Name(s)	Project Number
Alexander E. Ross	**S0914**

Project Title

Backyard Hydroelectric Generation

Abstract

Objectives/Goals
The objective of my project was to generate electricity from a motor utilizing water and the force of gravity.

Methods/Materials
A ten foot tall wooden derrick was constructed to hold a tank with the capacity to hold 135 gallons of water on top. A system of electrical wiring between a solar panel, car battery, and submersible water pump power the pump to pump water from a reservoir tank to the tank on top of the derrick. A PVC pipe system controls the flow of water up to the tank as well as the drainage from the tank to a Pelton wheel assembly within the derrick roughly one foot above the initial platform. The water drains from the tank and spins a Pelton wheel that, through a system of drive wheels and axels, powers a DC motor. From there, the water drains back into the reservoir tank and the cycle repeats itself as the water is pumped back up to the suspended tank. The water flow down to the Pelton wheel assembly is controlled by a ball valve that is used to disrupt the flow of the water and "turn off" the generator.

Results
The 12 volt motor I used had an electrical output consistent with about 2.5-2.8 volts of DC electrical current and had a consistent DC amperage of .01 mA.

Conclusions/Discussion
My results reveal that the generator did not generate a very substantial amount of energy. However, the project did reveal that the design was a success being that it did show that if the concept is executed it is feasible to generate electricity. Though the design I have created does have flaws I believe that if it can be perfected the possible outputs of this generator could increase greatly from the results in this experiment.

Summary Statement

In my project I utilized the powers of water and gravity to construct a functional hydroelectric generator

Help Received

Grandfather helped with construction and blueprinting