



**CALIFORNIA STATE SCIENCE FAIR
2007 PROJECT SUMMARY**

Name(s) Drew H. Sherwood	Project Number J1034
Project Title San Luis Rey River: Planet Pal or Planet Peril?	
Abstract Objectives/Goals As the San Luis Rey River flows along its course, does it clean itself or is it dumping unhealthy water into the Pacific Ocean? I believed the pollution and debris this river would be picking up would be too much for it to filter out completely and would therefore be dumping unhealthy water into our ocean. Methods/Materials In order to efficiently test the water, I began by doing several tests on water from different locations along the river. I chose 5 sites at approx. 5 mile intervals and executed tests on pH, nitrates, turbidity, TDS and salinity, hardness, and water-born microorganisms on each of my five river samples. My control was distilled water. I also completed tests on daphnia magna and another on lettuce seedlings. Results After this series of tests, I concluded that the San Luis Rey River is in good health and filters out most harmful chemicals relatively well before depositing its water into the Pacific Ocean. Conclusions/Discussion My experiments did not support my hypothesis that the river would be dumping unhealthy water into the Pacific Ocean. I learned that the river cleans itself well of most harmful minerals and nutrients. While the pH level was not filtered out as well as I would have liked, it is still in the range where it is considered less harmful than higher or lower readings to most organisms. On the other hand, my lettuce seeds showed two sets of gradual increases in size, going downstream suggesting that the farther along the river, the seedlings improved. My daphnia also supported the theory that life downstream was healthier. Finally, nitrates show a drastic decrease of this harmful substance going downstream. Due to these tests, I can infer that the river does actually clean itself as it travels along this portion of its final course before entering the ocean. I believe additional research should be conducted because even though this river appears to be doing fine, it makes sense to test it on a regular basis to make sure it stays as healthy as it is. A possible use of my findings would be to discover how the San Luis Rey River filters its harmful substances out so well and if we can place that ability into unhealthy rivers. A question that developed from my research was if this river is filtering out toxicity and other harmful materials from the water, are these simply seeping deeper into the ground, possibly affecting underground drinking sources?	
Summary Statement Determining the health of the San Luis Rey River and the potential harmful water it's dumping into the Pacific Ocean.	
Help Received Mother helped type report; water test kit was loaned to me by Ivan Golakoff, from the San Diego Water Authority	