



**CALIFORNIA STATE SCIENCE FAIR
2005 PROJECT SUMMARY**

Name(s) Naomi R. Sussman	Project Number S0899
Project Title Disinfecting Duck Poop	
<p style="text-align: center;">Abstract</p> <p>Objectives/Goals My objective was to prove two things: the effects of the filtering and screening processes standard in sewage disinfection plants, and the best disinfecting agents used in treating the water. I hypothesized that A) If sewage goes through treatment, then 1) the bacterial colonies will decrease and 2) the turbidity will decrease. B) If chlorine, UV light, ozone, and iodine are tested for success in disinfecting sewage, then chlorine will be the most effective because it is a proven disinfection method that I have observed.</p> <p>Methods/Materials In this experiment, there were five base steps: 1) the settling of the effluent in a bucket, 2) the screening of the effluent through two screens of varying mesh size, 3) the filtering of the sewage through coffee filters in a funnel, 4) the oxygenating of the effluent with an aquarium pump for twenty-four hours, and 5) disinfection. There were four disinfecting media: ozone, chlorine, iodine, and boiling. After these procedures were followed, the samples were plated and inoculated into culture tubes to evaluate the results. The plates were a visual representation of the bacterial growth, and the tubes measured the turbidity due to bacterial growth by way of strips with five bars of varying degrees of darkness. The more bars that could be observed, the less bacterial growth there was in the solution.</p> <p>Results The most turbid solutions by measure of the turbidity meters were the samples from stages yet to be disinfected. The least turbid solutions by measure of the turbidity meters were the boiling and chlorination samples. My results in the culture tubes were backed by similar growth results in the plates.</p> <p>Conclusions/Discussion I observed that the sediment did decrease after each stage. I conclude from these results that my hypothesis was correct in stating that chlorine would be the most effective disinfectant observed that the sediment did decrease after each stage.</p>	
Summary Statement Disinfecting Duck Poop was designed to find the effectiveness of standard treatment processes and disinfection media.	
Help Received My father helped come up with the idea; my mother helped collect supplies; my biology teacher, Ms. Moule, allowed me use of lab facilities.	