ID: ONT52253 * Automotive Testing and Development Services, Inc. * Wed 28 April 2021 09:23 Page 1 of PRE EPA 75 TEST Printed on: Wed 28 April 2021 10:20 Single Roll Dyno Configuration

Cert Tracking ID

Fuel Calculation Type

Model Year

Eng. Disp.

Transmission

Test

= EPA 75

 ${\tt Options} = {\tt CVS} \ {\tt Bag} \ {\tt Dil} \ {\tt Sec} \ {\tt ShowTol} \ {\tt Methane} \ {\tt ModalMethane} \ {\tt MethaneRF}$

Test Init Start = 28 April 2021 09:05:20 Test Start Posttest Completed At = 28 April 2021 09:23:17 = 28 April 2021 10:20:14 Test Finish = 28 April 2021 10:03:47 Hot Soak Start Time = 27 April 2021 21:00:00 Personnel Information:: **≖ REDACTED** Operator **≖ REDACTED** Requestor =REDACTED Supervisor ≈ REDACTED Vehicle Information:

≖ REDACTED VIN Vehicle Model = JEEP GRAN CHEROKEE Engine Family = ECRXT03.05PV

Ignition Status = No Automatic = 1 Sample Delay

Vehicle Conditions: Soak Start Time: = APR 27, 2021 21:00

Test Specifications: TO-Number = W0110TestNet Number

= 3029Dynamometer:

Inertia Road Load B

= 5500 (1b)= 0.3804

Fuel Information: Fue1 NHV **CWF**

= DIE-DJ1621HW10 = 18083.00= 0.8710

= 0.1290

Phase Information:

HWF

Shift Tables Phase 1 AUTO Phase 2 Con't Phase 3 AUTO

Response Factors: Bag Methane

= 1.05

Pre Test Remarks: TEST #1 AS RECEIVED

Post Test Remarks:

Non-Critical Information: Begin ()do Test end Odometer

= 66507= 66518 Engine performance = No Problem Transmission = No Problem

Idle RPM Ambient Limit Type = OTHER7 CVS BulkStream Flow: = 2) 350 scfm Road Load A = 17.89 (1bs) Road Load C = 0.02537Specific gravity 0.8520 Fuel R-Factor 0.60OWF

= 3029-ECRXT0305PV-244

= 2014

= 3.0L

= 0.0000

= Diesel/EPA Calcs

Idle RPM Driveability Brakes Vehicle stalls

Good = No Problem = None

A	QUAL	ITY AS	SURANCE	j
		: L	ACTED	

INSPECTED BY: DATE:

COMMENTS:

* Automotive Testing and Development Services, Inc. * Wed 28 April 2021 09:23 Page 1 of SUM * Single Roll Dyno Configuration *

SUMMARY REPORT

Test = EPA 75 Test Id = ONT52253 TestNet Number = 3029
Options = CVS Bag Dil Sec ShowTol Methane ModalMethane MethaneRF
Test Init Start = 28 April 2021 09:05:20 Fuel Calculation Type = Diesel/EPA Calcs

