the technician to conduct the inspection with the vehicle in second gear unless the following criteria cannot be met, and then select a gear that will maintain the following engine speeds.

a) Engine size less than or equal to 3.0L: Greater than or equal to 1500 RPM, less than or equal to 3000 RPM.

b) Engine size larger than 3.0L: Greater than or equal to 1250 RPM, less than or equal to 2500 RPM.

9. Tire Drying: If the vehicle's tires must be dried before the emissions inspection, the analyzer must prompt the technician as follows:

Display Prompt:

DO THE TIRES NEED DRYING? (YES/NO)

Programming Criteria:

1. If YES, the analyzer must require the technician to run the vehicle at any speed below 30 mph after selection of the transmission gear (engine speed may not exceed 3000 RPM) for a period from 15 to 30 seconds. When the roll speed exceeds one mph, the screen must display the following delay message which must include the seconds that must be waited until the inspection mode can begin.

Display Prompt:

ONCE THE TIRES ARE DRY, YOU MUST WAIT AT IDLE FOR ____ SECONDS PRIOR TO BEGINNING THE PRECONDITIONING MODE.

The software must increment the above second timer one second at a time, not to exceed 30 seconds until the rolls are brought to a stop (speed reaches one mph or less). If the vehicle speed exceeds 30 mph or the engine exceeds 3000 RPM during tire drying, the timer must increment twice a second until the speed is brought below 30 mph or the engine speed below 3000 RPM. When the rolls come to a stop, the above timer must decrement once every second until the time reads zero before the analyzer allows the driver to start the ASM 50/15 mode. At the same time, display the following prompt:

Display Prompt:

DO THE TIRES NEED MORE DRYING? (Y)es OR (N)o

2. If NO (to either the 1st or 2nd question), the analyzer must proceed to the next step (after any required waiting time) in the inspection procedure.

10. ASM Pre Emissions Inspection Conditions

Programming Criteria:

The following conditions must be present before the analyzer begins the inspection sequence:

- Zero air, electronic span, ambient air, and hang up checks have been performed.

- The analyzer does not detect a “low-flow” condition.

- The engine idle speed is between 400 and 1250 RPM.

- The dynamometer rolls are not turning (speed < 1 mph). If the roll speed exceeds this limit, or the engine speed exceeds 1250 RPM, display the following delay message and increment the displayed seconds by two times the number of seconds the roll or engine speed are outside limits (not to exceed 30 seconds).

  Display Prompt:

  DELAY TESTING, YOU MUST WAIT ____ SECONDS.

- Once the roll and engine speed are within the limits, decrement the time by one second at a time until the number of seconds reaches zero. The analyzer must not start the inspection sequence until the dynamometer remains stopped for twice the time that the rolls were turning or 30 seconds whichever is less.

- The analyzer does not detect a “sample dilution” condition.

11. Preconditioning

Once the conditions in step 10 are met, the inspector shall be prompted to begin the preconditioning sequence.

Programming Criteria:

The dynamometer must smoothly apply the load once the vehicle speed exceeds 10 mph. The preconditioning must be accomplished by driving the vehicle on the dynamometer using the ASM 50/15 mode as specified in step 12. The vehicle will continue to be operated for 30 seconds at this speed within the speed and wheel force tolerance specified below. The duration of the preconditioning cycle may be adjusted by TCEQ if it is determined through the use of statistical process control methods that a shorter time is adequate to ensure that vehicles are fully warmed-up prior to inspecting. The adjustment to the preconditioning cycle will be done via software updates until a more efficient method is developed.

If the speed or wheel force fall above or below the tolerance of ± 0.5 HP or ± 4% HP (which ever is greater) and ± 5 mph, the preconditioning timer will reset to zero. Preconditioning time must not be included in the overall maximum inspection time.

Display Prompt:

PRECONDITIONING CAN BEGIN. ACCELERATE GRADUALLY TO 15 MPH

If, at any time during the preconditioning mode, the above speed and RPM criteria or the gear selection criteria fall outside the acceptable ranges, the software must display one of the following appropriate messages to prompt the driver to correct the problem. The “dynamometer loading error” should be displayed if the ASM 50/15 load tolerances are exceeded, even if they are within the preconditioning tolerances above. A dynamometer loading error requires correction only if it is outside preconditioning tolerances.

