

## Micro-hydro Capabilities

*Gardner Energy has been designing and installing micro-hydro systems for the past 18 years and has installed 20 micro hydro systems in the intermountain west. Micro hydro power, just like solar power, can be designed for grid-tie with net metering, off-grid and grid-tie with battery backup. Micro hydro systems are typically designed to meet the customer's needs even though at times the potential exists to generate far more power than is needed. Because hydropower operates 24 hours a day a small system can provide enough energy for residential or small commercial customers.*

### Case Study:

#### Workman Floating Turbine, East Canyon, Utah

- 600-Watt grid-tie hydro system
- No elevation head
- 6.0 fps water velocity

Robert Workman was the founder of “Goal-0” products. Gardner Energy has worked with Mr. Workman for years installing solar, wind and hydroelectric systems on his property to bring his energy bill to “0”. We have been experimenting with a floating hydro turbine. The system generates “wild” AC, 3-phase power from water velocity only which is rectified to DC power and sent through a solar inverter for a grid tie system. The system is only operational when temperatures are above freezing. Further testing will result in improvements. The key to a successful system is a large diameter pulley on the turbine and large paddle depths on the turbine.

