



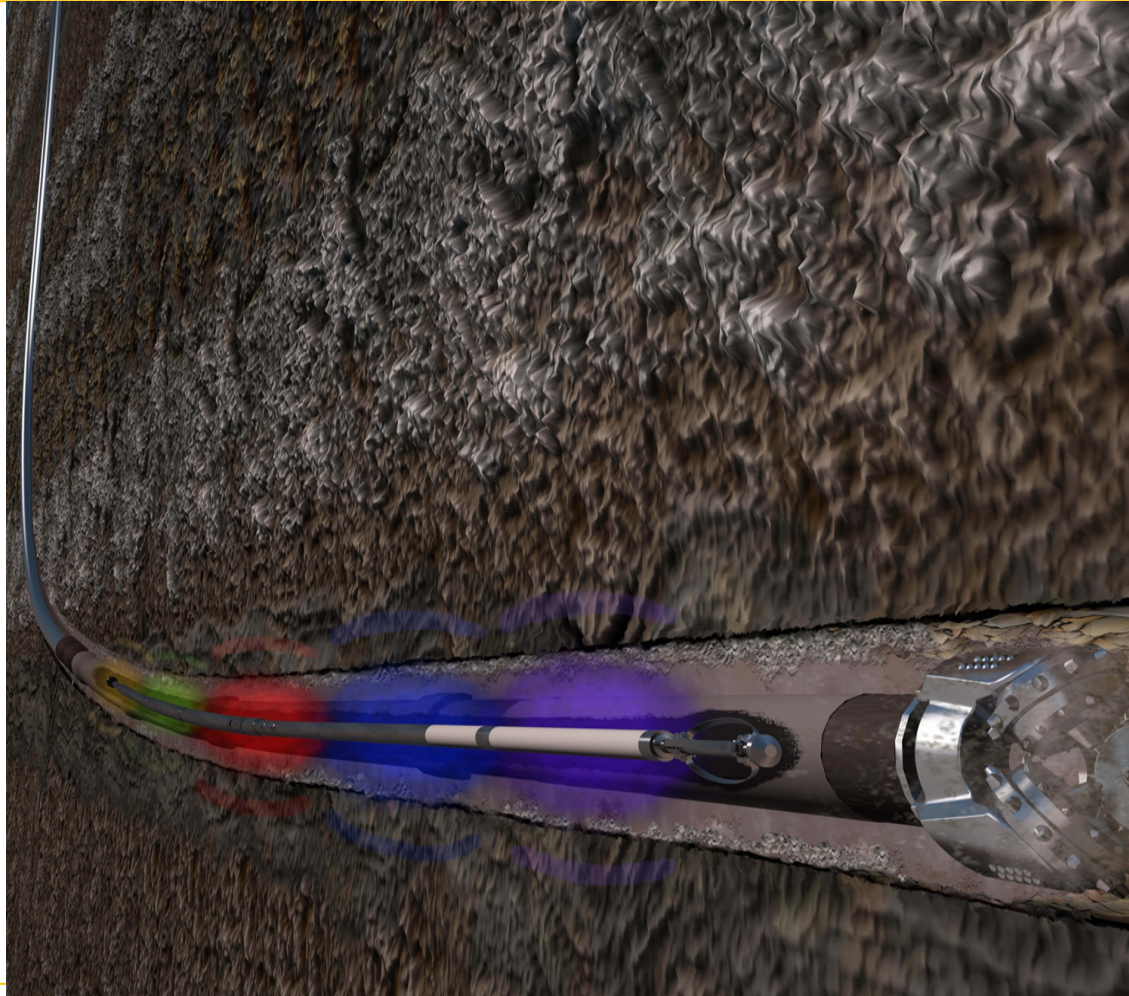
**CORDAX**

**Logging While Tripping – You  
Can Log Every Well Again!**

*Don Herman*

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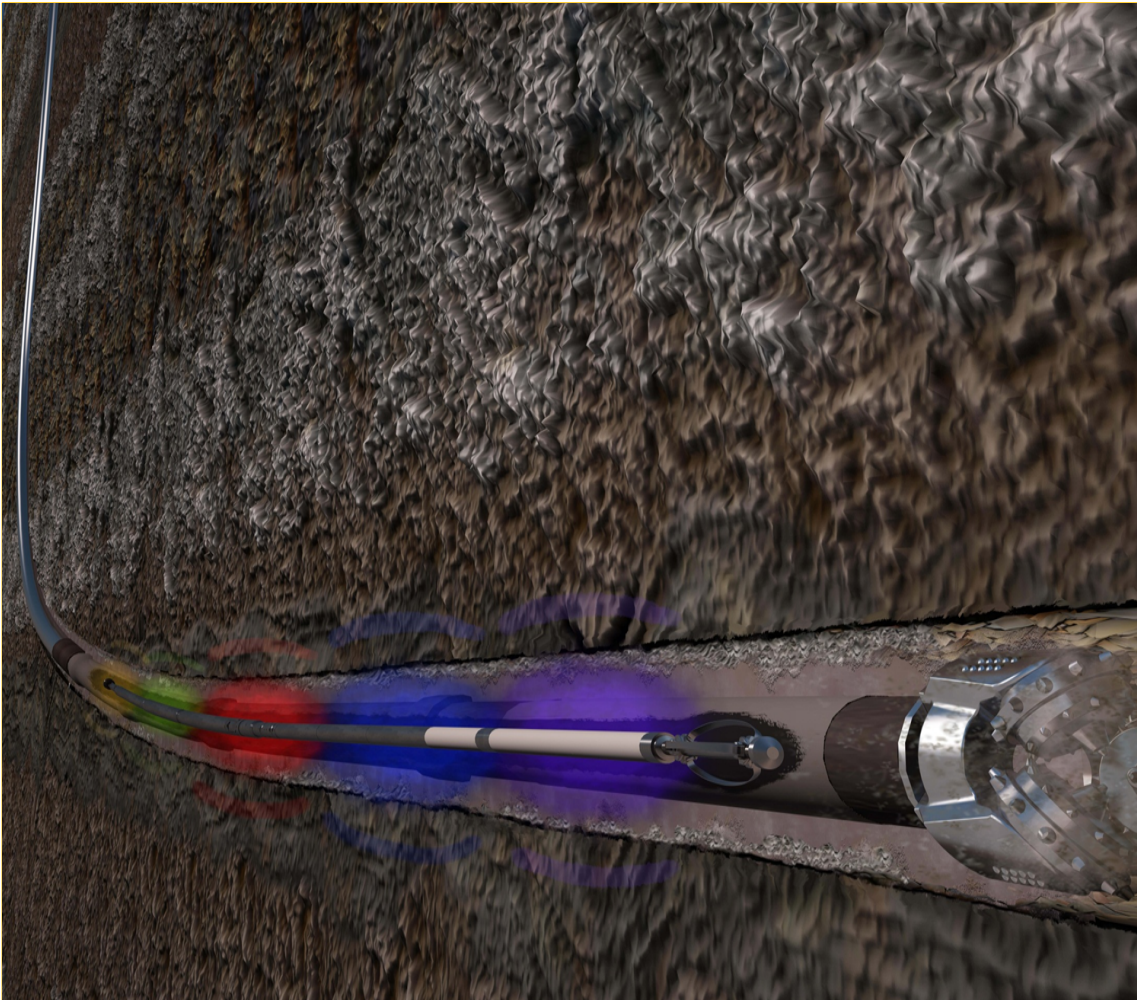
# Description / Image of the Product



- Unique to Cordax Evaluation Technologies
- Logging While Tripping
- Restart acquiring OH log data
