

October 22, 2016 WWD Board Meeting, Water Operations Summary-Director Bainbridge

- i. Well Level/Production Report: (see Well Level/Production Charts) Water levels as of October 1, 2016 have dropped through the dry summer season. With lower rainfall this quarter than the past 2 years, the all time low water levels for our 2 largest producing wells were recorded this quarter and they are currently lower than the last 2 years at this time. Well hourly production dropped each month of the quarter as the wells were run manually. Water usage and pumping hours/day were higher than last year and well water levels dropped.
 - Rainfall for the 2016/17 season to date (July1, 2016 to Oct. 1, 2017) is 0.93 inches compared to 3.44 inches for last year and 3.04 inches the previous year for the same time period.
 - Well #5, our static monitoring well, is 3 feet higher; Well #9, our largest producer, is 14 feet lower; and Well #11, our second highest producer, is 29 feet lower than last year at this time.

- ii. Conservation Status Report: (See Water Production 2016 vs. 2015 Chart)The State has determined that the emergency water conservation order is to be replaced by conservation targets developed by each water district based on the individual water districts water availability. Since WWD's only source of water is ground water and based on well levels being a little lower than last year, WWD sent out a conservation request and individual usage charts in July requesting customers target water usage at or below 2015 levels. Unfortunately during the quarter, water demands were above 2015 levels. The usage for the 3rd quarter was approximately 15% greater than 2015. However, year to date, 2016 usage is still about 3% lower than the first 3 quarters of 2015. The high use this quarter may be partially due to the lower amount of rain this quarter as compared to last year and the 60,000 gallons of water required to fill the refurbished storage tank in September.
 - Based on the pump house meters, the water production for the 3rd quarter 2016 was 2.0 million gallons which was approximately 46% more than 2nd quarter of 2016 and 15% more than the 3rd quarter of 2015.
 - In looking at the monthly figures, water production for each month June through September 2016 was greater than last year.

- iii. Storage Tank Refurbishment Project/Water Systems Control Report
 - Large Storage Tank: Superior Tank Solutions started refurbishment of the large storage tank on September 8 and finished assembly, taesting and disinfection on September 16, 2016. Heritage Well Service reconnected the well feeds and we started filling the tank on September

19. The County reviewed water test results and authorized us to reconnect the tank to the system on September 29.

- Automatic water level well controls: Heritage Well Services was contacted in July and they provided an estimate to install Float switches in tank T-2. They installed the switches in T-2 on August 9 and we completed the relays and other equipment installation and activated the system on August 16. A Time Of Use timer was installed on Sept. 8. Heritage installed float switches in T-1 on Sept. 20 and they were connected to the CFW controls.

iv. Time of Use Operation: (See attached TOU Report) After the large storage tank was reconnected to the system the TOU timer was set to prevent the wells from running during the Peak Pricing Period (11:00 AM to 6:00 PM). We are continuing to adjust the settings to reduce well pumping electricity costs. The schedule will have to be adjusted when the Winter TOU schedule begins November 1.

