



# **Nonroad Small Spark-Ignited (SI) Engines and Evaporative Components**

U.S. EPA Compliance Workshop  
Washtenaw Community College  
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# Topics

Definitions

Regulations and Standards

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Potential Tech Amendments

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Post-Certification

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Top Averaging, Banking, and Trading (ABT) Report Issues

Top Annual Production Volume Report Issues

Confirmatory Testing Process

EPA Audits

In-Use Testing

Concluding Thoughts



## Definition of “Small SI”

- Nonroad Small Spark-Ignited (SI) engines
  - Power ratings  $\leq 19$  kW
    - Allowance for engines  $\leq 30$  kW and  $\leq 1000$  cc
  - Primarily used in lawn & garden applications
- Handheld (e.g., Carried by operator during operation; Operates multi-positionally; all engines  $\leq 80$ cc)
  - Class III (<20 cc displacement engine)
  - Class IV (displacement  $\geq 20$  cc and <50 cc)
  - Class V (displacement  $\geq 50$  cc)
- Nonhandheld
  - Class I (>80 cc and <225 cc)
  - Class II ( $\geq 225$  cc)



# Definition of “Small SI Equipment”

*Equipment* means any mechanical device commonly known as equipment, including vehicles. If the equipment has an installed engine, the term *equipment* includes the installed engine and fuel system components. (see 1054.801)

Small SI Equipment has a Small SI engine installed in it.



## Definition of “Portable Fuel Container”

*Portable fuel container* means any reusable container designed and marketed (or otherwise intended) for use by consumers for receiving, transporting, storing, and dispensing gasoline, diesel fuel, or kerosene. For the purpose of this subpart, all utility jugs that are red, yellow or blue in color are deemed to be portable fuel containers, regardless of how they are labeled or marketed. (see Section 59.680)



# EPA Regulations for Small SI and Nonroad Evaporative Components

- 40 CFR 1054 – Small SI Engines and Equipment
- 40 CFR 1060 – Nonroad Evaporative Emissions
- 40 CFR 1068 – General Compliance Provisions
- 40 CFR 1065 – Engine Testing Procedures
- 40 CFR 59, Subpart F – Portable Fuel Containers



# Guidance Documents

- 2018
  - Update on Deployment of New Module for Reporting Defects and Recalls and Changes to MyCDX - CD-18-01 (All Industries)
- 2017
  - Template for Replacement Engine Exemption CD-17-15 (HD On-highway, NRCl, Marine Cl, Stationary, Large SI, Small SI, Marine SI, Rec Vehicles)
  - Update of EPA Standardized Naming Conventions for Engine Family, Test Group, Evaporative/Refueling Family, Permeation Family, Emission Family, and Durability Group - CD-17-10 (All Industries)
- 2015
  - Production Line Testing (PLT) Report Clarification (Small SI) CD-15-21





## Current Exhaust Standards (g/kW-hr)

Engine Class	HC+NO <sub>x</sub>	CO*	Alternate CO (on CARB LEVIII fuel)
Class I	10.0	610	549
Class II	8.0	610	549
Class III	50	805	536
Class IV	50	805	536
Class V	72	603	536

\* CO standard for Auxiliary Marine Generator engines is 5.0 g/kW-hr



# Current Evaporative Requirements

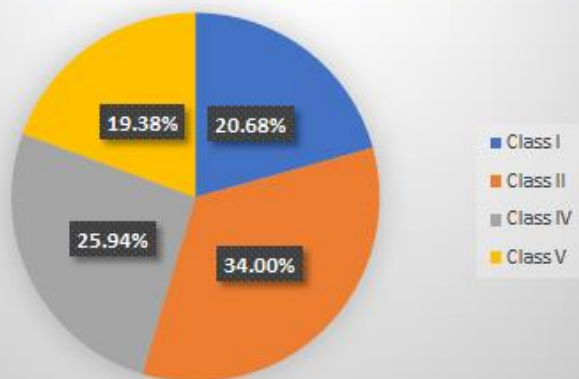
- Regulated Items:
  - Fuel Line Permeation
    - 15 g/m<sup>2</sup>/day standard for non-cold-weather fuel lines
    - 10 g/m<sup>2</sup>/day standard for Low-Emissions fuel lines
    - 225 g/m<sup>2</sup>/day standard for cold-weather fuel lines
  - Fuel Tank Permeation
    - 1.5 g/m<sup>2</sup>/day standard at 28°C, 2.5 g/m<sup>2</sup>/day standard at 40°C
    - Provisions for design-based certification (i.e., no test required)
  - Marine SI Diurnal System
    - 0.40 g/gal/day for trailerable vessels and 0.16 g/gal/day for Nontrailerable vessels
    - Provisions for design-based certification (i.e., no test required)
  - Running Loss (Small SI nonhandheld only)
    - Route fuel tank vapors to intake during engine operation
    - Seal fuel tank during normal operation
    - Obtain CARB approval
  - Equipment (both Handheld and Nonhandheld)
    - Use certified fuel tank and fuel lines
    - Control Running Losses (nonhandheld only)
  - Portable Fuel Containers – 0.3 g/gal/day



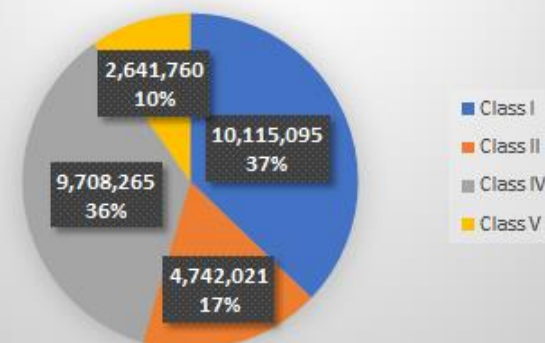
# Small SI Engine Industry

Model Year	Number of Manufacturers	Number of Engine Families
1998	43	432
2005	99	713
2011	105	985
2018	105	1006

