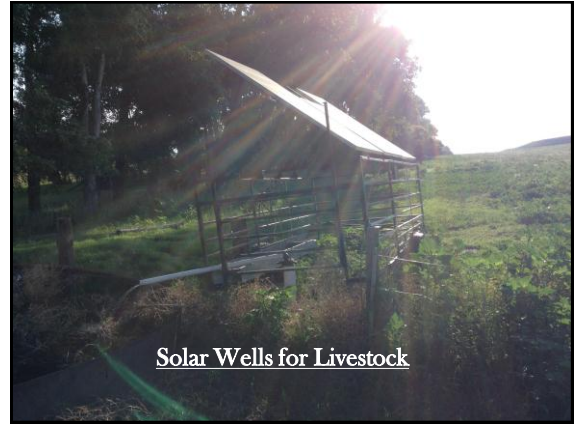
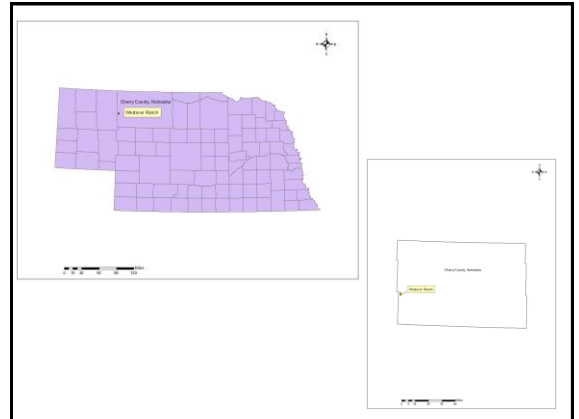


Water capture, transfer and storage

Roy Westover
Ashby, NE



Gem Valley Ranch
Cherry County, Nebraska



Mom's family came to western Cherry County in 1885. Dad's family moved into Sheridan County in 1909. Dad and Mom bought the home place from Ostrandres in 1943. Dad died in 1978 and Jolyne and I have been trying to figure it out since then with lots of help from her folks and Mom.

Right now there are 4 generations of us living on the ranch.

We still just own a section of ground and lease the rest.



Use of Solar wells since 1992

We started using intensive rotation grazing to run more cattle when we moved home from college. The solar system allowed us to provide more water where we wanted for less cost.



Solar pump on portable unit

I got the original system from Gordon Pettit in 1992. It was an AY Macdonald pump and used panels. We had a little trouble with the AY Macdonald pumps and now have 2 Grundfos pumps.



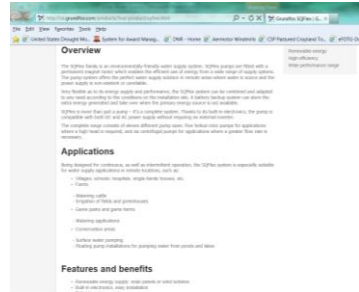
Submersible Pump

Our pump consistently puts out 15 gallon per minute in full sun. When it starts and quits it is making about 2 gpm.



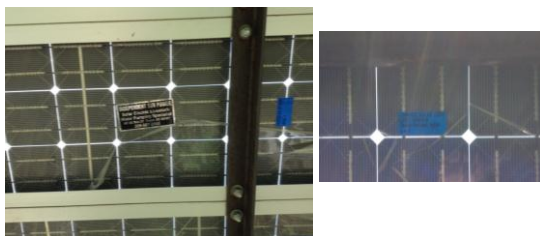
Submersible Pump

I like the 25 SQF-7 pump. It produces a lot of water in full sun and still makes a little water on a cloudy day. I've never tried other pump ends so I can't say that it is the best. We got the first Grundfos pump in 2003 and haven't had any trouble yet.



Links

<http://us.grundfos.com/products/ind-product/sqflex.html>
<http://www.solar-electric.com/wind-and-water-products/solcwpwpu/grposuwpwpu.html>



Solar Panels

We still use the original panels. 16 25-watt panels wired up to provide a total of about 400 watts in full sun



Portable trailer

I built the trailer using Dad's pickup stock rack and feed sled axles. I changed axles and added springs later.



Well is capped prior to use to prevent contamination; trailer is backed over the well to prevent livestock from damaging the pump/well.



Trailer pulls easily with an ATV.



Solar Unit ready to pump

I have 30 feet of hose on the pump. The static water level varies from about 5 ft to 15 ft in the wells we use. They say the pump will fit down a 4-inch casing, but all our wells are 4.5 or 5 inch.



Water Storage

I have been putting in 20 ft bottomless tanks. Right now we are running about 650 cows and are not able to use intensive rotation summer grazing on the leased pastures.



Other Uses

The second pump is in a deeper well that supplies the buildings and corrals. It pumps into a cistern on the hill behind our houses.



Windmills vs Solar Wells??

The solar pump waters quite a few cows with plenty of water and not much ice to chop. The output fits a cow's demand for water better than a windmill.



Ranch Operation

This year we AI bred 250 cows at home before they went to summer pasture. This flow well wouldn't keep up so I used the solar pump to water them.



Backup system

We don't have a backup system as such. We would have to move cattle if we ran out of water.



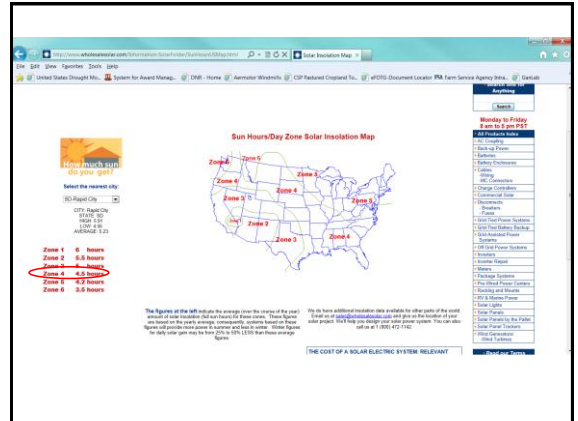
Positive aspects of Solar Wells--

Lots of water, reliability, less cost



Negative Aspects of Solar Wells

I got tired of moving it when we were intensive grazing.



Questions?

