

Verify Light-Duty Tier 3 Updates

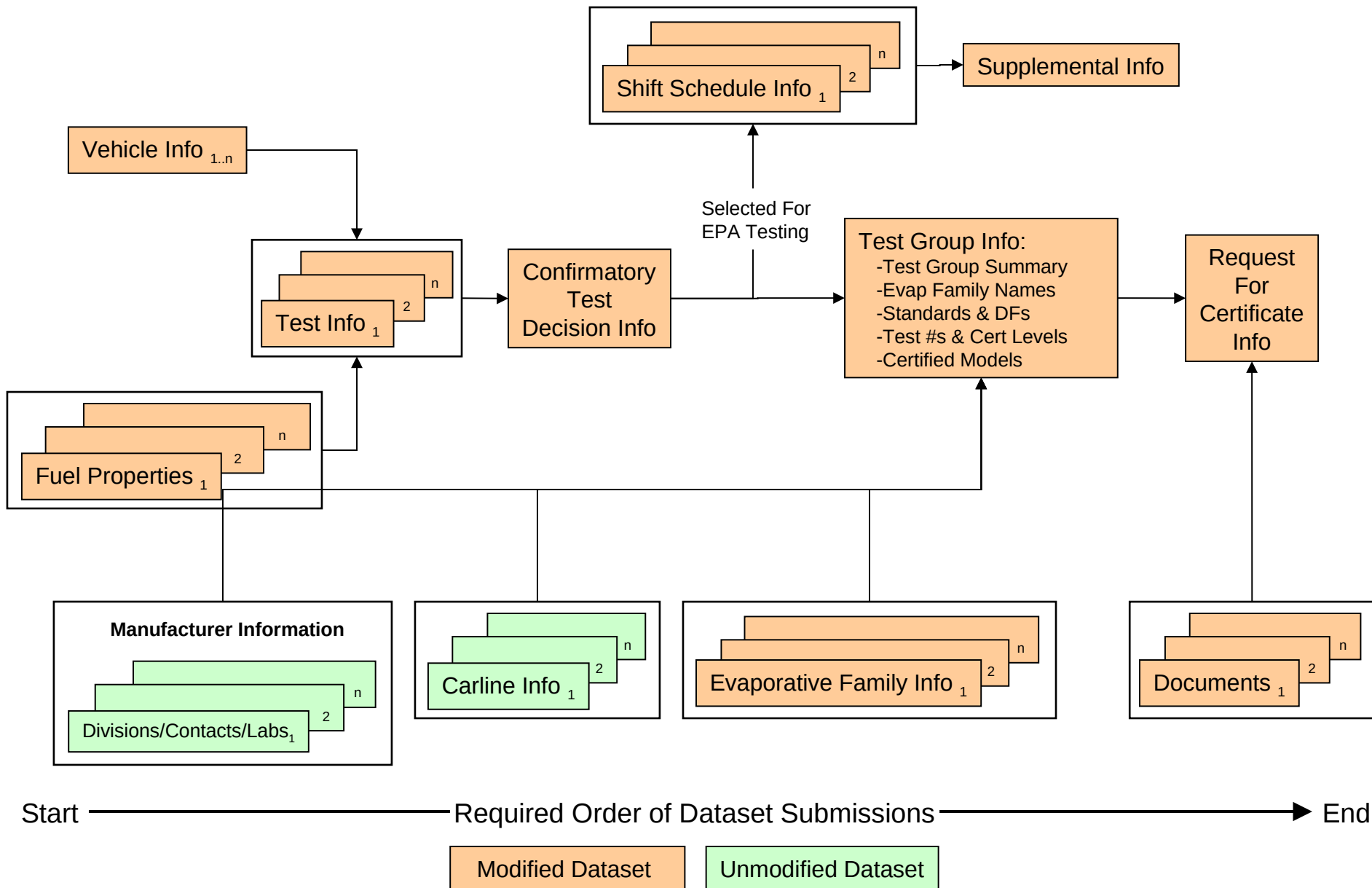
July 24, 2014



