



**CALIFORNIA STATE SCIENCE FAIR
2006 PROJECT SUMMARY**

Name(s) Kyle Ivey	Project Number J0514
Project Title Bottled Backwash: A Study of Level of Contaminants in Water Bottles	
Abstract Objectives/Goals The goal of my project was to determine if the levels of total dissolved solids increased as the level of water decreased in water bottles and as they sat over time, when test subjects drank directly from the bottles. Methods/Materials Informed consent was obtained from twelve second grade students: 7 boys and 5 girls, ranging in age from 7 to 8 years. I purchased 13 water bottles and ordered a water tester. To begin testing, I performed a baseline check of all 13 water bottles. I marked and labeled the water bottles for all twelve subjects. Subjects were instructed to drink half, to the first mark, by 1:00 p.m. I tested and recorded the levels of contaminants. Subjects were instructed to drink four-fifths, to the second mark, of the water bottle by 2:40 p.m. I tested the water bottles again, and recorded the data. I tested again at 4:50 p.m. on that day, at 3:27 p.m. three days later, and again at 4:47 p.m. four days after that. Results Levels of contaminants varied among the different subjects, and can be organized into three categories: low, moderate, and high. Test subject 8 had low levels of contaminants throughout the study. Subjects 1, 2, 7, and 10 had moderate levels of contaminants throughout the study. Subjects 3, 4, 5, 6, 9, 11, and 12 had high levels of contaminants throughout the testing. The final test, done seven days after the study began, indicated that the level of contaminants went down, indicating a reduction in total dissolved solids. Conclusions/Discussion From my study, I concluded that my hypothesis was correct. The levels of contaminants did increase as the test subjects consumed the water. The levels of contaminants continued to increase as the water sat at room temperature. However, after one week, the levels of contaminants began to drop. This indicates that the levels of total dissolved solids will multiply over time, but may eventually decrease.	
Summary Statement Measuring levels of total dissolved solids in water bottles as the water was consumed.	
Help Received Second grade students, with their teacher 's help, volunteered to participate as subjects.	