



CHALLENGE SPECS

CHALLENGE

Breaking Viscous Shear of Crude Oil

DISCIPLINES

Energy, Environment, Non-Profit

CHALLENGE AWARD

\$20,000

SOLVERS ENGAGED

165

SOLUTIONS

53

PROGRAM DURATION

90 days

GLOBAL SOLVER PARTICIPATION



By 2007, in the aftermath of the Exxon Valdez oil spill, there were still over 120,000 liters of oil trapped in the Alaskan coastline and surrounding seas. In need of creative solutions to respond to the pervasive problem, the Oil Spill Recovery Institute ran a number of challenges with InnoCentive, to benefit from out-of-the-box solutions tailored to the needs of the problem. Below is a more in depth look at the “Breaking the Viscous Shear of Crude Oil” Challenge and solution.

Challenge

- Sought to clean-up after Exxon Valdez oil spill in harsh remote conditions.
- Needed a method to separate oil from water; specifically oil that had solidified into a viscous mass with frozen water in recovery barges.
- The method had to allow a 1000 gallon enclosed metal tank to be pumped empty within half an hour and the oil had to be able to flow 4 meters to the intake of the pump at the bottom of the tank.

Solutions

- Winner had no previous experience in oil or recovery.
- The solution came from John Davis, who had studied chemistry at Illinois State and Notre Dame and at one point worked in construction as a summer job.
- Davis proposed a common construction industry technique learned from the summer construction job that vibrates concrete to keep it liquid during large projects.
- The relatively basic method was adapted to oil barges by inserting metal poles attached to the equipment into the oil which kept it in a fluid transferable state.

Result

- The solution and expertise of the solver supported Scott Pegau’s notion that if it could be solved in the oil industry it would have been.
- The vibration method had a similar effect on oil as it did with concrete.
- A Fundamental 30-year-old problem solved in only two months, for a \$20,000 award.

All 4 Challenges run by OSRI were solved and had solvers awarded resulting in next generation oil recovery technology.

“If it was easily solved by people within the industry, it would have been solved by people within the industry. The InnoCentive process allows us to step outside of the box.”

Scott Pegau, Research Program Manager, OSRI