



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Erik B. Holliday	Project Number J0619
Project Title Sediment Deposition Patterns in Varying Water Velocities	
Abstract Objectives/Goals With my science fair project, I hoped to successfully observe and record the deposition of sediment particles within my apparatus. I used two different water velocities in my experiment to observe and record the effects of this change in the water velocities. I would be observing the SLOPES of the end of the sediment bank, and the general patterns of the deposition that would occur (and confirming which theory, concerning deposition, the patterns supported). These theories were basically: diagonal deposition and horizontal deposition. Methods/Materials I would be using a working hydraulic apparatus to get my results. It is simulating a river or stream emptying out into a larger body of water. I allows for a decrease in water velocity to have the deposition occur. It was made of: -glass tank 48# long x 4# wide x 8# deep (Courtesy of Aquatic Gardens); -4 gpm submersible pump; -7 gpm enclosed pump; -5/8# clear vinyl tubing; -sediment (fine sands); -fireplace concrete; -water; -funnel (for sediment insertion); -funnel holder (thin wooded plank w/ drilled hole); -filter (cloth); -velocity valve; -tubing fittings; -tank/tubing attachments; -tubing adhesive (GOOP); -water bucket; -electricity; -clear desk (in garage); -tools for assembly; -spare pieces of wood for tubing stabilization; -clasps; -cm rulers; -Sharpie #; -video camera (it keeps track of time as well as footage); -tripod. Results I was able to observe successful deposition within my experiment. I observed that with the faster water velocity, the sediment deposited at a steeper slope. As well, I was able to confirm that my results and observations of my experiment supported the depositional theory of DIAGONAL DEPOSITION. Thus the sediment particles depositing in a diagonal, overlapping manner. Conclusions/Discussion Using the results of my experiment, I can conclude that the faster the velocity of the water that is flowing, then the steeper of the sediment bank that is depositing. As well, I can state, that my observations and results, support the theory of diagonal deposition. This theory happens to contradict the common knowledge of the deposition process. Several thought provoking questions came up from my results. Doing my science project has allowed me to research the facts and question, if modern day knowledge concerning deposition, within the vast topic of geology, is actually correct.	
Summary Statement I utilized a working hydraulic model to observe the patterns of deposition in varying water velocities (to look at slopes and theories).	
Help Received My mom and dad were my main support in helping me development of my idea and the displaying it appropriately. Mr. Rob Almy was another main support in getting access to crucial research and background information. The aquarium store "Aquatic Gardens", was the resource that I used to order my	