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Eastern Region

Project No. 116-07-2014

## **Expert Report and Narrative Relative to Water Right Transfer #79384 for Irrigation**

Prepared for:

Cedar Ridge Dairy  
Filer, Idaho

February 13, 2015

For information concerning this report, contact  
Greg Sullivan, M.S., Engineer  
Charles E. Brockway, Ph.D., P.E.



CHARLES E. BROCKWAY, Ph.D., P.E.  
CHARLES G. BROCKWAY, Ph.D., P.E.  
ERICK POWELL, Ph.D., P.E.

2016 NORTH WASHINGTON, SUITE 4  
TWIN FALLS, IDAHO 83301



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# **Expert Report and Narrative Relative to Water Right Transfer #79384 for Irrigation**

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Brockway Engineering, PLLC  
February 13, 2015

## **A. Introduction**

### **A.1. Objectives**

This report examines the effects of Transfer 79384. Transfer 79384 proposes to transfer an irrigation ground water right for 41.6 acres of irrigation to a new place of use south of Filer, Idaho. Hydraulic analysis of the regional aquifer is based upon published reports, well drillers logs, USGS/IDWR monitoring wells and pump test data. From this analysis, the effects of Transfer 79384 on the local aquifer and the Protestants' domestic wells can be determined.

### **A.2. Executive Summary**

Water right 47-17589 is currently owned by Thomas Leno and was decreed in the Snake River Basin Adjudication on June 1, 2010. Water right 47-17589 is a valid water right based on the laws and policies of the Idaho Department of Water Resources. Approval of Transfer 79384 will not result in any significant impact on groundwater levels or injure any existing water rights, included the Protestants' domestic wells.

## **B. Water Right Information**

Water Right 47-7106 was partially decreed by the Snake River Basin Adjudication District Court on June 1, 2010. See Appendix A (partial decree and background information). The source of water for this right is groundwater in Basin 47. Water right 47-7106 is supplied by ground water that is hydraulically connected to the regional aquifer in Basin 47, the same groundwater resource for

which the transfer proposes to move a portion of the water right. As recommended by the Director of IDWR, and decreed in the SRBA District Court, the right is described as follows:

|                 |                              |
|-----------------|------------------------------|
| Source:         | Ground water                 |
| Priority Date:  | December 25, 1970            |
| Quantity:       | 1.85 cfs/ 465 acre-feet/year |
| Purpose of Use: | Irrigation                   |
| Place of Use:   | 155 acres                    |

Based on the IDWR Administrative Memorandum Regarding: Forfeiture Review Period, a water right holder has until the end of the 5<sup>th</sup> year to resume use of a water right or initiate a defense to forfeiture. See Appendix B (Memo). This water right was partially decreed in 2010 and therefore is considered protected from forfeiture. The end of the calendar year of 2015 will be the end of the 5<sup>th</sup> year. By the end of 2015, irrigation must be resumed at its current authorized place of use, or the proposed transfer applications must be approved, or the water right must be leased to the Idaho Water Supply Bank, or an extension of time to avoid forfeiture must be applied for with IDWR.

Water right 47-7106 is considered a “Parent” water right by IDWR terminology. This means that portions of 47-7106 have been split and transferred off of the original water right. IDWR has already approved three splits and transfers from this water right. The three transfers are Transfer 77406 to Triple J Dairy, Transfer 77669 to Brackett Cattle Company and Transfer 78127 to Farmers National Bank. Appendix C contains an overview map of the transfers, Corey Skinner transfer memos, and copies of IDWRS transfer approvals.

To facilitate these transfers, an analysis of the historical consumptive use was required to determine how much of 47-7106 could be transferred as a primary ground water right. An analysis of the acres irrigated, volume of water allowed,

engine horse power, engine efficiency, pump efficiency, water pumping depth, operating irrigation system pressure, diesel fuel consumed, and irrigation efficiency was used to determine the amount of 47-7106 that IDWR considers to constitute a “primary” ground water right. Based on these inputs into the analysis, it was determined that 94% of water right 47-7106 is considered primary and that 145.7 acres can be split and transferred off of the property from the decreed 155 acre place of use. This analysis is provided in Appendix D.

First, IDWR approved Transfer 77406 in November of 2011. This transfer dried up 9.1 acres and 27.3 acre feet of primary irrigation water under 47-7106. When this transfer was approved by IDWR, water right 47-17569 was split off and owned by Triple J Dairy. Water right 47-17569 is a stock and commercial water right that allows a diversion rate of 0.12 cfs and an annual volume of 17.0 acre feet. The unchanged portion of 47-7106 was changed to 47-17568 which allowed 145.9 acres of irrigation with a diversion rate of 1.73 cfs and an annual volume of 437.7 acre feet.

Second, IDWR approved Transfer 77669 in March of 2012. This transfer dried up 17.6 acres and 52.8 acre feet of primary irrigation water under 47-17568. When this transfer was approved by IDWR, water right 47-17572 was split off and owned by Brackett Cattle Company. Water right 47-17572 is a stockwater right that allows a diversion rate of 0.22 cfs and an annual volume of 32.9 acre feet. The remaining portion of 47-17568 was changed to 47-17571 which allows 128.3 acres of irrigation with a diversion rate of 1.51 cfs and an annual volume of 384.9 acre feet.

Next, IDWR approved Transfer 78127 in December of 2012. This transfer dried up 25.8 acres and 77.4 acre feet of primary irrigation water under 47-17571. When this transfer was approved by IDWR, water right 47-17590 was split off and owned by Farmers National Bank. Water right 47-17590 is a stock and

commercial water right that allows an annual volume of 48.2 acre feet. The remaining portion of 47-17571 was changed to 47-17589 which allows 102.5 acre of irrigation with a diversion rate of 0.30 cfs and an annual volume of 307.5 acre feet.

The Idaho Department of Water Resources has recognized parent water right 47-7106 as a legal water right through the SRBA Court partial decree and the approval of Transfer 77406, Transfer 78127 and Transfer 78127 by IDWR. The consumptive use analysis of 47-7106 required in Transfer 77406, Transfer 78127 and Transfer 78127 has been accepted by IDWR for all three transfers.

## **C. Transfer Application**

### **C.1. Transfer Summary**

Transfer 79384 proposes to dry up 41.6 acres of irrigation authorized under ground water right 47-17589 and move that portion of the right to two small pivots south of Filer, Idaho. The fields are located in Township 11 South Range 16 East Section 7 NESE and SESE (see Figure 1). The proposed transfer would allow a diversion rate of 0.49 cfs and an annual volume of 124.8 acre feet per year to be used for irrigation purposes on 41.6 acres. The period of use for this portion of 47-17589 that will be transferred will remain unchanged with a period of use of April 1 through November 1 of each year.

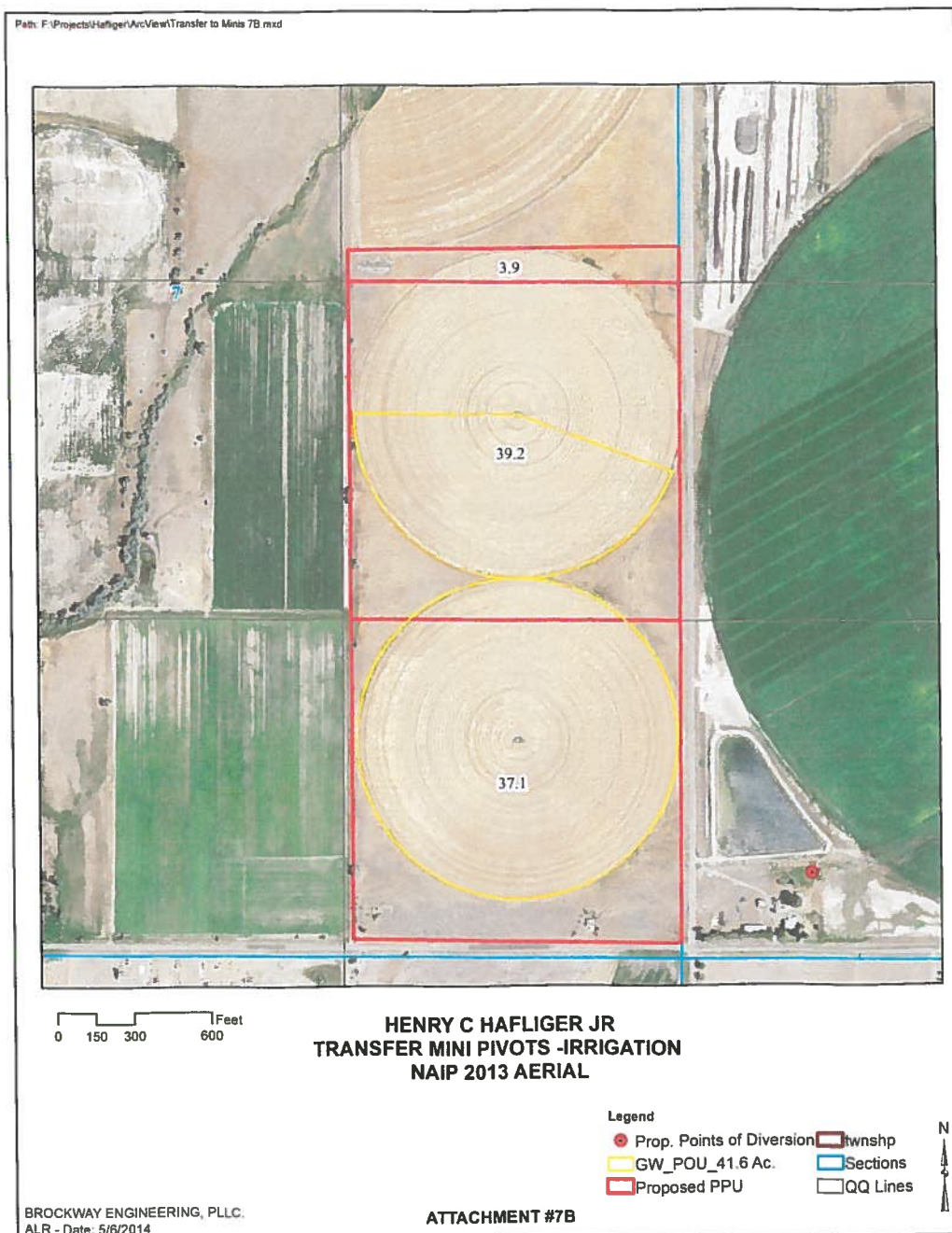


**Figure 1: Irrigation Location, proposed place of use and well locations.**

## C.2. Geology and Hydrogeology

Multiple publications have been written analyzing the ground and surface water characteristics in the Salmon Falls Area of Twin Falls County, Idaho (within

IDWR Administration Basin 47) and the relationship of this area with the Snake River Basin.

The United States Geological Survey (USGS) published a *Preliminary Report on Ground Water in the Salmon Falls Area, Twin Falls County, Idaho* written by K.H. Fowler in 1960. This report states that the geology of the area consists of volcanic and sedimentary strata of various types which range from nearly impermeable to moderately permeable. Wells in the area have drilled through Snake River Basalt and into sedimentary strata consisting of silt, clay, sand and some gravel. It is this sedimentary strata that provides water to domestic, stock and smaller irrigation wells.

Aquifer recharge in the Salmon Falls area is facilitated by precipitation, seepage loss from streams, canals and reservoirs. The precipitation and streams are located on the east side Highway 93 in Twin Falls County as well as Shoshone Creek, Salmon Falls Creek, and Cottonwood Creek drainages basins in northern Nevada. Salmon Falls Creek Reservoir provides storage water for irrigation and ground water recharge through seepage loss. The Salmon Falls Canal Company and Twin Falls Canal Company delivery canals also supply recharge to the ground water aquifer through seepage losses. The general direction of ground water movement is a north to northwest direction toward the Snake River.

Discharge measurements indicate that very little ground water is discharged into the creek from the Salmon Falls area between the Salmon River Creek Reservoir and the Roseworth crossing (Lily Grade). It is apparent that most of the ground water leaves the area by some route other than the canyon of Salmon Falls Creek (Fowler, 1960).

The State of Nevada published a report entitled *Water Resources-Reconnaissance Series Report 48, Water-Resources Appraisal of the Snake River Basin in Nevada*

written by Donald Moore and Thomas Eakin in 1968. This report analyzes the flow of surface water and ground water that flows into the Snake River Basin from Goose Creek Valley, Salmon Falls Creek Valley, Bruneau River Valley, Jarbridge River Valley, Owyhee River Valley, South Fork Owyhee River Valley and East Little Owyhee River Valley. An area of 5,000 square miles in northern Nevada is considered to be in the Snake River Basin. Moore and Eakin indicate by this report that the several northern Nevada ground water aquifers are directly linked and flow northward into the ground water aquifers of Idaho.

Ground water and surface water are closely interrelated along the flood plains and stream channels in northern Nevada. Due to the steep hydraulic gradients of the area, stream systems act as ground water drains. During seasons of low or little flow in streams, ground water may seep into the stream channels.

Eakin and Moore specifically discuss the surface water streams and ground water interaction in northern Nevada. They explain that due to the "steep stream gradients and high unit runoff, the estimated recharge is considered as potential recharge, rather than actual. That is, some or a considerable part of the potential recharge may leave the area as streamflow without ever entering the ground water system. This is due to the fact that, during the part of the year, infiltration rates are exceeded and the water moves off overland. However, this also is due in part to the fact that the ground water system locally is full with respect to the adjacent streams and therefore it rejects water that otherwise would enter the system. Such rejected water must then pass on as streamflow or be lost by evaporation. Because of these features, information from this study is insufficient to permit a direct estimate of the actual average recharge to the ground water system in the area of this report (Eakin, 1968)."

The report also indicates that the shallow ground water along the Salmon Falls Creek near to the mouth of Shoshone Creek is affected by a north trending fault

line that is located on the east side of the foot hills but west of Highway 93. However, two irrigation wells were drilled in close proximity to Shoshone Creek in the late 1960's and one produced 2,500 gallons per minute and the second well produced 1,250 gallons per minute. The water production from these two wells indicates that the ground water aquifer is prolific and can sustain moderate pumping for irrigation. This indicates that there is sufficient ground water at this location of the aquifer to supply these two irrigation wells. The ground water will continue to flow down gradient into Idaho towards the Snake River.

The United States Geological Survey published *Water Resources of the Salmon Falls Creek Basin Idaho-Nevada*, by E.G. Crosthwaite in 1969. This report indicates that basalt flows overlie Idavada Volcanics which is composed of silicic tuff, ash, clay, silt, sand and gravel. Alluvial and windblown deposits cover the majority of the study area. The upper basin or watershed is located in Nevada and consists of several drainages from mountain ranges. The natural discharge direction of the ground water flow is northward towards the Twin Falls tract and the Snake River. A small amount of aquifer water is discharged into Salmon Falls Creek.

The general interpretation of the all referenced published reports indicate ground water recharge occurs in northern Nevada in the Jackpot area and southern Idaho in Twin Falls County and that the aquifer flows northward towards the Snake River. Precipitation in the form of rain and snow is collected in the mountain ranges and basins that encompass Salmon Falls Creek, Shoshone Creek and Cottonwood Creek. This precipitation supplies these streams and other smaller streams with water and the water in these streams percolate into the ground water aquifer. Salmon Falls Creek Reservoir also supplies ground water recharge through seepage loss. The general flow direction of the ground water aquifer is in a north northwest direction.

