Beyond Writing a Program
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Johnathan Ashcraft, PE
Core Operating Area — NOMP, Marmaton, and EOR
Stable IP base with large upside – 727 MMBoe, R/P – 16 years
Oil focused:
- (71% oil; 29% gas) – 2012 SEC Reserves
- (65% oil; 35% gas) – 2013 Production Estimate
Key Growth Drivers
- Near Term – Drilling Repeatable Resource Plays (~ 320,000 net acres; 3,450 unrisked gross locations)
- Long Term – CO2 Enhanced Oil Recovery
2012- Always Behind
+ Unsubstantiated “advice” being given by other departments
+ “Revolving door” of personnel
+ No knowledge capture in place
+ Inconsistent Rig and Well Inventories
+ Lack of Toolkits/Software

Next wells were often unknown until rig release
Drilling programs were often delivered after spud
Lack of Process
No time for training
Accelerating the Drilling Curve

2013- More Than The Prog

- 2013- Improvements
  - Engineering Software
    - WellView Software
    - Landmark Software Suite
  - Knowledge Capture
    - Well Reviews After Rig Release
    - Root Cause Analysis Exercises
    - Drill-Well-On-Paper Exercises
    - Cost Codes
  - Investment in Personnel
    - Training
    - Field Rotation
    - Retainers
  - Company Process for Well Selection
    - Company goal to get 3 ready-to-drill locations ahead of each rig
WellView

- Increased data capture
- Linked well data
- Validated well data
Post Well Reviews

- Institutionalized best practices & lessons learned.
- Has all the data been scrubbed?
- What can we improve for next time?
- How well did we AFE?
- How did we do?
RCA’s

— Institutionalize best practices & lessons learned.
— What was the root cause?
— What are we going to do to improve?
Patterson 421 DWOP

- Breakout sessions and discussions contained to each hole section
- Vendor, rig, field, and office personnel contributed
- 35 suggestions
- 25 suggestions implemented

- Immediate Improvement on the next well!
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2013- Knowledge Capture Projects

Lean Project- Cost Code Revision

- Accurately assigning of costs was difficult
  - Created accounting rework, cost duplication, or unintentionally unspent development funds.
  - Vague cost descriptions created confusion and inconsistency in budgeting, cost recording, and invoicing

**Performed a Lean Project- DMAIC**
Beneficially improved cost management
Freed up estimated 547 wellsite consultant hours
Freed up estimated 104 office hours
Accelerating the Drilling Curve
2013- Investment in Personnel

- **Training**

- **Field Rotation**
  - Engineer kept in the field at all times

- **Retainers**
  - Shut down the revolving door
  - Retain key people that learned the expensive lessons
  - Gain more respect and loyalty of key personnel
  - Instituted Rig of the Quarter, recognize performance
Accelerating the Drilling Curve
2013- Company Well Selection

- Company wide effort to create a process for E&P
- Well selection process devised for repeatable high success well selection.
- Goal of 3 ready-to-drill locations ahead of each rig at all times.
Accelerating the Drilling Curve

2013- More Than The Prog

◆ Improvements
  — Engineering Software
  — Knowledge Capture
  — Investment in Personnel
  — Company Process for Well Selection

Average Marmaton well fell from
34 to 19 days spud-Rig Release

Capital Efficiency increased 400%
from 2012 to 2013
Accelerating the Drilling Curve

2013 - More Than The Prog

- Improvements
  - Engineering Software
  - Knowledge Capture
  - Investment in Personnel
  - Company Process for Well Selection

Average Marmaton well fell from 34 to 19 days spud-Rig Release

Capital Efficiency increased 400% from 2012 to 2013

Questions?