

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-14-012;

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 INFORMATION                                 |                                       |                           |                                    |   |   |  |
|--|---------------------------------------|---------------------------|------------------------------------|---|---|--|
| MODEL YEAR   | TEST GROUP                            | VEHICLE CLASS(ES)         |                                    | FUEL CATEGORY                                 | FUEL TYPE   |  |
| 2016   | GVVXT02.0P3T                          | LDT4                      |                                    | PLUG-IN HYBRID ELECTRIC VEHICLE               | GASOLINE  |  |
| USEFUL LIFE (miles)                                    |                                       | VEHICLE EMISSION CATEGORY |                                    |   | INTERIM / INTERMEDIATE IN-USE STD                         |  |
| EXH/ORVR   | EVAP                                  | FTP                       | SFTP                               | FTP   | SFTP  |  |
| 150000   | 150000                                | LEV3 SULEV30              | LEV 3 COMPOSITE                    | *   | NMOG+NOX  |  |
| SPECIAL FEATURES & EXHAUST EMISSION CONTROL SYSTEMS    |                                       |                           | OBD STATUS                         |   | ENGINE DISPLACEMENT (L)                                   |  |
| 1  | DFI, TC, SC, CAC, 2HO2S, WR-HO2S, TWC |                           | FULL                               | *   | 2.0   |  |
| *  | *                                     |                           | PARTIAL                            | *   |   |  |
| *  | *                                     |                           | PARTIAL WITH FINES                 | ALL MODELS                                    |   |  |
| EVAPORATIVE & REFUELING (EVAP/ORVR) FAMILY INFORMATION |                                       |                           |                                    |   |   |  |
| EVAP / ORVR FAMILY                                     |                                       | EVAPORATIVE STD CATEGORY  |                                    | EVAP EMISSION STD VEHICLE CLASS               |   | SPECIAL FEATURES                                 |
| GVVXR0140EP1   |                                       | LEV 3 OPTION2             |                                    | LDT4  |   | *  |
| EMISSION CREDIT INFORMATION                            |                                       |                           |                                    |   |   |  |
| ALLOWANCE FOR TEST GROUP                               |                                       |                           | NMOG CREDIT FOR NON-PZEV ZERO-EVAP | NMOG CREDIT FOR DOR                           | OPTIONAL EXH. STD FOR WORK TRUCKS                         |  |
| BASELINE PZEV  | AT PZEV                               | TZEV                      |                                    |   |   |  |
| *  | *                                     | ALL MODELS                | N                                  | N   | N   |  |
| NMOG AND FLEET AVERAGE INFORMATION                     |                                       |                           |                                    |   |   |  |
| NMOG RAF   | CH4 RAF                               | FTP NMOG/NMHC RATIO       | HCHO/NMHC RATIO                    | NMOG+NOX FLEET STD PC+LDT (0-3750 LVW) (g/mi) | NMOG+NOX FLEET STD LDT (3751 LVW-8500 GVWR) + MDPV (g/mi) | NMOG+NOX FLEET STD MDV (10001-14000 GVWR) (g/mi) |
| *  | *                                     | 1.10                      | *                                  | 0.093   | 0.110   | *  |

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+NOx and greenhouse gas 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],

|  |                       |   |
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| California Environmental Protection Agency<br><b>Air Resources Board</b> | VOLVO CAR CORPORATION | Executive Order: A-018-0200<br>New Passenger Cars, Light-Duty Trucks and<br>Medium-Duty Vehicles<br>Page 2 of 4 |
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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 2015 and Subsequent Model Criteria Pollutant Exhaust Emission Standards and Test Procedures and 2017 and Subsequent Model Greenhouse Gas Exhaust Emission Standards and Test Procedures for PC, LDT and MDV).

