

ARB Portable Fuel Container (PFC) Regulation Update

October 20, 2015 - Sacramento



Presentation Outline

Section 1: Background

Section 2: Certification Process Revisions

Section 3: Economic Impacts

Section 4: Interlaboratory Comparison Study

Emission Impacts of PFCs

- Approximately 10 million PFCs in use in California
- A significant source of reactive organic gases (ROG)
- Controlling emissions from PFCs:
 - Reduces ozone precursors
 - Reduces exposure to benzene and other air toxics

Why Regulatory Updates are Needed

- ARB test data indicates approximately 50 percent of in-use PFCs fail emissions standard
- Update certification fuel to reflect current gasoline formulation
- Clean-up certification and test procedures
- Alignment with U.S. EPA

Past PFC Rulemaking Activity

- ARB adopted PFC regulations in 1999
 - 0.4 grams/gallon/day emission standard
 - Performance standards
- ARB amended PFC regulations in 2005
 - 0.3 grams/gallon/day emission standard (01/01/2009)
 - Amended test procedures
 - Included non-compliant containers previously used as PFC substitutes

PFC Regulatory Proposal

- E-10 certification fuel
- Certification process revisions
- Update certification and test procedures
- Align with U.S. EPA

PFC Rulemaking Timeline

September 2005

ARB regulation amended

October 2015

Post draft regulatory language, certification procedure, and test procedures & 2nd Public Workshop

February 2016

ARB Board Hearing to consider E-10 fuel requirement, and revisions to clarify procedures and harmonize with U.S. EPA

September 1999

ARB regulation adopted including E-0 test fuel requirement

May 2015

1st Public Workshop

December 2015

Post staff report

Presentation Outline

Section 1: Background

Section 2: Certification Process Revisions

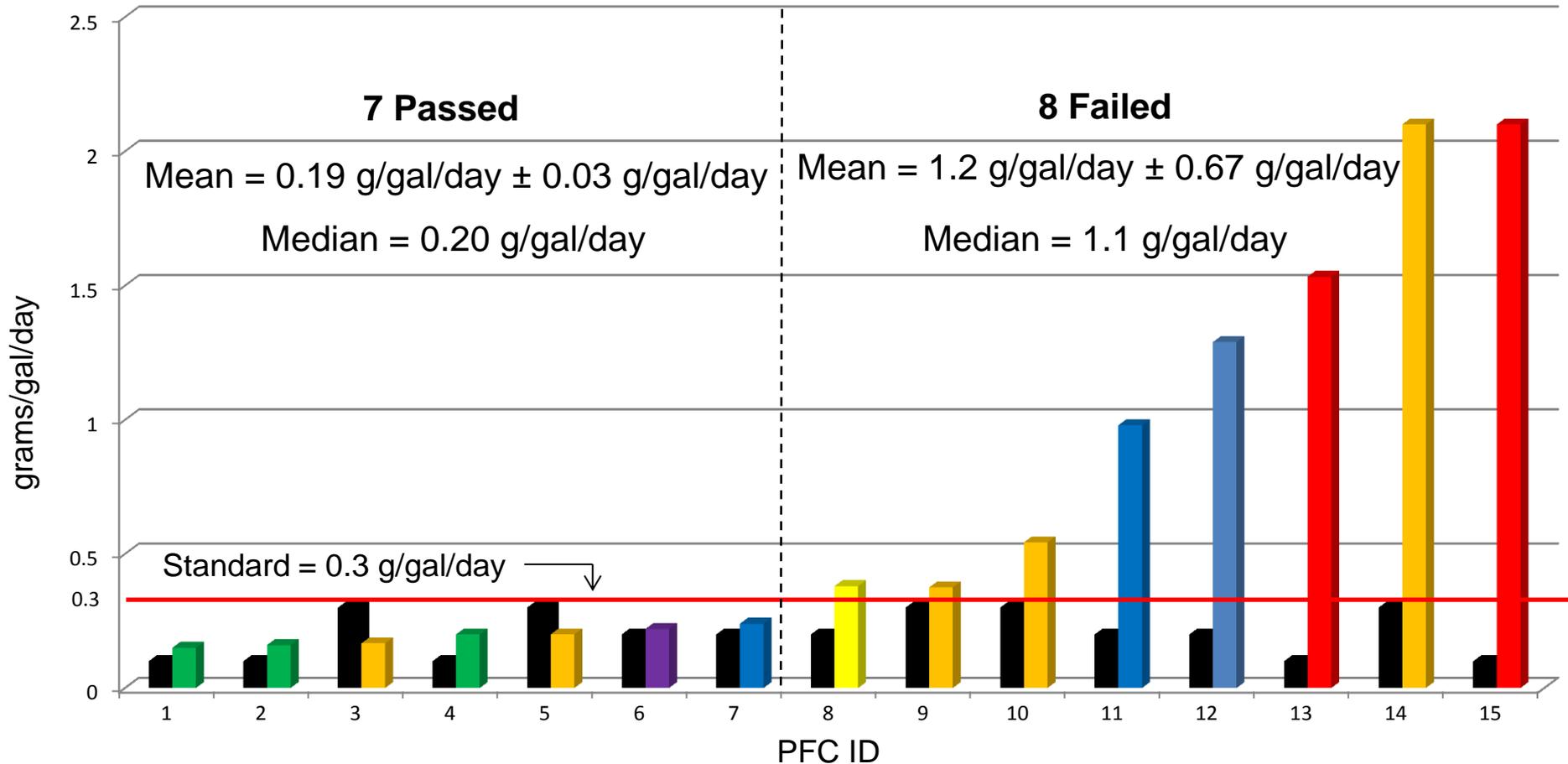
Section 3: Economic Impacts

Section 4: Interlaboratory Comparison Study

Need for Certification Process Revisions

- Significant discrepancy between PFC emissions measured by ARB and certification test results
- In-use PFC emissions compliance rates are approximately 50 percent