Driver = **REDACTED** Idle RPM =

へっつ calculated b	v DF metho	nd				1				Driver = REDACTI
ASS calculated by Phase 1 Bag 1	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRF)	FE (mpg)		Dyna	Information
Range	30.0	500	100	2.00	10.0				Inertia =	5500
Sample	13.876	43.82	4.15		10.0					
Range	30.0	500	100		4.912				Inertia Un	its = 1b
Ambient	3.959	1.88	0.09		10.0					
Net Conc.	10.244	42.09	4.07		2.213				Dynamomete	r will be set manually = False
Modal Corr.	0.0020	0.0129	0.0018		2.883 0.0008	7.2263 0.0012				
Grams/ph.	0.4665	2 9640	0.55.6		V.0000	0.0012			Dyno Coeff	icient Units = 2
Grams/mi	0.1297	3.8648 1.0749	0.5543 0.1542		0.1520 0.0423	0.3289 0.0915	24.05	10	Road Load A	A = 17.89
				000 - Ft				_ :	Road Load E	3 = 0.3804
Phase 2 Bag 2	THC	CO	NOX	C02	CH4	NM-HC	cr.			
	(ppmC)	(ppm)	(ppm)	(%)	(ppmC)	(wRF)	FE (mpg)		Road Load (C = 0.02537
Range	30.0	50.0	100	2.00	10.0	••••••		••	Use Augment	ed Braking System? = False
Sample	9.106	1.797	0.03	0.6624		-				5 - J
Range	30.0	50.0	100	2.00	6.411					
Ambient	3.905	1.940	-0.02	0.0588	10.0					
Net Conc.	5.395	0.000	0.02	0.6065	2.216				27.17	
Modal Corr.	0.0022	0.0010	0.0000	5.2161	4.304 0.0018	0.8879 0.0006			100	
Grams/ph.	0.4213	0.0010	0.0071	1500.3455	0.2006			_	And Section 1	
Grams/mi	0.1095	0.0003	0.0018	389.7774	0.3886 0.1010	0.0695 0.0181	26.068	37		
Phase 3 Bag 3	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRF)	FE (mpg)	-		
lange	30.0	50.0	100	2.00	• • • • • • • • • • • • • • • • • • • •		·····	•	7000	
Sample	9.629	1.035	0.23	2.00	10.0	7				
lange	30.0	50.0	100	0.9165	7.449					
mbient	3.468	1.148	0.01	2.00	10.0					
et Conc.	6.398	0.000	0.22	0.0600	2.211					
odal Corr.	0.0013	0.0003	0.0001	0.8606 4.1941	5.390 0.0012	0.7552 0.0002			7117	
rams/ph.	0.2906	0.0003	0.0296	1020 7001	······································			_	Announcemental	
rams/mi	0.0810	0.0001	0.0296	1238.7891 345.1538	0.2831 0.0789	0.0344 0.0096	29.473		10.00	
	· · · · · · · · · · · · · · · · · · ·								1 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	
Test Summary	THC	CO	NOX	C02	CH4		·			
				002	CH4	NM·HC (wRF)	FE (mpg)			
√td Results	•					• • • • • • • • • • • • • • • • • • • •		• į į	111111111111111111111111111111111111111	
irams g/mi	0.1058	0.2234	0.0352	383.9179	0 0007	0.0075			7.77	
Arams g/mi	0.106	0.22	0.0332	384	0.0827	0.0310	26.452	6		
hs1&2 gms	0.8878	3.8657		3012.8528	0.083	0.031	_			
hs1&2 g/mi	0.1193	0.5193	0.0754	404.6924	0.5406	0.3985			+	
hs2&3 gms	0.7119	0.0013		2739.1345	0.0726	0.0585	3,061	6 10-		
hs2&3 g/mi	0.0957	0.0002	0.0049	368.2459	0.6717 0.0903	0.1089	27.628		DEDA	SURANCE
							NSPEC	TED E	3Y:	CTED
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SUMMARY REPORT

