Trans-Alaska Pipeline System

the challenges and opportunities ahead
Incorporated August 14, 1970 to design, build, operate and maintain the pipeline, pump stations and the Valdez Marine Terminal.

Currently owned by five oil pipeline companies.

Alyeska personnel and contractors continually monitor and operate TAPS so oil flows safely, efficiently and in an environmentally sound manner.
Background

- Approximately 14 percent of the nation's domestic oil production carried on TAPS.
- 16 billion barrels+ of crude oil transported.
- 20,000+ tankers loaded.
- 640,000 barrels throughput per day.
TAPS Owners & Percentages

<table>
<thead>
<tr>
<th>Company</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>BP Pipelines (Alaska), Inc.</td>
<td>46.9263%</td>
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<tr>
<td>ConocoPhillips Transportation Alaska Inc.</td>
<td>28.2953%</td>
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<td>ExxonMobil Pipeline Company</td>
<td>20.3378%</td>
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<td>Koch Alaska Pipeline Company, L.L.C.</td>
<td>3.0845%</td>
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<tr>
<td>Unocal Pipeline Company</td>
<td>1.3561%</td>
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“We didn’t know it couldn’t be done.”
Ramp up & peak production

- Designed to move 1.5 million barrels per day
- Peak Production, 1988 2.1 million barrels per day
Declining throughput

- 2014: 32°F with 18 Day Transit from Prudhoe Bay to VMT
- 1988: 100°F+ with 4 Day Transit from Prudhoe Bay to VMT
Declining flows

• TAPS was designed as a warm oil pipeline
• Circumstances have changed:
  – Throughputs and temperatures continue to decline
  – At 550k barrels/day, portions of the pipeline will be at 32° F during the winter months
Low flow study

• Testing program
  – Laboratory testing
  – Field tests
  – Flow loop testing
• Model development
• Mitigation studies
Low flow issues

• Water dropout
• Ice formation
• Wax deposition
• Frost heaves
Low flow issues – water/ice

– Water separation and accumulation at low points during flowing conditions
– Ice formation in flowing conditions
Wax received with scraper pig
Low flow scenario

• Poor weather
• Cold temperatures
• Boom challenges
• Inventory builds
• Producers prorate (scale back production)
• Potential shut-down
Potential low flow solutions
Determination, ingenuity, partnership