Comparison of ARB and Certification PFC Diurnal Test Results (E-0 Fuel)



**Note: Black columns represent certification data submitted to ARB
 Other colors represent maximum ARB test results for PFC families by manufacturer**

Sell-Through Date (Regulation Order)

- Ensures products in the marketplace are compliant with the updated certification fuel requirement
- Applies to currently certified PFC families
 - PFCs produced after June 30, 2017, must comply with updated certification procedure using E-10 test fuel
 - Certified PFCs produced prior to July 1, 2017, must be sold prior to December 31, 2017
- U.S. EPA requiring E-10 test fuel for all new PFC certification applications
- New applications using CE-10 test fuel will not be accepted by U.S. EPA

Limited Term Certification (CP-501)

- Current PFC executive orders do not expire
- Future executive orders will expire after four years
- Manufacturers may submit “request for renewal” within 18 months of expiration
- ARB will grant or reject renewal considering:
 - Manufacturer supplied data and declarations
 - ARB compliance test or screening test results
 - Rejection requires manufacturer to re-apply for renewal

Presentation Outline

Section 1: Background

Section 2: Certification Process Revisions

Section 3: Economic Impacts

Section 4: Interlaboratory Comparison Study

Cost for Certification Testing

- Applicable to sell-through and executive order renewal
- Based on estimates obtained from independent laboratory quotes and estimates from confidential industry sources

Test Procedure	ARB Cost (Existing)	U.S. EPA Cost (Existing)	Combined Cost (Proposed)
TP-501	\$1,800	\$3,300	\$1,800
TP-502	\$6,400		\$7,000
U.S. EPA Durability Steps	N/A	\$2,400	\$4,800
Written Report	\$1,200	\$1,200	\$1,200
Total per Test	\$9,400	\$6,900	\$14,800
Total Cost per Certification		\$16,300	\$14,800

Sell-Through Costs

- One-time cost
- Includes certification test and report generation costs for the 11 currently active PFC executive orders

Proposed Amendment	Cost
Cost to retest containers to requirements of amended CP-501	\$14,800
Total Costs (for all 11 certified PFC families)	\$163,000

Limited Term Certification Costs

- Incurred every 4 years
- Includes the cost to generate a renewal request and, if necessary, additional testing
 - Additional testing based on ARB evaluation of renewal request
 - ARB compliance results considered

Proposed Amendment	No Additional Testing Required	Additional Testing Required
EO Renewal Request	\$1,200	\$1,200
Certification Tests	\$0	\$13,600
Total Costs Per Renewal	\$1,200	\$14,800
Total Costs (for all 11 certified PFC families)	\$13,200	\$163,000

Total Costs

- Present value based on five year implementation period
- Lower bound based on no additional testing
- Upper bound based on all manufacturers performing additional testing

Year	Present Value (2015 Dollars)	
Year	Lower Bound	Upper Bound
2017	\$153,000	\$186,000
2018	-\$2,200	\$29,300
2019	-\$2,100	\$27,900
2020	-\$2,000	\$26,600
2021	\$8,500	\$153,000
Total	\$155,200	\$422,800

Estimated Price Increase Per PFC

- Highest annual upper bound cost = \$186,000
- Total projected annual sales = 1,000,000 PFCs/year
- $(\$186,000 / 1,000,000 \text{ PFCs}) = \$0.19/\text{PFC}$
- Assumed mark-up of 100%: $\$0.19/\text{PFC} \times 2 = \$0.38/\text{PFC}$
- Maximum estimated price increase of **\$0.38/PFC**

Presentation Outline

Section 1: Background

Section 2: Certification Process Revisions

Section 3: Economic Impacts

Section 4: Interlaboratory Comparison Study

Interlaboratory Comparison Study

- ARB and SGS - Testing Services Group Labs
- ARB Test Procedure TP-502 with 11 PFCs per lab
- Statistical comparison of diurnal test results (t-test)
- Preconditioning initiated September 2015
- Diurnal testing tentatively scheduled for December 2015

ARB Staff Contact Information

Monitoring and Laboratory Division

- Matthew Holmes – Air Resources Engineer, Lead
(916) 322-8913, Matthew.Holmes@arb.ca.gov
- Christopher Dilbeck, Ph.D. – Air Pollution Specialist
(916) 319-0106, Christopher.Dilbeck@arb.ca.gov
- Angus MacPherson, P.E. – Manager
(916) 445-4686, Angus.MacPherson@arb.ca.gov

Questions?