

**MOMENTUM**  
*Drilling Fluids*  *est. 2012*

**MDF EXTENDRILL**

# ↓ REDEFINING DRILLING LUBRICANTS

## UNIQUE APPLICATION

MDF Extendrill was introduced while drilling to coat drill solids, the wellbore, and the drill string, ensuring no lube returned to the surface. This contrasts with traditional lubes, which require a 2-3% concentration in the drilling fluid.

## EFFICIENT DRILLING

Multiple two-mile laterals have been drilled without an expensive and time-consuming displacement to Oil-Based Mud (OBM).

## CLEAN OPERATION

Utilized 'dirty' cut brine, produced water, and MDF Lube, with additional treatments for H<sub>2</sub>S and periodic sweeps for hole cleaning.

## HIGH PERFORMANCE

Achieved a Rate of Penetration (ROP) comparable to OBM drilling.

## SMOOTH CASING RUNS

Floated casing to the bottom with 6 ppb Lubra Bead Pills to facilitate the run.

# ↓ ADVANTAGES OF MDF EXTENDRILL

## COST AND TIME EFFICIENCY

- Drill to Total Depth (TD) without the need to switch to OBM, avoiding associated time, cost, and complications.
- Higher Annular Velocity (AV) and effective hole cleaning lead to better bit hydraulics.
- Higher ROPs and Fewer Drilling Days.

## OPERATIONAL EXCELLENCE

- Drilling with clear fluid enhances bit hydraulics and ROPs.
- MDF Extendrill is added as needed to treat the wellbore, unlike traditional lubes which are added by volume (around 3%, potentially over 2500 gallons), reducing waste and disposal costs. MDF Extendrill has a unique affinity for the formation and the pipe.
- 25-40% Reduction in torque depending on rate of additions.
- Reduction in P/U-S/O and Rotational Weights.
- Extends Bit Life.
- Reduction in pipe wear.

## PRACTICAL APPLICATION

- Easy to add to Brine and Fresh water drilling fluids directly to the suction.
- Compatible with brines up to 12.5 ppg.
- Easily built on the fly.



MDF Extendrill was added at <0.16% of the flow rate directly into the suction.



# NOT YOUR TYPICAL LUBE



## ENHANCED EFFICIENCY

Achieve the same high ROPs as traditional OBM drilling but with cleaner, more cost-effective operations.

