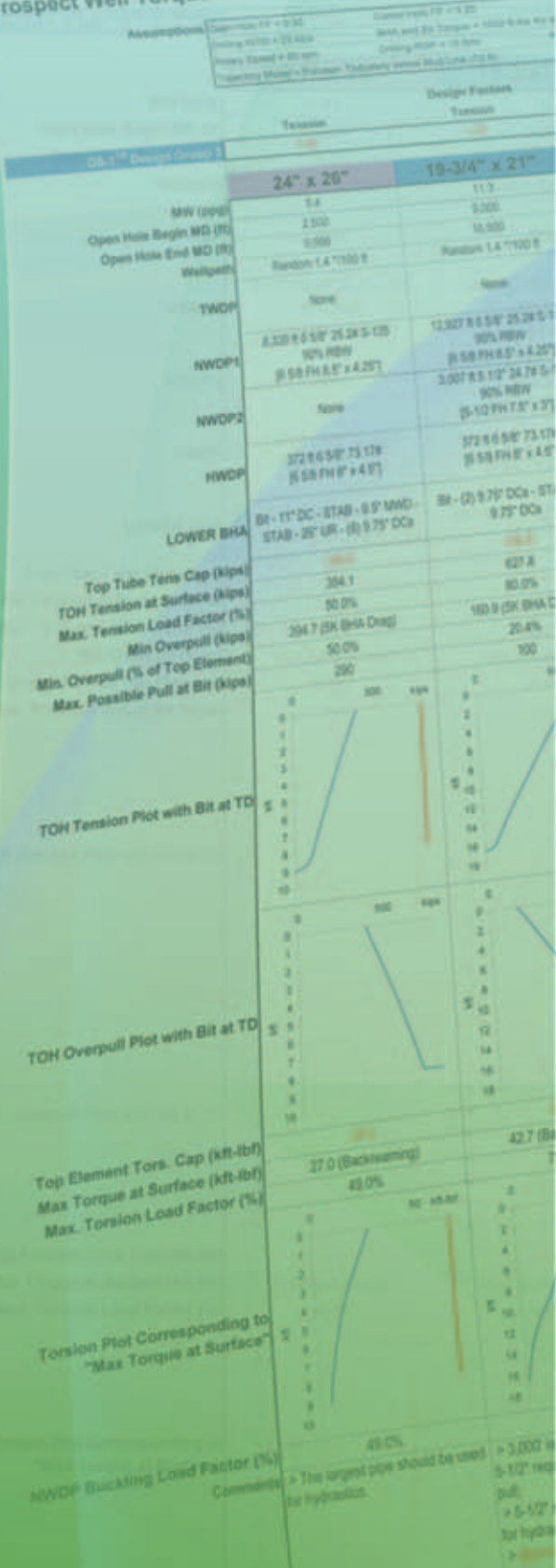


DRILLING ENGINEERING

Prospect Well Torque & Drag Summary



Specialization. Innovation. Independence. These three words define how we approach drilling engineering at T H Hill. For more than 25 years, we have focused on maintaining the structural integrity of equipment used during drilling operations while emphasizing the importance of design considerations in preventing failure. When limited by available technology or design methodologies, we have created our own, such as proprietary software, DS-1® Third Edition Design Groups, and complex fatigue estimation and mitigation techniques.

Additionally, within the confines of your drilling program, we perform each analysis independent of outside influence. This means you receive not only the most advanced and comprehensive structural design possible, but also a result unbiased by commercial factors.

By taking this position, we ensure that the only thing that drives our recommendations is the practical application of technology to your drilling program. After all, we know that our success depends on yours.

CONTACT US

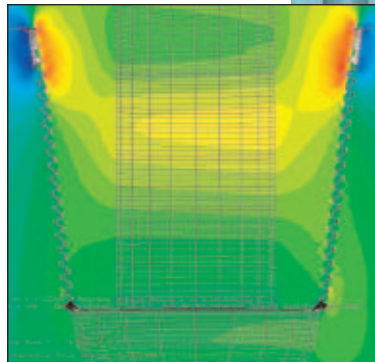
Contact us to learn more about our expertise in:

- DS-1® Drillstring Design
- Torque & Drag Analysis
 - BHA Optimization
 - Casing Wear Modeling
- Slip Crushing Evaluation
- Fatigue Modeling & Mitigation
 - Vibration Modeling

The Questions...

- Can I use what's available on the rig, or will I need a rental string?
- Am I near my operating limits for torque, tension or combined loading?
- What connection types are best suited for my operations?
- How often should I inspect the drill pipe?
- Am I vulnerable to fatigue failures, and if so, where in the string?

Whether a comprehensive Torque & Drag Analysis, a detailed BHA Optimization or an advanced DS-1 Fatigue Evaluation, the best design offers the lowest risk of structural failure when considered within the operational constraints of your drilling program. To give you the optimal solution, we put ourselves in your position: If this were our well, what questions would we want to answer? Aligning your perspective with our expertise enables the practical analysis needed to address the failure risks in your operations.



The Answers...

- Maximize use of 5" 19.5# S-135 to reduce torque...
- Inspect drill pipe to 90% RBW to improve overpull...
- Use NC56 connections instead of 6 5/8 REG...
- Specify DS-1 Category 5 Inspection as per DS-1 Design Group 3 requirements...
- Lay down this section of drill pipe to lower the probability of a fatigue failure...

How do you create optimal designs? The process must be iterative, thorough and unbiased. We have performed thousands of such analyses and leveraged our experience to build comprehensive models which address the key structural issues for each design situation. We successfully use this process-based approach on the world's most technically challenging wells and continuously improve our models through feedback from this real-world application. The result: you receive concise, practical recommendations validated through actual use in the harsh conditions of the world's most demanding drilling programs.

Drill Pipe	N/A
19 x HWDP	N/A
XO Sub	26-1016
Drilling Jar	50143C
XO Sub	261005XT
10 x HWDP	N/A
XO Sub	11522
	"Rig DC"
XO Sub	044
MWD	26244
XO Sub	012
Float Sub	6632-F
	or 6631-F
IB Stab	S80365
Drill Collar	SR812
Reamer	RB10-08
NB IB Stab	SD-13033
	or SD-13571
Pony Collar PIN UP	80106
	or 80104
Bullnose HO	JS1018
	or JS1019