ULSD Workshop

November 20-21, 2002

Houston, TX

Transition to 15 ppm ULSD







• Annual RVP change over – since 1989



Experiences to Draw on

• Annual RVP change over – since 1989

• Introduction of Oxygenated Gasoline – 1992





- Annual RVP change over since 1989
- Introduction of Oxygenated Gasoline 1992
- Introduction of low sulfur diesel fuel 1993





- Annual RVP change over since 1989
- Introduction of Oxygenated Gasoline 1992
- Introduction of low sulfur diesel fuel 1993
- Introduction of Simple Model RFG 1995





- Annual RVP change over since 1989
- Introduction of Oxygenated Gasoline 1992
- Introduction of low sulfur diesel fuel 1993
- Introduction of Simple Model RFG 1995
- Introduction of Complex Model RFG 1998





- Annual RVP change over since 1989
 - Can produce blends below the maximum RVP to facilitate turn over





- Annual RVP change over since 1989
- Introduction of Oxygenated Gasoline 1992
 - Plenty of room between maximum oxygen limit and minimum specification requirement





- Annual RVP change over since 1989
- Introduction of Oxygenated Gasoline 1992
- Introduction of Simple Model RFG 1995
 - Very similar to RVP change over





- Annual RVP change over since 1989
- Introduction of Oxygenated Gasoline 1992
- Introduction of Simple Model RFG 1995
- Introduction of Complex Model RFG 1998
 - Again, very similar to RVP change over





- Annual RVP change over since 1989
- Introduction of Oxygenated Gasoline 1992
- Introduction of Simple Model RFG 1995
- Introduction of Complex Model RFG 1998
- Introduction of Low Sulfur Diesel Fuel 1993
 - Some things are the same
 - Some things are different



After Further, Further Review

• Introduction of low sulfur diesel fuel in 1993 will be the closest parallel for ULSD



• Introduction of new product



- Introduction of new product
- Drop dead compliance date



- Introduction of new product
- Drop dead compliance date
- Immediate demand for product



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- Drop dead compliance date
- Immediate demand for product
- Choices to make



- Introduction of new product
- Drop dead compliance date
- Immediate demand for product
- Choices to make
- Adjustments to operations



- Introduction of new product
- Drop dead compliance date
- Immediate demand for product
- Choices to make
- Adjustments to operations
- Division of facilities or new construction



• Competing product still being marketed



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- Refinery Production is regulated 80/20, 100/0



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- Initial need (verses demand) is zero, demand is...



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- Radical changes to operations
- Sulfur Credits



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- Refinery Production is regulated 80/20, 100/0
- Initial need (verses demand) is zero, demand is...
- Choices are short term
- Radical changes to operations
- Sulfur Credits
- Small refinery exclusion



- Competing product still being marketed
- Refinery Production is regulated 80/20, 100/0
- Initial need (verses demand) is zero, demand is...
- Choices are short term
- Radical changes to operations
- Sulfur Credits
- Small refinery exclusion
- Degrees of magnitude 3000 500 vs 400 15

TEPPCO Physical Transition, Initial staging

• June 1 – July ?



• June 1 – July ?

Won't be without problems

- June 1 July ?
- Won't be without problems
- We have "outs" at this point



- June 1 July ?
- Won't be without problems
- We have "outs" at this point
 - Downgrades
 - Little or no demand
 - Time



• July ? – August 31



- July ? August 31
- Pace of downstream conversions



- July ? August 31
- Pace of downstream conversions
- Who/how many will handle both products?



- July ? August 31
- Pace of downstream conversions
- Who/how many will handle both products?
- Price differential vs inventory



- July ? August 31
- Pace of downstream conversions
- Who/how many will handle both products?
- Price differential vs inventory
- Use of Credits?



- July? August 31
- Pace of downstream conversions
- Who/how many will handle both products?
- Price differential vs inventory
- Use of Credits?
- Out of the wood work/None to be had



• A non-event



- A non-event
 - No overnight change



- A non-event
 - No overnight change
 - Production control, 80/20



- A non-event
 - No overnight change
 - Production control, 80/20
 - No major distribution problems

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