



## Diagnostic Production Logging

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### Background:

In some cases, production can decline due to water fallback and loading. Some solutions include gas lift, shutting in to build pressure to flow temporarily and other means. This log captures where the water is falling back and loading. The well has over 21 discrete perforation zones.

The production is very unstable with very little oil and trace gas. The rates given are averages over several tests and the well declines before and during logging.

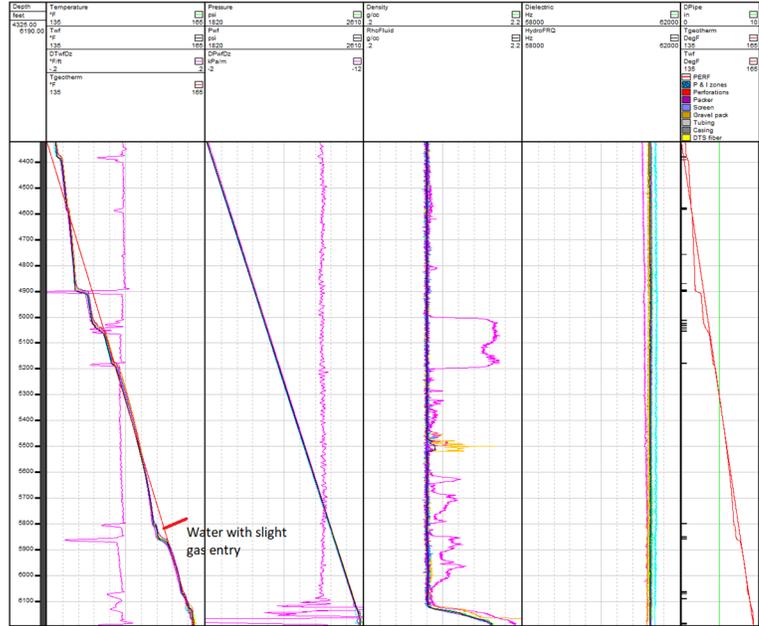


Figure 1

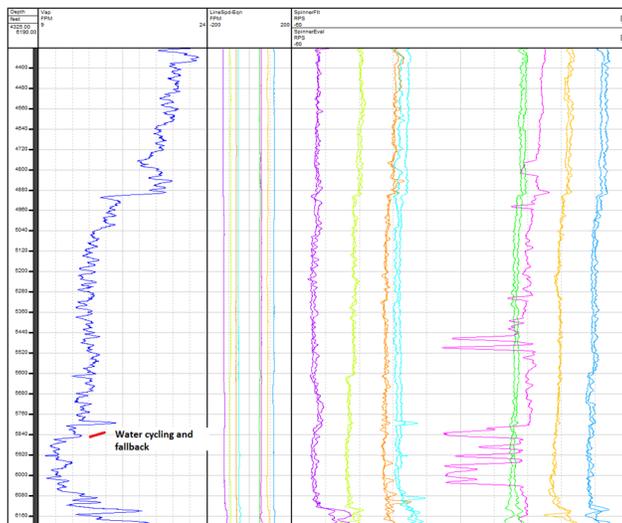
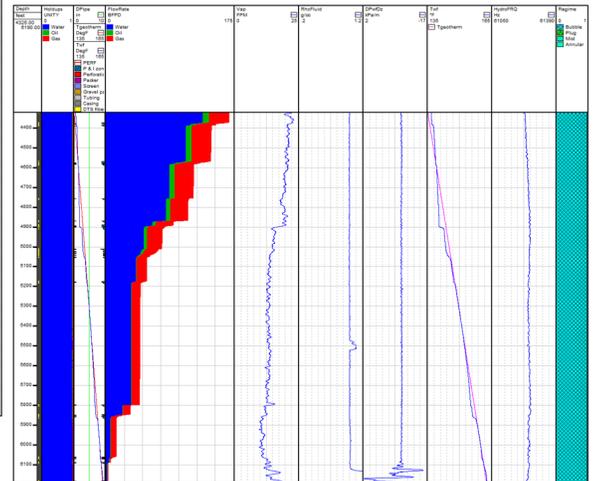


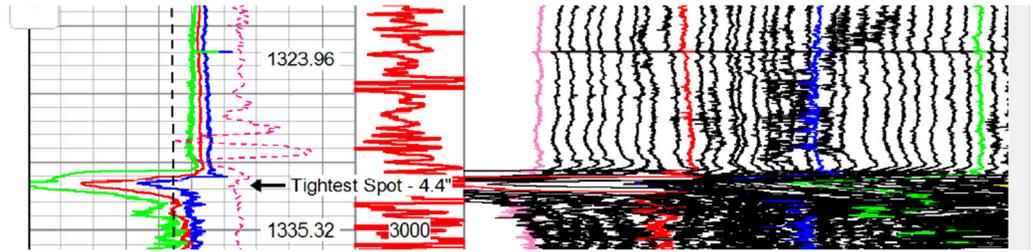
Figure 2

Figure 1 and 2 shows water from lowest perforation moving up the well but cycling and falling back (spinner and temp) as temp stays close to geothermal and spinner slows due to cycling / falling water until water and slight gas entry at 5798'



