

Petromac Conveyance System

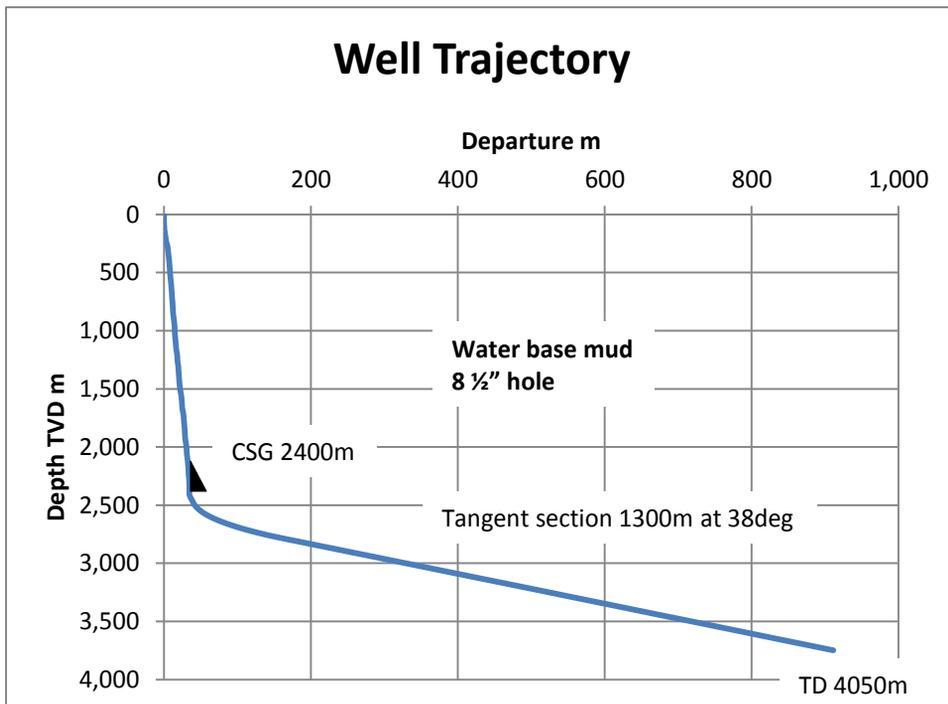
Sampling from the “high side”

The Petromac Guide and Tool Taxis were used to successfully convey wireline tools down a deviated, rugose hole. The 8 ½” hole section was drilled with water base mud to a depth of 4050m with 9 5/8” casing at 2400m. The 1300m tangent section had an average deviation of 38deg. Despite a rugose and washed out wellbore, all 3 logging runs ran successfully to TD.

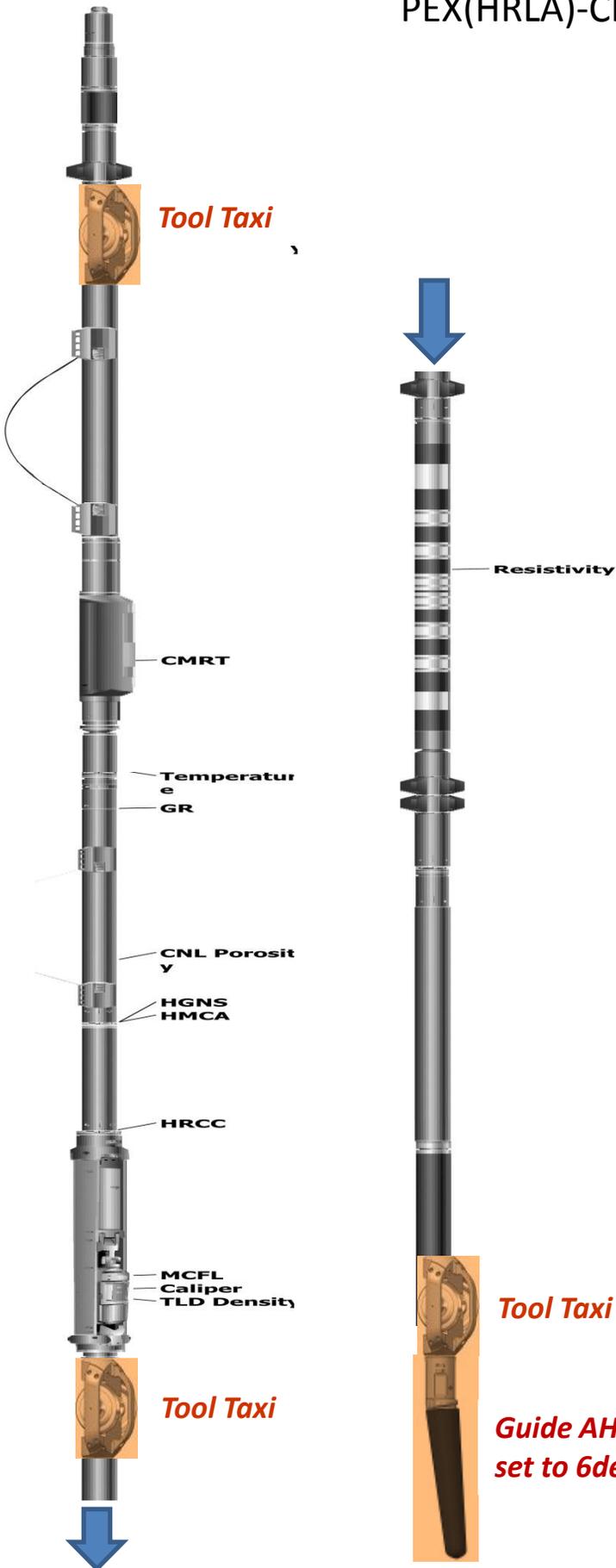
Run 1	CMR-PEX(HALS)	3 tool taxi and Guide set to 6 deg
Run 2	MDT(pretest)	2 tool Taxi and Guide set to 6 deg
Run 3	MDT(sampling)	2 tool Taxi and Guide set to 6 deg

Whilst the wellbore deviation is not particularly high, there were numerous washouts and over-gauge hole, particularly in the build section. The Petromac Tool Guide is designed to ski over ledges and obstructions. The tension shows that the toolstring was run to TD with minimal holdup (See log plot on page 3).