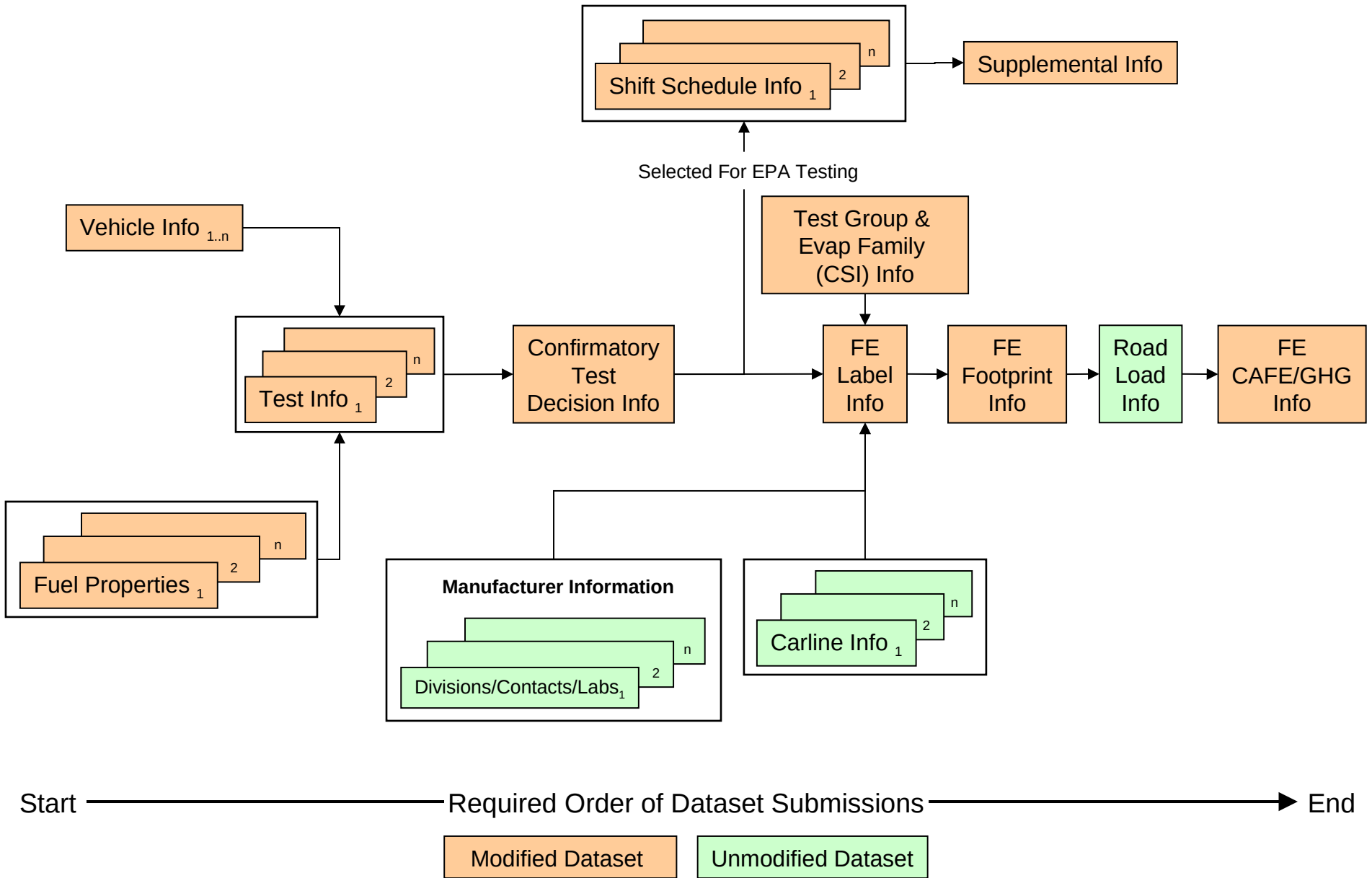
Verify Light-Duty Tier 3 Draft Deployment Schedule