- Understand Geology, Optimize Completions, Data in the Data Room
- Low Cost, Low Risk, Low Rig Time for Continuous ROI Improvement



# Why We Are Here



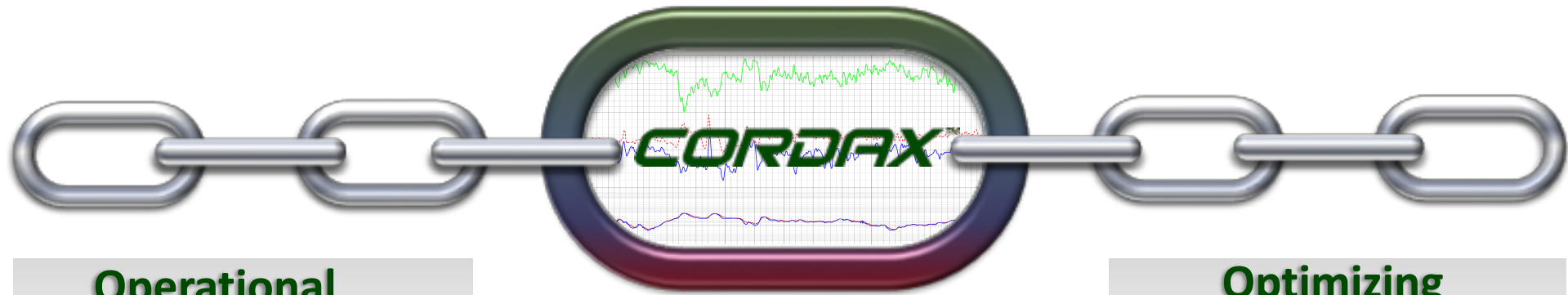
- Operators CAN LOG every well AGAIN
- Future of Logging is here, now.
- Opportunity to review Drilling, Formation Evaluation & Completion planning.

