

# Tidelands Oil Production Company



Methane Reduction Actions

EPA's Natural Gas Star  
Producers Technology Transfer Workshop  
Long Beach, CA  
August 21, 2007

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# Replaced Old Gas Stretford Processing facility with Sulfa Treat System



**Issue:** Inefficient processing facility for changes in gas production.

**Answer:** Replace with Sulfa Treat System, for current and project gas production.

# Replaced Old Gas Stretford Processing facility with Sulfa Treat System



- What did we do: Shut-in 11 “1920s” vintage ICEs
- Benefit: Removed old engines with inefficient combustion process that had a high blow-by of un-combusted fuel. (>100 tons/year);
- Technical Issues: New process and how do we manage the gas at the new facilities;
- Additional Benefits: Provided clean, efficient and reliable system



994  
WEST

994  
EAST

17/08/2007

# Consolidate Tank Facilities



**Issue:** Neighboring facilities were now under common ownership, duplication of facilities existed.

**Answer:** Consolidate facilities accordingly for current and project production needs.

# Consolidate Tank Facilities



- What did we do: Combined production at 7 tank facilities into 2;
- Benefit: Eliminated over 80 processing tanks and associated equipment containing Methane;

# Consolidate Tank Facilities



- Technical issues: How do we get the production there and accommodate unique production issues (hot fluids from steam fluid);
- Additional Benefits: Reductions in staffing needed to run facilities and reduction in maintenance, reduced other liabilities.

# Consolidated and Electrified hydraulic pump operations



**Issue:** Multiple small (50 –120 bhp) old internal combustion engines driving power oil pumps;

**Answer:** Replace with electric motors



# Consolidated and Electrified hydraulic pump operations



- What did we do: Reduced over 30 ICE powered Kobe hydraulic pumps to 12 electric motor powered units;
- Benefits: Removed old engines with inefficient combustion process that had a high blow-by of un-combusted fuel.

# Consolidated and Electrified hydraulic pump operations



- Technical Issues: How do you make best use of existing equipment;
- Additional Benefits: Reductions in staffing needed to run facilities and reduction in maintenance, reduced other liabilities.