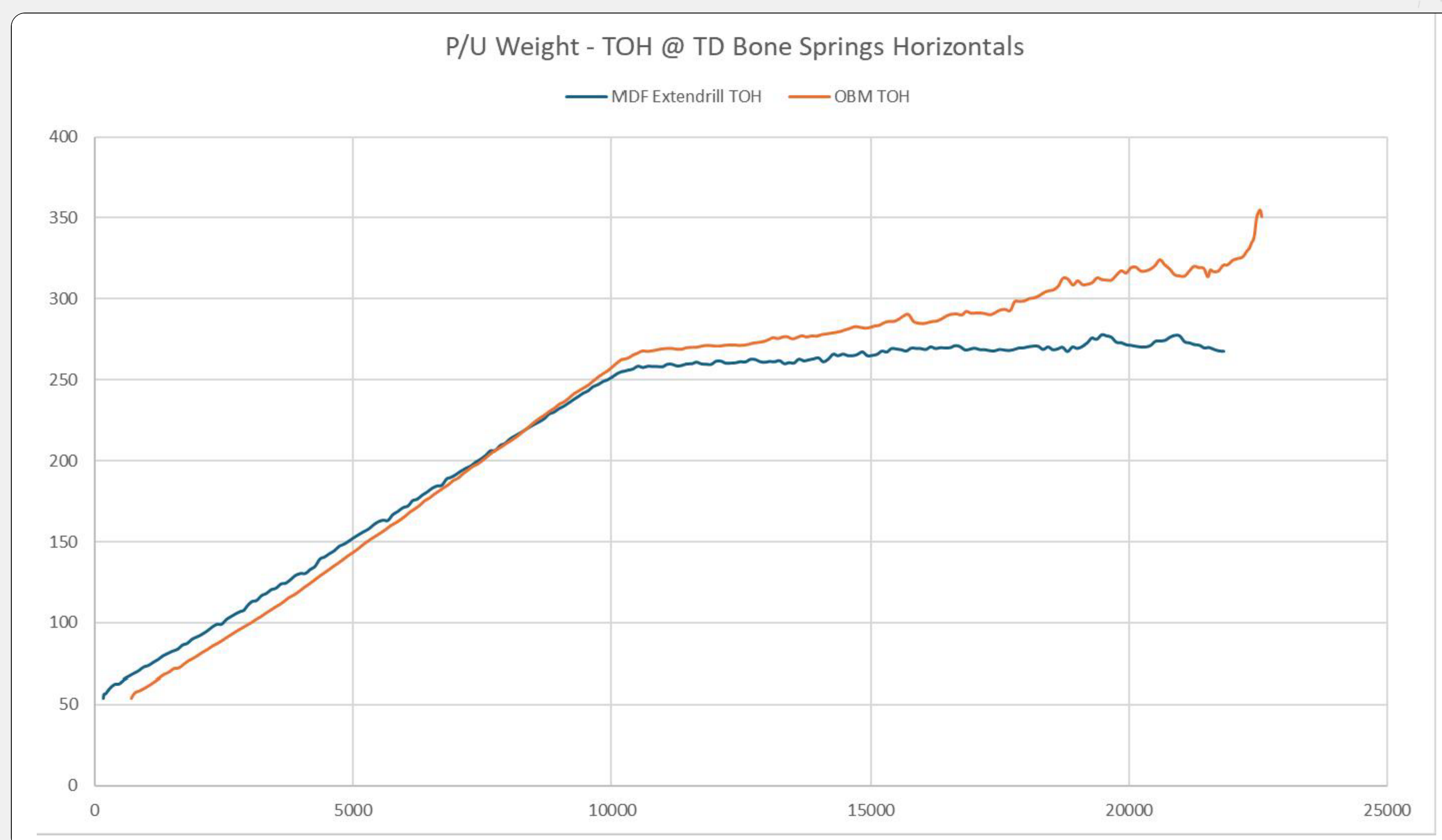
## REDUCED ENVIRONMENTAL IMPACT

Minimize the volume of lubricant used and subsequently disposed of.

