# **GENERAL MOTORS LLC**

**EXECUTIVE ORDER A-006-1897** 

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Pursuant to the authority vested in the Air Resources Board by Health and Safety Code (HSC), Division 26, Part 5, Chapter 2; and pursuant to the authority vested in the undersigned by HSC Sections 39515 and 39516 and Executive Order G-02-003;

## IT IS ORDERED AND RESOLVED:

The following exhaust and evaporative emission control systems produced by the manufacturer are certified as described below. Production vehicles shall be in all material respects the same as those for which certification is granted.

			TEST	GROUP INFOR	MATION					
MODEL YEAR	TEST GRO	OUP VEHI	CLE CLASS(ES)	F	JEL CATEGORY		FL	JEL TYPE		
2014	EGMXV01.4	1088	PC	PLUG-I	N HYBRID ELECTR VEHICLE	IC	GASOLINE			
	USEFUL LIF	E (miles)	VEHICLE E	MISSION CAT	EGORY	IN	ITERIM / INTERME	EDIATE IN-USE STD		
EXH/0	ORVR	EVAP	FTP		SFTP		FTP	SFTP		
150,	000	150,000	LEV3 SULEV30	LEV3	COMPOSITE		*	NMOG+NOx		
SPECIAL	FEATURES &	EXHAUST EMISSION	CONTROL SYSTEMS		OBD STATUS		ENGIN	NE DISPLACEMENT (L)		
1	Т	WC(2), HO2S(2), SFI	AIR	FULL	ALL MOI	DELS				
		•		PARTIAL	*	1.4				
*		*	(F)	PARTIAL WIT	Ή .					
			EVAPORATIVE & REFUEL	ING (EVAP/OF	VR) FAMILY INFORI	MATION				
	EVAP / OF	RVR FAMILY	EVAPOR	RATIVE STD C	ATEGORY	E	VAP EMISSION ST	TD VEHICLE CLASS		
	EGMXF	R0060600		LEV 2			P	C		
		•		*			•			
		•		*			*			
			EMISSIO	N CREDIT INF	ORMATION					
	A	LLOWANCE FOR TES	T GROUP		OG CREDIT FOR	NMOCO	REDIT FOR DOR	OPTIONAL EXH. STD FOR		
BASEL	INE PZEV	AT PZEV	TZEV	NON	NON-PZEV ZERO-EVAP		REDIT FOR DOR	WORK TRUCKS		
ALL N	ODELS	ALL MODELS	ALL MODEL	S	N		N	N		
			NMOG AND FL	EET AVERAG	EINFORMATION					
NMOG RAF	CH4 RAF	FTP NMOG/NMHC RATIO	HCHO/NMHC RATIO		MOG+NOX FLEET LDT (0-3750 LVW) (g	ı/mi)	mi) NMOG+NOX FLEET STD LDT (3751 L 8500 GVWR) + MDPV (g/mi)			
*	*	1.10			0.107			0.128		

See the Attachment for Vehicle Models, Evaporative Family, Engine Displacement, Emission Control Systems, Phase-In Standards, OBD Compliance, Emission Standards and Certification Levels, and Abbreviations.

### BE IT FURTHER RESOLVED:

The exhaust and evaporative emission standards and the certification emission levels for the listed vehicles are as listed on the Attachment. Compliance with the 50° Fahrenheit testing requirement may have been met based on the manufacturer's submitted compliance plan in lieu of testing. Any debit in the manufacturer's "NMOG or NMOG+NOx, as applicable, Fleet Average" (PC or LDT or MDPV) or "Vehicle Equivalent Credit" (MDV) compliance plan shall be equalized as required.

### BE IT FURTHER RESOLVED:

For the listed vehicle models, the manufacturer has attested to compliance with Title 13, California Code of Regulations, (13 CCR) Sections 1965 [emission control labels], 1968.2 [on-board diagnostic, full or partial compliance], 2035 et seq. [emission control warranty], 2235 [fuel tank fill pipes and openings] (gasoline and alcohol fueled vehicles only), and "High-Altitude Requirements" and "Inspection and Maintenance Emission Standards" (California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for PC, LDT and MDV).