## **D. Aquifer Characteristics**

### **D.1. Aquifer Features**

Based on the publications and analysis by Cosgrove (1998), Fowler (1960) and Young (1971) the aquifer conditions of hydraulic gradient, storativity, hydraulic conductivity and general aquifer flow direction in the Salmon Falls area have been determined.

Hydraulic gradient is the elevation change of the static water level in an aquifer at a given distance. Hydraulic gradient is usually defined with the units of feet per mile or the change in elevation of the static water level in feet over the distance of 1 mile. The hydraulic gradient usually is parallel to the ground surface but can be affected by local aquifer recharge or depletion and geological structures within the aquifer. For the Salmon Falls area, the general hydraulic gradient for the aquifer is 50 feet per mile, Cosgrove (1998).

Storativity of an aquifer is a physical property of the aquifer that characterizes the capacity of the soil or aquifer material to store and release ground water. This aquifer characteristic is dimensionless. Storativity values vary depending on the soil composition of the aquifer. The storativity value for the aquifer area where the POD for Transfer 79384 is located is 0.12 , Cosgrove (1998) and Young (1971).

Hydraulic conductivity is characteristic of an aquifer that describes how fast water flows through the aquifer material. This characteristic has units of feet per day. The tighter packed the aquifer materials are, such as clay or solid rock, the lower the hydraulic conductivity will be or the slower the water will move through the aquifer. The aquifer materials of gravel and sand have high hydraulic conductivity values and the water flows faster through these materials. The

aquifer at the POD for Transfer 79384 is location has an estimated hydraulic conductivity value of 55 ft/day, Cosgrove (1998).

In aquifer regions of basalt, granite or other solid rock formations, the water is more likely to be moving in areas of geologic faults, cracks or fisher areas of the rock formations. The ability of a well to supply an adequate amount of water in this type of aquifer may depend on whether the well connects with or was drilled through the underground channels formed by the faults, cracks and fishers.

#### D.2. USGS Monitoring Wells

There are multiple ground water monitoring wells located within a 10 mile radius of the proposed transfer place of use (see Figure 2). The USGS measured these monitoring wells until 2009. The Idaho Department of Water Resources has recorded the water levels in these well since 2010 and will continue to do so into the foreseeable future.

The closest four monitoring wells to the proposed transfer location are identified as 11S15E-07ACB1, 11S15E-02BBB1, 10S15E-26DDA1 and 11S16E-20CCC. It was determined that well 10S15E-26DDA1 could not be used for this analysis due to its close proximity and hydraulic interaction with the Twin Falls Canal Co. canal system. It was also determined that well 11S16E-20CCC could not be used for this analysis because there are only 11 data points collected from this well from 1980 through 2006. The intermittent data is not sufficient to define any statistically sound seasonal trends or long-term trends for well 11S16E-20CCC.

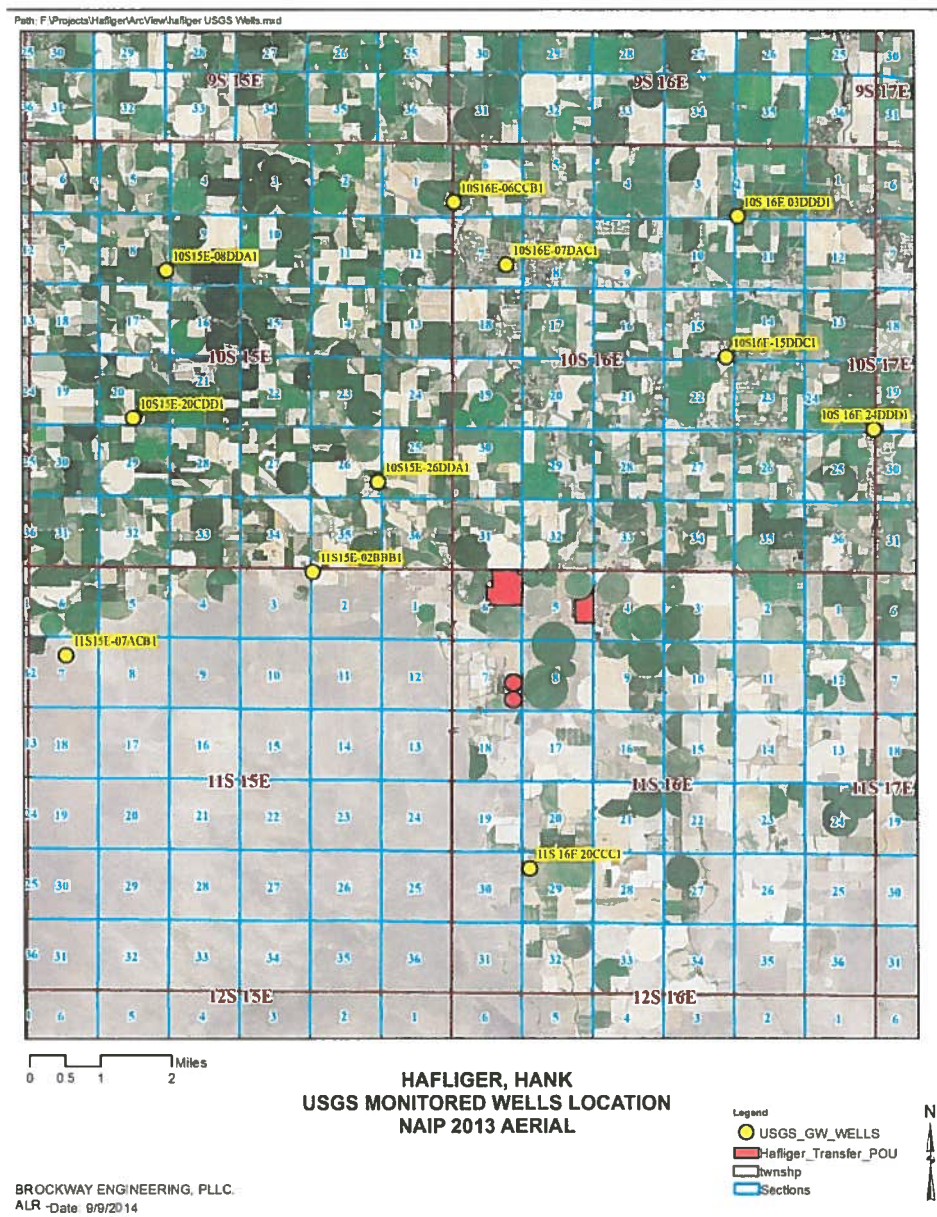


**Figure 2: USGS Monitoring Wells Locations**

Well 11S15E-07ACB1 is located approximately 6.6 miles west of the proposed point of diversion for Transfer 79384. Data from this well have been recorded from the spring of 1980 to the present time with over 120 well measurements having been performed. A graphical representation of the data from this well is shown in Figure 3 as Well 11S 15E Sec 7 SWNW.

Well 11S15E-02BBB1 is located approximately 3.6 miles northwest of the proposed point of diversion for Transfer 79384. Data from this well have been collected from the fall of 1980 to the present time with over 250 well measurements having been performed. A graphical representation of the data from this well is provided in Figure 3 as 11S 15E Sec 2 NWNW. The tabular data for these two wells can be found at

<http://www.idwr.idaho.gov/hydro.online/gwl/gwl.html>.

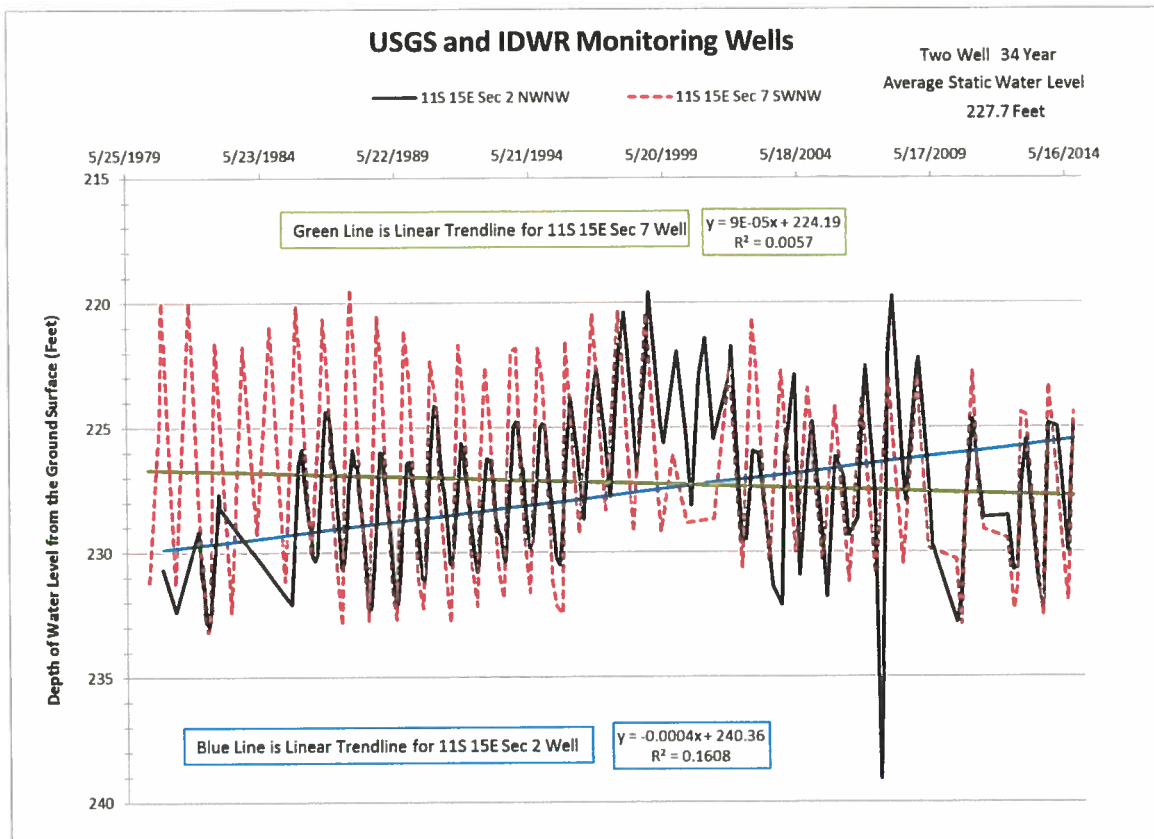


Figure 3: USGS Monitoring Wells 11S15E-07ACB1 and 11S15E-02BBB1 static water levels.

It is unknown why there is an irregularity in the number of measurements from these two wells. It is important to recognize that wells 11S15E-07ACB1 and 11S15E-02BBB1 are located on the southern edge of the local cultivated farm ground area. Additionally, as documented by Cosgrove (1998), Young (1971),

Crosthwaite (1969), Fowler (1960) and Eakin (1968), the ground water flow direction is in a north and northwest direction. Because these wells are up-gradient and on the southern edge of cultivated areas, there are no wells or ground water diversions from the Salmon Falls area aquifer that would significantly affect the static water level measurements in these two wells as the groundwater flows north. The static water level measurements in these two wells are representative of the unaffected aquifer water level throughout the local aquifer. In addition, because these wells are several miles west of the POD for Transfer 79384, the hydraulic affect from the existing wells and pumping at the local dairy wells and irrigation wells is minimal on the static water level in monitoring wells 11S15E-07ACB1 and 11S15E-02BBB1.

The average combined static water level in wells 11S15E-07ACB1 and 11S15E-02BBB1 over the last 34 years is 227.7 feet below ground surface. The static water measurements have fluctuated between a depth of 220 feet and 235 feet below ground surface since 1980. Because the fluctuation over the last 34 years is constant and there is no indication from these wells the aquifer water table is decreasing or increasing, it can be concluded that ground water aquifer is stable. The trendlines for both 11S15E-07ACB1 and 11S15E-02BBB1 indicated that there is no statistical variation of water level over the last 34 years.

The water level data for monitoring wells 11S15E02BBB and 11S15E07ACA were subjected to a trend analysis using the Mann-Kendall non-parametric method. The Mann-Kendall method is a standard technique for analysis of trends in hydraulic systems. To remove seasonal effects from the data from these two wells, a water-year average was calculated including only those years with more than two readings per year. This resulted in 30 values for 11S15E02BBB and 18 values for 11S15E07ACA. At the 95% confidence level, no increasing or decreasing trend was detected in either well. This confirms the qualitative result indicated by visual inspection of the well data.

### D.3. Local Well Drillers Logs Analysis

An analysis of local wells was performed utilizing information gathered from 25 well drillers logs for wells drilled after the year 2000 that are located within a 2 mile radius of the dairy location. The data from the well logs is supplemented by static water measurements from wells owned by Hank Hafliger or other associated entities. Water level measurements from one domestic well (well that pump tested in Oct. 2015), one irrigation well (adjacent to southern edge of Dairy #3) and three commercial wells (wells at Dairy #1, Dairy #2, Dairy #3) have been recorded in 2014.

The wells locations were compared to National Elevation Data (NED), 10 meter 1999 elevation data. The NED is the primary elevation data product of the USGS. The NED provides basic elevation information for earth science studies and mapping applications in the United States. Scientists and resource managers use the NED data for global change research, hydrologic modeling, resource monitoring, mapping, visualization, and many other applications. The NED is updated continually to integrate newly available, improved elevation source data (<http://ned.usgs.gov>). The NED data provides ground surface elevation contours in which the ground surface elevation for each well can be estimated.

The static water levels from the 25 wells were obtained by examination of the well logs. The static water levels from the domestic well, the irrigation well and the three commercial wells were obtained by field measurements for general well and pump maintenance and also from the pump test performed in October 2014.

Depth to water contours were obtained by subtracting the static water levels from the 25 wells and the field measurements from the ground surface contours generated from the NED data. The result is a contour map of the depth to water levels in the area of the proposed transfer applications (Figure 4).

