Email from CARB 9/12/2024

From: CARB Heavy-Duty Inspection and Maintenance <hdim@arb.ca.gov>
Sent: Thursday, September 12, 2024 5:49 PM
[redacted]
Subject: Second Phase OBD Readiness Criteria Effective on September 13, 2024 – Clean Truck Check

CAUTION: This email originated from outside the organization. Do not click links or open attachments unless you recognize the sender and know the content is safe.

As of September 13, 2024, CARB will be tightening the Readiness Criteria applied to On-Board Diagnostic (OBD) test submissions for the Clean Truck Check. The minimum number of **warm-up cycles** since the OBD codes were last cleared will be increased from **three** to **five**.

In addition, vehicles whose OBD systems report Permanent Diagnostic Trouble Codes (PDTCs) will have their Operation Since code Clear (OSC) thresholds **multiplied by a factor of three**. For example, a vehicle with **one or more PDTCs** will have to have at least **15 warm-up** cycles since the last OBD code cleared.

Please check for OBD Readiness Criteria updates available on CARB's website.

CARB High Emitting Letters

- CARB is flagging units with a roadside device (https://www.youtube.com/watch?v=5kdsRR7_VVE) and sending letters to customer requiring them to prove unit is being properly maintained.
- DDC Engineering/Compliance/Service working together on how to best support customers who receive these letters in the interim.
  - Responsibility is between the customer and ARB
  - We are supporting with generation of the OBD Compliance report
  - The report is available using DDDL
  - Long term strategy is report support through a aftermarket "Certified" tool

To avoid penalties and a registration hold on the high-emitting vehicle listed above, submit the following documentation to CARB by December 17, 2021 :

1) Documentation on emissions status, conducted on or after the date of recorded emissions listed above:
   - Results of a snap-acceleration smoke opacity test (SAE J1667 protocol) conducted by an independent certified commercial smoke tester (see 13 CCR § 2182(b)), OR
   - For 2013 model year or newer engines, vehicle on-board diagnostics (OBD) data may be submitted in lieu of a smoke test.

2) General vehicle documentation:
   - Copies of the vehicle registration document(s), AND
   - Images of all engine emission control labels (ECLs).

3) For Vehicles with 2006 MY engines and older, documentation demonstrating compliance with the Truck and Bus Regulation, which can include, but is not limited to:
   - A copy of the installation invoice from an authorized installer demonstrating that a verified diesel particulate filter was installed on vehicles that have a GVWR greater than 26,000 pounds, AND/OR
   - Documentation demonstrating the vehicle was repowered with a compliant engine with appropriate emission control systems, AND/OR
   - Other records demonstrating the vehicle is in a compliance option or in compliance with the Truck and Bus Regulation.

J1939-61

OBD Compliance

Heavy Duty/On-Board Diagnostics (CARB CCR 1971.1)

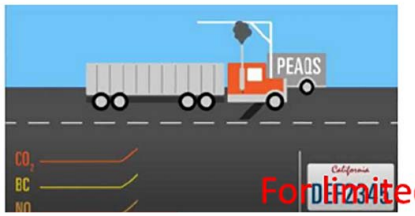
System	Ready	Completed (this trip)	Enabled (this trip)
Comprehensive Component	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle
Exhaust Gas Sensor	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle
NMHC Catalyst	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle
NOx Aftertreatment	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle
PM Filter	test not complete	monitor not complete this cycle	monitor enabled this cycle

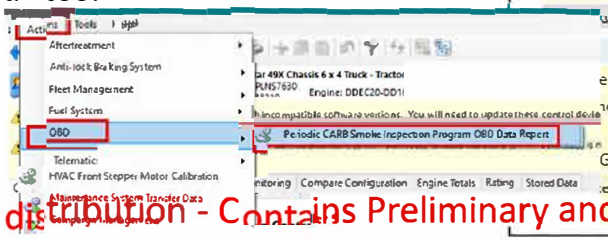
J1939-1

OBD Compliance

uty/On-Board Diagnostics (CARB CCR 1971.1)