## BE IT FURTHER RESOLVED:

The test group listed in this Executive Order is certified conditionally on the manufacturer providing data to demonstrate compliance with California's greenhouse gas fleet average emission standard (CA GHG Standard) specified in Title 13, California Code of Regulations, (13 CCR) Section 1961.1 and the incorporated California 2001 through 2014 Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2009 through 2016 Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for Passenger Cars, Light-Duty Trucks, and Medium-Duty Vehicles,

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amended December 6, 2012 (CA Test Procedures). The manufacturer has elected, under 13 CCR Section 1961.1(a)(1)(A)(ii) and under Section E.2.5.1(ii) of the CA Test Procedures, to demonstrate compliance with the CA GHG Standard by demonstrating compliance with the National greenhouse gas program (National GHG Program). Therefore, the test group listed in this Executive Order is certified conditionally further on the manufacturer complying with the requirements specified in said provisions in 13 CCR, and Sections E.2.5.1(ii) and H.4.5(b) and H.4.5(c) of the CA Test Procedures (among other things, concerning data and information submission, timing, and format as specified by the Executive Officer). Failure to comply with the certification requirements to demonstrate compliance with CA GHG Standard by demonstrating compliance with the National GHG Program under said provisions in 13 CCR and CA Test Procedures may be cause for the Executive Officer to revoke the Executive Order. Vehicles in the revoked Executive Order shall be deemed uncertified and subject to penalties authorized under California law. Notwithstanding the requirement herein, a manufacturer that becomes, after MY2009, a large-volume manufacturer, as defined in 13 CCR Section 1900, is not required to comply with the CA GHG Standard until the beginning of the fourth model-year from becoming a large-volume manufacturer. Additionally, notwithstanding the requirement herein, a small-volume manufacturer, independent low-volume manufacturer, or intermediate volume-manufacturer, as defined in 13 CCR Section 1900, is not required to comply with CA GHG Standard during model-years (MY) 2012 through 2015.

Vehicles certified under this Executive Order shall conform to all applicable California emission regulations. The Bureau of Automotive Repair will be notified by copy of this Executive Order.

Executed at El Monte, California on this

day of November 2013.

Erik White, Chief

Mobile Source Operations Division

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# **ATTACHMENT**

# EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

(For bi-, dual- or flexible-fueled vehicles, the STD and CERT in parentheses are those applicable to testing on gasoline test fuel.)

EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS (FTP. HWFE'	50 °F	20 °F)	

	CH4=methane; NMOG=non-CH4 organic gas; HC=hydrocarbon; NMHC=non-CH4 HC; CO=carbon monoxide; NOx=oxides of nitrogen; HCH0=formaldehyde; PM=particulate matter; RAF=reactivity adjustment factor; 2DHS/3DHS [g HC/test]=2/3 days diurnal+hot-soak; RL HC/mi]=running loss; ORVR [g HC/gallon dispensed]=on-board refueling vapor recovery; g=gram; mg=milligram; mi=mile; K=1000 miles Fahrenheit; FTP=federal test procedure; SFTP=supplemental FTP										
		NMOG+NOx (g/mi)		CO (g/mi)		HCHO (mg/mi)		PM (g/mi)		HWY NMOG+NOx (g/mi)	
		CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD
FTP @ UL	GASOLINE-LEV3 E10	0.018	0.030 -	0.4	1.0	*	4	*	0.01	0.003	0.030
20°F @ 50K	GASOLINE-COLD CO HIGH OCTANE	*	*	1.3	10.0	*	*	*	*	*	*
50°F @ 4K	*	*	*	*	*	*	*	*	*	•	*

### SFTP EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS

	FUEL TYPE	US06 / UC (LA92)					SC03				COMPOSITE					
		NMOG+NOx (g/mi)		CO (g/mi)		PM (mg/mi)		NMOG+NOx (g/mi)		CO (g/mi)		NMOG+NOx (g/mi)		g/mi)	CO (g/mi)	
		CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD	CERT	STD	BIN	CERT	STD
@ UL	GASOLINE-LEV3 E10	*	*	*	*	*	*	*	*	*	*	0.008	0.140	0.050	0.7	4.2