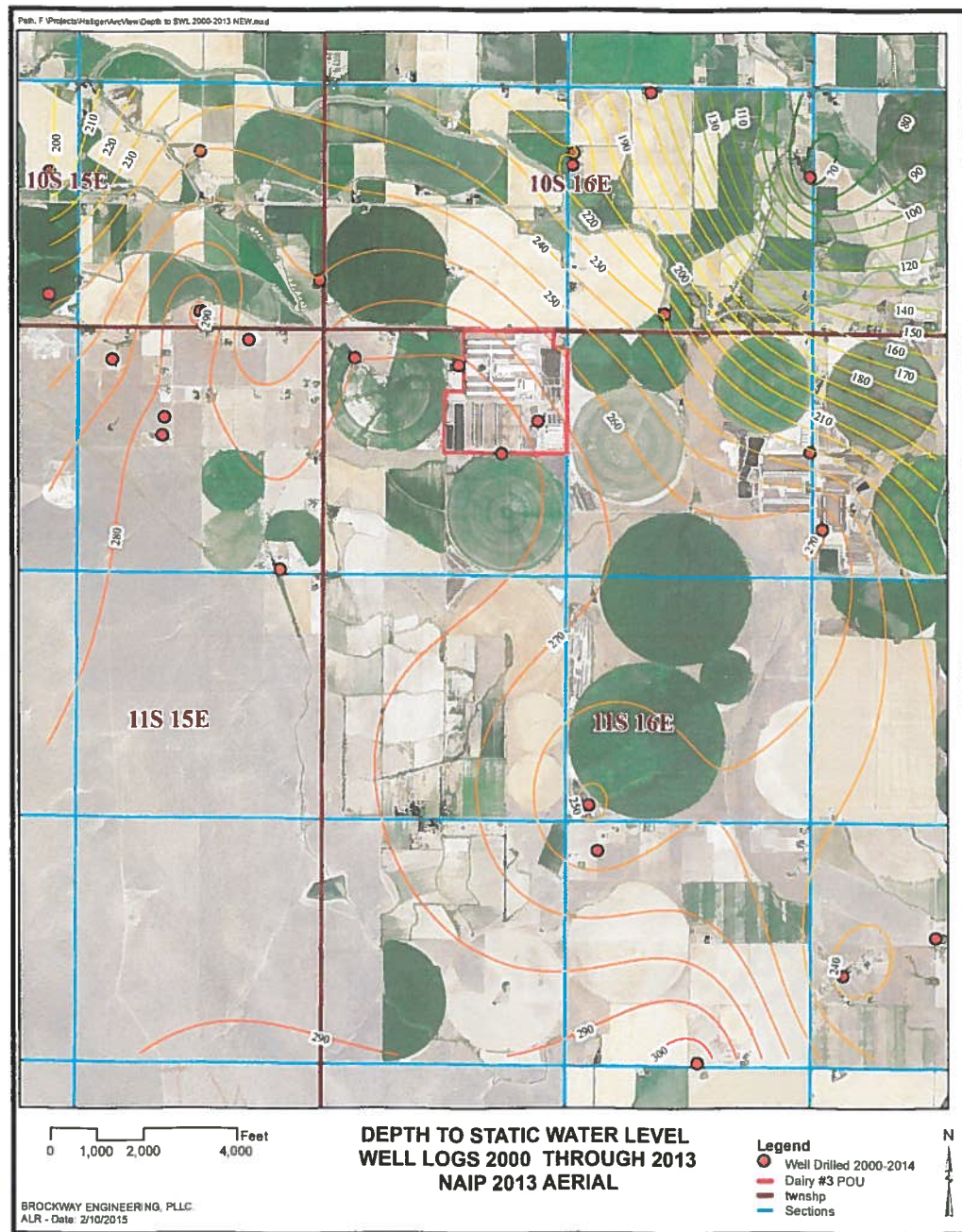


**Figure 4: Depth to Static Water Level Contour Map**

The static water level contour map indicates the depth to water in the areas where domestic wells of the protestants to Transfer 79384 are located. The estimated depth to water, ground surface elevation contour and water level elevation maps are located in Appendix E.

The well drillers log data, pump test data, ground elevation contour map, static water level contour map, Brockway Engineering Memo and estimated depth to water at protestants domestic well locations values are provided in Appendix E. No estimation values were obtained for several of the Protestants' domestic well locations because the distance of the Protestants' domestic well was too far away from the 25 identified well logs and field measurements to provide an accurate estimation. Known water level values of the Protestants' wells are provided in Appendix E.

The depths to water levels decrease or are shallower as the contours encounter the Twin Falls Canal Company High Line and Low Line canals. This is due to the seepage of water from the canal system into the aquifer. The seepage from the canal system provides elevated aquifer levels that are accessed by shallower wells with shallower static water levels. It would be expected that these shallower wells would experience seasonal water level fluctuation related to water being diverted into the canal during the months of April through October and would be less affected by the increased pumping that would occur by this proposed transfer. As water flows through the Low Line and High Line Canal systems, canal water seeps into the ground water. This canal water seepage is evident by shallower depths to water in wells that are close in proximity of the Low Line and High Line canals.

## **E. Aquifer Impact**

### **E.1. Winflow Model**

Groundwater impacts were modeled in the immediate area of the proposed transfers using the Winflow 3.05 analytical element modeling software. This software essentially utilizes the Theis approach to calculate aquifer drawdown, but allows multiple wells, transient fluxes, aquifer flow direction and distributed aquifer stresses.

The Theis method utilizes aquifer conditions to provide a calculated drawdown effect at a given distance away from a discharge location or well. This method can be adjusted to accommodate multiple discharge locations with several locations at different distances by utilizing multiple runs of the Theis method. The Theis method is considered to be a standard method by IDWR of analysis for aquifer affects and drawdown and has been utilized by Brockway Engineering for multiple water right transactions and analyses.

The Winflow model utilizes the Theis method and bolsters the analysis with spatial recognition of multiple discharge or observation points and aquifer flow direction. Winflow analyses provides a more complete analysis of the effects of discharge at a known location and the expected drawdown at multiple observation locations with one run of the model.

Aquifer hydraulic parameters were based on well drilling records in the area of the proposed transfer, and the calibrated large-scale model developed for the Twin Falls tract by Cosgrove, et al. Model parameters are based on published data for the general Salmon Falls aquifer characteristics and specifically aquifer characteristics of the proposed point of diversion when the aquifer data is available. The following model parameters were applied in this analysis:

Groundwater gradient: 50 ft/mile (Cosgrove, et al.)

Ambient flow direction: 315 degrees clockwise from north (Cosgrove, et al.)

Saturated thickness: 435 feet (aquifer bottom 700 below land surface, average static water level in vicinity of pumping well 265 feet below land surface)

Hydraulic conductivity: 55 ft/day (Cosgrove, et al.)

Storativity: 0.12 (typical for unsaturated aquifers, confirmed by Cosgrove, et al.)

A transient model was developed, using monthly time steps and stress periods. For the proposed transfer, the monthly average groundwater diversion was estimated, with the annual volume limited by the proposed water right transfer. The diversion was assumed to be the same each year over a model simulation time of 20 years. As a check, a simple manual calculation, the Theis equation was used to verify an identical test scenario in Winflow of one discharge point and one observation point at a known distance. The results of the Theis method and the Winflow model were in agreement: both procedures provided an estimated drawdown effect that was equivalent.

Protestant domestic well locations have been identified and labeled Well 1 through Well 16 (Table 1) for analysis utilizing the Winflow Model. The Protestants' domestic well locations were also identified in Figure 5. Well 8 is absent from the list because Victoria Henson is protesting the transfer on behalf of her mother Lois Rice whose domestic well is identified as Well 7.

**Table 1: Protestants Domestic Well Labels for Winflow Analysis**

|         |                 |
|---------|-----------------|
| Well 1  | Slifer          |
| Well 2  | Winsryg/Elliott |
| Well 3  | Hackard         |
| Well 4  | Houtz           |
| Well 5  | Parrott         |
| Well 6  | Ritter          |
| Well 7  | Rice/Henson     |
| Well 9  | McCreary        |
| Well 10 | Hamby           |
| Well 11 | Stephens        |
| Well 12 | Ellsworth       |
| Well 13 | Smith           |
| Well 14 | Humphries       |
| Well 15 | Conder          |
| Well 16 | Miller          |

In an effort to better understand the hydraulic relationship between the Protestants' domestic wells and the proposed POD for Transfer 79384 an aerial map of the proposed

POU and POD of Transfer 79384 and the measured distance for five Protestant domestic well locations is provided (Figure 5).

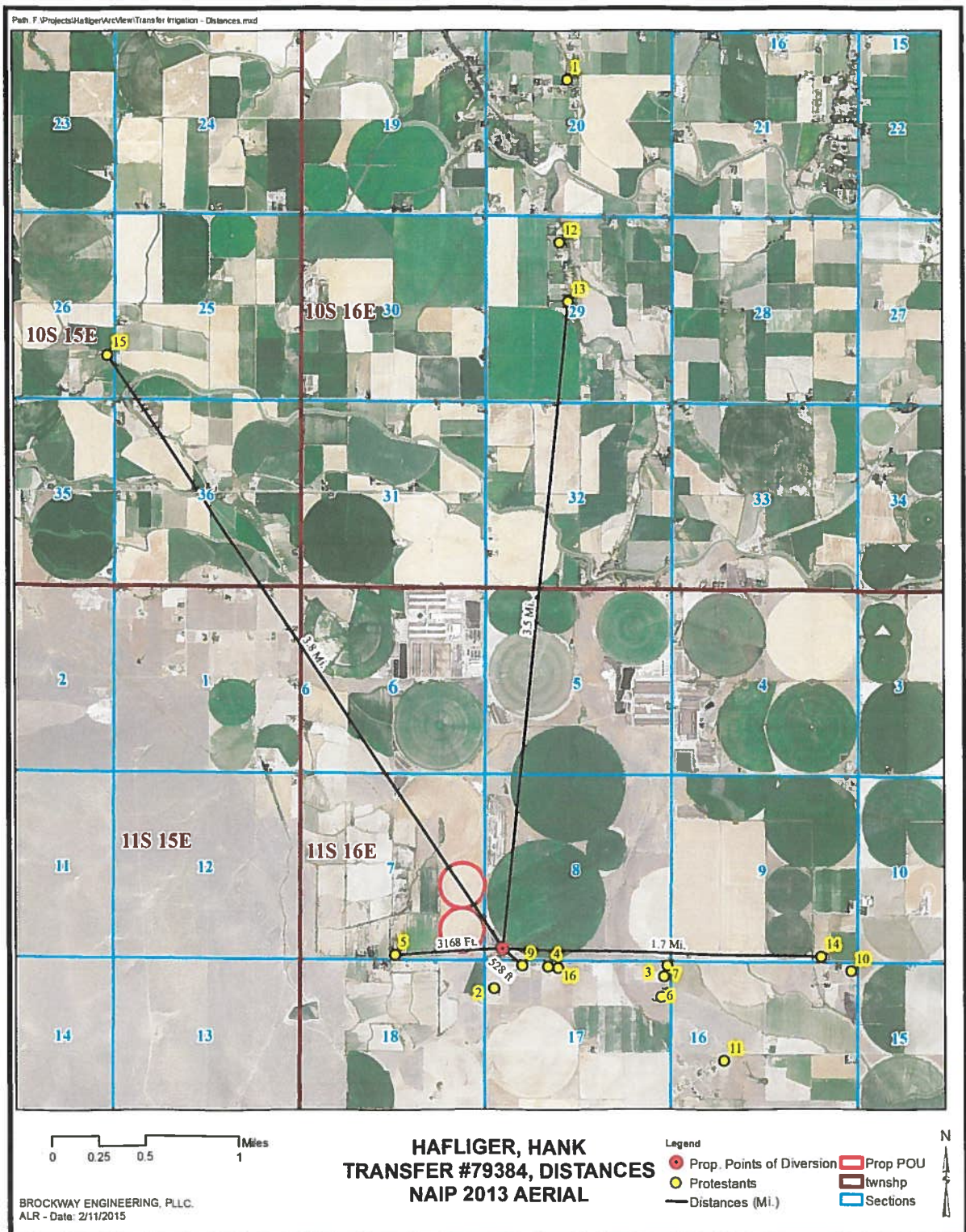


Figure 5: Protestant's Domestic Well Locations.

## E.2. Winflow Analysis 1

For this irrigation transfer, the monthly diversions for 41.6 acres were based on the monthly precipitation deficit data from the Buhl station given by Allen and Robinson, 2012. The total Pdef for this station is 34.1 inches, or 118.1 acre feet per year, whereas the water right volume is limited to 124.8 acre feet per year. The Pdef is net irrigation water consumed by a crop. Thus, an efficiency of  $118.1/124.8 = 0.946$  was applied to the Pdef each month to yield a total annual volume of 124.8 acre feet. Based on these numbers, irrigation recharge will be minimal (5.4% of the diversion volume) and was not applied in the model analysis.

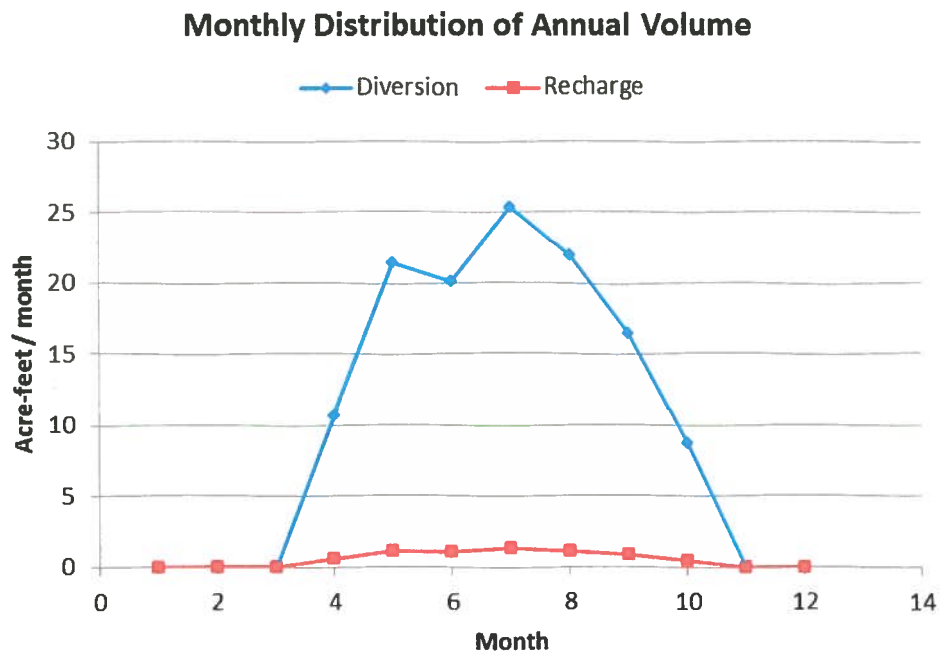


Figure 6: Monthly Diversion Seasonal Curve

In the Winflow model, observation points were located at each of the 15 wells in question to calculate the drawdown at these points. The model was run for a 20-year period and the results are shown on the attached plots. The calculated drawdowns are shown in Figure 7. An aerial map with the calculated drawdown effect lines is provided in Figure 8.

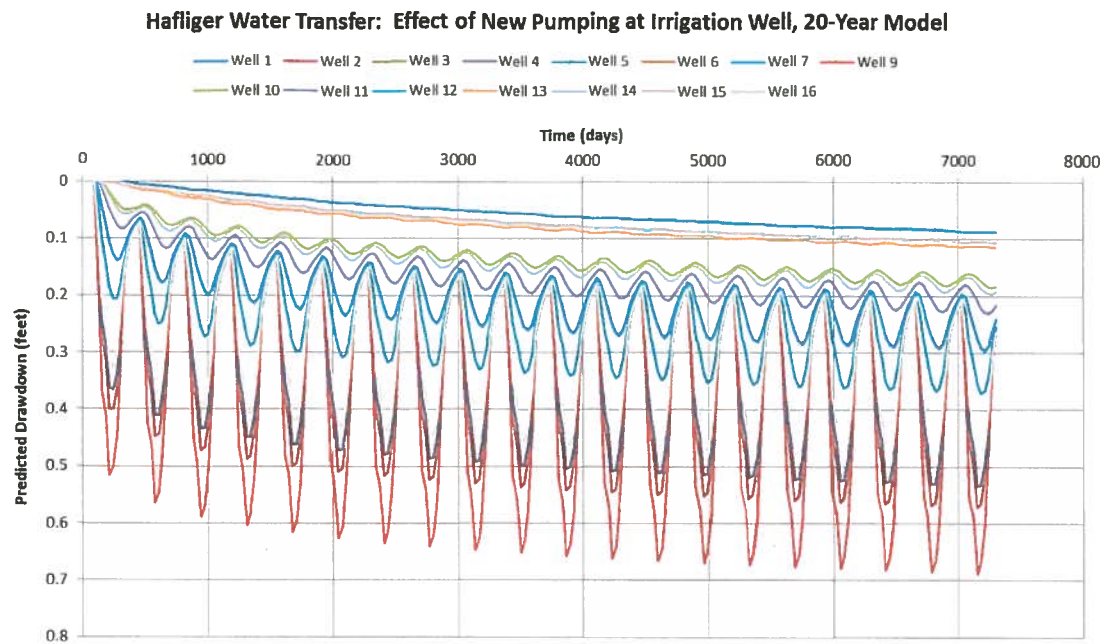


**Figure 7: 20 Year Drawdown Estimation with a 55 ft/day hydraulic conductivity.**

For the irrigation transfer, maximum drawdown ranges from 0.087 to 0.688 feet (1.0 to 8.3 inches). The larger drawdowns are observed at the wells within on-quarter mile of the proposed irrigation well, i.e Wells 2, 4, 9 and 16. Apart from these wells, all drawdowns are less than 0.4 feet. These drawdowns are very small and are negligible relative to the observed seasonal fluctuations of the water table and the normal operation of a domestic well. Complete results for the Winflow model analysis are located in Appendix F.

