

Test = HWFET with Warmup

Options = CVS Bag Sec ShowToI Methane MethaneRF

Test Init Start = 16 June 2020 11:32:08 Test Start = 16 June 2020 11:40:59  
Posttest Completed At = 16 June 2020 12:14:37 Test Finish = 16 June 2020 12:06:44  
Hot Soak Start Time = 15 June 2020 11:47:00

Personnel Information::  
Driver = REDACTED Operator = REDACTED  
Requestor = REDACTED Supervisor = REDACTED

Vehicle Information:  
VIN = [REDACTED] Cert Tracking ID = 2964-EC299348  
Vehicle Model = JEEP CHEROKEE Model Year = 2014  
Engine Family = ECRXT03.05PV Eng. Disp. = 3.0  
Ignition Status = No Transmission =  
Automatic = 1 Idle RPM =  
Sample Delay =

Vehicle Conditions:  
Soak Start Time: = JUNE 15, 2020 11:47 Ambient Limit Type = OTHER7

Test Specifications:  
TO-Number = W0110 CVS BulkStream Flow : = 3) 625 scfm  
TestNet Number = 2964

Dynamometer:  
Inertia = 5500 (lb) Road Load A = 13.93 (lbs)  
Road Load B = 0.4178 Road Load C = 0.02593

Fuel Information:  
Fuel = DIE-DJ1621HW10 Specific gravity = 0.8520  
NHV = 18083.00 Fuel R-Factor = 0.60  
CWF = 0.8710 OWF = 0.0000  
HWF = 0.1290 Fuel Calculation Type = Diesel/EPA Calcs

Phase Information:  
Shift Tables  
Phase 1 N/A  
Phase 2 N/A

Response Factors:  
Bag Methane = 1.05

Pre Test Remarks:  
TEST #1 AS RECEIVED

Post Test Remarks:

Non-Critical Information:  
Begin Odo = 86160 Idle RPM =  
Test end Odometer = 86180 Driveability = Good  
Engine performance = No Problem Brakes = No Problem  
Transmission = No Problem Vehicle stalls = None

SUMMARY REPORT

Test = HWFET with Warmup Test Id = ONT50887 TestNet Number = 2964  
 Options = CVS Bag Sec ShowTol Methane MethaneRF  
 Test Init Start = 16 June 2020 11:32:08 Fuel Calculation Type = Diesel/EPA Calcs Idle RPM = Driver = REDACTED

MASS calculated by DF method

Phase 1	Bag 2	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRF)	FE (mpg)
Range		10.0	50.0	30.0	1.00	10.0		
Sample		3.228	0.528	-0.065	0.7871	2.310		
Range		10.0	50.0	30.0	1.00	10.0		
Ambient		3.237	0.554	-0.001	0.0579	2.216		
Net Conc.		0.181	0.007	0.000	0.7326	0.224	0.0000	
Grams/ph.		0.0204	0.0015	0.0000	2617.3220	0.0292	0.0000	39.9042
Grams/mi		0.0020	0.0001	0.0000	254.9354	0.0028	0.0000	

----- Dyno Information -----

Inertia = 5500  
 Inertia Units = lb  
 Dynamometer will be set manually = False  
 Dyno Coefficient Units = 2  
 Road Load A = 13.93  
 Road Load B = 0.4178  
 Road Load C = 0.02593  
 Use Augmented Braking System? = True

CVS Bag report  
 MASS calculated by DF method

Phase 1	Bag 2	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRF)	FE (mpg)	Test Info	Times Info
Range		10.0	50.0	30.0	1.00	10.0			Baro(inHg) = 28.92	Phase Start = 11:53:59
Sample		3.228	0.528	-0.065	0.7871	2.310			Temp( F) = 77.3	Phase Finish = 12:06:44
Range		10.0	50.0	30.0	1.00	10.0			Tdew( F) = 43.4	Analysis End = 12:11:29
Ambient		3.237	0.554	-0.001	0.0579	2.216			Rhum(%) = 31.6	
Net Conc.		0.181	0.007	0.000	0.7326	0.224	0.0000		Ahum(gr/lb) = 45.5	Elapsed (sec) = 765.0
Grams/ph.		0.0204	0.0015	0.0000	2617.3220	0.0292	0.0000	39.9042	NOX Factor = 0.8784	Bag Fill (sec)= 765.0
Grams/mi		0.0020	0.0001	0.0000	254.9354	0.0028	0.0000		Vmix(ft3 20 C) = 6894.08	Bag Anl (sec) = 285.0
									Dilu. Factor = 17.0161	Drv Err (sec) = 0.0
									Dist(mi) = 10.2666	

