



**CALIFORNIA STATE SCIENCE FAIR  
2004 PROJECT SUMMARY**

<b>Name(s)</b> <b>Luke Penn-Hall</b>	<b>Project Number</b> <b>S0608</b>
<b>Project Title</b> <b>Soil Contamination by Heavy Metals in Glen Avon, California</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The objective of this project was to observe the progress of the remediation process at the Stringfellow Acid Pits through soil testing in Glen Avon, California. By testing levels of the heavy metals Arsenic, Cadmium, Chromium, Lead, and Nickel in the soil and comparing those to previous samples on file with the EPA I hoped to chart the success or failure of the remediation plan. <b>Methods/Materials</b> This project required the use of a sterile scoop, two sterile glass jars, a pair of latex gloves, and a mass spectrometer. The soil samples were taken using the scoop, and placed into the jars. The jars were then sent to a lab through Earth Tech, mixed together, and processed using a mass spectrometer. A series of values derived from previous tests done at the same site in 2003 were used to create a comparative range for my results. <b>Results</b> I found that each of the metals I tested for were either below or within their respective ranges. Arsenic, Lead and Nickel were approximately in the middle of their ranges, with concentrations of 2.2mg/kg, 2.1mg/kg, and 2.4mg/kg respectively. Chromium was in the lower end of its spectrum with a concentration of 2.5mg/kg. And Cadmium was very low, with a concentration of 0.096mg/kg. <b>Conclusions/Discussion</b> From my results, I can reasonably conclude that the clean up has been proceeding at an acceptable rate. Most of my results were considerably lower than the concentrations gained during routine testing last year.	
<b>Summary Statement</b> The purpose of my project is to observe any lingering traces of contamination from the Stringfellow Acid Pits in Glen Avon, California.	
<b>Help Received</b> Jean Hall, my mother, assembled the board; Brian Weith, a professional geologist, consulted; Rick Bartko obtained the satellite photos; Dr. Zekai Nazikoglu advised initially.	