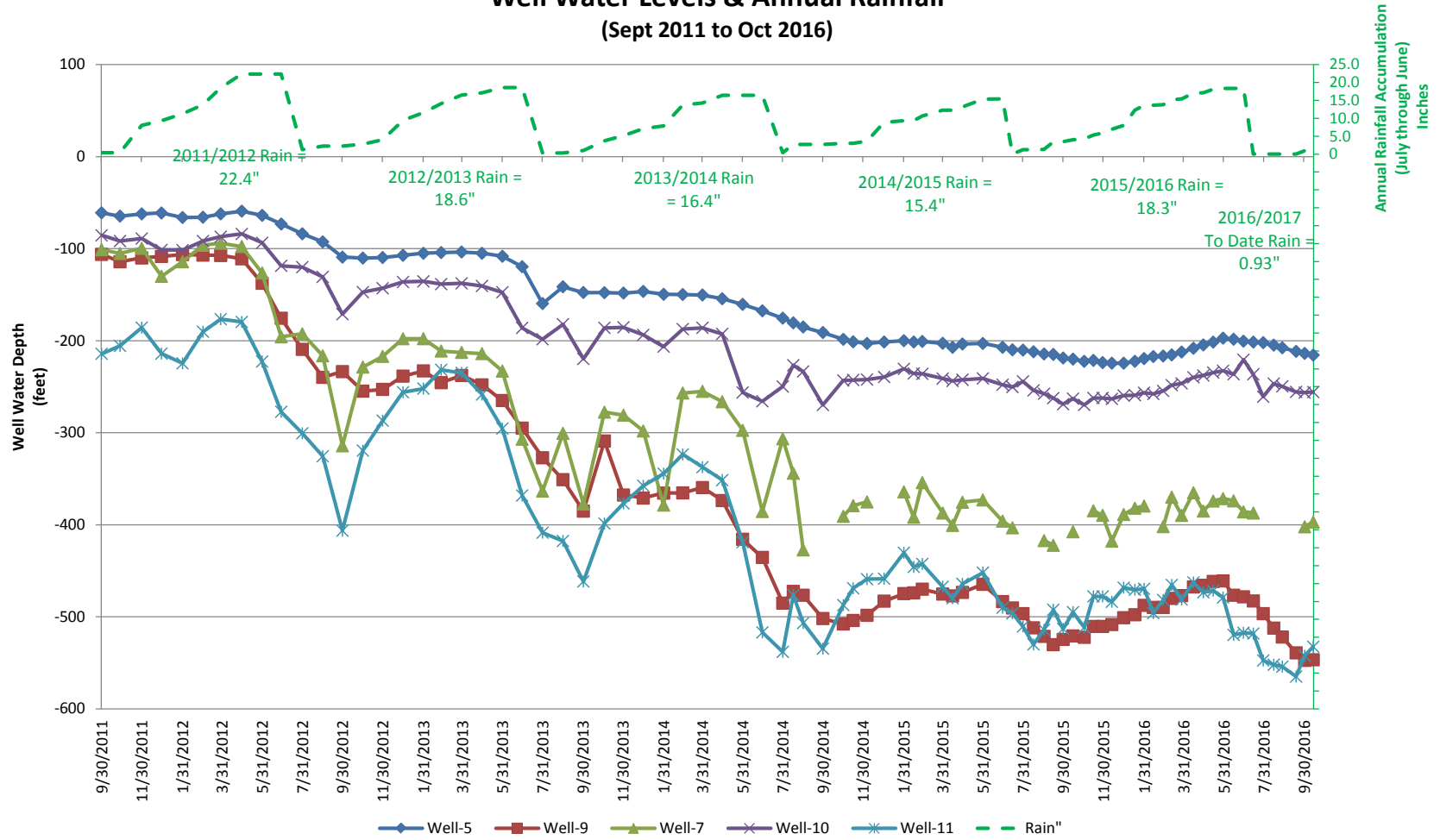
v. Water Sales:

- For the 3rd quarter of 2016 sales were 3,186 units or 2.38 million gallons. This is more than was sold in the 3rd quarter of 2015 but still lower than the amounts sold for the 3rd quarters of 2012 through 2014. This was a 44% increase from last quarter and a 20% increase from the 3rd quarter of 2015.

