



U.S. Environmental Protection Agency Central Data Exchange



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Verify Light-Duty Release 4b Business Rules

Certification Test Data Business Rules

Test Vehicle (VI) Submission

- VI-BR1** - Manufacturer Code (VI-1) must exist in the system.
- VI-BR2** - If Process Code (VI-0.5) is equal to 'C' (Correction) and Model Year (VI-7) is greater than or equal to 2011, then a record must already exist in the system with the same Vehicle ID (VI-2), Vehicle Configuration (VI-3), and Manufacturer Code (VI-1).
- VI-BR3** - The Model Year (VI-7) must match the model year embedded in the Test Group (VI-5).
- VI-BR4** - The Model Year (VI-7) must match the model year embedded in the Evaporative/Refueling Family (VI-6).
- VI-BR5** - The Manufacturer Code (VI-1) must match the manufacturer code embedded in the Test Group (VI-5).
- VI-BR6** - The Manufacturer Code (VI-1) must match the manufacturer code embedded in the Evaporative / Refueling Family (VI-6).
- VI-BR7** - The displacement embedded in the Test Group (VI-5) must be a valid number.
- ~~**VI-BR8** - For model years 2010 and later, the industry code embedded in the fifth character of the Test Group (VI-5) must reference a valid industry code.~~
- VI-BR9** - The canister working capacity embedded in the Evaporative/Refueling Family (VI-6) must be a valid number.
- ~~**VI-BR10** - For model years 2010 and later, the Evaporative Family type embedded in the Evaporative/Refueling Family (VI-6) must be valid.~~
- VI-BR11** - Fuel 1 (VI-11) cannot be equal to 'NA' (Not Applicable).
- VI-BR12** - If Vehicle Fuel Category (VI-10) is equal to 'FF' (Flex-Fuel), 'FH' (Flex-Fuel Hybrid), 'DF' (Dual Fuel) or 'BF' (Bi-Fuel), then Fuel 2 (VI-12) is required, otherwise Fuel 2 (VI-12) must equal 'NA' (Not Applicable).

- VI-BR13** - If Air Aspiration Method (VI-23) is equal to 'OT' (Other) then Air Aspiration Method If Other (VI-24) is required, otherwise it is optional.
- VI-BR14** - If Air Aspiration Method (VI-23) is equal to 'TC' (Turbocharged), 'SC' (Supercharged), 'TS' (Turbocharged and Supercharged) or 'OT' (Other), then Number of Air Aspiration Devices (VI-25) is required, otherwise it must be equal to 0, if present.
- VI-BR15** - If Air Aspiration Method (VI-23) is not equal to 'NA' (Naturally Aspirated), then Number of Air Aspiration Devices (VI-25) is required and cannot be equal to 0.
- VI-BR16** - If Air Aspiration Method (VI-23) is equal to 'TC' (Turbocharged), 'SC' (Supercharged), 'TS' (Turbocharged and Supercharged) or 'OT' (Other), then Air Aspiration Device Configuration (VI-26) is required, otherwise it is not allowed.
- VI-BR17** - If Air Aspiration Device Configuration (VI-26) is equal to 'N' (Single), then Number of Air Aspiration Devices (VI-25) must be 1.
- VI-BR18** - If Air Aspiration Device Configuration (VI-26) is not equal to 'N' (Single), then Number of Air Aspiration Devices (VI-25) must be greater than 1, if present.
- VI-BR19** - Equivalent Test Weight (VI-30) must be greater than Curb Weight (VI-29).
- VI-BR20** - Gross Vehicle Weight Rating (VI-33) must be greater than Curb Weight (VI-29).
- VI-BR21** - If Transmission Type (VI-36) is equal to 'OT' (Other), then Transmission Type Other Description (VI-37) is required.
- VI-BR22** - If Transmission Type (VI-36) is equal to 'M' (Manual), then Transmission Lockup (VI-38) must be equal to 'N' (No).
- VI-BR23** - If Creeper Gear (VI-39) is equal to 'Y' (Yes), then Transmission Type (VI-36) must be equal to 'M' (Manual).
- VI-BR24** - If Transmission Type (VI-36) is equal to 'CVT' (Continuously Variable), then Number of Transmission Gears (VI-40) must be equal to 1.
- VI-BR25** - If Air Aspiration Method (VI-23) is not equal to 'NA' (Naturally Aspirated) then Charge Air Cooler Type (VI-27) is required.

- VI-BR26** - If the Process Code (VI-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (VI-1) of the dataset for which the report was requested.
- VI-BR27** - If the Process Code (VI-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (VI-1) of the submitted dataset.
- VI-BR28** - If the Process Code (VI-0.5) is equal to 'N' (New) then the Vehicle Configuration Number (VI-3) is not allowed.
- VI-BR29** - If the Process Code (VI-0.5) is equal to 'C' (Correction) then the Vehicle Configuration Number (VI-3) is required.
- VI-BR30** - If the Process Code is equal to 'C' (Correction) then this vehicle cannot have any active tests for which there are locked and active Certification Summary Information Reports (CSIs).
- VI-BR31** - If Process Code (VI-0.5) is equal to 'R' (Report) then a record must already exist in the system with the same Vehicle ID (VI-2), Vehicle Configuration (VI-3), and Manufacturer Code (VI-1).

Test Information (TI) Submission

- TI-BR1** - Manufacturer Code (TI-3) must exist in the system.
- TI-BR2** - If Process Code (TI-0.5) is equal to 'C' (Correction) and the Original Model Year (VI-7) of the associated vehicle is greater than or equal to 2011, then Test Number (TI-1) is required and a corresponding record must already exist in the system.
- TI-BR3** - If Process Code (TI-9) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code (TI-3), Vehicle ID (TI-4), and Vehicle Configuration (TI-5) must match to an active vehicle currently in the system.
- TI-BR4** - If the submitter's Manufacturer Code (TI-3) is not equal to 'LOD' then LOD Test Number (TI-2) is not allowed.
- TI-BR5** - Test Date (TI-6) must be earlier than or equal to the Submit Date (as determined by the system).

TI-BR6 - If the submitter's Manufacturer Code (TI-3) is equal to 'LOD' then Manufacturer Test Lab Site Code (TI-7) is not allowed, otherwise it is required.

TI-BR7 - Test lab site code (TI-7) must belong to the submitted Manufacturer Code (TI-3) or the submitted Manufacturer Code (TI-3) must be listed as one of the alternate Manufacturer Codes of the owner of the Test Lab for the Model Year (VI-7).

TI-BR8 - If Test Procedures (TI-8) is **an evaporative test** then the Exhaust/Evaporative Test Number Link (TI-13) is required and must reference an FTP Exhaust test number that already exists in Verify, otherwise it is not allowed.

Comment [cp1]: This business rule is going to be modified to allow Exhaust/Evap Test# link for ORVR and Running Loss tests.

TI-BR9 - Fuel Batch Manufacturer Code (TI-16), Fuel Batch Id (TI-17) and Fuel Calibration Number (TI-18) must reference a Fuel Properties data set that exists in the system.

~~**TI-BR10** - If the Test Fuel Type (TI-9) is one of the 'Diesel' fuel types (9, 19) or 'Hydrogen' (50), or Test Procedure (TI-8) is for an evaporative test (23, 27, 34, 38, 43, 47), 'Electric Vehicle Urban Range Test' (62), or 'Electric Vehicle Highway Range Test' (63) then Fuel Batch Manufacturer Code (TI-16), Fuel Batch Id (TI-17), and Fuel Calibration Number (TI-18) are not allowed.~~

TI-BR11 - If the submitter's Manufacturer Code (TI-3) is equal to 'LOD' then Retest Indicator (TI-22) is required.

TI-BR12 - If the submitter's Manufacturer Code (TI-3) is equal to 'LOD' and Retest Indicator (TI-22) equals 'Y' (Yes), then Retest Reason (TI-23) is required.

TI-BR13 - If Fuel Category (VI-10) equals 'HV' (Hybrid) or 'FC' (Fuel Cell-Electric), or 'FH' (Flex-Fuel Hybrid) then State Of Charge Delta Indicator (TI-24) is required.

TI-BR14 - If Test Procedure (TI-8) is equal to '62' (Electric Vehicle Range Urban), then All-Electric Range - Urban (TI-26), Total DC Energy Output - Urban Test (TI-27), Total DC Energy Input - Urban Test (TI-28), Net DC Expended - Urban Test (TI-29), Total AC Energy - Charge Batteries after Urban Test (TI-30), and Total DC Energy - Charge Batteries after Urban Test (TI-31) are required otherwise they are not allowed.

TI-BR15 - If Test Procedure (TI-8) is equal to '63' (Electric Vehicle Range Highway), then All-Electric Range - Highway (TI-32), Total DC Energy Output - Highway Test (TI-33), Total DC Energy Input - Highway Test (TI-34), Net DC Expended - Highway Test (TI-35), Total AC Energy - Charge Batteries after Highway Test (TI-36), and Total DC Energy - Charge Batteries after Highway Test (TI-37) are required otherwise they are not allowed.

- TI-BR16** - The Test Result/Emission Name (TI-19) cannot contain 'CO-comp' (CO SFTP Composite) or 'HC-NM+NOx-comp' (NMHC+NOX SFTP Composite).
- TI-BR17** - If the Process Code (TI-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (TI-3) of the dataset for which the report was requested.
- ~~**TI-BR18** - If the Process Code (TI-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (TI-3) of the submitted dataset.~~
- TI-BR19** - If Analytically-Derived FE (ADFE) Indicator (TI-13.5) is equal to 'Y' (Yes) and the Test Category (TI-43) is equal to 'FTP' (Test Procedures (TI-8) = 2, 21, 25, 31, 35, 41, 45) then one of the Test Results submitted must have a Test Result/Emission Name (TI-19) equal to 'MFR FE'.
- TI-BR20** - If Analytically-Derived FE (ADFE) Indicator (TI-13.5) is equal to 'Y' (Yes) and the Test Category (TI-43) is equal to 'HWY' (Test Procedures (TI-8) = 3) then one of the Test Results submitted must have a Test Result/Emission Name (TI-19) equal to 'MFR FE'.
- TI-BR21** - If Analytically-Derived FE (ADFE) Indicator (TI-13.5) is equal to 'N' (No), Test Fuel Type (TI-9) is equal to '9' (Diesel- #2) or '19' (Diesel- ULSD), and the Test Procedure (TI-8) requires Fuel Economy to be calculated (2, 3, 21, 25, 31, 35, 41, 45), then Test Results must be submitted with the following Test Result/Emission Names (TI-19): 'HC-TOTAL' (Total Hydrocarbon), 'CO' (Carbon Monoxide), and 'CO2' (Carbon Dioxide).
- TI-BR22** - If Analytically-Derived FE (ADFE) Indicator (TI-13.5) is equal to 'N' (No), the Test Fuel Type (TI-9) is one of the ethanol fuel types (36, 37, 38, 43, 44, 45 or 71) and the Test Procedure (TI-8) requires Fuel Economy to be calculated (2, 3, 21, 25, 31, 35, 41, 45), then Test Results must be submitted with the following Test Result/Emission Names (TI-19): 'HC-TOTAL' (Total Hydrocarbon), 'CO' (Carbon Monoxide), 'CO2' (Carbon Dioxide), 'METHANOL', 'HCHO' (Formaldehyde), 'ETHANOL', and 'H3C2HO' (Acetaldehyde); and the following fields must exist in the Fuel Properties submission associated with the Test Information: Fuel specific gravity (FP-13) and Fuel blend carbon weight fraction (FP-15).
- TI-BR23** - If Analytically-Derived FE (ADFE) Indicator (TI-13.5) is equal to 'N' (No), Test Fuel Type (TI-9) is '42' (LPG) and the Test Procedure (TI-8) requires Fuel Economy to be calculated (2, 3, 21, 25, 31, 35, 41, 45), then Test Results must be submitted with the

following Test Result/Emission Names (TI-19): 'HC-TOTAL' (Total Hydrocarbon), 'CO' (Carbon Monoxide), and 'CO2' (Carbon Dioxide); and the following fields must exist in the Fuel Properties submission associated with the Test Information: Fuel specific gravity (FP-13) and Fuel Blend Carbon weight fraction (FP-15).

