

THE METHOD OF IMPLEMENTATION OF VERSA FRACKING OF OIL AND GAS WELLS

IITM Technology Available for Licensing

Problem Statement

- Oil and gas production in wells that are ceased or cemented with particles and fluids of muds and slurries are stimulated by sharp decline in pressure to enhance cleaning of mudding off and bridging pay zone for disclosure of existing cracks and formation of new.
- Existing methods either generate insufficient pressure drops or require the use of complex equipment.
- There is a need for a method of versa fracking for enhanced oil and gas recovery through the use of decreased pressure and simple equipment

Intellectual Property

- IITM IDF Ref.1314
- IN 525066 Patent Granted
- PCT Publication No: WO/2017/037746

TRL (Technology Readiness Level)

TRL 2 Technology Concept formulated

Technology Category/ Market

Category- Energy, Energy Storage & Renewable Energy

Industry Classification:

- NIC (2008)- 0610 Extraction of crude petroleum; 0620 Extraction of natural gas
- NAICS (2022)- 2111 Oil and Gas Extraction
- Applications- oil and gas producing industry and in particular to a method of versa fracking for increasing oil and gas production rate in well completion stage and obtaining total recovery of oil and gas in later stages of production.

Market drivers:

Hydraulic Fracturing Market is poised to grow from USD 36.69 billion in 2023 to USD 70.94 billion by 2031, growing at a CAGR of 7.6%.

Research Lab

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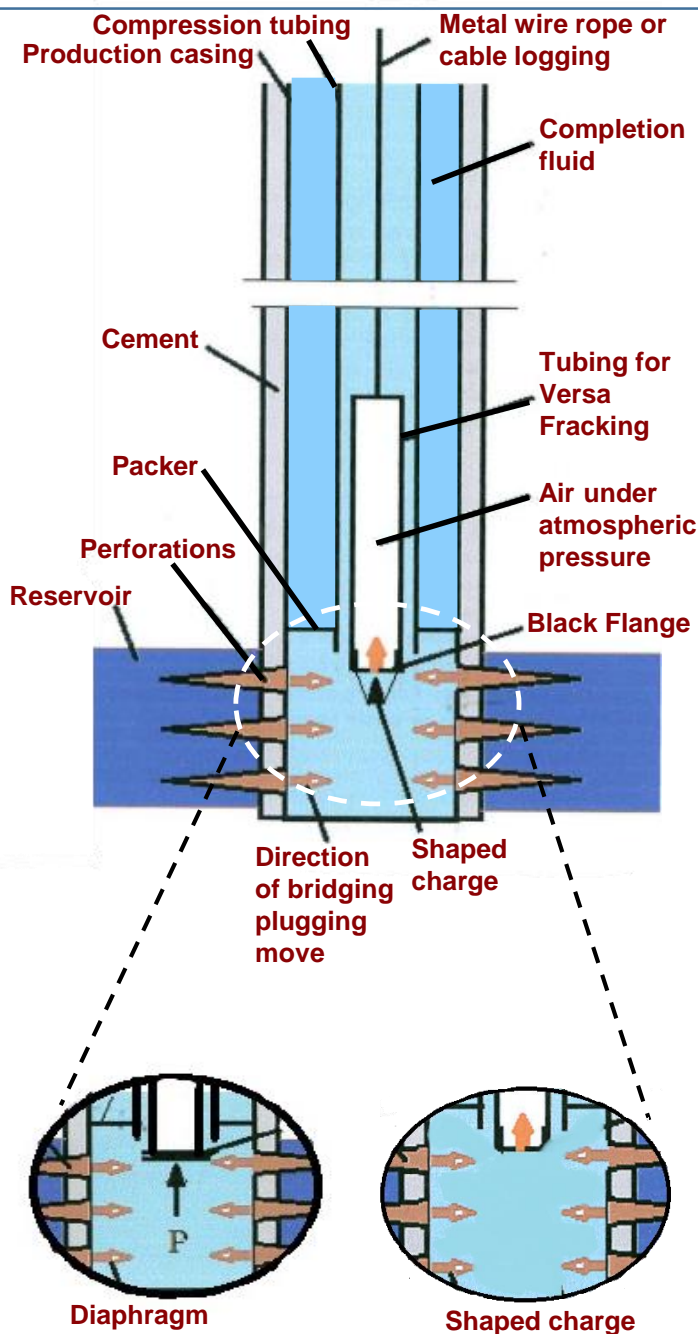


Figure: Scheme of the equipment featuring a black flange and a shaped charge in a deep well during versa fracking.

