

**AER**  
LIMITED, LLC

***Challenger PDC Reamers***





## ***Who We Are...***

*At Western Energy Products and Services we are not new to the oil industry. Owned and operated by Alaskan Energy Resources, Inc., Alaska's "point of contact" for services and technologies for more than ten years, we have a history as a premier provider.*

*Western Energy Products and Services (WEPS) was formed in early 2011 to expand and provide PDC reamer services to the lower 48 states.*

*With office and support facilities located in Anchorage, Alaska, Roosevelt, Utah, Denver, Colorado, Dickinson, North Dakota and Houston, Texas, WEPS has a complete engineering support team to offer our customers both in-house and on-site support engineering. Our employees have an average of more than 20-plus years in the Oil Industry, with a full understanding of, and excellence in, drilling operations.*





***What is the cost of not getting  
liner / packers to TD?***





# Which is better? A dedicated clean out reamer run or ream while drilling ?

*Could you go in and renovate the house below (located in Ward County)?*

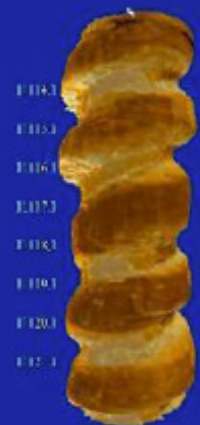
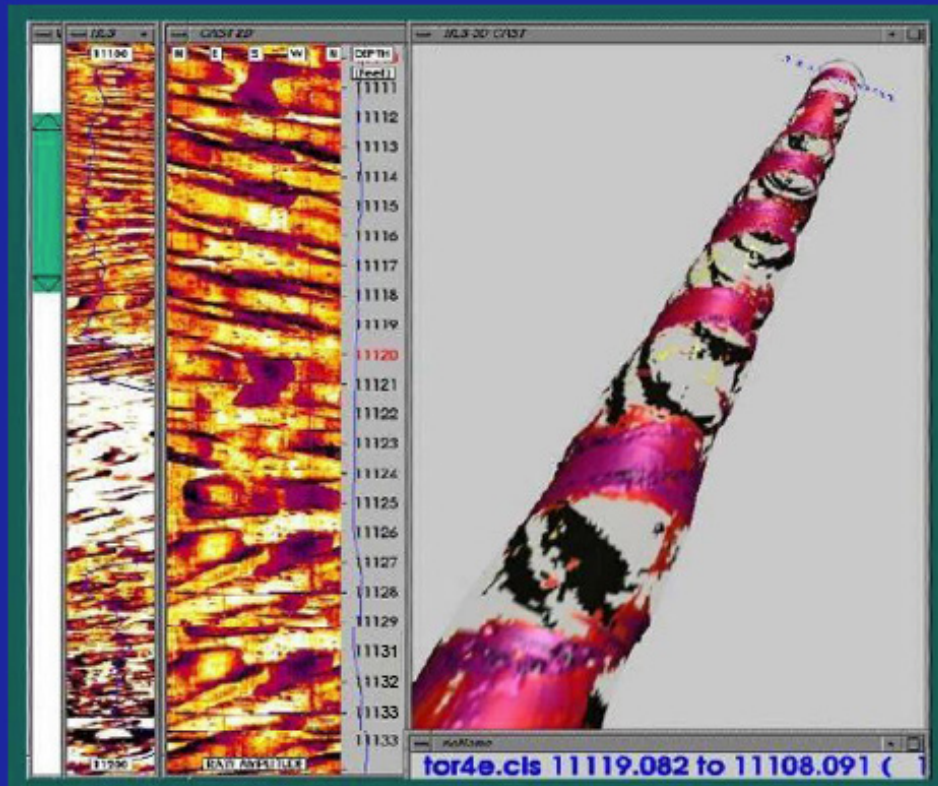
*Dedicated clean out run is an after the fact situation - ideally we would like that nice smooth lateral to start with ie the new home - skip the renovation.*





# *The Importance of Hole Quality*

## Hole Spiralling – Imaging





# ***Are All Reamers Created Equal?***





# ***AER Challenger PDC Reamer***

*Low / Manageable Torque*

- \*PDC cutters set slightly lower than tool OD*
- \*No-go Gauge ring passes over PDC cutters and stops on TCI cutters*
- \*Reduces torque by having PDC cutters smooth ledges but not drilling new formation*
- \*Ability to drill out of casing and only have flat / mesa top TCI cutters in contact with inside of casing during drill-out.*





# ***AER Challenger PDC Reamer***

*Improved Sliding / Steerability*

- \*Flat / mesa top TCI profile cutters – improved sliding operations*
- \*Wider blade profile – improved sliding operations*
- \*Decrease in blade spiral for increased junk slots / flow channels and to improve sliding operations.*





