

Assessing the Effect of Five Gasoline Properties on Exhaust Emissions from Light-Duty Vehicles certified to Tier-2 Standards

Analysis of Data from EPA Phase 3

(EPAct/V2/E-89)

APPENDIX D

Influential Measurements

As described in Section 5.2, individual measurements were designated as “influential” on the basis of their externally-studentized residuals, also known as “studentized-deleted residuals” (r_i). Specifically, measurements were designated as “influential” if the absolute value of their externally-studentized residual was greater than or equal to 3.5 ($|r_i| \geq 3.5$).

Models used to assess the influence of measurements were run as described in Section 5 of the report (Preliminary Modeling). No influential measurements were identified for THC, CO, NMOG or NMHC. Influential measurements identified for NO_x and PM are listed below.

Influential Measurements identified for NO_x.

Bag	Run	Test	VehID	Fuel	Result (g/mi)	ln(Result)	ln(predicted)	studentized-deleted residual
1	6277	EPA-TSIE-P3-22-T1	TSIE	22	0.000902908	-7.0099	-5.22857	-3.5987
1	6533	EPA-FFOC-P3-28-T1	FFOC	28	0.000847845	-7.0728	-5.08724	-4.0166
1	6751	EPA-FFOC-P3-30-T2	FFOC	30	0.000232146	-8.3681	-5.16664	-5.2169
2	4487	EPA-CCOB-P3-2-T2	CCOB	2	0.0001156	-9.0654	-7.95077	-3.5899
2	6068	EPA-CCOB-P3-3-T1	CCOB	3	0.0000383	-10.17	-7.98439	-4.5309
2	5599	EPA-CCOB-P3-9-T1	CCOB	9	0.000077	-9.4717	-8.00687	-3.8964
2	5323	EPA-CCOB-P3-11-T2	CCOB	11	0.000112945	-9.0886	-7.81835	-3.7259
2	7249	EPA-CCOB-P3-15-T3	CCOB	15	0.000114047	-9.0789	-7.86428	-3.6768
2	6215	EPA-CCOB-P3-24-T2	CCOB	24	0.0000779	-9.4601	-7.86604	-4.011
2	6114	EPA-CCOB-P3-28-T2	CCOB	28	0.000153045	-8.7848	-7.76176	-3.5099
Composite	6507	EPA-FFOC-P3-7-T2	FFOC	7	0.000775381	-7.1622	-6.1095	-3.6933
Composite	6873	EPA-FFOC-P3-21-T2	FFOC	21	0.001069327	-6.8407	-5.90448	-3.5281

Influential Measurements identified for PM.

Bag	Run	Test	VehID	Fuel	Result (mg/mi)	ln(Result)	ln(predicted)	studentized-deleted residual
1	6247	EPA-JLIB-P3-16-T1	JLIB	16	412.589	6.02245	2.33482	4.4539
2	5324	EPA-FEXP-P3-27-T2	FEXP	27	110.019	4.70066	-1.94501	4.2667
Composite	5735	EPA-JLIB-P3-2MP-T1	JLIB	2	18.561	2.92104	0.72895	3.7902
Composite	7309	EPA-TCOR-P3-13-T2	TCOR	13	0.01	-4.5749	-1.31976	-4.246
Composite	6247	EPA-JLIB-P3-16-T1	JLIB	16	21.588	3.07216	0.85548	3.8052
Composite	5491	EPA-TSIE-P3-24-T1	TSIE	24	0.005	-5.2755	-1.5697	-4.3588
Composite	5324	EPA-FEXP-P3-27-T2	FEXP	27	96.813	4.57278	-1.18185	5.3019
Composite	8059	EPA-TCOR-P3-28-T2	TCOR	28	0.008	-4.8085	-1.66995	-4.1273