	**																			
MODE MOD		MODE		SAMPLE		-DILUTE	CONCENT	DATIONS						:						
NO. TYP	E TIME	TIME	DIST	POINT	THC	CO	NOX			1	CVS				MODAL	GRAMS				
	sec	sec	mi		ppmC			C02	CH4		UME	THO	;	CO	NOX	C02	CH4	NMHC	F.E.	
					ppilic	ppm	ppm	*	ppmC	ft3	20 (Onit			D,
IPHASE ()	ne MODAL	SUMMARY																wRF	mpg	
CRANK	TIOUAL	JUNINART																		
IDLE			0.000								8.27	0.0	00							
			0.002	DIL							6.79			0.00	0.000		0.000	0.000	0.00	0.
ACCEL			0.871	DIL								0.0		0.10	0.030		0.033	0.000	0.32	0.
CRUISE			1.827	DIL							0.20	0.1	48 (0.66	0.117	301.1	0.078	0.000	29.29	0.
DECEL			0.896	DIL							2.88	0.2	16 2	2.62	0.353	741.2		0.000	24.92	
				276						68	7.16	0.0	67 (0.61	0.044		0.045	0.000		0.0
TOTAL			3.596	DY											****	370.3	0.045	0.000	24.11	0.0
			3.390	DIL						278	5.30	0.4	70 3	3 00	0 545	2000 1	0.010			
										-		0.,,,		3.33	0.545	1503.1	0.248	0.000	24.22	0.0
PHASE TW	o MODAL	CLUMAN							***		:									
DLE	O MUDAL	SUMMARY																		
			0.001	DIL						00			_							
CCEL			1.271	DIL							. 59	0.05	-		-0.001		0.086	0.000	0.38	0.0
RUISE			1.817	DIL						1482		0.03	19 0	.07	-0.002	271.4	0.086	0.000	47.61	0.0
ECEL			0.760	DIL						139		0.18	17 0	.06	0.002	589 1	0.215	0.000	31.35	
			******	016						1064	. 69	0.15			0.002	484 6	0.173	0.000		0.0
OTAL			3.849	DIL												104.0	0.1/3	0.000	15.94	0.0
			3.043	שונ						4772	. 18	0.43	5 0	.22 -	0.006	1505.0	0.559	0.000	26.00	
																2000.0	0.333	0.000	26.00	0.0
PHASE The	ee MODAL	SUMMARY	Ī															· · · · · · · · · · · · · · · · · · ·		
RANK			0.000	DIL																
DLE			0.001							б	.06	0.00	0 0	.00	0.000	0.0	0.000			
CCEL				DIL						515	.73	0.03			0.001		0.000	0.000	0.01	0.0
RUISE			0.868	DIL						658		0.03		.01	0.001	58.6	0.059	0.000	0.22	0.0
ECEL			1.828	DIL						911		0.03		OI	0.006	223.1	0.051	0.000	39.57	0.0
LUEL			0.892	DIL						685			3 0.	ÛΤ	0.021	636.5	0.213	0.000	29.19	0.0
										000	:5/	0.032	2 0.	01	0.000	318.4	0.057	0.000	28.51	0.0
OTAL			3.589	DIL												- 1				0.0
										2777	17	0.274	₹ 0.	05	0.026 1	236.6	0.381	0 000	29.51	0.0
			·																27.31	0.0
										200							······································			
IODAL EQU	IVALENT E	BAG SUMMA	RYI																	
ASE One			3.596	DY										-						
ASE Two				DIL						2785	30	0.470	3.	gg r	.545 1	502 1	0.040			
ASE Three			3.849	DIL						4772		0.435		22 0	0000			0.000	24.22	0.0
not inter	=		3.589	DIL						2777.		0.435	0.	44 - U	006 1		0.559		26.00	0.0
										-111			0.1	U5 0	.026 1	236.6	0.381	0.000	29.51	0.0
												• • • • • •	• • • • •	G	RAMS P	ER mi	• • • • • • • • • • • • • • • • • • • •			
IGHTED TO	TAL			DIL	THUI									11		7				
												0.107	0.2	26 0	.033	383.8	0.119	000	26.46	0.0
																			4U.4D	0.0

* Automotive Testing and Development Services, Inc. * Wed 28 April 2021 09:23 Page 1 of CBAG * Single Roll Dyno Configuration *

