

# Operational Efficiency Plans

Gas STAR Technology Transfer Workshop

*October 26, 2005*



**Marathon  
Oil Company**

# Worldwide Production 2005 GHG Reduction Goals



- ◆ Develop comprehensive GHG emissions management plan for 2006 implementation
- ◆ GHG reduction metrics established for 2005
  - target to match 2004 GHG emissions baseline
  - stretch to reduce 2004 GHG emissions by 10%
  - threshold exceeds 2004 GHG emissions by 10%

# Strategy to Achieve 2005 GHG Goals



- ◆ Utilize existing BMPs & GHG database (EMIS) to prioritize efforts
- ◆ Utilize consultants with GHG reduction expertise to develop overall program
  - Process optimization design specifications for new facilities
  - Structured review process for existing facilities
- ◆ Focus on operational efficiency improvements
  - Opportunities to increase profitability while reducing GHG emissions

# Operational Efficiency Studies



- ◆ Studies Conducted –
  - North Shongaloo Red Rock (NSRR) Central Facility
  - NSRR Parker 23 #1
  - NSRR Camp Heirs #3 Alt
  - Indian Basin (IB) Gas Plant
  - IB MOC Federal Battery
  - IB East Indian Basin Battery
  - IB Station 120
  
- ◆ Two major and five satellite facilities

# Operational Efficiency Studies



## Process

- ◆ **Similar to a Process Hazards Review**
- ◆ **Follow process flow**
- ◆ **Identify opportunities**
  - **Cost effectively eliminate emission source**
  - **Cost effectively capture for sales**
  - **Flare (destruction)**

# Typical Facility Efficiency Opportunities

- ◆ High Bleed vs. Low Bleed Pneumatics
- ◆ Pressure Drop – separator flash gas to tanks
- ◆ Non-Condensables – HC's vented in glycol dehy units
- ◆ Overall engine fuel efficiencies
- ◆ Compressor seals
- ◆ Fugitive emissions
- ◆ Vent gas versus flared gas



# Study Results

- ◆ Optimization work completed
  - Marathon is doing a good job of ensuring energy efficiency of properties
  - Examples
    - Vapor recovery units
    - Low emission engines
    - Condensers on dehydrators
  
- ◆ Inventory Update
  - Removal of all dehy's and fired vessels
  
- ◆ Optimization Opportunities
  - Smaller Scale
    - Example – Turbulators on heaters
  - Longer Payout
    - Example – Compressor Controls



# Conclusions

- ◆ Update Emissions Inventory
- ◆ Focus Studies
  - New facilities
  - Smaller facilities
  - Flares – 59% of emissions
- ◆ Evaluate GHG reporting methodology
  - Take credit for the GHG reduction technology we use





# Path Forward

- ◆ Finalize Efficiency Studies
  - North Shongaloo Red Rock
  - Indian Basin
- ◆ Develop Opportunity List for BU Consideration
  - Based on EMIS and Industry BMP's
- ◆ GHG Emissions Management Plan
- ◆ Process optimization design recommendations for new facilities (30 Nov)
- ◆ Structured review process for existing facilities (30 Nov)