2018 Service Class (Families) for Small SI



2018 Service Class (Actual Production) for Small SI





## Nonroad SI Evap Industry

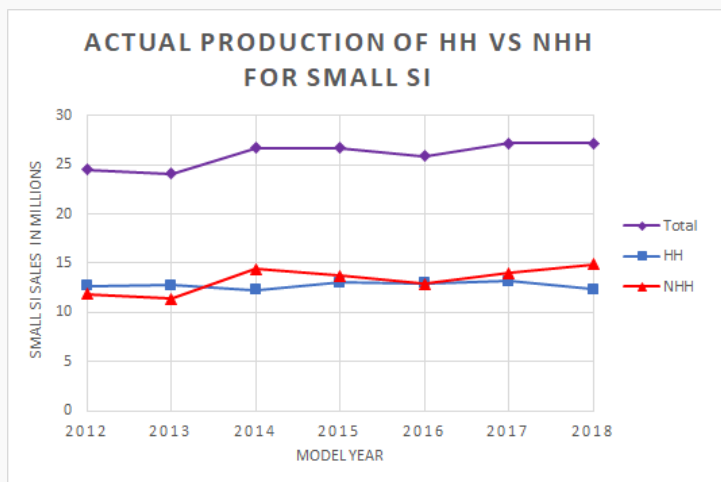
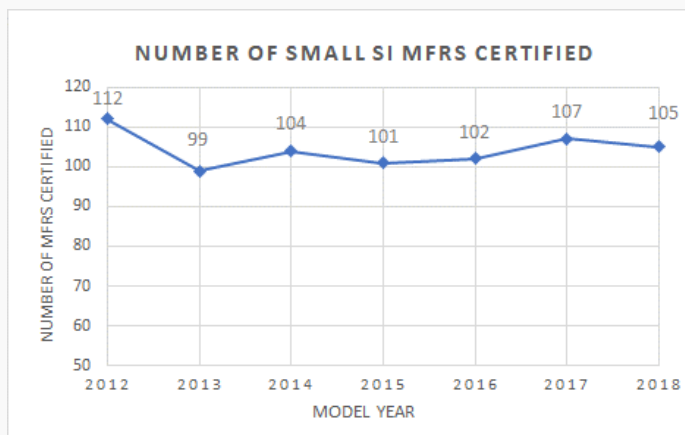
<b>Model Year</b>	<b>Number of Total Manufacturers</b>	<b>No. of Fuel Line Families</b>	<b>No. of Fuel Tank Families</b>	<b>No. of Diurnal Families</b>	<b>No. of Equipment Families</b>
2012	254	108	183	28	351
2015	294	138	242	33	402
2018	318	136	258	31	450

## Portable Fuel Container (PFC) Industry

Note: PFC certificates are 5-year certificates

<b>Model Year</b>	<b>Number of Manufacturers</b>	<b>No. of Valid Certificates</b>
2009	4	7
2014	6	21
2018	9	25

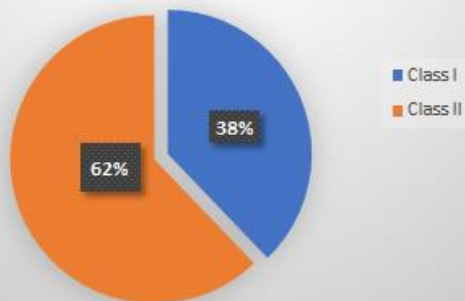
## Small SI Engine Industry Information



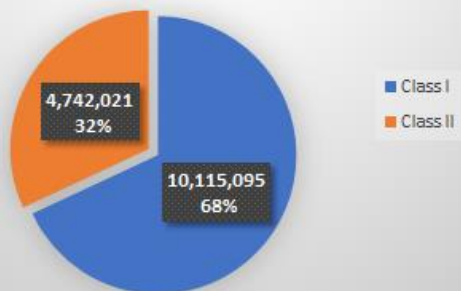
- The number of Small SI manufacturers has remained rather flat over the last 6 years, with 112 being the highest and 99 being the lowest number of manufacturers.
- Actual production numbers have increased slightly from 2012, going from approximately 25 million in 2012 to about 27 million in 2018
- The mix of handheld and Nonhandheld engine sold in the U.S. has remained rather constant since 2012, with perhaps a downward trend for handheld engines in 2018.

## Small SI Engine Industry Information

2018 Service Class (Families) for Small SI NHH



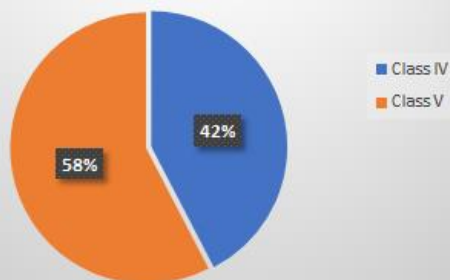
2018 Service Class (Actual Production) for Small SI NHH



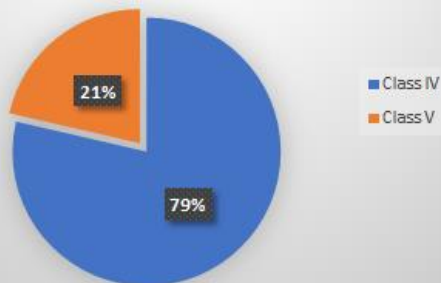
While Nonhandheld Class II engines in 2018 represented 62% of the Nonhandheld engines certified by EPA, they comprised only 32% of the total Nonhandheld engine sales in the U.S.

## Small SI Engine Industry Information

2018 Service Class (Families) for Small SI HH

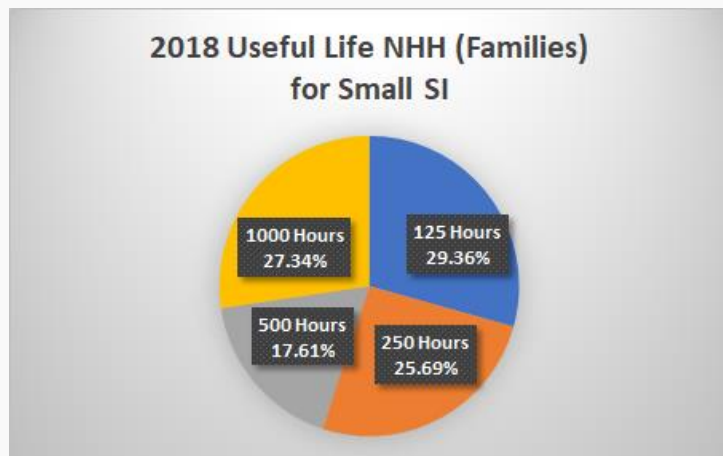


2018 Service Class (Actual Production) for Small SI HH

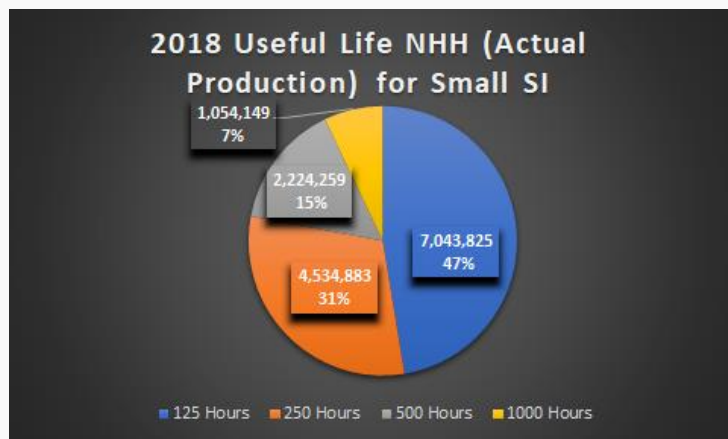


While handheld Class V engines in 2018 represented 58% of the handheld engines certified by EPA, they comprised only 21% of the total handheld engine sales in the U.S.