# This is who we are

- John King – Chairman of the Board
  - Maarten Propper – CEO
  - Ricardo Quintero – Sr VP Operations
  - Mike Carter – VP Geoscience
  - Don Herman – US Sales and Business Development
- Company started as Datalog in Calgary, commercialized in 2011
  - Cordax Management team acquired technology in 2016
  - Subsequent 3 years have seen excellent growth
  - US, Canada and International presence



## Help with conflicting objectives



### Operational Challenges

- drilling wells faster
- drilling longer laterals
- more stages
- decrease cost per well
- Increase production

#### Formation Evaluation Optimization

*Cordax LWT™*

#### Well Construction Optimization

*Cordax LWT™*

#### Well Producibility Optimization

*Cordax Zone Grader™*

### Optimizing Completions

- accurately ID zones
- custom stage design
- efficient stimulation
- superior production
- Increase ROI

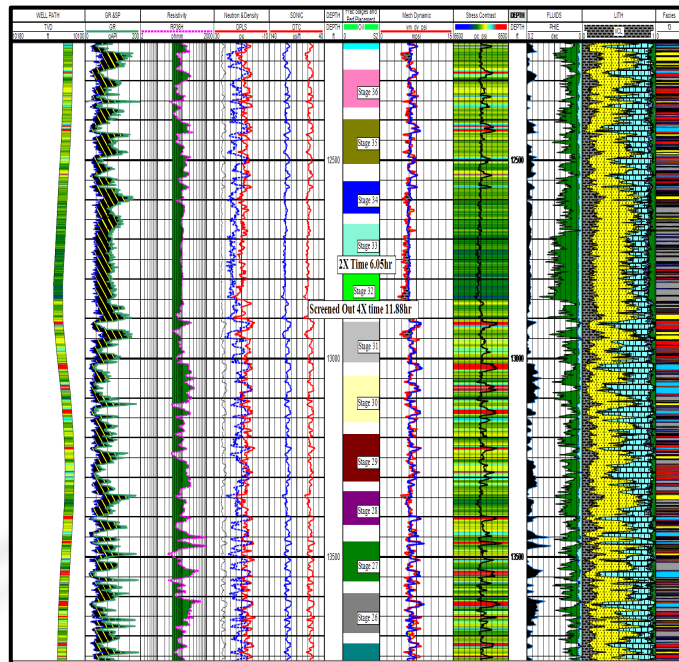


# This is our mission

- Cordax Evaluation Technologies – Goal is to provide a low cost low risk system to compete with the 1% or laterals that get logged, and more importantly, the 99% that currently are completed blind.
- Prior to wells being drilled laterally, nearly 100% were logged.
- Since, logging has virtually stopped due to cost, risk and rig time expense.
- Wells are logged to understand geology and design completions.
- With Cordax, Operators can once again effectively log their wells.

# This is our technology or process

- Cordax provides a full baseline service offering to operators.