Display Prompt:

OUTSIDE PRECONDITIONING SPEED LIMIT
OUTSIDE ENGINE RPM RANGE
DYNAMOMETER LOADING ERROR
OUTSIDE DILUTION SPECIFICATION
ANALYZER LOW FLOW ERROR

12. ASM Emissions Inspection Sequence

When the preconditioning sequence at ASM 50/15 speed and load has been successfully completed, the inspector shall be prompted that the ASM 50/15 inspection has begun. The ASM mode timer must start (mt=0) when the vehicle speed, engine rpm, dynamometer loading and dilution are within the inspection limits for five continuous seconds.

If the inspection is restarted at any time during the sequence, the previously stored second-by-second record must be deleted. The second-by-second data must be written to the second-by-second data record. The emission levels, without the DCF adjustment, must be recorded in the second-by-second data record.

The emissions data (HC, CO, CO_2, and NO second-by-second readings) for both the ASM 50/15 and ASM 25/25 modes must be time-aligned with the vehicle speed readings to account for the delay caused by the transport time needed to get the exhaust gas from the vehicle's tailpipe to the analyzers/sensors. This transport time may be different from the probe to the optical bench and from the probe to the NO sensor, and must be accounted for. Time-alignment must be done before any corrections are applied.

ASM 50/15 Mode

At the conclusion of the preconditioning mode, the software must prompt the driver to maintain the vehicle at 15 mph ± 1 mph. The software must display the 50/15 speed with applicable speed limits (or drive trace graphical display), inspection mode time, engine RPM and other appropriate inspection mode information. The dynamometer must meet the tolerances throughout the ASM 50/15 mode. The ASM 50/15 mode must begin (mt=0) when the roll speed (and corresponding power) is stabilized at 15 ± 1 mph for five consecutive seconds (which may include the last 5 seconds of the preconditioning mode if the 50/15 tolerances have been met for those 5 seconds).

The maximum duration for the ASM 50/15 mode is 90 seconds. The emissions averaging portion of the inspection must not begin unless:

- Engine speed (manual transmission only) is within required engine RPM range.
- Load and dilution (CO + CO_2) fall within specifications. (If dyne horsepower loading remains out of specification for two or more consecutive seconds or dilution occurs, restart inspection according to the restart procedures listed later.)

If the vehicle has not stabilized in accordance with the above criteria within 60 seconds, the analyzer must prompt the technician to restart the inspection according to the restart procedures listed later.

If the instantaneous dynamometer loading, as measured by the dynamometer load cell, differs from the command load by more than ±0.25 hp or ±2% whichever is greater for more than

two consecutive seconds during the emissions averaging portion of the ASM 50/15 inspection, the analyzer must set a dynamometer loading error. This must cause the inspection mode to restart according to the restart procedures.

The vehicle may fast pass when the emissions readings are simultaneously below 50% of the cutpoints for HC, CO, and NO_X. The pass/fail analysis using the fast pass criteria must begin after an elapsed time of 15 seconds from mt=0, provided that the speed, load and acceleration readings are within specifications. Pass/fail analysis using the normal cutpoints must occur between an elapsed time of 25 seconds (mt=25) and 90 seconds (mt=90), provided that the speed, load, and acceleration readings are with specifications. The vehicle must pass the ASM 50/15 mode and the mode must be immediately terminated if, at any point between an elapsed time of 15 seconds and 90 seconds, the 10-second running average measured values for each pollutant are simultaneously less than or equal to the applicable emissions inspection standards.

If, at any time during the emissions-averaging portion of the inspection mode, the above criteria fall outside the acceptable ranges, the software must display one of the following appropriate messages to prompt the driver to correct the problem.

Display Prompt:

OUTSIDE TEST SPEED LIMIT
OUTSIDE ENGINE RPM RANGE
DYNAMOMETER LOADING ERROR
OUTSIDE DILUTION SPECIFICATION
ANALYZER LOW FLOW ERROR

As soon as the emission averaging portion of the inspection mode has begun, start monitoring the vehicle's acceleration every 0.5 seconds. If at any time the acceleration exceeds the limits, the software must display the following message to prompt the driver that the acceleration is out of range:

Display Prompt:

OUTSIDE THE MAXIMUM ACCELERATION LIMIT

<u>Programming Criteria:</u>

Emissions resulting from transient throttle that cause the acceleration to exceed the maximum limits must not be included in the 10-second averaging data. In addition, if an acceleration violation occurs, that time-aligned data must not be used for emissions averaging. Instead, the emissions averaging will continue beginning five seconds after the time aligned acceleration violation ceased. Time alignment is determined by subtracting analyzer response time and transport time. If this event occurs near the end of the inspection where another 10-second average cannot be completed, the last full 10-second average without acceleration violations will be the ending result for the mode.