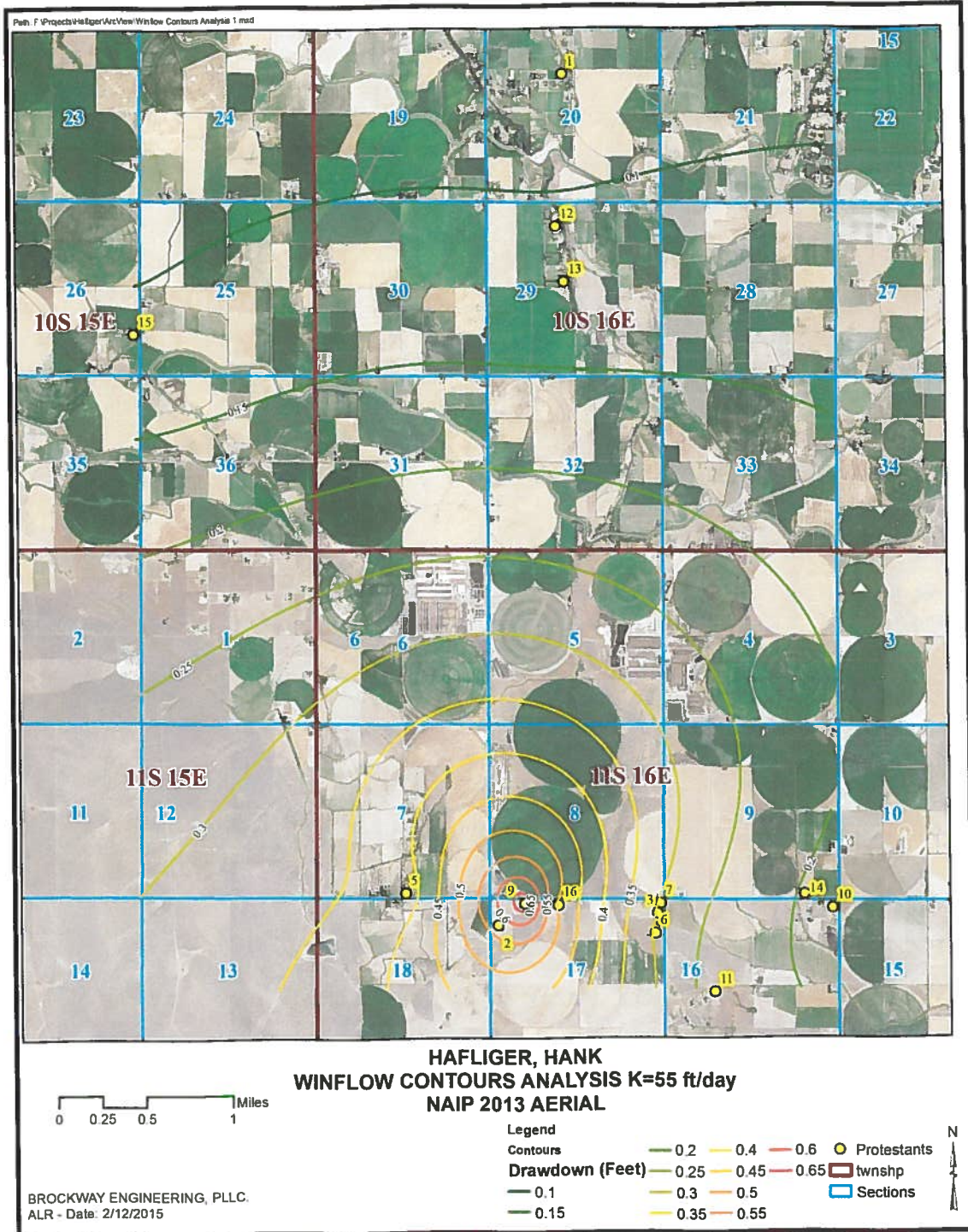


Figure 8: Expected Drawdown Affect (Feet) with a 55 ft/day hydraulic conductivity.

### E.3. Winflow Analysis 2

A second Winflow model analysis was performed utilizing the hydraulic conductivity value of 15.3 ft/day to utilize specific aquifer conditions calculated from local well drillers logs and pump tests. This hydraulic conductivity value was calculated by examination of local well logs and utilizing pump test data from those well logs. The well logs are identified in Table 2. Table 2 contains the data collected from the identified well logs and the pump test performed on the proposed irrigation well on October 7<sup>th</sup> and 8<sup>th</sup> 2014.

**Table 2: Transmissivity and Hydraulic Conductivity Estimation with Partial Penetration.**

**Transmissivity Estimation with Partial Penetration**

Bradbury and Rothschild (1985) specific capacity method.

Suitable for situations where a single time and drawdown measurement is available.

Includes effects of partial penetration using Sternberg (1973) approach.

| Well No. | Name           | Location <sup>1</sup> | Pumping Rate [gpm] | Drawdown [ft] | Time [min] | Well radius [in] | Storativity | SWL [ft] | Well Depth [ft] | Aquifer bottom <sup>2</sup> [ft] | Open interval [ft] | Average aquifer thickness [ft] | Calc T [ft <sup>2</sup> /d] | Calc K [ft/d] |
|----------|----------------|-----------------------|--------------------|---------------|------------|------------------|-------------|----------|-----------------|----------------------------------|--------------------|--------------------------------|-----------------------------|---------------|
| 1        | 13 Domestic    | 11S15E1SESW           | 20                 | 90            | 60         | 3                | 0.15        | 210      | 345             | 700                              | 45                 | 445.0                          | 340.5                       | 0.8           |
| 2        | 27 Domestic    | 11S15E1NWNE           | 30                 | 21            | 60         | 3                | 0.15        | 269      | 355             | 700                              | 65                 | 420.5                          | 1493.9                      | 3.6           |
| 3        | 32 Domestic    | 11S16E17NENW          | 20                 | 90            | 120        | 3                | 0.15        | 410      | 555             | 700                              | 55                 | 245.0                          | 146.4                       | 0.6           |
| 4        | 80 Irrigation  | 11S16E5NWNE           | 900                | 21            | 1260       | 8                | 0.15        | 193      | 485             | 700                              | 271                | 496.5                          | 13990.6                     | 28.2          |
| 5        | 84 Domestic    | 11S16E6NWNE           | 15                 | 60            | 180        | 3                | 0.15        | 340      | 500             | 700                              | 100                | 330.0                          | 129.4                       | 0.4           |
| 6        | 86 Domestic    | 11S16E9NENE           | 19                 | 72            | 30         | 3                | 0.15        | 288      | 500             | 700                              | 140                | 376.0                          | 103.8                       | 0.3           |
| 7        | 87 Domestic    | 10S16E32SESE          | 658                | 35            | 18         | 3                | 0.15        | 188      | 250             | 700                              | 27                 | 494.5                          | 53425.0                     | 108.0         |
| 8        | 102 Irrigation | 11S16E9NESE           | 100                | 132           | 240        | 6                | 0.15        | 318      | 720             | 700                              | 270                | 316.0                          | 97.0                        | 0.3           |
| 9        | 114 Domestic   | 10S15E36SENW          | 20                 | 90            | 30         | 3                | 0.15        | 250      | 343             | 700                              | 3                  | 405.0                          | 4136.0                      | 10.2          |
| 10       | Pump Test Well | 10S15E36SENW          | 140                | 153           | 960        | 4                | 0.15        | 247      | 550             | 700                              | 150                | 376.5                          | 378.9                       | 1.0           |

|         |             |             |
|---------|-------------|-------------|
| Mean    | <b>7424</b> | <b>15.3</b> |
| Median  | 359.7       | 0.9         |
| Max     | 53425.0     | 108.0       |
| Min     | 97.0        | 0.3         |
| Std dev | 16728.0     | 33.7        |

<sup>1</sup> From drilling records, corrected if needed based on water right records and/or aerial photo evidence.

<sup>2</sup> From Preliminary Report on Ground Water in the Salmon Falls Area, Twin Falls County Idaho Geological Survey Circular 436, K. H. Fowler, 1960

The hydraulic conductivity value of 15.3 ft/day is considered very conservative compared to published values for similar strata. Hydraulic conductivity values are best calculated from pump tests that have a high discharge over an extended period of time. The high discharge rate is important to stress or maximize the ability of the aquifer to provide water. If a pump test is not capable of stressing the aquifers ability to provide water, then the estimated hydraulic conductivity value will be smaller than the actual hydraulic conductivity value.

Typically, large discharge pump tests are performed for irrigation, municipal and industrial beneficial uses. These large discharge pump tests must be performed

with large pumps for a period of time that spans several hours to several days. Domestic wells are small production wells that typically require a discharge of less than 20 gpm.

By using the 15.3 ft/day hydraulic conductivity value, the range of calculated drawdown effects after 20 years of pumping for the irrigation transfer is 0.13 to 1.94 feet (1.6 to 23.3 inches) and are depicted in Figure 9. An aerial map with the calculated drawdown affect lines is provided in Figure 10. These drawdowns are small and are negligible relative to the operation of a domestic well. Complete results for the Winflow model analysis are located in Appendix G.

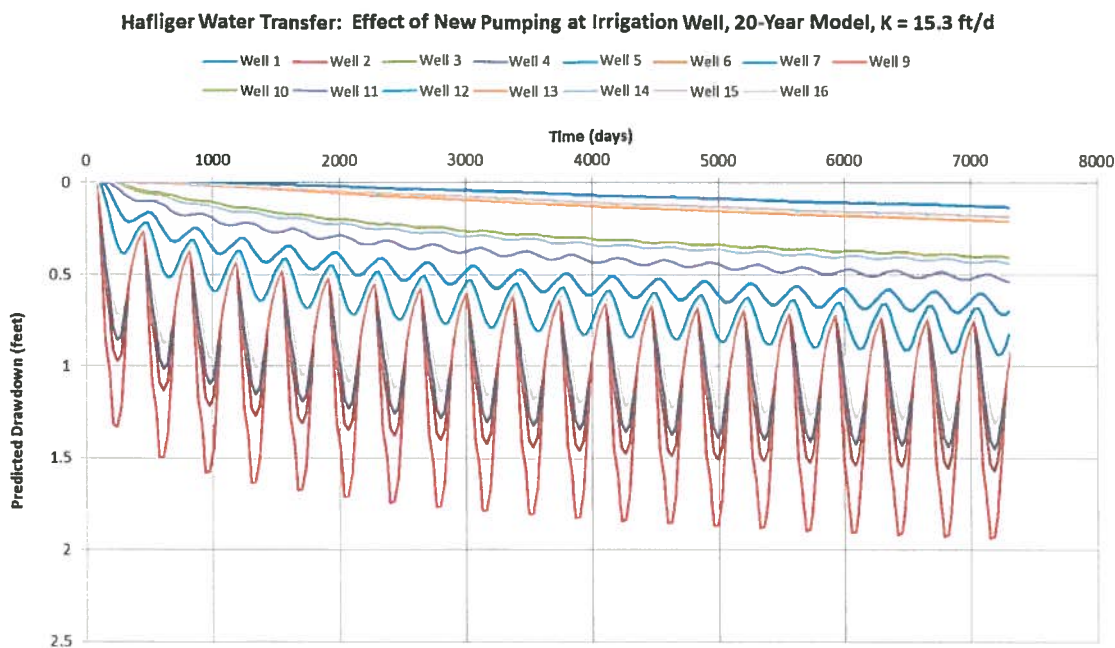


**Figure 9: 20 Year Drawdown Estimation with a 15.3 ft/day hydraulic conductivity.**

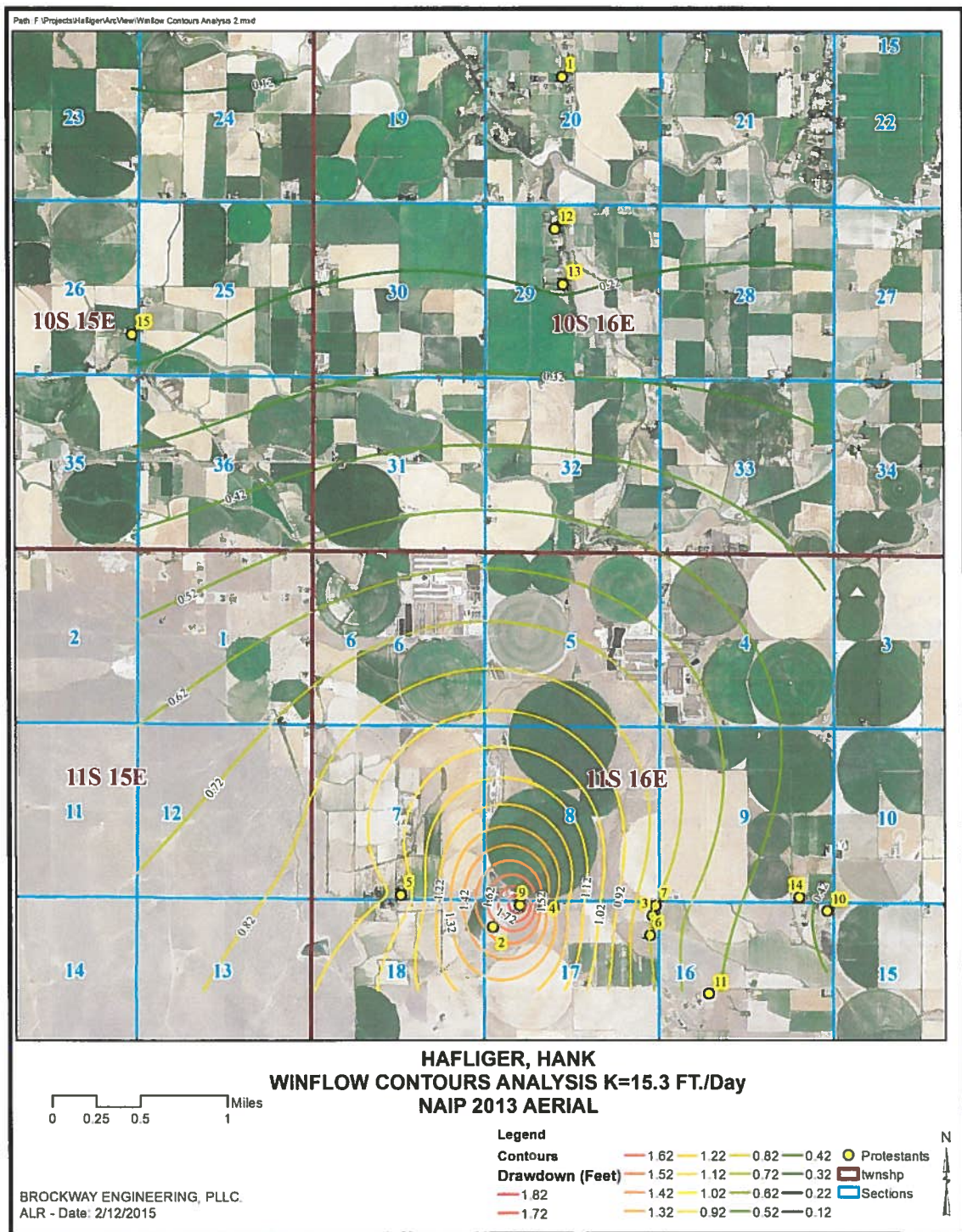


Figure 10: Expected Drawdown Affect (Feet) with a 15.3 ft/day hydraulic conductivity.