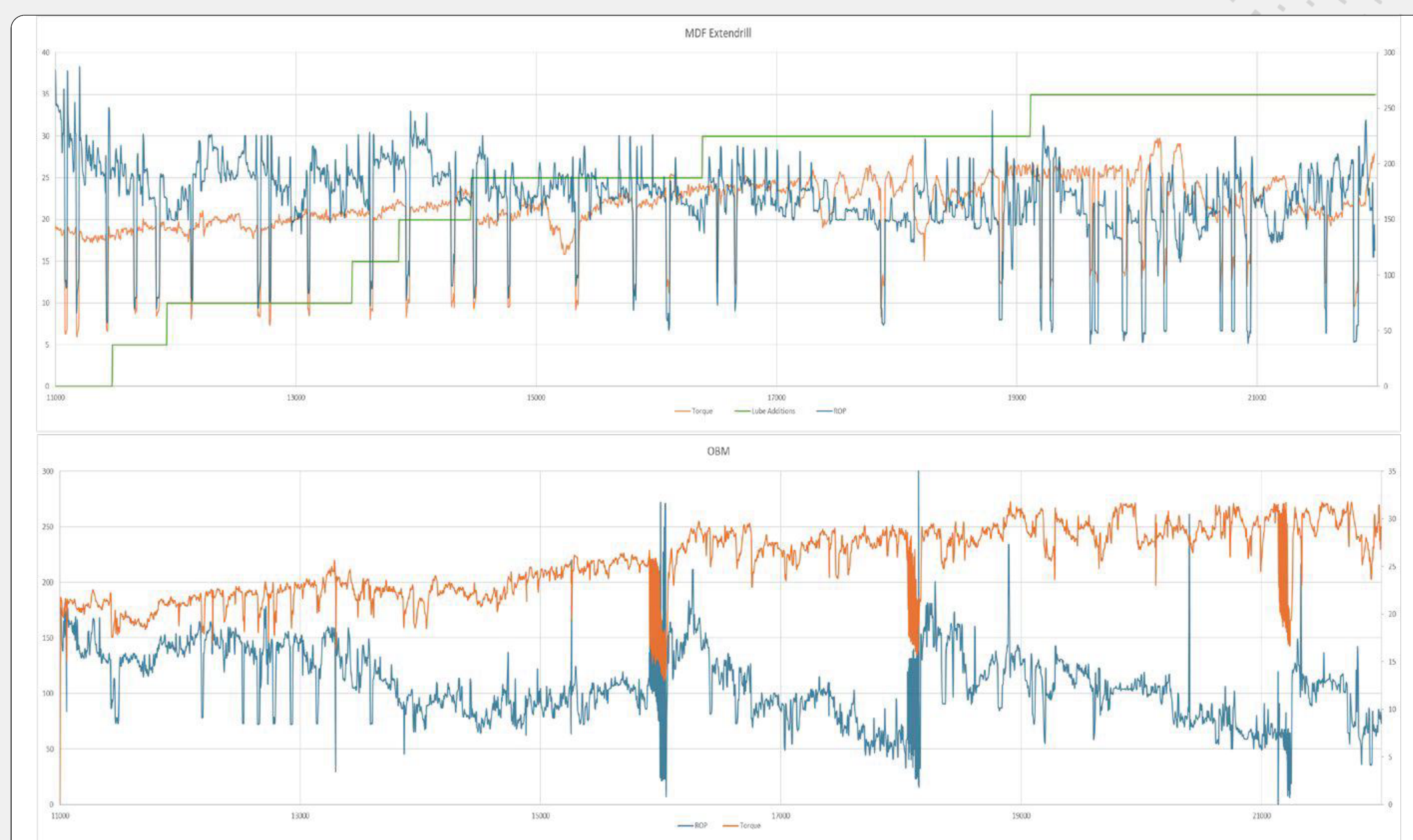
## PROVEN PERFORMANCE

Successfully drilled challenging wells with comparable efficiency and lower costs.

Two comparable Bone Springs wells drilled in Lea County, NM.