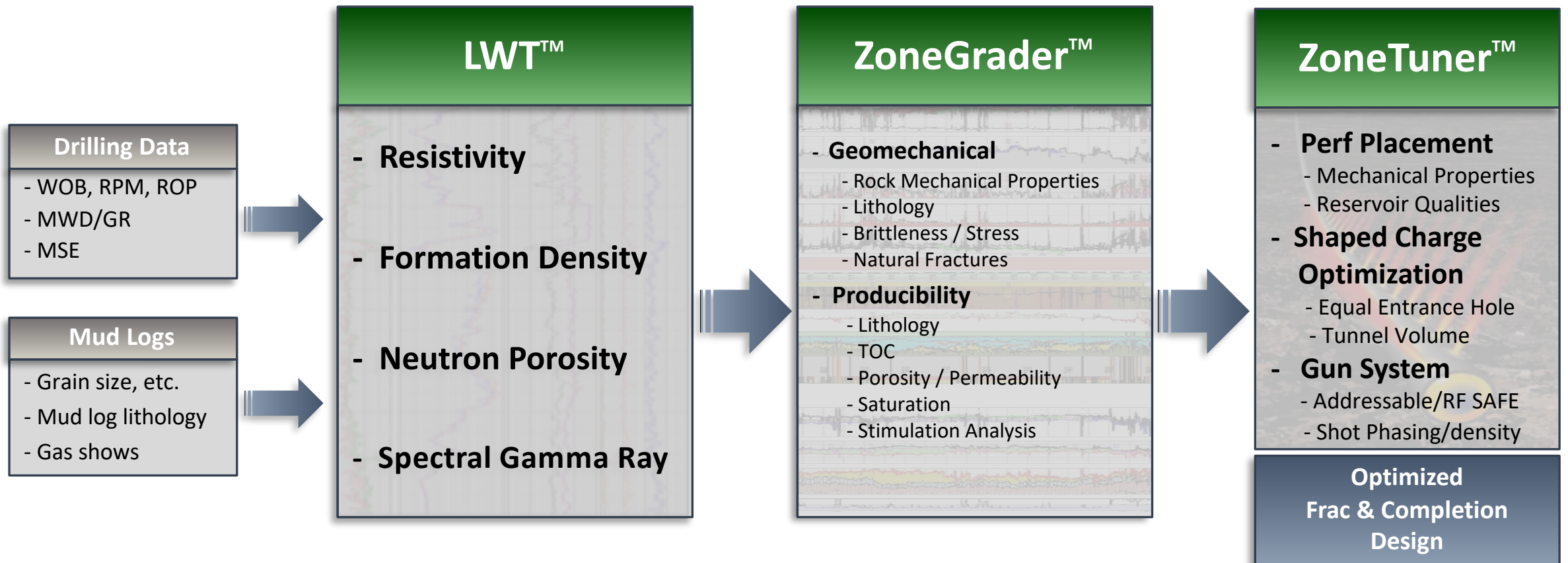
- Obtain cost effective open hole data
- Provide full formation analysis, including mechanical rock properties
- Provide completion optimization answer products
- Provide look back engineering to evaluate effectiveness of frac operations and insights for continuous improvement



# This is our technology or process

*While Drilling.....During Trip Out.....Immediate Evaluation.....Optimized Perforating*

*(Invisible to drilling operations)*



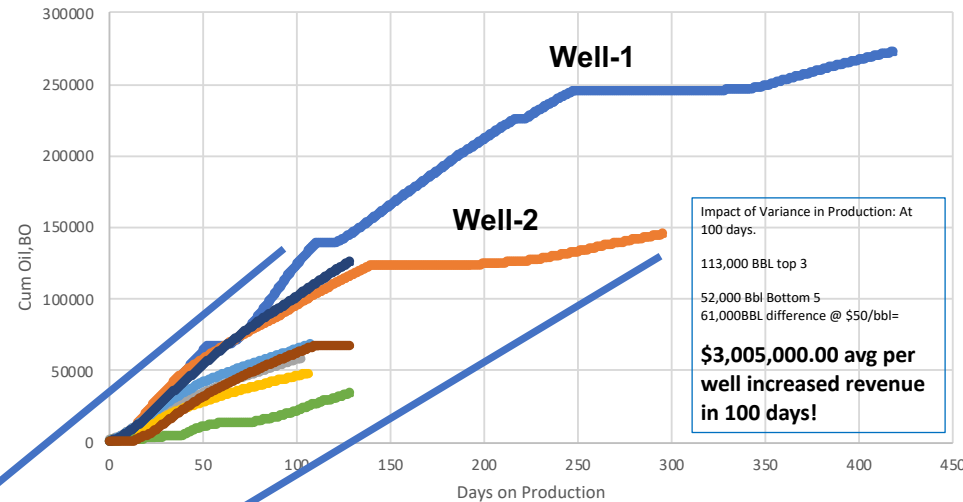
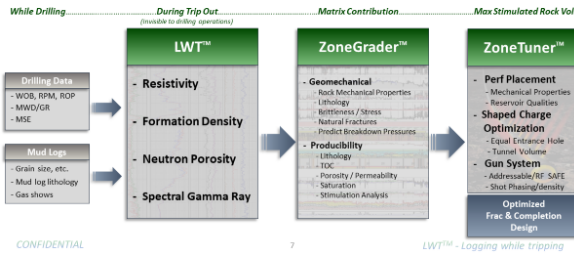
# Here are examples of successes