## **F. Evaluation of Transfer Application Criteria**

### **F.1. Authority to File**

Transfer 79384 was filed in the name of Thomas and Dorothy Leno. Thomas and Dorothy Leno currently own water right 47-17589. Dorothy Leno passed away several years ago, so Thomas Leno has sole ownership of water right 47-17589. Thomas Leno and Cedar Ridge Dairy have entered into an agreement that Cedar Ridge Dairy will purchase the portion of water included in Transfer 79380 after the transfer is approved.

After the proposed transfer is approved and payment for the water right has been accepted. The seller will Deed the water right to the buyer. The buyer then has the responsibility to update the ownership of the water right with the Idaho Department of Water Resources.

### **F.2. Water Right Validity**

Water right 47-17589 (Parent 47-7106) was partially decreed in the Snake River Basin Adjudication June 1, 2010. The Idaho Department of Water Resources allows a five year period of non-use after partial decree year before the water right can be considered subject to forfeiture. Therefore, 47-17589 is a valid irrigation water right.

### **F.3. Injury to Other Water Rights and Domestic Wells**

Natural occurring seasonal fluctuations in the USGS/IDWR monitoring wells have an approximate 5 feet elevation shift annually which is due to precipitation, seepage loss from irrigation, canals, reservoirs and stream channels. Based on the hydraulic analysis of the ground water aquifer and the Winflow analyses for Transfer 79384, the largest additional drawdown to be expected from approval of this transfer is 1.94 feet or 23.3 inches at the McCreary well (Well 9). Although this additional drawdown may be observed, it cannot be definitively measured

with an annual water level shift of 5 feet. It is expected that no significant hydraulic impact on local domestic wells will occur.

F.4. Enlargement of Use

Brockway Engineering has performed analysis of the historical water use from water right 47-7106. Transfer 79384 proposes to use the water right for the same irrigation purpose, with no increase in irrigated acres. There will be no enlargement of historical use.

F.5. Local Public Interest

This transfer will allow a local farming business to improve its farming practices. This transfer does not allow for an increase in acres irrigated, volume diverted, or a diversion rate above the decreed rate. Effects on the domestic wells owned by the Protestants' of this transfer are expected to be insignificant and not injurious to any water rights.

F.6. Beneficial Use/Conservation of Water Resources

The currently approved beneficial use of irrigation is recognized as a beneficial uses of water by the Idaho Department of Water Resources. The Applicant proposes to irrigate with pivots and sprinklers. The use of such equipment is common practice throughout southern Idaho and consistent with the conservation of water resources in the state.

**G. Ground Water Monitoring**

When Transfer #79384 is approved, the farm operators will install a magnetic flow meter that is approved by IDWR and will record monthly discharge volumes. This data will be made available to the Idaho Department of Water Resources upon request by the Idaho Department of Water Resources.

## References

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- Young, Norman and Ralston, Dale R., 1971  
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- Cosgrove, Donna M., Johnson, Gary S., Brockway, Charles E. and Robison, Clarence W. (1998).  
Development of a Transient Ground-Water Model for the Twin Falls Area, Idaho. Idaho Water Resources Research Institute. University of Idaho Moscow, Idaho

## Appendix

## Appendix A:

### Water Source

Water right 47-7106 is a ground water right. The well for 47-7106 was drilled in 1972. The well has a diameter of 8 inches and was drilled to a depth of 1080 feet. The well is located at Township 16 South Range 16 East Section 32 NWNW.

### Water Right History

Due to the isolated location of water right 47-7106, power to the well has historically been provided by a diesel powered generator. Crops have been irrigated by ground water on the farm since 1972. Affidavits from Thomas Leno Senior, Thomas Leno Junior and Vern Buss have been signed and notarized.

Water right 47-7106 was stacked with water rights 47-7287, 47-2118, 47-2048 and 47-14285 that utilize water from Mule Creek. Water right 47-7287 provides storage water and irrigation water. Water right 47-2118 provides stockwater and irrigation water. Water right 47-2048 provides stockwater and irrigation water. Water right 47-14285 provides irrigation water.

Water right 47-7106 has a December 25, 1970 priority date and is allowed to pump 1.85 cfs for a total volume of 465 acre feet annually on 155 acres.

USE TYPEWRITER OR  
BALL POINT PEN

State of Idaho  
Department of Water Administration  
**WELL DRILLER'S REPORT**

State law requires that this report be filed with the State Reclamation Engineer  
within 30 days after completion or abandonment of the well.

RECEIVED

| <b>1. WELL OWNER</b><br>Name <u>Tam Leno</u><br>Address <u>2225 Castberry Lane</u><br><u>Las Vegas, Nevada</u><br>Owner's Permit No. _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |      | <b>7. WATER LEVEL</b><br>Static water level <u>77</u> feet below land surface<br>Flowing? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Q.P.M. flow _____<br>Temperature <u>64</u> °F. Quality _____<br>Artesian closed-in pressure _____ p.s.i.<br>Controlled by <input type="checkbox"/> Valve <input type="checkbox"/> Cap <input type="checkbox"/> Plug                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                             |               |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
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---|---|-----|-----|-----|------------------|---|-----|-----|-----|-----------------|---|-----|-----|-----|------------|---|-----|-----|-----|-----------------|---|-----|-----|-----|-------------------------|---|-----|-----|-----|-----------------|---|-----|-----|-----|-----------------|---|-----|-----|-----|-------------------------|---|-----|-----|-----|--------------------|---|-----|-----|-----|--------------------------|---|-----|-----|-----|--------------|---|-----|-----|-----|--------------------------|---|-----|-----|-----|-------|---|-----|-----|-----|--------------------|---|-----|-----|-----|-------|---|-----|-----|-----|--------------------------|---|-----|-----|-----|-------------------------|---|-----|-----|-----|--------------------------|---|-----|-----|-----|-------------------------|---|-----|-----|-----|----------------------|---|-----|-----|-----|------------------------|---|-----|-----|-----|--------------------------|---|-----|-----|-----|-----------------------------|---|-----|-----|-----|-----------------------|---|-----|-----|-----|------------|---|-----|-----|-----|----------------------------|---|
| <b>2. NATURE OF WORK</b><br><input checked="" type="checkbox"/> New well <input type="checkbox"/> Deepened <input type="checkbox"/> Replacement<br><input type="checkbox"/> Abandoned (describe method of abandoning) _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |      | <b>8. WELL TEST DATA</b><br><input checked="" type="checkbox"/> Pump <input type="checkbox"/> Sucker <input type="checkbox"/> Other _____<br>Discharge (G.P.M.) <u>60</u> Draw Down <u>5'</u> Hours Pumped <u>2</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                             |               |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| <b>3. PROPOSED USE</b><br><input type="checkbox"/> Domestic <input checked="" type="checkbox"/> Irrigation <input type="checkbox"/> Test<br><input type="checkbox"/> Municipal <input type="checkbox"/> Industrial <input type="checkbox"/> Stock                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |      | <b>9. LITHOLOGIC LOG</b> <u>046197</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |                             |               |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| <b>4. METHOD DRILLED</b><br><input checked="" type="checkbox"/> Cable <input type="checkbox"/> Rotary <input type="checkbox"/> Dug <input type="checkbox"/> Other _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |      | <table border="1"> <thead> <tr> <th>Hole<br/>Depth</th> <th>From</th> <th>To</th> <th>Material</th> <th>Water</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td>14</td><td>Rock hard granitic chp.</td><td>X</td></tr> <tr><td>14</td><td>14</td><td>58</td><td>Dark clay of fine chp.</td><td>X</td></tr> <tr><td>58</td><td>58</td><td>77</td><td>Brown sandy clay</td><td>X</td></tr> <tr><td>77</td><td>77</td><td>198</td><td>Gray sand stone</td><td>X</td></tr> <tr><td>198</td><td>198</td><td>224</td><td>Brown sandstone</td><td>X</td></tr> <tr><td>224</td><td>224</td><td>247</td><td>Brown sandy clay &amp; chp.</td><td>X</td></tr> <tr><td>247</td><td>247</td><td>268</td><td>Brown clay</td><td>X</td></tr> <tr><td>268</td><td>268</td><td>278</td><td>Gray sand stone</td><td>X</td></tr> <tr><td>278</td><td>278</td><td>290</td><td>Brown sandy clay</td><td>X</td></tr> <tr><td>290</td><td>290</td><td>302</td><td>Gray sand stone</td><td>X</td></tr> <tr><td>302</td><td>302</td><td>336</td><td>Brown clay</td><td>X</td></tr> <tr><td>336</td><td>336</td><td>350</td><td>Gray sand stone</td><td>X</td></tr> <tr><td>350</td><td>350</td><td>364</td><td>Brown sand stone &amp; chp.</td><td>X</td></tr> <tr><td>364</td><td>364</td><td>383</td><td>Light gray clay</td><td>X</td></tr> <tr><td>383</td><td>383</td><td>422</td><td>Gray sand stone</td><td>X</td></tr> <tr><td>422</td><td>422</td><td>427</td><td>Brown sandy clay &amp; chp.</td><td>X</td></tr> <tr><td>427</td><td>427</td><td>432</td><td>Cemented sand chp.</td><td>X</td></tr> <tr><td>432</td><td>432</td><td>437</td><td>Light gray shale (stcky)</td><td>X</td></tr> <tr><td>437</td><td>437</td><td>447</td><td>Yellow shale</td><td>X</td></tr> <tr><td>447</td><td>447</td><td>452</td><td>Light gray shale (stcky)</td><td>X</td></tr> <tr><td>452</td><td>452</td><td>457</td><td>Black</td><td>X</td></tr> <tr><td>457</td><td>457</td><td>464</td><td>Dark shale (stcky)</td><td>X</td></tr> <tr><td>464</td><td>464</td><td>468</td><td>Black</td><td>X</td></tr> <tr><td>468</td><td>468</td><td>471</td><td>Light gray shale (stcky)</td><td>X</td></tr> <tr><td>471</td><td>471</td><td>478</td><td>Dark gray shale (stcky)</td><td>X</td></tr> <tr><td>478</td><td>478</td><td>483</td><td>Light gray shale (stcky)</td><td>X</td></tr> <tr><td>483</td><td>483</td><td>487</td><td>Dark gray shale (stcky)</td><td>X</td></tr> <tr><td>487</td><td>487</td><td>492</td><td>Dark gray sandy clay</td><td>X</td></tr> <tr><td>492</td><td>492</td><td>497</td><td>Dark gray clay &amp; shale</td><td>X</td></tr> <tr><td>497</td><td>497</td><td>502</td><td>Light gray shale (stcky)</td><td>X</td></tr> <tr><td>502</td><td>502</td><td>507</td><td>Gray shale &amp; dark rock chp.</td><td>X</td></tr> <tr><td>507</td><td>507</td><td>511</td><td>Gravelly tuff (candy)</td><td>X</td></tr> <tr><td>511</td><td>511</td><td>514</td><td>Black chp.</td><td>X</td></tr> <tr><td>514</td><td>514</td><td>518</td><td>Black chp. &amp; gravelly tuff</td><td>X</td></tr> </tbody> </table> |                             | Hole<br>Depth | From | To | Material | Water | 0 | 0 | 14 | Rock hard granitic chp. | X | 14 | 14 | 58 | Dark clay of fine chp. | X | 58 | 58 | 77 | Brown sandy clay | X | 77 | 77 | 198 | Gray sand stone | X | 198 | 198 | 224 | Brown sandstone | X | 224 | 224 | 247 | Brown sandy clay & chp. | X | 247 | 247 | 268 | Brown clay | X | 268 | 268 | 278 | Gray sand stone | X | 278 | 278 | 290 | Brown sandy clay | X | 290 | 290 | 302 | Gray sand stone | X | 302 | 302 | 336 | Brown clay | X | 336 | 336 | 350 | Gray sand stone | X | 350 | 350 | 364 | Brown sand stone & chp. | X | 364 | 364 | 383 | Light gray clay | X | 383 | 383 | 422 | Gray sand stone | X | 422 | 422 | 427 | Brown sandy clay & chp. | X | 427 | 427 | 432 | Cemented sand chp. | X | 432 | 432 | 437 | Light gray shale (stcky) | X | 437 | 437 | 447 | Yellow shale | X | 447 | 447 | 452 | Light gray shale (stcky) | X | 452 | 452 | 457 | Black | X | 457 | 457 | 464 | Dark shale (stcky) | X | 464 | 464 | 468 | Black | X | 468 | 468 | 471 | Light gray shale (stcky) | X | 471 | 471 | 478 | Dark gray shale (stcky) | X | 478 | 478 | 483 | Light gray shale (stcky) | X | 483 | 483 | 487 | Dark gray shale (stcky) | X | 487 | 487 | 492 | Dark gray sandy clay | X | 492 | 492 | 497 | Dark gray clay & shale | X | 497 | 497 | 502 | Light gray shale (stcky) | X | 502 | 502 | 507 | Gray shale & dark rock chp. | X | 507 | 507 | 511 | Gravelly tuff (candy) | X | 511 | 511 | 514 | Black chp. | X | 514 | 514 | 518 | Black chp. & gravelly tuff | X |
| Hole<br>Depth                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          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  |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| 0                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Dark gray clay & shale      | X             |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| 497                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Light gray shale (stcky)    | X             |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| 502                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Gray shale & dark rock chp. | X             |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| 507                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Gravelly tuff (candy)       | X             |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| 511                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Black chp.                  | X             |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| 514                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    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                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | Black chp. & gravelly tuff  | X             |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| <b>5. WELL CONSTRUCTION</b><br>Diameter of hole <u>8</u> inches Total depth <u>1080</u> feet<br>Casing schedule <input checked="" type="checkbox"/> Steel <input type="checkbox"/> Concrete<br>Thickness <u>2.50</u> inches <u>8.75</u> inches <u>1.1</u> feet <u>19</u> feet<br>Diameter <u>8.75</u> inches <u>8.75</u> inches <u>8.75</u> inches <u>8.75</u> inches<br>From _____ feet _____ feet _____ feet _____ feet<br>To _____ feet _____ feet _____ feet _____ feet<br>Was a packer or seal used? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Perforated? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>How perforated? <input type="checkbox"/> Factory <input type="checkbox"/> Knife <input type="checkbox"/> Torch<br>Size of perforation _____ inches by _____ inches<br>Number _____ perforations _____ feet _____ feet<br>_____ perforations _____ feet _____ feet<br>_____ perforations _____ feet _____ feet<br>Well screen installed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No<br>Manufacturer's name _____ Model No. _____<br>Type _____ Slot size _____ Set from _____ feet to _____ feet<br>Diameter _____ Slot size _____ Set from _____ feet to _____ feet<br>Gravel packed? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Size of gravel _____ feet<br>Placed from _____ feet to _____ feet<br>Surface seal? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No To what depth <u>18</u> feet<br>Material used in seal <input type="checkbox"/> Cement grout <input checked="" type="checkbox"/> Pudding clay |      | <b>10. DRILLER'S CERTIFICATION</b><br>This well was drilled under my supervision and this report is<br>true to the best of my knowledge.<br>Driller's or Firm's Name <u>Balay &amp; Henry</u> 86<br>Address <u>Murfreesboro, Idaho</u> Number _____<br>Signed by <u>Balay &amp; Henry</u> Date _____                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                             |               |      |    |          |       |   |   |    |                         |   |    |    |    |                        |   |    |    |    |                  |   |    |    |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                  |   |     |     |     |                 |   |     |     |     |            |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                 |   |     |     |     |                 |   |     |     |     |                         |   |     |     |     |                    |   |     |     |     |                          |   |     |     |     |              |   |     |     |     |                          |   |     |     |     |       |   |     |     |     |                    |   |     |     |     |       |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                          |   |     |     |     |                         |   |     |     |     |                      |   |     |     |     |                        |   |     |     |     |                          |   |     |     |     |                             |   |     |     |     |                       |   |     |     |     |            |   |     |     |     |                            |   |
| <b>6. LOCATION OF WELL</b><br>Sketch map location must agree with written location.<br><br>County <u>Twin Falls</u><br><u>N.W. 1/4 Sec. 32 T. 16 N. R. 16 E.</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |      | Work started <u>26 April 1972</u> Finished <u>21 July 1972</u><br>10. <u>1081</u> Black chp. & gravelly tuff<br>10. <u>1080</u> Black chp. & gravelly tuff<br>10. <u>1079</u> Black chp. & gravelly tuff                                                                                                                                                                                                                                                                                                                                                                                                                                             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USE ADDITIONAL SHEETS IF NECESSARY

FORWARD THE WHITE, BLUE, AND PINK COPIES TO THE DEPARTMENT

BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF WATER RIGHT  
NO. 47-7106, 47-7287 & 47-14285  
FOR IRRIGATION

)  
)  
)  
)

COMMENTS AND  
EVIDENCE OF  
THOMAS LENO JR.