## Small SI Engine Industry Information



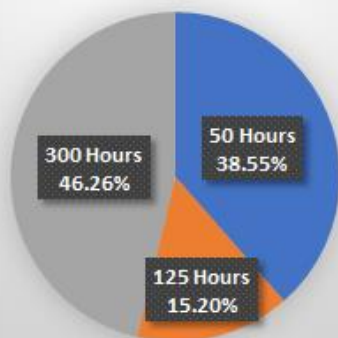
While Nonhandheld engines with 500 or 1000 hour useful life designations represent about 45% of the engine families, they comprise 22% of actual production numbers.





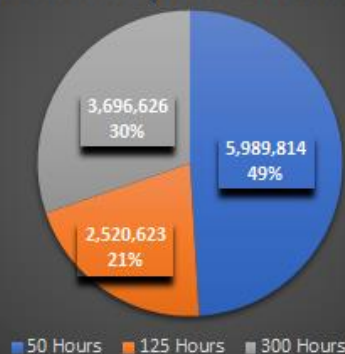
## Small SI Engine Industry Information

2018 Useful Life HH (Families)  
for Small SI



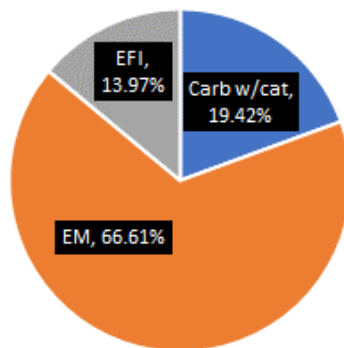
While handheld engines with 300 hour useful life designation represent about 46% of the engine families, they comprise 30% of actual production numbers.

2018 Useful Life HH (Actual  
Production) for Small SI



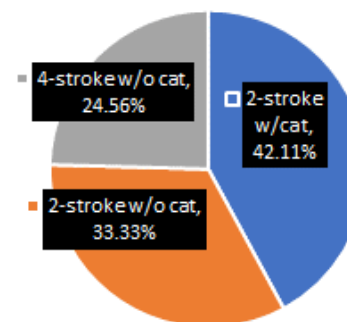
## Small SI Engine Industry Information Percent 2018 families

2018 Nonhandheld Engine Technology



2018 Handheld Engine Technology

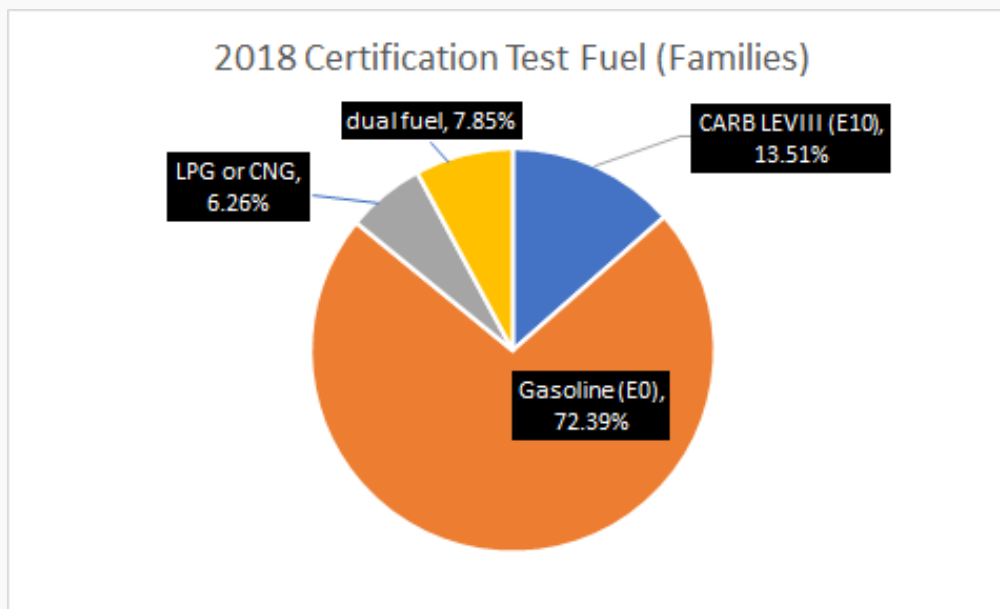
Note: no 4-stroke engines with catalyst



Nearly 67% of 2018 Nonhandheld engine families met exhaust standards through engine design improvements

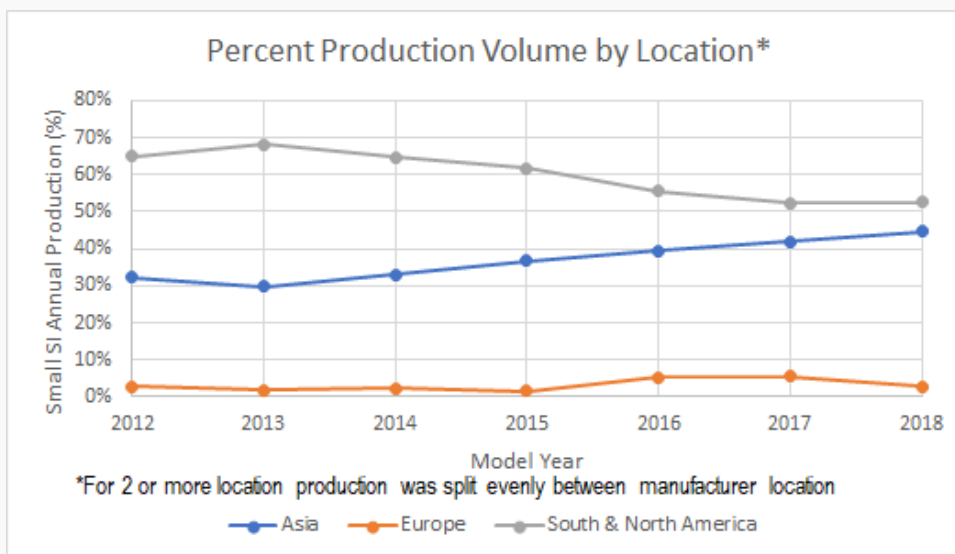
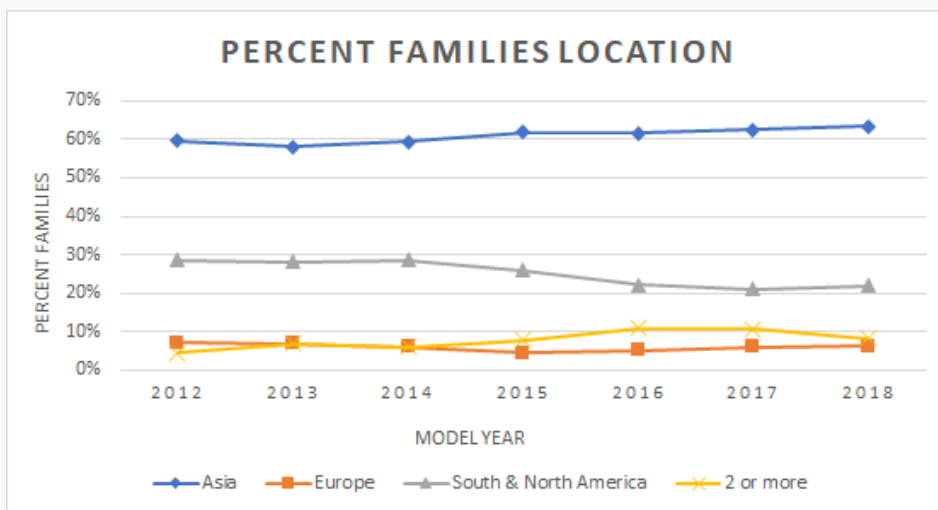
Approximately 58% of 2018 handheld engine families met exhaust standards through engine design improvements