**BE IT FURTHER RESOLVED:**

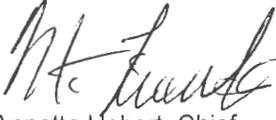
The listed vehicle models are conditionally certified in accordance with 13 CCR Section 1968.2(k) (deficiency and fines provisions for certification of malfunction and diagnostic system) because the on-board diagnostic II (OBD) system of the listed vehicle models has been determined to have six deficiencies. The listed vehicle models are approved subject to the manufacturer paying a fine of \$100 for the third through sixth deficiency in the listed test group that is produced and delivered for sale in California.

On a quarterly basis, the manufacturer shall submit to the Air Resources Board reports of the number of vehicles produced and delivered for sale in California and pay the full fine owed for that quarter pursuant to this conditional certification. Payment shall be made payable to the State Treasurer for deposit in the Air Pollution Control Fund no later than thirty (30) days after the end of each calendar quarter during the 2016 model-year production period. Failure to pay the quarterly fine, in full, in the time provided, may be cause for the Executive Officer to rescind this conditional certification, effective from the start of the quarter in question, in which case all vehicles covered under this conditional certification for that quarter and all future quarters would be deemed uncertified and subject to a civil penalty of up to \$5000 per vehicle pursuant to HSC Section 43154.

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 12<sup>th</sup> day of January 2016.

*FOR*   
 Annette Hebert, Chief  
 Emissions Compliance, Automotive Regulations and Science Division

**ATTACHMENT**

**EXHAUST AND EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS**

**EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS (FTP, HWFET, 50°F, 20°F)**

|          |                   |   |       |           |     |            |     |              |     |           |      |
|----------|-------------------|---|-------|-----------|-----|------------|-----|--------------|-----|-----------|------|
|          | FUEL TYPE         | CH4: methane; NMOG: non-CH4 organic gas; HC: hydrocarbon; NMHC: non-CH4 HC; CO: carbon monoxide; NOx: oxides of nitrogen; HCHO: formaldehyde; PM: particulate matter; RAF: reactivity adjustment factor; 2DHS/3DHS [g HC/test]: 2/3 days diurnal+hot-soak; RL [g HC/mi]: running loss; ORVR [g HC/gallon dispensed]: on-board refueling vapor recovery; g: gram; mg: milligram; mi: mile; K: 1000 miles; F: degrees Fahrenheit; FTP: federal test procedure; SFTP: supplemental FTP |       |           |     |            |     |              |     |           |      |
|          |                   | NMOG+NOx (g/mi)   |       | CO (g/mi) |     | NOx (g/mi) |     | HCHO (mg/mi) |     | PM (g/mi) |      |
|          |                   | CERT  | STD   | CERT      | STD | CERT       | STD | CERT         | STD | CERT      | STD  |
| FTP@50K  | *                 | *   | *     | *         | *   | *          | *   | *            | *   | *         | *    |
| FTP@UL   | GASOLINE-LEV3 E10 | 0.022   | 0.030 | 0.4       | 1.0 | 0.015      | *   | *            | 4   | 0.001     | 0.01 |
| 50°F @4K | GASOLINE-LEV3 E10 | 0.010   | 0.060 | 0.30      | 1.0 | 0.005      | *   | *            | 8   |           |      |

|             |                             |                 |       |           |      |
|-------------|-----------------------------|-----------------|-------|-----------|------|
|             | FUEL TYPE                   | NMOG+NOx (g/mi) |       | CO (g/mi) |      |
|             |                             | CERT            | STD   | CERT      | STD  |
| HWFET @ 50K | *                           | *               | *     |           |      |
| HWFET @ UL  | GASOLINE-LEV3 E10           | 0.011           | 0.030 |           |      |
| 20°F @ 50K  | GASOLINE-COLD CO LOW OCTANE |                 |       | 0.54      | 12.5 |