During the 10-second period used for the pass decision, the dynamometer speed must not fall more than 1.0 mph absolute drop, not cumulative. That is, if the speed at the end of the 10-second period is more than 1.0 mph less than the speed at the start of the 10-second period, the inspection must continue until the speed meets this criterion.

If, at any time during the emissions averaging portion of the inspection mode, the vehicle speed deviates by more than one mph from the target speed for more than two consecutive seconds at any time, the mode must restart.

A vehicle must pass the ASM 50/15 mode when the 10-second average readings for HC, CO and NO are all equal to or below the applicable standards for the vehicle. Once passing readings have been achieved for all three gases, the ASM 50/15 mode must terminate and the analyzer must proceed to the next phase of the inspection.

The emissions readings used to make the pass/fail decision must be recorded in the inspection record of SECXSEC.DAT. This data must be purged from the analyzer when the data is transmitted to the VID.

ASM 25/25 Mode

The ASM 25/25 mode procedures are the same as those for the ASM 50/15 mode, except for the following:

Upon termination of the ASM 50/15 mode, the vehicle must immediately begin accelerating to the speed required for the ASM 25/25 mode. The dynamometer torque must smoothly transition during the acceleration period and must automatically reset to the load required for the ASM 25/25 mode once the speed reaches 25 mph.

The ASM 25/25 mode must begin (mt=0) when the roll speed (and corresponding power) is stabilized at 25 mph ± 1 mph for five consecutive seconds.

The vehicle may fast pass when the emissions readings are simultaneously below 50% of the cutpoints for HC, CO, and NO_X. The pass/fail analysis using the fast pass criteria must begin after an elapsed time of 15 seconds from mt=0, provided that the speed, load and acceleration readings are within specifications. Pass/fail analysis using the normal cutpoints must occur between an elapsed time of 25 seconds (mt=25) and 90 seconds (mt=90), provided that the speed, load, and acceleration readings are with specifications. The vehicle must pass the ASM 50/15 mode and the mode must be immediately terminated if, at any point between an elapsed time of 15 seconds and 90 seconds, the 10-second running average measured values for each pollutant are simultaneously less than or equal to the applicable emissions inspection standards.

A vehicle must pass the ASM 25/25 mode if, after mt=25 seconds, the 10-second average readings for HC, CO and NO are all equal to or below the applicable standards for the vehicle. Once readings have been achieved for all three gases, the ASM 25/25 mode must terminate and the analyzer must proceed, if applicable, to the second chance phase of the inspection.

The emissions readings used to make the pass/fail decision must be recorded in the inspection record. If the vehicle failed either the ASM 50/15 mode or the ASM 25/25 mode with scores for any pollutant over 150% of the applicable standard, the vehicle must fail the ASM inspection. The ASM inspection must be terminated and the inspection results from both modes must be recorded on the VIR.

13. Second Chance Inspections.

If all HC, CO, and NO emissions results for both ASM modes are within 150% of the applicable standards used for pass/fail determination, the vehicle is entitled to a second

chance inspection. Otherwise, the inspection will end and the vehicle will not receive a second chance inspection. If an ASM mode is authorized for a second chance inspection, only the results of the second chance inspection for that mode must be written to the VIR. However, all first chance inspection results must be recorded on the inspection record as well as the second chance inspection results.

(a) If the vehicle fails the first-chance inspection, the inspection mode timer must reset to zero (mt=0) and a second-chance inspection must be performed, except as noted below.

(b) If the vehicle failed only the ASM 50/15 mode within 150% of all standards during the first chance inspection, then that mode must be repeated upon completion of the ASM 25/25 mode. The inspection will terminate when the mode ends or when the vehicle passes, whichever occurs first.

(c) The dynamometer torque must smoothly transition during the deceleration period and must automatically reset to the load required for the ASM 50/50 mode once the speed reaches 15 mph. The second chance ASM 50/15 inspection must proceed as in Section (12)(a) above. The analyzer must display the following message:

Display Prompt:

SECOND CHANCE 50/15 TEST AUTHORIZED. PLEASE GRADUALLY DECELERATE TO 15 MPH AND REPEAT THE ASM 5015 MODE.

