

2018.02.13 → menu:

- Additional comments on estimation of $N, G, TRR(N_p, G_p)$ using Monte Carlo → exercise 4
- layout of production systems

if you have interest: http://www.spe.org/industry/docs/GuidelinesEvaluationReservesResources_2001.pdf

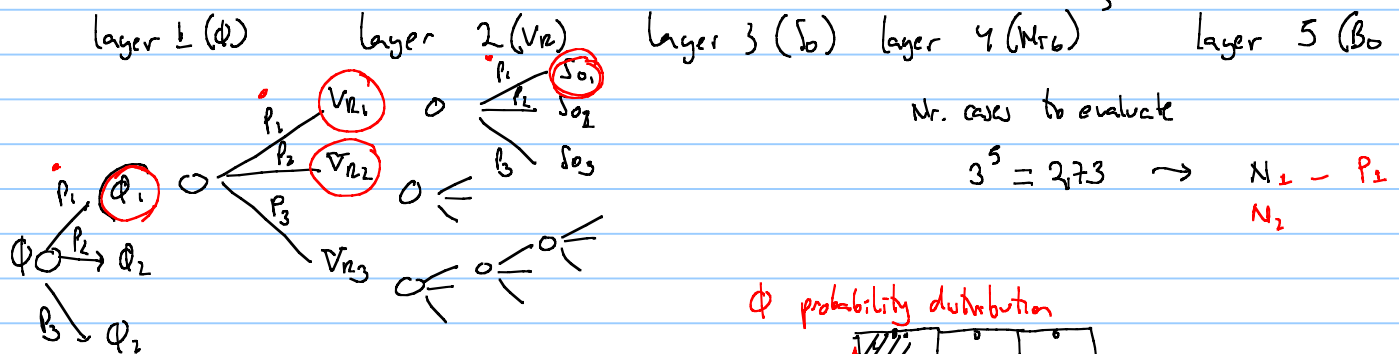
DISTINGUISHED AUTHOR SERIES

Reserves Estimation: The Challenge for the Industry

Feruh Demirmen, SPE, Petroleum Consultant

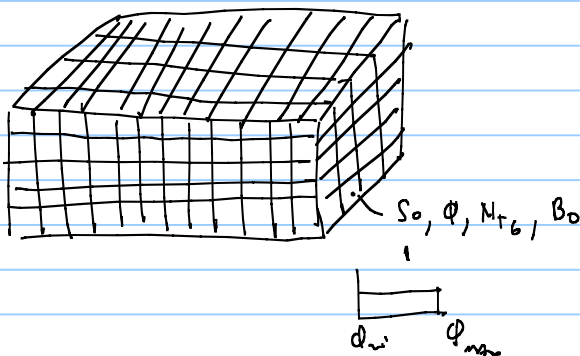
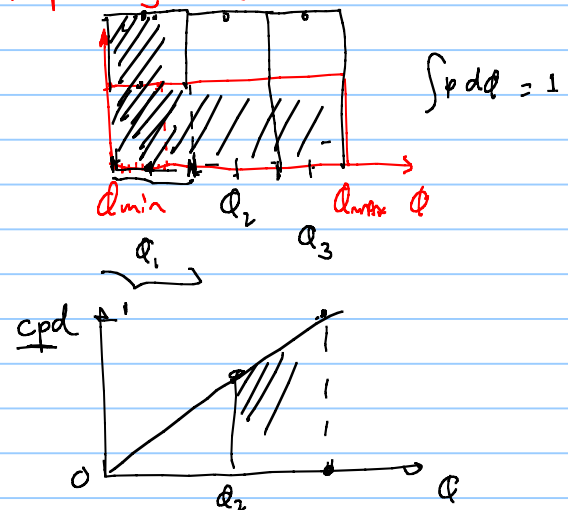
Comment on problem 4 → exercise 1

$$N = \frac{1}{B_o} \sum_{i=1}^4 V_{Ri} S_{oi} N_{Ri}$$



Convert from continuous probability to discrete by integrating under curve

ϕ probability distribution



Read page 85 from compendium for more information about how we handle several reservoir realizations.

layout of offshore production systems → offshore Norway

platform wells
(dry X-mas)
trees

subsea wells
(wet X-mas)
trees

drilling package
\$ \$

sea level

- drilling is done on the platform
- X-mas tree is on the platform
- wells are deviated well intersection must be taken care of
- reservoir is not very spread
- usually limited for water depths $\approx 500\text{m}$