- Cordax validations:
  - FE measured while drilling assy. is tripped to surface
  - Cordax provides measured insight to the variance in production
  - Look back results on frac operations and cumulative production
  - Linking historical data to measure impact of today's stimulation plans
- Minimum cost when compared to other logging methods.
  - The rock matters: lower amount of good rock equals less production
  - Lower overall Hydraulic Horsepower needed.
  - Less pump time and proppant used.
  - Pump savings are more than logging costs.
  - By placing clusters in the optimum location, production increases are achievable.
  - Data in the data room can drive higher acquisition numbers.

# Here are examples of successes

## CORDAX - THE PROCESS

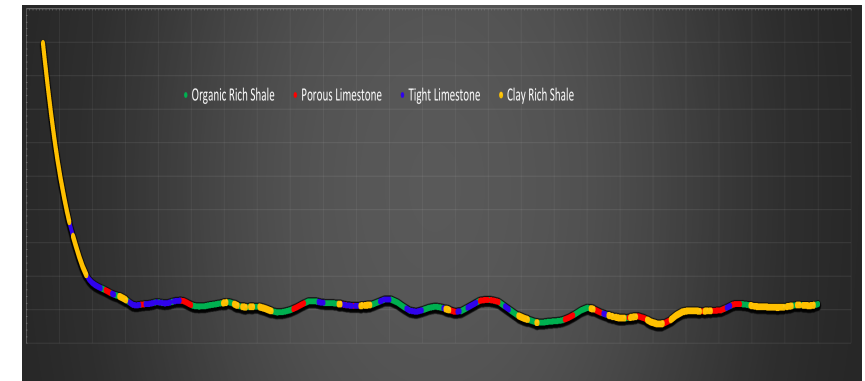
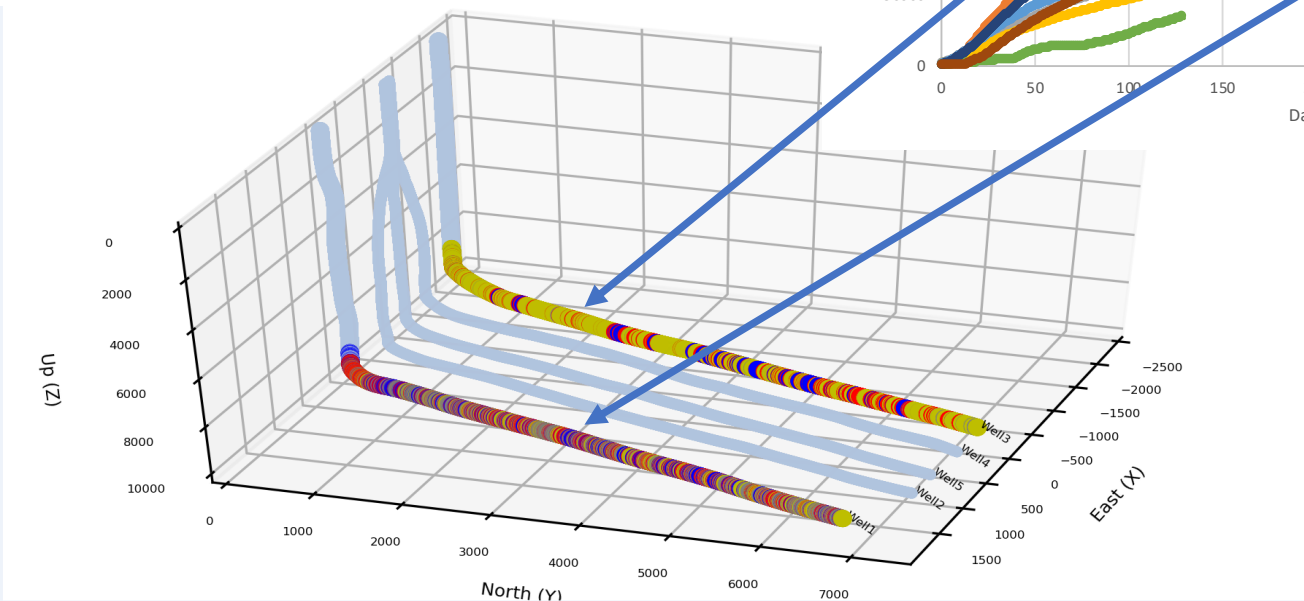
**CORDAX™**



