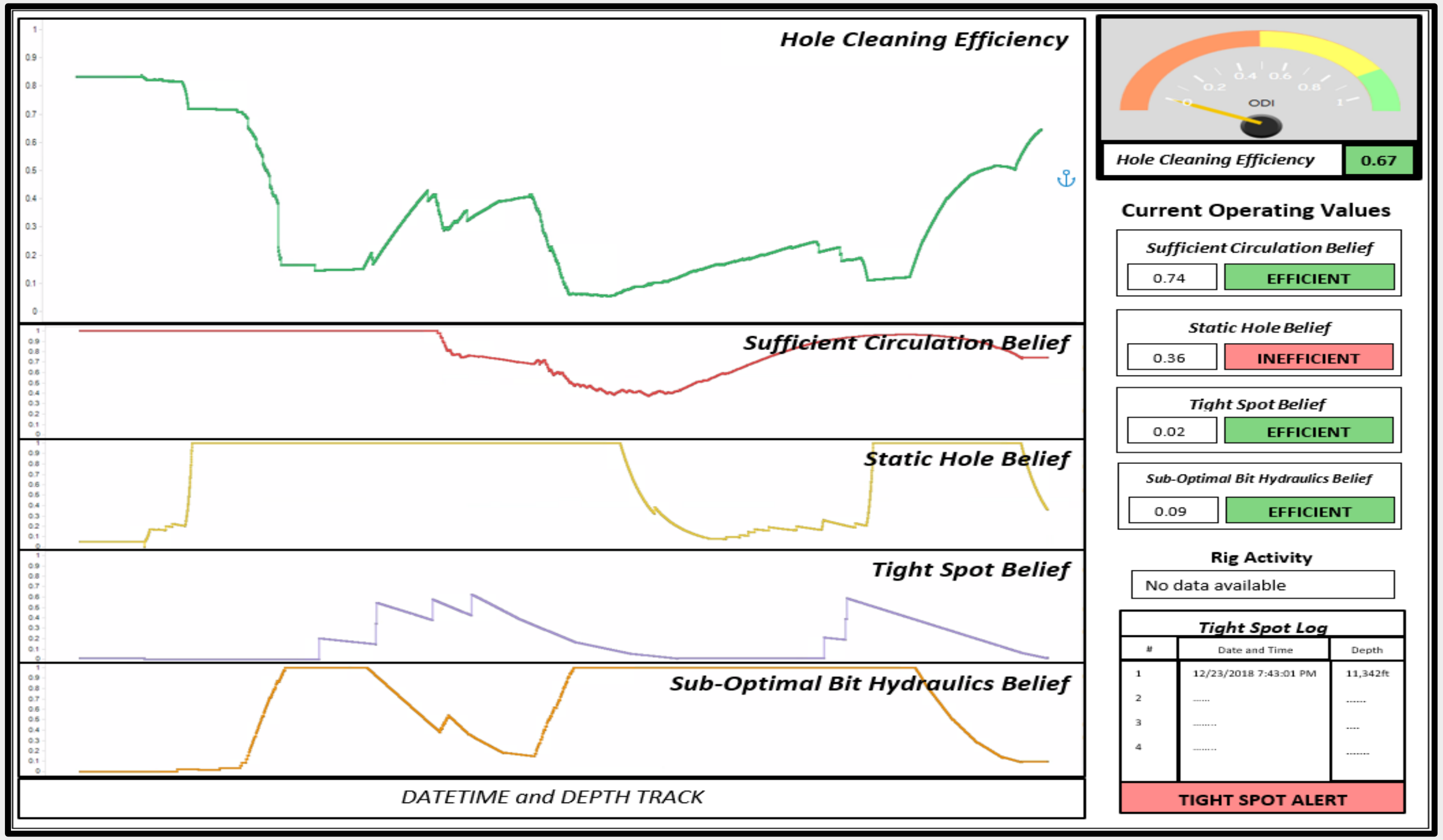
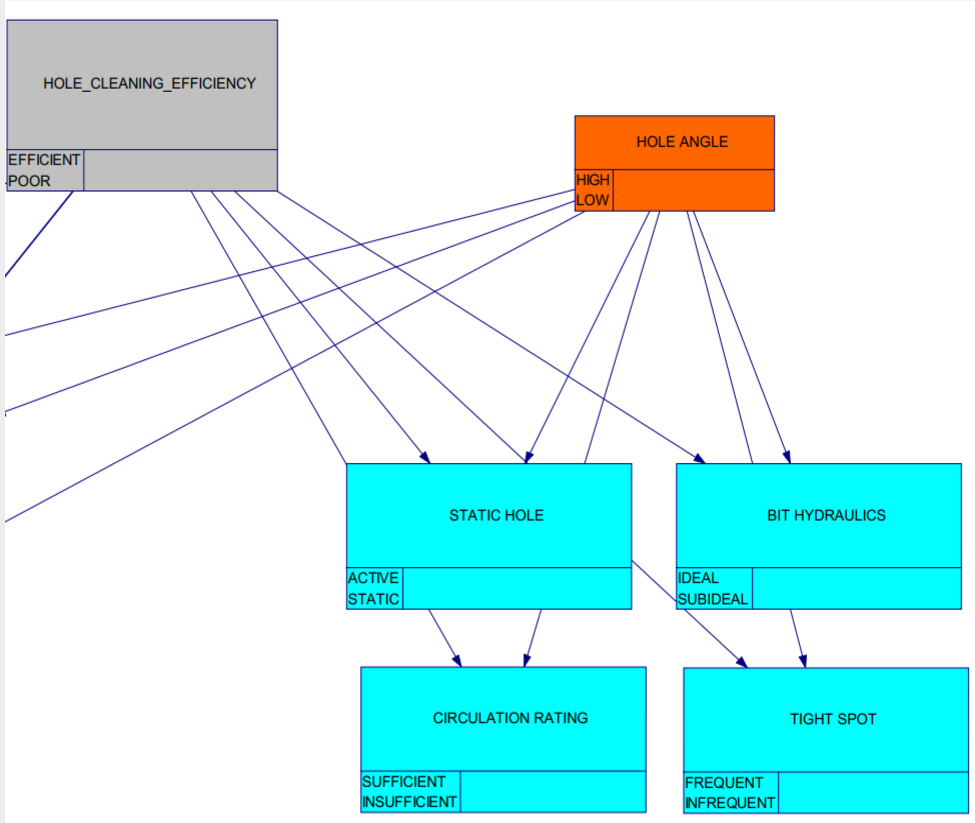
Hole Cleaning Belief – Tracking Causes