CVS Bag report MASS calculated by DF method

Phase 1 Bag 1	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (%)	CH4 (ppmC)	NM-HC (wRF)	FE (mpg)		Test	Info)	Time	s Info	o
Range Sample	30.0	500	10	0 2.00	10.0		• •••••			• • • •			<i></i>	
*	13.876	43.82	4.1	5 1.1031	4.912	-		Baro(in	g)	=	29.03	Phase Start	= 0	19-23-17
Range	30.0	500	10		10.0			Temp(F)		=	75.2	Phase Finis	h = 0	0.21.42
Ambient	3.959	1.88	0.0		2.213	-		Tdew(F)		=		Analysis En	- U	0.51.36
Net Conc.	10.244	42.09	4.0					Rhum(%)		==		741413313 EII	u - 0	3:21:30
Modal Corr.	0.0020	0.0129	0.001	_,,,,	2.883 0.0008	7.2 263 0.0 0 12		Ahum(gr/ NOX Fact		=	52.2	Elapsed (see Bag Fill (se	c) =	506.3
Grams/ph.	0.4665	3.8648	0.5543	3 1512.5073	0.1500				2			Bag Anl (see	· \ _	506.0
Grams/mi	0.1297	1.0749	0.1542		0.1520 0.0423	0.3289 0.0915	24.0510	Vmix(ft3 Dilu. Fa			12.0842	Drv Err (sec Crank Time		0.0 1.3
Phase 2 Bag 2	THC	со	NOX	500		-		Dist(mi)		772	3.5956			
	(ppmC)	(ppm)	(ppm)	CO2 (%)	CH4 (ppmC)	NM·HC (wRF)	FE (mpg)		est 1	nfo		Times	Info	
Range	30.0	50.0	100	2.00	10.0		******	• • • • • • • • • • • • • • • • • • • •	• • • •					
Sample	9.106	1.797	0.03		10.0	-		Baro(inHg	r)	=	29.03	Phase Start	_ 00	1.21.40
Range	30.0	50.0	100	2.00	6.411	1		Temp(F)		==	75.2	Phase Finish	- 09	1.16.10
Ambient	3.905	1.940	-0.02	0.0588	10.0	-		Tdew(F)		=	48.6	Analysis End	- 09	:40:13
Net Conc.	5.395	0.000	0.02	0.6065	2.216			Rhum(%)		=	39.1	UIGITALE ENG	= 10	:08:50
Modal Corr.	0.0022	0.0010	0.0000	5.2161	4.304 0.0018	0.8879 0.0006		Ahum(gr/1 NOX Facto	b) r	==	52.2 0.9031	Elapsed (sec Bag Fill (sec) = :)=	869.4 869.0
Grams/ph.	0.4213	0.0010	0.0071	1500.3455	0.3886	0.000	06.055=					Bag Anl (sec		1357.7
Grams/mi	0.1095	0.0003	0.0018	389.7774	0.1010	0.0695 0.0181	26.0687	Vmix(ft3 Dilu. Fac Dist(mi)			4756.84 20.1972	Drv Err (sec) Stop Time		0.0
						AAAT PER TOTOLOGY TO SEA TO SE						Soak Start Soak Finish	= 09:	:46:13 :55:21
Phase 3 Bag 3	THC (ppmC)	CO (ppm)	NOX (ppm)	CO2 (*)	CH4	NM-HC	FE	Te	st In	fo		Soak Finish Elapsed (sec)	= 09:	:46:13 :55:21 :548.0
**************	(ppmC)	(ppm)			CH4 (ppmC)	NM-HC (wRF)	FE (mpg)	Te	st In	fo		Soak Finish	= 09:	55:21
Range	(ppmC) 	(ppm) 				3			st In	· · · ·		Soak Finish Elapsed (sec)	= 09:	55:21
Range Sample	(ppmC) 	(ppm) 	(ppm) 100 0.23	(%)	(ppmC)	3		Baro(inHg)	st In		29.03	Soak Finish Elapsed (sec) TimesPhase Start	= 09: = Info = 09:	55:21 548.0
Range Sample Range	(ppmC) 30.0 9.629 30.0	(ppm) 50.0 1.035 50.0	(ppm) 100 0.23 100	(%) 	(ppmC) 	3		Baro(inHg) Temp(F)	st In	 =	75.2	Soak Finish Elapsed (sec) Times Phase Start Phase Finish	= 09: = Info = 09: = 10:	55:21 548.0 55:21 03:47
Range Sample Range Ambient	(ppmC) 30.0 9.629 30.0 3.468	(ppm) 50.0 1.035 50.0 1.148	(ppm) 100 0.23	2.00 0.9165	(ppmC) 10.0 7.449 10.0	3		Baro(inHg) Temp(F) Tdew(F)	st In	 	75.2 48.6	Soak Finish Elapsed (sec) Times Phase Start Phase Finish	= 09: = Info = 09: = 10:	55:21 548.0 55:21 03:47
Range Sample Range Ambient Net Conc.	30.0 9.629 30.0 3.468 6.398	(ppm) 50.0 1.035 50.0 1.148 0.000	(ppm) 100 0.23 100	2.00 0.9165 2.00	(ppmC) 10.0 7.449 10.0 2.211	(wRF)		Baro(inHg) Temp(F) Tdew(F) Rhum(%)	The same of the sa	=	75.2 48.6 39.1	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End	= 09: = Info = 09: = 10:	55:21 548.0 55:21 03:47
