



CALIFORNIA SCIENCE & ENGINEERING FAIR 2019 PROJECT SUMMARY

Name(s) Jack Jensen	Project Number J1118
Project Title Going Undercover to Save a Precious Resource	
<p style="text-align: center;">Abstract</p> <p>Objectives The problem I researched was water evaporation in uncovered finished water reservoirs. My goal was to determine which cover prevents the most water evaporation: white shade balls, black shade balls or a Hypalon cover.</p> <p>Methods A secure room and area so that all four containers received the same conditions, four 24.6L plastic boxes filled with 7000 ml water, measuring cup, plastic syringe, wooden rulers, black and white ping pong balls, three sheets of Hypalon, air thermometer, SteriPEN. Measured water volume at Day 0 and again at Day 21. Also measured water height during experiment as a control measurement. Measured air temperature and humidity levels every day. All materials purchased at store or Amazon.com except for SteriPEN which came from a mentor.</p> <p>Results The data showed the best way to reduce water evaporation was using the Hypalon cover as that reservoir lost only 3.24% water volume over the 21 days. The white shade balls had the second least amount of water loss at 7.5%. The black shade balls had the most water loss among the covered containers at 17.3%. The control pan had no cover and had the most evaporation loss at 27.6%.</p> <p>Conclusions From my experiment it was clear that any kind of cover reduces water evaporation. My results demonstrated a solid cover was better at reducing water evaporation than shade balls. But because of expense and large sizes of some water reservoirs, Hypalon covers aren't always financially feasible. In those cases, shade balls are a workable alternative to reduce water evaporation.</p>	
Summary Statement I found that covers such as Hypalon and shade balls are effective in reducing water evaporation in finished water reservoirs.	
Help Received I designed, built & performed the experiment myself. I got background research info from Jini Mohanty, Office of Drinking Water at the EPA; & Dr. Newsha Ajami, Dir of Urban Water Policy, Stanford Univ. I got real life use experiences for shade balls from Steven Cole, Water Works Engineer, LADWP.	