- October 2011: Changes to CREE/Opt-CREE Calculations in Test Information and Test Group, Footprint, and Model Year 2011/2012+ CAFE/GHG Datasets (Release 9)
- May 2012: New Road Load Dataset, New Footprint Dataset Calculations, New Test Information ADFE & ADCREE Calculations, Updates to Model Year 2013+ FE Label Dataset (Release 10)
- November 2012: LEV3 Changes & Integration of EPA CAFE/GHG Calculations into Verify (Release 11)
- March 11, 2013: Completion of CAFE/GHG Calculation Integration (Release 11.1)
- **September 2014: Tier 3 Updates**

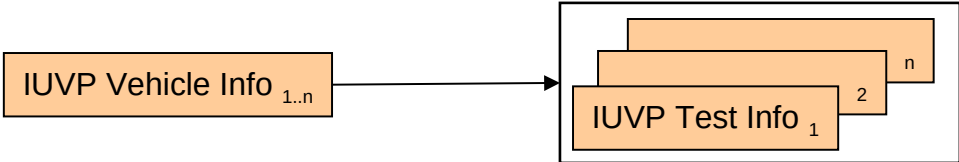
Verify Light-Duty Certification Dataset Submission Process (07/24/2014)



Verify Light-Duty Fuel Economy Dataset Submission Process (07/24/2014)



Verify Light-Duty IUVP Dataset Submission Process (07/24/2014)



Start ————— Required Order of Dataset Submissions —————> End

Modified Dataset

Unmodified Dataset

Changes to Vehicle Information Dataset

- New data element for Leak Family Identifier (VI-6.5)
 - Manufacturers will enter a three character string to identify each Leak Family
- New data element for Leak Family Name (VI-6.6)
 - Verify will create the Leak Family Name by concatenating the Leak Family Identifier with the Evaporative Family Name

Changes to Fuel Properties Dataset

- New Test Fuel Types (FP-4)
 - 28 = COLD CO E10 REGULAR GASOLINE (TIER 3)
 - 29 = COLD CO E10 PREMIUM GASOLINE (TIER 3)
 - 30 = COLD CO DIESEL 7-15 PPM SULFUR
 - 48 = TIER 3 E10 REGULAR GASOLINE (9 RVP @Low Alt.)
 - 49 = TIER 3 E10 PREMIUM GASOLINE (9 RVP@Low Alt.)
 - 58 = TIER 3 E10 REGULAR GASOLINE (10 RVP-FFV ORVR Only)
 - 59 = TIER 3 E10 PREMIUM GASOLINE (10 RVP-FFV ORVR Only)
- New business rule:
 - If Process Code (FP-0.5) equals 'N' (New) then Test Fuel Type (FP-4) cannot equal '24' (Cold CO Regular (CERT)) or '25' (Cold CO Premium (CERT)).

Changes to Test Information Dataset

- New Test Procedures (TI-8)

- 9 = HWY80 (80 mph Highway Test)
- 60 = AC17 - Manual A/C Controls
- 61 = AC17 - Automatic A/C Controls
- 64 = Evap CARB Fuel Only (Rig) Test
- 65 = Evap Canister Bleed Test
- 66 = Leak Test - Evap Fuel System OBD
- 67 = Leak Test - Port Near Canister
- 68 = Leak Test - Port Near Fuel Pipe
- 69 = Leak Test - Evap Gas Cap

- New Test Fuel Type (TI-9)

