WELL HISTORY

Reichhold Energy Corporation
Well: Columbia County No. 10
Section 3-6N-5W, W.B.& M.
Columbia County, Oregon

September 1979

29, Paul Graham Drilling and Service Company moved in Rig No. 1 and rigged up.

30, Spudded in at 11:00 A.M. with 9-7/8" bit and drilled ahead.

445' Sand, Gravel and Clay

October 1979

1, Ran 11 joints or 425.73' (inc. shoe) of 7" 20# casing equipped with a guide shoe and cemented around shoe at 437' with 150 sacks of Class II cement treated with 2% CaCl₂. Cement in place at 10:40 P.M. No cement returns at surface.

Ran 1" pipe to top of cement in annulus at 223'. Pumped in 50 sacks of Class II cement, filling annulus to surface. Cement in place at 6:15 A.M.

Ran 1" pipe to top of cement in annulus at 120'. Pumped in 65 sacks of Class II cement filling annulus to surface. Cement in place at 12:15 P.M.

Landed casing and installed 6" Series 900 Screw on head.

Installed and tested BOP equipment.

2, Found top of cement at 386'. Drilled out cement and shoe with 6-1/4" bit and drilled ahead.

1,516' Clay

3, 2,063' Clay and Sand

Conditioned mud and raised weight to 75 lbs/cu.ft. Drilled ahead.

2,257' Clay and Sand

4, 2,981' Clay and Sand

5, Ran Welex Dual Induction Guard Log from 440' to 2,979'.

Ran Welex Compensated Acoustic Velocity Log from 440' - 2,975'.

Ran Welex Compensated Density-Neutron Gamma Ray Log from 440' - 2,979'.

Ran Welex Dipmeter.

-1-
WELL HISTORY

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October 1979

5,

Ran in hole and conditioned mud. Laid down drillpipe.

6,

Ran 79 joints or 2,982.96' (inc.shoe) of 4-1/2" 10.5# K, R-3, ST&C casing equipped with a guide shoe and an insert fill-up valve on top of second joint above shoe. Casing equipped with 10 centralizers on 76' 3/4 spacing.

Cemented around shoe at 2,980' with 175 sacks of Class II cement. Used bottom rubber plug and displaced top rubber plug with 263 cu.ft. of water. Bumped plug with 1,400 psi which was held for 10 minutes. Bled off and check held. Cement in place at 7:00 A.M.

Casing Details

<table>
<thead>
<tr>
<th>Description</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shoe</td>
<td>1.00'</td>
</tr>
<tr>
<td>2 Joints</td>
<td>76.73'</td>
</tr>
<tr>
<td>Insert</td>
<td>---</td>
</tr>
<tr>
<td>77 Joints</td>
<td>2,905.23'</td>
</tr>
<tr>
<td>On Hook</td>
<td>2,982.96'</td>
</tr>
<tr>
<td>Above K8</td>
<td>3.00'</td>
</tr>
<tr>
<td>Shoe @</td>
<td>2,979.96'</td>
</tr>
</tbody>
</table>

Landed casing and installed tubing spool. Tested Secondary Seal with 3,000 psi.

Installed and tested BOP equipment.

Picked up 2-3/8" tubing and ran into top of plug at 2,900'. Pulled tubing.

Waiting on cement.

7,

Ran Welex Micro-Seisogram Log from 1,102' - 2,902'.

Ran Welex Neutron Correlation Log from 2,300' - 2,901'.

Ran 2-3/8" tubing to 2,900' and conditioned water in casing with 3% Potassium Chloride.

Landed tubing at 2,634'.

Installed Xmas Tree.
October 1979

8,

Welex ran through tubing with 1-9/16" Sidewinder gun loaded with 0° phasing and Magnetic decentralizer.

Shot 4 holes per foot in the following intervals:

\[
\begin{align*}
2,668' & - 2,678' \\
2,682' & - 2,689'
\end{align*}
\]

\[
\begin{align*}
2,692' & - 2,700' \\
2,703' & - 2,710'
\end{align*}
\]

Removed water from casing with Nitrogen.

Blew well at various rates to remove water.

Flowed well on 7/16" bean at 4,300 Mcf/D rate. Tubing pressure 840 psi casing pressure 910 psi.

Shut in pressure, Tubing 990 psi, Casing 960 psi.

Well shut in waiting for pipeline connection.