

CASE STUDY

ClearWELL
Oilfield Solutions
Continuous Scale Control

CLEARWELL™ CUTS OPERATIONAL EXPENSE BY 70%

LOCATION: Llanos Basin, Colombia

APPLICATION: ESP Oil Well

DEPTH: 4000m (~13,000ft)



BEFORE CLEARWELL

Calcium carbonate scaling was severely impacting production at a well in Colombia. Production from this well required the use of an electrical submersible pump (ESP) but scale deposition was reducing its efficiency and run-life. Costly chemical methods to prevent the deposits were reducing scaling but the well would lose production every two months due to repeated pump failure.

Seeking an alternative to the ineffective chemical program, ClearWELL™ technology was introduced. Prior to installation, baseline variables such as hardness, sulphates and pH were measured and operational parameters for the ESP were also recorded.

AFTER CLEARWELL

To determine the effectiveness of the ClearWELL™ technology, its impact on production and the overall success of the trial, operational variables were carefully monitored throughout. At the commencement of the test period the amount of scale inhibitor injected into the well was steadily decreased. Thirty days after implementing ClearWELL™ the scale inhibitor injection was suspended. All analytical variables, including those for the ESP, remained consistent demonstrating the effectiveness and efficiency of the technology.

Six months into deployment the well remains in production with the ESP delivering three times the previous best run-time and reducing operational costs by 70%. Due to the proven success of scale prevention in the well and the savings delivered, the operator extended the ClearWELL™ programme with additional devices deployed on their ESP wells.

ClearWELL™ delivered results when other methods failed, enabling the client to maximize production and cut operating costs while protecting their assets.

QUICK FACTS

- ESP oil well in Colombia with severe calcium carbonate scaling
- Chemical treatment ineffective
- ESP failure stopping production every two months – high intervention costs
- ClearWELL™ installation stopped scaling – pump failure eliminated
- Operational saving of 70% was achieved over the first six months
- Chemical use eliminated – production maximised

THE PROCESS

- The ClearWELL™ unit is connected to production equipment at the surface wellhead – no intervention required, no loss of production.
- The unit transmits a pulsed radio frequency signal down into the wellbore or along flowlines and equipment. The pulsed signal delivers energy to the scaling ions, controlling precipitation, keeping the liquid below saturation and minimising scale growth on production equipment.
- ClearWELL use satellite monitoring to ensure optimum unit performance. Where required personnel perform regular non-intrusive equipment checks.
- ClearWELL™ systems are low power consumption and supplied as a certified Class 1, Zone 1. The AC signal system is corrosion neutral, no reported gauge signal interference.

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