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)