Range Sample Range Ambient Net Conc. Modal Corr.	30.0 9.629 30.0 3.468 6.398 0.0013	50.0 1.035 50.0 1.148 0.000 0.0003	100 0.23 100 0.01 0.22 0.0001	2.00 0.9165 2.00 0.0600 0.8606 4.1941	(ppmC) 10.0 7.449 10.0	3		Baro(inHg) Temp(F) Tdew(F)	The same of the sa	 	75.2 48.6	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec)	= 09: = 10: = 10: = 10:	55:21 548.0 55:21 03:47
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph.	30.0 9.629 30.0 3.468 6.398 0.0013	50.0 1.035 50.0 1.148 0.000 0.0003	(ppm) 100 0.23 100 0.01 0.22 0.0001	2.00 0.9165 2.00 0.0600 0.8606 4.1941	10.0 7.449 10.0 2.211 5.390	(wRF)	(mpg)	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb			75.2 48.6 39.1 52.2 0.9031	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec)	= 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24
Range Sample Range Ambient Net Conc. Modal Corr.	30.0 9.629 30.0 3.468 6.398 0.0013	50.0 1.035 50.0 1.148 0.000 0.0003	100 0.23 100 0.01 0.22 0.0001	2.00 0.9165 2.00 0.0600 0.8606 4.1941	10.0 7.449 10.0 2.211 5.390 0.0012	0.7552 0.0002		Baro(inHg) Temp(F) Tdew(F) Rhum(%) Ahum(gr/lb) (C)	= 2 = 2 = 3	75.2 48.6 39.1 52.2 0.9031 2768.25 4.6039	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Dry Err (sec)	= 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi	30.0 9.629 30.0 3.468 6.398 0.0013 0.2906 0.0810	50.0 1.035 50.0 1.148 0.000 0.0003	(ppm) 100 0.23 100 0.01 0.22 0.0001	2.00 0.9165 2.00 0.0600 0.8606 4.1941	10.0 7.449 10.0 2.211 5.390 0.0012	0.7552 0.0002	(mpg)	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb NOX Factor Vmix(ft3 20 Dilu Factor) (C)	= 2 = 2 = 3	75.2 48.6 39.1 52.2 0.9031	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi	30.0 9.629 30.0 3.468 6.398 0.0013	50.0 1.035 50.0 1.148 0.000 0.0003	(ppm) 100 0.23 100 0.01 0.22 0.0001	2.00 0.9165 2.00 0.0600 0.8606 4.1941	10.0 7.449 10.0 2.211 5.390 0.0012	0.7552 0.0002	(mpg) 29.4732 FE	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb NOX Factor Vmix(ft3 20 Dilu Factor	C)	= = = = = = = = = = = = = = = = = = = =	75.2 48.6 39.1 52.2 0.9031 2768.25 4.6039	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi	30.0 9.629 30.0 3.468 6.398 0.0013 0.2906 0.0810	50.0 1.035 50.0 1.148 0.000 0.0003 0.0003	(ppm) 100 0.23 100 0.01 0.22 0.0001 0.0296 0.0083	2.00 0.9165 2.00 0.0600 0.8606 4.1941 1238.7891 345.1538	10.0 7.449 10.0 2.211 5.390 0.0012 0.2831 0.0789	0.7552 0.0002 0.0344 0.0096	(mpg) 29.4732	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb NOX Factor Vmix(ft3 2(Dilu. Factor	C)	= = = = = = = = = = = = = = = = = = = =	75.2 48.6 39.1 52.2 0.9031 2768.25 4.6039	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi Test Summary Wtd Results	30.0 9.629 30.0 3.468 6.398 0.0013 0.2906 0.0810	50.0 1.035 50.0 1.148 0.000 0.0003 0.0003	(ppm) 100 0.23 100 0.01 0.02 0.0001 0.0296 0.0083	2.00 0.9165 2.00 0.0600 0.8606 4.1941 1238.7891 345.1538	10.0 7.449 10.0 2.211 5.390 0.0012 0.2831 0.0789	0.7552 0.0002 0.0344 0.0096	(mpg) 29.4732 FE	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb NOX Factor Vmix(ft3 20 Dilu. Factor Dist(mi) Avg Tes	t Inf	= 2	75.2 48.6 39.1 52.2 0.9031 2768.25 44.6039 3.5891	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi Test Summary Wtd Results Grams g/mi	30.0 9.629 30.0 3.468 6.398 0.0013 0.2906 0.0810	