(d) If the vehicle is failing only the ASM 25/25 mode within 150% of all standards during the first chance inspection, then the second mode must not end at 90 seconds but must continue for up to 180 seconds. Mode timers must not reset but rather continue up to 180 seconds. The pass/fail analysis must continue up to 180 seconds or until the vehicle passes, whichever comes first. If a restart occurs, then this second chance ASM 25/25 mode must occur as described in Step 12 above.

(e) The dynamometer torque must maintain the load required for the ASM 25/25 mode. The second chance ASM 25/25 mode must proceed as in Step 12 above, and the analyzer must display the following message:

Display Prompt:

SECOND CHANCE 25/25 TEST AUTHORIZED. PLEASE CONTINUE SPEED AT 25 MPH.

(f) If the vehicle failed both the ASM 50/15 and ASM 25/25 modes within 150% of all standards during the first chance inspection, then the vehicle must receive a second-chance inspection for the ASM 50/15 and the analyzer must display the following message.

Display Prompt:

SECOND CHANCE 50/15 TEST AUTHORIZED. PLEASE DECELERATE GRADUALLY TO 15 MPH AND REPEAT THE ASM 5015 MODE.

The second chance ASM 50/15 inspection must proceed as in steps (13)(b)&(c) above. The emissions readings used to make the pass/fail decision must be recorded in the inspection record and on the VIR.

(g) If the vehicle fails the second-chance ASM 50/15 mode, then the vehicle must fail the ASM inspection. Otherwise, the vehicle must also receive a second-chance ASM 25/25 mode. If the vehicle fails the second chance ASM 25/25 mode, the vehicle must fail the ASM inspection. If the vehicle passes the second chance ASM 25/25 mode, the vehicle must pass the ASM inspection.

The ASM inspection must terminate and the emissions readings used to make the pass/fail decision must be recorded in the inspection record and on the VIR.

If the vehicle passes, the printed and recorded values must be the passing readings. In addition to storing these readings, the analyzer must also store the start time of the first chance ASM 50/50 mode, and the end time of the final mode. If the vehicle fails, calculate the scores in the same manner and enter the values for the HC, CO, and NO into the record from the last valid 10-second average. Proceed to the second chance inspection and report only the scores obtained from it.

14. Augmented Braking

Augmented braking must be operational during the ASM inspection. Augmented braking for the ASM inspection consists of applying the maximum safe load with the dynamometer to bring the rolls to a complete stop. Augmented braking must automatically occur when any of the following conditions are met:

- The conclusion of the final inspection mode (including second chance inspections)
- The inspection mode meets conditions for restart
- The inspection mode meets conditions for abort

15. Restart Procedures

Bring the rollers to a full stop. Record the time elapsed since the beginning of the current mode. The software must prohibit the restart of the inspection until the vehicle has idled (speed < 1,250) until twice the original elapsed time from the start of the current mode or one minute (whichever is less). The dynamometer load must be applied when the speed reaches 10 mph and must smoothly transition until the speed reaches 15 mph or 25 mph as applicable. The mode timer must reset to zero when the speed and dynamometer load reach 15 or 25 mph ± 1 mph (as applicable) for five continuous seconds. Upon restart, the previously captured second-by-second data for that inspection mode must be deleted and data collection must begin anew.

Display Prompt:

TEST MODE MUST BE RESTARTED BECAUSE:

<u>Conditions Causing Inspection Mode Restart (all modes):</u>

- Vehicle and/or equipment unable to stabilize with required stabilization time.
- Acceleration violation according to the requirements stated in the inspection sequence.
- Dynamometer load outside of specification for two or more consecutive seconds.

- Sample dilution.
- Engine speed below 100 RPM for two or more consecutive seconds.
- Inadequate number of valid 10-second average readings.
- Analyzer "low flow" condition for two or more consecutive seconds.
- Vehicle speed outside inspection limit for two or more consecutive seconds.
- Engine speed outside of range for five or more seconds during one excursion. The engine speed ranges are: 1500 - 3000 RPM, for engine sizes less than or equal to 3.0 L; and 1250 - 2500 RPM, for engine sizes larger than 3.0L.

The software must count the number of restarts during the inspection procedure. The count must be written to the ASM Restart Counter field of the inspection record. The maximum number of restarts for the entire ASM inspection sequence is two. Otherwise the inspection will be aborted. ASM inspections with no restarts will record zero in the appropriate fields; (TSI inspections will leave the field blank).

