

# High Production Rod Lift in Bakken Shale Wells

**RUNTIMES  
OVER  
~1000 days**

## CHALLENGE



Reciprocating rod lift (RRL) systems in Bakken shale wells can present significant challenges to our clients due to the typical well depths, downhole pressure, mildly corrosive environments as well as high initial production rates that can rapidly decline.

After initial completion, production rates are higher, prompting most operators to turn to electric submersible pumps (ESPs). However, due to the production rate decline, operators typically have to run multiple ESPs back-to-back, downsizing to meet production or due to failure, but this option can be costly with upwards of \$150,000 per ESP installation.

Adopting RRL earlier in the production cycle can be complex. Deeper, deviated wells often require larger-diameter and/or guided rods to manage loading and deviation, increasing rod string weight and friction. This also drives the need for higher-capacity surface equipment or force production trade-offs to fit existing units.

That's when Lifting Solutions' client approached our Technical Applications Team for a solution.

## SOLUTION



The Lifting Solutions team presented Endless Rod®, knowing its continuous rod design would accomplish two main goals:

- 1. Reduce OPEX:** Convert the wells to RRL sooner, thus minimizing the cost of additional ESP operations.
- 2. Minimize Downtime:** Maintain ESP-level production with RRL while minimizing downtime and failures.

With LS Endless Rod High Strength NS grade rod in diameters from 1-1/8" to 7/8", our team was able to meet production targets, maximize surface equipment efficiency by lowering rod string weight, and maximize runtime and reliability by eliminating couplings and reducing friction.

Additionally, the 1-1/8" Endless Rod can effectively run in existing 2-7/8" tubing, allowing the client to avoid the additional costs associated with running larger tubing to accommodate conventional 1-1/8" sucker rods.

## PERFORMANCE



To date, LS has deployed over **1,600,000 ft** of Endless Rod in the Bakken area across more than **175** well sites. Several wells migrated to RRL earlier in their production cycle to avoid additional ESP runs while still producing upwards of 700 bbls/day, at depths up to 11,000 ft.

The decreased weight of an Endless Rod string allowed operators to rod lift sooner without sacrificing higher production rates due to loading. By eliminating couplings throughout the rod string, operators were able to eliminate coupling failures while also minimizing rod/tubing wear even with side loads of 1300 lb/25'.

## METRICS

|                              |                    |
|------------------------------|--------------------|
| Well Count                   | 176                |
| Total Install Footage        | 1,635,113/ 498,382 |
| Average Oil API              | 42                 |
| Average Water Cut            | 80                 |
| Average Downhole Temps (F/C) | >280/138           |

|                                   | AVG       | MAX        |
|-----------------------------------|-----------|------------|
| Runtimes (Days)                   | 363       | 1353       |
| Production (bbls/m <sup>3</sup> ) | 415/66    | 702/112    |
| Rod Pump Depth (ft/m)             | 9800/2987 | 11200/3414 |
| Side Load (lb/25')                | 450       | 1315       |
| Data as of 05/07/2025             |           |            |

Despite challenges with production targets, wellbore geometry, and depths, Endless Rod has delivered runtimes exceeding 1,000 days, with an average of 350 days across the entire Bakken Lifting Solutions installation.