INTELLICESS

Network Subnode: Sufficient Circulation

- Duration and recentness of instances over a long time window where flowrate meets or exceeds a model derived threshold considered ideal for proper cuttings transport
- The threshold is a percentage of the model derived critical flowrate and vary depending on hole size
- More recent calculations are weighted more heavily and affect the hole cleaning belief more than older calculations

IADC/SPE 27486

Simple Charts To Determine Hole Cleaning Requirements in Deviated Wells

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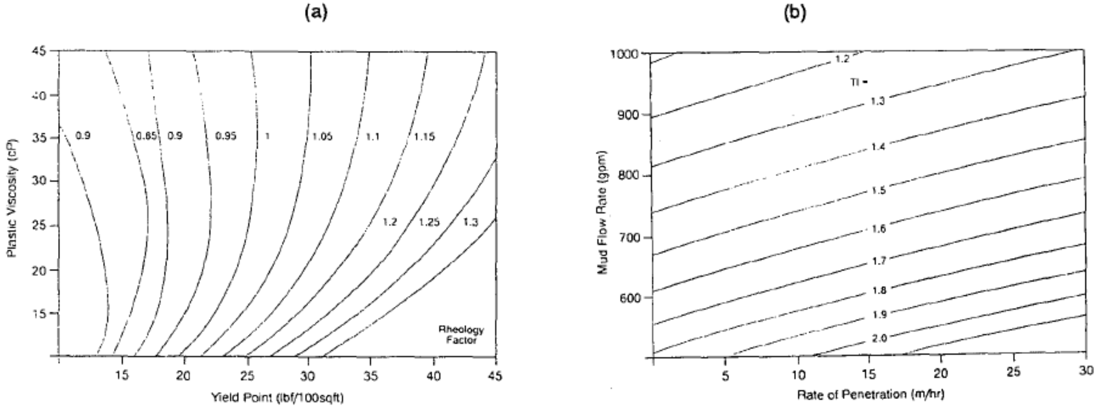
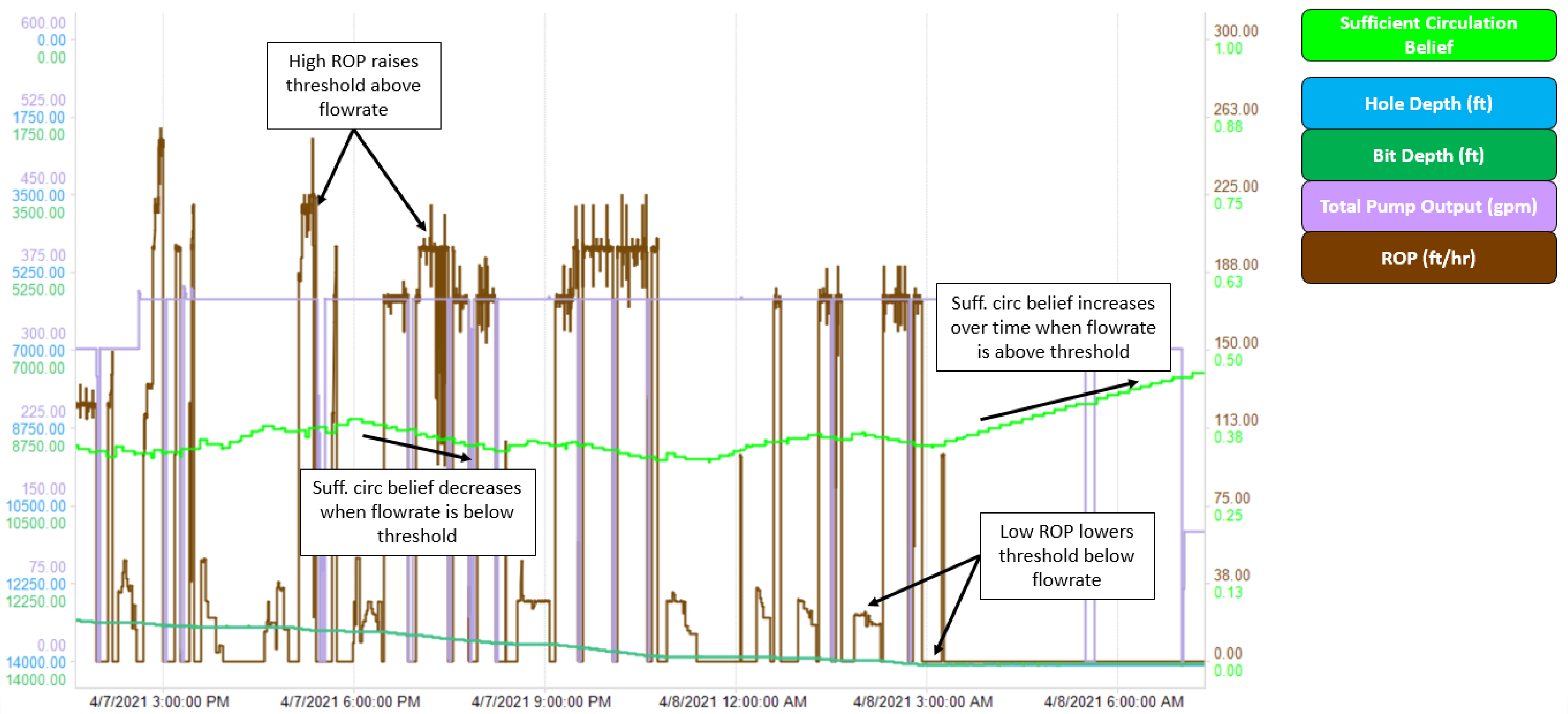
FIGURE 2:
HOLE CLEANING CHARTS FOR 12-1/4" HOLES



