Utah Division of Water Rights Well Metering Project – Parowan Valley – 2015 Summary

On March 25, 2015 the meters' totalizers were reset to zero and power meters read at all metered well sites, except at the Buckhorn well 1, where the power meter appeared to have malfunctioned. Subsequent site visits to inspect the meters and to record meter and power readings were made on May 14, June 30, August 26 and October 27, 2015. During the 2015 irrigation season photos showing the water and power meter readings at each site were taken during each site visit. During the October 27 site visit the flow meters were disconnected from their power source for the non-irrigation season.

The Buckhorn 2 well was not metered during the 2015 season due the plumbing set-up at the well.

To begin the 2015 irrigation season, the water meter for the Burton North well was moved to the Field One Pump location to replace a meter that malfunctioned at the end of the 2014 season. The Burton North well's meter was moved because the meter sensors have not be able to consistently have sufficient signal strength to accurately measure water flow since the beginning of this project.

The Paragonah 1, 2 and 3 well ratings all varied throughout the 2015 season. This could be due to the wells being tied together to operate several pivots. The change in the Paragonah 2 well rating during 2015 did not follow the decreasing pattern that occurred during the 2013 and 2014 seasons.

During the May 14, 2015 visit, it was noted that the Allread well meter's totalizer had not been reset to zero. The beginning meter reading for 2015 is the ending meter reading from 2014.

A few of the water meters experienced some sort of malfunction during the 2015 season, part or all of their recorded diversion amounts are not accurate.

- On May 14 the Oaktree well was found pumping but the meter was not recording flow due to low signal strength. An attempt was made to adjust the sensors to improve the signal strength, but was not successful. During all subsequent site visits the meter appeared to be functioning properly.
- On May 14 the Old Farm East well was also found to be pumping but the meter was not recording flow due to low signal strength. The sensors were adjusted and the meter began recording flow.
- On May 14 the display on the meter that had been moved from the Burton North well to the Field One Pump well was found to be not functioning. A replacement meter was installed on June 30 that appeared to function properly for the remained of the season.
- On August 26 the Buckhorn 3 well meter was found off and the solar controller indicated a low battery. The meter was found in this state again on October 27.

The attached tables and figure summarize the data collected during the 2015 irrigation season.

Table 1 Power Meter Readings

		Date				
Well Name	**kw-hr Multiplier**	**3/25**	**5/14**	**6/30**	**8/26**	**10/27**
Buckhorn 2	10					
Buckhorn 1	40		28434	30579	37834	38555
Buckhorn 3	-	12789	13106	23208	73222	79504
Oaktree	40	58312	60815	62852	68352	71096
Paragonah 1	-	91390	93480	95289		102692
Paragonah 2	40	21473	22152	23160	25766	26767
Paragonah 3	40	1116	2218	3131	5635	7730
Burton South	-	159	159	29344	24920	61448
Burton North	40	71246				
Old Farm East	-	87744	11727	32353	15116	52135
Old Farm West	10	66489	71117	76413	92015	98849
Field One Pump	-	57787	20315	36660	22176	60092
Church Farm 2	-	99562	8496	36470	39505	40625
Church Farm 5	40	2268	3302	3373	8358	11491
Church Farm 4	40	27966	29060	30930	35680	37372
Church Farm 3	10	44592	47938	51389	59642	60737
Allread	-	72196	97768	23186	97548	15624
Evans	80	16359	16496	17740	19931	21009

Table 2 Water Meter Readings (acre-feet)

	Date				
Well/Water Meter Name	**3/25**	**5/14**	**6/30**	**8/26**	**10/27**
Buckhorn 2 North					
Buckhorn 2 South					
Buckhorn 1	0.0	125.5	172.9	467.8	494.1
Buckhorn 3	0.0	3.3	41.0		
Oaktree	0.0	195.6	317.1	631.8	778.6
Paragonah 1	0.0	160.5	298.7		852.5
Paragonah 2	0.0	241.4	390.8	740.8	775.1
Paragonah 3	0.0	111.0	202.6	309.9	351.0
Burton South	0.0	0.0	78.8	328.5	424.8
Burton North					
Old Farm East	0.0	0.0	40.3	199.3	270.4
Old Farm West	0.0	87.8	187.8	456.4	574.1
Field One Pump	0.0		0.0	158.1	227.0
Church Farm 2	0.0	16.4	67.4	67.5	67.7
Church Farm 5	0.0	137.0	146.4	537.9	837.4
Church Farm 4	0.0	30.0	80.0	293.7	367.9
Church Farm 3	0.0	61.3	122.2	238.6	240.0
Allread	383.7[1]	439.3	495.9	651.8	690.4
Evans	0.0	12.6	147.8	361.4	455.6

[1] Allread meter was not reset to zero. Reading is from the end of the 2014 season.

