

visplore

User Success Story:

How an oil & gas company revolutionized anomaly labeling and achieved **10x faster data preparation for supervised learning**



AT A GLANCE



Labeling multi-year well data and identifying anomalies was **time-consuming & labor-intensive**



Visplore enabled **automatic & interactive labeling** using advanced pattern-search and rule-set algorithms



The Client reported **10x increase in labeling efficiency** and gained valuable insights into anomaly events

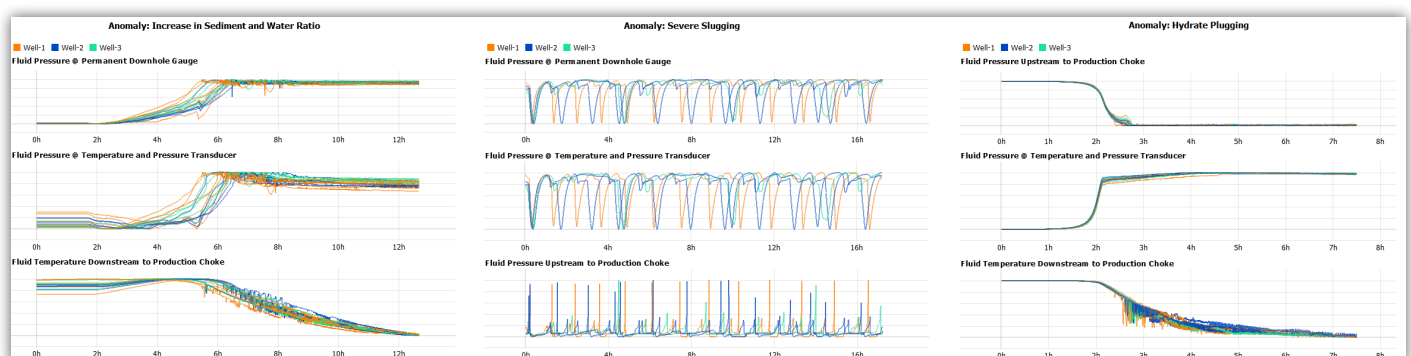
Challenge: Labeling sensor data from multiple wells spanning multiple years

A leading oil & gas company was facing the challenge of efficiently labeling sensor data from numerous wells over several years. The task involved categorizing various operational stages and distinguishing anomalies, presenting a **time-consuming and labor-intensive process**. The existing approach, reliant on manual investigation of each event without interactive labeling capabilities, **hindered efficiency and accuracy**.

Solution: Self-service tool for manual and automatic labeling for SMEs

Integrated seamlessly into the company's infrastructure, Visplore empowered engineers to ingest and analyze extensive operations data spanning multiple years. Leveraging advanced pattern-search and rule-set algorithms, **Visplore automated the segmentation and labeling of operational stages** such as start-ups, transients, stable periods, and shutdowns, liberating engineers from manual tasks and **enabling swift decision-making**. This allowed engineers to compare all such events and decide which instances to use as training data for their model.

Furthermore, **Visplore facilitated interactive labeling of well statuses by subject matter experts**, revolutionizing the process. This approach not only accelerated labeling tenfold but also empowered engineers to delve deeper into their data, gaining invaluable insights into anomaly events and operational behavior (see image*).



*Illustrated based on publicly available dataset [1]

Results: Time savings and clearer insights for model improvement

Engineers reported not only a remarkable **10x increase in labeling efficiency**, freeing up valuable time for strategic analysis and innovation but also an increase in insights gained from the data. For example, automatic segmentation revealed extra stages that were previously unknown to the engineers, enriching the training dataset and enhancing model accuracy. Additionally, **Visplöre's visualization capabilities revealed nuanced insights into anomaly events, driving continuous improvement and operational excellence.**



“Thanks to Visplöre, our engineers can now focus on value generation instead of overcoming data preparation struggles. Visplöre empowered us to reduce the time spent on labeling as well as to improve the label accuracy by providing insights.”

— Flow Assurance Manager, Oil & Gas Company

Other benefits of Visplöre

- ✓ Increased situation awareness for **data-driven decision-making**
- ✓ **More transparent** insights for operators than “black-box” AI
- ✓ **Ad-hoc analysis** of years of historical data with **strong graphical interface**

Highlights

- 10X** Efficiency gains for engineers in labeling tasks
-  **Automatic labeling** leveraging patterns and rule sets
-  **Automated workflow pipeline** for enhanced productivity

Want to learn more?

Reach out to discover how advanced analytics can empower your business to tackle challenges

visplöre **MOST TRANSPARENT
TIME SERIES ANALYTICS**

REACH OUT TO US

[1] Vaz Vargas, R. E., Munaro, C. J., Marques Ciarelli, P., Gonçalves Medeiros, A., Guberfain do Amaral, B., Centurion Barrionuevo, D., Dias de Araújo, J. C., Lins Ribeiro, J., & Pierezan Magalhães, L. (2019). A realistic and public dataset with rare undesirable real events in oil wells. *Journal of Petroleum Science and Engineering*, 181. <https://doi.org/10.1016/j.petrol.2019.106223>