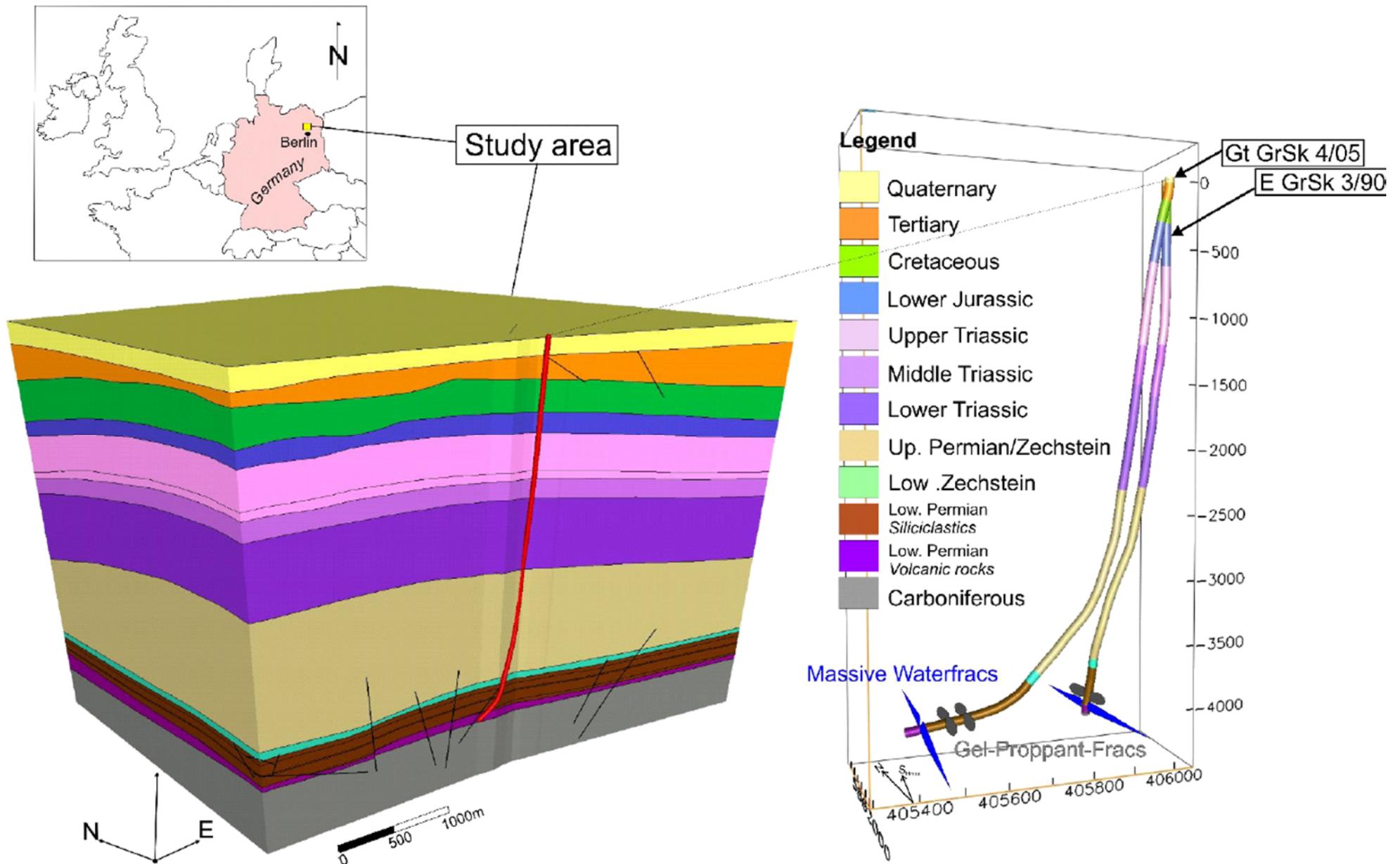
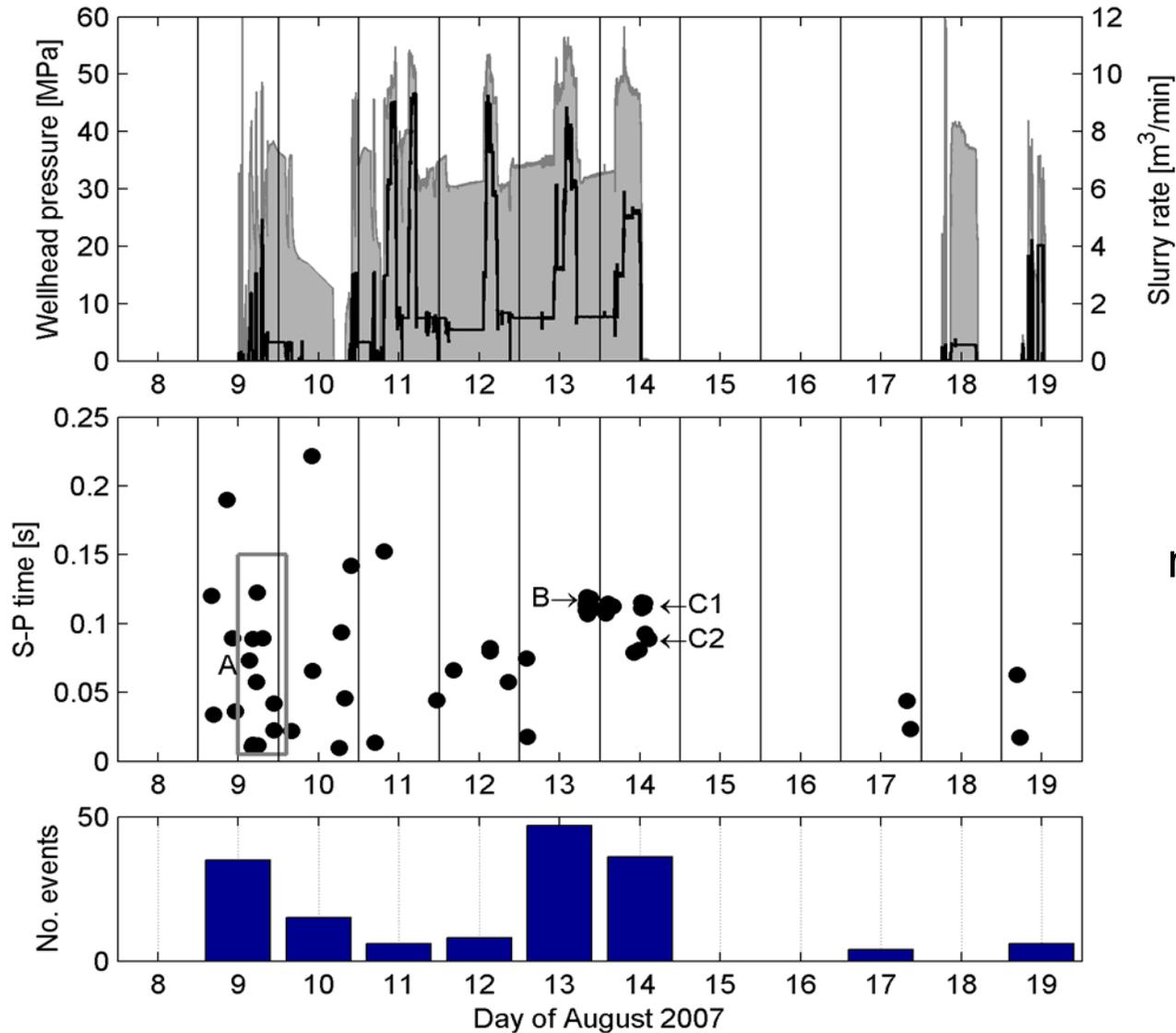




