

Public Consultation Meeting Regulatory and Non-Regulatory Fuels Activities

March 17, 2005

California Environmental Protection Agency



Air Resources Board

Agenda

- ◆ Introduction
- ◆ Topics (presentation by ARB and Others):
 - Gasoline
 - CaRFG3 Predictive Model Update
 - Permeation Emissions Estimate
 - Test Methods
 - CARBOB Model Validation
 - Diesel
 - Lubricity
 - Biodiesel
 - Marine Vessels Activities
- ◆ Other Topics?
- ◆ Open Discussions
- ◆ Closing Remarks

Topics: Gasoline

CaRFG3 Predictive Model Update

◆ Data Set Availability

- Alliance of Automobile Manufacturers
- CRC E67 Study conducted by CE-CERT, UC Riverside
 - Objective: effects of gasoline volatility parameters and ethanol content on exhaust emissions for the newest technology vehicles
 - Engine tests completed
 - Compiling data
 - Data availability expected in a month or so

Permeation

- ◆ In 1999, ARB staff learned that ethanol in gasoline increases evaporative emissions through a process known as permeation
- ◆ Permeation is when fuel migrates through the soft fuel system found on motor vehicles
- ◆ At the 1999 Hearing, the Board directed staff to conduct permeation study and report back

Permeation Test Program

- ◆ In 2002, the CRC and ARB co-funded permeation study

- ◆ Results:
 - Ethanol fuel higher than MTBE on all vehicles and higher than non-oxy on almost all vehicles
 - 65% or 1.4 grams/day more than MTBE gasoline
 - 45% or 1.1 grams/day more than non-oxygenated gasoline

Permeation Emissions Increase

- ◆ Study results do not directly provide the emissions impact of permeation
- ◆ Vehicle activity and fuel temperature data must be integrated to provide an appropriate temporal and spatial distribution of emissions
- ◆ Estimated on-road vehicles hydrocarbon emissions increase by 40-50 tpd, statewide 2004
- ◆ Recent posting:
www.arb.ca.gov/fuels/gasoline/permeation/permeation.htm

How to Deal with the Hydrocarbon Emissions Increase from Ethanol Use?

- ◆ Hydrocarbon emissions increase well into the foreseeable future
 - New vehicle standards help
 - Slow turn over of fleet

- ◆ Report back to the Board later this year
 - Better estimate of ethanol permeation impact on emissions
 - Measures to mitigate the impact

What's Next

- ◆ The CRC is proceeding with a second stage of the test program
- ◆ Two additional vehicles: LEV II and PZEV
- ◆ Two additional fuels: 10% ethanol and a higher aromatics fuel
- ◆ E-85 will also be tested on an flexible fueled vehicle

Test Methods

CARBOB Model Validation

- ◆ All refiners sent their data
- ◆ Some incomplete / missing data
 - Ethanol content
 - Information on blending properties (e.g., RVP)
- ◆ Work in progress
- ◆ Expected to complete this summer

Topics: Diesel

Diesel Fuel Lubricity

- ◆ Lubricity standard May 1 implementation update
- ◆ CRC diesel lubricity test program

Implementation Update

- ◆ Installation of terminal injection equipment proceeding in preparation for May 1 implementation date
- ◆ Implementation at San Jose terminal delayed due to permitting issues - may be one month late
- ◆ No other known problems

CRC Diesel Performance Group Lubricity Test Program

- ◆ Test program to correlate fuel lubricity measurements to light duty diesel fuel injection equipment wear
 - Two fuel lubricity measurement tests
 - Three equipment types
- ◆ Southwest Research Institute selected as test laboratory for the program
- ◆ Test fuels have been designated
- ◆ Working on acquiring test equipment and control units

Topics:
Marine Vessels Activities

Other Topics?

Open Discussions

Closing Remarks