Cordax provides measured Insight to the Variance in production

Production can vary because:

- 1) Completion efficiency
- 2) Formation quality

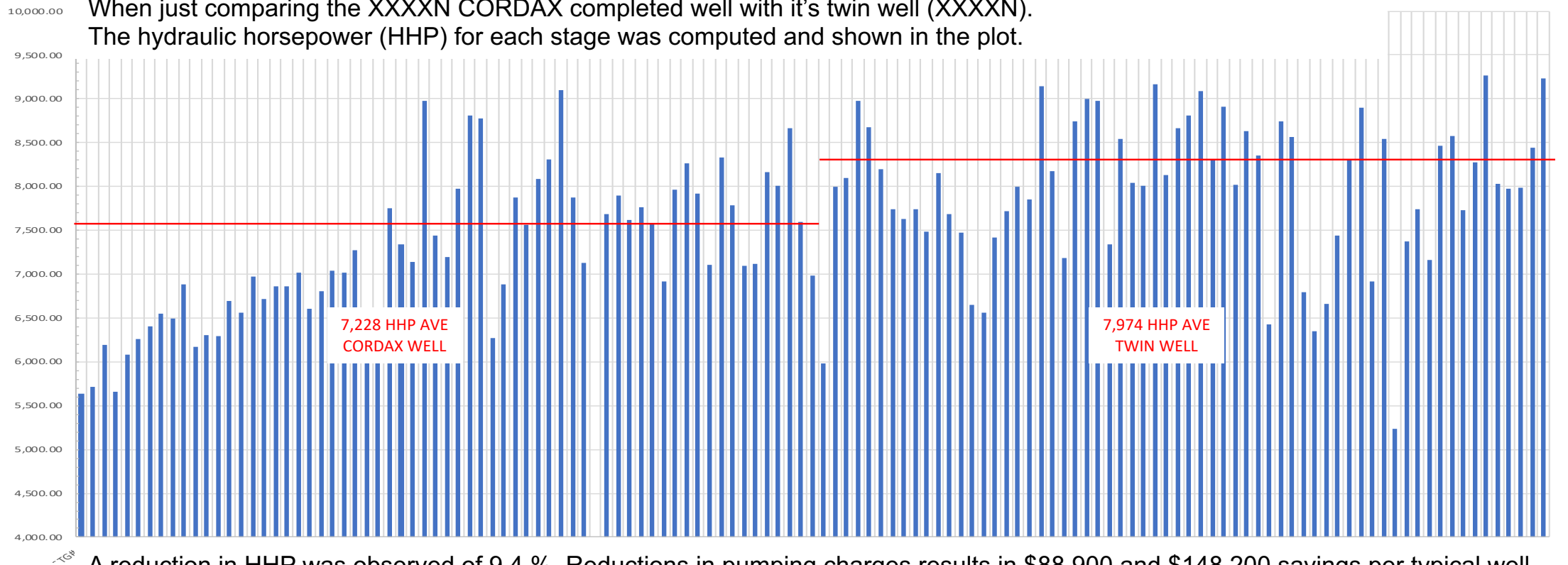




# Here are examples of successes

## Cordax saves horsepower

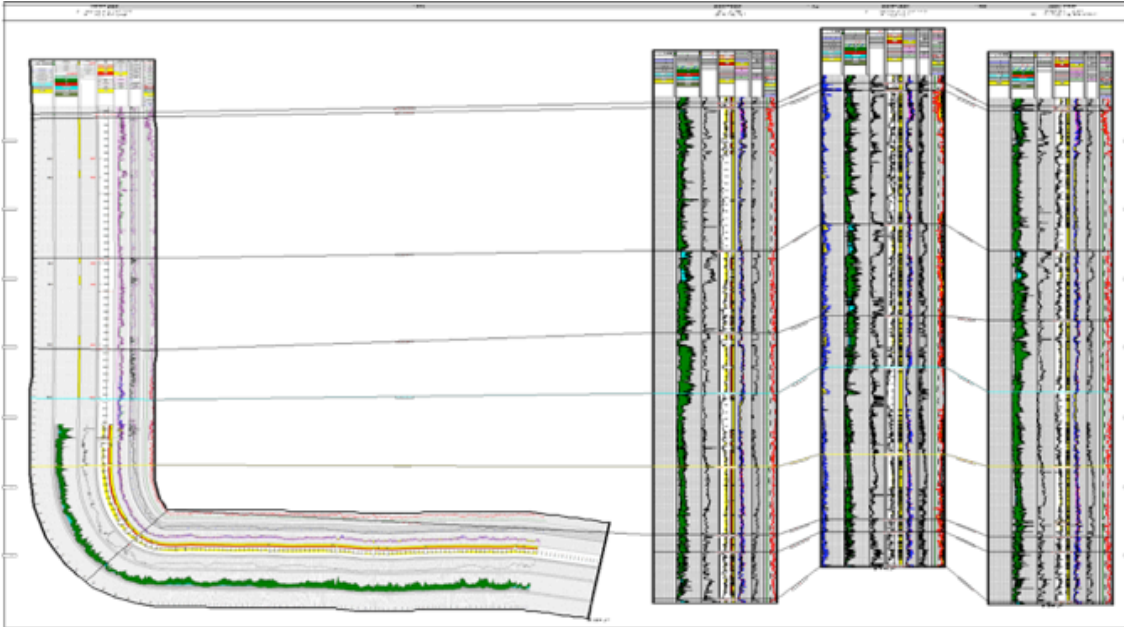
When just comparing the XXXXN CORDAX completed well with it's twin well (XXXXN). The hydraulic horsepower (HHP) for each stage was computed and shown in the plot.



A reduction in HHP was observed of 9.4 %. Reductions in pumping charges results in \$88,900 and \$148,200 savings per typical well.

# How will it work? Is it working now?

- Is the Cordax technology proven?
- Does it work?



- Global operations.
- Data qualified with multiple >15 successful “log-offs”.
- More than 1100 wells have been logged.
- Operating efficiency above 99%