Table 3 Water Use Summary

Well/Meter Name	Unmetered Diversion Power (kW-hr)	Well Rating Factor (kW-hr/AF)[1]	Estimated Unmetered Diversion (AF)	Metered Diversion (AF)	Total Diversion (AF)	Crop Type	Acres	Diversion per Acre (AF/ac)
Buckhorn 2	-	-	-	-	-	Corn & Alfalfa	720	-
Buckhorn 1	189,720	992.3[2]	191.2	321.5	512.7			
Buckhorn 3	66,715	291.8[3]	228.6	-	228.6			
Oaktree	-	-	-	778.6	778.6	Alfalfa	240	3.24
Paragonah 1	20	13	1.5	852.5	854.0	Alfalfa	695	3.31
Paragonah 2	320	112.5[4]	2.8	775.1	777.9			
Paragonah 3	184,200	397.1	463.8	202.6	666.4			
Burton South	-	-	-	424.8	424.8	Corn	263	-
Burton North	-	-	-	-	-			
Old Farm East	23,996	511.8	46.9	270.4	317.3	Alfalfa	272	3.28
Old Farm West	120	527.1	0.2	574.1	574.3			
Field One Pump	78,892	540.9	145.9	227.0	372.9	Corn & Alfalfa	874	2.51
Church Farm 2	48	544.8	0.1	67.7	67.8			
Church Farm 5	40	301.9	0.1	837.4	837.5			
Church Farm 4	-	-	-	367.9	367.9			
Church Farm 3	-	-	-	240.0	240.0			
Allread	57	459.9	0.1	306.7	306.8			
Evans	720	869.8[5]	0.8	455.6	456.4	Alfalfa	235	1.94

[1] Unless specified otherwise, well rating factor is determined from power and water use during first and second meter readings of the season. If blank, no unmetered diversions were estimated.
[2] Rating factor of 992.3 kW-hr/AF is the average for the Buckhorn 1 well from June 30 to October 27, 2015.
[3] Rating factor of 291.8 kW-hr/AF is the factor for overall water and power use for the Buckhorn 3 well in 2014.
[4] Well rating factor was determined as 112.5 kW-hr/AF at the beginning in the season, but changed significantly throughout the season. Due to the small amount of power use prior to the start of water metering, the well rating factor has little consequence on the total diversion for the well.
[5] Rating factor for the Evans well was significantly higher than in 2013 and in all but the last 2 months of the 2014 season. It is likely the meter did not record all water, resulting in a less-than-expected metered diversion amount and diversion amount per acre.