Network Subnode: Sufficient Circulation



Network Subnode: Suboptimal Bit Hydraulics

Duration and recentness of instances over a long time window in which hydraulic impact force is low compared to a modeled threshold considered ideal for proper cuttings transport where:

$$HIF = \frac{\rho_{mud}(Q_{In})^2}{12031(.95*TFA)^2}$$

Bit hydraulics are considered suboptimal when:

HIF <= Threshold

Where:

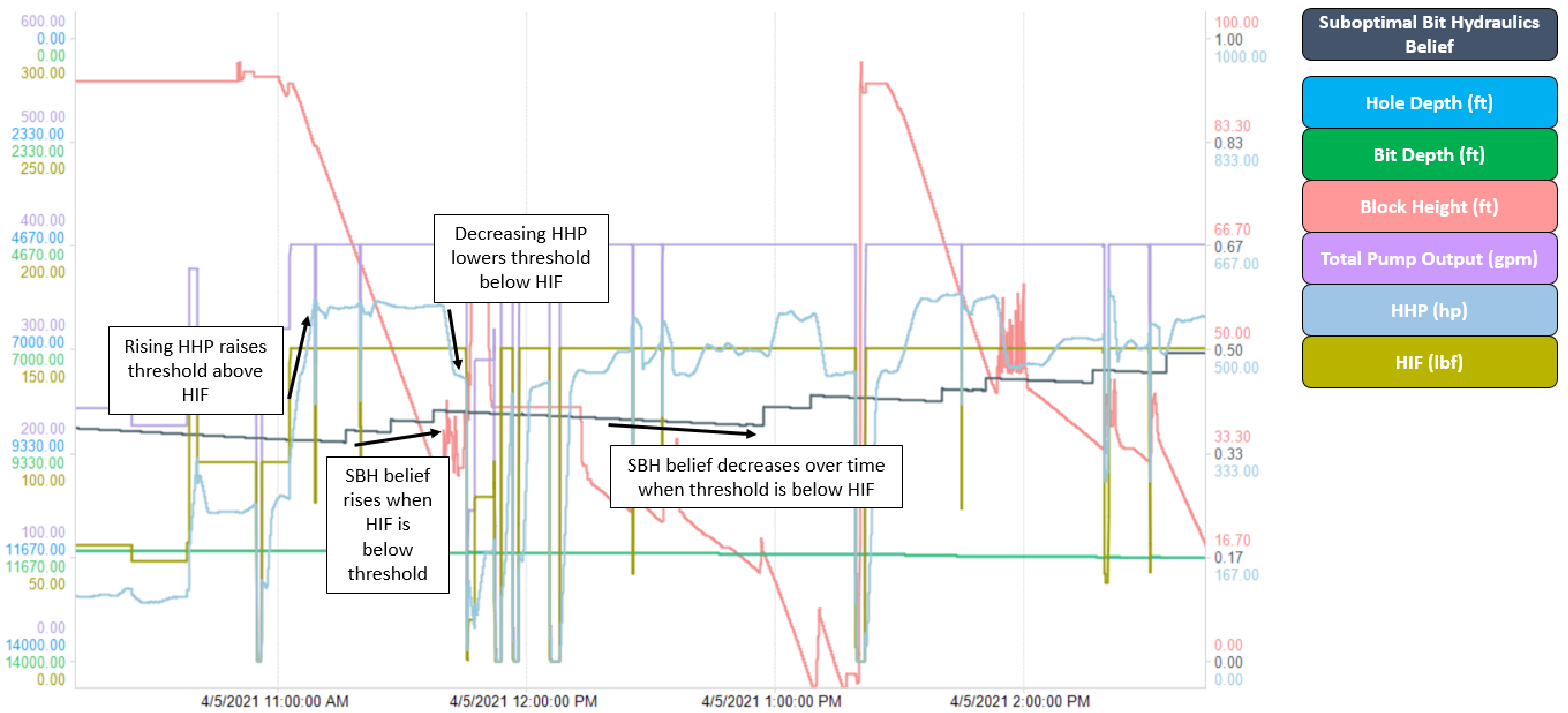