G. Zimmermann, J. Henniges, A. Reinicke, G. Blöcher, I. Moeck, G. Kwiatek, W. Brandt, A. Saadat, E. Huenges
Deutsches GeoForschungsZentrum – GFZ Potsdam

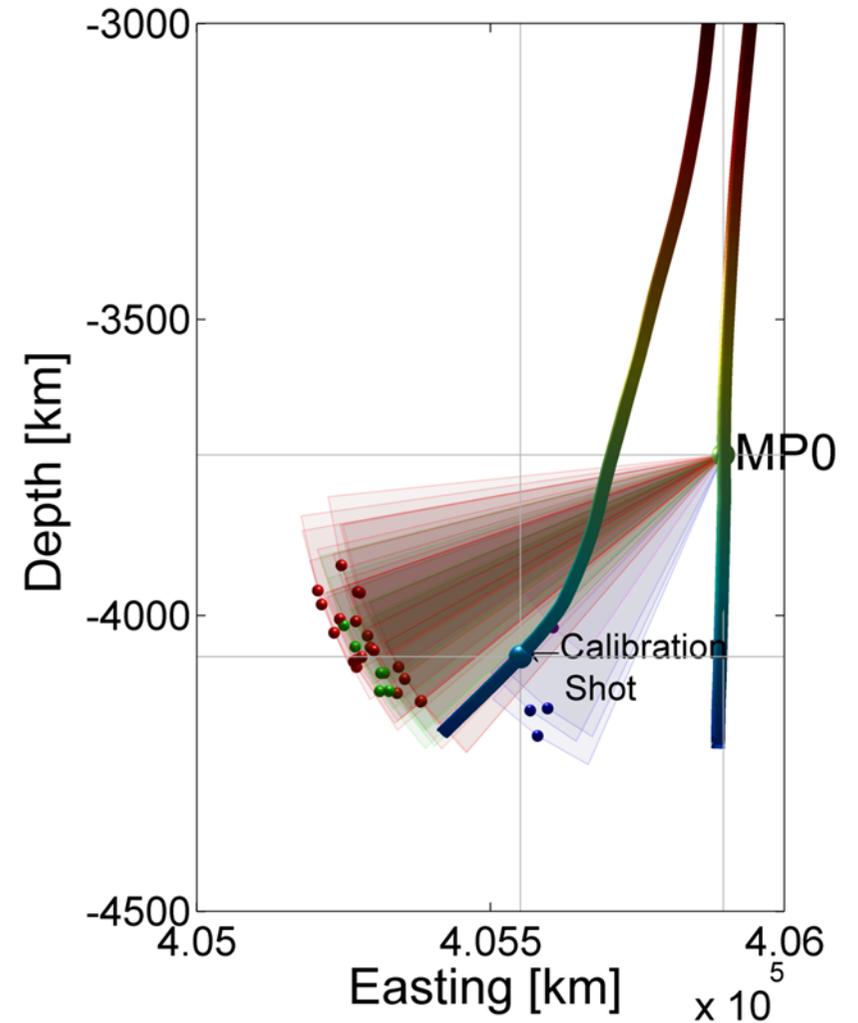
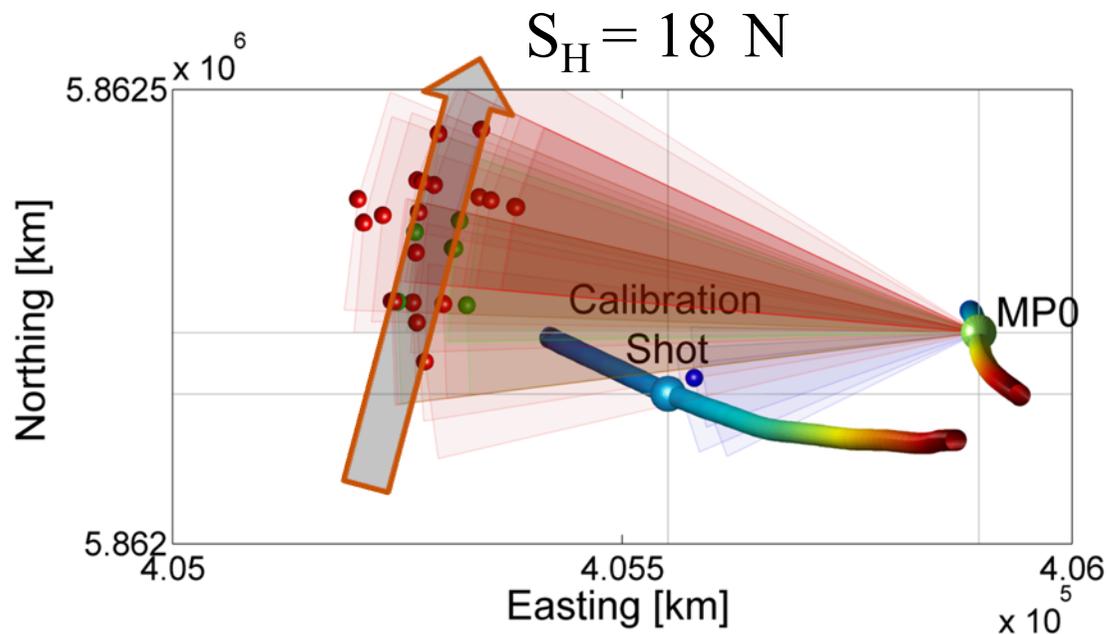
well paths and frac orientation



