

Seawater Technologies LLC – Our “1 Page Summary” June 1st, 2020

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Oilfield waters are a multi-billion-dollar business today. Fresh and brackish water sourcing, hauling, pipeline transportation, storage, disposal, pigging, produced water treatment (for re-use, disposal, EOR / IOR, and fracturing) are just a few of the various oilfield uses. ARAMCO, in Saudi Arabia, and ONGC in India, use seawater for EOR (Enhanced Oil Recovery) in the Ghawar and Mumbai High oilfields (respectively), as **seawater is free and available without any limits**. Seawater is what was actually present in the reservoir rock pore spaces when the great marine environment reservoirs of the world were formed. We should be fracturing with it!

The bottom line is this; our oil and gas industry does not re-use much produced water for hydraulic fracturing (*less than 35%*) and there is still a huge volume of clean frac “source water” needed, even in the most mature oil and gas basins in the world (not to mention areas of the world which have no fresh water and no brackish groundwater, in the volumes required for “industrialized fracturing”; like the Middle East, South Africa, Australia, Mexico, Turkey, etc.).

Our proposition is so simple; use Seawater onshore, where economically and logistically feasible, as a base fluid for fracturing, and try to stop using fresh water for fracturing in water stressed areas of the world! The industry likes green and sustainable solutions, when they are cheaper, easier, or have immediate uptake with management. What the O & G industry is doing with fresh water usage in fracturing is not sustainable, nor is it with due diligence to the longevity of our fresh water systems. Our grand-children will pay the price for our wasteful uses of fresh water. **Consider this**, if the industry would have worked together, and built a 60” pipeline for 400 miles from the Gulf of Mexico to the Permian basin, we would have saved over 18 Billion bbls. of fresh water over the past 10 years; and paid off the pipeline!

Starting in 2013, Seawater Technologies LLC patented the whole process in the U.S.A.; and 18 water stressed countries where shale fracturing may be evolving.

22 *Granted* patents in 18 countries to date: - The Kingdom of Saudi Arabia, the U.S.A. (4), South Africa, Mexico, Australia, the Ukraine, Poland, China, Latvia, Romania, Sweden, Turkey, Germany, Denmark, Spain, France, United Kingdom and Lithuania. (granted via European Patent No. 2994171). We are still finalizing The U.A.E. and India; they are lagging behind. We are very interested in talking to end-users, operators, investors, and buyers in 2020; offering operators a global, or country-by-country license, where applicable. Moreover, we would entertain selling the whole patent portfolio. My 39 years of oilfield experience and travels have let us see and work in many oilfields, in many countries, and meet some great people along the way. We want to see their countries prosper just the same way the U.S.A. has prospered by fracturing unconventional.

Thank You, Brent Smith +1-307-359-8627. Most patents are valid through May 2034.

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“Moving Oceans” <https://www.seawatertechnologies.com/index.html>

Also, the 5th U.S.A. patent – dealing with R.O. Water (R.O./Deal Waste) # US 9,862,871 B2. January 9, 2018. This granted patent claims the discharge waste of R.O. and Desal plants (in the USA), as a base fluid for fracturing.