TI-BR24 - If Analytically-Derived FE (ADFE) Indicator (TI-13.5) is equal to 'N' (No), Test Fuel Type (TI-9) is '1' (Indolene 30), '6' (EPA Unleaded), '7' (Industrial Unleaded 100 Octane), '8' (Number 1 Fuel Oil), '22' (Special Unleaded 91 RON), '24' (Cold CO Regular Cert), '25' (Cold CO Premium Cert), '26' (Cold CO Regular Tier 2), '27' (Cold CO Premium Tier 2), or '61' (Tier 2 Unleaded) and the Test Procedure (TI-8) requires Fuel Economy to be calculated (2, 3, 21, 25, 31, 35, 41, 45), then Test Results must be submitted with the following Test Result/Emission Names (TI-19): 'HC-TOTAL' (Total Hydrocarbon), 'CO' (Carbon Monoxide), and 'CO2' (Carbon Dioxide); and Fuel Batch Manufacturer Code (TI-16), Fuel Batch ID (TI-17), and Fuel Calibration Number (TI-18) are required and must specify a Fuel Properties submission in which the following fields exist: Fuel specific gravity (FP-13), Fuel Blend Carbon weight fraction (FP-15), and Fuel net heating value (FP-14).

TI-BR25 - If Analytically-Derived FE (ADFE) Indicator (TI-13.5) is equal to 'N' (No), Test Fuel Type (TI-9) is '10' (Natural Gas) or '41' (CNG) and the Test Procedure (TI-8) requires Fuel Economy to be calculated (2, 3, 21, 25, 31, 35, 41, 45), then Test Results must be submitted with the following Test Result/Emission Names (TI-19): 'HC-NM' (Non-methane Hydrocarbon), 'METHANE', 'CO' (Carbon Monoxide), and 'CO2' (Carbon Dioxide); and the following fields must exist in the Fuel Properties submission associated with the Test Information: Carbon weight fraction NMHC (FP-8), Carbon weight fraction HC (FP-9), Fuel Blend carbon weight fraction (FP-15), Fuel density (FP-12), and Weight fraction CO2 (FP-16).

TI-BR26 - If Analytically-Derived FE (ADFE) Indicator (TI-13.5) is equal to 'N' (No), Test Fuel Type (TI-9) is '23' (CARB Phase II Gasoline) and the Test Procedure (TI-8) requires Fuel Economy to be calculated (2, 3, 21, 25, 31, 35, 41, 45), then Test Results must be submitted with the following Test Result/Emission Names (TI-19): 'HC-TOTAL' (Total Hydrocarbon), 'CO' (Carbon Monoxide), and 'CO2' (Carbon Dioxide); and the following fields must exist in the Fuel Properties submission associated with the Test Information: Fuel specific gravity (FP-13), Fuel net heating value (FP-14), and Fuel blend carbon weight fraction (FP-15).

TI-BR27 - If the Process Code (TI-0.5) is 'C' (Correction) then there cannot be any locked and active Certificate Summary Information Reports (CSIs) which reference this test.

TI-BR28 - If Test Fuel Type (TI-9) is equal to '9' (Diesel- #2) or '19' (Diesel- ULSD) the Diesel Adjustment Factor (TI-18.5) is required, otherwise it is optional.

TI-BR29 - If the Process Code (TI-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code of the submitted dataset unless the submitter is LOD.

TI-BR30 - If Process Code (TI-0.5) is equal to 'R' (Report) then Test Number (TI-1) is required and a corresponding record must already exist in the system.

TI-BR31 - If Process Code (TI-0.5) is equal to 'N' (New) then Test Number (TI-1) is not allowed.

TI-BR32 - Test Procedure Codes (TI-8) of '80', '81', '82', or '83' are not allowed.

Fuel Properties (FP) Submission

FP-BR1 - Manufacturer Code (FP-1) must exist in the system.

FP-BR2 - If Process Code (FP-0.5) is equal to 'R' (Report) or 'C' (Correction) then a record must already exist in the system with the same Fuel Batch ID (FP-2), Fuel Batch Calibration Number (FP-3), and Manufacturer Code (FP-1).

FP-BR3 - If Test Fuel Type (FP-4) has a Fuel Category equal to 'CNG' (Test Fuel Type equals '10' (Natural Gas) or '41' (Compressed Natural Gas)) then Carbon weight fraction NMHC (FP-8) is required to be between 0.0 and 0.900.

FP-BR4 - If Test Fuel Type (FP-4) is equal to '10' (Natural Gas) or '41' (Compressed Natural Gas) then Carbon weight fraction HC (FP-9) is required to be between 0.680 and 0.900.

~~**FP-BR5** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'CNG' (Natural Gas) (Methanol or Methanol Blend) then Fuel Methanol Volume Fraction (FP-11) is required to be between 0.000 and 1.000.~~

FP-BR6 - If Test Fuel Type (FP-4) has a Fuel Category equal to 'CNG' (Test Fuel Type equals '10' (Natural Gas) or '41' (Compressed Natural Gas)) then Fuel Density (FP-12) is required to be between 15.0 and 25.0 gm/cu. ft.

- FP-BR7** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'G' (Gasoline) (Test Fuel Type equals 1, 6, 7, 22, 23, 24, 25, 26, 27, or 61) then Fuel Specific Gravity (FP-13) is required to be between 0.700 and 0.790.
- FP-BR8** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'D' (Diesel) (Test Fuel Type equals 9 or 19) then Fuel Specific Gravity (FP-13) is required to be between 0.830 and 0.870, however, it is not required that it be submitted.
- FP-BR9** - If Test Fuel Type (FP-4) is equal to '23' (California Phase II Gasoline) then Fuel Specific Gravity (FP-13) is required to be between 0.723 and 0.790.
- FP-BR10** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'G' (Gasoline) (Test Fuel Type equals 1, 6, 7, 22, 23, 24, 25, 26, 27, or 61) then Fuel Net Heating Value (FP-14) is required to be between 18200 and 19000 Btu/lb.
- FP-BR11** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'D' (Diesel) (Test Fuel Type equals 9 or 19) then Fuel Net Heating Value (FP-14) is required to be between 18300 and 19000 Btu/lb.
- FP-BR12** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'CNG' (Test Fuel Type equals '10' (Natural Gas) or '41' (Compressed Natural Gas)) then Fuel Net Heating Value (FP-14) is required to be between 19000 and 25000 Btu/lb.
- FP-BR13** - If Test Fuel Type (FP-4) is equal to '23' (California Phase II) then Fuel Net Heating Value (FP-14) is required to be between 17500 and 19000 Btu/lb.
- FP-BR14** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'G' (Gasoline) (Test Fuel Type equals 1, 6, 7, 22, 23, 24, 25, 26, 27, or 61) then Fuel Blend Carbon Weight Fraction (FP-15) is required to be between 0.835 and 0.886.
- FP-BR15** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'D' (Diesel) (Test Fuel Type equals 9 or 19) then Fuel Blend Carbon Weight Fraction (FP-15) is required to be between 0.850 and 0.875.
- FP-BR16** - If Test Fuel Type (FP-4) is equal to '23' (California Phase II Gas) then Fuel Blend Carbon Weight Fraction (FP-15) is required to be between 0.820 and 0.845
- FP-BR17** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'CNG' (Test Fuel Type equals '10' (Natural Gas) or '41' (Compressed Natural Gas)) then Fuel Blend Carbon Weight Fraction (FP-15) is required to be between 0.650 and 0.770.

- FP-BR18** - If Test Fuel Type (FP-4) has a Fuel Category equal to 'CNG' (Test Fuel Type equals '10' (Natural Gas) or '41' (Compressed Natural Gas)) then Weight fraction CO2 (FP-16) is required to be between 0.000 and 0.300.
- FP-BR19** - If the Process Code (FP-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code of the dataset for which the report was requested.
- FP-BR20** - If the Process Code (FP-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code of the submitted dataset.
- FP-BR21** - If the Process Code (FP-0.5) is equal to 'C' (Correction) then there cannot be any active test for which there are locked and active Certificate Summary Information Reports (CSIs) which reference these fuel properties.
- FP-BR22** - If the Process Code (FP-0.5) is equal to 'N' (New) then a record cannot already exist in the system with the same Fuel Batch ID (FP-2), Fuel Batch Calibration Number (FP-3), and Manufacturer Code (FP-1).

Confirmatory Test Business Rules

Decision Information (DI) Submission

- DI-BR1** - Manufacturer Code (DI-1) must exist in the system.
- DI-BR2** - The Model Year (DI-5) must match the model year embedded in the Test Group (DI-7).
- DI-BR3** - The Model Year (DI-5) must match the model year embedded in the Evaporative/Refueling Family (DI-8)
- DI-BR4** - The Manufacturer Code (DI-1) must match the manufacturer code embedded in the Test Group (DI-7).
- DI-BR5** - The Manufacturer Code (DI-1) must match the manufacturer code embedded in the Evaporative / Refueling Family (DI-8).
- DI-BR6** - The displacement embedded in the Test Group (DI-7) must be a valid number.
- ~~**DI-BR7** - For model years 2010 and later, the industry code embedded in the fifth character of the Test Group (DI-7) must reference a valid industry code.~~
- DI-BR8** - The canister working capacity embedded in the Evaporative/Refueling Family (DI-8) must be a valid number.
- ~~**DI-BR9** - The Evaporative Family type embedded in the Evaporative/Refueling Family (DI-8) must be valid.~~
- DI-BR10** - If Process Code (DI-0.5) is equal to 'R' (Report) or 'C' (Correction), then a record must already exist in the system with the same Vehicle ID (DI-3), Vehicle Configuration (DI-4), and Manufacturer Code (DI-1) and Model Year (DI-5).
- DI-BR11** - If the Process Code (DI-0.5) is equal to 'N' (New), the Manufacturer Code (DI-1), Vehicle ID (DI-3), and Vehicle Configuration Number (DI-4) must reference a vehicle currently active in the system.
- DI-BR12** - At least one Federal Exhaust Emission Standard Level (DI-9) or California Exhaust Emission Standard Level (DI-10) must be selected.
- DI-BR13** - If New Engine or Technology Indicator (DI-14) is equal to 'Y' (Yes) or 'YT' (Yes, but previously tested) then New Engine or Technology Description (DI-15) is required.