<u>Conditions Causing ASM Inspection Abort (both modes):</u>

- Safety-related issues
- Equipment failure
- Power loss
- Any of the restart conditions listed above, occurring more than twice

16. End of ASM Emissions Inspection

At the completion or termination of the ASM inspection, the analyzer must display the following message:

Display Prompt:

END OF ASM-2 EMISSIONS TEST

REMOVE RESTRAINING SYSTEM FROM VEHICLE.

REMOVE COOLING FAN, TACHOMETER LEAD AND SAMPLE PROBE.

DRIVE THE VEHICLE OFF OF THE DYNAMOMETER.

Appendix V

Safety Certificate Format Table

Texas Department of Public Safety Certificate Formats
(As of June 18, 2008)

CERTIFICATE TYPE (SPEC NAME)	FORMAT (CHARACTERS)	EXAMPLE NUMBER	BARCODED	SAFE_TEST_ TYPE	ACCEPTABLE ALPHA CHARACTER GROUPINGS	VIR/REG FEE CODE
ASM Safety/Emission 1 year **(1 year windshield - asm (safety & emissions))**	1 alpha, and 8 numeric (9 positions)	F00734251 M00203023	Yes	M	F, M - ASM	ASM M
OBD Safety/Emission 1 year **(1 year windshield - obd (safety & emissions))**	1 alpha, and 8 numeric (9 positions)	P00734251 E00203023	Yes	L	E, P - OBD	OBD L
TSI Safety/Emission 1 year (El Paso only) **(1 year windshield - tsi (safety & emissions))**	1 alpha, and 8 numeric (9 positions)	C00734251 D00203023	Yes	A	A, B, C, D - TSI	TSI A
Safety/Emission 1 year (Austin only) **(1 year windshield - obd/tsi (safety & emissions))**	1 alpha, and 8 numeric (9 positions)	A00734251 B00203023	Yes	N	A, B	TSIOBD N
Commercial - Windshield **(FMCSR (Truck))**	1 alpha, and 8 numeric (9 positions)	T00382851	No	G	T, U	CW G
Commercial – Trailer **(FMCSR(Trailer))**	1 alpha, and 8 numeric (9 positions)	R00896611	No	K	R, S	CDEC K
Safety Only - 1 year **(1 year windshield (safety only)**	1 alpha, and 8 numeric (9 positions)	G05379551	Yes	J	G, H, I, J, K	1YR J
Safety Only - 2 year **(2 year windshield)**	1 alpha, and 8 numeric (9 positions)	N00674076	Yes	B	N, W, Q	2YR B
Trailer/Motorcycle **(Trailer/Motorcycle)**	1 alpha, and 8 numeric (9 positions)	Z00957626	No	C	X, Y, Z	TLMC C
Emissions Only Decal **(Emissions Test Only Decal)**	1 alpha, and 8 numeric (9 positions)	V00102110	No	H	V	EMONLY H
Out of State Identification Certificate (VI-30)	1 alpha, 8 numeric	L13500422	Yes		L	
OBD Safety/Emissions 1 year - No LIRAP **(1 year windshield - obd (safety & emissions))**	1 alpha, and 8 numeric (9 positions)	P00734251 E00203023	Yes	L	E, P - OBD	OBDNL R

CERTIFICATE TYPE (SPEC NAME)	FORMAT (CHARACTERS)	EXAMPLE NUMBER	BARCODED	SAFE_TEST_ TYPE	ACCEPTABLE ALPHA CHARACTER GROUPINGS	VIR/REG FEE CODE
Safety/Emission 1 year (Austin) - No LIRAP **(1 year windshield - obd/tsi (safety & emissions))**	1 alpha, and 8 numeric (9 positions)	A00734251 B00203023	Yes	N	A, B	NLTSI S
One Year Safety Only + Emissions Only Decal (Not printed on VIR or stored in Reg_Fee_Code)	No format Not printed on VIR					SOEO
Commercial - Windshield + Emissions Only Decal (Not printed on VIR or stored in Reg_Fee_Code)	No format Not printed on VIR					CWEO

Appendix W

AirCheckTexas Repair and Retirement Assistance Program Application

AirCheckTexas Repair and Replacement Assistance Program Application

Is there financial assistance for vehicle repairs?

The state of Texas has established a financial assistance program for certain owners of vehicles that fail the emissions test. The assistance program is called the **AirCheckTexas Repair & Replacement Assistance Program**.

How do I apply for help?

The assistance program is currently operating in Brazoria, Fort Bend, Galveston, Harris, Montgomery, Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant counties. To find the location of the office nearest you, call toll free **LIRAP_NUM_A in bold font** in the **Dallas-Fort Worth** area, or **LIRAP_NUM_B in bold font** in the **Houston-Galveston** area.

