

## PROJECT SUMMARY

### Product Name

4-1/2 inch EVOLV® Composite Plugs, PN # 45-101

### Region

Powder River Basin  
Campbell county Wyoming  
- USA

### Well Type

Unconventional horizontal oil producer

### Formation

Turner

### Stages

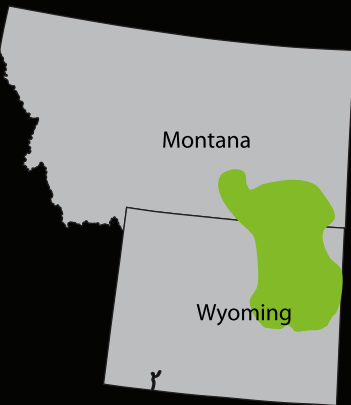
65 stages

### Depth

20,000 ft. MD

### Casing

5-1/2 inch to 4-1/2 inch



## Powder River Basin

## CASE STUDY

### EVOLV® plugs facilitating fast and clean mill outs saving time and money

Powder River Basin operator achieves GEODynamics record recently, drilling out 4-1/2" EVOLV® all composite plugs. The operator cleaned out the entire wellbore, milling out all 65 EVOLV® plugs in 21 hours, averaging just 3-1/2 minutes per plug.

#### THE CHALLENGE

GEODynamics record recently set by Powder River Basin operator. The operator drilled out all 65- 4-1/2" EVOLV® all composite plugs in his wellbore in just 21 hours. Drilling through each of the plugs averaged only 3-1/2 minutes per plug.

#### THE SOLUTION

Reynolds system did not circulate gel during mill out. Pump 5 bbl. Fresh water sweep after every plug. Then after 5th plug drilled, moved up hole 200 FT short trip. Cleaned bottoms up with fresh water at 8 bpm. On Bottom, pumped 20bbl's fresh water and 20 bbl. Gel sweep, circulate well bore clean. Pulled to heel of well, circulated an additional 10 bbl. Gel sweep.

#### THE RESULTS

Using the Reynolds system has been hugely successful, cleaning out well bores. This has been an amazing drill out achievement. Circulating the well took longer than drilling out plugs.

#### EQUIPMENT DETAILS

- 4-1/2" EVOLV® all composite plugs PN # 45-101
- 2 3/8" Coil Tubing
- 3-1/8" motor
- Extended reach agitator
- 3.75" Tri-cone bit
- Circulating pressure 5900 psi., 3000 psi. WHP
- Rate 5 BPM increasing to 8 BPM ECD after 5 Plugs and 200ft