DI-BR14 - If Running Change (DI-25.2) is equal to 'Y' (Yes) then Running Change Number (DI 25.3) and Running Change Date (DI-25.4) are required.

DI-BR15 - Test Number (DI-17.5) must exist in the system.

DI-BR16 - If the Process Code (DI-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (DI-1) of the dataset for which the report was requested.

DI-BR17 - If the Process Code (DI-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (DI-1) of the submitted dataset.

DI-BR18 - If the value of "OT" (Other) is chosen for any of the 4 standards fields (DI-9 (Federal Exhaust Emission Standard Level), DI-10 (California Exhaust Emission Standard Level), DI-11 (Federal Evaporative Emission Standard Level), or DI-12 (California Evaporative Emission Standard Level)) then the Manufacturers Comments field (DI-28) is required.

DI-BR19 - If Process Code (DI-0.5) is equal to 'N' (New), then a record cannot already exist in the system with the same Vehicle ID (DI-3), Vehicle Configuration (DI-4), and Manufacturer Code (DI-1) and Model Year (DI-5), unless it is in the "Waived", "Completed" or "Deleted" states.

Supplemental Information (SI) Submission

SI-BR1 - If Process Code (SI-0.5) is equal to 'R' (Report) or 'C' (Correction), then a record must already exist in the system with the same Vehicle ID (SI-2), Vehicle Configuration (SI-3), Manufacturer Code (SI-1) and Model Year (SI-3.5).

SI-BR2 - If Driver Selectable Transmission (SI-19) is equal to 'Y' (Yes), then Transmission Mode Tested Description (SI-20) is required.

SI-BR3 - If Canister Loading (SI-38) is equal to 'Y' (Yes), then Number of Canisters (SI-39) is required and Canister Working Capacity (SI-40) and Total Canister Volume (SI-41) are required for each canister.

SI-BR4 - The Test Procedure Codes Selected for EPA Confirmatory Testing (SI-41.5) must include all codes that have been selected for EPA testing in the Decision Information submission for that Manufacturer Code (SI-1), Vehicle ID (SI-2), Vehicle Configuration (SI-3), and Model Year (SI-3.5).

- SI-BR5** - Either a shift schedule with the Manufacturer Code (SI-1), Shift Schedule ID (SI-46) and Shift Schedule Database Code (SI-47) must exist in the system or a shift schedule with the LOD manufacturer code, Shift Schedule ID (SI-46) and Shift Schedule Database Code (SI-47) must exist in the system.
- SI-BR6** - If Engine Type (SI-10) is equal to 'Other' (99), then Test Vehicle Information Comments (SI-55) is required.
- ~~**SI-BR7** - Both a Multiplicative DF (SI-64) and Additive DF (SI-63) must not be submitted at the same time.~~
- SI-BR8** - If Fuel (SI-56.5) is equal to 'D' (Diesel), then Upward Diesel Adjustment Factor (SI-93) is required.
- SI-BR9** - If Fuel (SI-56.5) is equal to 'D' (Diesel), then Downward Diesel Adjustment Factor (SI-94) is required.
- SI-BR10** - If the Process Code (SI-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (SI-1) of the dataset for which the report was requested.
- SI-BR11** - If the Process Code (SI-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (SI-1) of the submitted dataset.
- SI-BR12** - If Process Code (SI-0.5) is equal to 'N' (New) then a Decision Information record must already exist in the system with the same Vehicle ID (SI-2), Vehicle Configuration (SI-3), Manufacturer Code (SI-1) and Model Year (SI-3.5).
- SI-BR13** - If Process Code (SI-0.5) is equal to 'N' (New), then a Supplemental Information record cannot already exist in the system with the same Vehicle ID (SI-2), Vehicle Configuration (SI-3), Manufacturer Code (SI-1) and Model Year (SI-3.5).
- SI-BR14** - Exhaust Certification/In-Use Code (SI-90) must equal 'C' (Certification).
- SI-BR15** - Evaporative Certification/In-Use Code (SI-97) must equal 'C' (Certification).
- SI-BR16** - Shift Schedule ID (SI-46) is required unless the Test Procedure Code Selected for EPA Confirmatory Testing (SI-41.5) is equal to '23' (Federal Fuel 2-day Evap) or '27' (California Fuel 2-day Evap).

Shift Schedule (SS) Submission

- SS-BR1** - If Process Code (SS-0.5) is equal to 'R' (Report) or 'C' (Correction), then a record must already exist in the system with the same Shift Schedule ID (SS-1), Shift Schedule Database Code (SS-2), and Manufacturer Code (SS-4).
- SS-BR2** - Manufacturer Code (SS-4) must exist in the system.
- SS-BR3** - If Shift Action Code (SS-62) is equal to '99' (Alternative Shift Action), then Shift Point Screen (SS-63) is required.
- SS-BR4** - If the Process Code (SS-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (SS-4) of the dataset for which the report was requested.
- SS-BR5** - If the Process Code (SS-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (SS-4) of the submitted dataset.
- SS-BR6** - If Process Code (SS-0.5) is equal to 'N' (New), then a Shift Schedule record cannot already exist in the system with the same Shift Schedule ID (SS-1), Shift Schedule Database Code (SS-2), and Manufacturer Code (SS-4).

Certification Business Rules

Test Group (TG) Submission

TG-BR1 -

- a. TG-BR1a - If Process Code (TG-0.5) equals 'C' (Correction) then a record must already exist in the system with the same Test Group Name (TG-2) and Model Year (TG-6).
- b. TG-BR1b - If Process Code (TG-0.5) equals 'R' (Report) then a record must already exist in the system with the same Test Group Name (TG-2) and Model Year (TG-6).

TG-BR2 - If CSI Type (TG-4) equals 'N' (New) then a record must not exist in the system for this Test Group Name (TG-2) and Model Year (TG-6).

TG-BR3 - If CSI Type (TG-4) equals 'R' (Running Change) then Running Change Reference Number (TG-5) is required.

TG-BR4 - The Model Year (TG-6) must match the model year embedded in the Test Group Name (TG-2).

TG-BR5 - The Manufacturer Code (TG-1) must match the manufacturer code embedded in the Test Group (TG-2).

TG-BR6 - The displacement embedded in the Test Group (TG-2) must be a valid number.

~~**TG-BR7** - For model years 2010 and later, the industry code embedded in the fifth character of the Test Group (TG-2) must reference a valid industry code.~~

TG-BR8 - If Drive Source (TG-7) is equal to 'C' (Combustion Engine) then Vehicle Fuel Category (TG-8) must equal 'SF' (Single Fuel), 'FF' (Flex Fuel), 'DF' (Duel Fuel), or 'BF' (Bi-Fuel).

TG-BR9 - If Drive Source (TG-7) is equal to 'E' (Electric Motor) then Vehicle Fuel Category (TG-8) must equal 'EV' (Battery-Electric) or 'FC' (Fuel Cell Electric).

TG-BR10 - If Drive Source (TG-7) is equal to 'H' (Hybrid) then Vehicle Fuel Category (TG-8) must equal 'FH' (Flex-Fuel Hybrid) or 'HV' (Hybrid).

TG-BR11 - If Model Year (TG-6) is greater than or equal to 2009 and the fifth character in the Test Group Name (TG-2) is equal to 'K' (Heavy Duty Vehicle) or if Model Year (TG-6) is less than 2009 and the fifth character in the Test Group Name (TG-2) is equal to 'D' (Heavy Duty Vehicle), then Federal Clean Fuel Vehicle (TG-9) must not be equal to 'Y' (Yes).

TG-BR12 - If Federal Clean Fuel Vehicle (TG-9) is equal to 'Y' (Yes) then Federal Clean Fuel Vehicle Standard (TG-10) is required, otherwise it must not be present.

TG-BR13 - If Federal Clean Fuel Vehicle (TG-9) is equal to 'Y' (Yes) then Federal Clean Fuel Vehicle ILEV (TG-11) is required otherwise it must not be present or must be equal to 'N' (No).

TG-BR14 - If Federal Clean Fuel Vehicle ILEV (TG-11) is equal to 'Y' (Yes) then either Fuel1 (TG-17) must be equal to 'CNG', 'LNG' or 'LPG' or Vehicle Fuel Category (TG-8) must be equal to 'EV' (Battery-Electric) or 'FC' (Fuel Cell-Electric).

TG-BR15 - If EPA Vehicle Class (TG-16) is equal to 'M6' (MDV6- CA LEV2 MDV GVW 8,501-10,000) or 'M7' (MDV7- CA LEV2 MDV GVW 10,001-14,000) then Certification Region Code (TG-14) must only equal 'CA' (California + 177 States).

TG-BR16 - The EPA Vehicle Class (TG-16) cannot be equal to 'LDVT' (LDV + LDT1) at the Test Group Level.

TG-BR17 - Fuel 1 (TG-17) cannot be equal to 'NA' (Not Applicable).

TG-BR18 - If Vehicle Fuel Category (TG-8) is equal to 'FF' (Flex-Fuel), 'FH' (Flex-Fuel Hybrid), 'DF' (Dual Fuel) or 'BF' (Bi-Fuel) then Fuel 2 (TG-18) is required and must not equal 'NA' (Not Applicable).

TG-BR19 - If OBD Compliance Type (TG-19) is equal to 'F' (Federal) then Certification Region Code (TG-14) cannot be equal to 'CA' (California + 177 States).

TG-BR20 - Number of Test Group OBD Deficiencies (TG-22) can be equal to 0 only if Test Group OBD Compliance Level (TG-21) is equal to 'F' (Full- No Deficiencies).

~~**TG-BR21** - If Drive Source (TG-7) is equal to 'E' then Hybrid/Combustion Engine Description (TG-26 to TG-52) is not allowed.~~

TG-BR22 - If Drive Source (TG-7) is equal to 'H' (Hybrid) then Hybrid Type (TG-26) is required, otherwise it is not allowed.