System	Ready	Completed (this trip)	Enabled (this trip)
essure	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle
ensive Component	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle
	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle
Gas Sensor	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle
em	test not complete	monitor not complete this cycle	monitor enabled this cycle
	test complete or not supported	monitor complete this cycle or not supported	monitor enabled this cycle





CARB Clean Truck Announcement: May 4, 2023

- If you receive a Notice to Submit to Testing (NST) from the California Air Resources Board (CARB), your vehicle will be required to undergo compliance testing performed by a credentialed tester to ensure it is operating with properly functioning emissions control systems. Repairs to emissions-related parts may be necessary to bring your vehicle into compliance. Please follow the instructions in the NST letter you receive from CARB and be sure to submit your vehicle's passing test results and any other required documentation within 30 days of receipt of the NST letter. Please do not wait until the last day to get your vehicle tested and submit the results to CARB.
- Moving forward, you must regularly maintain your vehicle to ensure the emissions controls remain in proper operating condition. Repair any emissions related issues as soon as possible.
- If you receive a NST letter and have questions, please email CARB's Enforcement at HDVehicleEnforcement@arb.ca.gov or go to CARB's enforcement page. For more information on the program as a whole, you may also visit CARB's Clean Truck Check.

CARB Clean Truck Check (HD I/M) Team

- From now on, if you receive an official "Notice to Submit to Testing" – e.g. your truck gets flagged by a PEAQS system – the testing has to be done by a credentialed tester – not just a valid tool.

California Air Resources Board

Heavy-Duty Vehicle Inspection Report

Test Date/Time: 9/18/2024 1:30:05 PM **Report ID:** [redacted]

Vehicle Information

VIN: [redacted]
User VIN:
Fuel Type: Diesel
License: [redacted]
Make: Freightliner
Model Year: 2020

Tester Information

Tester Name: Cristian Rodriguez
Comment:

Overall Test Result

OBD Test Result: **NOT READY**

This vehicle's On-Board Diagnostics (OBD) system has not had enough time to complete its tests. The vehicle either has exceeded the number of allowable incomplete monitors, or does not meet the minimum operation since codes cleared criteria.

- **1 warm-up cycles**

have occurred since the last code clear.

Note that these tests can be erased by disconnecting the battery from the vehicle. These test results cannot be accepted until additional vehicle operation has occurred, allowing the OBD system adequate time to assess whether the vehicle's emissions controls are working properly.

Please visit CARB's website for more information about OBD readiness criteria:
https://ww2.arb.ca.gov/obd-readiness-criteria

CARB's Clean Truck Check team can be reached at hdim@arb.ca.gov.

California Air Resources Board

Heavy-Duty Vehicle Inspection Report

Test Date/Time: 9/23/2024 2:37:32 PM **Report ID:** [redacted]

Vehicle Information

VIN: [redacted]
User VIN:
Fuel Type: Diesel
License: [redacted]
Make: Freightliner
Model Year: 2020

Tester Information

Tester Name: Cristian Rodriguez
Comment:

Overall Test Result

OBD Test Result: **NOT READY**

This vehicle's On-Board Diagnostics (OBD) system has not had enough time to complete its tests. The vehicle either has exceeded the number of allowable incomplete monitors, or does not meet the minimum operation since codes cleared criteria.

- **3 warm-up cycles**

have occurred since the last code clear.

Note that these tests can be erased by disconnecting the battery from the vehicle. These test results cannot be accepted until additional vehicle operation has occurred, allowing the OBD system adequate time to assess whether the vehicle's emissions controls are working properly.

Please visit CARB's website for more information about OBD readiness criteria:
https://ww2.arb.ca.gov/obd-readiness-criteria

CARB's Clean Truck Check team can be reached at hdim@arb.ca.gov.