- 28 = COLD CO E10 REGULAR GASOLINE (TIER 3)
- 29 = COLD CO E10 PREMIUM GASOLINE (TIER 3)
- 30 = COLD CO DIESEL 7-15 PPM SULFUR
- 48 = TIER 3 E10 REGULAR GASOLINE (9 RVP @Low Alt.)
- 49 = TIER 3 E10 PREMIUM GASOLINE (9 RVP @Low Alt.)
- 58 = TIER 3 E10 REGULAR GASOLINE (10 RVP-FFV ORVR Only)
- 59 = TIER 3 E10 PREMIUM GASOLINE (10 RVP-FFV ORVR Only)

- New Business Rule:

- If Process Code (TI-0.5) equals 'N' (New) then Test Fuel Type (TI-9) cannot equal '24' (Cold CO Regular (CERT)) or '25' (Cold CO Premium (CERT)).

Changes to Test Information Dataset- continued

- New data element for E10 Evaporative Test Measurement Method (TI-24.5)
 - ACTUAL = Actual Total Hydrocarbon Equivalent Measurement (with speciation)
 - CALC = Calculated (1.08 x FID Total Hydrocarbons)
 - FID-EPA = Actual FID w/o Speciation (EPA Only)
- New data element for Drive Cycle Speed Tolerance Criteria (TI-24.6)
 - PART86 = Used Part 86 (+/- 2 mph, +/- 1 sec)
 - PART1066 = Used Part 1066 (+/- 2.0 mph, +/- 1.0 sec)
- New data element for Road Speed Fan Usage Indicator (TI-24.8)

Changes to Test Information Dataset- continued

- New business rules:
 - If the Test Fuel Type (TI-9) equals '46' (CARB LEV3 E10 REGULAR GASOLINE), '47' (CARB LEV3 E10 PREMIUM GASOLINE), AND the Test Procedure (TI-8) equals '23' (FED FUEL 2 DAY EVAP (BUTANE)), '27' (CA FUEL 2 DAY EVAP (BUTANE LOAD)), '32' (FED FUEL RUNNING LOSS), '34' (FED FUEL 3 DAY EVAP(BUTANE LOAD)), '37' ('CA FUEL RUNNING LOSS'), '38' (CA FUEL 3 DAY EVAP (BUTANE LOAD)), '43' (FED FUEL 2DAY EVAP(HEAT TO LOAD)), '47' (CA FUEL 2 DAY EVAP(HEAT TO LOAD)), '58' (TIER 3 E10 REGULAR GASOLINE (10 RVP-FFV ORVR Only)), or '59' (TIER 3 E10 PREMIUM GASOLINE (10 RVP-FFV ORVR Only)), then E10 Evaporative Test Measurement Method (TI-24.5) is required.
 - If the Submitting Manufacturer Code is not 'LOD' or 'EPA' then E10 Evaporative Test Measurement Method (TI-24.5) cannot equal 'FID-EPA'.
 - If the Submitting Manufacturer Code is 'LOD' or 'EPA' then E10 Evaporative Test Measurement Method (TI-24.5) must either match the E10 Evaporative Test Measurement Method (TI-24.5) for the test specified Test Number (DI-17.5) by the manufacturer for the corresponding test procedure/test fuel type combination in Decision Information, or, must equal 'FID-EPA' (Actual FID w/o Speciation (EPA Only)).

