

SGS (Static Gradient Survey)

Motivation

The idea of SGS is to pull a memory gauge down hole below, deep enough to capture a pressure gradient in wellbore fluid column and then use the same gradient to extrapolate the wellbore pressure to formation datum.

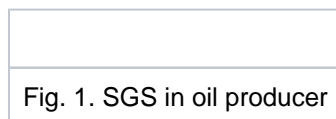
Objectives

Assess formation pressure in perforated formation units.

Data Acquisition Procedure

1. Design survey
 - a. Assess the duration of required shut-in period
 - b. Assess the expected static fluid level based on the minimal expected formation pressure around the well
 - c. Assess additional depth extension in order to capture the pressure gradient in static fluid column
2. Shut-down the well for a pre-calculated period of time
3. Pull down the memory gauge at pre-calculated depth
4. Retrieve the tool at surface and download the data

Data Interpretation



Assumptions and Limitations

The survey assumes that

- the achieved shut-in conditions are representative of the formation pressure

- the fluid column across the surveyed interval stays the same all the way down to the formation datum

The survey is applicable for wells with one perforated unit with no integrity issues (behind casing communications, active leaks or leaky bottom-hole)

The survey is applicable for wells with multiple perforations providing that all perforated units have the same formation pressure so that well does not develop a cross-flow between perforations during the survey.

In most practical cases the above conditions are not met and SGS may be highly misleading.