

Upstream Water Management Tool

Lead Inventor

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Research Interests

- Well Completion Technology
- Drill-IN Fluids for Well Completions
- Formation Damage Phenomena in Well Completions
- Horizontal Well Stimulations
- Profile Control Technology

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Overview

Water treatment is a vital part of oil and gas production operations. There are various water treatment strategies including mobile (on-site), centralized, and conventional salt water disposal well (SWD). The most cost effective approach is dependent on a number of factors, including number of wells, volume produced, various distances, costs for systems (trucking, piping, treatment, and disposal) and project life.

The *Upstream Water* software's primary goal is to evaluate the economics of treating and reusing produced water (PW) from a field and to determine the most cost effective approach to water treatment. Using a number of minimal inputs, *Upstream Water* provides the macroeconomics associated with water treatment for assisted water management, planning, and decision making.

Technology

Compared to various complex design tools, *Upstream Water's* goal is to provide useful macroeconomic outputs to be used in decision making for water treatment decisions given minimal inputs. The model does not attempt to design a treatment system, but rather provides effective information on the relative economics of mobile and centralized water treatment. The model provides clarity to a controversial topic by enabling oil and gas operators and service operators to estimate the economics of treatment and reuse. The model targets multiple aspects of the industry – it benefits in produced water management decision making, service companies in determining a target treatment cost, and engineering firms in assisting operators with water management planning and design

Advantages

- Simple, yet effective modeling to determine optimized water treatment decisions
- Determines economics of various treatment approaches including mobile on-site treatment, centralized treatments, and conventional disposal (injection)
- Easy calculation and comparison of water treatment break-even costs
- Gives a management perspective from an operator point-of-view

Applications

- Determining an optimal water treatment approach in on-shore, upstream oil
- Comparing treatment approaches against conventional disposal
- Useful to a wide range of potential users including:
 - Exploration and production companies
 - Oil and gas service companies
 - Water technologies companies
 - Engineering consultant firms
 - Midstream transportation and disposal companies

Stage of Development

- Currently coded in Visual Basic for Applications (VBA)

Intellectual Property Status

Copyright Filed