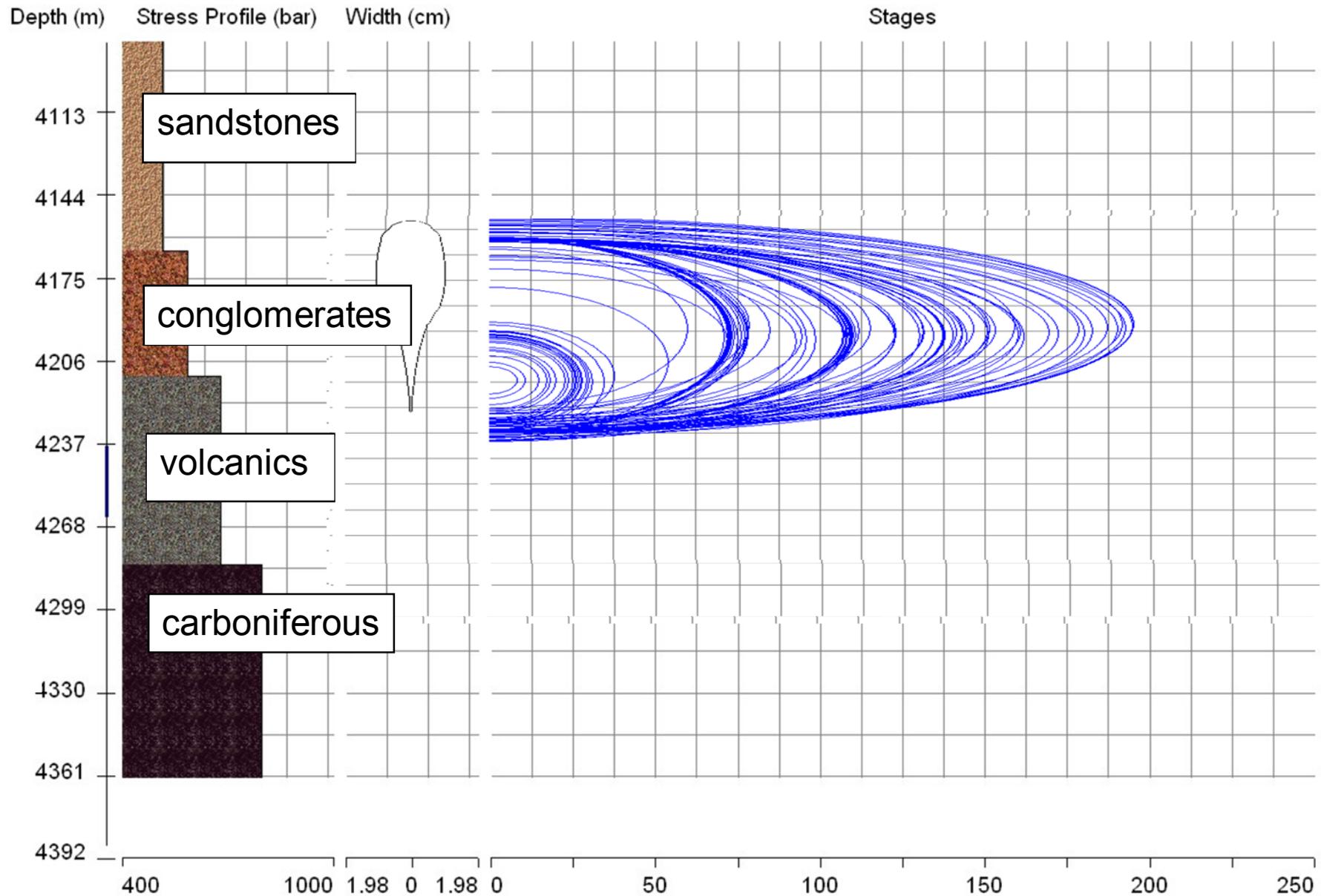


moment magnitude -1... -1.8

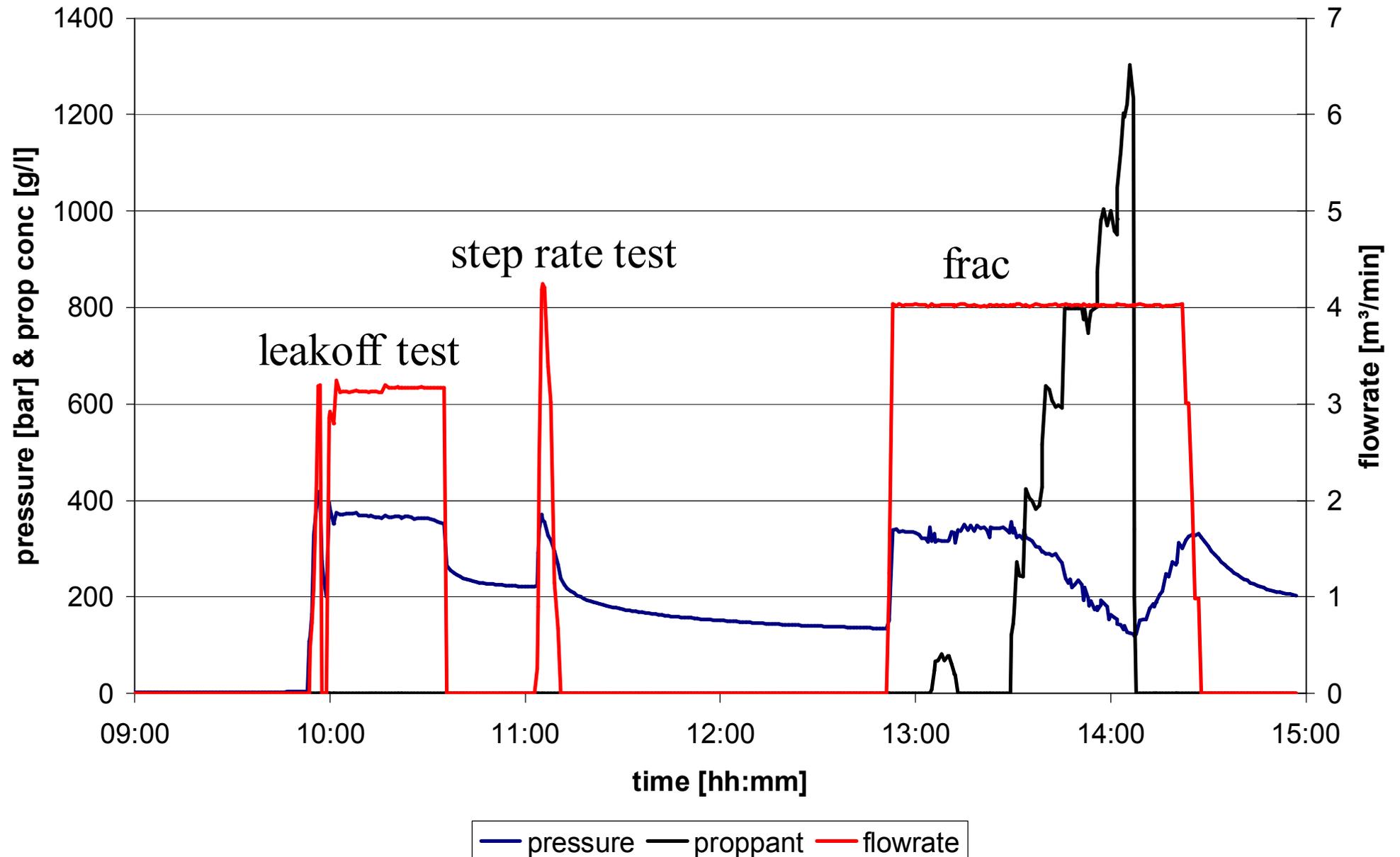
Kwiatek et al., 2010

