

Robbie Crane

H₂Oil

The purpose of this investigation was to determine an efficient procedure for separating water from oil. My main design involved using density to freely separate the two fluids and estimated that the accuracy would be above 75% pure water or oil. This engineering experiment involved creating a mechanism through which the oil could flow. The device was built using an 18.9 liter bucket with copper piping protruding from it. Placed inside this container was a metal divider with a weir allowing the oil to pass over it. The process of inserting the divider involved using petroleum resistant caulking that served both as an adhesive and a sealant. Once completed, the mechanism was set onto a stool taller than an 18.9 liter bucket. A mixture of oil and water was poured through 3 trials of 4 different categories: 1) accuracy for water, 2) accuracy for oil, 3) speed, and 4) reliability. The results for accuracy were then measured to find the percentage of purity, and all results were recorded on a table. The data collected supported my theories in multiple ways, especially efficiency. All tests passed with the exception of reliability on prototype 2 when the expectations were altered. These findings lead me to conclude that my device could be beneficial to the environment by playing an important part in the series of separating water and oil.