50.0 1.035 50.0 1.148 0.000 0.0003 0.0003	(ppm) 100 0.23 100 0.01 0.022 0.0001 0.0296 0.0083	2.00 0.9165 2.00 0.0600 0.8606 4.1941 1238.7891 345.1538	10.0 7.449 10.0 2.211 5.390 0.0012 0.2831 0.0789	0.7552 0.0002 0.0344 0.0096	(mpg) 29.4732 FE	Baro(inHg) Temp(F) Tdew(F) Rhum(*) ANum(gr/lb NOX Factor Vmix(ft3 20 Dilu. Factor Dist(mi) Avg Tes Baro(inHg)	C)	= 2	75.2 48.6 39.1 52.2 0.9031 2768.25 4.6039 3.5891	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi Test Summary Wtd Results Grams g/mi Grams g/mi	30.0 9.629 30.0 3.468 6.398 0.0013 0.2906 0.0810 THC	50.0 1.035 50.0 1.148 0.000 0.0003 0.0003 0.0001	(ppm) 100 0.23 100 0.01 0.22 0.0001 0.0296 0.0083	2.00 0.9165 2.00 0.0600 0.8606 4.1941 1238.7891 345.1538 CO2	10.0 7.449 10.0 2.211 5.390 0.0012 0.2831 0.0789	0.7552 0.0002 0.0344 0.0096 NM-HC (wRF)	FE (mpg) 26.4526	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb NOX Factor Vmix(ft3 2(Dilu. Factor Dist(mi) Avg Tes Baro(inHg) Temp(F)	or to the second of the second	= 2	75.2 48.6 39.1 52.2 0.9031 2768.25 4.6039 3.5891	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi Test Summary Wtd Results Grams g/mi Grams g/mi Phs1&2 gms	30.0 9.629 30.0 3.468 6.398 0.0013 0.2906 0.0810 THC	(ppm) 50.0 1.035 50.0 1.148 0.000 0.0003 0.0003 0.0001 CO 0.2234 0.22 3.8657	(ppm) 100 0.23 100 0.01 0.22 0.0001 0.0296 0.0083	2.00 0.9165 2.00 0.0600 0.8606 4.1941 1238.7891 345.1538 CO2 	10.0 7.449 10.0 2.211 5.390 0.0012 0.2831 0.0789	0.7552 0.0002 0.0344 0.0096 NM-HC (wRF)	FE (mpg) 26.4526	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb NOX Factor Vmix(ft3 2(Dilu. Factor Dist(mi) Avg Tes Baro(inHg) Temp(F) Tdew(F)	t Inf	= 2	75.2 48.6 39.1 52.2 0.9031 2768.25 4.6039 3.5891	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi Test Summary Wtd Results Grams g/mi Grams g/mi Phsl&2 gms Phsl&2 g/mi	30.0 9.629 30.0 3.468 6.398 0.0013 0.2906 0.0810 THC 0.1058 0.106 0.8878 0.1193	(ppm) 50.0 1.035 50.0 1.148 0.000 0.0003 0.0003 0.0001 CO 0.2234 0.22 3.8657 0.5193	100 0.23 100 0.01 0.022 0.0001 0.0296 0.0083 NOX	2.00 0.9165 2.00 0.0600 0.8606 4.1941 1238.7891 345.1538 CO2 	0.0827 0.083	0.7552 0.0002 0.0344 0.0096 NM-HC (wRF)	FE (mpg) 26.4526	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb, NOX Factor Vmix(ft3 2(Dilu. Factor Dist(mi) Avg Tes Baro(inHg) Temp(F) Tdew(F) Rhum(*)	order of the second of the sec	= 2	75.2 48.6 39.1 52.2 0.9031 2768.25 4.6039 3.5891	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0
Range Sample Range Ambient Net Conc. Modal Corr. Grams/ph. Grams/mi	30.0 9.629 30.0 3.468 6.398 0.0013 0.2906 0.0810 THC	(ppm) 50.0 1.035 50.0 1.148 0.000 0.0003 0.0003 0.0001 CO 0.2234 0.22 3.8657	100 0.23 100 0.01 0.022 0.0001 0.0296 0.0083 NOX	2.00 0.9165 2.00 0.0600 0.8606 4.1941 1238.7891 345.1538 CO2 	0.0827 0.083 0.5406	0.7552 0.0002 0.0344 0.0096 NM-HC (wRF) 0.0310 0.031 0.3985	FE (mpg) 26.4526 25.0516	Baro(inHg) Temp(F) Tdew(F) Rhum(*) Ahum(gr/lb NOX Factor Vmix(ft3 2(Dilu. Factor Dist(mi) Avg Tes Baro(inHg) Temp(F) Tdew(F)	t Inf	= 2	75.2 48.6 39.1 52.2 0.9031 2768.25 4.6039 3.5891	Soak Finish Elapsed (sec) Times Phase Start Phase Finish Analysis End Elapsed (sec) Bag Fill (sec) Bag Anl (sec) Drv Err (sec)	= 09: = 09: = 10: = 10:	55:21 548.0 55:21 03:47 16:24 505.9 506.0 757.6 0.0