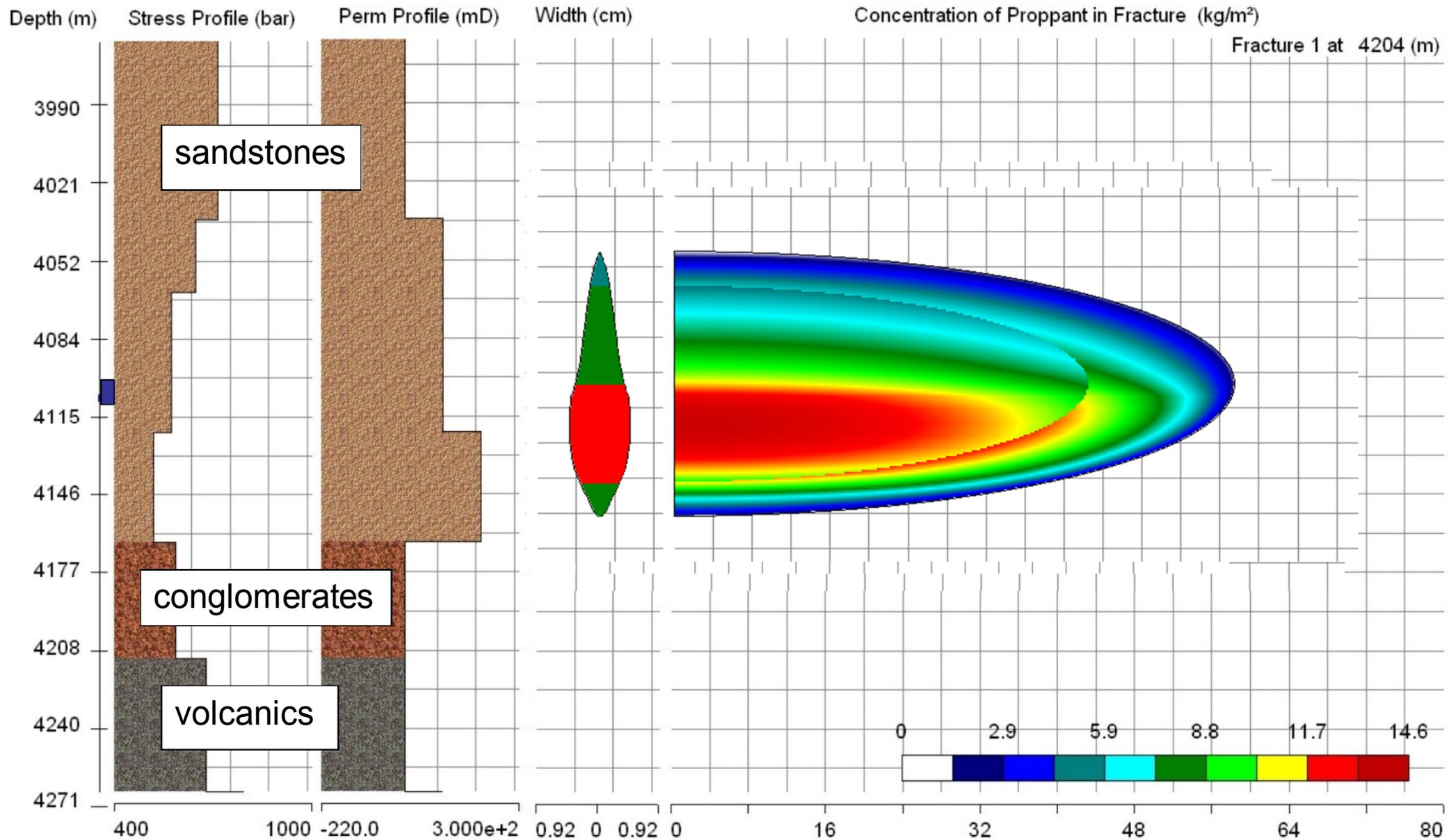


Kwiatek et al., 2010

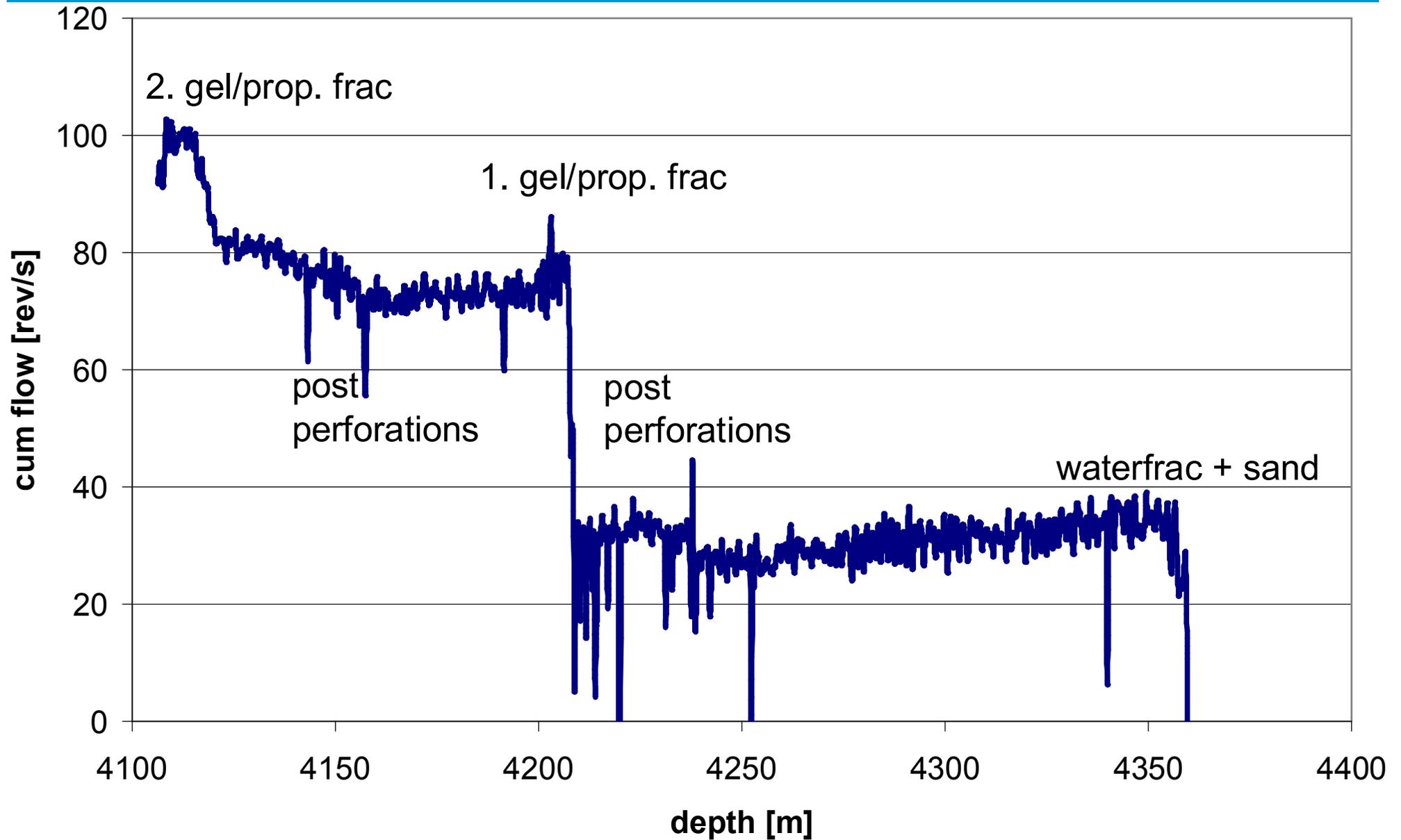


gel proppant treatment