## Small SI Engine Industry Information



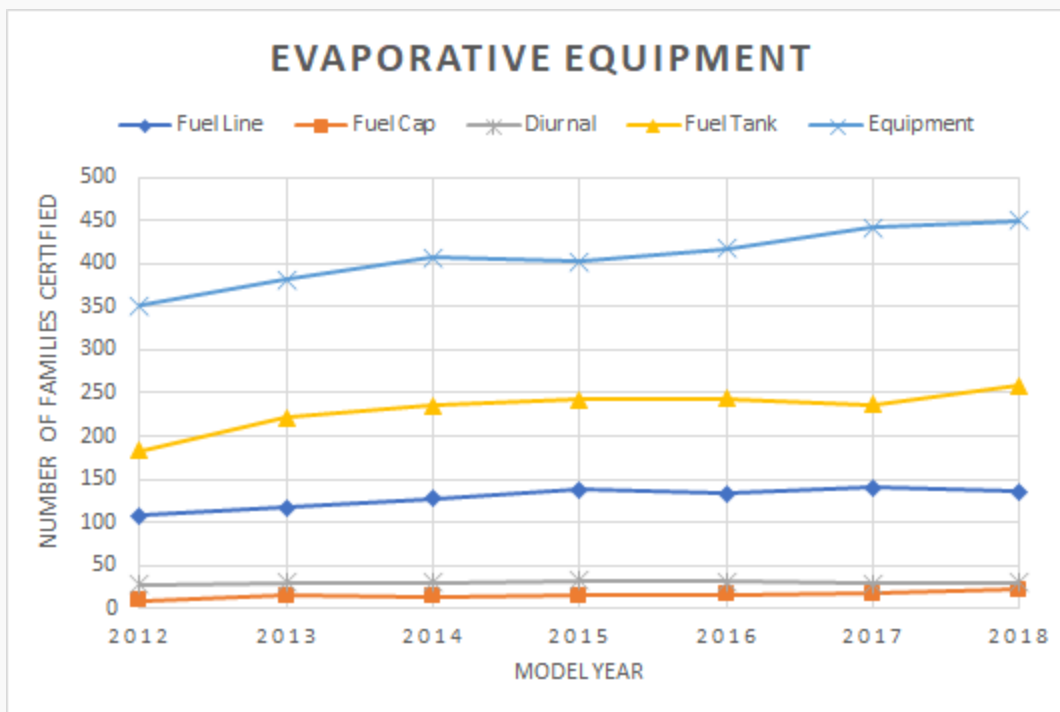
Approximately 13.5% of 2018 Small SI engine families were certified on CARB LEV VIII E10 fuel. EPA expects this percentage to increase significantly in the 2019 and 2020 model years.

# Small SI Engine Industry Information



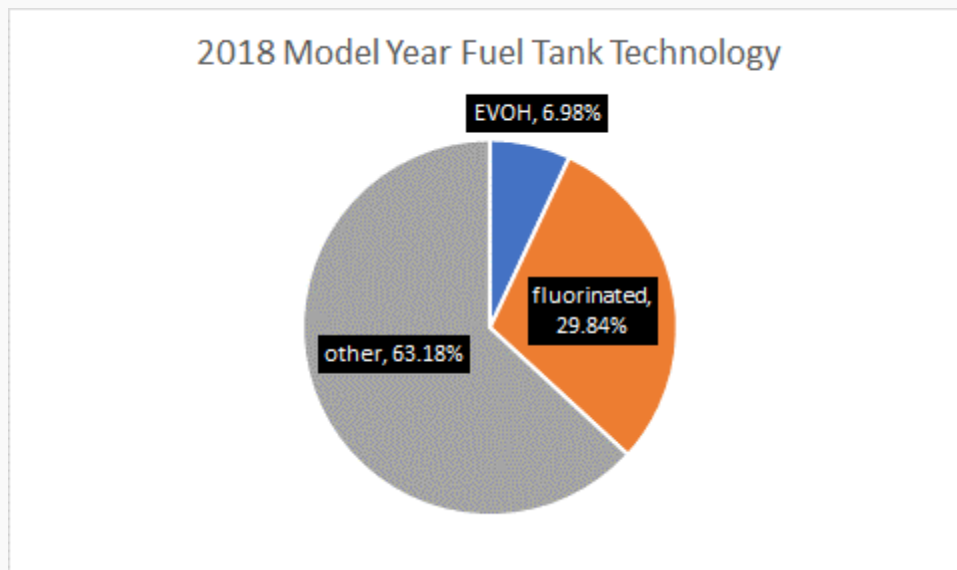
Although Asia certified the majority of engine families from 2012 – 2018, engine production from Asia does not dominate total U.S. sales but appears to be increasing.

## Nonroad SI Evaporative Components Industry Information



EPA issued about 75-100 more fuel tank and equipment certificates since 2012, and the other categories have been rather flat since 2012. EPA issued approximately 900 total evaporative certificates in 2018.

