

**Questions and Answers  
for  
CRC Project E-144: Impact of Alternative Diesel Fuels on OBD Robustness**

**Updated 1/23/24**

1. Is continuous NH<sub>3</sub> measurement needed via FTIR?

No. NH<sub>3</sub> sensor should be added to vehicle if not equipped. NH<sub>3</sub> sensor measurement should be continuous.

2. Will the LA92 tests be conducted as cold-start or hot-start (i.e. Hot 1435 Unified Cycle)?

Hot start unified - Hot 1435 Unified cycle.

3. Is a UDDS prep needed before a cold-start FTP? (it would be run after the LA92)

FTP72 prep and cold soak required prior to cold start FTP.

4. Should statistical support be included in the estimate or will it be priced separately?

No, just basic statistics

5. If a PM sensor is not part of the OEM package, is a particular type of PM sensor required? (we can provide sensors if needed)

Need feedback from other OEMs - GM vehicles are equipped.

MB: We do have a PM sensor, but it does not provide a value

6. Is the plan to measure continuous gaseous emissions dilute (typical) or will raw measurements be required?

Feedback from team - dilute probably preferred.

7. Should we assume a through fuel change and conditioning procedure will be used—similar to E-94 or E-122?

Yes, use these.

8. Are both bag and modal emissions requested, or just modal?

Modal

MB: Both would be helpful

Can contractors quote both separately? Bag emissions may add too much cost.

Ford: Both modal and bag measurements are useful

9. Estimated # of FTP72s to complete regen on each product?

See fuel table.

10. Soak between regen FTP72s (if more than one cycle to complete regen), or run continuous?

Run FTP72s continuously (no key cycle or idle between subsequent cycles) until regeneration completes.

11. Are emissions measurements required during the precon FTP72s?

No

12. Can we assume that all vehicles will be provided with ETK ECUs and the appropriate interface hardware (e.g. ETAS modules)?

No. Data should be collected from OBD data stream (PIDs) and scan tool.

MB: Our vehicle has them

Tests should be run similarly among vehicles with same data collection, so if some manufacturers are unable to provide ETK/experiment, all data should be collect via OBD data stream,

Stellantis: The idea of using the standard data stream was to ensure the data was all comparable. I would recommend that we use the OBD datastream to collect all data.

Ford: Data should be collected from OBD data stream (PIDs) with a scan tool.

13. Can we assume that each of the member companies will provide Inca experiments (or similar) for the provided vehicle to ensure all required parameters are logged?

See #12. Scan tool may be used to monitor data stream parameters.

MB: Yes, we can provide it (Tentatively. Need management approval).

Stellantis: Should NOT be needed, since you'll be using the OBD datastream via a scan tool.

Ford: Use the OBD data stream via a scan tool to log parameter data

14. Can the details of the fuel change and conditioning procedure used in "E-94 / E-122" be provided directly as part of this Q&A?

Please refer to Appendix E in the E-122-2 Report on the CRC website at:

<https://crcao.org/wp-content/uploads/2023/01/E-122-2-Final-Report-with-CRC-Cover-12.5.22.pdf>

15. Are repeats desired for the regen emissions testing on each product? Or should we just assume that regen testing is performed one time with each fuel?

Regen test shall just be run once per fuel. Emissions should not be collected during regen.

MB: Agree with above.

Ford: Agree with above statement - Regen test shall be run once per fuel. Emissions should not be collected during regen.

16. Have the vehicles been modified to run effectively on the alternative fuels?

Vehicles have not been modified. The purpose of this study is to observe impact of alternative fuels as drop in fuels.

17. Have the fuel tanks been replaced with sealed tanks, and evaporative emissions controls installed for the alternative fuels?

Diesel vehicles do not have evaporative emissions controls.

18. Evaluated fuel tank pressure - Should alternate tank be used for pressure readings?

Not sure how to answer your question. This should not be an issue with these fuels.

Ford: See #17 - Diesel vehicles do not have evaporative emissions controls.

19. Will baseline emissions data for each vehicle be provided?

No. EPA ULSD may be considered "baseline" fuel for comparison with other fuels. If there are concerns with vehicle performance, project leaders can be contacted for more information.

20. For low energy density fuels how will the FTP cycle be generated?  
FTP72/75 cycles are vehicle speed trace only. There are no calculations based on power.
21. If the fuel system cannot inject sufficient fuel volume of test fuel to match power output of diesel, how will the two fuels be compared on the FTP cycle?  
See #20.
22. If faults occur that are not critical to engine performance or safety, will they be calibrated out to allow otherwise inhibited monitors to run?  
No. It is unknown how the diagnostic system will respond to alternative fuels. Faults/MILs should be documented.
23. Who is responsible for testing the different fuels?  
A CRC member company will provide the fuel data on the fuels for the report. If there is data needed by the contract for testing, that should be noted in the proposal. If the testing cannot be provided by a CRC member company, CRC will handle getting the data.
24. Fuel testing is very costly and can be time consuming if fuel requires shipment to distant laboratory's ?  
Details on the fuel blending and shipping area still be worked out. We don't expect the on-site contractor to need to prepare samples to ship. If this does become an issue, CRC project panel will address at another time with the contractor.
25. Engine out MSS Micro Soot bench must be cleaned frequently to prevent fouling. If regeneration completes before FTP 72, do we continue running the cycle?  
Unsure what question is being asked. Normal maintenance/cleaning procedures for MSS should be followed, and procedure should be consistent among test fuels so as not to affect analysis and conclusion.  
The expectation is that a regeneration should not be automatically triggered by the control system during the testing procedure.
26. Are emissions being collected during the regen FTP 72?  
No
27. Are we collecting gravimetric PM data?  
No