Attachments:

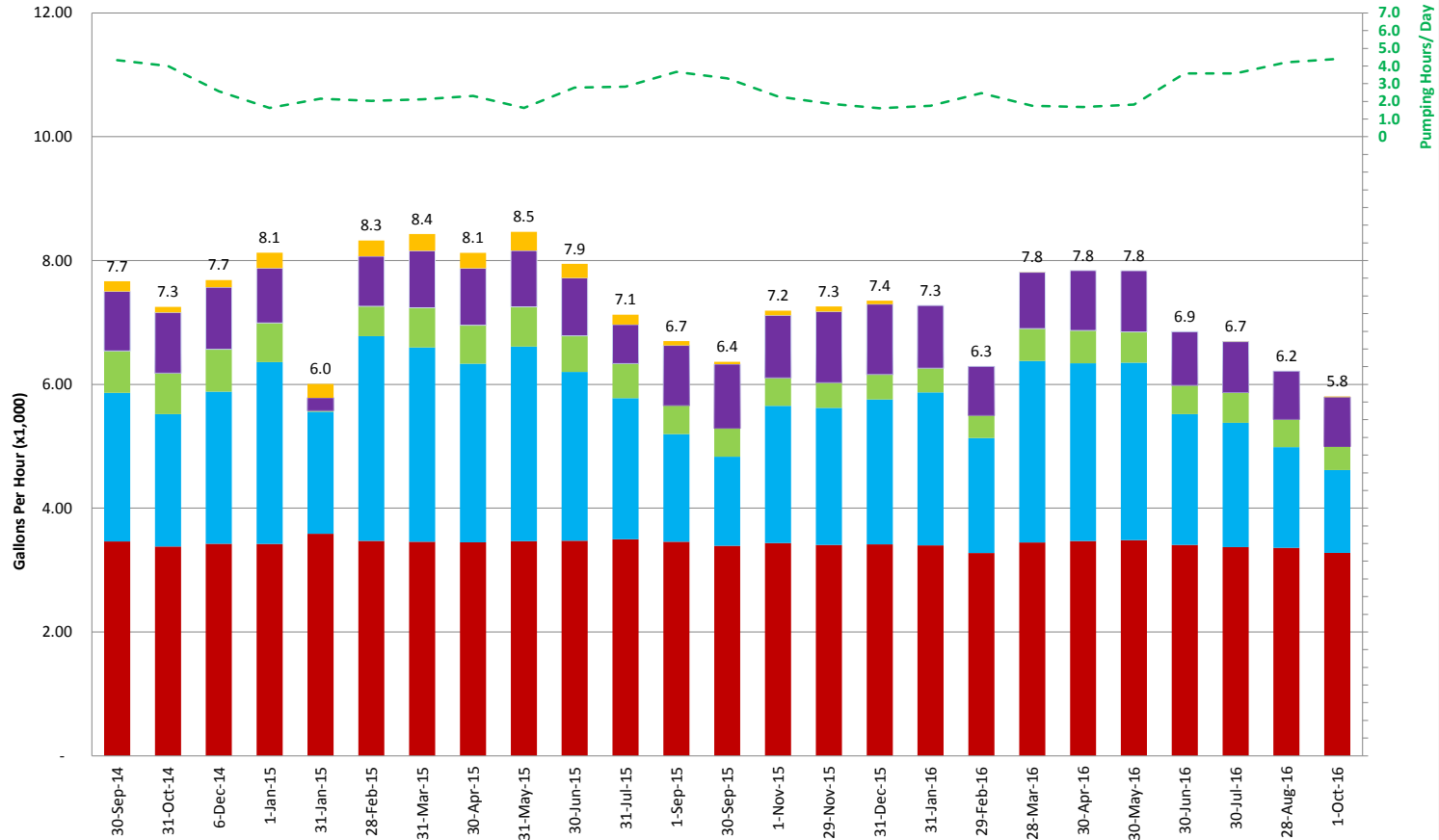
- Well Water Level Charts:
 - Well Water Levels Sept. 2011 to Sept 2016
 - Well Gallons per Hour Sept 2014 to Sept 2016
- Water Conservation
 - Chart: Monthly Water Production 2016 vs 2015 Data through Sept 2016
- TOU Details

Wynola Water District Well Water Levels & Annual Rainfall (Sept 2011 to Oct 2016)



