## ACREAGE

### Top-Tier Unconventional Liquids Reservoirs

<table>
<thead>
<tr>
<th>North American Resource Plays</th>
<th>Apache Wolfcamp</th>
<th>Apache Duvernay</th>
<th>Apache Canyon Lime</th>
<th>Apache Eagle Ford (North)</th>
<th>Eagle Ford (South)</th>
<th>Bakken</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depth (FT)</td>
<td>5,800-8,500</td>
<td>8,000-13,000</td>
<td>7,500-9,500</td>
<td>7,500-13,500</td>
<td>6,500-14,500</td>
<td>8,000-10,000</td>
</tr>
<tr>
<td>Gross Thickness (FT)</td>
<td>600-1,500</td>
<td>65-225</td>
<td>100-580</td>
<td>60-200</td>
<td>75-300</td>
<td>20-50</td>
</tr>
<tr>
<td>Porosity (%)</td>
<td>6-10</td>
<td>4-10</td>
<td>6-10</td>
<td>8-10</td>
<td>8-12</td>
<td>5-7</td>
</tr>
<tr>
<td>TOC (%)</td>
<td>2-5</td>
<td>2-7</td>
<td>2-6</td>
<td>2-10</td>
<td>2-12</td>
<td>1-5</td>
</tr>
<tr>
<td>Fracability</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>Moderate</td>
<td>High</td>
<td>Moderate</td>
</tr>
<tr>
<td>Gradient (PSI/FT)</td>
<td>0.45-0.60</td>
<td>0.70-0.90</td>
<td>0.55</td>
<td>0.60-0.80</td>
<td>0.6-0.9</td>
<td>0.65-0.7</td>
</tr>
<tr>
<td>Liquid Yield (BBL/MMcf)</td>
<td>330 -910</td>
<td>up to 500</td>
<td>1,000</td>
<td>250-2,500</td>
<td>250-2,500</td>
<td>1,000</td>
</tr>
</tbody>
</table>
CANYON LIME
Maximizing Recovery and Minimizing Cost

- Dominant player in oil play (> 80% liquids)
- One proven pay zone with potential for additional zone
- 300 square miles of 3D seismic
- 800 locations based on 600’ spacing in 1 zone

<table>
<thead>
<tr>
<th>Acres</th>
<th>130,000 net</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planned 2015 Rigs</td>
<td>4-5 rigs</td>
</tr>
<tr>
<td>Planned 2015 Wells</td>
<td>35 horizontal wells</td>
</tr>
<tr>
<td>Inventory</td>
<td>~800 Hz locations</td>
</tr>
</tbody>
</table>

Bivins East 41-1H*
30-Day IP: 787 BOE/D
Lateral length: 5,500’
Cum Oil: 54,286 BO (7 mo.)

Bivins East 94-1H
30-Day IP: 1,718 BOE/D
Lateral length: 4,472’
Cum Oil: 80,087 BO (6 mo.)

*75 percent of lateral not in zone.
CANYON LIME
Type Curve and Economics

Canyon Lime

Drilling Economics

<table>
<thead>
<tr>
<th>Metric</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>D+C Cost $MM</td>
<td>$8.5</td>
</tr>
<tr>
<td>EUR MBOE</td>
<td>377</td>
</tr>
<tr>
<td>30-Day IP Rate (BOE/D)</td>
<td>1,021</td>
</tr>
<tr>
<td>% Oil / Gas / NGL</td>
<td>50% / 20% / 30%</td>
</tr>
<tr>
<td>WI / NRI</td>
<td>85% / 64%</td>
</tr>
<tr>
<td>ROR</td>
<td>63%</td>
</tr>
<tr>
<td>BFIT NPV 10, $M</td>
<td>$2.4</td>
</tr>
<tr>
<td>2015 Planned Wells</td>
<td>35</td>
</tr>
</tbody>
</table>

Note 1. Type curve assumes 1-mile completed lateral length.
Note 2. All well economics assume $80/BBL WTI, $4/MMBTU NYMEX
“THE CAPACITY OF THE INDIVIDUAL IS INFINITE. LIMITATIONS ARE LARGELY OF HABIT, CONVENTION, ACCEPTANCE OF THINGS AS THEY ARE, FEAR OR LACK OF SELF CONFIDENCE.” - RAYMOND PLANK 1964
CANYON LIME CASE STUDY

MAXIMIZING RECOVERY

Stage Level Completions With 3D
Geosteering With 3D
Integrated Team Solutions
Global Supply Chain
Cost Optimization
Global Database Management
Technology Innovations

MINIMIZING COST

Economic Metrics and Inventory Ranking

Maximize NPV and ROR

Technical Discussion and Case Studies | 98
Bivins East 41-1H
Canyon Lime Discovery Well
30-day IP: 787 BOE/D
Cum: 54,286 BO (215 Days)
Lateral length*: 5,100'

Bivins East 94-1H
30-day IP: 1,718 BOE/D
Cum: 80,087 BO (175 Days)
Lateral length: 4,472'

*Only 25% of the lateral completion in the 41-H contacted the primary pay zone.
CANYON LIME CASE STUDY

Confirmation and Delineation Strategy

- **Minimize** penetration of drilling hazards identified on 3D seismic data
- **Experiment** with casing design and penetration inclination within “Wash Out” shale hazard zone
- **Test** azimuth to maximize open fracture contact with well bore
- **Drill** a vertical monitor well adjacent to 4 horizontal wells spaced at 1,200 feet
- **Conduct** micro-seismic survey, obtain conventional core and extensive logging suite
- **Generate** multiple well pads for 2014 and 2015 drilling inventory
CANYON LIME CASE STUDY
Hazard Zones Using 3D Attributes

Lost Circulation Zones
(Pg = 0.361 PSI/FT)

PANHANDLE FIELD
Cumulative Production:
1.4 BBO, 8.1 TCF
Drilled 6 “new” wells using 3D attributes

- No circulation losses occurred

100% within target zone, average lateral length of 6,000 feet

- Average spud to TD = 37 days
- Average drilling cost savings of $2 MM per well
CANYON LIME CASE STUDY
Reducing Drilling Time Using 3D Seismic

Bivins Ranch: Depth vs. Days

Average reduction of 23 days per well.
CANYON LIME CASE STUDY
Stage Level Completions Using 3D Seismic

- Generated Definitive Attributes
  - Identified drilling and completions hazards
  - Identified locations of enhanced system porosity and permeability
  - Correlated completions diagnostic data with predicted attributes

New approach has resulted in a better understanding of the hydrocarbon system.
CANYON LIME CASE STUDY

Development Strategy and Testing the Hazard

600 Total Locations (100 probable locations within Hazard Polygon)

2014 Wells
2015 Wells
2016+ Wells
Wells in HZD
Pipelines

Hazard Polygon
CANYON LIME CASE STUDY
Development Strategy and Testing the Hazard

800 Total Locations
(100 probable & 200 possible locations within Hazard Polygon)

2014 Wells
2015 Wells
2016+ Wells
Wells in HZD
Pipelines