flowmeter logs during CLT



coil tubing unit

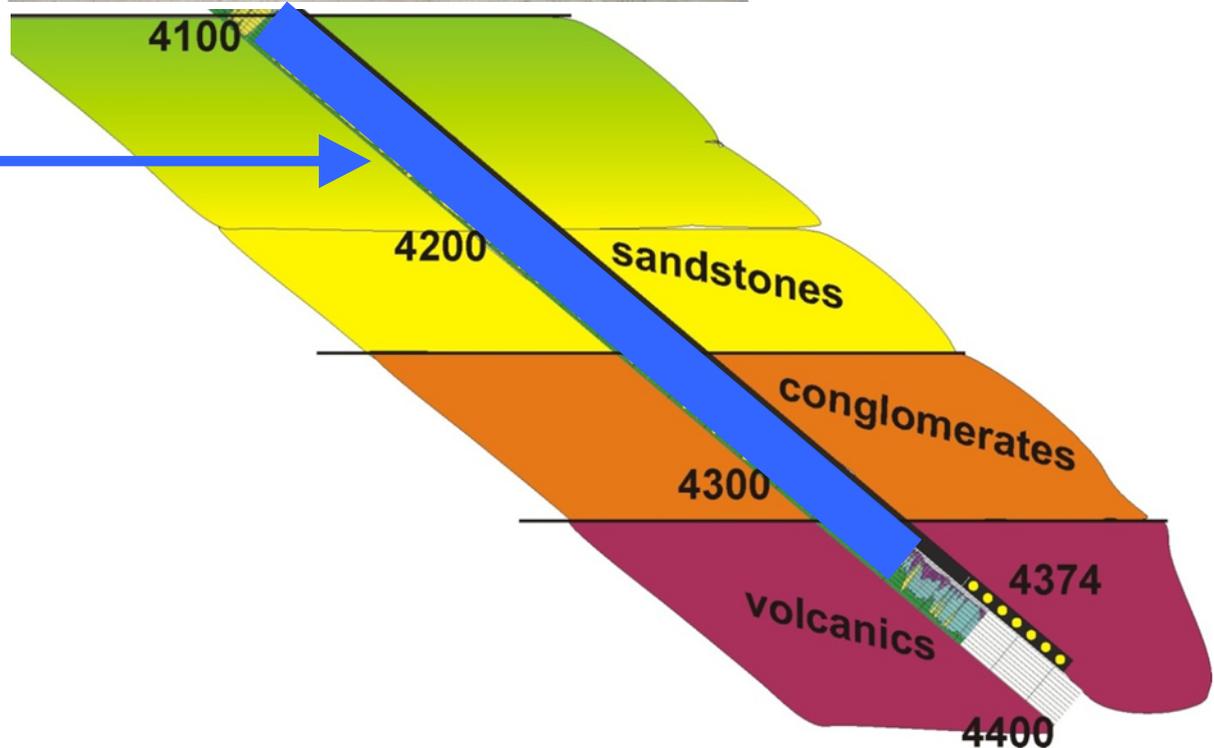
- reel diameter 2''
- reel length 5000 m

