



**CALIFORNIA STATE SCIENCE FAIR
2002 PROJECT SUMMARY**

Name(s) Regina M. Dettmer	Project Number J0604
Project Title The Saturation and Flow of Rainfall through the Soil of the Owl Canyon Watershed	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals To calculate how much water Owl Canyon soil could hold, and compare this with how much water it does hold once saturated with autumn and winter rains. Also to observe increases and decreases in canyon water flow after periods of rainfall.</p> <p>Methods/Materials I calculated the approximate amount of rain needed to saturate canyon soil and begin flow by multiplying the average soil depth by the ratio of saturation water volume to soil volume. I determined the average top soil depth by driving a rod into the soil in many places in the canyon. I determined the saturation ratio by pouring measured amounts of water through soil core samples and collecting the drainage. I measured rainfall and canyon water flow.</p> <p>Results I calculated that it would take 11.25 cm of rainfall to saturate the soil. I observed that it actually took 13 cm. My flow observations show that within a day after a rain, flow reaches its peak (as great as 23.6 liters/sec). It then decreases by 1 to 2 liters/sec each day, until it drops to 2 liters/sec. After that it decreases by only .3 liters/sec each day.</p> <p>Conclusions/Discussion I was able to predict within 10% how much water the Owl Canyon soil can hold. I was able to compare flows with periods of rainfall, and observe trends.</p>	
Summary Statement The measurements and observations of soil saturation and water flow in a watershed	
Help Received Father suggested topic, accompanied me to the canyon, and gave editing suggestions.	