



**CALIFORNIA STATE SCIENCE FAIR  
2011 PROJECT SUMMARY**

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| <b>Name(s)</b><br><b>Katie A. Shewfelt</b>   | <b>Project Number</b><br><br>31903 |
| <b>Project Title</b><br><b>Slaying the Spill</b>   |                                    |
| <b>Objectives/Goals</b><br>The purpose of my project was to discover how several different materials remove oil from salt water in a small scale oil spill. I hypothesized that hair would prove to be the most effective variable.<br><b>Abstract</b><br><b>Methods/Materials</b><br>To create my own sea water, I mixed 1 cup of salt pellets with one gallon of water. I then obtained my four independent variables, which were hay, human hair, peat moss, and iodized salt.<br>I poured eight cups of homemade salt water and one cup of 50w motor oil into a clear jug. I measured the height of the oil. Then I poured the water and oil into a tub, and recorded the temperature of the mixture. Next, I applied my variable, and allow it to absorb the oil for 12 minutes. I recorded my observations. Then the oil-covered material was extracted. After that, I poured the remaining oil and water back into the clear jug and re-measured the oil height. I subtracted this measurement from the original to determine the amount of oil removed, and formulated results. This process was repeated for each of the independent variables. Four trials were conducted for each.<br><b>Results</b><br>My final results matched my hypothesis. Human hair removed the most oil, with an average of 75% of oil removed. The next best variable was the hay, which averaged 48% of oil removed. Third was the iodized salt, averaging 25% of oil removed. Finally, the peat moss was left undetermined because the moss had clouded the water and oil, and accurately measuring the oil was impossible.<br><b>Conclusions/Discussion</b><br>I concluded that human hair removes oil from salt water more effectively than the other independent variables tested. I believe hair was more successful because it has a natural fiber, keratin, that has high absorption properties. |                                    |
| <b>Summary Statement</b><br>My project is about learning how to clean up a terrible, man-made disaster - an oil spill - with inexpensive, yet efficient materials.   |                                    |
| <b>Help Received</b><br>Ms. Reichelt, my teacher, checked my written report; My parents supervised my experiments.   |                                    |