

CASE STUDY

ClearWELL
Oilfield Solutions
Continuous Scale Control

SEVERE FLOWBACK SCALING SOLVED AND PRODUCTION ASSURED FOR A FIELD OF GAS WELLS

LOCATION: Haynesville Shale, USA
APPLICATION: Unconventional Gas
AVERAGE DEPTH: 13,000' TVD, 21,000' TD



BEFORE CLEARWELL

An operator producing from the Haynesville shale in NE Texas and NW Louisiana was experiencing substantial production loss as calcium carbonate and barium sulphate deposition was causing their wells to plug off and stop producing. Returning water used for frac treatment caused significant problems with the worst recorded blockage occurring within only three days. Mitigation was attempted using chemical inhibitor and acid washes which attained 30 – 45 days continuous production between interventions. These treatments always carry risk and with rig availability and other problems up to 20 days production could be lost. Each well produced 17 – 20 MMSCFD so the cash flow impact to the operator was substantial. The operator was seeking to reduce downtime to increase revenue, as well as driving down the direct cost of intervention.

AFTER CLEARWELL

Units were installed on six wells for a ninety day trial period and all chemical injection ceased. The technology demonstrated outstanding results with no interventions required to be undertaken on any of the wells. ClearWELL™ was then installed on a further six wells, protecting twelve in total over a further ninety day trial

with complete success. The operator is now using thirty ClearWELL units across the field and has achieved around six years of full production without intervention due to scale since the first unit was installed.

ClearWELL™ is now a standard fit at completion, allowing the operator to maximise initial production and cashflow to return their capital investment as quickly as possible. ClearWELL has cut direct expenditure on intervention and delivered reliable flow assurance, avoiding significant production loss.

QUICK FACTS

- Shale gas development
- Severe calcium carbonate and barium sulphate scaling from frac and reservoir fluid mixing
- High chemical injection rate into gas wells to extend intervention interval to 30-45 days
- High production loss due to intervention
- ClearWELL™ delivered continuous, scale free production
- Intervention and chemical cost reduced to zero
- Significant production enhancement

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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