11/04/2007

# Installation of Molecular Gate<sup>®</sup> CO<sub>2</sub> Removal system.



**Issue:** Desire to take non-merchantable gas and make utility spec gas instead of flaring gas.

**Answer:** Install Acid Gas Removal system.

# Installation of Molecular Gate<sup>®</sup> CO<sub>2</sub> Removal system.



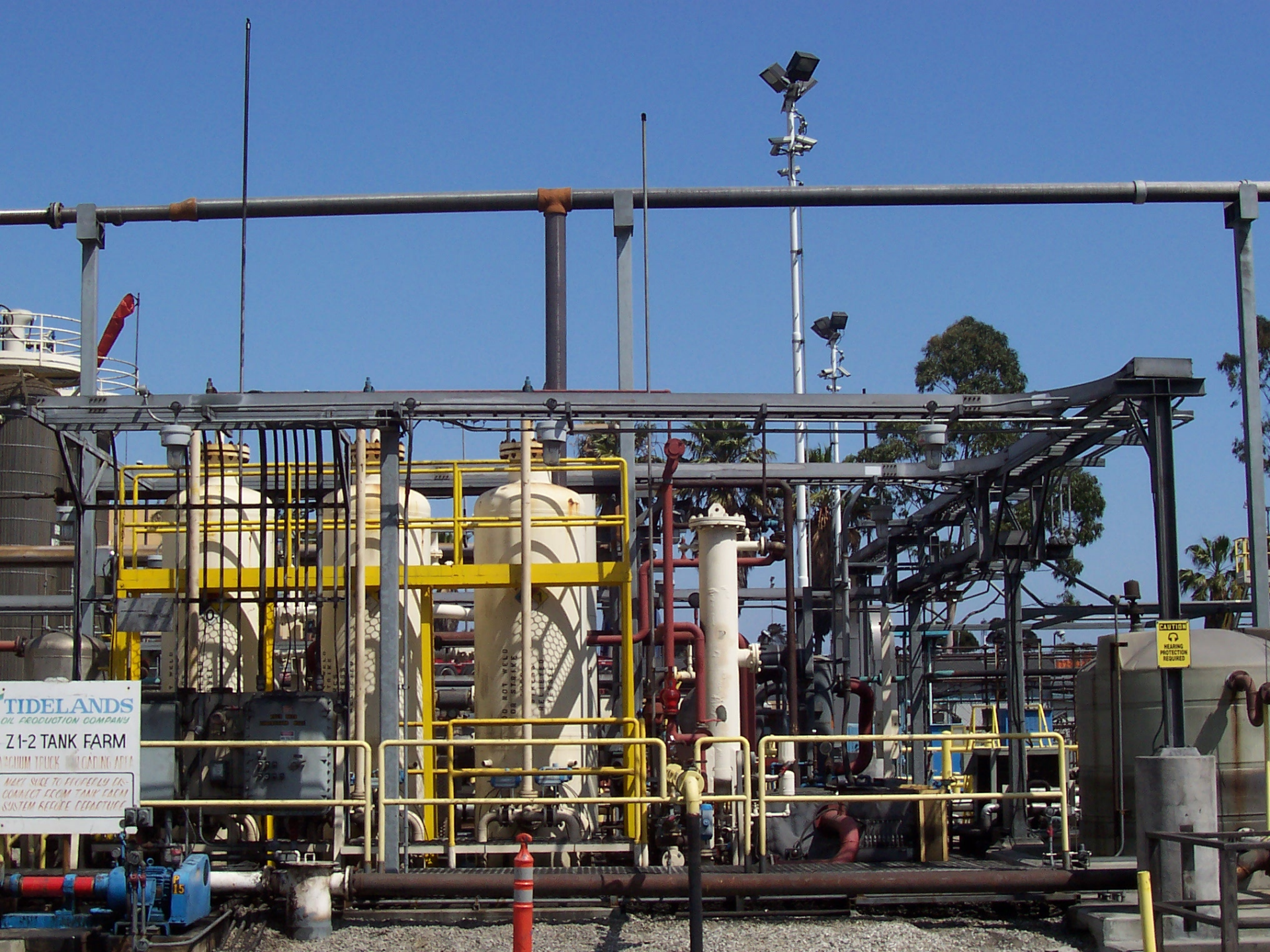
- What did we do: Installed Molecular Gate CO<sub>2</sub> Removal system;
- Benefits: Created merchantable gas instead of flaring;
- Technical issues: New technology: 2<sup>nd</sup> unit to be installed in the world;
- Additional Benefits: Increase in revenue.



**TIDELANDS**  
OIL PRODUCTION COMPANY  
**Z1-2 TANK FARM**  
ALUMINUM TRUCK UNLOADING AREA  
MAKE SURE TO FULLY OPEN DIS-  
CONNECT FROM TANK CARM  
SYSTEM BEFORE DEPARTURE