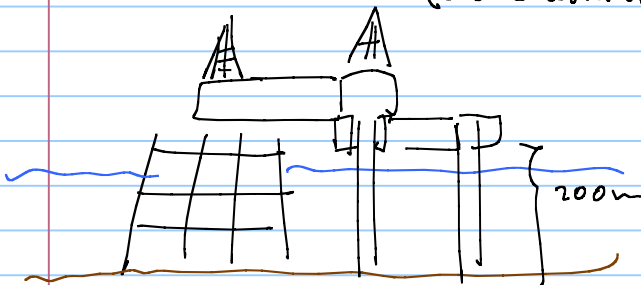
- used when frequent well intervention is required (electric submersible pump)

floating, production, storage
offloading

PPS

300m and above
water layer
height

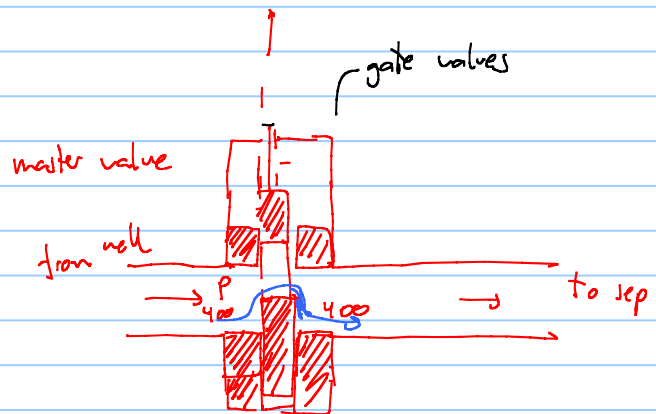
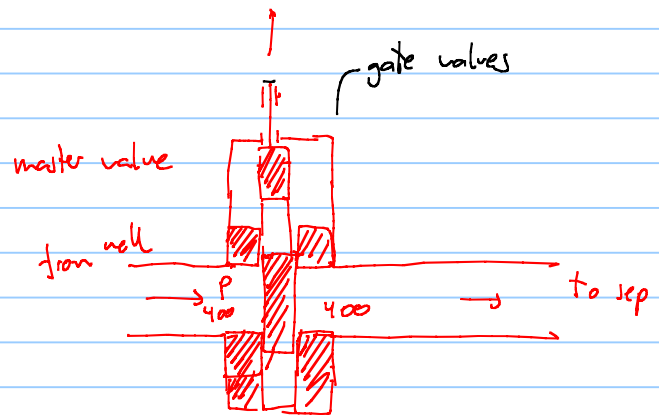
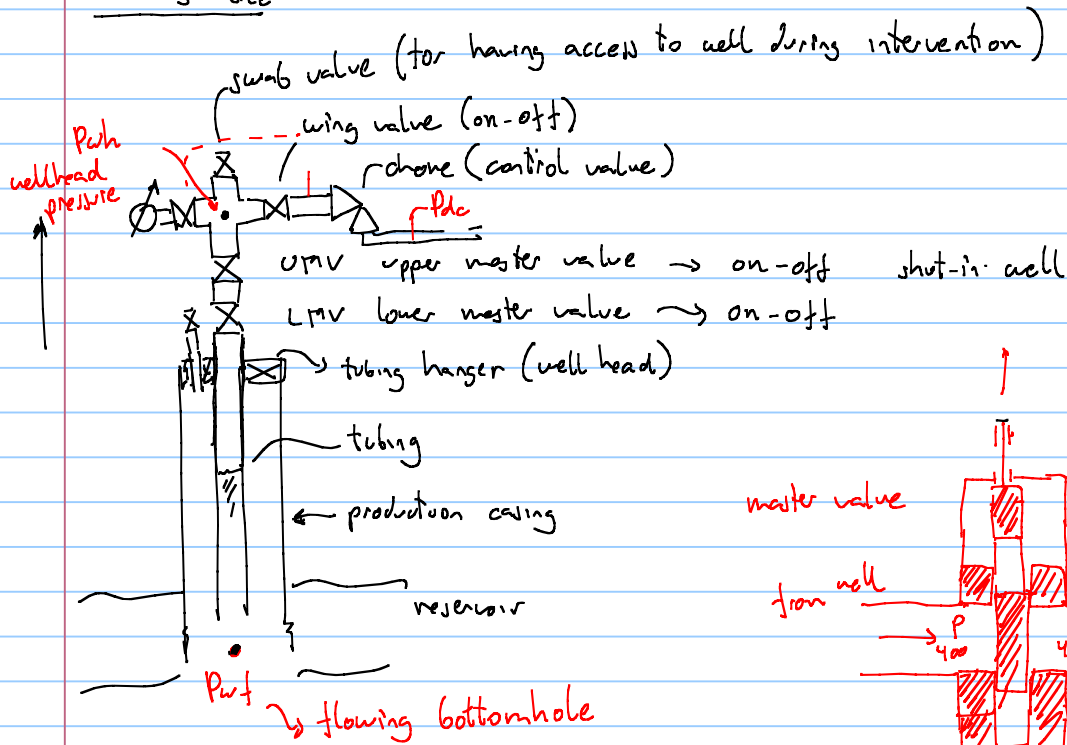
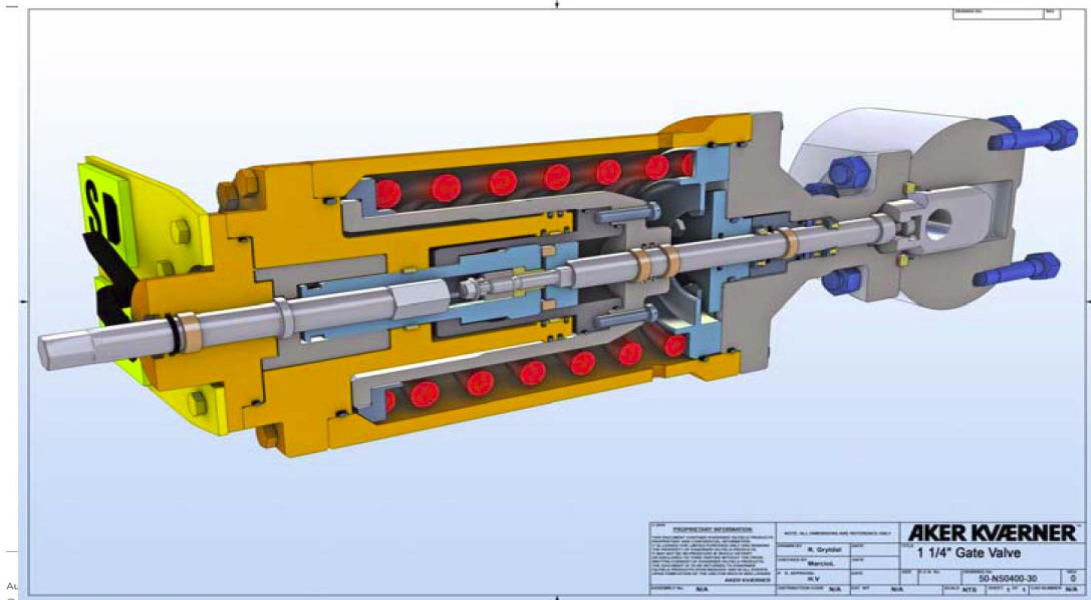
drilling in subsea wells usually performed by drilling ship
↳ semisubmersible drilling