Legend  
 \* denotes Unstable Reading  
 (wRF) denotes with Response Factor  
 (woRF) denotes without Response Factor

DATA VALIDATION

PARAMETER DESCRIPTION	VALUE OF PARAMETER	LIMIT OF PARAMETER
Temperature	VALID	68 - 86 (degF)
Barometer	VALID	26.99 - 33.0001 (inHg)
Dew Point	VALID	-20 - 200 (degF)
Absolute Humidity	VALID	0 - 150 (gr/lb)
Pretest Soak Time	VALID	12 - 36 (hr)
Phase Length	VALID	2 (%)
Distance	VALID	2 (%)
Test Hold Conditions	VALID	60 (sec)
Leak Check	VALID	1
Bag Analysis Time	VALID	1200 (sec)
Bag Fill Time	VALID	5 (sec)
Ambient Bag Readings	VALID	THC    -0.55 - 10 (ppm) CO     -0.55 - 15 (ppm) NOX    -0.55 - 2 (ppm) CO2    350 - 850 (ppm) CH4    -0.55 - 10 (ppm)
Sample Bag Readings	VALID	THC    -0.55 (ppm) CO     -0.55 (ppm) NOX    -0.55 (ppm) CO2    350 (ppm) CH4    -0.55 (ppm)
Bag Read Sequence	VALID	Stabilization Time (T2) 10 (sec) Integration Time (T3) 3 (sec) Stability Time Out (T4) 30 (sec) Stability Chk Tolerance 2 (%)
Bag Zero/Span Sequence	VALID	Pre-Bag Z/S Offset 25 (%) Pre-Bag Zero Drift 1 (%) Post-Bag Z/S Drift 2 (%) Stabilization Time (T2) 10 (sec) Integration Time (T3) 3 (sec) Stability Time Out (T4) 30 (sec) Stability Chk Tolerance 2 (%)
Analyzer Overscale	VALID	10 (sec)
Venturi Inlet Temperature	VALID	32 - 300 (degF)

Printed on: Tue 16 June 2020 12:14 **BAG Zero/Span Results**  
 \* Single Roll Dyno Configuration \*

Bag Pair 2 Zero/Span Concentrations ( Offset Limit = 25.0% ReZero Limit = 1.0% )

Bag	Gas	Range	Fullscale	Zero	Offset	Std Dev	Spec	Span	Offset	Std Dev	Rezero	Drift	Std Dev	Status
BAG	LCO	(1)	50.0ppm	0.451	0.90	0.02472	46.352	46.498	0.29	0.08197	0.009	0.02	0.05603	PASS
BAG	CO2	(1)	1.00%	0.0004	0.04	0.01700	0.9303	0.9317	0.14	0.05471	0.0001	0.01	0.01658	PASS
BAG	THC	(1)	10.0ppm	0.179	1.79	0.01740	9.382	9.390	0.07	0.01651	-0.013	-0.13	0.02204	PASS
BAG	NOX	(2)	30.0ppm	0.153	0.51	0.13609	28.000	27.969	-0.10	0.19223	-0.094	-0.31	0.23705	PASS
BAG	CH4	(1)	10.0ppm	0.208	2.08	0.06474	9.368	9.356	-0.13	0.08938	-0.030	-0.30	0.10888	PASS

Bag Pair 2 Post Bag Check ( Drift Limit = 2.0% )

Bag	Gas	Range	Fullscale	Zero	Drift	Std Dev	Spec	Span	Drift	Std Dev	Status
BAG	LCO	(1)	50.0ppm	0.036	0.07	0.02598	46.352	46.398	0.09	0.04791	PASS
BAG	CO2	(1)	1.00%	0.0014	0.14	0.01418	0.9303	0.9312	0.09	0.05487	PASS
BAG	THC	(1)	10.0ppm	-0.002	-0.02	0.02520	9.382	9.358	-0.24	0.03685	PASS
BAG	NOX	(2)	30.0ppm	-0.015	-0.05	0.15941	28.000	28.123	0.41	0.29471	PASS
BAG	CH4	(1)	10.0ppm	0.017	0.17	0.09021	9.368	9.396	0.28	0.09485	PASS