**CAUTION**  
HEARING  
PROTECTION  
REQUIRED

DO NOT WELD  
OR STRIKE



# Use of Ultra Efficient ICEs



**Issue:** Desire to use non-merchantable gas, instead of flaring gas, to run ICEs instead of electric motors.

**Answer:** Install large ICEs capable of using gas to drive water injection pumps.



# Use of Ultra Efficient ICEs

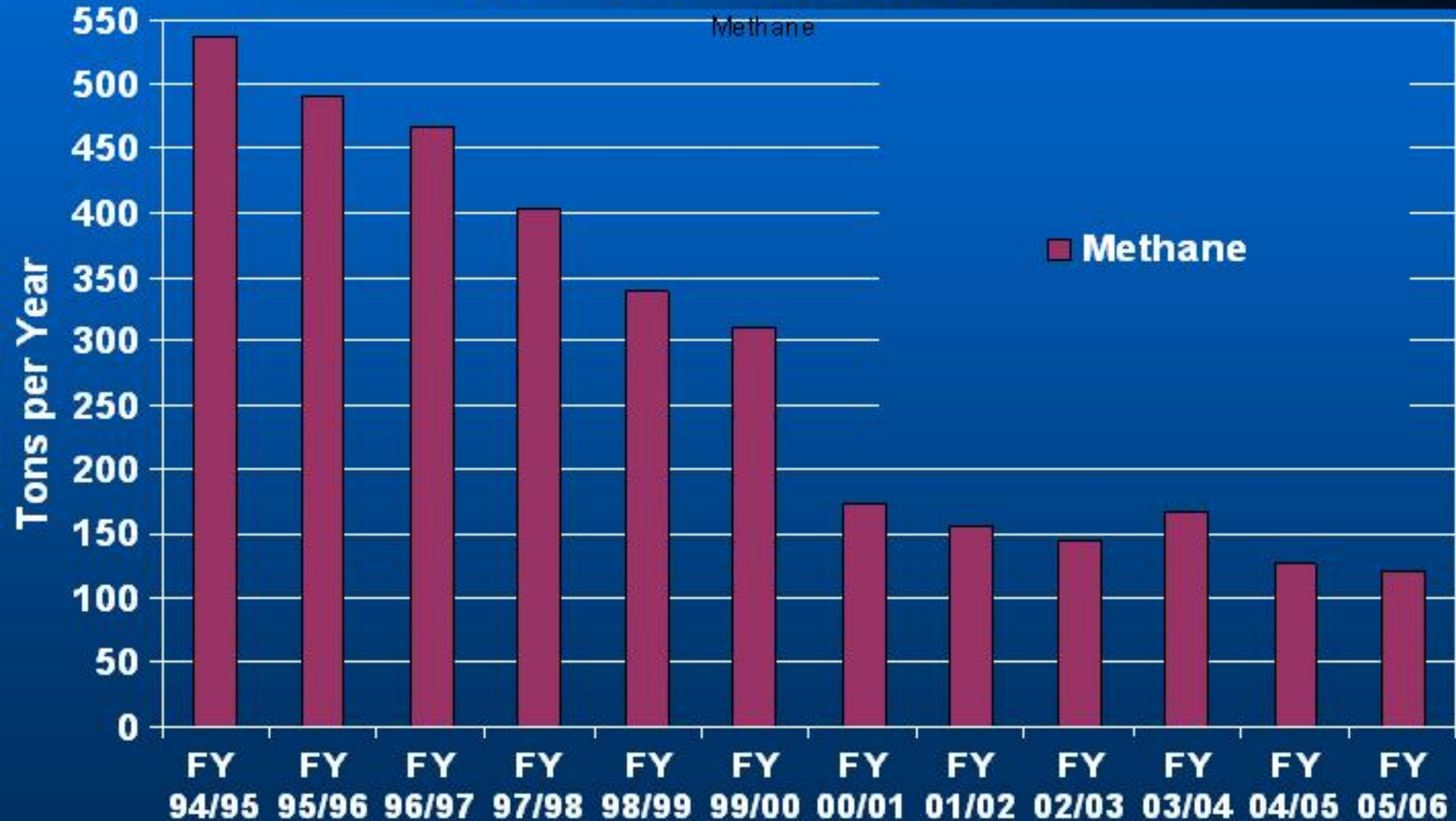


- What did we do: Designed ICEs to allowed the use of non-merchantable gas to be used as fuel.
- Benefits: Significantly reduced flaring (800 mscf/day)
- Technical Issues: How do you control emissions with varying quality gas;
- Additional Benefits: Reduction in electrical cost (\$3,000/day/unit)



13/08/2007

# Air Emissions



Methane is higher in FY03/04 because SCAQMD changed method for calculating methane emissions.