in platform well wells are contained
well bay



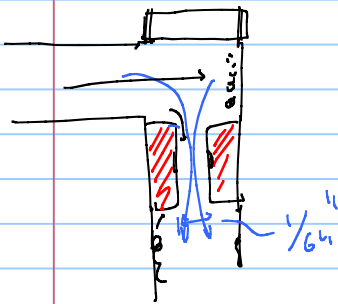
in platform well the operator has direct access to
X-mas tree → well closing change down
↳ test well maintenance

X-mas treeXmas Tree Gate Valves

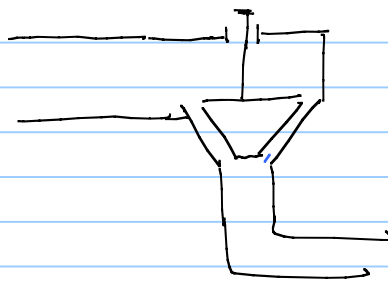
Choke

Fixed

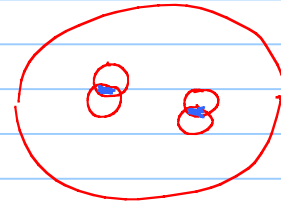
adjustable



bean choke



needle choke

willis choke
disk chokeusually used on
onshore wells
or platform wells

cage -choke

in subsea wells the choke
is placed in a special
module to make it easy
to retrieveeroseive energy away from the
downstream components.of operating conditions, including
high sand concentrations.

- Available in manually operated or actuated models.

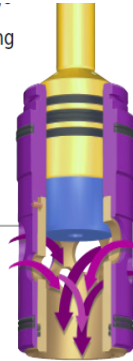
Control Choke
Cage-Style Trim Design

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