ChevronTexaco (CVX)

O&M Optimization Initiative

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Location: Dallas, Texas
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Chevron Environmental Management Company (EMC)

History – EMC formed in November 1998 as a subsidiary of ChevronTexaco, to manage environmental remediation projects.

Purpose - Create significant value through focused management of remediation and abandonment responsibilities.

Scope – Over 3000 sites world wide and expanding internationally. Divided into 5 BU (RCRA, Retail, Superfund, Abandonment and International).
Lifecycle Cost

- Work Process Improvements
- End-State Strategy Selection
- Cost Management
- Risk Management
Business Case

To manage EMC’s liabilities to achieve reduction in total lifecycle spend

RCRA lifecycle cost reduction opportunities

O&M: >30% reductions in O&M expenditures
Cost Over Time

RCRA spend profile over time
$ Millions; future value

- 50 - 70% spend in the next 5 years
- 30 - 50% spend in the future

• O&M represent 30 - 50% of the portfolio lifecycle costs
ChevronTexaco RCRA Corrective Action Refinery Sites

- Non-operating
- Operating - owned
- Operating – not owned
Current State for 11+ RCRA Sites:

- O&M burn rate is $13 to 15MM/year
- O/M managed by each site
- Total FTE - 60 contractors & 17 CVX
- > 600 wells/yr sampled & chemical tested
- > 1500 samples/yr are collected
- > 2100 wells/yr are gauged for fluid levels
- Over 8000 measured each year
O/M Optimization Project

Current State Continued:

• >Operate 550 H/C recovery wells, 280 Vapor extraction wells and 95 bioventing wells
• >1.5 MM gal/yr liquid hydrocarbon recovered
• > 0.4 MM BOE/yr as vapor recovered
• >1.5 billion gal/yr of fluids pumped, treated
• >1000 acres of CAMU or Capped areas maintained and inspected - an additional 135 wells sampled and analyzed.
Routine O/M Costs Across RCRA

- Recovery O/M: 27%
- Admin and Land Maintenance Costs: 22%
- Lab Analysis: 12%
- Sample Collection: 10%
- Report Prep: 10%
- Recovery Data Collection: 9%
- Effluent Treatment Costs: 4%
- Cell Inspections and repair: 2%
- Other Costs: 4%
### O/M Optimization Project

#### Opportunity Statement -

Implement an O&M optimization program and an O&M organizational model to minimize O&M life cycle costs across the ChevronTexaco RCRA portfolio in support of our cost saving challenge.
O&M OPTIMIZATION PROJECT

Project Drivers

Why are we doing this?

– Meeting the EMC Savings Challenge
– O&M represent 40% of the portfolio lifecycle costs
– Potential savings at key sites to reduce O&M cost

How are we going to do this?

– Document current activities, cost, FTE.
– Focus data gathering and analysis on critical sites
– Run pilot projects to help quantify optimization savings potential and test saving alternatives
O&M Optimization Project

Project Drivers

Why now?
– Current O/M burn rate is $12-15MM/yr
– Sites are being remediated and are shifting to O/M activities

How quickly?
– Implement business model & initial optimization studies in the near term
– Overall systems optimization may take longer
O/M Optimization Project

Organizational model

Routine O&M activities

Implementation of optimization

Optimization study

Optimization model
Where Are We Now

- Created a new position to oversee all O&M activities and focus on optimization of cost while not sacrificing safety and compliance
- Reviewing site strategies & long term O&M costs
- Selected a supplier for optimization studies
- Beginning to evaluate O/M systems throughout the portfolio
- Evaluating contractor management alternatives -
  - Migrate to a single O&M supplier
  - Incentive based contracting
Casper Wyoming Smart Site Review Objectives

• Evaluate O&M objective, technology, system design, and performance.
• Evaluate potential modifications and upgrades to system hardware and software that may improve performance or reduce short term or long term costs.
• Implement modifications that offer a significant financial ROI or provide other significant non monetary benefits.
Casper Results

- >$165,000/yr savings = 19%
- Installation of Automated Well Field Controls ($56,000/yr)
- Replacement of Groundwater Extraction Pumps ($13,000/yr)
- Enhance Polymer Feed System ($9000/yr)
- Installation of VFD on GWTU discharge transfer pumps ($3700/yr)
- Reroute groundwater discharge ($3600/yr)
Casper Results Cont.

- Replace SVE Thermal Oxidizer with Vapor Phase Carbon ($74,000/yr)*
- Interlock GWTU Controls to Wet Well Sump ($700/yr)
- Install Acid Cleaning Loop on Air Stripper ($4,700/yr)
- Repipe Air Stripper Air Intake ($1000/yr)
Conclusion

• By providing sites with organization and tools to perform O/M evaluations we hope to save 10% to 30% of our life cycle costs through efficient operation and design of remediation or O/M systems
Questions?????