

# PLT – Logging Procedure

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PLT is performed in cased-holes and sometimes in wells with open-hole bottom completions.

In both cases it's classified as cased-hole logging as the major part of the borehole is cased.

The PLT survey is conducted under flowing and shut-in conditions, preferably after reaching quasi-stationary conditions (when flow rate and pressure change negligibly during the survey).

The PLT is performed between two depth points: top of PLT survey and bottom of PLT survey, which is called PLT survey interval.

The primitive element of PLT survey is a single-run of PLT tool from top to bottom of survey interval (called "down-pass") or from bottom to top (called "up-pass") .

The typical logging procedure includes three different up-down passes at three different cable speeds, which results in totally 6 different passes.

For vertical well with up to 3,000 m depth and 100 m survey interval the typical duration of the survey would be between 4 hours and 8 hours and fits working day schedule at well location.

In deep wells and horizontals the PLT survey may last few days.

The PLT survey requires some pre-survey well-maintenance:

- ensure the wellhead valve and THP gauges are operational
- preliminary well testing to ensure the well flow during the survey
- dummy run with a tool-equivalent to ensure the accessibility of the hole for the PLT toolstring
- Preferably arrange flowrate measurements at wellhead

The PLT survey is normally conducted twice:

- during the stabilized flow and called "flowing passes"
- during the stabilized shut-in conditions and called "shut-in passes"

The usual choice of cable speeds is:

- 5 m/min
- 10 m/min
- 20 m/min
- 30 m/min

and logging engineer may wish to run the tool at all the above speeds or select three most appropriate speeds for a given flow conditions

In some cases the engineer may select less than 5 m/min pass and more than 30 m/min pass and in case of a real-time survey may decide selectively for different parts of survey interval.

Below is the table of popular suffixes for logging passes.

Suffix	Flow status	Cable Speed	Up / Down
F1D1	Flowing = Production / Injection	5 m/min	Down
F1U1	Flowing = Production / Injection	5 m/min	Up
F2D1	Flowing = Production / Injection	10 m/min	Down
F2U1	Flowing = Production / Injection	10 m/min	Up
F3D1	Flowing = Production / Injection	20 m/min	Down
F3U1	Flowing = Production / Injection	20 m/min	Up
F4D1	Flowing = Production / Injection	30 m/min	Down
F4U1	Flowing = Production / Injection	30 m/min	Up
S1D1	Shut-in	5 m/min	Down
S1U1	Shut-in	5 m/min	Up
S2D1	Shut-in	10 m/min	Down
S2U1	Shut-in	10 m/min	Up
S3D1	Shut-in	20 m/min	Down
S3U1	Shut-in	20 m/min	Up
S4D1	Shut-in	30 m/min	Down
S4U1	Shut-in	30 /	Up

Following the above conventions the log name TEMP\_F1D2 means: "Temperature sensor, first flowing survey, down pass at second speed".