Changes to Test Information Dataset- continued

- New Test Result/Emission Name (TI-19)
 - HC-TOTAL-EQUIV (Total Hydrocarbon equivalent – Evap-only)
 - METHANE-COMB (Combined CH₄ for HD 2b/3 vehicles only)
 - N₂O-COMB (Combined Nitrous Oxide for HD 2b/3 vehicles only)
 - LEAK-DIA - Effective Leak Diameter (inches)
 - LEAK-GAS CAP - Gas Cap Leakage (cc/min)
- New business rules:
 - If Test Procedure (TI-8) = '65' (Evap Canister Bleed Test), '66' (Leak Test - Evap Fuel System OBD), '67' (Leak Test - Port Near Canister) or '68' (Leak Test - Port Near Fuel Pipe) then Test Result/Emission Name (TI-19) must only equal 'LEAK-DIA' (Effective Leak Diameter).
 - If Test Procedure (TI-8) = '69' (Leak Test - Evap Gas Cap) then Test Result/Emission Name (TI-19) must only equal 'LEAK-GAS CAP' (Gas Cap Leakage).
 - If the Fuel Type (TI-9) equals '46' (CARB LEV3 E10 REGULAR GASOLINE), '47' (CARB LEV3 E10 PREMIUM GASOLINE), '48' (TIER 3 E10 REGULAR GASOLINE), or '49' (TIER 3 E10 PREMIUM GASOLINE) AND the Test Procedure (TI-8) equals '23' (FED FUEL 2 DAY EVAP (BUTANE)), '27' (CA FUEL 2 DAY EVAP (BUTANE LOAD)), '32' (FED FUEL RUNNING LOSS), '34' (FED FUEL 3 DAY EVAP (BUTANE LOAD)), '37' (CA FUEL RUNNING LOSS), '38' (CA FUEL 3 DAY EVAP (BUTANE LOAD)), '43' (FED FUEL 2DAY EVAP (HEAT TO LOAD)), '47' (CA FUEL 2 DAY EVAP (HEAT TO LOAD)), '58' (TIER 3 E10 REGULAR GASOLINE (10 RVP-FFV ORVR Only)), or '59' (TIER 3 E10 PREMIUM GASOLINE (10 RVP-FFV ORVR Only)), then Test Result/Emission Name (TI-19) must include 'HC-TOTAL-EQUIV'.
 - If Test Procedure (TI-8) is not equal to '2' (CVS 75 AND LATER (W/O CAN. LOAD)), '21' (FED FUEL 2 DAY EXH (BUTANE LOAD)), '25' (CA FUEL 2 DAY EXH (BUTANE LOAD)), '31' (FED FUEL 3 DAY EXH (BUTANE LOAD)), '35' (CA FUEL 3 DAY EXH (BUTANE LOAD)), '41' (FED FUEL 2 DAY EXH (HEAT TO LOAD)) or '45' (CA FUEL 2 DAY EXH (HEAT TO LOAD)); then, Test Result/Emission Name (TI-19) cannot equal 'METHANE-COMB' or 'N₂O-COMB'.

Changes to Decision Information Dataset

- New values for Federal Exhaust Emission Standard Level (DI-9)
 - T3B160 - Federal Tier 3 Bin 160
 - T3B125 - Federal Tier 3 Bin 125
 - T3B110 - Federal Tier 3 Transitional Bin 110
 - T3B85 - Federal Tier 3 Transitional Bin 85
 - T3SULEV30 – Federal Tier 3 Transitional LEV-II SULEV30 Carryover
 - T3B70 - Federal Tier 3 Bin 70
 - T3B50 - Federal Tier 3 Bin 50
 - T3B30 - Federal Tier 3 Bin 30
 - T3B20 - Federal Tier 3 Bin 20
 - T3B0 - Federal Tier 3 Bin 0
 - HDV2B395 - Federal Tier 3 HD Class 2b Transitional Bin 395
 - HDV2B340 - Federal Tier 3 HD Class 2b Transitional Bin 340
 - HDV2B250 - Federal Tier 3 HD Class 2b Bin 250
 - HDV2B170 - Federal Tier 3 HD Class 2b Bin 170
 - HDV2B150 - Federal Tier 3 HD Class 2b Bin 150
 - HDV2B0 - Federal Tier 3 HD Class 2b Bin 0
 - HDV3B630 - Federal Tier 3 HD Class 3 Transitional Bin 630
 - HDV3B570 - Federal Tier 3 HD Class 3 Transitional Bin 570
 - HDV3B400 - Federal Tier 3 HD Class 3 Bin 400
 - HDV3B270 - Federal Tier 3 HD Class 3 Bin 270
 - HDV3B230 - Federal Tier 3 HD Class 3 Bin 230
 - HDV3B200 - Federal Tier 3 HD Class 3 Bin 200
 - HDV3B0 - Federal Tier 3 HD Class 3 Bin 0
- New business rules:
 - 'T3B110', 'T3B85' and 'T3SULEV30' are not allowed for Model Year (DI-5) 2020 and later.
 - 'HDV2B395', 'HDV2B340', 'HDV3B630' and 'HDV3B570' are not allowed for Model Year (DI-5) 2022 and later.