The target formation typically has low permeability, hence valid pressure tests are difficult to acquire. The Petromac Conveyance system was used to orient logging tool sensors and optimise data quality. On run 2 and run 3, the MDT probe was orientated to the undamaged, high side of the wellbore. Quality pressure data was recorded and valid samples taken.



PEX(HRLA)-CMR



Tool Taxi attaches over tool housing



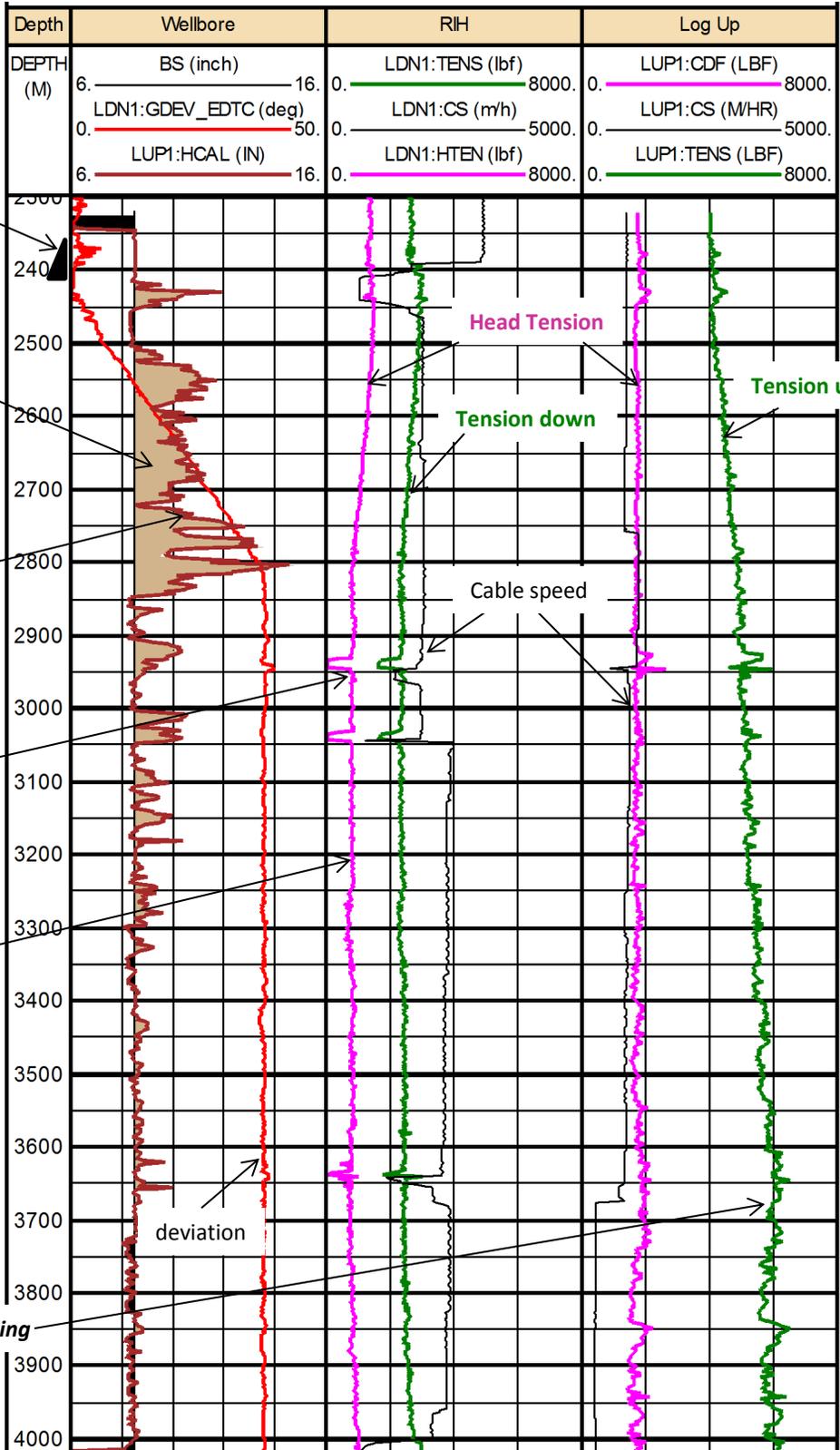
Guide with adjustable angle SKIS over wellbore ledges



Tool Taxi

Guide AHFC set to 6deg.

Logging Record Run 1 PEX-CMR-HRLA



Casing shoe

Over-gauge and rugose hole

Caliper

Toolstring temporary holdup
- cuttings in over-gauge hole.

Good head tension maintained in
majority of deviated section
during RIH.

POOH smoothly - no sticking

Head Tension

Tension down

Tension up

Cable speed

deviation

MDT pretest and sampling string “highside” configuration

Advantages of probe orientation to highside:-

- Reduced pretest time (best permeability).
- Faster sampling (less invasion)
- Good seal (probe centralisation and no cuttings)

Why avoid the low side of the wellbore?

- *Drillstring grinds cuttings into pore spaces of the wellbore-reduced permeability*
- *Reciprocating drillstring repeatedly removes mudcake - deep fluid invasion*
- *Cuttings on lowside compromise packer seal*

