



## RETROFIT EMISSIONS

# APPLICATION PRE-ASSESSMENT WORKSHEET ON-ROAD

Proper application is critical to ensuring that FILTER-BASED emissions control devices perform as designed and meet the requirements of regulatory authorities. **Clean Diesel Group** Certified Retrofit Emissions Dealers are responsible for performing application pre-assessments prior to installing retrofit emissions devices on all vehicles. Dealers are also responsible for registering the emissions control devices with **Clean Diesel Group** and reporting the results of all data logging and engine pre-assessments.

### End User Vehicle Information

Fleet Name:			
Fleet Vehicle #:		VIN #:	
Vehicle Make:		Vehicle Model:	Vehicle Year:
Engine Make:		Engine Model:	Engine Year:
Engine Family #:			
Dealer Name:		Signature:	PASS (✓) <input type="checkbox"/> FAIL (✓) <input type="checkbox"/>
Inspector's Name:		Inspection Date:	OR <input type="checkbox"/>

**If any shaded boxes are checked, the vehicle/engine fails pre-assessment and may NOT be retrofitted.**

Section A: End User Maintenance Practices	Yes (✓)	No (✓)
1. Are you using ULSD Fuel? If yes, see Section C.	<input type="checkbox"/>	<input type="checkbox"/>
2. Are you using CJ-4 oil? If yes, see Section C.	<input type="checkbox"/>	<input type="checkbox"/>
3. Are fuel additives being used?	<input type="checkbox"/>	<input type="checkbox"/>
4. Is the engine consuming oil at a rate higher than 1 quart/500 miles? Review maintenance records (if available). (13 CCR 2706.t.4.A)	<input type="checkbox"/>	<input type="checkbox"/>
5. Has the fuel pump or governor setting been changed?	<input type="checkbox"/>	<input type="checkbox"/>
6. Will the engine be serviced and maintained according to the engine manufacturer recommendations after the emissions device is installed?	<input type="checkbox"/>	<input type="checkbox"/>
7. Does the engine ECU download show any active fault codes? Attach ECU download.	<input type="checkbox"/>	<input type="checkbox"/>
8. a. Has the air filter been serviced/replaced in the last 3 months?	<input type="checkbox"/>	<input type="checkbox"/>
b. When was the air filter serviced/replaced?      Date:                      at                      Hrs/Miles		

Section B: Visual Inspection	Yes (✓)	No (✓)
1. With the engine at normal operating temperatures, snap to high idle. Do you see excessive amounts of white or blue smoke exiting the tailpipe?	<input type="checkbox"/>	<input type="checkbox"/>
2. Is there noticeable oil or fuel residue on the exhaust tailpipe? (13 CCR 2706.t.4.D)	<input type="checkbox"/>	<input type="checkbox"/>
3. Does it look like the governor and any seals/cover protecting it have been tampered with?	<input type="checkbox"/>	<input type="checkbox"/>
4. Does it look like the fuel injection pump and seals/covers protecting it have been tampered with? (mechanical injection only)	<input type="checkbox"/>	<input type="checkbox"/>
5. For engines equipped with EGR, does it look like the EGR valve and any seals/cover protecting it have been tampered with?	<input type="checkbox"/>	<input type="checkbox"/>
6. Are there any exhaust leaks in the entire exhaust system (manifold to tailpipe)?	<input type="checkbox"/>	<input type="checkbox"/>
7. Inspect the inside edges of the outlet or stack pipe with a white rag or glove. Is there excessive PM or fuel, oil or coolant residue present?	<input type="checkbox"/>	<input type="checkbox"/>
8. Is there any oil leaking from the exhaust manifold seals? (13 CCR 2706.t.4.C)	<input type="checkbox"/>	<input type="checkbox"/>
9. Are there any Engine Warning Lights activated?	<input type="checkbox"/>	<input type="checkbox"/>
10. Are there any leaks around the turbocharger?	<input type="checkbox"/>	<input type="checkbox"/>
11. Are there any leaks around the oil coolers? (13 CCR 2706.t.4.C)	<input type="checkbox"/>	<input type="checkbox"/>
12. Are there any leaks around the radiator?	<input type="checkbox"/>	<input type="checkbox"/>
13. Crankcase blow-by vent weepy/oily on exit port?	<input type="checkbox"/>	<input type="checkbox"/>

**Additional Testing & Data Logging (Section C & D) on reverse side.**

## Section C: Additional Tests (Lube, Fuel & Opacity)

### Test Engine Lube Oil

- Filter-based emissions devices require the use of low ash oil (CJ-4). Low ash oil slows the buildup of ash in the filter and reduces the buildup of backpressure over time. Other problems can be caused by out of spec oil. Clean Diesel Group recommends oil analysis via a third-party oil testing firm.

### Test Fuel

- Filter-based emissions devices require ULSD fuel with less than 15 ppm sulfur. Collect and inspect fuel from the vehicle fuel tank and any bulk tank if feeding the fleet.

### Opacity Testing (per SAE J1667 guidelines)

- An opacity test and a printout of test results are required for the engine if one or more of the following conditions apply:
  - the engine model year is 1996 or older; OR,
  - the engine has accumulated 200,000 miles (320,000 km ) or more; OR 16,000 operating hours.

An opacity measurement is only an approximate indicator of engine particulate matter emission output. It is possible that an engine can pass the opacity test limit but still have a particulate matter emission level above original certification levels and/or standards. In these cases a passive particulate filter may experience premature plugging due to engine issues not detected by the opacity test. A single opacity test is a "snapshot" in time and engine deterioration or engine component failure over time may also raise emission levels and cause premature plugging.

**Opacity Test Method:** A snap acceleration opacity test must be conducted following the SAE J1667 guidelines by a certified dealer (California) or a dealer using a "declared" opacity meter. A list of "declared" opacity meters can be found on the California Air Resource Board website.

**Alternative Option:** If the vehicle has been tested by a certified dealer or a dealer using a "declared" opacity meter within the previous 30 days, Clean Diesel Group will accept the test result printout as proof of opacity assessment.

Engine Model Year	Opacity Specification	Opacity Reading Compared to Specification (✓ one box)
1991-2006	Less than or equal to 20%	
	Greater than 20%	

Testing Questions	Yes (✓)	No (✓)
An opacity test has been conducted and the printout is attached to my pre-assessment form.		
Is the engine ECU download attached to my pre-assessment form?		
The 3rd party oil-testing shows oil meets CJ-4 oil spec?		
Does the fuel from the supplier meet ASTM D975 spec for ULSD fuel?		
For Spiracle Applications: What is the maximum measured blow by flow in CFM at full load*? Date:		
* Full load reading to be achieved by accelerating the vehicle from standing start to 35 mph, using full throttle. Measured Flow:		

If any shaded boxes are checked, the vehicle/engine fails pre-assessment and may NOT be retrofitted.

## Section D: Duty Cycle Evaluation – Data Logging Results

Data Logging can proceed when the pre-assessment inspector has signed and checked PASS on the front page of this application pre-assessment worksheet.

	DOC	LNF/LXF	SEF
1. The histogram report from data logging allowed application of the following control technology ( ✓ all that apply)			
	Yes (✓)	No (✓)	
2. Will this histogram result be used for other vehicles in the fleet?			
3. The Clean Diesel Group data logger was used to collect duty cycle data.			



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