Changes to Decision Information Dataset- continued

- New values for Federal Evaporative Emission Standard Level (DI-11)
 - T3 - Federal Tier 3 Evap
 - T3-3Z - Federal Tier 3 LEV-III Zero Evap (Option 1) Carryover
- New business rule:
 - 'T3-3Z' is not allowed for Model Year (DI-5) 2022 and later.
- New values for Manufacturer Test Procedures Used (DI-18)
- New values for Test Fuel Type Code (DI-19)

Changes to Decision Information Dataset- continued

- New values for Test Procedure Codes Selected for EPA Confirmatory Testing (DI-38)
- New values for Test Fuel Type Code for EPA Confirmatory Testing (DI-38.5)
- New data element for EPA Road Speed Fan Usage Indicator (DI-38.8)

Changes to Shift Schedule Dataset

- New/Deleted values for Drive Schedule Name Code (SS-56)
 - NEW: '006' - HWY80
 - NEW: '007' - LA92
 - DELETED: '021' - LA4 (prep only);
 - DELETED: '022' - LA4;
 - DELETED: '023' - 505;
 - DELETED: '031' - HWFE (no warmup);
 - DELETED: '101' - SCC#1;
 - DELETED: '102' - SCC#2;
 - DELETED: '103' - BIH (Auto);
 - DELETED: '104' - BIH (Manual);
 - DELETED: '111' - 3BagHWFE;
 - DELETED: '112' - 3Bag505;
 - DELETED: '121' - LA4 (perturbed 1.5)

Changes to Supplemental Information Dataset

- New values for Test Procedure Codes Selected For EPA Confirmatory Testing (SI-41.5)
- New value for Primary Engine Cooling Fan Placement Code (SI-42)
 - 20 = Road Speed Fan (width 31.5" x height 24")
- New data element Road Speed Fan Setup Specifications (SI-44.5)
- New business rule:
 - If Primary Engine Cooling Fan Placement Code (SI-42) equals '20' (Road Speed Fan) then Road Speed Fan Setup Specifications (SI-44.5) is required

Changes to Supplemental Information Dataset- continued

- New data element E10 Evaporative Test Measurement Method (SI-49.5)
- New data element Drive Cycle Speed Tolerance Criteria (SI-49.7)
- New values for Exhaust Emission Standard Level (SI-57A)
- New business rules:
 - 'T3B110', 'T3B85' and 'T3SULEV30' are not allowed for Model Year (SI-3.5) 2020 and later.
 - 'HDV2B395', 'HDV2B340', 'HDV3B630' and 'HDV3B570' are not allowed for Model Year (SI-3.5) 2022 and later.
- New values for Test Procedure (SI-92 & SI-98)
- New values for Test Result/Emission Name (SI-59 & SI-71)
- New values for Evaporative/Refueling Standard Level (SI-57B)

Changes to Evap Family Information Dataset

- New data elements:
 - Leak Family Indicator (EV-20)
 - Canister Bleed Test Indicator (EV-21)
 - CARB Fuel Only (Rig) Test Indicator (EV-22)
 - Leak Family Identifier (EV-23)
 - Leak Family Name (EV-24)
 - Applicability of Leak Family Requirements (EV-25)
 - Leak Family Standard (EV-26)
 - Leak Family Description (EV-27)
 - Applicability of Evaporative Canister Bleed Emission Test (EV-28)
 - Evaporative Canister Bleed Test Comments (EV-29)
 - Applicability of CARB Fuel Only (Rig) Test (EV-30)
 - CARB Fuel Only (Rig) Test Comments (EV-31)
 - E10 Evaporative Test Measurement Method (EV-32)