- Majors, independents of all sizes.

- With the Cordax system, Operators have the opportunity to log every type of well drilled.



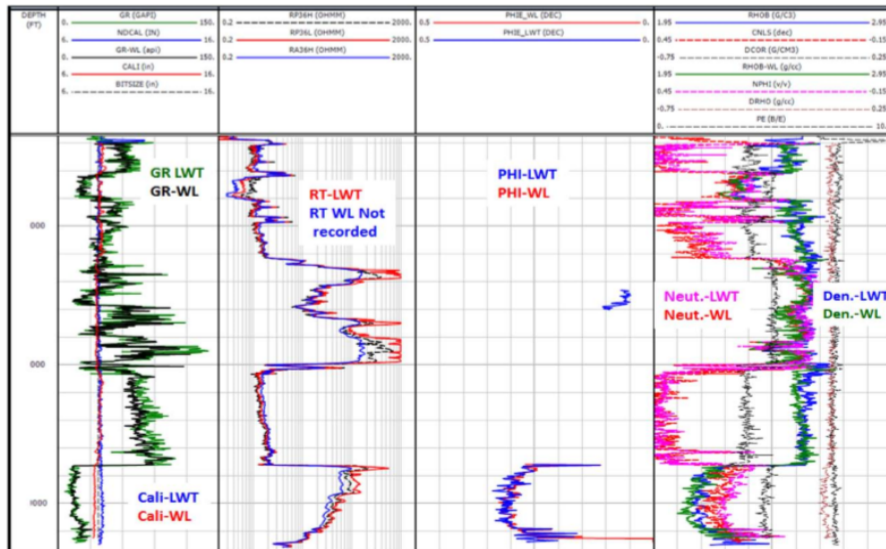
- Primary target is lateral wells. Most cost effective, low risk system in the market.
- Cordax can also address any vertical, deviated and S Shaped well that cannot obtain wireline logs.
- Operators can truly get logs on any well they can get to TD with our collars in place.
- Cordax is happy to provide a detailed operational presentation at any time.





**SPE 193315 –MS**

**A Case Study on Open-hole Logging While Tripping  
LWT Through Drill Pipes, as a NEW Technology for  
Risk Mitigation and Cost Optimization**



- Please contact [Don.Herman@cordax.com](mailto:Don.Herman@cordax.com) for more information or
- Check out our website at [www.cordax.com](http://www.cordax.com)