

CONSERVATION COMMITTEE REPORT TO GV BOARD

March 11, 2011

As we are winding down another season, the Committee wishes to summarize our work and to point out some further recommendations as we look ahead.

SOLAR POOL SYSTEM

The system is operating beautifully! We found and corrected a few glitches in the original installation; two sensors needed to be relocated. Since February 11, 2011 it has been running on “automatic”, taking full advantage of whatever our weather would give us. In just 1 month of full operation, it has generated over 6,500 Kwh of solar power, pre-heating the water for the large pool. Our goal is to achieve 72,000 Kwh, so we can receive the full SRP rebate over one year’s operation. SRP has set aside \$18,000 in this rebate program, which pays \$.25 per Kwh. So, as you can see, in the past month of operation, the system has returned \$1,625 in SRP credit. In addition, there are considerable savings in reduced use of propane. Unfortunately, this is not measurable, since there are no gas meters at the propane heaters. {Note: We estimate that for every 1,200 Kwh of solar energy received, we will save 45 gallons of propane gas.} So, we anticipate greater earnings ahead. The Committee is making recommendations to Larry and Cory to keep this system at optimum operation.

POOL & SPA COVERS

The covers are doing a good job conserving heat and reducing evaporation. There are times when the covers should be on the water, but are not deployed (cold, windy periods; nights; periods of no use). Of course, it is not a perfect system, since we depend on volunteers to manage this. Golden Vista has seen a considerable reduction in propane use since these covers were deployed. Again, this savings is not measurable due to the lack of meters in front of the small pool and spa heaters. If we had some data, we might look at other options or improvements in further energy conservation and reducing our cost of operation. Our research and discussions with engineers all indicate that proper use of pool covers will save from 50% to 70% of propane cost. The Committee feels that a cover would be the next best energy-saver for the large pool. However, we are not recommending one at this time. Management would have to work out hours of pool use, criteria for covering, who would cover and uncover it, etc. Also, a large pool cover would require a mechanized system and would be expensive.

PROPANE GAS USE

Golden Vista records show that in 2010 we used 41,655 gal. of propane at a cost of \$80,690. In 2003, we used 47,630 gal. at a cost of \$54,000. The average for 2003 through 2009 was 49,000 gallons per year. In the fall of 2009, we started covering the small pool and the spa. Not to take all the credit, but you can see that considerable propane gas savings were made in 2010, the first full year of pool and spa covers. Compared to the previous 7 year average, we burned 7,345 gal. less propane in 2010. At a cost of \$1.94 per gal., we realized a savings of \$14,295. So, our conservation efforts are paying off!

But the Conservation Committee still feels we can do better. We can't wait to see the results when the first full year of operation of the solar pool system is complete. There are still some things we would like to do:

1. Reset the pool heater for the large pool at 86 degrees F., the same as the small pool. This will "push" the solar pool system further, generating more BTU's each day. It will be slightly cooler for the lap swimmers in the morning (which they prefer), but it will quickly catch up with the solar energy gained. And, it will save more propane.
2. As stated earlier, Golden Vista does not have a good handle on where the propane is burned. The data only indicates propane fills at the tank. If the Board would authorize installation of gas meters at each appliance (i.e. pool heaters, spa heater, kitchen, N&S laundries), then we could make more accurate assessments as to the efficiency of this equipment.
3. Speaking of efficiency, we have noted that the older equipment burning propane gas is rated for 65%-75% efficiency. Much of the heat gets exhausted out the smoke-stack. The Committee recommends that, as gas equipment needs to be repaired, strong consideration should be given to replacing it. There are energy efficient appliances on the market that will burn at 95% efficiency. One concern however, is that they are somewhat noisier.
4. The Committee also wants to study an alternative heat source for the small pool. Once we know the amount of propane used by the pool heater currently there, we can then make an assessment of the possibility of a greater efficiency heat pump. A meter is needed.

OTHER RECOMMENDATIONS:

1. A check list should be kept up daily, keeping a log on the Kwh meter readings. This will ensure close monitoring of the solar pool system.
2. Contract for regular professional servicing of air conditioners and boilers, or have GV staff trained for doing it ourselves. Then use check lists to see that maintenance is performed as scheduled. Preventive maintenance will save money in the long run.
3. The Committee is working on a diagram of the plumbing and appliances, including solar, to be posted on the wall in the pool facilities room. Also, manuals of operation of the solar pool system, the GL-235 Solar Pool Controller, and the SVM Metering device will be available there. Maintenance staff should become familiar with this information.

Respectfully submitted,

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