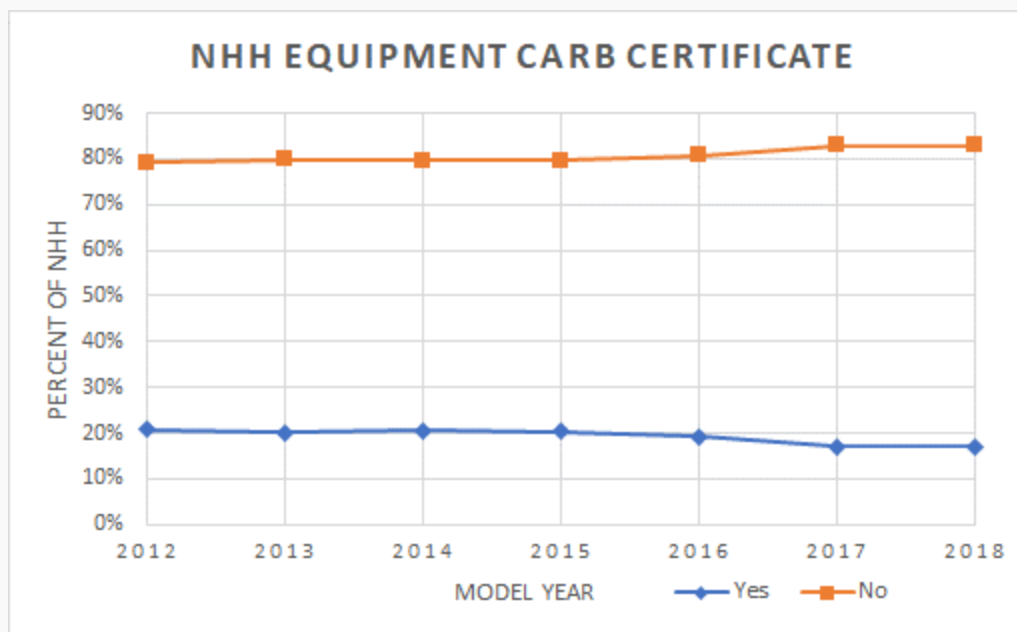
## Nonroad SI Evaporative Components Industry Information



EVOH (Ethylene vinyl alcohol) fuel tanks are design-based certified, meet the requirements in 1060.240(d), and are not required to run permeation tests.

Non-fluorinated fuel tanks comprise over 60% of the fuel tank fuel tank families.

## Nonroad SI Evaporative Components Industry Information



Approximately 20% of Nonhandheld Equipment families run the CARB TP-902 test (a SHED test) rather than using certified fuel system components.



## Potential Technical Amendments in Process

- May be part of Heavy Duty Greenhouse Gas rule amendments
- Clarify information manufacturers should store in Section 1054.250(c):\*
  - (c) Keep required data from emission tests and all other information specified in this section for eight years after we issue your certificate. If you use the same emission data or other information for a later model year, the eight-year period restarts with each year that you continue to rely on the information.

\* Intention was to have the requirements for 1054.250 & 1039.250 (nonroad CI) be the same. This language adjustment is for clarification.





## Potential Technical Amendments in Process

- 40 CFR Part 1060 – Control of Evaporative Emissions from New and In-Use Nonroad and Stationary Equipment
  - Fuel Tanks - CFR 40 Part 1060.520 – Changes
    - 1060.520 (a) – Preconditioning durability testing: For slosh testing the fuel maintained to at least 40 percent capacity of the fuel tank
    - 1060.520(d) – Permeation test run: The tank may be removed from the environmental chamber for up to 30 minutes for weighing purposes only
  - Current regulations have no stated provisions for fuel capacity during the preconditioning durability tests or for removing fuel tanks from the environmental chamber for weighing purposes. This provides testing clarity as well as flexibility.



## Test Fuel Requirements, Small SI Exhaust

- Fuels used for small SI exhaust testing
  - E0: 1065.710(c)
  - CARB LEV III E10 – required for CA for MY  $\geq$  2020
  - CARB LEV II – only through MY 2019
- Will **not** accept EPA Light Duty Vehicle Tier III E10; 1065.710(b)
- See 1054.510(b)(2) & 1054.145(n) for fuel regulation references
- Fuels guidance document pending



# Evaporative Components Test Fuel Requirements

- Fuel Line Permeation Testing requires CE 10 fuel (Fuel C as specified in ASTM D471 mixed with 10% ethanol)
- Cold Weather Fuel Lines require E10 (Gasoline as defined in 1065.710(c) mixed with 10% ethanol, commonly called IE10)
- Fuel Tank Permeation Preconditioning and Testing requires CE10 fuel or E10 (Gasoline as defined in 1065.710(c) mixed with 10% ethanol, commonly called IE10)
- Preconditioning fuel must be identical to test fuel
- Portable Fuel Containers (PFCs) require E10 (Gasoline as defined in 1065.710(c) mixed with 10% ethanol, commonly called IE10)
- Diurnal emissions testing requires: E0 gasoline as defined in 1065.710(c)
- Will **not** accept EPA Light Duty Vehicle Tier III E10; 1065.710(b)
- Fuels guidance document pending



## Nonhandheld Engine Test Cycle Selection

- As most manufacturers are re-testing engines on CARB LEVIII E10 fuel for MY2020, EPA and CARB have been reviewing nonhandheld engine test cycles
- Test Cycles for nonhandheld engines (see Section 1054.505(d)(1))
  - In normal circumstances, select a test speed of 3060 rpm or 3600 rpm.
    - Intermediate-speed equipment (3060 rpm, “A Cycle”)
    - Rated-speed equipment (3600 rpm, “B Cycle”)
  - In unusual circumstances, manufacturer may ask EPA to use a different test speed if it better represents in-use operation

# Nonhandheld Engine Test Cycle Selection

- Definitions (see Section 1054.801)
  - *Intermediate-speed equipment* means nonhandheld equipment in which the installed engine is intended for operation at speeds substantially below 3600 rpm.
  - *Rated-speed equipment* means nonhandheld equipment in which the installed engine is intended for operation at a rated speed that is nominally 3600 rpm or higher.
- EPA Recommendation
  - Cutpoint for Intermediate-speed/Rated-speed equipment: Somewhere between 3330-3400 rpm



## Nonhandheld Engine Test Cycle Selection

- Determine which test cycle(s) applies to each family for certification
  - Use 'full-load speed' for determining test cycle (Mode 1 of emission test cycle)
    - Based on high speed/no-load minus governor droop
  - Example (carbureted engine, no user adjustability)
    - All engines within family have a full-load speed of 3300 rpm
      - Select A Cycle
    - All engines within family have a full-load speed of 3500 rpm
      - Select B Cycle
    - Engines within family have a full-load speeds of 3300 rpm and 3500 rpm – Determine if A Cycle or B Cycle is worst-case for HC+NOx emissions



# Nonhandheld Engine Test Cycle Selection

- Example (carbureted engine, with user adjustability such as rabbit/turtle lever)
  - Manufacturer should include the upper and lower ends of the range of full-load speeds that an engine could experience during operation in determining which test cycle(s) applies
  - All engines within family have a full-load speed of 3300 rpm
    - Select A Cycle
  - All engines within family have a full-load speed of 3500 rpm
    - Select B Cycle
  - Engines within family have a full-load speeds of 3300 rpm and 3500 rpm – Determine if A Cycle or B Cycle is worst-case for HC+NO<sub>x</sub> emissions