TG-BR23 - If Hybrid Type (TG-26) is equal to 'OT' (Other) then Hybrid Type Other Description (TG-27) must be present.

TG-BR24 - If Engine Type (TG-28) is equal to 'GT' (Gas Turbine), 'RK' (Rankine), 'STIR' (Stirling) or 'OT' (Other) then Engine Type Description (TG-29) is required, otherwise it is optional.

TG-BR25 -

- a. If Drive Source (TG-7) is equal to 'C' (Combustion Engine) then Engine Block Arrangement (TG-30), Number of Cylinders/Rotors (TG-32), Basic fuel metering system 1 (TG-33), Number of after Treatment Devices (TG-53), After Treatment Device Type (TG-56), ATD Precious Metal Type (TG-57), Substrate Material (TG-59), Substrate Construction (TG-60), Number Air Fuel Sensors (TG-61), and Number Knock Sensors (TG-65) are required.
- b. If Drive Source (TG-7) is equal to 'H' (Hybrid) and Hybrid Type (TG-26) is equal to 'EM' (IC Engine/Electric Motor) or 'EH' (IC Engine/Hydraulic) then Engine Block Arrangement (TG-30), Number of Cylinders/Rotors (TG-32), Basic fuel metering system 1 (TG-33), Number of after Treatment Devices (TG-53), After Treatment Device Type (TG-56), ATD Precious Metal Type (TG-57), Substrate Material (TG-59), Substrate Construction (TG-60), Number Air Fuel Sensors (TG-61), and Number Knock Sensors (TG-65) are required.

TG-BR26 - If Engine Type (TG-28) is equal to '4SI' (4-Stroke Spark Ignition), '2SI' (2-Stroke Spark Ignition), '4SCI' (4-Stroke Compression Ignition), '2SCI' (2-Stroke Compression Ignition) or 'RT' (Rotary) then Engine Block Arrangement (TG-30) and Number of Cylinders/Rotors (TG-32) are required.

TG-BR27 - If Engine Block Arrangement (TG-30) is equal to 'OT' (Other) then Engine Block Arrangement Description if Other (TG-31) is required.

TG-BR28 - If Vehicle Fuel Category (TG-8) is equal to 'DF' (Dual Fuel) or 'BF' (Bi-Fuel) then Basic fuel metering system 2 (TG-35) is required.

TG-BR29 - If Vehicle Fuel Category (TG-8) is equal to 'FF' (Flex-Fuel) or 'FH' (Flex-Fuel Hybrid) then Basic Fuel Metering System 2 (TG-35) is not allowed.

TG-BR30 - If Engine Type (TG-28) is equal to '4SI' (4-Stroke Spark Ignition), '2SI' (2-Stroke Spark Ignition), '4SCI' (4-Stroke Compression Ignition), '2SCI' (2-Stroke Compression Ignition) or 'RT' (Rotary) then Engine Rated Horsepower (TG-37), Engine

Displacement (TG-38), Air Aspiration Method (TG-47) are required, otherwise they are optional.

TG-BR31 - If Engine Type (TG-28) is equal to '4SI' (4-Stroke Spark Ignition), '2SI' (2-Stroke Spark Ignition), '4SCI' (4-Stroke Compression Ignition), or '2SCI' (2-Stroke Compression Ignition) then Cylinder Deactivation (TG-39), Variable Valve Timing (TG-41), Variable Valve Lift (TG-43), Number of Inlet Valves per Cylinder (TG-45), and Number of Exhaust Valves Per Cylinder (TG-46) are required, otherwise they are optional.

TG-BR32 - If Cylinder Deactivation (TG-39) is equal to 'Y' (Yes) then Cylinder Deactivation Description (TG-40) is required.

TG-BR33 - If Variable Valve Timing (TG-41) is equal to 'Y' (Yes) then Variable Valve Timing System Description (TG-42) is required.

TG-BR34 - If Variable Valve Lift (TG-43) is equal to 'Y' (Yes) then Variable Valve Lift System Description (TG-44) is required.

TG-BR35 - If Air Aspiration Device Method (TG-47) is equal to 'OT' (Other) then Air Aspiration Method Description (TG-50) is required.

TG-BR36 - If TG-7 is equal to 'E' (Electric Motor) then Exhaust Emission Control System Data Elements (Number After Treatment Devices (TG-53), ATD Comments (TG-54), ATD Number (TG-55), ATD Type (TG-56), ATD Precious Metal Type (TG-57), ATD Precious Metal Type Other Description (TG-58), Substrate Material (TG-59), Substrate Construction (TG-60), Substrate Construction Other Description (TG-102), Number Air Fuel Sensors (TG-61), Air Fuel Sensor Number (TG-62), Air Fuel Sensor Type (TG-63), Air Fuel Sensor Type Other (TG-64), Number Knock Sensors (TG-65), Sensor Comments (TG-66), Exhaust Gas Recirculation (TG-67), Cooled Exhaust Gas Recirculation (TG-68), EGR Type (TG-69), EGR Other Description (TG-70), Closed Loop Air Injection System (TG-71), Air Injection Type (TG-72), Air Injection Other Description (TG-73), Direct Ozone Reduction Device (TG-74), DOR Device Other Description (TG-75), and Emission Control Device Comments (TG-76)) are not allowed.

TG-BR37 - If After Treatment Device Precious Metal Type (TG-57) is equal to 'OT' (Other) then After Treatment Device Precious Metal Type Other Description (TG-58) is required.

TG-BR38 - If Substrate Construction (TG-60) is equal to 'OT' (Other) then Substrate Construction Other Description (TG-102) is required.

TG-BR39 -

- a. If Drive Source (TG-7) is equal to 'C' (Combustion Engine) then Air Fuel Sensor Type (TG-63) is required unless Number Air Fuel Sensors (TG-61) is equal to 0.
- b. If Drive Source (TG-7) is equal to 'H' (Hybrid) and Hybrid Type (TG-26) is equal to 'EM' (IC Engine/Electric Motor) or 'EH' (IC Engine/Hydraulic) then Air Fuel Sensor Type (TG-63) is required unless Number Air Fuel Sensors (TG-61) is equal to 0.

TG-BR40 - If Air Fuel Sensor Type (TG-63) is equal to 'OT' (Other) then Air Fuel Sensor Type Other (TG-64) is required.

TG-BR41 - If Vehicle Fuel Category (TG-8) is equal to 'HV' (Hybrid), 'EV' (Battery-Electric), 'FH' (Flex-Fuel Hybrid), or 'FC' (Fuel Cell-Electric) then Energy Storage Device (TG-77) is required, otherwise it is not allowed.

TG-BR42 - If Energy Storage Device (TG-77) is equal to 'OT' (Other) then Energy Storage Device Other Description (TG-78) is required.

TG-BR43 - If Energy Storage Device (TG-77) is equal to 'B' (Battery) or 'BC' (Battery + Capacitor) then Battery Type (TG-79), Number of Batteries (TG-81), Total Voltage of Battery Packs (TG-82), Battery Energy Capacity (TG-83), Battery Specific Energy (TG-84), Battery Charger Type (TG-85) are required, otherwise they are not allowed.

TG-BR44 - If Energy Storage Device (TG-77) is equal to 'B' (Battery) or 'BC' (Battery + Capacitor) and Battery Type (TG-79) is equal to 'OT' (Other) then Other Battery Type Description (TG-80) is required, otherwise it is not allowed.

TG-BR45 - If Energy Storage Device (TG-77) is equal to 'C' (Capacitor) or 'BC' (Battery + Capacitor) then Number of Capacitors (TG-86) is required, otherwise it is not allowed.

TG-BR46 - A Capacitor Rating (TG-87) must be present for each capacitor identified in the Number of Capacitors (TG-86).

TG-BR47 - If Energy Storage Device (TG-77) is equal to 'H' (Hydraulic) then Hydraulic System Description (TG-89) is required.

TG-BR48 - If Regenerative Braking Type (TG-90) is equal to 'OT' (Other) then Regenerative Braking Type Other Description (TG-91) is required.

TG-BR49 - If Regenerative Braking Type (TG-90) is not equal to 'NA' (Not Applicable) then Regenerative Braking Source (TG-92) and Driver Controlled Regenerative Braking (TG-93) are required, otherwise they are not allowed.

TG-BR50 - If Hybrid Type (TG-26) is equal to 'EM' (IC Engine/Electric Motor) then Number of Drive Motor Generators (TG-94) is required, otherwise it is optional.

TG-BR51 - If Motor Generator Type (TG-95) is equal to 'OT' (Other) then Other Motor Generator Type Other Description (TG-96) is required.

TG-BR52 - A Motor Generator Type (TG-95) and Rated Motor Generator Power (TG-97) are required for each Drive Motor Generator identified in the Number of Drive Motor Generators (TG-94) and not allowed if Number of Drive Motor Generators (TG-94) equals 0.

TG-BR53 - If [Vehicle Fuel Category](#) (TG-8) is equal to 'FC' (Fuel Cell Electric) then Fuel Cell Description (TG-98) is required.

Deleted: Drive Type

TG-BR54 - If [Vehicle Fuel Category](#) (TG-8) is equal to 'FC' (Fuel Cell Electric) and Fuel 1 (TG-17) is equal to 'H' (Hydrogen) then Fuel Cell On board H2 Storage Capacity (TG-99) is required.

Deleted: Drive Type

TG-BR55 - If Fuel Cell On board H2 Storage Capacity (TG-99) is present then Usable H2 Fill Capacity (TG-100) is required, otherwise (TG-100) is not allowed.

TG-BR56 - The provided Evaporative Test Number(s) (TG-202) must exist in the system.

TG-BR57 - If SFTP Compliance Indicator (TG-216.8) is equal to 'Y' (Yes) then FTP Test Number (for SFTP Composite Calculation) (TG-217) and US06 Test Number (for SFTP Composite Calculation) (TG-218) are required.

TG-BR58 - If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then the provided FTP Test Number (TG-217) must exist in the system with a Test Category (TI-43) of 'FTP' (Test Procedures (TI-8) = 2, 21, 25, 31, 35, 41, 45).

TG-BR59 - If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then the provided US06 Test Number (TG-218) must exist in the system with a Test Category (TI-43) of 'US06' (Test Procedures (TI-8) = 90).

TG-BR60 - If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then the provided SC03 Test Number (TG-219) must exist in the system with a Test Category (TI-43) of 'SC03' (Test Procedures (TI-8) = 95).

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TG-BR61 - If the SFTP Compliance Indicator (TG-216.8) is 'N' (No) then the SFTP CO Option (TG-216.9) must not be 'Y' (Yes).