$Threshold = HHP*coefficient_{model}$

$$HHP = \frac{SPP*Q_{In}}{1714}$$

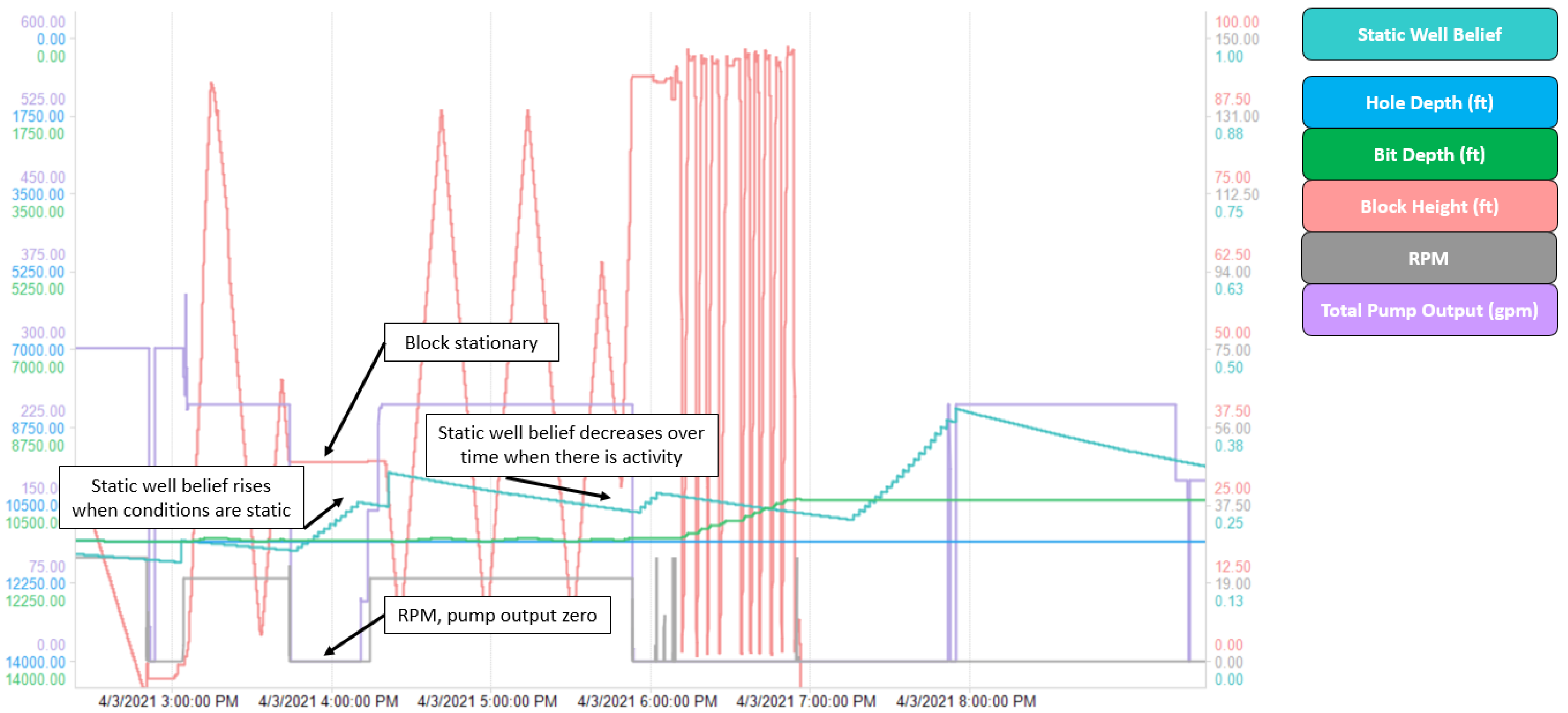
The threshold is a modeled ideal HIF that varies depending on hole angle

More recent calculations are weighted more heavily and affect the belief more than older calculations

Network Subnode: Suboptimal Bit Hydraulics



Network Subnode: Static Well



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