

Sucker Rod Pump (SRP) Performance Monitoring

Key Benefits

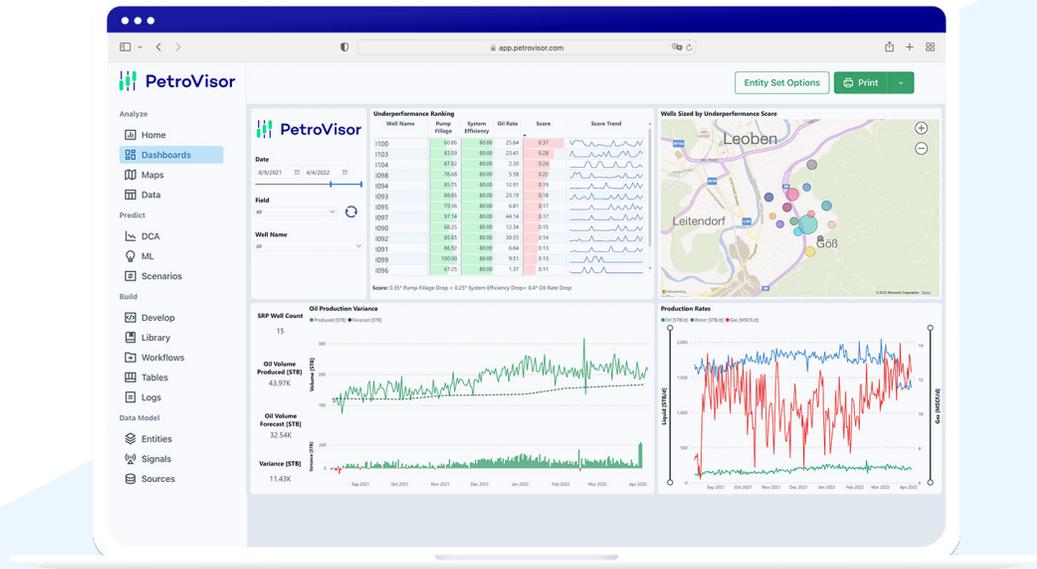
- For the Executive:** Increase operational efficiency and production gain in upstream oil and gas operations by connecting people, systems, and data in one platform.
- For the Engineer:** Examine the generated dynamometer cards visually to determine the pump's actual performance. Both cards, as well as additional parameters calculated individually in PetroVisor utilizing rod data, produced fluid characteristics, and the trajectory and well completion data, are plotted on the same graph.
- For the Field Operator:** PetroVisor allows field operations to utilize the Sucker Rod Pump Analysis tool and problem detection.
- For the Enterprise:** Provide your company with several KPIs which serve as a diagnostic tool for rod and pump conditions.

Key Features

- Production rate estimation per well, allowing for better reservoir-production decisions.
- Through data integration processes, PetroVisor improves the availability, quality, and consistency of data contained in several databases with varying levels of quality.
- Trained ML model to detect downhole pump health status and identify different classes of problems.
- Alarm and notifications of underperformance to alert you when designated limits are breached or an unhealthy card is present.

Despite the ease of installing sensors for detecting the load and position of the polished rod on the surface dynamometer card, the analysis of the pump's functioning necessitates the monitoring of the load and position at the downhole pump.

With PetroVisor's SRP Performance Monitoring, you can utilize a trained ML model based on over 12K dynamometer card data to identify rod pump problems, estimate production volumes, and perform stress analysis along the rod string. Identify the current health status of the pump system to reveal root cause of underperformance using a convolutional neural network model.



A Simplified Approach to SRP Performance Monitoring



Corporate-Wide Business Intelligence & Visualizations

Analyze and evaluate your data thoroughly. PetroVisor provides visual data exploration by condensing massive amounts of artificial lift data from any data source into useful dashboards and reports, with fully integrated, built-in business intelligence from Microsoft Power BI.



Fully Optimized / ML Ready

PetroVisor analyzes current and predicted data, such as well performance modeling, fluid characteristics, fluid dynamics, and PVT analysis.



Failure Notifications & Automated Alerts

Avoid substantial production challenges and mechanical failures by early detection of emerging problems that might otherwise go undiscovered for long periods of time. Create proactive measures to mitigate production losses by evaluating potential failures downhole or in surface assets.



Reduce Time Reviewing Wells

Automation capabilities reduce the time and effort of manual well review by providing a smart advisory solution with ranked well candidates that are underperforming and need further investigation.





Integrate Engineering with Performance Goals

Amplify your current investment in technology. PetroVisor, which is endlessly scalable and developed on an open architectural approach, can be integrated with any technology from any engineering application. By integrating all business data, users obtain company-wide data clarity, simplicity, and accountability to reach measurable goals.



Improve Decision Making

Evaluate theoretical versus actual lift performance, connect surface and subsurface related components, and detect root causes of issues as well as potential problems. Streamline and amplify the decision-making process by ranking opportunities for lift improvements and identification of problematic wells.

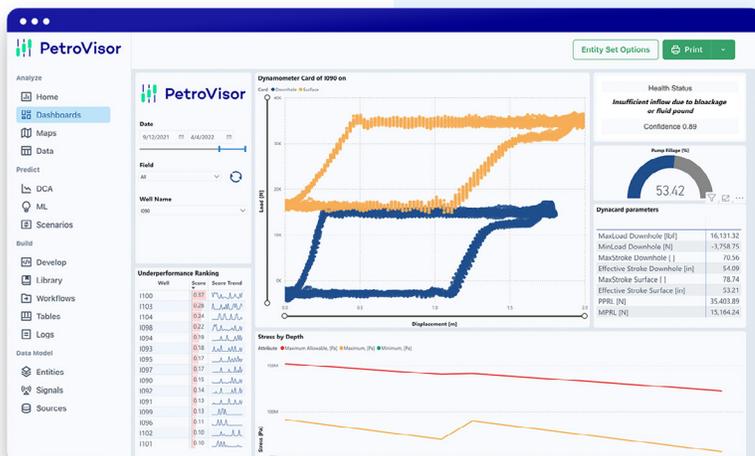


How to use PetroVisor's SRP Performance Monitoring Dashboards?



Well Ranking based on Various KPIs

- Priority list of underperforming wells to be addressed
- Accurate production rate per well, for better reservoir-production decisions
- Assess potential production output, based on pay-zone inflow performance, and provided recommendations for optimal strokes per minute



Transformation of Dynamometer Cards

- Display the surface dynamometer card and the modified or calculated downhole pump card
- Estimate the different efficiencies of the artificial lift system based on polished rod and pump card power





Stress Analysis Tool

- Monitor and keep the peak stress under the maximum allowable stress, to avoid future rod failures
- Perform stress analysis at each point of the rod string: minimum stress, maximum stress, and maximum allowable stress

Surveillance By Exceptions (SBE)

- Alarms tailored to notifications of deviation from production rate, low pump fillage, pump off point, problematic downhole pump conditions, abnormal stress values, and any custom desired rules.



Learn More

Learn more about how SRP Performance Monitoring from PetroVisor's Artificial Lift Optimization App determines the current health of a well and reveals the root cause of underperformance by reading our [Use Cases](#) and [Whitepapers](#).