TG-BR62 -

- a. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then the FTP test number (TG-217) must identify a test that has HC-NM (Non-Methane Hydrocarbon) and NOX (Nitrogen Oxides) emission results (TI-19).
- b. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then the US06 test number (TG-218) must identify a test that has HC-NM (Non-Methane Hydrocarbon) and NOX (Nitrogen Oxides) emission results (TI-19).
- c. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then the SC03 test number (TG-219) must identify a test that has HC-NM (Non-Methane Hydrocarbon) and NOX (Nitrogen Oxides) emission results (TI-19).

TG-BR63 -

- a. If the SFTP Composite CO Option (TG-216.9) is 'Y' (Yes) then the FTP test number (TG-217) must identify a test that has CO (Carbon Monoxide) emission results (TI-19).
- b. If the SFTP Composite CO Option (TG-216.9) is 'Y' (Yes) then the US06 test number (TG-218) must identify a test that has CO (Carbon Monoxide) emission results (TI-19).
- c. If the SFTP Composite CO Option (TG-216.9) is 'Y' (Yes) then the SC03 test number (TG-219) must identify a test that has CO (Carbon Monoxide) emission results (TI-19).

TG-BR64 -

- a. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then there must be at least one exhaust emission standard with the Test Result/Emission Name (TG-209) of HC-NM+NOX-COMP (Non-Methane Hydrocarbon + NOx SFTP Composite).
- b. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then for each HC-NM+NOX-COMP (Non-Methane Hydrocarbon + NOx SFTP Composite) emission standard, there must also be a NOX (Nitrogen Oxides) exhaust emission standard with the same Cert/In Use Code (TG-200.5) and Useful Life

(TG-210) as the HC-NM+NOX-COMP standard, and the same test procedure as the test identified by the FTP test number (TG-217).

- c. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) then for each HC-NM+NOX-COMP (Non-Methane Hydrocarbon + NOx SFTP Composite) emission standard, there must also be either HC-NM (Non-Methane Hydrocarbon) or NMOG (Non-Methane Organic Gases) exhaust emission standards with the same Cert/In Use Code (TG-200.5) and Useful Life (TG-210) as the HC-NM+NOX-COMP standard, and the same test procedure as the test identified by the FTP test number (TG-217).

TG-BR65 -

- a. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) and the SFTP CO Option (TG-216.9) is 'Y' then there must be at least one exhaust emission standard with the Test Result/Emission Name (TG-209) of CO-COMP (CO SFTP Composite).
- b. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) and the SFTP CO Option (TG-216.9) is 'Y' (Yes) then for each CO-COMP (CO SFTP Composite) emission standard, there must also be a CO (Carbon Monoxide) exhaust emission standard with the same Cert/In Use Code (TG-200.5) and Useful Life (TG-210) as the CO-COMP standard, and the same test procedure as the test identified by the FTP test number (TG-217).

TG-BR66 - If a PM-COMP (PM SFTP Composite) emission standard Test Result/Emission Name (TG-209) is provided, there must also be a PM (Particulate Matter) exhaust emission standard with the same Cert/In Use Code (TG-200.5) and Useful Life (TG-210) as the PM-COMP standard, and the same test procedure as the test identified by the FTP test number (TG-217).

TG-BR67 - If Carline Manufacturer Code (TG-300) is different than the Submitter's Manufacturer Code (in Submission Author Details), then the Submitter's Manufacturer Code must be one of the alternate manufacturer codes listed in the Carline Manufacturer Code's Manufacturer Profile for the Model Year (TG-6).

TG-BR68 - If Transmission Type (TG-307) is equal to 'OT' (Other) then Other Transmission Type Description (TG-308) is required.

- TG-BR69** - If the Process Code (TG-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (TG-1) of the dataset for which the report was requested.
- TG-BR70** - If the Process Code (TG-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (TG-1) of the submitted dataset.
- TG-BR71** - If Drive Source (TG-7) equals 'C' (Combustion Engine) or if Drive Source (TG-7) equals 'H' (Hybrid) and Hybrid Type (TG-26) equals 'EM' (IC Engine/Electric Motor) or 'EH' (IC Engine/Hydraulic) then Engine Type (TG-28) is required.
- TG-BR72** - If Air Aspiration Method (TG-47) is equal to 'OT' (Other) then Air Aspiration Method Other (TG-50) is required, otherwise it is optional.
- TG-BR73** - If Air Aspiration Method (TG-47) is equal to 'TC' (Turbocharged), 'SC' (Supercharged), 'TS' (Turbocharged and Supercharged) or 'OT' (Other), then Number of Air Aspiration Devices (TG-48) is required, otherwise it must be equal to 0, if present.
- TG-BR74** - If Air Aspiration Method (TG-47) is equal to 'TC' (Turbocharged), 'SC' (Supercharged), 'TS' (Turbocharged and Supercharged) or 'OT' (Other), then Air Aspiration Device Configuration (TG-49) is required, otherwise it is not allowed.
- TG-BR75** - If Air Aspiration Device Configuration (TG-49) is equal to 'N' (Single), then Number of Air Aspiration Devices (TG-48) must be 1.
- TG-BR76** - If Air Aspiration Device Configuration (TG-49) is not equal to 'N' (Single), then Number of Air Aspiration Devices (TG-48) must be greater than 1, if present.
- TG-BR77** - If Fuel (TG-204) is equal to 'D' (Diesel), then Upward Diesel Adjustment Factor (TG-215.5) is required.
- TG-BR78** - If Fuel (TG-204) is equal to 'D' (Diesel), then Downward Diesel Adjustment Factor (TG-215.6) is required.
- TG-BR79** - The Manufacturer Code embedded in the Test Group Name (TG-2) must match the Submitter's Manufacturer Code (in Submission Author Details).
- TG-BR80** -
- a. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) and there is an exhaust emission standard entered with the emission name (TG-209) of PM-COMP

(PM SFTP Composite), then the FTP test number (TG-217) must identify a test that has a PM emission result (TI-19).

- b. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) and there is an exhaust emission standard entered with the emission name (TG-209) of PM-COMP (PM SFTP Composite), then the US06 test number (TG-218) must identify a test that has a PM emission result (TI-19).
- c. If the SFTP Compliance Indicator (TG-216.8) is 'Y' (Yes) and there is an exhaust emission standard entered with the emission name (TG-209) of PM-COMP (PM SFTP Composite), then the SC03 test number (TG-219) must identify a test that has a PM emission result (TI-19).

TG-BR81 - There must be at least one Exhaust Standard with a Test Result/Emission Name (TG-209) of 'CO' (Carbon Monoxide) and a Test Procedure (TG-204.5) with a Test Category (TG-203) of 'FTP' (Test Procedures (TI-8) equal to 2, 21, 25, 31, 35, 41, 45, 51, 51).

Comment [cp2]: This BR is going to be modified so that for 50 state or federal certificates there must be a federal CO exhaust standard and for CA-Only certificates there must be a CA CO exhaust standard.

~~**TG-BR82** - There must be at least one Evaporative Standard for each Evaporative Family with a Test Result/Emission Name (TG-225) of "CO".~~

TG-BR83 - If Air Aspiration Method (TG-47) is not equal to 'NA' (Naturally Aspirated) then Charge Air Cooler Type (TG-51) is required.

TG-BR84 - If requesting a CSI Report then a record must already exist in the system with the same Test Group Name (TG-2), Evaporative/Refueling Family Name (TG-3) and Model Year (TG-6).

TG-BR85 - Engine Description fields (TG-26 – TG-52) are required if Drive Source (TG-7) is 'C' (Combustion Engine) or 'H' (Hybrid) and not allowed if Drive Source is 'E' (Electric Motor).

TG-BR86 - Hybrid, Electric Vehicle, and Fuel Cell fields (TG-77 through TG-101) are required if Vehicle Fuel Category (TG-8) is 'HV' (Hybrid), 'EV' (Battery-Electric), 'FH' (Flex-Fuel Hybrid) or 'FC' (Fuel Cell-Electric), otherwise they are not allowed.

TG-BR87 - If Engine Type (TG-28) is equal to '4SI' (4-Stroke Spark Ignition), '2SI' (2-Stroke Spark Ignition), '4SCI' (4-Stroke Compression Ignition), '2SCI' (2-Stroke Compression Ignition) or 'RT' (Rotary) then Engine Configuration fields (TG-36 – TG-52) are required.

TG-BR88 - The provided Exhaust Test Number(s) (TG-202.5) must exist in the system.

TG-BR89 - The provided Carline Manufacturer Code (TG-300), Division Code (TG-301), Carline Code (TG-302), and Model Year (TG-6) must specify a carline that exists in the system.

TG-BR90 - The provided Evaporative/Refueling Family (TG-3) and Model Year (TG-6) must exist in the system.

TG-BR91 - If the Manufacturer Code for the provided Exhaust Test Number (TG-202.5) is different than the Submitter's Manufacturer Code (in Submission Author Details), then the Submitter's Manufacturer Code must be one of the alternate manufacturer codes listed in the Test Manufacturer's Manufacturer profile for the Model Year (TG-6).

TG-BR92 - If the Manufacturer Code for the provided Evaporative Test Number (TG-202) is different than the Submitter's Manufacturer Code (in Submission Author Details), then the Submitter's Manufacturer Code must be one of the alternate manufacturer codes listed in the Test Manufacturer's Manufacturer profile for the Model Year (TG-6).

TG-BR93 - Exhaust Test Procedure Codes (TG-204.5) of '80', '81', '82', or '83' are not allowed.

TG-BR94 - Evaporative Test Procedure Codes (TG-223.5) of '80', '81', '82', or '83' are not allowed

TG-BR95 - This rule does not cause the transaction to be rejected. The 'Full Useful Life Miles: Evaporative/Refueling Emissions' field on a Certificate Of Conformity is drawn from the largest useful life (TG-223.6) of all of the evaporative/refueling standards that have an Emission Name (TG-225) of 'CO' (Carbon Monoxide). Since none of the evaporative/refueling standards in this submission match that criteria, 'N/A' will appear in the the 'Full Useful Life Miles: Evaporative/Refueling Emissions' field on the certificate issued for this test group and evaporative/refueling family combination.

TG-BR96 - If Transmission Type (TG-307) is equal to 'CVT' (Continuously Variable), then Number of Transmission Gears (TG-311) must equal '1'.

Comment [cp3]: This BR is going to be modified so that for 50 state or federal certificates there must be a federal HC-Total evaporative standard and for CA-Only certificates there must be a CA HC-Total evaporative standard.

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Evaporative Family (EV) Submission

EV-BR1 -

- a. If Process Code (EV-0.5) is equal to 'C' (Correction) then a record must already exist in the system with the same Evaporative/Refueling Family Name (EV-1) and Model Year (EV-1.5).
- b. If Process Code (EV-0.5) is equal to 'R' (Report) then a record must already exist in the system with the same Evaporative/Refueling Family Name (EV-1) and Model Year (EV-1.5).