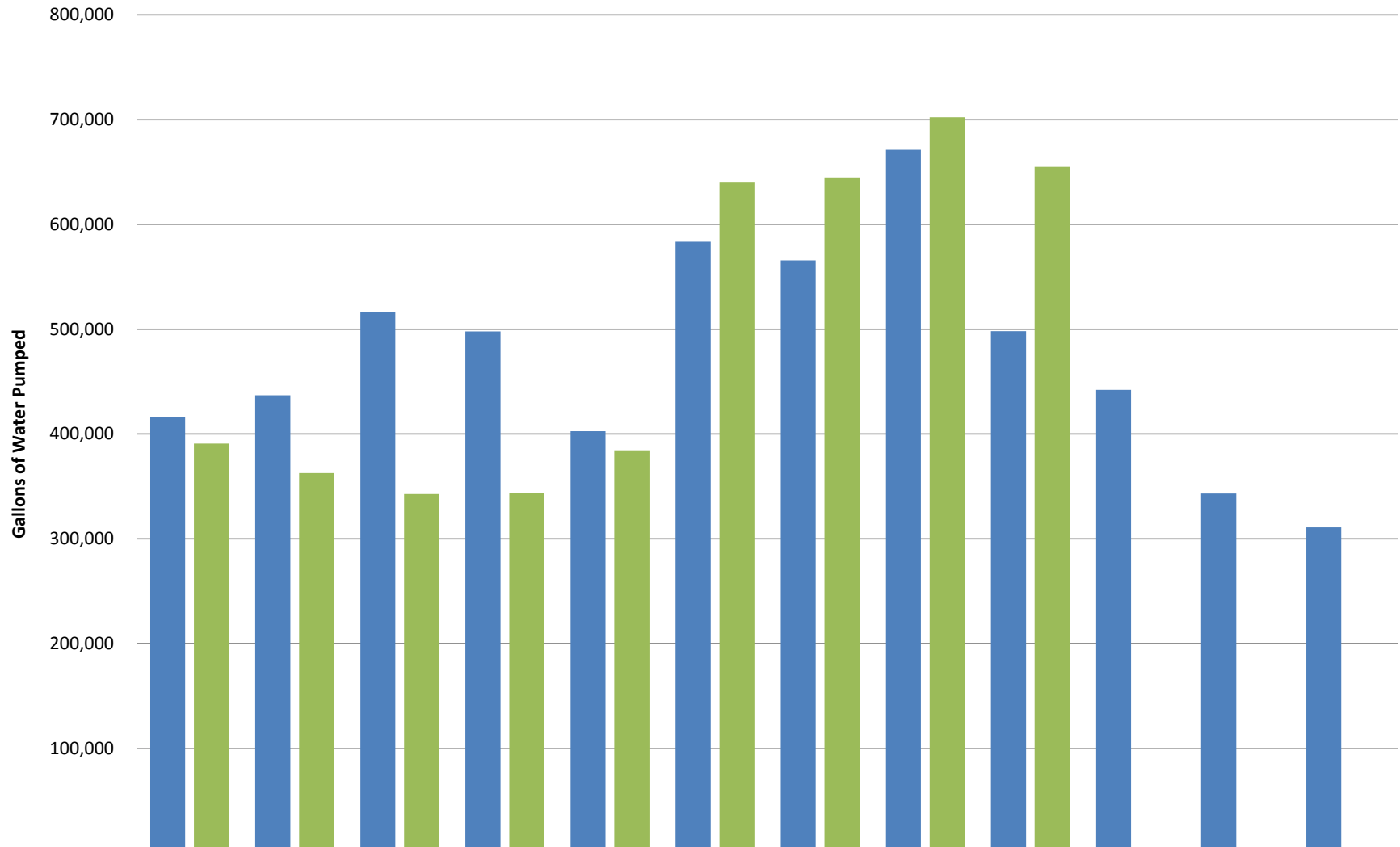
	Well #5		Well #7		Well #9		Well #10		Well #11	
	Depth-Ft	Date	Depth-Ft	Date	Depth-Ft	Date	Depth-Ft	Date	Depth-Ft	Date
High Water	-59	4/30/2012	-94	3/29/2012	-106	9/30/2011	-84	4/30/2012	-186	11/30/2011
Low Water	-224	12/31/2015	-427	8/31/2014	-547	10/1/2016	-270	11/1/2015	-565	9/18/2016
Pump Depth	N/A		-750	6/29/2002	-882	2/1/2012	-600	12/19/2001	-672	2/25/2014