Application must be received by the county program administrator for the **AirCheckTexas Repair & Replacement Assistance Program no later than 30 days** from the date of failing the emissions test.

SECTION 1: Applicant Information (filled out by applicant)

1. Applicant's name: _____

2. Address: _____

3. City: _____4. State: _____ 5. Zip: _____

6. Telephone number: ( ) _____ Email Address: _____

7. If you are not the owner of the vehicle, provide the owner's name and telephone number:

Name: _____ Telephone number: ( ) _____

SECTION 2: Vehicle Information and Eligibility Requirements (filled out by applicant)

8. County where vehicle is registered: _____ Are you applying for (check one): Repair ☐ Replacement ☐

Information for items 9-14 can be taken from the Vehicle Inspection Report (VIR).

9. Vehicle make:_____ 10. Vehicle model: _____ 11. Model year:_____

12. Vehicle ID number (VIN): _____ 13. License plate:_____

14. Odometer reading: _____ 15. Attach a copy of the Vehicle Inspection Report: ☐

16. Was the vehicle driven under its own power to the emissions inspection station, Yes ☐ No ☐; and could the vehicle be driven to a vehicle retirement facility? Yes ☐ No ☐

SECTION 3: Vehicle Owner Eligibility (filled out by applicant)

17. Total annual family take-home pay: $_____ 18. Number of members in family at home: _____

19. Proof of income (*check one* and include photocopy):

Pay stubs (last 3 months); _____

Tax return; _____

OR Case number from a federal or Texas Department of Human Services program: _____

20. Name of any other financial assistance program:_____

Affidavit: I hereby certify under penalty of perjury, that all the information contained herein is true and correct. I acknowledge that all information given is subject to verification and/or monitoring. I authorize AirCheckTexas Repair & Replacement Assistance Program representatives to verify information needed to certify my eligibility

_____ _____
Signature of vehicle owner Date

_____
Printed Name

AirCheckTexas Repair and Replacement Assistance Program Application

Is there financial assistance for vehicle repairs?

The state of Texas has established a financial assistance program for certain owners of vehicles that fail the emissions test. The assistance program is called the **AirCheckTexas Repair & Replacement Assistance Program**.

How do I apply for help?

The assistance program is currently operating in Travis, and Williamson counties. To find the location of the office nearest you, call toll free **LIRAP_NUM_A in bold font** in **Travis County**, or **LIRAP_NUM_B in bold font** in **Williamson County**.

Application must be received by the county program administrator for the **AirCheckTexas Repair & Replacement Assistance Program no later than 30 days** from the date of failing the emissions test.

SECTION 1: Applicant Information (filled out by applicant)

1. Applicant's name: _____

2. Address: _____

3. City: _____4. State: _____ 5. Zip: _____

6. Telephone number: ( ) _____ Email Address: _____

7. If you are not the owner of the vehicle, provide the owner's name and telephone number:

Name: _____ Telephone number: ( ) _____

SECTION 2: Vehicle Information and Eligibility Requirements (filled out by applicant)

8. County where vehicle is registered: _____ Are you applying for (check one): Repair ☐ Replacement ☐

Information for items 9-14 can be taken from the Vehicle Inspection Report (VIR).

9. Vehicle make:_____ 10. Vehicle model: _____ 11. Model year:_____

12. Vehicle ID number (VIN): _____ 13. License plate:_____

14. Odometer reading: _____ 15. Attach a copy of the Vehicle Inspection Report: ☐

16. Was the vehicle driven under its own power to the emissions inspection station, Yes ☐ No ☐; and could the vehicle be driven to a vehicle retirement facility? Yes ☐ No ☐

SECTION 3: Vehicle Owner Eligibility (filled out by applicant)

17. Total annual family take-home pay: $_____ 18. Number of members in family at home: _____

19. Proof of income (*check one* and include photocopy):

Pay stubs (last 3 months); _____

Tax return; _____

OR Case number from a federal or Texas Department of Human Services program: _____

20. Name of any other financial assistance program:_____

Affidavit: I hereby certify under penalty of perjury, that all the information contained herein is true and correct. I acknowledge that all information given is subject to verification and/or monitoring. I authorize AirCheckTexas Repair & Replacement Assistance Program representatives to verify information needed to certify my eligibility

_____ _____
Signature of vehicle owner Date

_____
Printed Name