New Offshore Pipeline Installations – Pacific OCS Region

Theresa Bell
Petroleum Engineer
MISSION:

BSEE works to promote safety, protect the environment, and conserve resources offshore through vigorous regulatory oversight and enforcement
2 Lease Term Pipelines

- Proposed 10" Injection Water Pipeline
- Existing Power Cable (West) - 6" Oil P/L, 12" P/L, 10" P/L
- Power Cable (East)
- Fissure
- J-Tube #4
- J-Tube #7
- Static Riser
- Proposed 10" Gross Fluids Pipeline

8,000' Each of 10.75" x .594" WT X-52
Beta Unit – Platform Eureka to Platform Elly Oil and Water Pipelines

* Two Replacement Pipelines - Oil and Water
* No lost time accidents
* Allows Eureka to return to full production
* Completed in December 2011

<table>
<thead>
<tr>
<th></th>
<th>Outside Dia.</th>
<th>Wall Thickness</th>
<th>Water Depth</th>
<th>Route Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risers</td>
<td>10.75 in</td>
<td>0.719 in</td>
<td>750-250 ft</td>
<td></td>
</tr>
<tr>
<td>Each Pipeline</td>
<td>10.75 in</td>
<td>0.594 in</td>
<td>750-250 ft</td>
<td>~9,500 ft</td>
</tr>
</tbody>
</table>
• Length – 381 ft
• Dynamically Position Vessel
• 4 Main Diesel engines - Wartsila 8L26A diesel engine driving Leroy-Somer generators each with a rating of 6,600v, 60Hz @ 900 RPM
2 Lease Term Pipelines

PROPOSED 10" INJECTION WATER PIPELINE

EXIST’G POWER CABLE (WEST)
- 6" OIL P/L
- 12" P/L
- 10" P/L
POWER CABLE (EAST)

FISSURE

J-Tube #1

J-Tube #7

EUREKA

J-Tube #4

PROPOSED 10" GROSS FLUIDS PIPELINE

9,000' Each of 10.75" x .594" WT X-52

Static Riser

6" FM EDITH 16" T
Dos Cuadras Pipelines

- 5 Pipelines; 12” oil and gas tie-ins, 8” oil and gas (P/F A-B), 6” gas
- Reconfigures the Platform A and B pipelines to make them “smart piggable” and removes the majority of the wall loss anomalies.
- Replaces portions with wall loss anomalies of more than 60%
- No loss time accidents
- Completed in February 2012
1 Modified Right of Way (ROW)
2 New ROWs Pipelines
3 New Lease Term Pipelines
Dos Cuadras Pipelines

- Three Replacement Pipelines
- Two New Sections with Sub-Sea Connections

<table>
<thead>
<tr>
<th>Pipeline and Risers</th>
<th>OD</th>
<th>Wall Thickness</th>
<th>Water Depth</th>
<th>Route Length</th>
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<tbody>
<tr>
<td>Hillhouse to A Gas</td>
<td>6.65 in</td>
<td>0.432 in</td>
<td>190-200 ft</td>
<td>2,661 ft</td>
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<tr>
<td>B to A Oil</td>
<td>8.625 in</td>
<td>0.5 in</td>
<td>190-200 ft</td>
<td>2,599 ft</td>
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<tr>
<td>B to A Gas</td>
<td>8.625 in</td>
<td>0.5 in</td>
<td>190-200 ft</td>
<td>2,599 ft</td>
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<tr>
<td>A to Sub-Sea Oil</td>
<td>12.75 in</td>
<td>0.5 in</td>
<td>190-200 ft</td>
<td>3,069 ft</td>
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<tr>
<td>A to Sub-Sea Gas</td>
<td>12.75 in</td>
<td>0.5 in</td>
<td>190-200 ft</td>
<td>541 ft</td>
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