# Casing Inspection

A COMPLETE REPORT GRADES EACH JOINT OF CASING FOR METAL LOSS OR SCALE



## Background:

A well with 7" 29# casing has over 2200' of parted tubing on bottom. The top of this fish is at about 6600'. A 5.5" overshoot was run in an attempt to fish, but the overshoot stacks out at about 3000'. A 2.75" 40 arm caliper is run to determine condition of casing after overshoot is unable to proceed.

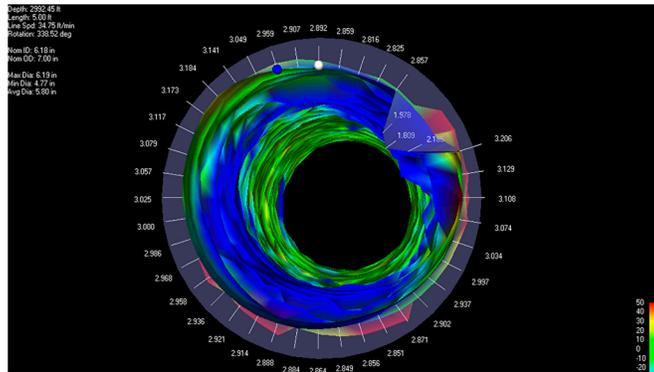
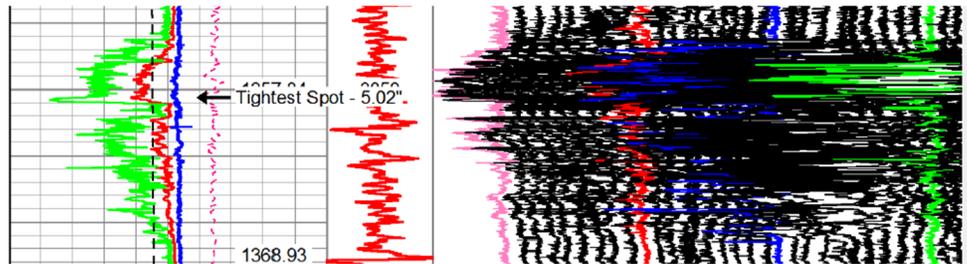


Figure 1 Restriction (2991'-3010') where overshoot could not pass

The caliper encounters very rough casing, with the tightest spot from about 2991'-3010', which measures 4.4" on caliper diameter; where overshoot could not pass. (Figure 1) Other tight spots are encountered until caliper stacks out at 3650', well above the fish depth.



Some tight spots are encountered are at 3042'-3073', 3171'-3114', and 3582'-3607'. Paraffin is drug up the well also.

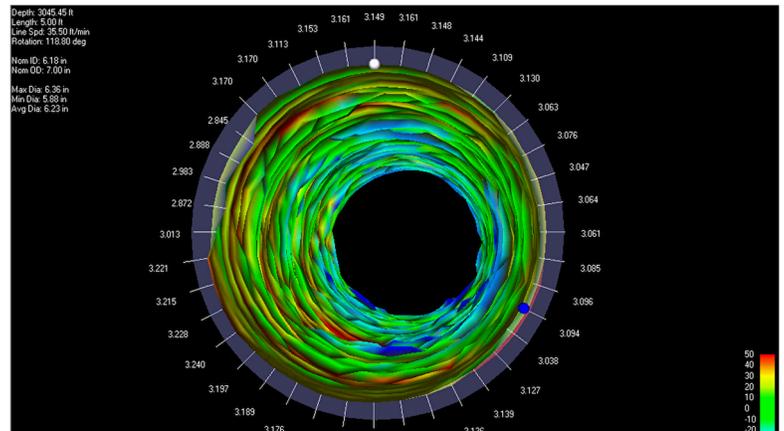


Figure 2 Restriction from 3042'-3073'

A 3.5" bit and scraper is run and gets to where the caliper stacks out. The spot is milled through with subsequent operations to eventually reach the fish and retrieve.