# Nonhandheld Engine Test Cycle Selection

- Example (electronically-governed engine)
  - EPA believes such engines may qualify as an ‘unusual circumstance’ as referenced in 1054.505(d)(1)
  - For engine families in which all of the electronic-governed speeds fall within 2700 rpm to 4000 rpm, EPA will accept a worst-case certification analysis based on A Cycle and B Cycle
  - For engine families in which the electronic-governed speeds encompass values outside of the 2700 rpm and/or 4000 rpm values, EPA will expect some type of analysis from the manufacturer for determining the worst-case model within the family that considers the entire range of governed speeds being produced
    - Could be emission testing or engineering analysis
- EPA may test your engine family at any speed within the designed operating range





# Nonhandheld Engine Test Cycle Selection

- PLT engine test cycle
  - Manufacturers should determine the appropriate test cycle for each engine selected
  - Engines should be tested as they are produced
  - Under no circumstances should manufacturers reprogram or modify the produced engine prior to the PLT test
  - Report which test cycle was run for each engine in the PLT template
- EPA planning to issue a Guidance Document
- EPA has a spreadsheet that manufacturers can use for reporting their engine family characteristics and test cycle selections
- Contact your EPA cert rep if you have any questions on nonhandheld test cycle selection



## Adjustable Parameters & Tamper Proof Methods

- Can the end-user adjust the mechanism or change the operation of the engine? If yes, then it is an **Adjustable Parameter**.
  - Engine emissions has to comply over full range of adjustment.
- Is the end-user prevented from adjusting operating characteristics? If yes, then it is a **Tamper-Proof Mechanism**.
- Note: Document Type of “CARB Approval of Adjustable Parameter” is used for documenting CARB approval.
- If your engine has a carburetor, your application must include a CARB Approval of Adjustable Parameter document(s) and/or a Tamper-Proof Mechanism document(s).



# Bond Issues

- Section 1054.690(d)(2) requires manufacturers post additional bond if their actual U.S.-directed production volume increases beyond the level appropriate for their current bond. This increased bond must be posted within 90 days of the manufacturer's knowledge of the increased production volume.
- Section 1054.690(b)(1) sets a threshold of \$3 million if the manufacturer has been a certificate holder in each of the preceding ten years without failing a test conducted by EPA officials or having been found by EPA to be noncompliant under applicable regulations.
  - Contact your certification representative to see if you qualify to post a maximum bond of \$3 million



# Top Certification Issues

- Common errors in Exhaust and Evaporative Applications
  - Agent for Service not located in the United States
  - Certification Fees not paid
  - Failure to submit a 'Request for New Certificate'
  - Failure to ensure updated application or document is accepted by EV-CIS (check My CDX In-Box after all submittals to confirm applications and documents were accepted)
  - Failure to update manufacturer contacts and other information in the manufacturer information module



# Top Certification Issues

- Common Exhaust application errors
  - Deterioration Factor (DF) data not averaged when more than one DF engine is run
  - Forgetting to update Carry-over information when new certification data (low-hour and DFs) are provided
  - Forgetting to change engine family name when adding larger or deleting largest displacement model in family
  - Inconsistent warranty contact information in Bond Worksheet and Warranty Statement
  - One of DF test points exceeds declared Family Emission Limit (FEL)
  - No Tamper Resistance Method information when engine has no adjustable parameters
  - No PLT, ABT, or Annual Production reports submitted for previous model years



# Top Certification Issues

## Evaporative Components and Equipment:

- Incorrect carryover family name and model year
  - Carry-over family name should be original year in which family was certified
  - Example: Fuel line family first certified in 2015 model year and not changed should list 2015 fuel line family and model year as original carry-over family in application
- Abbreviated labels/markings not reported in application
  - Abbreviated label should be included in comment section of application
- Average permeation loss not being properly reported (EPA worksheet located at <https://www.epa.gov/vehicle-and-engine-certification/certification-materials-nonroad-spark-ignition-nrsi-evaporative> )
- Average Permeation Loss (g/day) should be rounded to 3-decimal places – No truncating values or rounding to fewer decimal places
- Uncertified evaporative components listed on their Equipment Worksheet
- Date of manufacture not included on Equipment Label and no information provided regarding location and code for date of manufacture if it is engraved on the equipment



# Top Certification Issues - Evaporative

- No FEL for fuel tank applications unless participating in the Averaging, Banking and Trading program (ABT) and have enough credits.
- Application and Test Data Worksheet have inconsistent start and end dates for preconditioning period and/or durability tests.
- Application and Test Data Worksheet have different number of test samples listed.
- Common Running Change errors
  - Failure to provide clear description of modifications to application for running changes
  - Failure to submit “Request for Revised Certificate” when update affects information on EPA certificate (e.g., FEL change, useful life change)



# Post-Certification

- Requirements after engine certificate is issued
  - Production Line Testing (PLT)
  - Averaging, Banking, and Trading (ABT), if applicable
  - Annual Production Reports
  - Defect/Recall Reports
- EPA developed templates for manufacturers to submit PLT, ABT, Production, and Defect/Recall reports
  - ABT, PLT and Production templates can be found at <https://www.epa.gov/ve-certification/compliance-reporting-nonroad-spark-ignition-si-engines>
  - Manufacturers should submit all reports into EV-CIS
  - Defects/Recall are submitted using EV-CIS module





## Post-Certification (cont.)

- Production Line Testing (PLT) – ( § 1054, Subpart D)
  - Manufacturers perform low-hour emission tests on production engines
    - Maximum number of engines tested is 30 or 1% of production, whichever is lower
    - PLT does not apply to Small-volume manufacturers
    - Manufacturers must request EPA approval to be exempt from PLT requirements for a small-volume emission family
  - Statistical analysis determines if the engine family passes/fails
    - Manufacturers must notify EPA if an engine family fails its PLT
    - An PLT engine that fails its low-hour emission test cannot enter into U.S. commerce
    - Engine certificate is suspended if family fails
  - Reports must be submitted to EPA
    - As often as quarterly (within 45 days after end of quarter)
    - Final report due no later than mid-February of following year is official final PLT report
  - Approximately 680 engine families were subject to PLT testing out of the 1006 engine families certified in MY2018



## Post-Certification (cont.)

- Averaging Banking and Trading (ABT) – ( § 1054, Subpart H)
  - ABT allows manufacturers to certify engines above or below the standards and demonstrate they meet the standards on average<sup>1</sup>
    - ABT applies for HC+NO<sub>x</sub> standards only
    - Separate programs for Handheld and Nonhandheld Engines
  - Manufacturers must declare a Family Emission Limit (FEL) in their certification application(s)
    - Exhaust emissions must meet the FEL, rather than the standard
  - Manufacturers participating in the ABT program must submit two reports to EPA with credit calculations/balances
    - End-of-Year report due 90 days after end of model year
    - Final report due 270 days after end of model year
  - 22 engine manufacturers participated in the ABT program for MY2018

<sup>1</sup>. Note: FEL Caps apply.