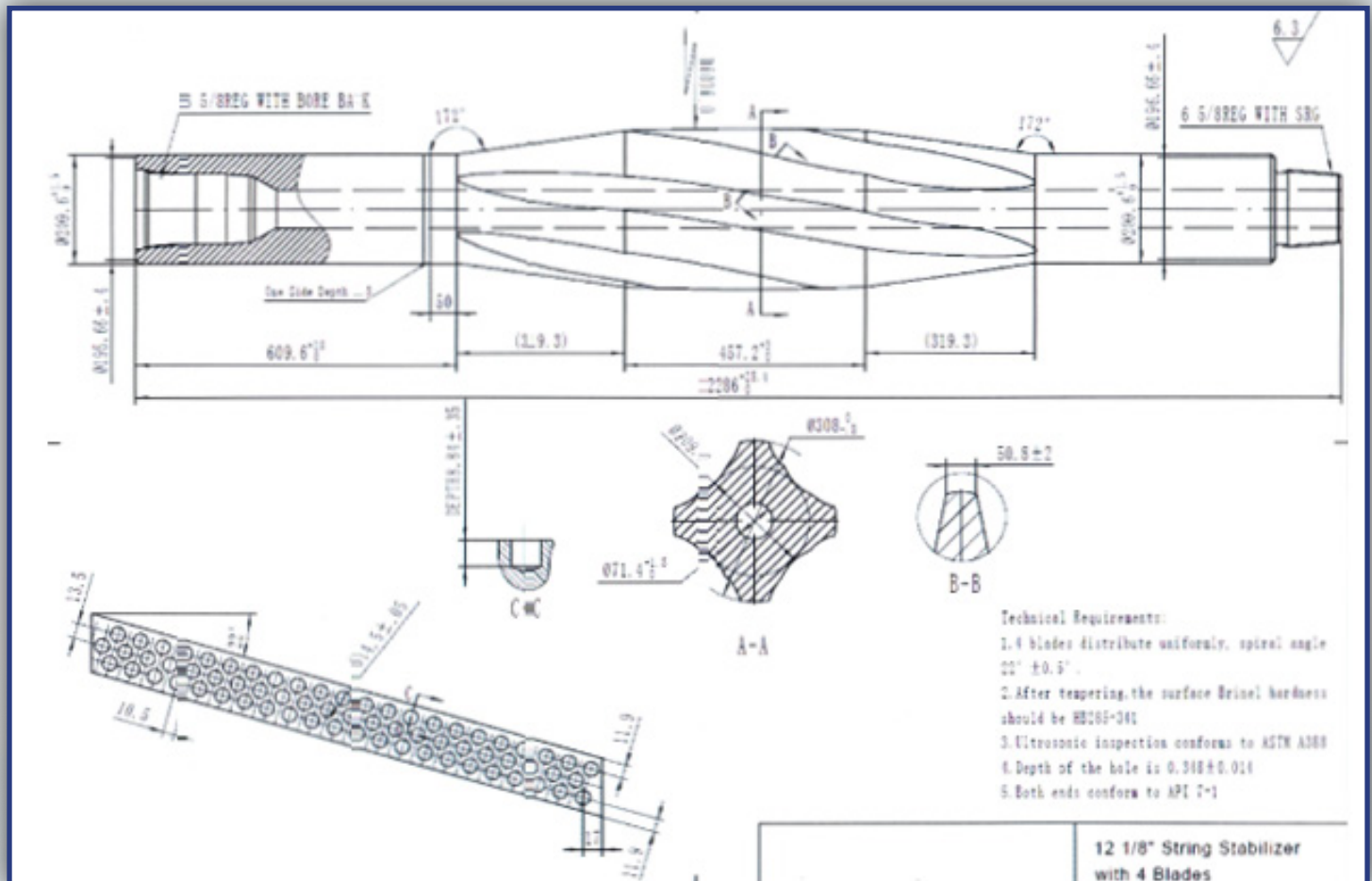
## 9-3/4" OD Challenger PDC Reamer Tool





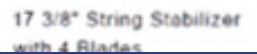
# ***AER New Designs / Sizes***

## *12-1/8" OD Challenger PDC Reamer Tool*





## 17-3/8" OD Challenger PDC Reamer Tool







# AER

## LIMITED, LLC

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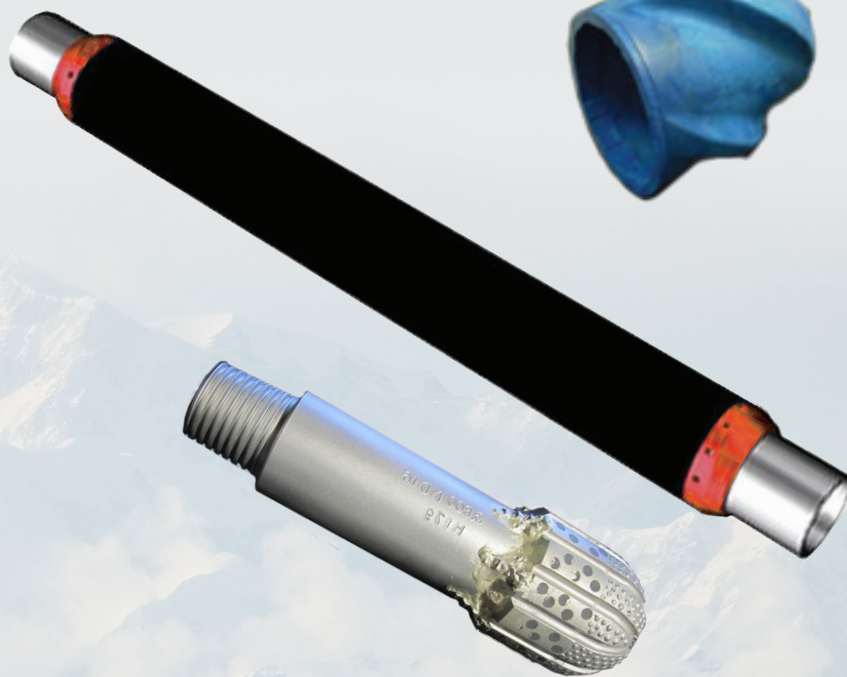
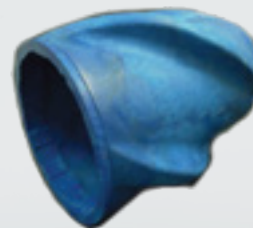
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Customer Oriented • Innovative  
Professional • Safety Conscious  
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24/7 365 Days a Year  
Significant Oilfield Experience