"**Warm-up cycle**" means an ignition cycle with sufficient vehicle operation such that the coolant temperature has risen by at least 40 degrees Fahrenheit or 22.2 degrees Celsius from engine start and reaches a minimum temperature of at least 160 degrees Fahrenheit or 71.1 degrees Celsius (140 degrees Fahrenheit or 60 degrees Celsius for applications with diesel engines). Alternatively, manufacturers may define warm-up cycle as an ignition cycle with vehicle operation in which the following criteria are met: for vehicles using the ISO 15765-4 protocol, the manufacturers may use the criteria specified in sections (d)(2.3.1)(C)(ii)b.3.i. (or v. if applicable), ii., and iii. herein, and for vehicles using the SAE J1939 protocol, the manufacturer may use the criteria specified in sections (d)(2.3.2)(D)(ii)b.3.i. (or v. is applicable), ii., and iii. herein.

Q&A:

1. How far does it have to cool down to count as the next one?
   - For Detroit powertrains –
     - Coolant temp is read at key-on: Key-On is the vehicle state changing from MCM/ACM powered down AND Ignition Key state from Off to On.
     - The software increments the Warm-Up Cycle when the coolant temp exceeds 60C and the delta from current temp and Key on value to be >= 22.2C

   a. If we warm it to 200F and let it cool to 120F then warm it again is that enough or what are the boundary conditions?

      - It *should* work. Note: Also Requires - ECU power down while cool AND coolant temp increase of 22.2C AND coolant temp to exceed 60C.

2. Is it time and key cycle based?
   - No, it's not in the SW logic, but coolant temp decrease takes….TIME.
   - **Fun Facts:**
     - If a customer tries to get creative and slew a sensor, that will likely trigger temp and time rationality faults.
       - This will make them have to start over in prepping a truck for CTC.
     - DO NOT CLEAR CODES!
       - Clearing codes will reset the warm up cycle counter to 0

3. Is there a difference between warmup cycle and drive cycle?

   - YES

   "**Driving cycle**" is defined as a trip that meets any of the four conditions below:
   - (1) Begins with engine start and ends with engine shutoff;
   - (2) Begins with engine start and ends after four hours of continuous engine-on operation;
   - (3) Begins at the end of the previous four hours of continuous engine-on operation and ends after four hours of continuous engine-on operation; or
   - (4) Begins at the end of the previous four hours of continuous engine-on operation and ends with engine shutoff.

   a. How many types of drive cycles do we have?
      - One "Driving Cycle", but there are many types of cycles. The primary ones CARB defines are Ignition, Driving, and Warm-up. They all serve various purposes throughout the regulation.

Link to CARB site on Second Phase:

[Second Phase OBD Readiness Criteria Effective on September 13, 2024 | California Air Resources Board]

Phase 2 Minimum OSC

1. **5 Warm-Up Cycles(15 if at least one PDTC is present)**
2. If the vehicle OBD system does not collect Warm-Up Cycles, the CTC test will check for a **minimum of 100 miles OSC (300 if at least one PDTC).**
3. If neither WUC nor mileage are in the test record, the CTC test will check for a **minimum of 200 minutes of OSC (600 if at least one PDTC).**

Getting ready for the CTC OBD test

Things to do to have your best chance at passing the CTC OBD test:

- If your Malfunction Indicator Light (right) is on, get your vehicle repaired as soon as possible. 
- Don't wait - Do the OBD test early in the inspection compliance window so there will be time to complete the test if there are problems
- Avoid clearing codes. OBD systems require substantial vehicle operation to be able to complete their emission control diagnostic tests.
- A vehicle that has not been operated enough will fail the test.

Best Practice Tip!

