Surface and Intermediate Sections - Midland Basin

Midland County, Texas

Mechanical Thruster

Challenge
A Midland basin operator experienced high shock and vibration and wanted to reduce it to increase drilling efficiency and reduce section costs.

Application
Analyze BHA, well profile, drilling performance requirements and discuss specific objectives with drilling team. Optimize MT6-800 configuration and placement for maximum effectiveness.

Results
Over a five well offset comparison, shock and vibration significantly reduced, section times decreased and $41,000 average savings per well. Operator has continued to run the thruster across their drilling program with repeated results.

Average Section Time Reductions

- **15%**
  Surface Section
- **8%**
  Intermediate Section

Total Savings Per Well

~**$41,000**

Vibration Decrease with Thruster

<table>
<thead>
<tr>
<th></th>
<th>Without Thruster</th>
<th>With Thruster</th>
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</thead>
<tbody>
<tr>
<td>Axial Vibration</td>
<td>-80.38%</td>
<td>-80.38%</td>
</tr>
<tr>
<td>Lateral Vibration</td>
<td>-29.86%</td>
<td>-29.86%</td>
</tr>
<tr>
<td>Axial Shock</td>
<td>-62.18%</td>
<td>-62.18%</td>
</tr>
<tr>
<td>Lateral Shock</td>
<td>-41.59%</td>
<td>-41.59%</td>
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