* Automotive Testing and Development Services, Inc. * Wed 28 April 2021 09:23 Page 2 of CBAG * Single Roll Dyno Configuration *

CVS Bag report MASS calculated by DF method

Grams To Total (Bags) (gm/mi)

	Bag1	Bag2	Bag3
THC	0.0269	0.0566	0.0223
CO	0.2232	0.0001	0.0000
NOX	0.0320	0.0010	0.0023
NM-HC (wRF)	0.0190	0.0093	0.0026

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

* Automotive Testing and Development Services, Inc. * Wed 28 April 2021 09:23 Page 1 of VAL * Single Roll Dyno Configuration *

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 (gg/lb)
Crank Time	VALID	5 (sec)
Restart Attempts	VALID	1
Shutdown Time	VALID	5 (sec)
Pretest Soak Time	VALID	12 - 36 (hr)
Phase Length	VALID	2 (%)
Distance	VALID	2 (%)
Test Hold Conditions	VALID	60 (sec)
Leak Check	VALID	ov (sec)
Bag Analysis Time	DETAILS BELOW	
Bag Fill Time	VALID	1900 (sec) 5 (sec)
Ambient Bag Readings	VALID	
	77.010	
	STORY OF THE PROPERTY OF THE P	
	-	
Sample Bag Readings	VALID	
, as any manage	WEID.	
		305
		`FF'''
Bag Read Sequence	VALID	CH4 -0.55 (ppm)
	WEID .	Stabilization Time (T2) 10 (sec)
		Integration Time (T3) 3 (sec)
		Stability Time Out (T4) 30 (sec)
Bag Zero/Span Sequence	VALID	Stability Chk Tolerance 2 (%)
==3 == 0. opun ooquonoo	AVEID	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)
Hot Soak Length	VALID	Stability Chk Tolerance 2 (%)
Analyzer Overscale	VALID	540 - 660 (sec)
Venturi Inlet Temperature	VALID	10 (sec)
Times remperature	AWEID	32 - 300 (degF)
Bag Analysis Time		V. C.
		V C C C C C C C C C C C C C C C C C C C
limit 1200 (sec)		

Limit: 1200 (sec)

Phase Time Status
(sec)

1 1192.20 (OK)
2 1357.71 (over) OK white OFF (OK)

1 violation.

ID: ONT52253 EPA 75 TEST

* Automotive Testing and Development Services, Inc. * Wed 28 April 2021 09:23 Page 1 of BZS BAG Zero/Span Results * Single Roll Dyno Configuration *