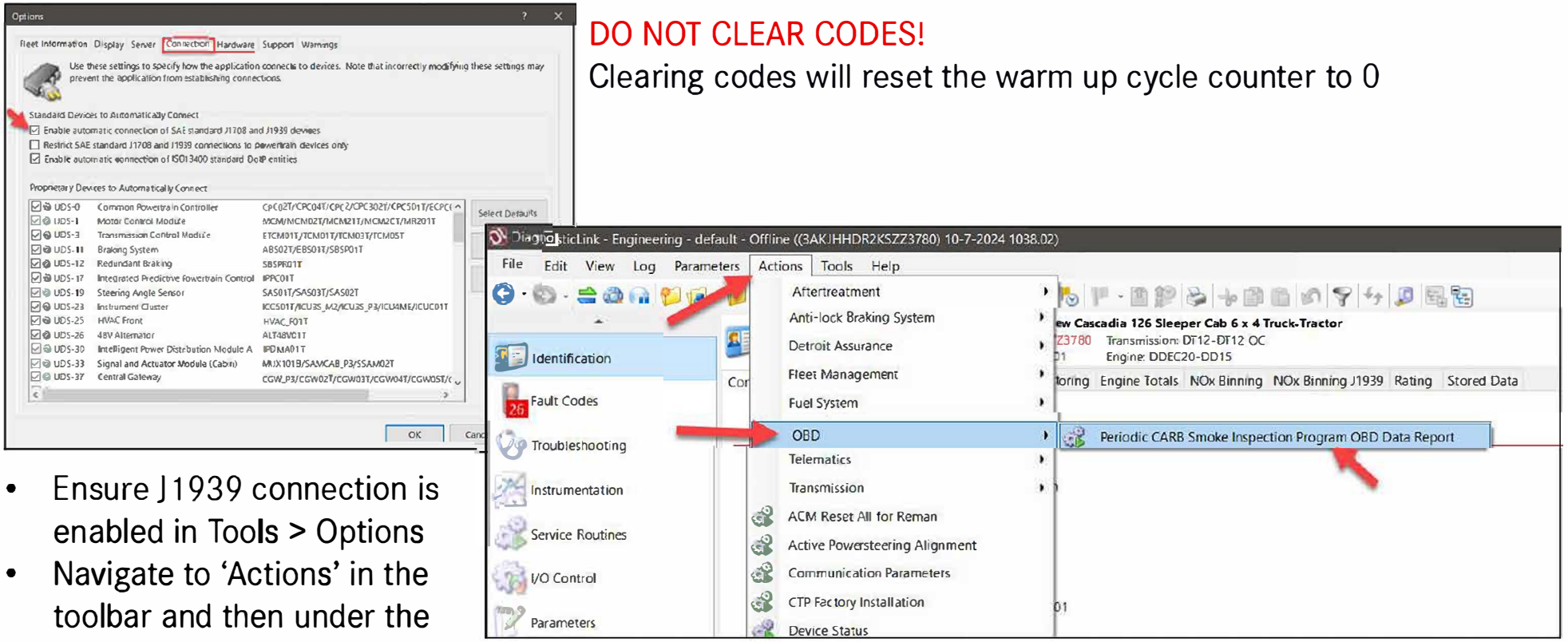
CARB Clean Truck Check

Preliminary

- DiagnosticLink is NOT an approved tool by CARB for California's Heavy Duty Vehicle Inspection and Maintenance Program
- Any panels in DiagnosticLink cannot be used for certification with CARB's Clean Truck Check
- Do NOT use DiagnosticLink to clear codes prior to a check
- The following slides will provide information on how to use DiagnosticLink to check for MIL status, fault code status, and warm up cycles which CARB uses to determine a pass/fail/not ready result