---

CCMES NOW, Thomas Leno Sr., and provides the following comments and evidence in this matter:

1. I am familiar with the property located in Section 20 and 29, T. 16 S., R. 16 E., B.M. hereafter known as the "Property." The Property is located in Twin Falls County close to the City of Jackpot, Nevada and is known as the Leno Farm.
2. My involvement/Title associated with Property is/was Owner/Manager.
3. I am knowledgeable of the irrigation system, and crops that were irrigated during the time outlined in the affidavit signed by Vern Buss on December 12, 2010 (see attached affidavit).
4. It is my understanding that the affidavit signed by Vern Buss was not entirely clear as to the amount of irrigation that occurred on the Leno Farm for the years indicated in his affidavit.

In an effort to clarify Vern Buss's affidavit, additional information has been gathered and is now being presented to IDWR. This information includes aerial imagery and rain and snow precipitation data for Magic Mountain and Wilson Creek.

In 1999, irrigation water from Mule Creek and the ground water well was applied on the farm. The ground water well provided 155 acres of irrigation water. We used all of the water available from Mule Creek and applied it to the remaining farmable acres. A 1999 aerial infrared image of the Leno Farm provided by IDWR indicates that an estimated 217.2 acres were irrigated in 1999.

In 2000, irrigation water for the farm was provided exclusively by the ground water well due to insufficient flow of water in Mule Creek.

In 2001, irrigation water for the farm was provided exclusively by the ground water well due to insufficient flow of water in Mule Creek.

In 2002, irrigation water for the farm was provided exclusively by the ground water well due to insufficient flow of water in Mule Creek.

In 2003, irrigation water for the farm was provided exclusively by the ground water well due to insufficient flow of water in Mule Creek.

In 2004, irrigation water was supplied by ground water well and Mule Creek. My recollection is that the ground water well and the Mule Creek water was utilized fully for this year. The analysis of the 2004 aerial shows that the water rights were utilized to their full potential for irrigation purposes. The ground water well was used to irrigate 155 acres and water from Mule Creek was used to irrigate the rest of the farm when it was available. This was the last year that irrigation occurred on this farm.

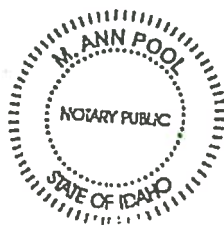
DATED this 24 day of February, 2012.

Thomas Leno Jr.  
Thomas Leno Jr.

SUBSCRIBED and SWORN to before me

this 24 day of February, 2012.

M. Ann Pool  
NOTARY PUBLIC  
Residing at : Swain Falls  
My Commission Expires: April 5, 2016



BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF WATER RIGHT  
NO. 47-7106, 47-7287 & 47-14285  
FOR IRRIGATION

)  
)  
)  
)

COMMENTS AND  
EVIDENCE OF  
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3. I am knowledgeable of the irrigation system, and crops that were irrigated during the time outlined in the affidavit signed by Vern Buss on December 12, 2010 (see attached affidavit).
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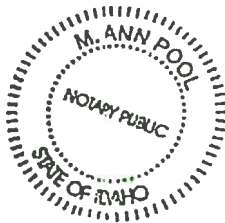
DATED this 24 day of February, 2012.

Thomas Leno  
Thomas Leno Sr.

SUBSCRIBED and SWORN to before me

this 24 day of February, 2012.

M. Ann Pool  
NOTARY PUBLIC  
Residing at: Twain Falls  
My Commission Expires: April 5, 2016



BEFORE THE IDAHO DEPARTMENT OF WATER RESOURCES

IN THE MATTER OF WATER RIGHT )  
 NO. 47-7106, 47-7287 & 47-14285 ) COMMENTS AND  
 FOR IRRIGATION ) EVIDENCE OF  
 ) Vern Buss  
 )

COMES NOW, Vern Buss, and provides the following comments and evidence in this matter:

1. I am familiar with the property located in Section 20 and 29, T. 16 S., R. 16 E., B.M. hereafter known as the "Property." The Property is located in Twin Falls County close to the City of Jackpot, Nevada and is known as the Leno Farm.
2. My involvement/Title associated with Property is/was Farm Manager.
3. I am knowledgeable of the irrigation system, and crops that were irrigated during the time outlined in Item 4.
4. The year, crop type and water source on the Property have consisted of:

| Year | Crop              | Water Source (%) |            |
|------|-------------------|------------------|------------|
|      |                   | Ground Water     | Mule Creek |
| 1999 | Grian, Hay, Beans | 90%              | 10%        |
| 2000 | Grian, Hay        | 100%             |            |
| 2001 | Grian, Hay        | 100%             |            |
| 2002 | Grian, Hay        | 100%             |            |
| 2003 | Grian, Hay        | 80%              | 20%        |
|      |                   |                  |            |
|      |                   |                  |            |
|      |                   |                  |            |

5. Explanation of how irrigation water is diverted and delivered on the Property:  
Water was delivered by wheel lines, hand lines and pivots. Pressurized systems utilized a diesel powered pump to provide irrigation water from the well and storage pond.

DATED this 17 day of December, 20 10.

Vern Buss  
Vern Buss

SUBSCRIBED and SWORN to before me

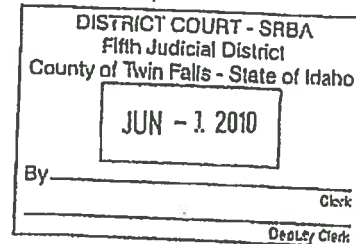
this 17 day of December, 20 10.



M. Ann Pool  
NOTARY PUBLIC  
Residing at: Turn Falls County Idaho  
My Commission Expires: 4-5-2016

IN THE DISTRICT COURT OF THE FIFTH JUDICIAL DISTRICT OF THE  
STATE OF IDAHO, IN AND FOR THE COUNTY OF TWIN FALLS

In Re SREA )  
 ) PARTIAL DECREE PURSUANT TO  
 ) I.R.C.P. 54(b) FOR  
 )  
 ) Water Right 47-07106  
 )



NAME AND ADDRESS: DONOTTY LENO  
THOMAS LENO  
4236 N 1500 E  
TWIN FALLS, ID 83116

SOURCE: GROUND WATER

QUANTITY: 1.02 CFS  
465.00 AFW

This right when combined with all other rights shall provide more than 0.02 cfs per acre not more than 1.0 cfs per acre the field headgate for irrigation of the lands below.

PRIORITY DATE: 12/25/1970

POINT OF DIVERSION: 1169 R16E S20 NMSWEN Within Twin Falls County

| PURPOSE AND PERIOD OF USE | PURPOSE OF USE | PERIOD OF USE  | QUANTITY               |
|---------------------------|----------------|----------------|------------------------|
| Irrigation                |                | 04-01 TO 11-01 | 1.95 CFS<br>465.00 AFW |

| PLACE OF USE:     | Irrigation | Within Twin Falls County |
|-------------------|------------|--------------------------|
| 1169 R16E S20     | SWEN 40.0  | SEEN 12.0                |
| S20               | NENW 20.0  | NSNW 40.0                |
|                   | SWNW 20.0  | SENW 15.0                |
| 155.0 Acres Total |            |                          |

OTHER PROVISIONS NECESSARY FOR DEFINITION OR ADMINISTRATION OF THIS WATER RIGHT:

THIS PARTIAL DECREE IS SUBJECT TO SUCH GENERAL PROVISIONS NECESSARY FOR THE DEFINITION OF THE RIGHTS OR FOR THE EFFICIENT ADMINISTRATION OF THE WATER RIGHTS AS MAY BE ULTIMATELY DETERMINED BY THE COURT AT A POINT IN TIME NO LATER THAN THE ENTRY OF A FINAL UNIFIED DECREE: I.R.C. SECTION 42-2412(c).

RULE 54(b) CERTIFICATE

With respect to the issues determined by the above judgment or order, it is hereby CERTIFIED, in accordance with Rule 54(b), I.R.C.P., that the court has determined that there is no just reason for delay of the entry of a final judgment and that the court has and does hereby direct that the above judgment or order shall be a final judgment upon which execution may issue and an appeal may be taken as provided by the Idaho Appellate Rules.

Eric J. Waldman  
Presiding Judge of the  
Snake River Basin Adjudication

## Appendix B:

## ADMINISTRATOR'S MEMORANDUM

Multiple Programs Memo No. 2

To: Regional Offices  
Water Allocation Bureau

From: Gary Spackman *Gary S*

Re: FORFEITURE REVIEW PERIOD

Date: March 5, 2012

Idaho Code § 42-222(2) provides that all rights to the use of water shall be lost and forfeited by a failure for the term of five years to apply it to the beneficial use for which it was appropriated. Idaho Code § 42-222(3&4) provides that the Department may grant an extension for an additional five years for good cause shown if an application for extension is made before the end of the five year period. Idaho Code § 42-223 provides for exceptions or defenses to forfeiture. Experience in the Snake River Basin Adjudication (SRBA) and other court cases have provided additional guidance on the subject of forfeiture. In general, forfeiture is not favored; however, the Department has a responsibility to review water rights to determine if forfeiture has occurred prior to approving (or denying) certain applications affecting existing water rights.

In 1999, the SRBA court issued a decision tolling the forfeiture period for a water right during the time period that a claim is pending in the adjudication. The Department has presumed that water rights are not forfeited for non-use during the five-year period following issuance of a partial decree. For many water rights decreed in the SRBA, the initial five-year period has ended or will end soon, and Department employees are increasingly faced with questions regarding a cut-off date to determine if forfeiture has occurred and when action must be taken to protect a water right from forfeiture. For example, if a partial decree is issued during the middle of the irrigation season, is it appropriate to assume that five full irrigation seasons of non-use (in addition to the first partial season) must pass before the right is considered to be forfeited? If so, would the right holder need to initiate some action to protect the right from forfeiture prior to the end of the five full seasons, or prior to the beginning of the sixth irrigation season, or some other time? In the past, the Department has presumed that resumption at the beginning of the sixth season would prevent forfeiture on the basis that junior irrigation rights would not have had opportunity to establish some reliance on the unused water during the non-irrigation season. What if the need for irrigation water is further delayed in the sixth season due to a wet spring?

The purpose of this memo is to address the timing questions that arise during forfeiture review by providing Department employees with a simple and uniform forfeiture review period. This memo applies to forfeiture review associated with applications to lease a water right to the Water Supply Bank, applications for extension of time to avoid forfeiture, and applications for transfer of a water right. This memo applies to both irrigation and non-irrigation water rights.

The Department will presume that beneficial use under a water right during a portion of a calendar year or any defense or protection from forfeiture applicable during a portion of a calendar year will apply to the entire calendar year. For example, if an irrigation right is used to establish a cover crop at the beginning of an irrigation season and is not used during the remainder of the irrigation season; the right will be considered protected from forfeiture through December 31 of that calendar year. Likewise, if an irrigation right is decreed at the beginning of a calendar year (prior to the beginning of the irrigation season) and is not used at any time during the irrigation season, the right will still be considered protected from forfeiture for that entire calendar year.

The Department will also presume that resumption of beneficial use under a water right for a portion of a calendar year or any defense or protection initiated during a calendar year will apply to the entire calendar year. For example, if an irrigation right is used to establish a fall crop at the end of an irrigation season, even if the right was not used earlier during the irrigation season, the right will be considered protected from forfeiture for that calendar year. Likewise, if an application for lease to the Water Supply Bank is submitted before the end of a calendar year and eventually approved and the right is not used at any time during that calendar year, the right will be considered protected from forfeiture for that calendar year.

Strict application of Idaho Code § 42-222(4) would require an application for extension of time to avoid forfeiture to be submitted prior to the end of the fifth unprotected year of non-use. However, the Department wishes to avoid questions and conflicts surrounding the timing of resumption during an irrigation season and to maintain simple and uniform guidance to Department employees. Therefore, the Department will presume that resumption of beneficial use or any defense or protection, including filing an extension of time to avoid forfeiture, initiated before the end of the sixth calendar year will prevent a finding of forfeiture by the Department.

As an example, if an irrigation right is decreed in the SRBA in January, 2004 and water is not used during 2004, 2005, 2006, 2007, 2008 and 2009, then resumption or action initiating a defense or protection from forfeiture must occur prior to the end of the calendar year in 2010. The 2004 calendar year is considered protected since the decree was issued during that year. The years 2005 through 2009 represent the five year period of non-use. The Department would not find forfeiture if use resumed before the end of calendar year 2010. An application to lease the water right to the Water Supply Bank or other action initiating a defense or protection from forfeiture would apply similarly<sup>1</sup>.