acid placement

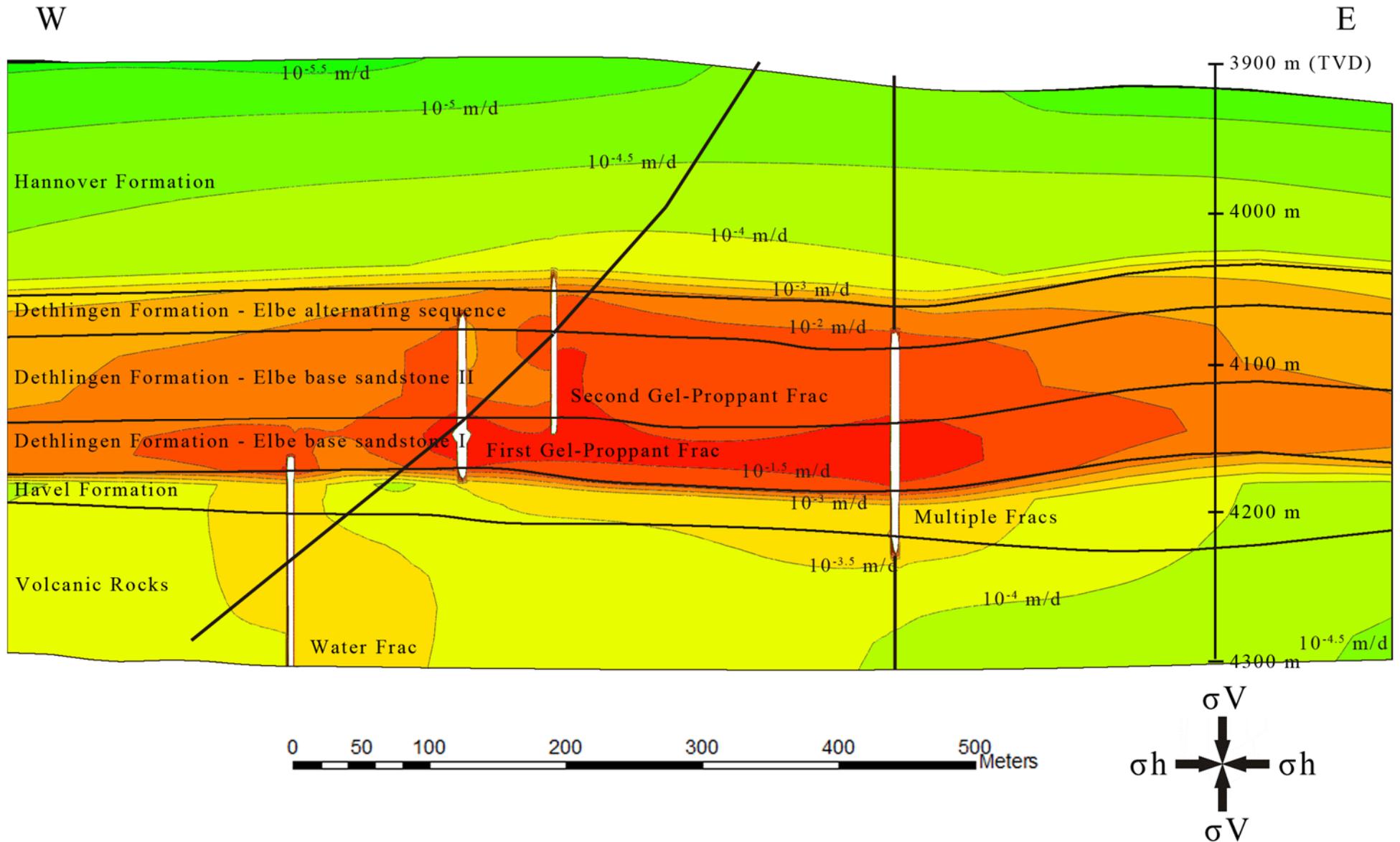
- 10 m³ of hydrochloric acid
- 7.5 % concentration
- between 4360 - 4100 m MD
- for 30 minutes

casing lift test (CLT)

- pressure gauge in 2350 m
- duration 4 hours
- total volume 140 m³



flow between doublet



productivity increase in GrSk4/05

	productivity index [m ³ /(h MPa)]	improvement factor
initial value	2.4	-
after hydraulic stimulations	10.1	4.3
after acidizing	13.0 – 14.7	5.5 - 6.2



