Residential Situation

- Ranch style bungalow on 5 acres
- 2,400 square foot home built in 1976
  - 2,000 sq. feet 1976
  - 400 sq. foot addition with full basement added 1999
- Carrier Weathermaster 3 ton air source heat pump installed in 1990
- Original 1976 Westinghouse electric furnace
- Air source heat pump had failed beyond repair. Heat pump and furnace required replacement
Client Request, August 2015

- Propose complete geothermal system to replace 25 year old air source heat pump and 39 year old electric furnace
- Remove air source heat pump
- Remove original Westinghouse furnace
- Remove and discard all hookups (Freon lines & electrical) associated with air source heat pump
- Remove old hot water heater

- Trane T2GX049, 4 ton two stage geothermal unit with variable speed blower and Grundfos flow center
- 5 ton (3,000 feet) high density P.E. pipe closed loop collector system
- AGL10 internally mounted emergency 10KW heater
- De-super heater; partial hot water generation with internal circulation pump including 60 gallon storage tank and 60 gallon hot water heater
- Trane XL824 Wi-Fi “Nexia ready” touch screen thermostat - control & monitor system from your smart phone
Ground Loop Site
Ground Loop Installation
Ground Loop Installation Cont’d
Fusing the Headers
Headers to/from Loops
Lines to/from Ground Loop Headers and into House
Into House and to Flow Center
Grundfos Flow Center and **TRANE** 4 Ton Geothermal Unit
Complete System with Hot Water Storage & Hot Water Tank
Hi Jim,

Thought you would be very interested in this.

Have a look at the two files and take a note of the consumption history between Feb 2016 and Feb 2015. OK it’s been a warm winter compared to last winter but electricity rates have gone up significantly which you can see on the bill. So warm winter, about an approx 21% increase in the electricity rate, (example 0.14 to 0.175 for on peak winter rate for instance) which you can see on the bill yet my actual bill went down significantly. Highlights which you can see;

1. Both bills for a 28 day period in Feb
2. kWH per day consumption in Feb 2015 was 223.18 per day, in Feb 2016 it was 69.30 per day. This is a decrease of 322%
3. Actual bill for Feb 2015 was $951.20, for the same period of 2016 it is $337.11. This is a decrease in cost of 282% despite an increase in the rates of over 20%!!!
4. Take a look at the difference in the consumption history graph. A dramatic change so far.
5. I do expect a slight increase in expense in the summer months as we suffered last year with no air conditioning through the summer

Can’t express how pleased we are with the system.

Thanks, Garth
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