EV-BR2 - The Manufacturer Code embedded in the Evaporative/Refueling Family Name (EV-1) must match the Submitter's Manufacturer Code (in Submission Author Details).

EV-BR3 - The canister working capacity embedded in the Evaporative/Refueling Family (EV-1) must be a valid number.

~~**EV-BR4** - The Evaporative Family type embedded in the Evaporative/Refueling Family (EV-1) must be valid.~~

EV-BR5 - If Evaporative Summary Information (EVS) Type (EV-2) equals 'N' (New) then a record must not exist in the system for this Evaporative/Refueling Family Name (EV-1) and Model Year (EV-1.5).

EV-BR6 - If Fuel Tank Material (EV-7) is equal to 'P' (Plastic) or 'OT' (Other) then Fuel Tank Material Description (EV-8) is required.

EV-BR7 - If Air Intake System Vapor Storage Device (EV-10) is equal to 'Y' (Yes) then Air Intake System Vapor Storage Device Description (EV-10.5) is required.

EV-BR8 - If Number of Bleed Canisters (EV-15) is greater than '0' then Bleed Canister Total Working Capacity (EV-16) is required.

EV-BR9 - If the Process Code (EV-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (EV-19) of the dataset for which the report was requested.

EV-BR10 - Fuel 1 (EV-4) cannot be equal to 'NA' (Not Applicable).

EV-BR11 - If the Process Code (EV-0.5) is equal to 'N' (New) or 'C' (Correction) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (EV-19) of the submitted dataset.

EV-BR12 - Manufacturer Code (EV-19) must exist in the system.

Carline (CL) Submission

CL-BR1 - Manufacturer Code (CL-1) must exist in the system.

CL-BR2 -

- a. If Process Code (CL-0.5) equals 'C' (Correction) then a record must already exist in the system with the same Model Year (CL-2), Division Code (CL-3), Carline Code (CL-4), and Manufacturer Code (CL-1).
- b. If Process Code (CL-0.5) equals 'R' (Report) then a record must already exist in the system with the same Model Year (CL-2), Division Code (CL-3), Carline Code (CL-4), and Manufacturer Code (CL-1).

CL-BR3 - For any submission, the Division Code (CL-3) must already exist in the system.

CL-BR4 - If Process Code (CL-0.5) equals 'N' (New) then the Carline Code (CL-4) must not exist in the system for that Manufacturer Code (CL-1) and Division Code (CL-3) and Model Year (CL-2).

CL-BR5 - If the Class Code (CL-5) equals '2' (Mini Compact), '3' (Subcompact), '4' (Compact), '5' (Midsize), '6' (Large), '7' (Small Station Wagon), '8' (Midsize Station Wagon), or '9' (Large Station Wagon) (indicating a passenger vehicle that is not a two-seater) then Average Passenger Volume (CL-9) is required.

~~**CL-BR6** - If Two Door Passenger Volume (CL 11) is entered then Two Door Luggage Volume (CL 12) is required.~~

~~**CL-BR7** - If Four Door Passenger Volume (CL 13) is entered then Four Door Luggage Volume (CL 14) is required.~~

~~**CL-BR8** - If Hatchback Passenger Volume (CL 15) is entered then Hatchback Luggage Volume (CL 16) is required.~~

CL-BR9 - If the Process Code (CL-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (CL-1) of the dataset for which the report was requested.

CL-BR10 - If the Process Code (CL-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (CL-1) of the submitted dataset.

Certificate Request (CR) Submission

CR-BR1 - Unless Process Code (CR-0.5) is equal to 'I' (Update Commerce Introduction Date) a Test Group record must exist in the system for the same Test Group (CR-4), Evaporative/Refueling Family Name (CR-5) and Model Year (CR-3).

CR-BR2 - If Process Code (CR-0.5) is equal to 'I' (Update Commerce Introduction Date), then a Test Group record must exist in the system for the same Test Group (CR-4) and Model Year (CR-3).

~~**CR-BR3** - The Model Year (CR-3) must match the model year embedded in the Test Group (CR-4).~~

~~**CR-BR4** - The Model Year (CR-3) must match the model year embedded in the Evaporative/Refueling Family (CR-5).~~

~~**CR-BR5** - The Manufacturer Code (CR-1) must match the manufacturer code embedded in the Test Group (CR-4).~~

~~**CR-BR6** - The Manufacturer Code (CR-1) must match the manufacturer code embedded in the Evaporative / Refueling Family (CR-5).~~

~~**CR-BR7** - The displacement embedded in the Test Group (CR-4) must be a valid number.~~

~~**CR-BR8** - The industry code embedded in the Test Group (CR-4) must reference a valid industry.~~

~~**CR-BR9** - The canister working capacity embedded in the Evaporative/Refueling Family (CR-5) must be a valid number.~~

~~**CR-BR10** - The Evaporative Family type embedded in the Evaporative/Refueling Family (CR-5) must be valid.~~

CR-BR11 - If Process Code (CR-0.5) is equal to 'I' (Update Commerce Introduction Date) then Commerce Introduction Date (CR-7) is required.

CR-BR12 - If Process Code (CR-0.5) is equal to 'N' (New) or 'L' (Lock) then Commerce Introduction Date (CR-7), Meet All Applicable Standards Indicator (CR-9), Meet All

Applicable Requirements Indicator (CR-10), OBD System Approval Indicator (CR-11), CARB Executive Order Issued Indicator (CR-12), ORVR System Approval Indicator (CR-14), Compliance Fee Paid Indicator (CR-15), No Defeat Device Indicator (CR-16), CAP2000 Conditional Certificate (CR-17), ICI Certificate Indicator (CR-18), and Alternate Fuel Converter Indicator (CR-19) are required.

CR-BR13 - Unless Process Code (CR-0.5) is equal to 'U' (Unlock) or 'L' (Lock) , Lock/Unlock Comment (CR-20) is not allowed.

CR-BR14 - If Process Code (CR-0.5) is equal to 'L' (Lock) then Revised Certificate Needed (CR-21) is required.

CR-BR15 - If CARB Executive Order Issued Indicator (CR-12) is equal to 'Y' (Yes) then CARB Executive Order Number (CR-13) is required.

CR-BR16 - There cannot be a pending certificate request for this Test Group (CR-2) and Evaporative/Refueling Family (CR-3) in the system. The certificate must either be issued or denied before a new certificate request with CR-0.5 (Process Code) equal to 'N' (New) can be submitted.

~~**CR-BR17** - Not Implemented.~~

CR-BR18 - This rule does not cause the transaction to be rejected. However, this certificate request has been denied since at least one of Meet All Applicable Standards Indicator (CR-9), Meet All Applicable Requirements Indicator (CR-10), OBD System Approval Indicator (CR-11), CARB Executive Order Issued Indicator (CR-12), ORVR System Approval Indicator (CR-14), Compliance Fee Paid Indicator (CR-15), or No Defeat Device Indicator (CR-16) is equal to 'N' (No).

CR-BR19 - When requesting a Certificate Request report (CR-0.5 (Process Code) equals 'R' (Report)), a Certificate Request record must exist with the same Test Group (CR-2), Evaporative / Refueling Family (CR-5), Model Year (CR-3), and Manufacturer Code (CR-1).

CR-BR20 - Manufacturer Code of the Submission Author Details must match the Manufacturer Code (CR-1) of the submitted dataset.

CR-BR21 - The CSI report for this Test Group (CR-4) and Evaporative/Refueling Family (CR-5) combination shows failed tests.

CR-BR22 - An Application for Certification document must have been submitted for this ~~Test~~ Group. Deleted: Engine Family

Fuel Economy Business Rules

General Label (GL) Submission

- GL-BR1** - If Process Code (GL-0.5) equals 'R' (Report) or 'C' (Correction) then a record must already exist in the system with the same Model Type Index (GL-1), Manufacturer Code (GL-2), and Model Year (GL-3).
- GL-BR2** - If Process Code (GL-0.5) equals 'N' (New) then a record must not exist in the system with the same Model Type Index (GL-1), Manufacturer Code (GL-2), and Model Year (GL-3).
- GL-BR3** - If Carline Manufacturer Code (GL-10) is different than the Submitter's Manufacturer Code (in Submission Author Details), then the Submitter's Manufacturer Code must be one of the alternate manufacturer codes listed in the Carline Manufacturer's Manufacturer Profile for the Model Year (GL-3).
- GL-BR4** - The combination of Model Year (GL-3), Carline Manufacturer Code (GL-10), Division Code (GL-11) and Carline Code (GL-12) must exist in the system as a certified model within a previously certified Test Group.
- GL-BR5** - If Process Code (GL-0.5) is equal to 'C' (Correction) then Manufacturer FE Label Comments (GL-4) is required.
- GL-BR6** - The combination of Test Group (GL-13.5) and Engine Configuration (GL-25), if provided, must exist in the system as Test Group Information.
- GL-BR7** - If Transmission Type (GL-67) is equal to 'OT' (Other) then Transmission Type If Other (GL-68) is required.
- GL-BR8** - Shift Indicator Light (GL-74) can only be equal to 'Y' (Yes) when Transmission Type (GL-67) is equal to 'M' (Manual), 'AM' (Automated Manual) or 'OT' (Other).
- GL-BR9** - If Fuel Economy Label Calculation Approach (GL-79) is equal to 'EV' (Electric Vehicle label) then Drive Source (TG-7) must equal 'E' (Electric motor).
- GL-BR10** - If Drive Source (TG-7) is equal to 'H' (Hybrid) then 5-Cycle Hybrid Calculation Approach (GL-80) is required.
- GL-BR11** - If Process Code (GL-0.5) is equal to 'N' (New) then Label Recalculation (GL-87) must equal 'N' (No), if present.