CONTACT US

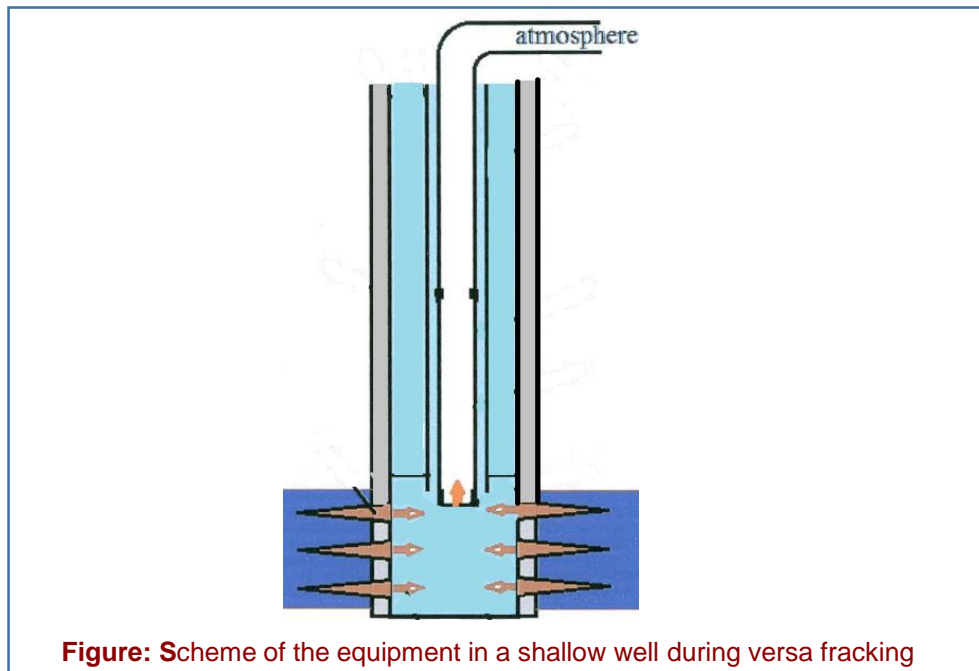
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Technology

Impacting versa fracking in the bottom hole of a well reservoir.

Running tubing filled with air under pressure of 1 kg/cm^2 or under atmospheric pressure or connected to the atmosphere into the bottom hole of the well using cable

The lower end of the tubing is closed with a black flange or diaphragm whose strength is equivalent to the hydrostatic pressure in the well plus $5 - 25 \text{ kg/cm}^2$.

Versa fracking shock is impacted to the reservoir by perforating or destroying with the use of increased pressure in the well in the range of $5 - 25 \text{ kg/cm}^2$ the black flange or diaphragm installed on the lower side of the tubing with the use of a shaped charge to provide a hydrodynamic link in the bottom hole.

Finally the tubing is pulled from the well with the help of a metal wire rope or a cable logging or coiled tubing.

Key Features / Value Proposition

- The above described method of versa fracking enhances oil and gas recovery by power comparable to the impact of hydraulic fracturing.
- The Versa fracking method uses an equipment with simple construction and generates sufficient pressure drop for effective fracking. Whereas conventional methods require complicated equipment
- The method does not require the use of external energy source but depends wholly on the differential pressure between atmospheric pressure and formation fluid pressure
- Versa fracking technology is significantly cheaper than the usual hydraulic fracturing and does not pollute the environment.

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