Figure 1 Well Ratings during 2015

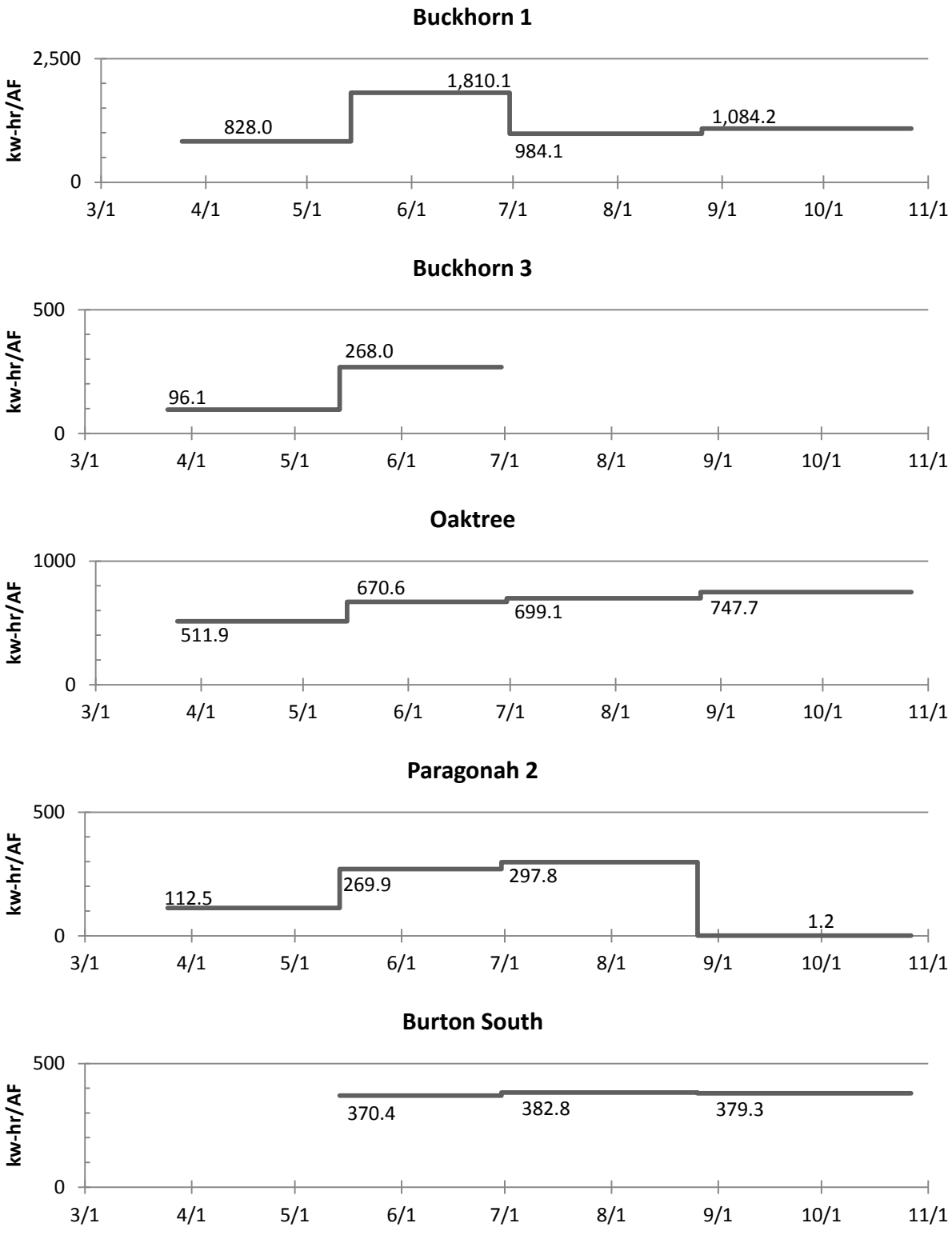

Figure 1 continued Well Ratings during 2015

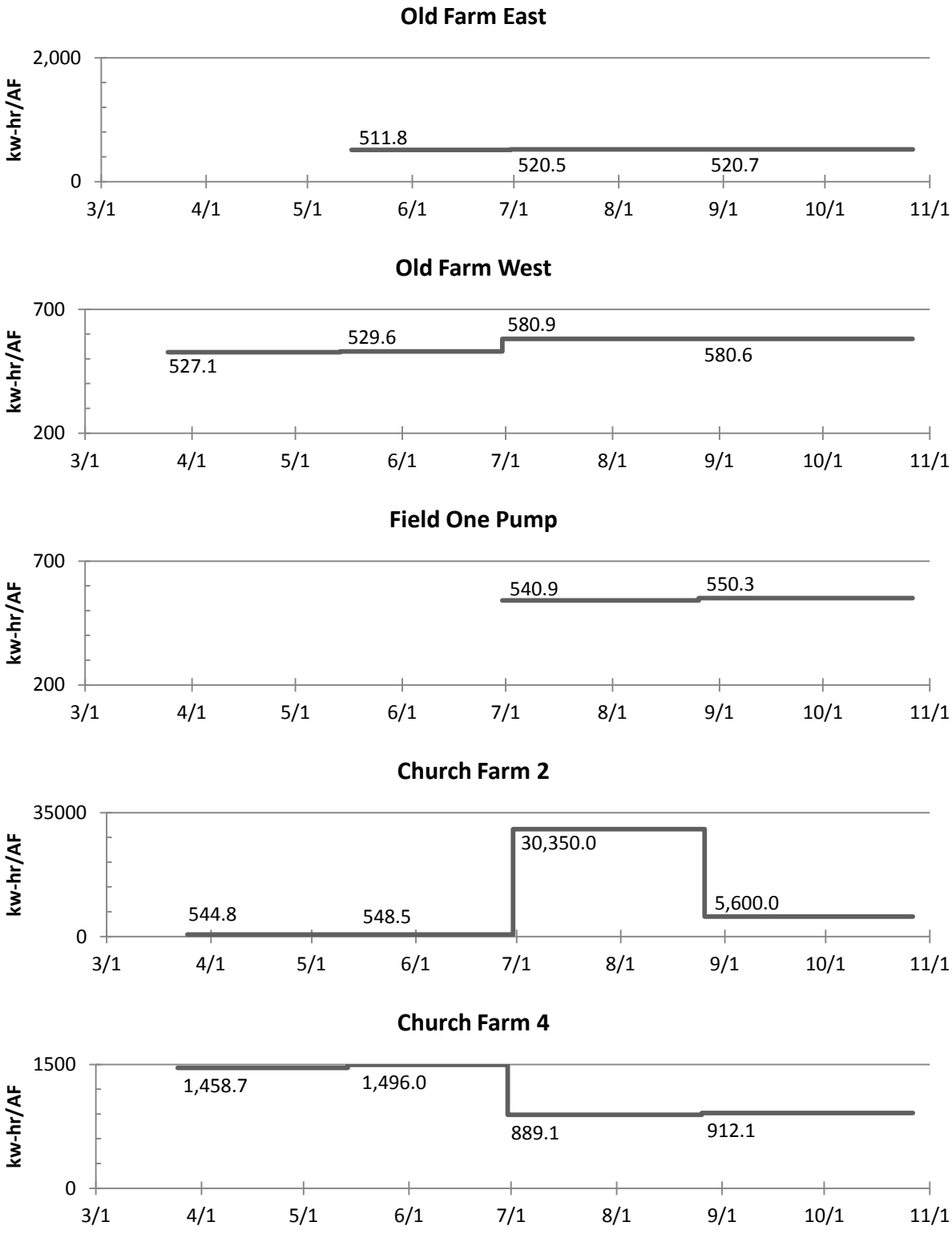