Opening Panel for CARB Clean Truck Check Data

Preliminary



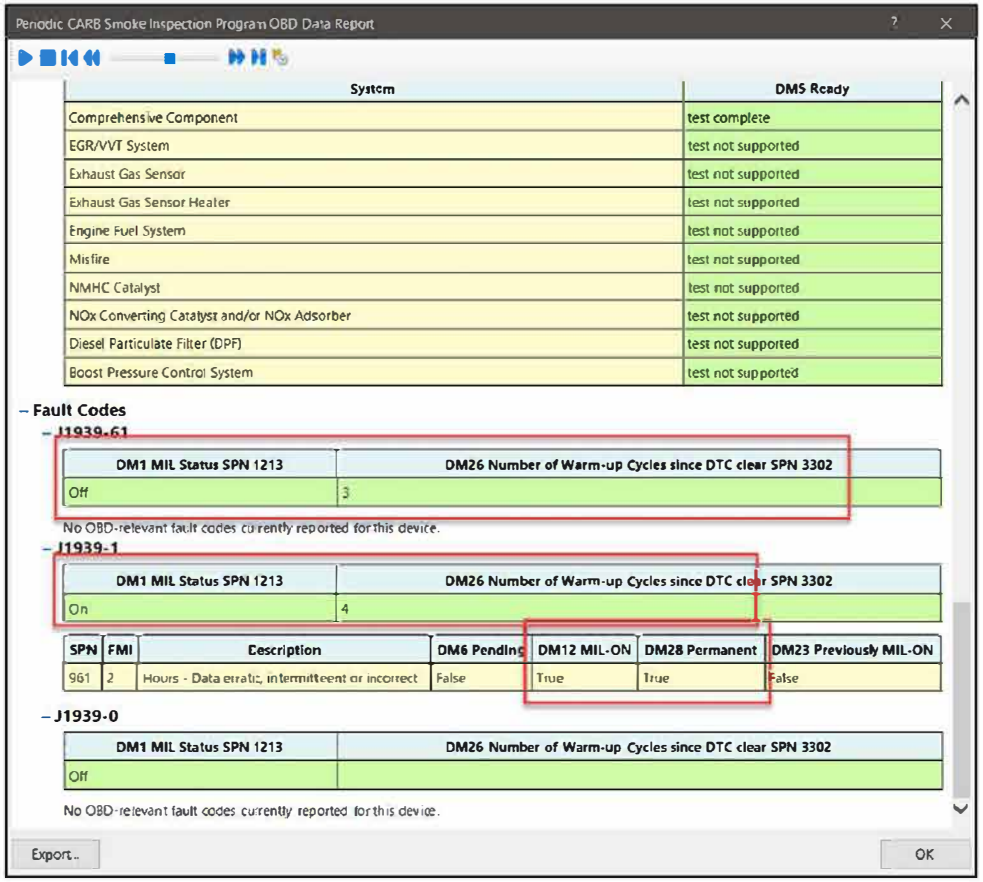
DO NOT CLEAR CODES!

Clearing codes will reset the warm up cycle counter to 0

- Ensure J1939 connection is enabled in Tools > Options
- Navigate to ‘Actions’ in the toolbar and then under the ‘OBD’ option select ‘Periodic CARB Smoke Inspection Program OBD Data Report’

Source of Information for Clean Truck Check in Diagnostic Link:
Actions > OBD > Periodic CARB Smoke Inspection Program OBD Data Report

Preliminary



Note: CARB pass/fail criteria are subject to change – contact DTTS for assistance

As of October 2024, Expected Pass/Fail Criteria:

PASS:

1) **No MIL on, no Permanent codes AND**
2) Meets readiness threshold for number of warmup cycles since DTC clear **(5 WUC)**

OR:

1) **No MIL on, BUT a Permanent code present, AND**
2) Meets readiness threshold for number of warmup cycles since DTC clear **(15 WUC)**

FAIL:

1) **MIL ON**

NOT READY:

1) **No MIL on, no Permanent codes, BUT**
2) **Readiness threshold not met (5 WUC, etc.)**

OR:

1) **Permanent code present**
2) **Readiness threshold not met (15 WUC, etc)**

What to do

Preliminary

- If you fail the test due to a MIL-on
- Diagnose and repair the cause of the MIL
- Using TechLit, execute the verification of the fault code to clear the code
- Do NOT use DiagnosticLink to clear codes
- If you do not pass the test – "Not Ready" results
- Review the reason for the "Not Ready"
  - If no MIL or permanent codes perform 5 warm up cycles
  - If permanent code present perform either:
    - Fault code verification to allow module to clear permanent code
    - 15 warm up cycles
- What is a warm up cycle?
- A warm up cycle requires the module/ECU to see a 40F (22C) coolant temperature rise AND minimum coolant temp of 158F (70C)
- You may have to disconnect and reconnect DiagnosticLink to see the counter increment
- **The recommended procedure to complete a warm up cycle:**
  - Key on, engine off ensure coolant temperature is below 120F (49C)
  - Start engine and run until coolant temperature exceeds 170F (77C)
  - Stop engine, allow modules to disconnect
  - Reconnect DiagnosticLink and check warm up cycle count
  - Allow engine to cool under 120F and repeat as needed