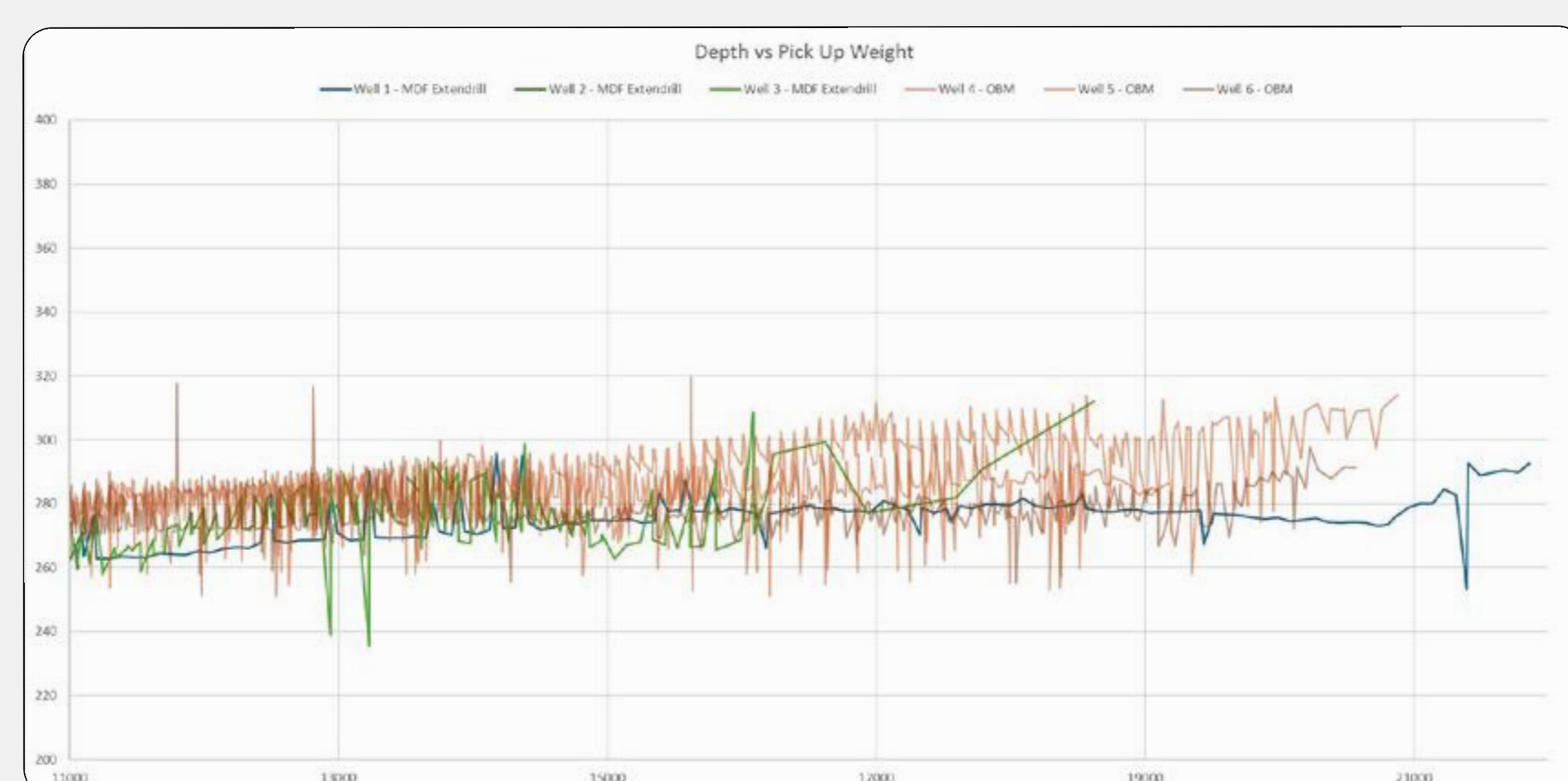
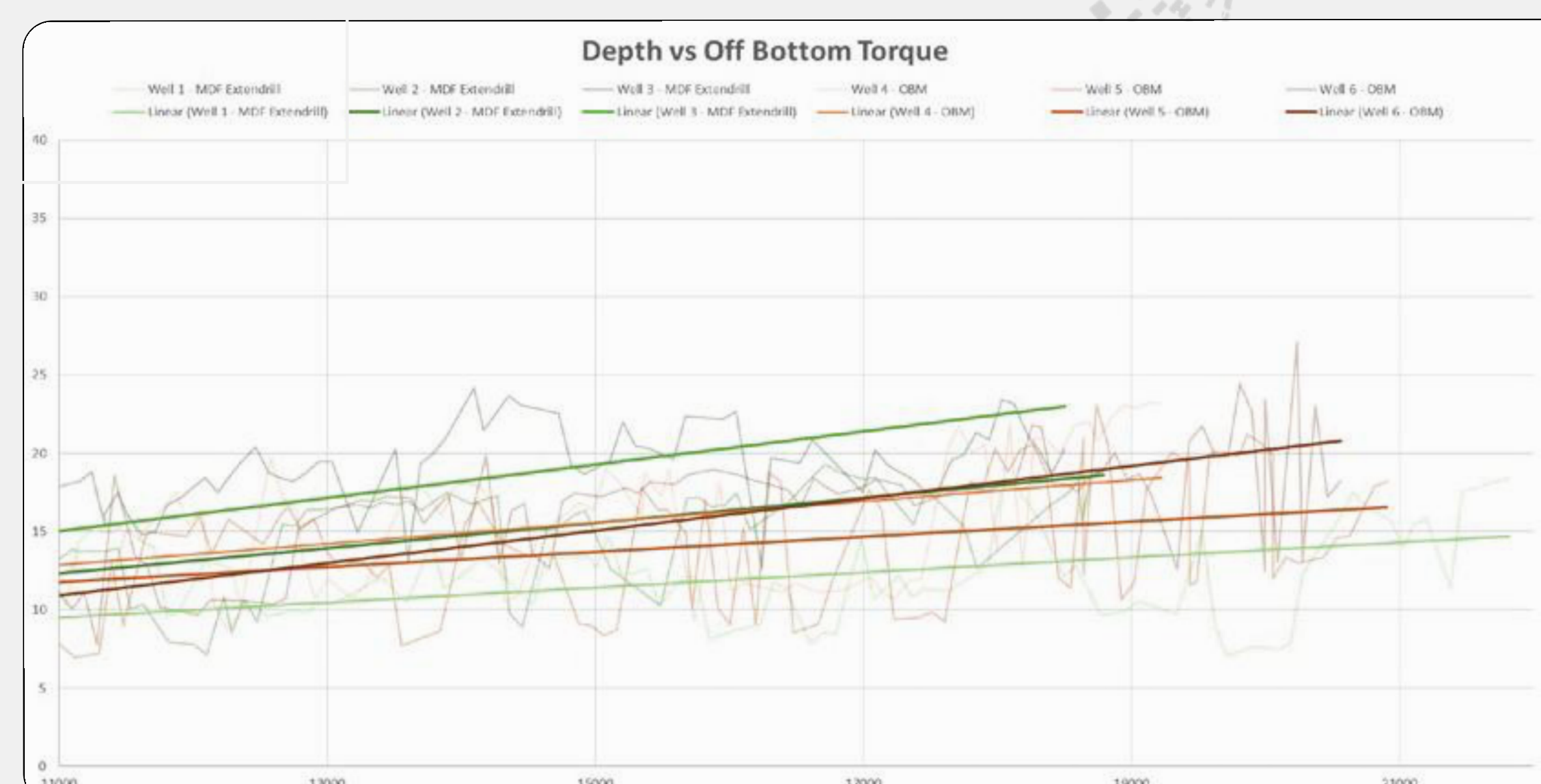
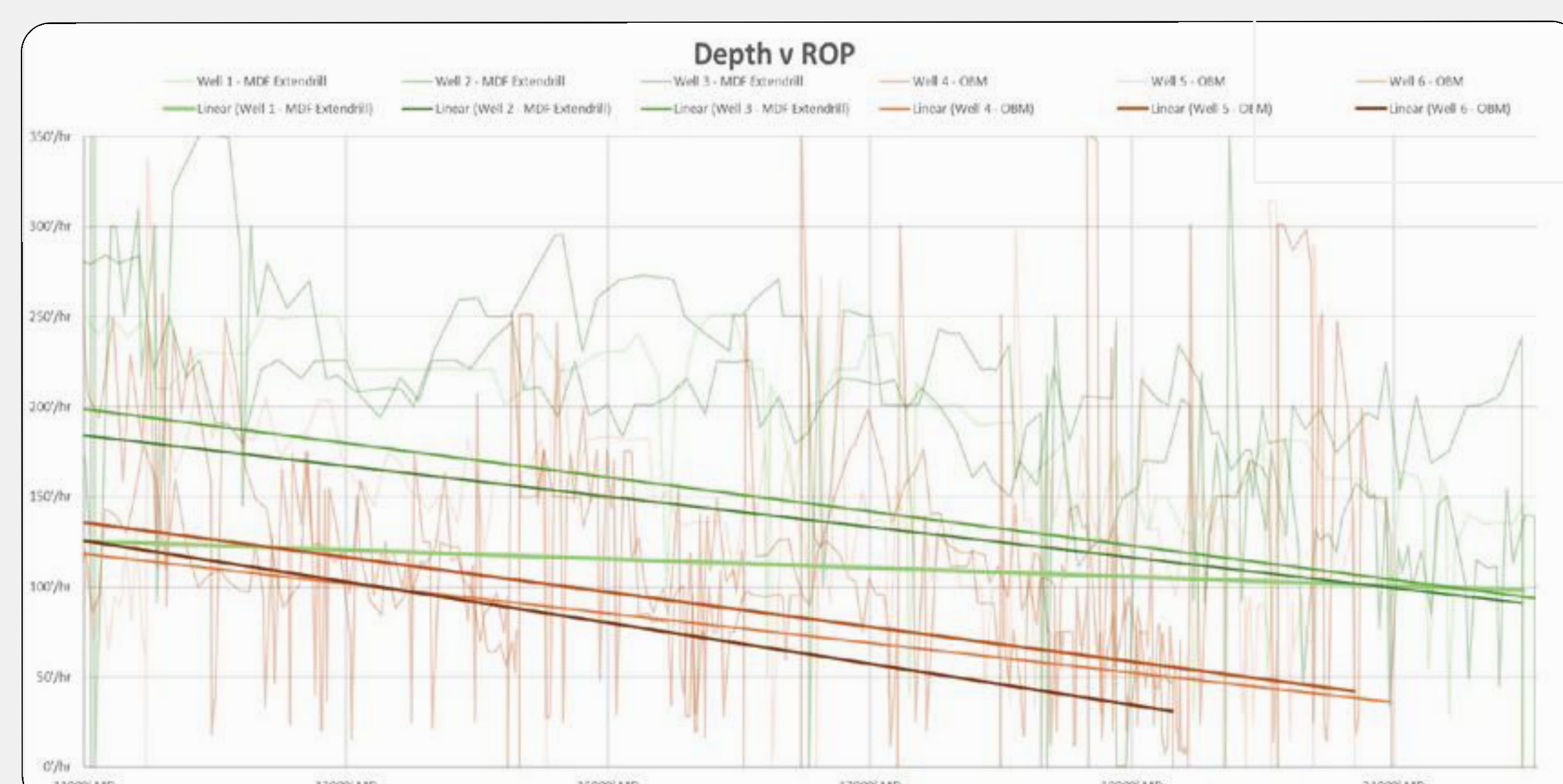
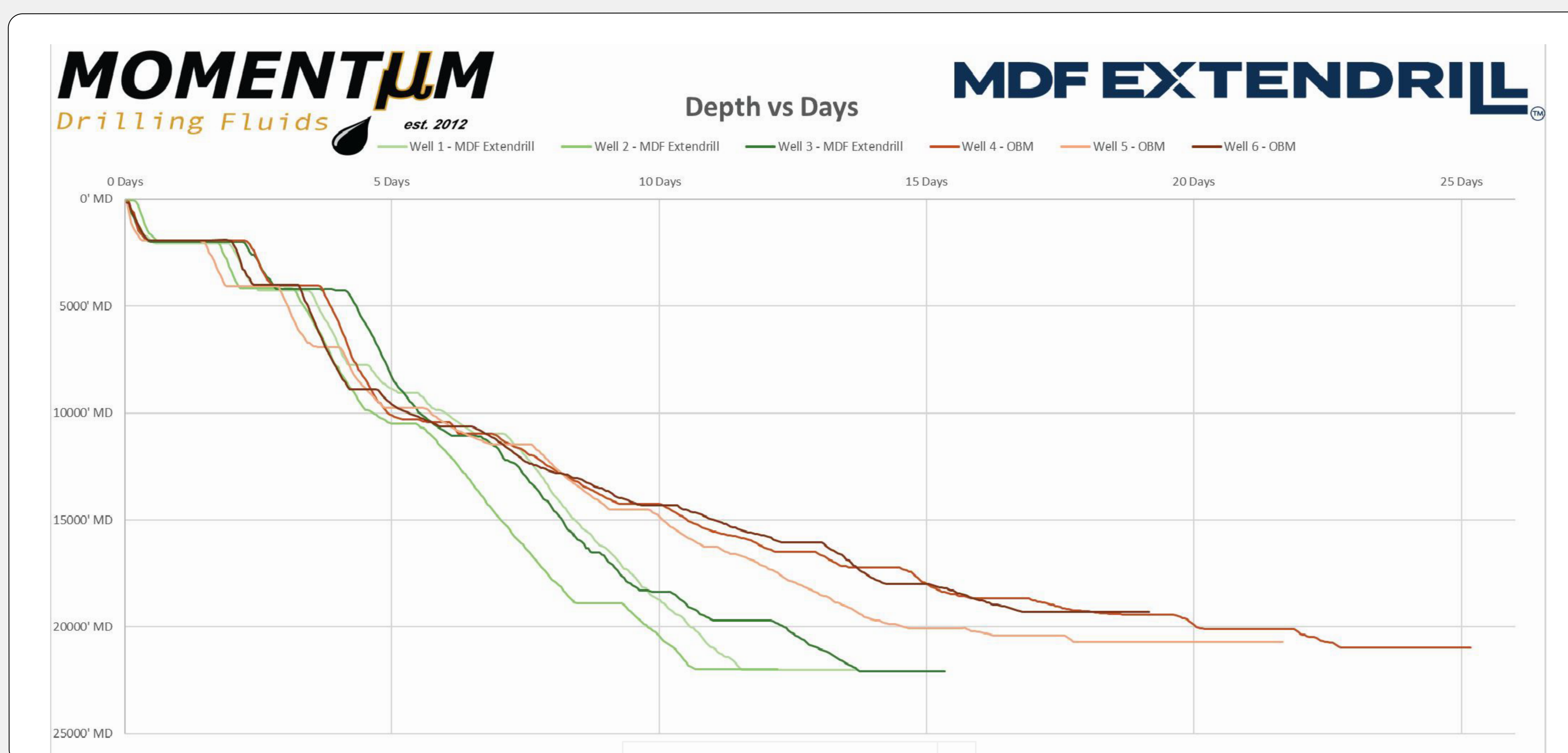


Both wells in Lea Co, NM – MDF Extendrill delivered better ROPs and more consistent torque.





# ACHIEVING SUPERIOR RESULTS WITH MINIMAL COST



All six wells were Bone Springs horizontals drilled in Lea County, NM

## WELL 1 - MDF EXTENDRILL

Drilled to 21,995' MD  
11.5 Days

## WELL 2 - MDF EXTENDRILL

Drilled to 21,982' MD  
10.7 Days

## WELL 3 - MDF EXTENDRILL

Drilled to 22,081' MD  
13.75 Days

## WELL 4 - OBM

Displaced to OBM @ 16,250' MD  
Drilled to 20,117' MD  
20.25 Days  
Diesel Used 20,322 gal (est \$60,966)

## WELL 5 - OBM

Displaced to OBM @ 10,978' MD  
Drilled to 20,705' MD  
17.8 Days  
Diesel Used 55,730 gal (est \$16,7190)

## WELL 6 - OBM

Displaced to OBM @ 10,630' MD  
Drilled to 19,316' MD  
17 Days  
Diesel Used 51,496 gal (est \$15,4494)