Monthly Average Hourly Well Production Sept 2014 to Sept 2016



	30-Sep-14	31-Oct-14	6-Dec-14	1-Jan-15	31-Jan-15	6-Feb-15	1-Mar-15	31-Mar-15	28-Feb-15	31-May-15	31-Jun-15	30-Jul-15	31-May-15	30-Jun-15	31-Jul-15	1-Sep-15	30-Sep-15	1-Nov-15	29-Nov-15	31-Dec-15	31-Jan-16	29-Feb-16	28-Mar-16	29-Apr-16	28-May-16	30-Jun-16	30-Jul-16	30-Jul-16	28-Aug-16	1-Oct-16
Usage (Gal/Dayx1,000)	33.1	28.9	19.8	13.2	13.0	16.9	17.9	18.7	13.8	22.1	20.1	24.6	21.0	16.4	13.6	11.8	12.8	15.5	13.6	11.8	12.8	15.5	13.6	13.1	14.2	24.5	24.0	26.1	25.6	
Total (Gal/Hrx1,000)	7.7	7.3	7.7	8.1	6.0	8.3	8.4	8.1	8.5	7.9	7.1	6.7	6.4	7.2	7.3	7.4	7.3	7.4	7.3	6.3	7.8	7.8	7.8	6.9	6.7	6.2	5.8			
WELL-3 (Gal/Hrx1,000)	0.16	0.09	0.12	0.25	0.22	0.25	0.27	0.25	0.30	0.23	0.16	0.07	0.04	0.07	0.08	0.06	-	-	0.00	-	-	0.00	-	-	-	0.00	-	0.01		
WELL-10 (Gal/Hrx1,000)	0.96	0.98	1.00	0.89	0.21	0.81	0.92	0.92	0.91	0.94	0.63	0.97	1.04	1.01	1.15	1.14	1.01	0.79	0.91	0.97	0.99	0.87	0.82	0.78	0.79					
WELL-7 (Gal/Hrx1,000)	0.68	0.66	0.68	0.63	0.02	0.48	0.64	0.62	0.64	0.58	0.56	0.46	0.46	0.45	0.41	0.40	0.39	0.36	0.52	0.53	0.50	0.46	0.49	0.45	0.38					
WELL-11 (Gal/Hrx1,000)	2.40	2.14	2.46	2.94	1.97	3.31	3.14	2.89	3.14	2.73	2.28	1.74	1.44	2.22	2.21	2.34	2.47	1.86	2.93	2.87	2.87	2.11	2.01	1.63	1.34					
WELL-9 (Gal/Hrx1,000)	3.46	3.38	3.43	3.42	3.59	3.47	3.46	3.45	3.47	3.47	3.50	3.46	3.39	3.44	3.41	3.42	3.40	3.28	3.45	3.47	3.48	3.41	3.37	3.36	3.28					
Pumping Hours/Day	4.3	4.0	2.6	1.6	2.2	2.0	2.1	2.3	1.6	2.8	2.8	3.7	3.3	2.3	1.9	1.6	1.8	2.5	1.7	1.7	1.8	3.6	4.2	4.4						

WWD Water Production 2016 vs 2015



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2015 Actual	416,100	436,840	516,560	497,720	402,640	583,520	565,670	671,230	498,100	442,190	343,310	310,920
2016 Actual	390,900	362,800	342,620	343,400	384,400	639,900	644,700	702,200	654,860	-	-	-

