

Material Balance

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Material Balance

Preliminary Self-Evaluation

Self-Evaluation: Material Balance

- Familiarity with reservoir pressure determination.
- Understanding of reservoir drive mechanisms.

Material Balance Subtasks

Tasks: Material Balance

- Oil MBE (must know all data, also $c_f(p)$).
- Gas MBE (abnormal pressure, water drive).

Topics: Material Balance

● "Accounting" Concept of Material Balance:

- Require all inflows/outflows/generations.
- (Average) reservoir pressure profile is **REQUIRED**.
- Require rock, fluid, and rock-fluid properties (at some scale).

● Oil Material Balance:

- Less common than gas material balance (pressure required).

● Gas Material Balance:

- Volumetric dry gas reservoir (p/z versus G_p (straight-line)).
- Abnormally-pressured gas reservoirs (various techniques).
- Waterdrive/water influx cases (always problematic) Material Balance yields **RESERVOIR VOLUME!**