As another example, if an extension of time to avoid forfeiture is granted for five years, the Department will presume that resumption of beneficial use or any defense or protection initiated before the end of the sixth calendar year will prevent a finding of forfeiture by the Department. Continuing with the example above, if an application for extension of time to avoid forfeiture was submitted in 2010 and the Department granted an extension for the years 2010, 2011, 2012, 2013 and 2014, then resumption or other action initiating a defense or protection from forfeiture must occur prior to the end of calendar year 2015. Note that, pursuant to Idaho Code § 42-222(4), the Department would still be required to provide notice at least 60 days prior to the end of 2014 that resumption and a report is due by December 31, 2014. However, the Department would not find forfeiture if resumption of beneficial use or

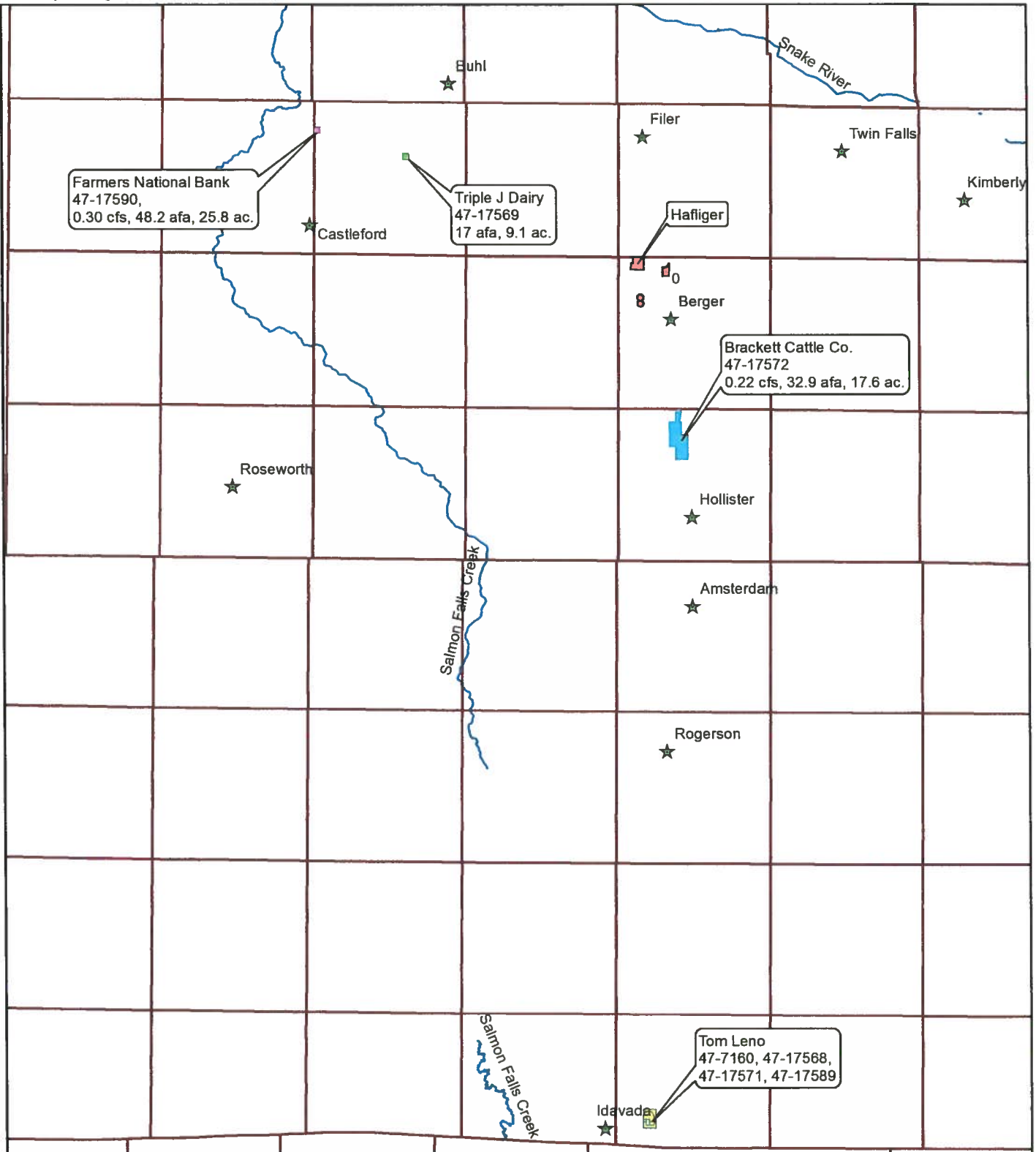
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<sup>1</sup> Filing an application for transfer does not toll the statutory period for forfeiture of a water right due to non-use.

other action initiating a defense or protection from forfeiture occurred prior to the end of calendar year 2015.

This memo does not change Department policy on partial forfeiture. Forfeiture of a portion of a water right may occur if beneficial use is reduced for the statutory period as applied under the guidance of this memo. When discussing forfeiture issues, Department employees and water users should be mindful that any Department decision or action where forfeiture may be an issue can be contested and certain facts may lead to a different conclusion in an administrative hearing, or judicial review.

## Appendix C:



0 3 6 12 Miles

# **HAFLIGER, HANK** **LENO WATER RIGHTS TRANSFERS** **NAIP 2013 AERIAL**

## **Legend**

- |                        |                       |                       |
|------------------------|-----------------------|-----------------------|
| — Rivers               | FARMERS NATIONAL BANK | Hafliger_Transfer_POU |
| Leno_WR_Transfers      | LENO                  | township              |
| C E BRACKETT CATTLE CO | TRIPLE J DAIRY        | ★ cities              |
| DOROTHY LENO           |                       |                       |



## MEMORANDUM

**Date:** July 25, 2011  
**To:** Transfer 77406 File  
**From:** Corey Skinner  
**Re:** Evaluation of Sufficiency of Information Submitted

---

Application proposes transferring a 9.1 acre (0.12 cfs & 17.0 afa) portion of a groundwater irrigation right, 47-7106, appurtenant to a farm located approximately 14.5 miles south and 1.0 mile west of Rogerson to stock water and commercial uses associated with an existing dairy operation located approximately 2.5 miles south and 2.0 miles west of the center of Buhl. The application also proposes to modify the described locations of the points of diversion on the existing water right (0.26 cfs & 16.0 afa) at the dairy to reflect the actual location of the wells at the dairy site. Two existing wells at the dairy site will be used to divert up to a total of 0.38 cfs and 34.2 afa) of water. Note that the place of use of groundwater right 47-7106 overlaps the place of use of two Mule Creek Rights, 47-7287 and 47-14285. The application includes a detailed supplemental analysis of the past use of right 47-7106. The application also includes a relinquishment form signed by the current owner of right 47-14285 relinquishing a 9.1 acre portion of right 47-14285. In addition, the application also includes a signed statement reducing the authorized place of use of right 47-7287 by 9.1 acres. However, note that the 47-7287 statement proposes to retain the full amount (actually a rather small amount) of irrigation storage volume and irrigation from storage volume authorized by right 47-7287.

- **Authority to File:**  
The application includes purchase and sale documents that give the applicant (Idaho Water Company) authority to file a transfer involving rights 47-7106 and 47-13694. Documents signed by the current owner address overlapping rights 47-7287 and 47-14285.
- **Water Right Validity:** All the rights involved with the transfer were decreed in the SRBA in 2010.
- **Injury to Other Water Rights:**  
The current point of diversion for right 47-7106 and the proposed points of diversion at the dairy site are located approximately 39 miles away from each other. However, both locations are located within IDWR administrative basin 47. In addition, the application includes copies of published reports relating to studies of the groundwater within the Salmon Falls Creek Basin in an attempt to show the interconnection of the aquifer between the current point of diversion for right 47-7106 and the dairy site.

- **Enlargement of Use:**  
None anticipated. Conversion from irrigation to stock water and commercial use (based on consumptive use of irrigation right) will result in a net decrease in the allowable annual diversion volume.
- **Local Public Interest:**  
No issues anticipated, but application will be subject to public notice and protest.
- **Beneficial Use/Conservation of Water Resources:**  
Proposed uses are recognized as beneficial uses of water.

**Review of the application finds there is no clear inconsistency with criteria set forth in Section 42-222 Idaho Code preventing processing of this application.**



State of Idaho

**DEPARTMENT OF WATER RESOURCES**

Southern Region, 1341 Fillmore Street, Suite 200 • Twin Falls, Idaho 83301-3380

Phone: (208) 736-3033 • Fax: (208) 736-3037 • Web Site: [www.idwr.idaho.gov](http://www.idwr.idaho.gov)

C. L. "BUTCH" OTTER  
Governor

GARY SPACKMAN  
Interim Director

November 2, 2011

IDAHO WATER CO LLC  
1135 VALLEY RD S  
EDEN ID 83325

THOMAS LENO  
DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

DUFF JACOBSON  
FLINT JACOBSON  
1291 E 3900 N  
BUHL ID 83316

TRIPLE J DAIRY  
C/O FLINT JACOBSON  
1291 E 3900 N  
BUHL ID 83316

RE: Transfer No.: 77406  
Water Right No(s): 47-13694 47-7106 47-7287 47-14285

**Transfer Approval Notice**

Dear Water Right Holder and other Interested Persons:

The Department of Water Resources has issued the enclosed approved Transfer of Water Right(s). Please be sure to thoroughly review the conditions of approval and remarks listed on the approval document.

The Transfer of Water Right(s) is a PRELIMINARY ORDER issued by the Department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action by the Department unless the APPLICANT petitions for reconsideration or files an exception and/or brief within fourteen (14) days of the service date as described in the enclosed information sheet.

ANY PERSON aggrieved by any decision, determination, order or action of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Department and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

If the transfer approval includes a condition requiring measuring and recording devices, such devices shall comply with specifications established by the Department. Detailed specifications are available on the Department's homepage on the Internet, or you can request a copy by contacting any office of the Department. Please be sure to thoroughly review the specifications to avoid unnecessary costs for reinstallation or modification due to non-conforming or improperly installed devices.

Please note that water right owners are required to report any change of water right ownership and/or mailing address to the Department within 120 days of the change. Failure to report these changes could result in a \$100 late filing fee. Contact any office of the Department or visit the Department's homepage on the Internet to obtain the proper forms and instructions.

If you have any questions, please contact me at 208-736-3033.

Sincerely,



Allen Merritt  
Southern Regional Manager

Enclosure(s)

cc:

BROCKWAY ENGINEERING PLLC

CERTIFICATE OF SERVICE

I hereby certify that on November 2, 2011 I mailed a true and correct copy, postage prepaid, of the foregoing TRANSFER APPROVAL to the person(s) listed below:

RE: TRANSFER NO. 77406  
WATER RIGHTS NOS. 47-13694 47-7106 47-7287 47-14285

IDAHO WATER CO LLC  
1135 VALLEY RD S  
EDEN ID 83325

THOMAS LENO  
DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

DUFF JACOBSON  
FLINT JACOBSON  
1291 E 3900 N  
BUHL ID 83316

TRIPLE J DAIRY  
C/O FLINT JACOBSON  
1291 E 3900 N  
BUHL ID 83316

BROCKWAY ENGINEERING PLLC  
C/O GREG SULLIVAN  
2016 N WASHINGTON ST STE 4  
TWIN FALLS ID 83301



Denise Buffington  
Administrative Assistant

## EXPLANATORY INFORMATION TO ACCOMPANY A PRELIMINARY ORDER

(To be used in connection with actions when a hearing was not held)

(Required by Rule of Procedure 730.02)

The accompanying order or approved document is a "Preliminary Order" issued by the department pursuant to section 67-5243, Idaho Code. It can and will become a final order without further action of the Department of Water Resources ("department") unless a party petitions for reconsideration, files an exception and brief, or requests a hearing as further described below:

### PETITION FOR RECONSIDERATION

Any party may file a petition for reconsideration of a preliminary order with the department within fourteen (14) days of the service date of this order. Note: the petition must be received by the department within this fourteen (14) day period. The department will act on a petition for reconsideration within twenty-one (21) days of its receipt, or the petition will be considered denied by operation of law. See Section 67-5243(3) Idaho Code.

### EXCEPTIONS AND BRIEFS

Within fourteen (14) days after: (a) the service date of a preliminary order, (b) the service date of a denial of a petition for reconsideration from this preliminary order, or (c) the failure within twenty-one (21) days to grant or deny a petition for reconsideration from this preliminary order, any party may in writing support or take exceptions to any part of a preliminary order and may file briefs in support of the party's position on any issue in the proceeding with the Director. Otherwise, this preliminary order will become a final order of the agency.

### REQUEST FOR HEARING

Unless a right to a hearing before the Department or the Water Resource Board is otherwise provided by statute, any person aggrieved by any final decision, determination, order or action of the Director of the Department and who has not previously been afforded an opportunity for a hearing on the matter may request a hearing pursuant to section 42-1701A(3), Idaho Code. A written petition contesting the action of the Director and requesting a hearing shall be filed within fifteen (15) days after receipt of the denial or conditional approval.

### ORAL ARGUMENT

If the Director grants a petition to review the preliminary order, the Director shall allow all parties an opportunity to file briefs in support of or taking exceptions to the preliminary order and may schedule oral argument in the matter before issuing a final order. If oral arguments are to be heard, the Director will within a reasonable time period notify each party of the place, date and hour for the argument of the case. Unless the Director orders otherwise, all oral arguments will be heard in Boise, Idaho.

## CERTIFICATE OF SERVICE

All exceptions, briefs, requests for oral argument and any other matters filed with the Director in connection with the preliminary order shall be served on all other parties to the proceedings in accordance with IDAPA Rules 37.01.01302 and 37.01.01303 (Rules of Procedure 302 and 303).

## FINAL ORDER

The Director will issue a final order within fifty-six (56) days of receipt of the written briefs, oral argument or response to briefs, whichever is later, unless waived by the parties or for good cause shown. The Director may remand the matter for further evidentiary hearings if further factual development of the record is necessary before issuing a final order. The department will serve a copy of the final order on all parties of record.

Section 67-5246(5), Idaho Code, provides as follows:

Unless a different date is stated in a final order, the order is effective fourteen (14) days after its service date if a party has not filed a petition for reconsideration. If a party has filed a petition for reconsideration with the agency head, the final order becomes effective when:

- (a) The petition for reconsideration is disposed of; or
- (b) The petition is deemed denied because the agency head did not dispose of the petition within twenty-one (21) days.

## APPEAL OF FINAL ORDER TO DISTRICT COURT

Pursuant to sections 67-5270 and 67-5272, Idaho Code, if this preliminary order becomes final, any party aggrieved by the final order or orders previously issued in this case may appeal the final order and all previously issued orders in this case to district court by filing a petition in the district court of the county in which:

- i. A hearing was held,
- ii. The final agency action was taken,
- iii. The party seeking review of the order resides, or
- iv. The real property or personal property that was the subject of the agency action is located.

The appeal must be filed within twenty-eight (28) days of this preliminary order becoming final. See section 67-5273, Idaho Code. The filing of an appeal to district court does not itself stay the effectiveness or enforcement of the order under appeal.

## MEMORANDUM

**Date:** January 30, 2012  
**To:** Transfer 77669 File  
**From:** Corey Skinner  
**Re:** Evaluation of Sufficiency of Information Submitted

---

Application proposes transferring a 17.6 acre (0.22 cfs & 32.9 afa) portion of a groundwater irrigation right, 47-17568, from a farm located approximately 14.5 miles south and 1.0 mile west of Rogerson to stockwater and commercial uses associated with a proposed cattle facility located approximately 2.5 – 4.5 miles north and 0.25 – 1.0 mile west of Hollister. The application also proposes to modify the authorized place of use of the existing domestic and stockwater right, 47-17509, (0.04 cfs & 14.6 afa) at the site of the cattle facility to reflect the entire proposed site of the cattle facility. One existing well at the cattle facility will be used to divert up to a total of 0.26 cfs and 47.5 afa of water. Note that the place of use of groundwater right 47-17568 overlaps the place of use of two Mule Creek Rights, 47-7287 and 47-14285. The application includes a detailed supplemental analysis of the past use of right 47-17568. The application also includes a relinquishment form signed by the current owner of right 47-14285 relinquishing a 17.6 acre portion of right 47-14285. In addition, the application also includes a signed statement reducing the authorized place of use of right 47-7287 by 17.6 acres. However, note that the 47-7287 statement proposes to retain the full amount (actually a rather small amount) of irrigation storage volume and irrigation from storage volume authorized by right 47-7287.