Changes to Evap Family Information Dataset

- New business rules:
 - If Leak Family Indicator (EV-20) equals 'Y' (Yes) then Leak Family Identifier (EV-23) is required.
 - If Leak Family Identifier (EV-23) exists then Applicability of Leak Family Requirements (EV-25) is required.
 - If Leak Family Identifier (EV-23) exists then Leak Family Standard (EV-26) is required.
 - The maximum allowed value for Leak Family Standard (EV-26) must be less than or equal to 0.040.
 - If Canister Bleed Test Indicator (EV-21) equals 'Y' (Yes) then Applicability of Evaporative Canister Bleed Emission Test (EV-28) is required.
 - If CARB Fuel Only (Rig) Test Indicator (EV-22) equals 'Y' (Yes) then Applicability of CARB Fuel Only (Rig) Test (EV-30) is required.

Changes to Test Group Information

Dataset- continued

- New values for Exhaust Emission Standard Level (TG-201)
- NEW business rules:
 - 'T3B110', 'T3B85' and 'T3SULEV30' are not allowed for Model Year (TG-6) 2020 and later.
 - 'HDV2B395', 'HDV2B340', 'HDV3B630' and 'HDV3B570' are not allowed for Model Year (TG-6) 2022 and later.
- New values for Test Procedure (TG-204.5 & TG-223.5)
- New values for Test Result/Emission Name (TG-209 & TG-225)
- New data format for Ratio of NMOG/NMHC (TG-207)
 - Changed from N(3,2) to N(7,6)
- New values for Evaporative/Refueling Standard Level (TG-224)
- NEW business rule :
 - 'T3-3Z' is not allowed for Model Year (TG-6) 2022 and later.

Changes to Test Group Information

Dataset- continued

- Modified data element name and description for TG-216.8
 - Changed to “SFTP Tier 2 Compliance Indicator”
- Modified data element name and description for TG-216.9
 - Changed to “SFTP Tier 2 Composite CO Option”
- New data element for SFTP Tier 3 Compliance Indicator (TG-260)
- New business rule:
 - SFTP Tier 2 Compliance Indicator (TG-216.8) and SFTP Tier 3 Compliance Indicator (TG-260) cannot both equal 'Y' (Yes).
- New data element for SFTP LEVIII Compliance Indicator (TG-261)
- New Tier 3/LEVIII SFTP calculations
- Modified data element name and description for TG-217.2
 - Changed to “Test Group Fuel – **Charge Depleting**”

Changes to Test Group Information Dataset- continued

- New data elements:
 - Test Group Fuel – SFTP LEVIII (TG-262)
 - Official SFTP LEVIII FTP Test Number (TG-263)
 - Official SFTP LEVIII US06 Test Number (TG-264)
 - Official SFTP LEVIII SC03 Test Number (TG-265)
 - NMOG+NOX-COMP – Tier 3 (TG-255) (Verify-calculated field)
 - NMOG+NOX-COMP – LEVIII (TG-256) (Verify-calculated field)
 - CO-COMP – LEVIII (TG-257) (Verify-calculated field)
- Modified data element names/descriptions
 - Changed to “HC-NM+NOX-COMP – **Tier 2**” (TG-219.5)
 - Changed to “CO-COMP – **Tier 2/Tier 3**” (TG-219.6)
 - Changed to “PM-COMP – **Tier 2**” (TG-219.7)

Changes to Request For Certificate Dataset

- Modified description for “Meet All Applicable Requirements Indicator” (CR-10)
 - Does this test group/evaporative family comply with all the applicable requirements of 40 CFR Parts **85, 86, 88, 600, 1037, 1065, 1066** and other regulations which may apply?
- Modifications to Certificate templates

Changes to FE Label Dataset

- Modified data element name/description for GL-200
 - Changed to “**Litmus Bypass Indicator**” from “MDVP-Only or ICI-Indicator”.

