



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

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<b>Project Title</b> A Spin on Oil Slicks using Filters and a Washing Machine to Spin Oil from Water	
<b>Abstract</b> <b>Objectives/Goals</b> My objective was to find a way to remove an oil slick and return any excess water right back into the environment. I developed an experiment to determine what filter had the greatest capacity to hold oil spun from water. I thought that it would be the playground sand & screen filter. <b>Methods/Materials</b> The only variable in my experiment was the type of filter. I made screen filters using fiberglass, furnace filters, playground sand, and diatomaceous earth. Each filter was tested five (5) times, for a total of twenty (20) experiments. Water and one (1) cup of oil went through the spin cycle using different filters. I used a new filter and clean equipment for each experiment. I controlled: amounts of water & oil, screen size, and temperature. <b>Results</b> The four (4) filters that I used in my experiment, in final ranking order were: (1st) Diatomaceous earth & screen, (2nd) Playground sand & screen, (3rd) Furnace filter & screen, and (4th) Fiberglass & screen. The diatomaceous earth & screen filter consistently failed with a high saturation point. The oil went right through the fiberglass & screen filter making it a complete failure. <b>Conclusions/Discussion</b> My hypothesis was that the playground sand & screen filter would have the highest oil capacity, but the diatomaceous earth & screen filter held the most volume. It had a average failure rate (saturation point) of nineteen and four-fifths (19 4/5) cups of oil compared to the playground sand & screen filter's ten and two-fifths (10 2/5) cups of oil. The oil drops in the diatomaceous earth & screen filter seemed to be surrounded by the siliceous powder.	
<b>Summary Statement</b> My project quickly removed oil from water using filters and centrifugal force.	
<b>Help Received</b> Sam's Mobil Stations gave me the oil. Rene Rodriquez disposed of the contaminated filters.	