Injection well
E GrSk 3/90

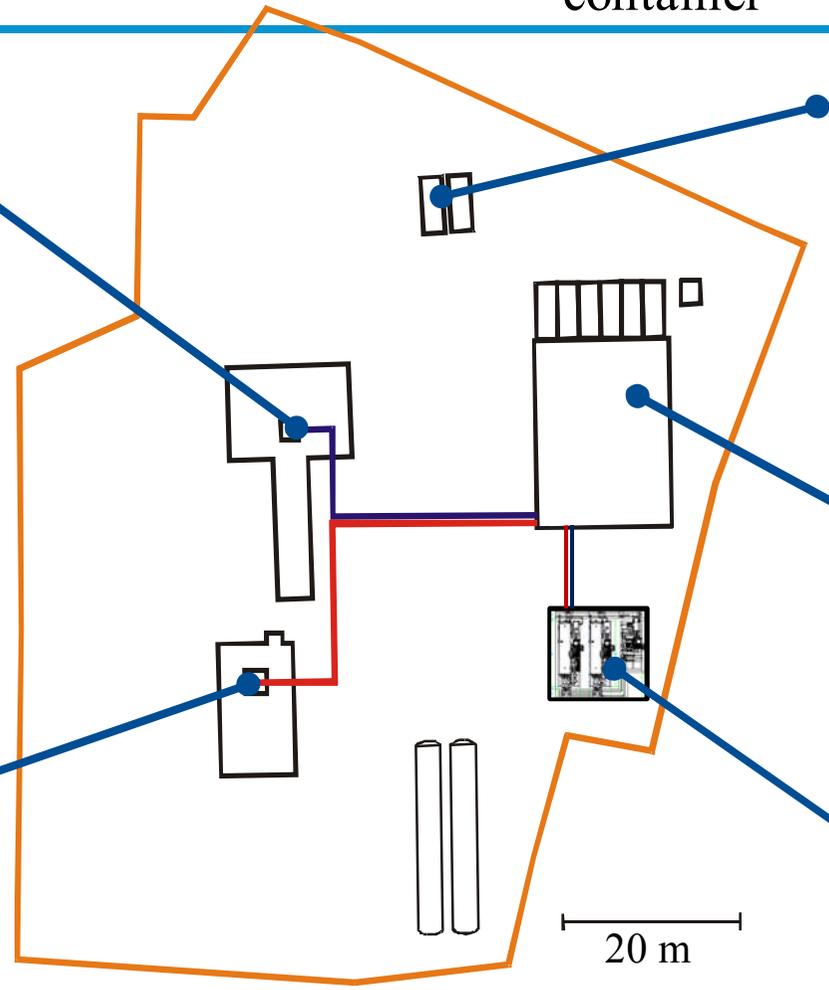


Production well
Gt GrSk 4/05

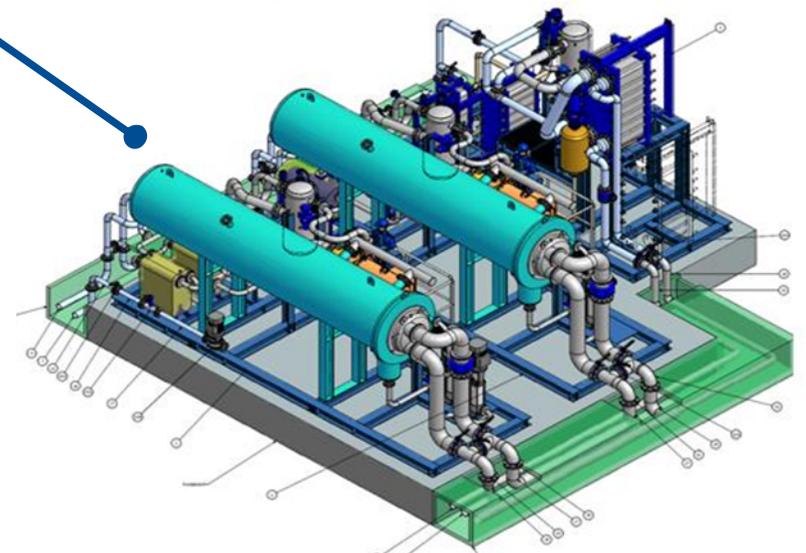
Laboratory
container



Function hall



Actual planning
3-steps ORC-power plant

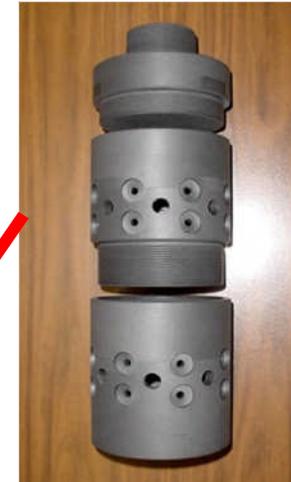
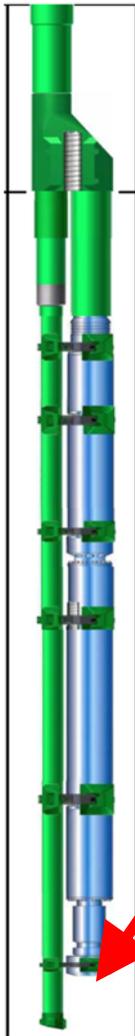
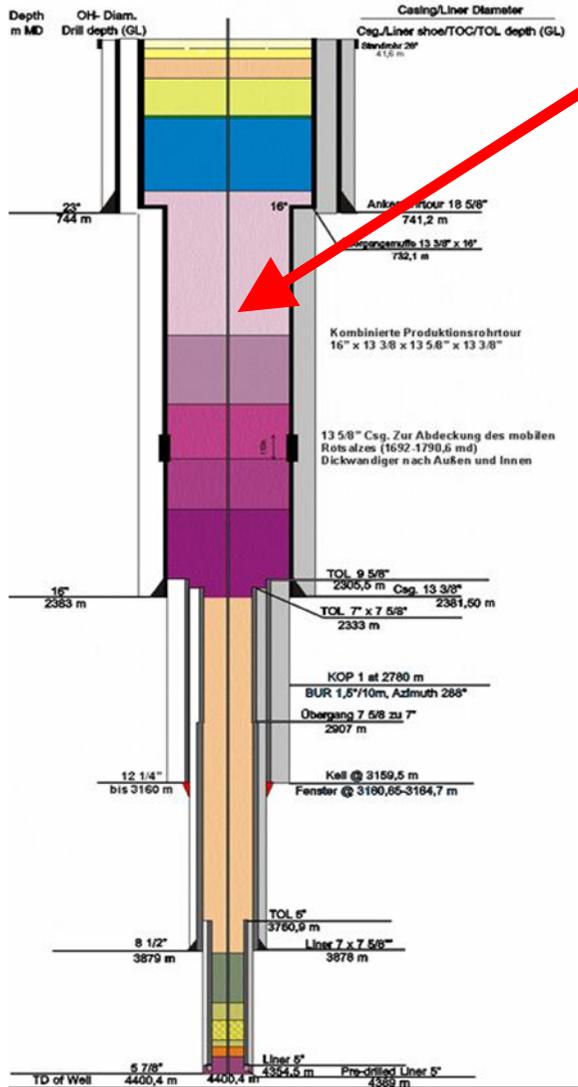