Changes to IUVP Vehicle Information Dataset

- New data element for Leak Family Identifier (IV-7.1)
- New business rule:
 - The combination of Evaporative Family Name (IV-7) and Leak Family Identifier (IV-7.1) must be an existing Evap/Refueling Family Name(EV-1) and Leak Family Identifier (EV-23) combination previously entered in the Evap/Refueling Family dataset.
- New data element for Mileage Since OBD Leak Check Performed (IV-39.5)
- New business rule:
 - If 'Readiness Status Complete?' (IV-38) equals 'Y' (Yes) or 'Incomplete Readiness Status Codes' (IV-39) does not include 'EVAP' (Evaporative System) then Mileage Since OBD Leak Check Performed (IV-39.5) is required.

Changes to IUVP Test Information Dataset

- New values for Test Procedure (IT-14)
- New values for Fuel Type (IT-15)
- New values for Test Result/Emission Name (IT-28)
- New business rules:
 - If Test Procedure (IT-14) is not equal to '3' (HWFE Highway Test) then Test Result/Emission Name (IT-28) cannot equal 'COMB-CREE' or 'COMB-OPT-CREE'.
 - If Model Year (IV-8) of the IUVP test vehicle is \geq 2012 and Test Procedure (IT-14) is equal to '3' (HWFE Highway Test) then Test Result/Emission Name (IT-28) must include 'COMB-CREE' or 'COMB-OPT-CREE'.
 - If the Fuel Type (IT-15) equals '46' (CARB LEV3 E10 REGULAR GASOLINE), '47' (CARB LEV3 E10 PREMIUM GASOLINE), '48' (TIER 3 E10 REGULAR GASOLINE), or '49' (TIER 3 E10 PREMIUM GASOLINE) AND the Test Procedure (IT-14) equals '23' (FED FUEL 2 DAY EVAP (BUTANE)), '27' (CA FUEL 2 DAY EVAP (BUTANE LOAD)), '32' (FED FUEL RUNNING LOSS), '34' (FED FUEL 3 DAY EVAP(BUTANE LOAD)), '37' ('CA FUEL RUNNING LOSS'), '38' (CA FUEL 3 DAY EVAP (BUTANE LOAD)), '43' (FED FUEL 2DAY EVAP(HEAT TO LOAD)), '47' (CA FUEL 2 DAY EVAP(HEAT TO LOAD)), '58' (TIER 3 E10 REGULAR GASOLINE (10 RVP-FFV ORVR Only)), or '59' (TIER 3 E10 PREMIUM GASOLINE (10 RVP-FFV ORVR Only)), then Test Result/Emission Name (IT-28) must include 'HC-TOTAL-EQUIV'.
- New data element for E10 Evaporative Test Measurement Method (IT-38.5)
- New values for Test Result Unit (IT-30)
 - in = inches
 - cc/min = cubic centimeters per minute

Changes to Footprint Dataset

- New data elements for Car/Truck Determination
 - To be deployed in release after Tier 3

Verify Manufacturer Testing Information

- Tier 3 Manufacturer Testing URL:
 - <https://test.epacdx.net/>
- Tier 3 testing dates:
 - September 3 through September 16th
 - Testing meetings will be held on Tuesdays and Thursdays at 3pm during the 2 testing weeks
 - Issue trackers must be submitted to verify@epa.gov by 3pm the day before the applicable testing meeting
- Contact Karen Danzeisen if you have questions about the upcoming Light-Duty Verify system testing
 - danzeisen.karen@epa.gov (734-214-4444)
- Join the Verify Listserve
- Draft documents will be posted to the Verify website under the Light Duty section:
 - <http://epa.gov/otaq/verify/publications.htm#workdocuments>