Wynola Water District Time Of Use Electricity Rates

On April 16, 2016, SDG&E converted all of WWD's electricity accounts to Time Of Use (TOU) rates. There are two different rate structures depending on the time of year as follows:

Summer (May 1- Oct 31)

On-Peak (7hrs) 11 a.m. – 6 p.m. weekdays, excluding holidays
 Semi-Peak (9hrs) 6 a.m. – 11 a.m. weekdays, excluding holidays
 6 p.m. – 10 p.m. weekdays, excluding holidays
 Off-Peak (8 hrs) 10 p.m. – 6 a.m. weekdays, and all hours on weekends & holidays

Winter (Nov 1 – April 30)

On-Peak (3Hrs) 5 p.m. – 8 p.m. weekdays, excluding holidays
 Semi-Peak (13Hrs) 6 a.m. – 5 p.m. weekdays, excluding holidays
 8 p.m. – 10 p.m. weekdays, excluding holidays
 Off-Peak (8 hrs) 10 p.m. – 6 a.m. weekdays, and all hours on weekends & holidays

WWD has two different types of electricity accounts (PA and A-Commercial). There also are two different TOU plans (TOU and TOU-Plus). The single phase low demand, A-Commercial accounts (well 7 and well 10) were put on the TOU-Plus plan that has lower rates than the stand TOU except during "Reduce Your Use Days" when electricity rates could be 400% higher during the peak pricing period. The other higher demand PA accounts were put on TOU standard. So far this year there was only one "Reduce Your Use" day declared (September 26, 2016 for the hours between 11:00AM and 6:00PM). We were still operating on just the small storage tank so we manually topped of the tank before 10:45 AM and didn't allow the wells to run until 6:15 PM.

In mid-September we installed an electro-mechanical timer to supervise the Call for Water (CFW) system that determines when the wells should run. The large storage tank refurbishment project was completed and reconnected to the system on September 29, 2016. On October 1, 2016 the time clock was set to not allow the wells to run during the Summer Peak Pricing Period (11:00 AM to 6:00 PM). Since, with our current low well water levels, wells 7 and 11 will only run for about one hour before the pump saver trips out for 45 minutes, the timer was set to run for two 45 minute periods with a 2 hour rest for the first 2 fill periods after the peak pricing period. After checking the energy usage for the first 2 weeks of October it was noted that most of the peak period operation was eliminated but a large percentage of the run time was during the semi peak period. Since we are getting into the lower water demand period (wells running 2 to 4 hours per day), the timer has been adjusted as follows to attempt to push more of the run time during the off peak pricing period.

ON	OFF	Run Duration (Minutes)	Summer (May 1-Oct 31) Pricing Period	Winter (Nov 1-Apr 1) Pricing Period
6:15 PM*	7:00 PM*	45	Semi Peak	Peak
11:15 PM	12:00 AM	45	Off Peak	Off Peak
1:45 AM	2:45 AM	60	Off Peak	Off Peak
4:30 AM	5:45 AM	75	Off Peak	Off Peak
9:30 AM	10:45 AM	75	Semi Peak	Semi Peak
		Maximum Run Time = 5 hours		
(*) For Winter should change this to 8:15 PM to 9:00 PM				

It may be possible with this timer schedule that on an extremely high use day the tanks may not completely refill but unless there are several high use days in a row the tanks should stay at an acceptable level. If tank levels get too low we can add the 8:15 pm to 9:00 pm cycle during the high usage summer period.

If, after several months of operation, this schedule appears to meet the water demand needs, we may want to investigate if switching Wells 9 and 11 to the Time Of Use Plus plan will reduce costs. The risk is that if it isn't more economical we will have to stay on the plan for at least 12 months before switching back.

J.R. Bainbridge
10/18/16