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- GL-BR12** - If Process Code (GL-0.5) is equal to 'C' (Correction) then Label Recalculation (GL-87) is required.
- GL-BR13** - If Process Code (GL-0.5) is equal to 'N' (New) then Re-label (GL-88) must not be present.
- GL-BR14** - If Label Recalculation (GL-87) is equal to 'Y' (Yes), then Re-label (GL-88) is required, otherwise it must not be present.
- GL-BR15** - Only one Fuel Usage (GL-89) can begin with 'G' (for Gasoline).
- GL-BR16** - Only one Fuel Usage (GL-89) can begin with 'D' (for Diesel).
- GL-BR17** - If Fuel Usage (GL-89) is equal to 'BE' (Battery Electric) or 'PE' (Plug-in Electric) then the Fuel Economy Value Unit (GL-90) must be equal to 'KWHR-100' (kilowatt-hour per 100 miles).
- GL-BR18** - If Fuel Usage (GL-89) is equal to 'H' (Hydrogen) then the Fuel Economy Value Unit (GL-90) must be equal to 'MPK' (miles per kilogram).
- GL-BR19** - If Fuel Usage (GL-89) is not equal to 'BE' (Battery Electric) or 'PE' (Plug-in Electric) then Manufacturer Unrounded Unadjusted Model Type City FE Value (GL-91), Manufacturer Unrounded Unadjusted Model Type Highway FE Value (GL-92), and Manufacturer Unrounded Unadjusted Model Type Combined FE Value (GL-93) are required.
- GL-BR20** - If Fuel Economy Label Calculation Approach (GL-79) is not equal to '5C-DRV' (Derived 5-cycle label) or 'EV' (Electric Vehicle label) then Manufacturer 5-Cycle Unrounded Adjusted Model Type City FE Value (GL-94), Mfr 5-Cycle Unrounded Adjusted Model Type Highway FE Value (GL-95), and Manufacturer 5-Cycle Unrounded Adjusted Model Type Combined FE Value (GL-96) are required, otherwise they must not be present.
- GL-BR21** - If Vehicle Fuel Category (TG-8) is not equal to 'EV' (Battery-Electric) then Manufacturer Calculated Rounded Adjusted Model Type City FE Value (GL-97), Manufacturer Calculated Rounded Adjusted Model Type Highway FE Value (GL-98) and Mfr Calculated Rounded Adjusted Model Type Combined FE Value (GL-99) are required.
- GL-BR22** - If Manufacturer Voluntary Lower MPG Label (GL-85) is equal to 'Y' (Yes) then Manufacturer Voluntary Lower City FE Label Value (GL-100) or Manufacturer

Voluntary Lower Highway FE Label Value (GL-101) is required, otherwise neither should be present.

- GL-BR23** - If present, Manufacturer Voluntary Lower City FE Label Value (GL-100) must be less than Manufacturer Calculated Rounded Adjusted Model Type City FE Value (GL-97).
- GL-BR24** - If present, Mfr Voluntary Lower Highway FE Label Value (GL-101) must be less than Mfr Calculated Rounded Adjusted Model Type Highway FE Value (GL-98).
- GL-BR25** - If Manufacturer Voluntary Lower MPG Label (GL-85) is equal to 'Y' (Yes) then Manufacturer Voluntary Lower Combined FE Label Value (GL-102) is required.
- GL-BR26** - If Vehicle Fuel Category (TG-8) is not equal to 'EV' (Battery-Electric) then Manufacturer City Label MPG Lower Range (GL-168), Manufacturer City Label MPG Upper Range (GL-169), Manufacturer Highway Label MPG Lower Range (GL-170), and Manufacturer Highway Label MPG Upper Range (GL-171) are required.
- GL-BR27** - If Vehicle Fuel Category (TG-8) is equal to 'DF' (Dual Fuel (2 separate fuel tanks, separate combustion)) or 'BF' (Bi-Fuel (2 separate fuel tanks combusted together)) then Model Type Driving Range (GL-103) is required.
- GL-BR28** - If Vehicle Fuel Category (TG-8) is equal to 'SF' (Single Fuel) and the first character of Fuel Usage (GL-89) is not equal to 'G' (for Gasoline) or 'D' (for Diesel) then Model Type Driving Range (GL-103) is required.
- GL-BR29** - If Fuel Usage (GL-89) is equal to 'E' (Ethanol) then Maximum Ethanol Percentage (GL-104) is required, otherwise it is not allowed.
- GL-BR30** - If Fuel Usage (GL-89) is equal to 'D' (Diesel) or 'DU' (Diesel, ultra low sulfur (15 ppm maximum)) then Maximum Bio-diesel Percentage (GL-105) is required, otherwise it is not allowed.
- GL-BR31** - If Class Code (CL-5) is greater than or equal to '10' (indicating it is not a passenger car or station wagon) then Model Type Footprint Description (GL-106.5), Wheel Base (GL-106.6), Front Track Width (GL-106.7), and Rear Track Width (GL-106.8) are required, otherwise they are optional.
- GL-BR32** - If Fuel Usage (GL-89) is not equal to 'BE' (Battery Electric) then Manufacturer Unrounded Unadjusted Base Level City FE Value (GL-111), Manufacturer Unrounded Unadjusted Base Level Highway FE Value (GL-112), and Mfr Unrounded Unadjusted Base Level Combined FE Value (GL-113) are required.

- GL-BR33** - If Fuel Economy Label Calculation Approach (GL-79) is not equal to '5C-DRV' (Derived 5-cycle label) or 'EV' (Electric Vehicle label) then Mfr 5-Cycle Unrounded Adjusted Base Level City FE Value (GL-114), Mfr 5-Cycle Unrounded Adjusted Base Level Highway FE Value (GL-115), and Mfr 5-Cycle Unrounded Adjusted Base Level Combined FE Value (GL-116) are required otherwise they must not be present.
- GL-BR34** - Test Group (GL-126) must exist in the system as a certified test group.
- GL-BR35** - Test Number (GL-127) must exist in Test Information (TI-1) for the Model Year (GL-3).
- GL-BR36** - If Sub configuration Index (GL-121) is 1 to 49 and Configuration Index (GL-117) is 1 to 499, which indicates that the subconfiguration is represented by a tested vehicle, then Test Number (GL-127) is required.
- GL-BR37** - The Test Category (TI-43) for this Test Number (GL-127) must be equal to 'FTP' (Test Procedure equal to 2, 11, 21, 25, 31, 35, 41, 45), 'US06' (Test Procedure equal to 90), 'SC03' (Test Procedure equal to 95) or 'HWY' (Test Procedure equal to 3).
- GL-BR38** - If Averaging Method (GL-133) is equal to 'N' (No averaging) then Averaging Group Indicator (GL-134) must not be present.
- GL-BR39** - If Averaging Method (GL-133) is not equal to 'N' (No averaging) then Averaging Weighting Factor (GL-135) is required.
- GL-BR40** - Engine Configuration Number (GL-25) is required when Drive Source (TG-7) is not equal to 'E' (Electric motor).
- GL-BR41** - If Fuel Usage (GL-89) is not equal to 'BE' (Battery Electric), 'PE' (Plug-in Electric) or 'H' (Hydrogen), then the Fuel Economy Value Unit (GL-90) must be equal to 'MPG' (miles per gallon).
- GL-BR42** - If the Process Code (GL-0.5) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (GL-2) of the dataset for which the report was requested.
- GL-BR43** - If the Process Code (GL-0.5) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (GL-2) of the submitted dataset.
- GL-BR44** - Manufacturer Code (GL-2) must exist in the system.

- GL-BR45** - Carline Manufacturer Code (GL-10) must exist in the system.
- GL-BR46** - Manufacturer Division Code (GL-11) must exist in the system.
- GL-BR47** - Carline Code (GL-12) must exist in the system for the Model Year (GL-3).
- GL-BR48** - Model Type Driving Range (GL-103) must match format 'nnn' for one driving range or 'nnn/nnn' for minimum and maximum driving range.
- GL-BR49** - Base Level Fuel Usage (GL-110.5) must match a Model Type Fuel Usage (GL-89).
- GL-BR50** - Test Group (GL-13.5) must exist in the system as a certified test group.
- GL-BR51** - The Fuel Usage for this Test Number (GL-127) must be the same as one of the Fuel Usages (GL-89) for this Label.
- GL-BR52** - Each Base Level must have a unique Inertia Weight Class (GL-110).
- GL-BR53** - Each Configuration within a Base Level must have a unique Configuration Index Number (GL-117).
- GL-BR54** - Each SubConfiguration within a Configuration must have a unique SubConfiguration Index Number (GL-121).
- GL-BR55** - Each Configuration within a Base Level must be a unique combination of Engine Code (GL-119), Axle Ratio (GL-120), and Transmission Configuration Code (GL-118).
- GL-BR56** - Each SubConfiguration within a Configuration must be a unique combination of Equivalent Test Weight (GL-123) and Road Load Horsepower (GL-122).
- GL-BR57** - If the Manufacturer Code for the Test Number (GL-127) is different than the Submitter's Manufacturer Code (in Submission Author Details), then the Submitter's Manufacturer Code must be one of the alternate manufacturer codes listed in the Test Manufacturer's Manufacturer Profile for the Model Year (GL-3).

GL-BR58 - If Transmission Type (GL-67) is equal to 'CVT' (Continuously Variable), then Number of Transmission Gears (GL-71) must equal '1'.

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CAFE (CA) Submission

- CA-BR1** - If Process Code (CA-3) is equal to 'R' (Report) or 'C' (Correction) then a record must exist in the system with the same CAFE Compliance Category (CA-4), Manufacturer Code (CA-0), and Model Year (CA-1).
- CA-BR2** - If Process Code (CA-3) is equal to 'N' (New) then a record must not exist in the system with the same CAFE Compliance Category (CA-4), Manufacturer Code (CA-0), and Model Year (CA-1).
- CA-BR3** - If CAFE Compliance Category (CA-4) is equal to 'LT' (Light Trucks) then CAFE Standard Type Indicator (CA-10) is required.
- CA-BR4** - For Model Year (CA-1) greater or equal to 2011, if CAFE Compliance Category (CA-4) is equal to 'LT' (Light Trucks) then CAFE Standard Type Indicator (CA-10) is required to equal 'R' (Reformed CAFE).
- CA-BR5** - If CAFE Standard Type Indicator (CA-10) is equal to 'R' (Reformed CAFE) then Reformed Model Type Index (CA-14) is required, otherwise it is not allowed.
- CA-BR6** - If Reformed Model Type Index (CA-14) is provided then a Fuel Economy Label must exist in the system for this Model Year (CA-1), Manufacturer Code (CA-0) and Model Type Index (CA-14).
- CA-BR7** - If CAFE Standard Type Indicator (CA-10) is equal to 'R' (Reformed CAFE) then Footprint Final Model Year Production Units (CA-20) and Footprint Target FE Value (miles per gallon) (CA-21) are required, otherwise they are not allowed.
- CA-BR8** - A Fuel Economy Label must exist in the system for the Model Type Index (CA-25), Manufacturer Code (CA-0), and Model Year (CA-1).
- CA-BR9** - Test Group (CA-34) must exist in the system as a certified test group.
- CA-BR10** - Test Number (CA-35) must exist in Test Information (TI-1) for the Model Year (CA-1).
- CA-BR11** - Test Number (CA-35) must be present when Subconfiguration Index (CA-29) is between 1 and 49 (inclusive) and Configuration Index (CA-26) is between 1 and 499 (inclusive), which indicates that the Subconfiguration is represented by a tested vehicle.
- CA-BR12** - The Test Category (TI-43) for this Test Number (CA-35) must be equal to 'FTP' (Test Procedure equal to 2, 11, 21, 25, 31, 35, 41, 45), 'US06' (Test Procedure

equal to 90), 'SC03' (Test Procedure equal to 95), or 'HWY' (Test Procedure equal to 3).