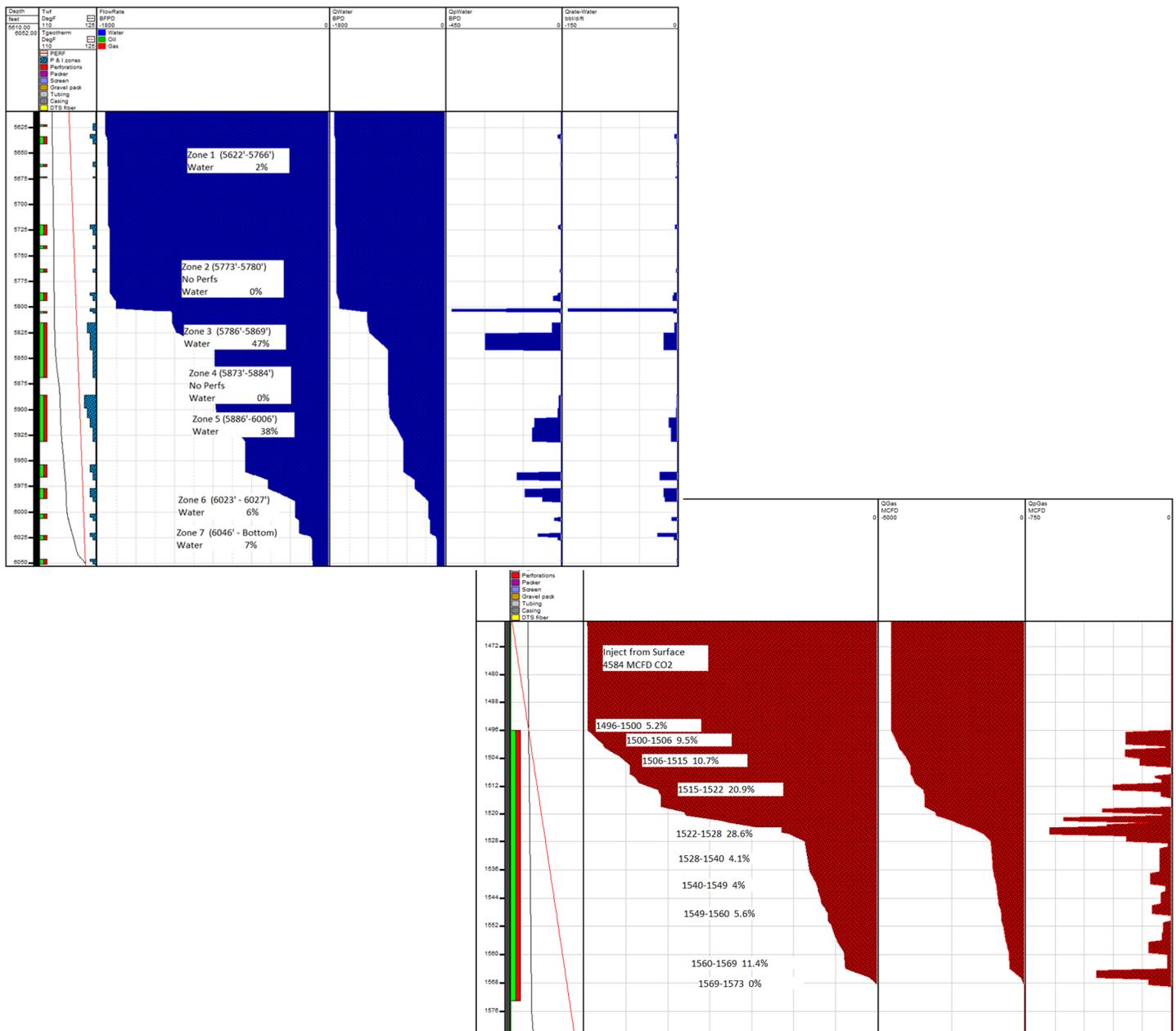
Paraffin was extreme in this well, which was evident during logging and the condition of the caliper once back on surface. The tool did excellent logging through these conditions.

## Injection Profiling for Secondary Recovery and Carnon Capture Use and Storage

Lately, much emphasis has been focused on returning CO<sub>2</sub> into the ground for removal of emissions from many types of industry. We are in the business of providing pressure transient analysis and build up analysis for many applications, as well as this application. The long term storage of CO<sub>2</sub> must be protected by a reservoir that has known integrity and will not communicate with reservoirs that need to be protected. Past newsletters have focused on this.

The other need for CO<sub>2</sub> capture and storage is to ensure vertical conformity in the reservoir that CO<sub>2</sub> is being pumped into so that efficiency is maximized.

In addition to above, CO<sub>2</sub> injection and water injection Profiles are means of moving oil to producers for optimized secondary recovery. Below are a couple examples of CO<sub>2</sub> and Water injection that illustrate percentages of entry across perforated intervals.



## Lagniappe!

We sure hope y'all have a very Merry Christmas as well as a Happy and Prosperous New Year!

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The ad deadline has passed for getting an ad in the Houston Livestock Show and Rodeo Souvenir Bulletin for 2024 but donations can still be accepted until January 15, 2024! Your donation will support the Youth of Texas

with scholarships, FFA and 4H programs. The Houston Livestock Show and Rodeo Scholarship Fund has provided over 14 million USD annually in scholarships every year to exceptional students who go on to become exceptional citizens. If you are looking for

tickets or packages to the rodeo, we can help with that also! Please contact us for details.

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