

SOLVING FLOWING WELL PROBLEMS

138. Let's look at some operating problems.

A newly completed well was opened a week ago by an inexperienced operator.

The well is expected to flow at 300 bbl./day but is only producing 200 bbl./day.

Flowing tubing pressure is 500 PSIG.

The well is (underproducing/overproducing).

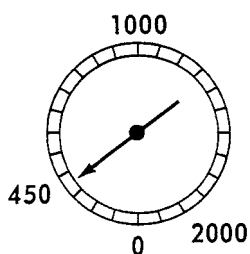
139. Since it is a new well, the underproduction probably (is/is not) caused by solid deposits in the tubing.

140. What does the operator probably need to do to increase production?

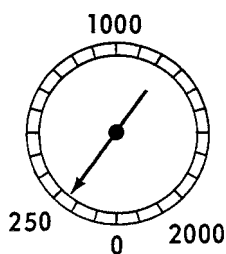
- Scrape the tubing.
- Kill the well.
- Install a larger choke.

141. Here are tubing pressure readings taken at two different times from a single-completion well with a packer.

The operator is checking this lease for overproducing wells.



TIME 1



TIME 2

Normally, this well maintains a flowing tubing pressure of 500 PSIG.

Tubing pressure is (rising/falling).

142. What's likely to be causing the overproduction at this well?

- _____ An eroded bottom-hole choke.
- _____ Blowaround.
- _____ An eroded surface choke.

143. In checking the adjustable choke at this well, the operator finds that it is set wide *open*.

This probably (is/is not) causing the overproduction at the lease.

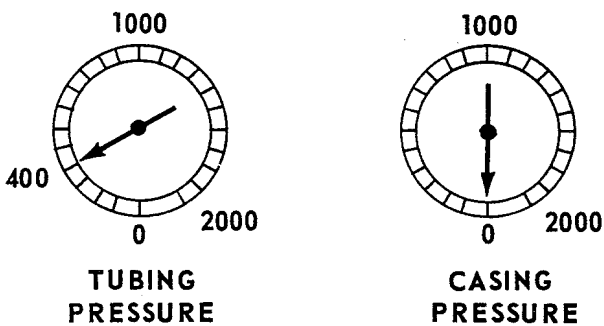
144. An adjustable choke may be accidentally _____ to the wrong setting.

The choke (is/is not) necessarily eroded.

145. After resetting the choke, the operator finds two days later that production at the lease is normal.

Since the problem is solved, he (needs/does not need) to go back immediately to this well.

146. On an underproducing lease, the operator finds these two pressure readings on a single-completion well with a packer. The well normally holds a flowing tubing pressure of about 600 PSIG.



Now tubing pressures are (rising/falling).

147. Casing pressures (are/are not) rising.

148. A tubing leak probably (is/is not) causing the underproduction.

149. Paraffin in the tubing (could/could not) cause these pressure changes.

150. Or a plugged bottom-hole _____ could make tubing pressures fall.

151. If the well is about due for a scraping or injection, the problem is probably _____ in the tubing.

152. Suppose the well has just been scraped, and tubing pressure is falling very rapidly.

Then the tubing may be loading up with dense _____.

153. A heading well will start with a falling tubing pressure.

In a well with a packer, casing pressures (are/are not) affected by heading.

154. If the well is going to head, tubing pressure will _____ to begin with.

155. But, after a while, tubing pressures will _____ again in a heading well.

156. When the well begins heading, the operator should record the pressure changes and their times.

These times are used to find out how long the well should be _____ and _____ during stop-cocking.

157. If the tubing pressure falls to 0 PSIG and does not rise again, the well is apparently _____.

158. An unpacked well may be equalized to bring it to life again.

Since this well has a _____, it cannot be equalized.

159. It may need to be _____ out to bring it to life again.

160. Here's another problem.

An operator finds a sudden increase in production and, on inspection, finds that tubing pressures are rising on several flowing wells on his lease. None of the wells has a bottom-hole choke, and all the surface chokes seem to be functioning normally.

A fluid injection program has been in operation.

What's likely to be causing the overproduction at this lease?

- Tubing leaks.
- A rising GOR.
- The injection program.

161. What should the operator do?

- Shut in the well.
- Kill the well.
- Report the overproduction to his supervisor.

162.

The tubing pressure at a well on an under-producing lease is abnormally high, but the surface chokes are properly set and seem clean.

A pressure gage set downstream from the surface choke also shows an abnormally high pressure, and the operator notices a hissing sound in the flow lines away from the well.

If this underproduction is caused by plugging deposits from the fluids, the plugs are probably in the (tubing/Christmas tree/surface flow lines).

163. The operator should:

- shut in the well.
- change the choke.
- report the problem to his supervisor.

164. At an underproducing lease, an operator finds an unpacked flowing well with these symptoms:

casing pressure is falling.
tubing pressure is falling.
there is a hissing sound at the well head.

This well probably (is/is not) underproducing.

165. The hissing sound indicates an increase in the volume of (gas/oil/water) in the produced fluid.

166. Is this well likely to begin heading?

___ Yes.

___ No.

167. The operator should first:

___ continue to observe the well closely.

___ recommend a change in the equipment or procedure at the well.

168. If he finds the well is heading, he should report this fact to his _____.

169. For any well, the allowable is the production goal.

As production continues over time, the allowable initially set for a flowing well becomes too _____.

170. Periodic tests are taken at a well.

One purpose of a test is to set the new _____ for the well.

171. Before a well test is taken, the operator _____
_____ the well to allow well pressures to stabilize.

172. Then the personnel making the test install any necessary equipment, and the operator _____ the well again.

173. While the test is being run, no changes should be made in well equipment.

Changing a choke while the test is being run would cause a _____ in the test results.

174. After the test is completed, the well is _____ again, the test equipment is _____, and the well is _____ again to normal flow.

175. Production allowables are kept realistic by periodic well _____.

THE END