### WHOLE VEHICLE EVAPORATIVE/ORVR EMISSION STANDARDS AND CERTIFICATION LEVELS

EVAPORATIVE FAMILY	FUEL TYPE	WHOLE VEHICLE EVAPO 3-DAYS DIURNAL + HOT SOAK (g/test) @ UL			APORATIVE TESTING  2-DAYS DIURNAL + HOT SOAK (g/test) @ UL			RUNNIN (g/mi)		ON-BOARD REFUELING VAPOR RECOVERY (g/gallon) @ UL	
		CERT	STD	FEL	CERT	STD	FEL	CERT	STD	CERT	STD
EGMXR0060600	GASOLINE - CA PHASE 2	0.18	0.35	*	0.17	0.35	*	0.000	0.05	*	*
EGMXR0060600	GASOLINE-TIER2 UNLEADED	*	*	*	*	*	*	*	*	0.12	0.20
*	*	*	*	*	*	*	*	*	*	*	*

# FUEL ONLY & CANISTER BLEED EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS

	FUEL TYPE		FUEL ONLY EVAP					
EVAPORATIVE FAMILY		3-DAYS DIURNA (g/test)			AL + HOT SOAK ) @ UL	CANISTER BLEED (g/test)		
		CERT	STD	CERT	STD	CERT	STD	
EGMXR0060600	GASOLINE - CA PHASE 2	0.04	0.0	•	0.0	*	*	
*	*	*	*	*	*	*		

\* =not applicable; #=pounds; UL=useful life; PC=passenger car; LDT=light-duty truck; LDT1=LDT\_6000#GVWR,0-3750#LVW; LDT2=LDT\_6000#GVWR,3751-5750#LVW; LDT3=LDT 6001-8500#GVWR,3751-5750#ALVW; LDT3=LDT 6001-8500#GVWR,3751-5750#ALVW; LDT4=LDT 6001-8500#GVWR,5751-8500#ALVW; MDV=medium-duty vehicle; MDV4=MDV 8501-10000#GVWR; MDV5=MDV 10001-14000#GVWR; MDPV=medium-duty passenger vehicle; ECS=emission control system; CERT=certification; STD=standard; FEL=family emission limit; GVWR=gross vehicle weight rating; LVW=loaded vehicle weight; ALVW=adjusted LVW; LEV=low emission vehicle; ULEV=ultra LEV; SULEV=super ULEV; ZEV=zero-emission vehicle; PZEV=partial ZEV; AT PZEV=advanced technology PZEV; TZEV=transitional ZEV; TWC/OC=3-way/oxidizing catalyst; ADSTWC=adsorbing TWC; HAC=HC adsorbing catalyst; WU=warm-up catalyst; NAC=NOx adsorption catalyst; SCR-U or SCRC/SCR-N or SCRC-NH3=selective catalytic reduction-urea/ammonia; NH3OC=ammonia oxidation catalyst; CTOX/PTOX= continuous/periodic trap oxidizer; DPF=diesel particulate filter (active); GPF=PM filter for spark-ignited engine; HO2S/O2S=heated/oxygen sensor; WR-HO2S or AFS=wide range/linear/heated air-fuel ratio sensor; NOXS=NOx sensor; PMS=PM sensor; RDQS=reductant quality sensor; NH3S=ammonia sensor; EGR=exhaust gas recirculation; EGRC=EGR cooler; AIR/AIRE=secondary air injection (belt driven)/(electric driven); PAIR=pulsed AIR; SFI/MFI=sequential/multiport fuel injection; DFI/IFI=direct/indirect fuel injection; TC/SC= turbo/super charger; CAC=charge air cooler; F/P/\$=full/partial/partial with fines on-board diagnostic; DOR=direct ozone reducing; HCT=hydrocarbon trap; BCAN=bleed carbon canister; prefix 2=parallel; (2) suffix=series; CNG/LNG=compressed/liquefied natural gas; LPG=liquefied petroleum gas; E85="85%" ethanol ("15%"gasoline) fuel; E10="10%" ethanol ("90%"gasoline) fuel; A=automatic transmission; M=manual transmission; OT=other transmission; L=lock-up automatic transmission; CV=continuously variable transmission; AM=automated manual

# 2014 MODEL YEAR: VEHICLE MODELS INFORMATION

MAKE	MODEL	VEH CLASS	ENGINE (L)	TRANS TYPE	EVAPORATIVE FAMILY	EXH ECS	OBD	PZEV TYPE
CADILLAC	ELR	PC	1.4	CV	EGMXR0060600	1	F	TZEV
CHEVROLET	VOLT	PC	1.4	CV	EGMXR0060600	1	F	TZEV