

REVOLUTIONARY LAND-BASED HYDRAULIC FRACTURING FLUID PATENT PORTFOLIO

Eliminates the Need for Fresh or Produced Water

Overview

Hydraulic fracturing is creating thousands of new oil and gas (O&G) wells but requires significant amounts of freshwater. Fields (e.g., the Eagle Ford Shale) are producing vast quantities of O&G via fracturing but are often located in arid regions where freshwater is limited. Local governments and communities have become hostile toward diversion of freshwater for fracturing processes and are moving to limit or prohibit use of freshwater for fracturing. Seawater Technologies, LLC (ST) has a patent portfolio which provides the solution by eliminating the need for local freshwater. ST's processes are cost competitive with freshwater usage, but have no impact on local freshwater reserves, providing an attractive, immediate and powerful long-term alternative to current practices.

Background

Each hydraulic fracturing well requires up to 10m gallons of water. In oil rich areas, hundreds of millions of gallons of freshwater are pulled from local aquifers each year to support fracturing and related operations. The O&G industry's thirst for water is projected to skyrocket in the coming decades as the U.S. Energy Information Administration projects that 80% of all natural gas produced annually will be from fracking operations. Local water sources cannot support this thirst. Due to the impacts on local water tables, regulators and governments on the national, state and local levels have begun restricting or, in some cases, outright banning utilization of local water for O&G operations. In some regions, prices for using water for O&G operations have doubled or tripled. Reduction of supply and increased costs are likely to continue, threatening the growth of hydraulic fracturing and the exploitation of new oil fields.

Patented Solution

ST has developed and patented multiple techniques for eliminating the need to use any local water (fresh or produced) in an O&G well. ST has invented systems and methods for collecting seawater from oceans, gulfs, sea, saltwater lakes and the like and transporting that water to an inland oilfield for creating and/or use in production wells. ST's technology covers both general transport and utilization of seawater at inland oil fields for fracturing and drilling, and specific methods of transportation including by rail, truck, and pipeline. *ST's technology will enable its owners to control what is likely to be the dominant base fluid for inland oilfield operations for decades to come and shore up its position as a dominating force in the hydraulic fracturing arena.*

Technical, Environmental, Regulatory and Financial Outlook

Seawater has long been used for offshore wells as a base fluid for drilling and well stimulation (acid and frac). The chemistry of such wells is easily applicable to wells using ST's technologies. ST has commissioned an independent analysis of the environmental and other regulatory issues facing its technologies which concluded that no obstacles exist to widespread adoption of the patented technologies.

PORTFOLIO DETAILS

U.S. Patent Nos.

[8,733,442](#), issued 5/27/14

[8,807,221](#), issued 8/19/14

[8,833,456](#), allowed 9/16/14

U.S. Pending Continuation App. No.

14/324,875, filed 7/7/14

International Pending Application No.

PCT/US2014/037322

Owner: Seawater Technologies, LLC

Priority Date: May 10, 2013

U.S. Issued Claims:

58 Total (10 Independent)

Portfolio Coverage:

Disclosed are systems and methods for transporting seawater from a seawater source (e.g., an ocean) to an inland oilfield for utilization in drilling and/or hydraulic fracturing operations. Issued/allowed claims cover a variety of actors, including end users, well operators, O&G well suppliers, water transport companies, pipeline owners, etc.

Affected Industries:

- Well operators
- Oil and gas well suppliers
- Water transport companies
- Wildcatters
- Oil exploration & production entities
- Pipeline owners/operators
- Long haul carriers

Additional Information:

Upon executing a *Non-Disclosure Agreement*, additional information about the patents, the market players, analysis of regulatory issues, and financial models are available.