Printed on: Wed 28 April 2021 10:20

* Single Roll Dyno Configuration

Bad	ı Pair	1 7ero	/Span Conce	antnatione							O SERVICE DE LA CONTRACTOR DE LA CONTRAC	77		
Sar	np Gas	Rang	e Fullscale	Zero	Offset	set Limit = Std Dev	: 25.0% Re Spec	Zero Lim Span	nit = 1.0% Offset) Std De	v Rezero	Drift	Std Dev	Status
BAC		,	500ppm	0.67	0.13	0.00610	466.17	466.58	0.08	0.02010	0 07			
BAG			2.00%	0.0023	0.12	0.01192	1.8723			0.02010	- , - , -	0.00	0.00643	PASS
BAG			30.0ppm	0.103		0.00939	27.975			0.04127	0.0008 -0.013	0.04	0.00741	PASS
BAG BAG			100ppm	0.85		0.03430	91.84			0.15686	-0.013	-0.04	0.01643	PASS
DAG	CH4	(1)	10.0ppm	0.175	1.75	0.07974	9.219	9.215		0.11006	0.018	0.18	0.06885 0.05499	PASS
											0,410	0.10	0.03433	PASS
Bag	Pair	1 Post	Bag Check	(Drif	t Limit =	2 09: 1			-		out the same of th			
Sam	p Gas	Range	Fullscale	Zero	Drift	Std Dev	Spec	Span	Dodet	CLID		7		
240						0.00 501	Spec	Spail	Drift	Std Dev	Status	77.7		
BAG BAG		(3)	500ppm	0.01	0.00	0.00570	466.17	466.31	0.03	0.00788	PASS	7 1		
BAG		(2)	2.00%	0.0009	0.04	0.00856	1.8723	1.8741	0.09	0.04305	PASS			
BAG		(2) (3)	30.0ppm 100ppm	-0.005	-0.02	0.00582	27.975	28.023	0.16	0.03608	PASS			
BAG		(1)	10.0ppm	-0.07	-0.07	0.06009	91.84	91.71	-0.13	0.14803	PASS			
	0,,,,	(1)	To . Oppiii	0.026	0.26	0.04110	9.219	9.234	0.15	0.07673	PASS	1		
Bag	Pair 2	? Zero/	Span Conce	ntrations	(Offs	set Limit =	25.0% Re2	ero Limi	it = 1 09	,		77.17.4		
Sam	o Gas	Range	Fullscale	Zero	Offset	Std Dev	Spec	Span	Offset	Std Dev	Rezero	Drift	C#4 D***	Ct I
BAG	LC0	(1)	E0 0	0.006			·	•		oud ber	Rezero	Dilli	Std Dev	Status
BAG	CO2	(2)	50.0ppm 2.00%	0.386 0.0027	0.77	0.05673	47.235	47.243	0.02	0.04917	-0.138	-0.28	0.03839	PASS
BAG	THC	(2)	30.0ppm	0.0027	0.14 0.38	0.00867	1.8723	1.8728	0.02	0.04805	0.0005	0.02	0.00918	PASS
BAG	NOX	(3)	100ppm	0.83	0.83	0.01479	27.975		-0.75	0.01822	-0.023	-0.08	0.00810	PASS
BAG	CH4	(1)	10.0ppm	0.153	1.53	0.08713 0.07536	91.84 9.219	91.68	-0.16	0.10247	-0.04	-0.04	0.06622	PASS
			• •		2.00	0.07550	3.213	9.246	0.26	0.07028	0.017	0.17	0.06923	PASS
Pag	Dain O	D+ 1	D 01 1											
Samp	Pair 2	Post	Bag Check Fullscale		Limit =				-		Appendix and a second a second and a second			
Jung	, das	Kange	ruiiscale	Zero	Drift	Std Dev	Spec	Span	Drift	Std Dev	Status	The state of the s		
BAG	LCO	(1)	50.0ppm	-0.099	-0.20	0.03105	47 005	47 004				100000000000000000000000000000000000000		
BAG	C02	(2)	2.00%	0.0006	0.03	0.03103	47.235 1.8723	47.234	0.00	0.07885	PASS			
BAG	THC	(2)	30.0ppm	.0.017	-0.06	0.01012	27.975	1.8754 28.118	0.16	0.05803	PASS			
BAG	NOX	(3)	100ppm	-0.01	-0.01	0.07266	91.84	91.80	0.48 -0.04	0.03935	PASS	The second secon		
BAG	CH4	(1)	10.0ppm	0.002	0.02	0.06539	9.219	9.180	-0.40	0.20384 0.12905	PASS PASS	7.7		
								7.100		0.12905	rass			
Bag	Pair 3	7ero/9	Span Concen	tnations	/ 055-	-1. 1.1.1.1						77.		
Samp	Gas	Range	Fullscale	Zero	Offset	et Limit = : Std Dev					. automorphism	7.774		
,				20,0	011366	stu bev	Spec	Span	Offset	Std Dev	Rezero	Drift	Std Dev	Status
BAG	LCO	(1)	50.0ppm	0.315	0.63	0.04870	47.235	47.296	0.12	0.05407	0 00			
BAG	C02	(2)	2.00%	0.0038	0.19	0.00847		1.8729	0.12	0.03407	-0.085	-0.17	0.08945	PASS
BAG	THC	(2)	30.0ppm	0.090	0.30	0.01015		27.854	0.41	0.03870	0.0001 -0.012	0.01 -0.04	0.00856	PASS
BAG	NOX	(3)	100ppm	0.79	0.79	0.07207	91.84	92.04	0.20	0.13223	-0.012	-0.04	0.01257	PASS
BAG	CH4	(1)	10.0ppm	0.144	1.44	0.06313	9.219	9.206	-0.13	0.05967	0.004	0.04	0.08477 0.09239	PASS PASS
											0.00		0.03233	rass
Bag F	Pair 3	Post B	ag Check	(Drift	Limit = 2	ን በቃ ነ						7. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.		
Samp	Gas	Range	Fullscale	Zero	Drift	Std Dev	Spec	Snan	Daist	C1-1 D		A second		
		·			D1 110	Ju bev	spec	Span	Drift	Std Dev	Status	2012		
BAG	LC0	(1)	50.0ppm	-0.068	-0.14	0.09984	47.235	47.260	0.05	0.03908	PASS	* Constant		
BAG	C02	(2)	2.00%	-0.0001	-0.01	0.00975		1.8745	0.03	0.04626	PASS	The second		
BAG BAG	THC	(2)	30.0ppm	-0.007	-0.02	0.00990	27.975	28.079	0.34	0.00857	PASS	N = 1 L		
BAG	NOX CH4	(3) (1)	100ppm	0.10	0.10	0.10458	91.84	91.61	-0.23	0.21894	PASS			
D, 10	CHT	(1)	10.0ppm	-0.007	-0.07	0.33239	9.219	9.226	0.06	0.06912	PASS	7		