Figure 1 continued Well Ratings during 2015

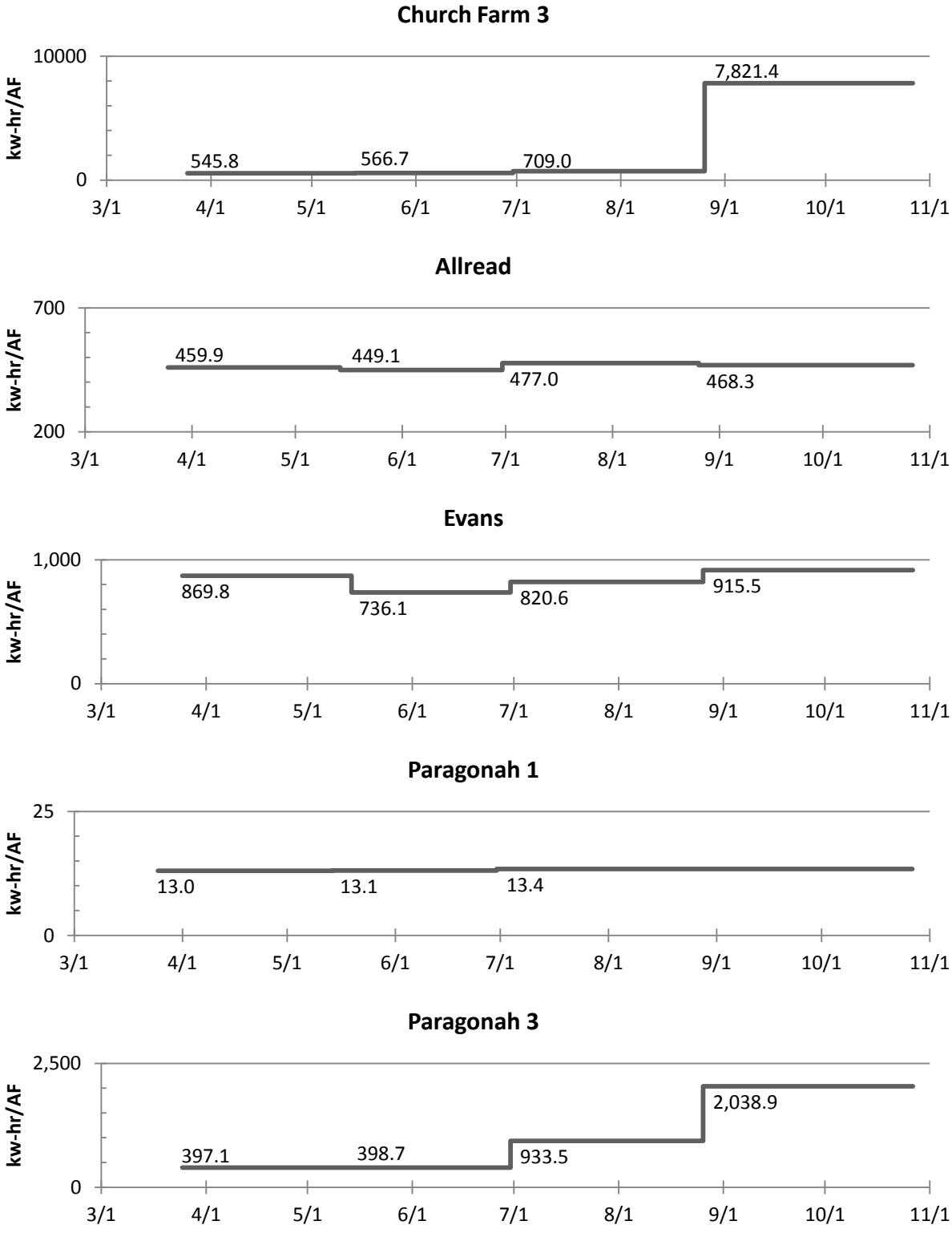

Figure 1 continued Well Ratings during 2015