Insitu Geothermielabor: today

Production well

ESP in ~1200 m

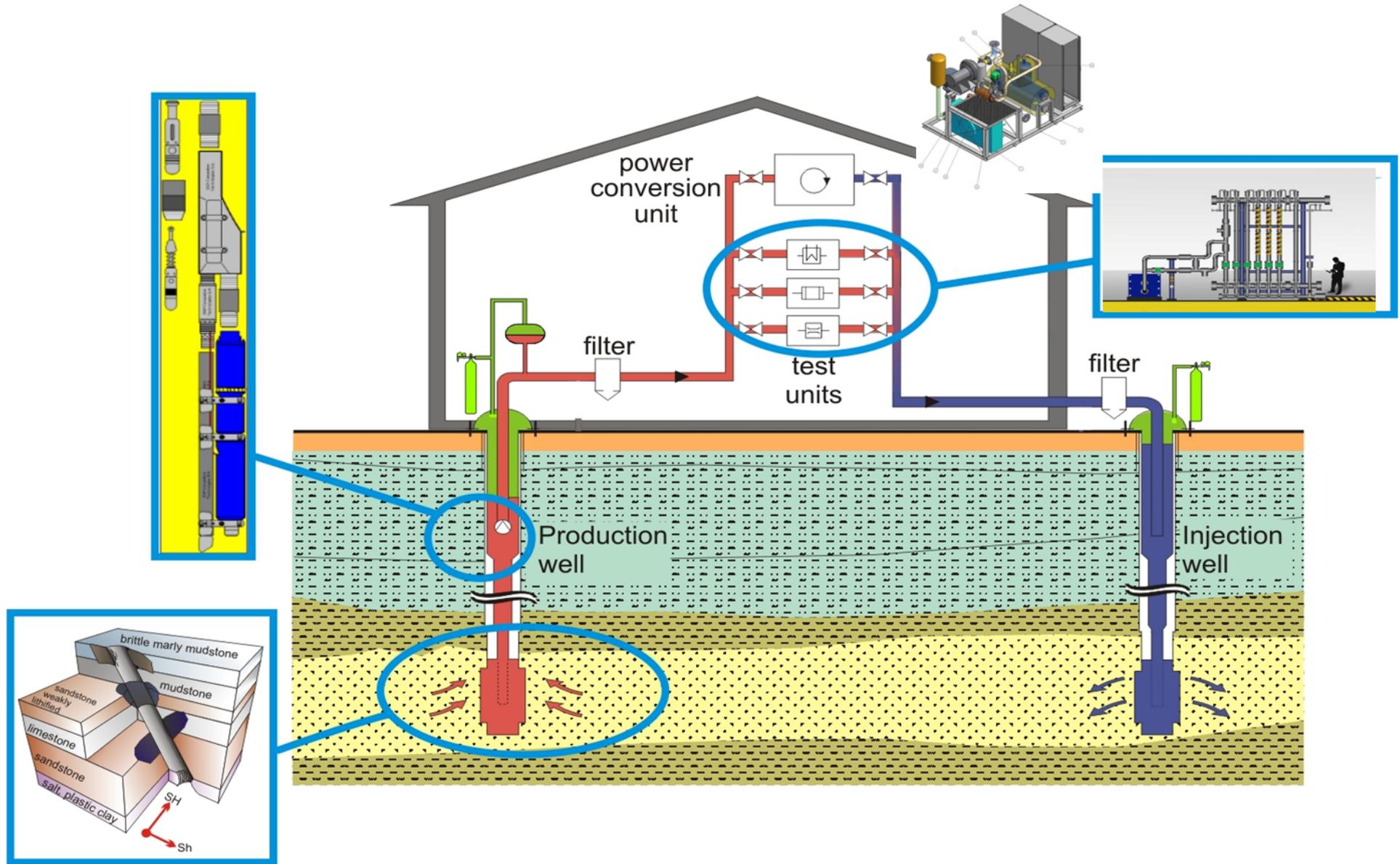
Corrosion test cell



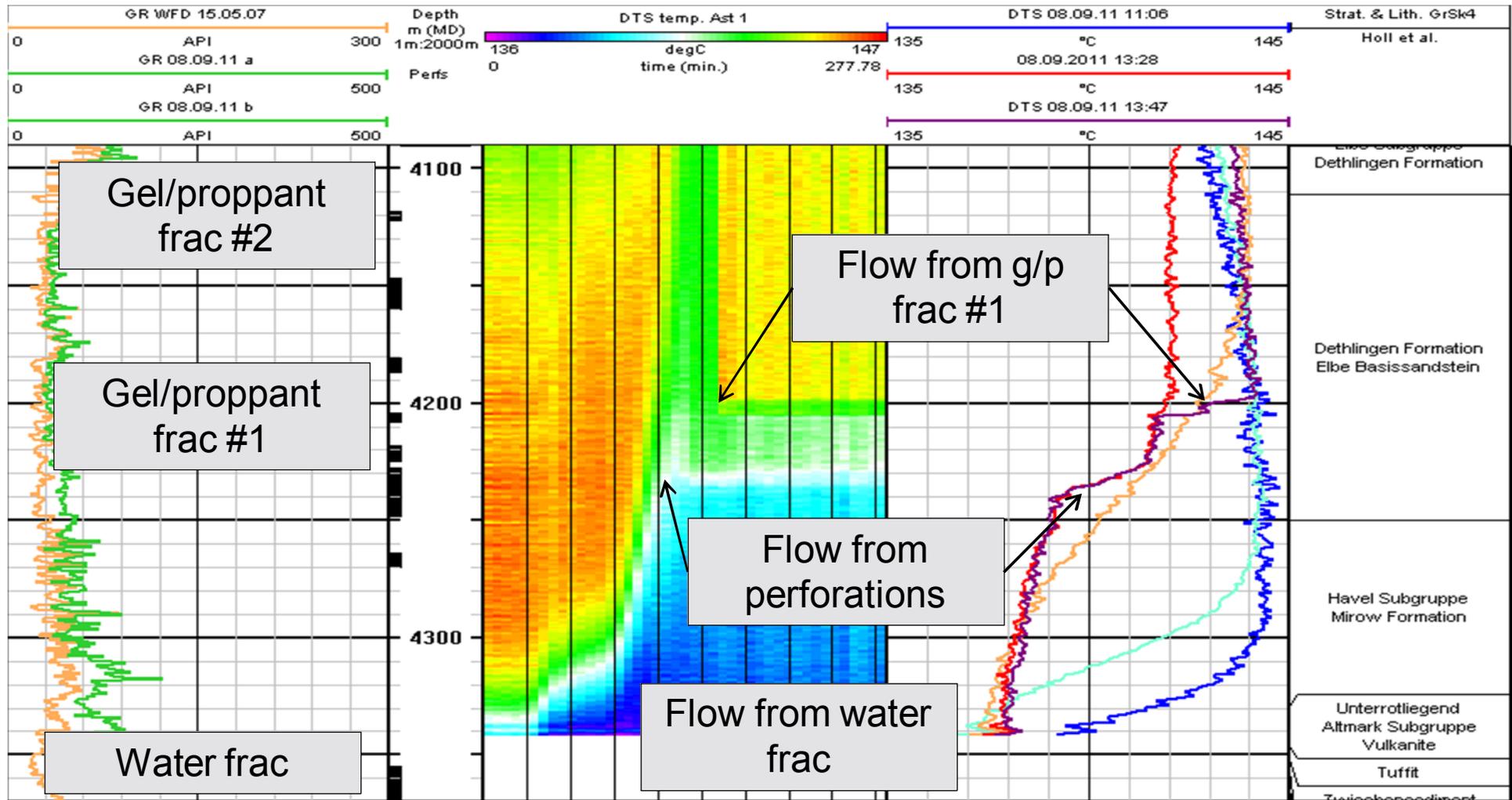
Logging while production:

- Conditions downhole
- Reservoir properties

Reservoirmonitoring







- Stimulation methods should be laid out individually depending on:
 - Rock properties
 - Stratigraphic sequences
 - Structural geological settings, stress field
 - Shear potential and self propping effect
 - Next steps:
 - Long term circulation
 - Building power plant
-