- CA-BR13** - If Averaging Method (CA-40) is equal to 'N' (No Averaging) then Averaging Group Indicator (CA-41) must not be present.
- CA-BR14** - If Averaging Method (CA-40) is not equal to 'N' (No Averaging) then Averaging Weighting Factor (CA-42) is required.
- CA-BR15** - Final Model Year Production Units (CA-5) must not equal zero.
- CA-BR16** - If the Process Code (CA-3) is equal to 'R' (Report) the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (CA-0) of the dataset for which the report was requested.
- CA-BR17** - If the Process Code (CA-3) is equal to 'N' (New) or 'C' (Correction) then the Manufacturer Code of the Submission Author Details must match the Manufacturer Code (CA-0) of the of the submitted dataset.
- CA-BR18** - If CAFE Standard Type Indicator (CA-10) is equal to 'R' (Reformed CAFE) then Manufacturer Calculated Unrounded Reformed CAFE Standard (CA-22.3) is required, otherwise it is not allowed.
- CA-BR19** - Subconfiguration Final Model Year Production Units (CA- 32) must not equal zero.
- CA-BR20** - The Fuel Usage for the Test Number (CA-35) must be the same as one of the Fuel Usages (GL-89) for the Label.
- CA-BR21** - Manufacturer Code (CA-0) must exist in the system.
- CA-BR22** - If Footprint Index (CA-14.5) is provided then a Fuel Economy Label Footprint must exist in the system for this Model Year (CA-1), Manufacturer Code (CA-0), Model Type Index (CA-14) and Footprint Index (CA-14.5).
- CA-BR23** - Each Base Level must have a unique Inertia Weight Class (CA-25.6).
- CA-BR24** - Each Configuration within a Base Level must have a unique Configuration Index Number (CA-26).
- CA-BR25** - Each SubConfiguration within a Configuration must have a unique SubConfiguration Index Number (CA-29).

- CA-BR26** - Each Configuration within a Base Level must be a unique combination of Engine Code (CA-28), Axle Ratio (CA-29), and Transmission Configuration Code (CA-27).
- CA-BR27** - Each SubConfiguration within a Configuration must be a unique combination of Equivalent Test Weight (CA-31) and Road Load Horsepower (CA-30).
- CA-BR28** - A Configuration with a new Configuration Index (CA-26) must not have the same combination of Engine Code (CA-28), Axle Ratio (CA-29), and Transmission Configuration Code (CA-27) as a Configuration previously entered in FE Label for the same Model Type and Base Level.
- CA-BR29** - A SubConfiguration with a new SubConfiguration Index (CA-29) must not have the same combination of Equivalent Test Weight (CA-31) and Road Load Horsepower (CA-30) as a SubConfiguration previously entered in FE Label for the same Model Type, Base Level, and Configuration.
- CA-BR30** - If the Manufacturer Code for the Test Number (CA-35) is different than the Submitter's Manufacturer Code (in Submission Author Details), then the Submitter's Manufacturer Code must be one of the alternate manufacturer codes listed in the Test Manufacturer's Manufacturer Profile for the Model Year (CA-1).

IUVP Data Business Rules

Vehicle Information (IV) Submission

- IV-BR1** - If Process Code (IV-1) is equal to 'R' (Report) or 'C' (Correction) or 'D' (Delete), then an active record must exist in the system with the same Manufacturer Code (IV-2), VIN (IV-3), Emission Program (IV-4) and Mileage Category (IV-20).
- IV-BR2** - If Process Code (IV-1) is equal to 'N' (New), then an active record must not exist in the system with the same Manufacturer Code (IV-2), VIN (IV-3), Emission Program (IV-4) and Mileage Category (IV-20).
- IV-BR3** - Manufacturer Code (IV-2) must exist in the system.
- IV-BR4** - Test Group (IV-6) must exist in the system as a certified test group.
- IV-BR5** - Evaporative/Refueling Family (IV-7) must exist in the system.

- IV-BR6** - If the Emission Program (IV-4) is equal to 'R1' (EPA In-Use Surveillance Testing (EPA only)), 'R2' (EPA In-Use Confirmatory Testing (EPA only)), 'C1' (California In-Use Confirmatory Testing Phase 1), or 'C2' (California In-Use Confirmatory Testing Phase 2), then the Manufacturer Code of the Submission Author Details must be 'EPA' or 'ARB'.
- IV-BR7** - The Model Year (IV-8) must match the embedded model year in the Test Group (IV-6).
- IV-BR8** - The Model Year (IV-8) must match the embedded model year in the Evaporative/Refueling Family (IV-7).
- IV-BR9** - The Manufacturer Code (IV-2) must match the manufacturer code embedded in the Test Group (IV-6).
- IV-BR10** - The Manufacturer Code (IV-2) must match the manufacturer code embedded in the Evaporative/Refueling Family (IV-7).
- IV-BR11** - Manufacturer Division Code (IV-10) must exist in the system.
- IV-BR12** - Carline Code (IV-11) must exist in the system if the Model Year (IV-8) is equal to 2010 or later.
- IV-BR13** - If Transmission Type (IV-23) is equal to 'OT' (Other) then Transmission Type if Other (IV-24) is required, otherwise it is not allowed.
- IV-BR14** - If Transmission Type (IV-23) is equal to 'M' (Manual), then Transmission Lockup (IV-25) must equal 'N' (No).
- IV-BR15** - If Creeper Gear (IV-26) is equal to 'Y' (Yes), then Transmission Type (IV-23) must equal 'M' (Manual).
- IV-BR16** - If Transmission Type (IV-23) is equal to 'CVT' (Continuously Variable), then Number of Transmission Gears (IV-27) must equal '1'.
- IV-BR17** - The Date of Inspection (IV-32) must not be greater than the submission date.
- IV-BR18** - If Commanded MIL Status (IV-35) is equal to 'Y' (MIL Commanded On) then Active Trouble Code Status (IV-36) must equal 'Y' (Active Trouble Codes Present).
- IV-BR19** - If Active Trouble Code Status (IV-36) is 'Y' (Active Trouble Codes Present) then at least one Active Trouble Code (IV-37) is required.

- IV-BR20** - If Readiness Status Complete (IV-38) is equal to 'N' (Not All Readiness Monitors Are Complete) then at least one Incomplete Readiness Status (IV-39) is required.
- IV-BR21** - If Incomplete Readiness Status (IV-39) is equal to 'OT' (Other), then Vehicle Comments (IV-42) is required.
- IV-BR22** - If Vehicle Rejection Code (IV-40) is not '0' (Vehicle Was Not Rejected), then Vehicle Rejection Comments (IV-41) is required.
- IV-BR23** - If Process Code (IV-1) is equal to 'D' (Delete) then Deletion Reason (IV-45) is required.
- IV-BR24** - IUVP Vehicle Information can only be accepted within the allowed time range of submissions for the Model Year (IV-8) and Mileage Category (IV-20).
- IV-BR25** - Deletion of an active IUVP Vehicle Information dataset is not allowed while it has active IUVP Test Information datasets. The active IUVP Test Information datasets must be deleted first.
- IV-BR26** - The Build Date (IV-33) must not be greater than the submission date.

Test Information (IT) Submission

- IT-BR1** - If Process Code (IT-1) is equal to 'R' (Report) or 'C' (Correction) or 'D' (Delete), then an active record must exist in the system with the same Manufacturer Code (IT-2), VIN (IT-3), Emission Program (IT-4), Mileage Category (IT-38), and Test Number (IT-5).
- ~~**IT-BR2** - If Process Code (IT-1) is equal to 'N', then an active record must not exist in the system with the same Manufacturer Code (IT-2), VIN (IT-3), Emission Program (IT-4), Mileage Category (IT-38), and Test Number (IT-5).~~
- IT-BR3** - An active Vehicle Information dataset must exist in the system with the same Manufacturer Code (IT-2), VIN (IT-3), Emission Program (IT-4), and Mileage Category (IT-38).
- IT-BR4** - Manufacturer Code (IT-2) must exist in the system.
- IT-BR5** - If the Emission Program (IT-4) is equal to 'R1' (EPA In-Use Surveillance Testing (EPA only)), 'R2' (EPA In-Use Confirmatory Testing (EPA only)), 'C1' (California In-Use

Confirmatory Testing Phase 1), or 'C2' (California In-Use Confirmatory Testing Phase 2), then the Manufacturer Code of the Submission Author Details must be 'EPA' or 'ARB'.

- IT-BR6** - If the Process Code (IT-1) is equal to 'R' (Report) or 'C' (Correction) or 'D' (Delete), then Test Number (IT-5) is required, otherwise it is not allowed.
- IT-BR7** - The Test Laboratory Code (IT-7) must be valid.
- IT-BR8** - If the Weighted Result (IT-29) is greater than the Federal In-Use Standard (IT-31), then the Federal Pass/Fail/Void Status (IT-10) must equal 'F' (Fail).
- IT-BR9** - If the Weighted Result (IT-29) is greater than the California In-Use Standard (IT-32), then the California Pass/Fail/Void Status (IT-11) must equal 'F' (Fail).
- IT-BR10** - If the Federal Pass/Fail/Void Status (IT-10) is equal to 'F' (Fail) or 'V' (Void), then Test Comments (IT-37) is required.
- IT-BR11** - If California Pass/Fail/Void Status (IT-11) is equal to 'F' (Fail) or 'V' (Void), then Test Comments (IT-37) is required.
- IT-BR12** - The Test Date (IT-12) must not be greater than the submission date.
- IT-BR13** - If the Test Condition (IT-13) is equal to 'SS' (Set to Spec) then the Manufacturer Code of the Submission Author Details must be 'EPA' or 'ARB'.
- IT-BR14** - If the Test Condition (IT-13) is equal to 'AM' (After Maintenance) then Test Comments (IT-37) is required.
- IT-BR15** - If Process Code (IT-1) is 'D' (Delete) then Deletion Reason (IT-39) is required.
- IT-BR16** - If the category of the Test Procedure (IT-14) is 'FTP' (Test Procedure equal to 2, 11, 21, 25, 31, 35, 41, 45), then Bag 1 Result (IT-33), Bag 2 Result (IT-34), and Bag 3 Result (IT-35) are required.
- IT-BR17** - If the category of the Test Procedure (IT-14) is 'FTP' (Test Procedure equal to 2, 11, 21, 25, 31, 35, 41, 45) and the test vehicle is a hybrid (Drive Source (TG-7) equals 'H' (Hybrid)), then Bag 4 Result (IT-36) is required.
- IT-BR18** - IUVP Test Information can only be accepted within the allowed time range of submissions for the model year (IV-8) of the test vehicle and the Mileage Category (IT-38).

IT-BR19 - Test Date (IT-12) must be greater than the Build Date (IV-33) of the vehicle.

IT-BR20 - Test Procedure Codes (IT-14) of '51', '52', '80', '81', '82', or '83' are not allowed.