## Post-Certification (cont.)

- Annual Production Report ( § 1054.250)
  - Manufacturers submit their U.S.-directed production for each engine family
    - Report due 45 days after end of model year
  - Total U.S.-directed production for 2018 was just over 27 million engines
- Important reminder: Production levels should be used to check if Bond Value needs to be increased



## Post-Certification (cont.)

- Defect reporting ( § 1068.501)
  - Applies to emission-related components/systems for both engines and evaporative components
  - Manufacturers must report defects when they reach a specified threshold
  - Threshold varies by production level (generally 2%)
  - Report within 21 days of determining you met the threshold
- Defect report must include a variety of information
  - Defect description, number of engines affected, estimate of emission impact, plan for addressing defect or reasons why effect does not need to be addressed
    - Include copy of dealer notification, technical bulletin, etc.
  - Submit using the EV-CIS Defect/Recall module
    - Email EPA cert rep to let them know report was submitted



## Post-Certification (cont.)

- Voluntary Recall reporting ( § 1068.535)
  - Manufacturer must send EPA a remedial plan
  - Email EPA cert rep to let them know a remedial plan was submitted
    - EPA has 15 days to provide comments
- Remedial plan must include a variety of information (see § 1068.510)
  - Information to identify products being recalled, repairs that will be made, how owners will be notified, steps owner must take
    - Include copy of repair instructions, owner notification letter, repair label, etc.
  - Six Quarterly Reports required to update EPA on status
- Submit all information using the EV-CIS Defect/Recall module

# Top PLT Report Issues

- Engine build dates not spread throughout model year

Build Date
2/1/2018
2/2/2018
2/3/2018
2/4/2018
2/5/2018

Unacceptable

Build Date
1/15/2018
4/20/2018
6/25/2018
9/2/2018
11/15/2018

Acceptable



## Top PLT Report Issues (continued)

- Error in filling out key information
  - DF values, FEL value, Alternate CO standards, Carry-over status, cert fuel/test fuel inconsistency in report
  - Project production level should be consistent with cert application
- Error in identifying the production period for the family
  - Reports should list entire production period (i.e., 1/1 – 12/31)
  - Can adjust in Final report if no production during final quarter(s)
- Error in identifying Test Period for the report
  - It is not based on Calendar Year quarter



## Top PLT Report Issues (continued)

- Averaging emission levels from engines that failed with emissions from engines that were repaired
- Failure to describe why a test was declared invalid
- Failure to test enough engines by end of year (resulting in an 'Open' PLT status)
- Failure to notify EPA if the engine family has a PLT status of 'Fail'
- Failure to submit report and/or perform testing
- Failure to use correct test fuel that was used for certification testing





# Top ABT Issues

- Missing or additional engine families listed in ABT Report
  - All EPA-certified engine families participating in ABT must be listed on the report
- Useful life discrepancies
  - Useful life values are approved by EPA at the time of certification and must match values listed in ABT report
- FEL discrepancies
  - FELs are approved by EPA at the time of certification and must match values listed in ABT report
- Banked credits not properly reported
- Credits given or received via a trade not properly reported and documented

# ABT Issues – Banked Credits

- Total manufacturer ABT credits in 2018 model year are summed at the bottom of the Credit Summary tab

Sample 2018 Credit Summary tab

MODEL YEAR:		2018		
MANUFACTURER:		EPA		
EMISSION CREDITS - EXHAUST				
		Handheld (HH)	Nonhandheld Class I&II	HH Engine Used in NHH Equip
<b>Credit Balances before Averaging:</b>				
Current MY	Total Standard Phase 3 Credits - POSITIVE	33,150	82,133	17,850
	Total Standard Phase 3 Credits - NEGATIVE	28,050	54,990	0
Banked	Total Standard and Enduring Phase 3 Credits			
	Phase 2 (Part 90) Banked Credits			
Traded	Total Standard and Enduring Phase 3 Credits you Received via a Credit Trade			
	Phase 2 (Part 90) Credits you received via a Credit Trade			
Mfr(s) who provided you credits via a trade				
<b>Credits Applied to Current MY Balance for Standard Phase 3 Credits:</b>				
Current MY	Apply Standard Handheld Phase 3 Credits			
Banked	Apply Standard Handheld Phase 3 Credits			
	Apply Handheld Phase 2 (Part 90) Credits			
Credits you Traded to Another Manufacturer	Standard Handheld Phase 3 Credits			
	Standard Handheld Phase 2 (Part 90) Credits			
	Standard Nonhandheld Phase 3 Credits			
Mfr(s) to whom you provided credits via a trade				
<b>Credit Balances after Averaging:</b>				
TOTALS	Standard Phase 3 Credits	5,100	44,993	
	Phase 2 HH (Part 90) Credits	0		

# ABT Issues – Banked Credits

- Total manufacturer ABT credits in 2018 model year should be listed as banked credits in the 2019 ABT Credit Summary tab

Sample 2019 Credit Summary tab

Credit Summary for the Part 1054 Small SI ABT Programs				
MODEL YEAR:		2019		
MANUFACTURER:		EPA		
EMISSION CREDITS - EXHAUST				
		Handheld (HH)	Nonhandheld Class I&II	HH Engine Used in NHH Equip
<b>Credit Balances before Averaging:</b>				
Current MY	Total Standard Phase 3 Credits - POSITIVE	28,050	80,370	17,850
	Total Standard Phase 3 Credits - NEGATIVE	30,600	59,573	0
Banked	Total Standard and Enduring Phase 3 Credits	5,100	44,993	
	Phase 2 (Part 90) Banked Credits			
Traded	Total Standard and Enduring Phase 3 Credits you Received via a Credit Trade			
	Phase 2 (Part 90) Credits you received via a Credit Trade			
Mfr(s) who provided you credits via a trade				
<b>Credits Applied to Current MY Balance for Standard Phase 3 Credits:</b>				
Current MY	Apply Standard Handheld Phase 3 Credits			
Banked	Apply Standard Handheld Phase 3 Credits			
	Apply Handheld Phase 2 (Part 90) Credits			
Credits you Traded to Another Manufacturer	Standard Handheld Phase 3 Credits			
	Standard Handheld Phase 2 (Part 90) Credits			
	Standard Nonhandheld Phase 3 Credits			
Mfr(s) to whom you provided credits via a trade				
<b>Credit Balances after Averaging:</b>				
TOTALS	Standard Phase 3 Credits	2,550	83,640	
	Phase 2 HH (Part 90) Credits	0		
Comments:				



# ABT Issues – Banked Credits

- Final ABT reports are due by September 30 of the following year (e.g., Final 2018 ABT reports are due by Sept 30, 2019)
- Per 1054.730(f)(3), manufacturers may submit a corrected ABT report that lowers banked credits value any time, including after Sept 30.
- Per 1054.730(f)(2), manufacturers cannot submit a corrected ABT report that increases banked credits after Sept 30

## **1054.730 What ABT reports must I send to EPA?**

(f) Correct errors in your end-of-year report or final report as follows:

(2) If you or we determine within 270 days after the end of the model year that errors mistakenly decreased your balance of emission credits, you may correct the errors and recalculate the balance of emission credits. **You may not make these corrections for errors that are determined more than 270 days after the end of the model year.** If you report a negative balance of emission credits, we may disallow corrections under this paragraph (f)(2).

