



**CALIFORNIA STATE SCIENCE FAIR  
2002 PROJECT SUMMARY**

<b>Name(s)</b> <b>James Henrard; Kevin Medeiros</b>	<b>Project Number</b> <b>J0609</b>
<b>Project Title</b> <b>Hollister's Impact on the San Benito River</b>	
<p style="text-align: center;"><b>Abstract</b></p> <p><b>Objectives/Goals</b> What impact does the City of Hollister have on the quality of the water flowing in the San Benito River? We answered this question by investigating the quality of water in the river by examining its chemical and physical characteristics. We tested 4 different locations: upstream, downstream, in Hollister, and just before Hollister. We hypothesis that the San Benito River will become contaminated as it flows downstream and passes the town of Hollister. We think this will happen because Hollister is a large town and trash and toxic runoff will pollute the river.</p> <p><b>Methods/Materials</b> We tested each site using the Hach Stream Survey Kit. We tested the river for Ammonia Nitrogen, Phosphates, Nitrates, Dissolved Oxygen, pH, and water temperature. Our Hach Kit is supplied with a thermometer and pH tester. We conducted the other tests using kit instructions, test tubes, color comparator, and different reagents and chemicals provided for each test. Test results were then averaged, graphed, and recorded.</p> <p><b>Results</b> Temperature: The temperature at all sites stays about the same (12°C - 14°C) except at the site within Hollister which averaged 21.5°C. Average pH: The highest pH reading was in the middle of Hollister at 8.63 and the lowest reading was downstream at 7.75. Dissolved Oxygen: The DO was highest in Hollister at 49.5 mg/L and lowest downstream at 30.8 mg/L. Ammonia Nitrogen: The readings for all sites were below 0.1 mg/L. But, the Hollister site had the darkest color green. Nitrate-Nitrogen: Downstream was highest at .053 mg/L and Hollister was 2nd at .016 mg/L. Phosphate: Before Hollister and in Hollister had the highest numbers at .165 mg/L and .12 mg/L.</p> <p><b>Conclusions/Discussion</b> We concluded that the chemical tests from our sites show the river water to be healthy with the exception of the Hollister site. Healthy streams have a temperature lower then 20°C and pH range of 6.5 to 8.5. The Hollister site had higher levels. The physical characteristics showed man-made pollution increased as the river flowed downstream. It reached disturbing amounts at the site in Hollister. We learned that even though man has adverse effects on the water, subsurface flows cleaned out some of the harmful toxins.</p>	
<b>Summary Statement</b> Analyzing the chemical and physical impact of Hollister on the San Benito River	
<b>Help Received</b> Father helped with water testing procedures; San Benito Co. Water District Engineer discussed water flow characteristics	