**SFTP EXHAUST EMISSION STANDARDS AND CERTIFICATION LEVELS**

|      |                   |      |                 |           |            |                 |           |                 |           |            |
|------|-------------------|------|-----------------|-----------|------------|-----------------|-----------|-----------------|-----------|------------|
|      | FUEL TYPE         |      | US06            |           |            | SC03            |           | COMPOSITE       |           |            |
|      |                   |      | NMOG+NOx (g/mi) | CO (g/mi) | PM (mg/mi) | NMOG+NOx (g/mi) | CO (g/mi) | NMOG+NOx (g/mi) | CO (g/mi) | PM (mg/mi) |
| @ 4K | *                 | CERT | *               | *         |            | *               | *         |                 |           |            |
|      |                   | STD  | *               | *         |            | *               | *         |                 |           |            |
| @ UL | GASOLINE-LEV3 E10 | CERT | *               | *         | *          | *               | *         | 0.017           | 0.6       | *          |
|      |                   | STD  | *               | *         | *          | *               | *         | 0.110           | 4.2       | *          |
|      |                   | BIN  |                 |           |            |                 |           | 0.080           |           |            |

**WHOLE VEHICLE EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS**

|                    |                   |                                   |       |     |                    |       |     |                |      |
|--------------------|-------------------|-----------------------------------|-------|-----|--------------------|-------|-----|----------------|------|
| EVAPORATIVE FAMILY | FUEL TYPE         | WHOLE VEHICLE EVAPORATIVE TESTING |       |     |                    |       |     | RL (g/mi) @ UL |      |
|                    |                   | 3DHS (g/test) @ UL                |       |     | 2DHS (g/test) @ UL |       |     |                |      |
|                    |                   | CERT                              | STD   | FEL | CERT               | STD   | FEL | CERT           | STD  |
| GVVXR0140EP1       | GASOLINE-LEV3 E10 | 0.2218                            | 0.500 | *   | 0.2388             | 0.500 | *   | 0.001          | 0.05 |

**ORVR / FUEL ONLY / CANISTER BLEED EVAPORATIVE EMISSION STANDARDS AND CERTIFICATION LEVELS**

|                    |                      |      |      |                                 |      |                             |      |                                   |      |     |
|--------------------|----------------------|------|------|---------------------------------|------|-----------------------------|------|-----------------------------------|------|-----|
| EVAPORATIVE FAMILY | ORVR (g/gallon) @ UL |      |      | FUEL ONLY EVAP & CANISTER BLEED |      |                             |      |                                   |      |     |
|                    |                      |      |      | 3DHS RIG TEST (g/test) @ UL     |      | 2DHS RIG TEST (g/test) @ UL |      | BLEED CANISTER TEST (g/test) @ 4K |      |     |
|                    | FUEL TYPE            | CERT | STD  | FUEL TYPE                       | CERT | STD                         | CERT | STD                               | CERT | STD |
| GVVXR0140EP1       | GASOLINE-LEV3 E10    | 0.07 | 0.20 | *                               | *    | *                           | *    | *                                 | *    | *   |

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| California Environmental Protection Agency<br><b>Air Resources Board</b> | VOLVO CAR CORPORATION | Executive Order: A-018-0200<br>New Passenger Cars, Light-Duty Trucks and<br>Medium-Duty Vehicles<br>Page 4 of 4 |
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\*: 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; 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; HDV: heavy-duty 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 (with lockup); M: manual transmission; SA: semi-automatic transmission; CV: continuously variable transmission; SCV: selectable continuously variable transmission; AM: automated manual transmission; AMS: automated manual-selectable transmission; OT: other transmission

**2016 MODEL YEAR: VEHICLE MODELS INFORMATION**

| MAKE  | MODEL   | VEH CLASS | ENGINE (L) | TRANS TYPE | EVAPORATIVE FAMILY | EXH ECS | OBD | PZEV TYPE |
|-------|---------|-----------|------------|------------|--------------------|---------|-----|-----------|
| VOLVO | XC90 T8 | LDT4      | 2.0        | SA8        | GVVXR0140EP1       | 1       | \$  | TZEV      |