(3) If you or we determine anytime that errors mistakenly increased your balance of emission credits, you must correct the errors and recalculate the balance of emission credits.

# ABT Issues – Traded Credits

- Amount of credits you receive via a trade and from whom you received them must be reported on the Credit Summary tab

Sample 2019 Credit Summary tab

EMISSION CREDITS - EXHAUST				
		Handheld (HH)	Nonhandheld Class I&II	HH Engine Used in NHH Equip
<b>Credit Balances before Averaging:</b>				
Current MY	Total Standard Phase 3 Credits - POSITIVE	28,050	80,370	17,850
	Total Standard Phase 3 Credits - NEGATIVE	30,600	59,573	0
Banked	Total Standard and Enduring Phase 3 Credits	5,100	44,993	
	Phase 2 (Part 90) Banked Credits			
Traded	Total Standard and Enduring Phase 3 Credits you Received via a Credit Trade	10,000		
	Phase 2 (Part 90) Credits you received via a Credit Trade			
Mfr(s) who provided you credits via a trade	Donald Duck Motors			
<b>Credits Applied to Current MY Balance for Standard Phase 3 Credits:</b>				
Current MY	Apply Standard Handheld Phase 3 Credits			
Banked	Apply Standard Handheld Phase 3 Credits			
	Apply Handheld Phase 2 (Part 90) Credits			
Credits you Traded to Another Manufacturer	Standard Handheld Phase 3 Credits			
	Standard Handheld Phase 2 (Part 90) Credits			
	Standard Nonhandheld Phase 3 Credits			
Mfr(s) to whom you provided credits via a trade				
<b>Credit Balances after Averaging:</b>				
TOTALS	Standard Phase 3 Credits	12,550	83,640	
	Phase 2 HH (Part 90) Credits	0		

# ABT Issues – Traded Credits

- Amount of credits you give via a trade and to whom you have given them must be reported on the Credit Summary tab

## Sample 2019 Credit Summary tab

Credit Summary for the Part 1054 Small SI ABT Programs				
MODEL YEAR:		2019		
MANUFACTURER:		EPA		
EMISSION CREDITS - EXHAUST				
		Handheld (HH)	Nonhandheld Class I&II	HH Engine Used in NHH Equip
<b>Credit Balances before Averaging:</b>				
Current MY	Total Standard Phase 3 Credits - POSITIVE	28,050	80,370	17,850
	Total Standard Phase 3 Credits - NEGATIVE	30,600	59,573	0
Banked	Total Standard and Enduring Phase 3 Credits	5,100	44,993	
	Phase 2 (Part 90) Banked Credits			
Traded	Total Standard and Enduring Phase 3 Credits you Received via a Credit Trade			
	Phase 2 (Part 90) Credits you received via a Credit Trade			
Mfr(s) who provided you credits via a trade				
<b>Credits Applied to Current MY Balance for Standard Phase 3 Credits:</b>				
Current MY	Apply Standard Handheld Phase 3 Credits			
Banked	Apply Standard Handheld Phase 3 Credits			
	Apply Handheld Phase 2 (Part 90) Credits			
Credits you Traded to Another Manufacturer	Standard Handheld Phase 3 Credits	2,500		
	Standard Handheld Phase 2 (Part 90) Credits			
	Standard Nonhandheld Phase 3 Credits			
Mfr(s) to whom you provided credits via a trade	Donald Duck Motors			
<b>Credit Balances after Averaging:</b>				
TOTALS	Standard Phase 3 Credits	50	83,640	
	Phase 2 HH (Part 90) Credits	0		



## Top Annual Production Report Issues

- Not listing all certified engine families
  - Include all certified families, even if production was zero
- Providing calendar year sales information instead of model year US-directed production
- US-directed production should include California
  - Template included a separate column for California production if available



## Confirmatory Testing Process

- Confirmatory Tests ( § 1054.235(c) and 1060.235(d))
  - EPA issues test orders to emissions certification representative and Agent for Service for specific emission families
  - Test orders are issued prior to certification approval
  - EPA testing began in 2008
    - Almost 500 engine families have been selected between 2008 and 2019 calendar years
    - More than 10% of requested engine families failed EPA's confirmatory test in 2018
    - Fuel line and fuel tank confirmatory testing has begun at EPA's Ann Arbor facility and will expand each year
  - Certificate is not issued if emission family fails the confirmatory test





## EPA Audits

- EPA is expanding Lab Audits, SEAs, and Confirmatory Testing of engines and components
- Selective Enforcement Audits (SEA) - (40 CFR 1068, Subpart E)
  - Manufacturers must test production engines
    - EPA may be present for engine selection and testing
    - Test order may direct manufacturer to run emission tests at US-based facility listed in certification application
  - Number of engines passing/failing determines if a family passes or not
    - Engine certificate is suspended if family fails the SEA
- Lab Audits
  - Reviewing test lab processes and compliance with required regulations
  - May include observing the running of a PLT test



## In-Use Testing

- EPA performs in-use emission testing on a variety of products
  - Small SI engines
  - Fuel Lines
  - Fuel Tanks
  - Portable Fuel Containers
- EPA plans to expand its in-use test work
- Manufacturers may or may not be informed regarding the test results



## Concluding Thoughts

- If you receive a confirmatory test order:
  - Do not immediately request a certificate for this family
  - The emission family must pass the emission test
  - Confirmatory test results must be input into your application for certification.
- Certification time frames:
  - Annually for Small SI engine, fuel system components and equipment
  - Every five (5) years for Portable Fuel Containers
  - Family expiration date listed on each certificate
- Applications cannot be processed until the fee is paid. Fee payment made at [www.pay.gov](http://www.pay.gov)



## Concluding Thoughts

- Contact your certification representative first if you have programmatic questions.
  - EPA works to respond in a timely manner
  - Many times we need to consult other divisions, such as legal counsel
- Contact the EV-CIS help desk (202-747-5320 or [evcishelpdesk@epacdx.net](mailto:evcishelpdesk@epacdx.net)) for software questions
  - inputting applications, documents, or requests for certificates into EV-CIS
  - Adding test labs or contact information into Manufacturer Information Module



## Concluding Thoughts

- Manufacturers should plan accordingly for the following:
  - EPA's goal is to process requests for certificates within 30 days of receipt.
  - EPA reviews requests in the order in which they are received.
  - Process times may exceed 30 days during due to high volumes.
  - Confirmatory test orders are issued approximately 6 months before typical production start dates.
  - Running changes (CSI updates and Revised Certificate Requests) will only be processed up to December 31 of the given model year.