- **Authority to File:**  
The application includes purchase and sale documents that give the applicant (Idaho Water Company) authority to file a transfer involving right 47-17568. Documents signed by the current owner address overlapping rights 47-7287 and 47-14285. An authorization form signed by the current owner of right 47-17509 authorizes the applicant to modify right 47-17509 via the transfer.
- **Water Right Validity:**  
All the rights involved with the transfer were decreed in the SRBA in 2010 or 2011.
- **Injury to Other Water Rights:**  
The current point of diversion for right 47-17568 and the proposed point of diversion at the cattle facility are located approximately 27 miles away from each other. However, both locations are located within IDWR administrative basin 47. In addition, the application includes copies of published reports relating to studies of the groundwater within the Salmon Falls Creek Basin in an attempt to show the interconnection of the aquifer between the current point of diversion for right 47-17568 and the cattle facility site.
- **Enlargement of Use:**  
None anticipated. Conversion from irrigation to stock water and commercial use (based on consumptive use of irrigation right) will result in a net decrease in the allowable annual diversion volume.
- **Local Public Interest:**  
No issues anticipated. The application will be subject to public notice and protest.
- **Beneficial Use/Conservation of Water Resources:**  
Proposed uses are recognized as beneficial uses of water.

Review of the application finds there is no clear inconsistency with criteria set forth in Section 42-222 Idaho Code preventing processing of this application.

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**TRANSFER OF WATER RIGHT**  
TRANSFER NO. 77669

This is to certify that: IDAHO WATER CO LLC  
1135 VALLEY RD S  
EDEN ID 83325  
(208) 312-1135

has requested a change to the water right(s) listed below. This change in water right(s) is authorized pursuant to the provisions of Section 42-222, Idaho Code. A summary of the changes is also listed below. The authorized change for each affected water right, including conditions of approval, is shown on the following pages of this document.

**Summary of Water Rights Before the Proposed Change**

| <u>Right</u> | <u>Origin/Basis</u> | <u>Priority</u> | <u>Rate</u> | <u>Volume</u> | <u>Acre Limit</u> | <u>Total Acres</u> | <u>Source</u> |
|--------------|---------------------|-----------------|-------------|---------------|-------------------|--------------------|---------------|
| 47-17509     | WR/Decreed          | 06/30/1959      | 0.04 cfs    | N/A           | N/A               | N/A                | GROUND WATER  |
| 47-17568     | WR/Decreed          | 12/25/1970      | 1.73 cfs    | 437.7 af      | N/A               | 145.9              | GROUND WATER  |

**Associated Water Rights Included in Transfer Approval (POU Reduction and Conditions Updated)**

| <u>Right</u> | <u>Origin/Basis</u> | <u>Priority</u> | <u>Rate</u> | <u>Volume</u> | <u>Acre Limit</u> | <u>Total Acres</u> | <u>Source</u> |
|--------------|---------------------|-----------------|-------------|---------------|-------------------|--------------------|---------------|
| 47-7287      | WR/Decreed          | 11/04/1974      | N/A         | 24.8 af       | N/A               | 145.9              | MULE CREEK    |
| 47-14285     | WR/Decreed          | 12/31/1969      | 4.26 cfs    | N/A           | N/A               | 212.9              | MULE CREEK    |

**Purpose of Transfer (Changes Proposed)**

| <u>Current Number</u> | <u>Split</u> | <u>POD</u> | <u>POU</u> | <u>Add POD</u> | <u>Period of Use</u> | <u>Nature of Use</u> |
|-----------------------|--------------|------------|------------|----------------|----------------------|----------------------|
| 47-17509              | NO           | NO         | YES        | NO             | NO                   | NO                   |
| 47-17568              | YES          | YES        | YES        | NO             | YES                  | YES                  |

**Summary of Water Rights After the Approved Change**

| <u>Existing Right</u> | <u>New No. (changed portion)</u> | <u>Transfer Rate</u> | <u>Transfer Volume</u> | <u>Acre Limit</u> | <u>Total Acres</u> | <u>New No. (remaining portion)</u> | <u>Remaining Rate</u> | <u>Remaining Volume</u> | <u>Remaining Acre Limit</u> | <u>Remaining Total Acres</u> |
|-----------------------|----------------------------------|----------------------|------------------------|-------------------|--------------------|------------------------------------|-----------------------|-------------------------|-----------------------------|------------------------------|
| 47-17509              | 47-17509                         | 0.04 cfs             | 14.6 af                | N/A               | N/A                |                                    | N/A                   | N/A                     | N/A                         | N/A                          |
| 47-17568              | 47-17572                         | 0.22 cfs             | 32.9 af                | N/A               | N/A                | 47-17571                           | 1.51 cfs              | 384.9 af                | N/A                         | 128.3                        |
| <b>COMBINED</b>       |                                  |                      |                        |                   |                    |                                    |                       |                         |                             |                              |
| <b>TOTALS</b>         |                                  | 0.26 cfs             | 47.5 af                | N/A               | N/A                |                                    | N/A                   | N/A                     | N/A                         | N/A                          |

Detailed Water Right Description(s) attached

Dated this 13<sup>th</sup> day of March, 20 12

SUPPORT DATA

IN FILE # 47-17509

  
Southern Region Manager

**WATER RIGHT NO. 47-17571**  
**As Modified by Transfer No. 77669**

In accordance with the approval of Transfer No. 77669, Water Right No. 47-17571 is now described as follows.

**Right Holder:** THOMAS Or DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

**Priority Date:** December 25, 1970

**Source:** GROUND WATER

| <u>BENEFICIAL USE</u> | <u>From</u> | <u>To</u> | <u>Diversion Rate</u> | <u>Volume</u> |
|-----------------------|-------------|-----------|-----------------------|---------------|
| IRRIGATION            | 04/01       | to 11/01  | 1.51 CFS              | 384.9 AF      |
|                       |             |           | 1.51 CFS              | 384.9 AF      |

**LOCATION OF POINT(S) OF DIVERSION:**  
GROUND WATER                      NWSWSW                      Sec. 20 Twp 16S                      Rge 16E                      TWIN FALLS  
County

**PLACE OF USE:** IRRIGATION

[illegible]

Total Acres: 128.3

### CONDITIONS OF APPROVAL

1. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 3.0 afa per acre at the field headgate for irrigation of the lands below.
2. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.

This water right is subject to all prior water rights and shall be administered in accordance with Idaho law and applicable rules of the Department of Water Resources.

Dated this 13<sup>th</sup> day of March, 2012

**Southern Region Manager**

**WATER RIGHT NO. 47-17572**  
**As Modified by Transfer No. 77669**

In accordance with the approval of Transfer No. 77669, Water Right No. 47-17572 is now described as follows.

**Right Holder:** THOMAS Or DOROTHY LENO  
 4236 N 1900 E  
 BUHL ID 83316

**Priority Date:** December 25, 1970

**Source:** GROUND WATER

| <u>BENEFICIAL USE</u> | <u>From</u> | <u>To</u> | <u>Diversion Rate</u> | <u>Volume</u> |
|-----------------------|-------------|-----------|-----------------------|---------------|
| STOCKWATER            | 01/01       | to 12/31  | 0.22 CFS              | 32.9 AF       |
| COMMERCIAL            | 01/01       | to 12/31  | 0.22 CFS              | 32.9 AF       |
|                       |             |           | 0.22 CFS              | 32.9 AF       |

**LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER      SESENW      Sec. 9   Twp 12S   Rge 16E   TWIN FALLS  
                                                                                                                          County

**PLACE OF USE:**    STOCKWATER

| Twp | Rge | Sec | NE |    |    |    | NW |    |    |    | SW |    |    |    | SE |    |    |    | Totals |   |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|---|
|     |     |     | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE |        |   |
| 12S | 16E | 4   |    |    |    |    | X  |    |    |    | X  |    |    |    | X  | X  | X  | X  |        |   |
| 12S | 16E | 9   |    |    | X  | X  | X  | X  | X  | X  | X  |    |    |    |    |    | X  |    | X      | X |

**PLACE OF USE:**    COMMERCIAL

| Twp | Rge | Sec | NE |    |    |    | NW |    |    |    | SW |    |    |    | SE |    |    |    | Totals |   |
|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|--------|---|
|     |     |     | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE | NE | NW | SW | SE |        |   |
| 12S | 16E | 4   |    |    |    |    | X  |    |    |    | X  |    |    |    | X  | X  | X  | X  |        |   |
| 12S | 16E | 9   |    |    | X  | X  | X  | X  | X  | X  | X  |    |    |    |    |    | X  |    | X      | X |

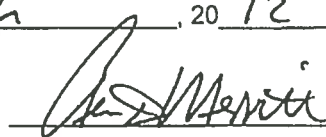
**WATER RIGHT NO. 47-17572**  
**As Modified by Transfer No. 77669**

**CONDITIONS OF APPROVAL**

1. Rights 47-17509 and 47-17572 when combined shall not exceed a total diversion rate of 0.26 cfs and a total annual maximum diversion volume of 47.5 af.
2. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
3. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable county zoning and use ordinances.
4. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable water quality permitting requirements administered by the Department of Environmental Quality or the Department of Agriculture.
5. The right holder shall accomplish the change authorized by this transfer within one year of the date of this approval.
6. Failure of the right holder to comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.
7. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.

This water right is subject to all prior water rights and shall be administered in accordance with Idaho law and applicable rules of the Department of Water Resources.

Dated this 13<sup>th</sup> day of March, 2012

  
Southern Region Manager

**Right Holder:** THOMAS Or DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

**Tributary:** SHOSHONE CREEK

| <u>From</u> | <u>To</u> | <u>Volume</u> |
|-------------|-----------|---------------|
| 01/01       | to 12/31  | 24.8 AF       |
| 03/15       | to 11/15  | 24.8 AF       |
|             |           | 24.8 AF       |

MULE CREEK                      SESWSW                      Sec. 17 Twp 16S    Rge 16E    TWIN FALLS  
County

[illegible]

1. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.
2. The approval of this transfer redefines all of the elements of this water right, and the new use of water authorized by this approval shall constitute the full extent of the right.

Dated this 13<sup>th</sup> day of March, 2012

**Southern Region Manager**

**WATER RIGHT NO. 47-14285**  
**As Modified by Transfer No. 77669**

In accordance with the approval of Transfer No. 77669, Water Right No. 47-14285 is now described as follows.

**Right Holder:** THOMAS Or DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

**Priority Date:** December 31, 1969

**Source:** MULE CREEK

**Tributary:** SHOSHONE CREEK

| <u>BENEFICIAL USE</u> | <u>From</u> | <u>To</u> | <u>Diversion Rate</u> |
|-----------------------|-------------|-----------|-----------------------|
| IRRIGATION            | 04/01       | to 10/31  | 3.91 CFS              |
|                       |             |           | 3.91 CFS              |

LOCATION OF POINT(S) OF DIVERSION:

MULE CREEK                      SESWSW                      Sec. 17 Twp 16S                      Rge 16E TWIN FALLS  
County

MULE CREEK                      SESWSW                      Sec. 17 Twp 16S                      Rge 16E TWIN FALLS  
County

(Injection)

MULE CREEK                      NESWNW                      Sec. 20 Twp 16S                      Rge 16E                      TWIN FALLS  
County

(Rediversion)

PLACE OF USE: IRRIGATION

| Twp Rge Sec |     |    | NE        |           |           |           | NW        |           |           |           | SW        |           |           |           | SE        |           |           |           | Totals |
|-------------|-----|----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
|             |     |    | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> |        |
| 16S         | 16E | 20 |           |           |           |           |           |           |           |           |           |           | 37.0      | 6.0       |           |           |           |           | 43.0   |
| 16S         | 16E | 29 |           |           |           |           | 24.0      | 32.3      | 21.0      | 29.0      | 12.0      | 34.0      |           |           |           |           |           |           | 152.3  |

Total Acres: 195.3

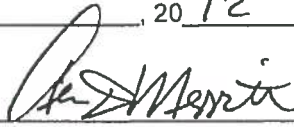
**WATER RIGHT NO. 47-14285**  
**As Modified by Transfer No. 77669**

**CONDITIONS OF APPROVAL**

1. Right includes accomplished change in point of diversion pursuant to Section 42-1425, Idaho Code.
2. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.
3. This right when combined with all other rights shall provide no more than 0.02 cfs per acre for irrigation of the place of use.
4. The approval of this transfer redefines all of the elements of this water right, and the new use of water authorized by this approval shall constitute the full extent of the right.

This water right is subject to all prior water rights and shall be administered in accordance with Idaho law and applicable rules of the Department of Water Resources.

Dated this 13<sup>th</sup> day of March, 2012

  
\_\_\_\_\_  
Southern Region Manager

**WATER RIGHT NO. 47-17509**  
**As Modified by Transfer No. 77669**

In accordance with the approval of Transfer No. 77669, Water Right No. 47-17509 is now described as follows.

**Right Holder:** C E BRACKETT CATTLE CO  
PO BOX 111  
ROGERSON ID 83302

**Priority Date:** June 30, 1959

**Source:** GROUND WATER

| <u>BENEFICIAL USE</u> | <u>From</u> | <u>To</u> | <u>Diversion Rate</u> | <u>Volume</u> |
|-----------------------|-------------|-----------|-----------------------|---------------|
| STOCKWATER            | 01/01       | to 12/31  | 0.04 CFS              | 13.4 AF       |
| DOMESTIC              | 01/01       | to 12/31  | 0.04 CFS              | 1.2 AF        |
|                       |             |           | 0.04 CFS              | 14.6 AF       |

**LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER                      SESENW                      Sec. 9   Twp 12S   Rge 16E   TWIN FALLS  
County

PLACE OF USE: STOCKWATER

| Twp | Rge | Sec | NE        |           |           |           | NW        |           |           |           | SW        |           |           |           | SE        |           |           |           | Totals |
|-----|-----|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
|     |     |     | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> |        |
| 12S | 16E | 4   |           |           |           |           | X         |           |           | X         |           |           | X         |           |           |           |           |           |        |
|     |     |     |           |           |           |           | L3        |           |           |           |           |           |           |           |           |           |           |           |        |
| 12S | 16E | 9   |           | X         | X         |           | X         | X         | X         | X         |           |           | X         |           |           | X         | X         |           |        |

PLACE OF USE: DOMESTIC

| Twp Rge Sec |     |   |  | NE        |           |           |           | NW        |           |           |           | SW        |           |           |           | SE        |           |           |           | Totals |
|-------------|-----|---|--|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
|             |     |   |  | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> |        |
| 12S         | 16E | 4 |  |           |           |           |           | X         |           |           |           |           |           |           |           |           |           |           |           |        |
|             |     |   |  |           |           |           |           | L 3       |           |           |           |           |           |           |           |           |           |           |           |        |

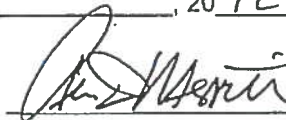
**WATER RIGHT NO. 47-17509**  
**As Modified by Transfer No. 77669**

**CONDITIONS OF APPROVAL**

1. The quantity of water under this right shall not exceed 13,000 gallons per day.
2. Rights 47-17509 and 47-17572 when combined shall not exceed a total diversion rate of 0.26 cfs and a total annual maximum diversion volume of 47.5 af.
3. Domestic use is for 1 home.
4. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
5. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable county zoning and use ordinances.
6. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable water quality permitting requirements administered by the Department of Environmental Quality or the Department of Agriculture.
7. The right holder shall accomplish the change authorized by this transfer within one year of the date of this approval.
8. Failure of the right holder to comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.
9. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.

This water right is subject to all prior water rights and shall be administered in accordance with Idaho law and applicable rules of the Department of Water Resources.

Dated this 13<sup>th</sup> day of March, 2012



Southern Region Manager

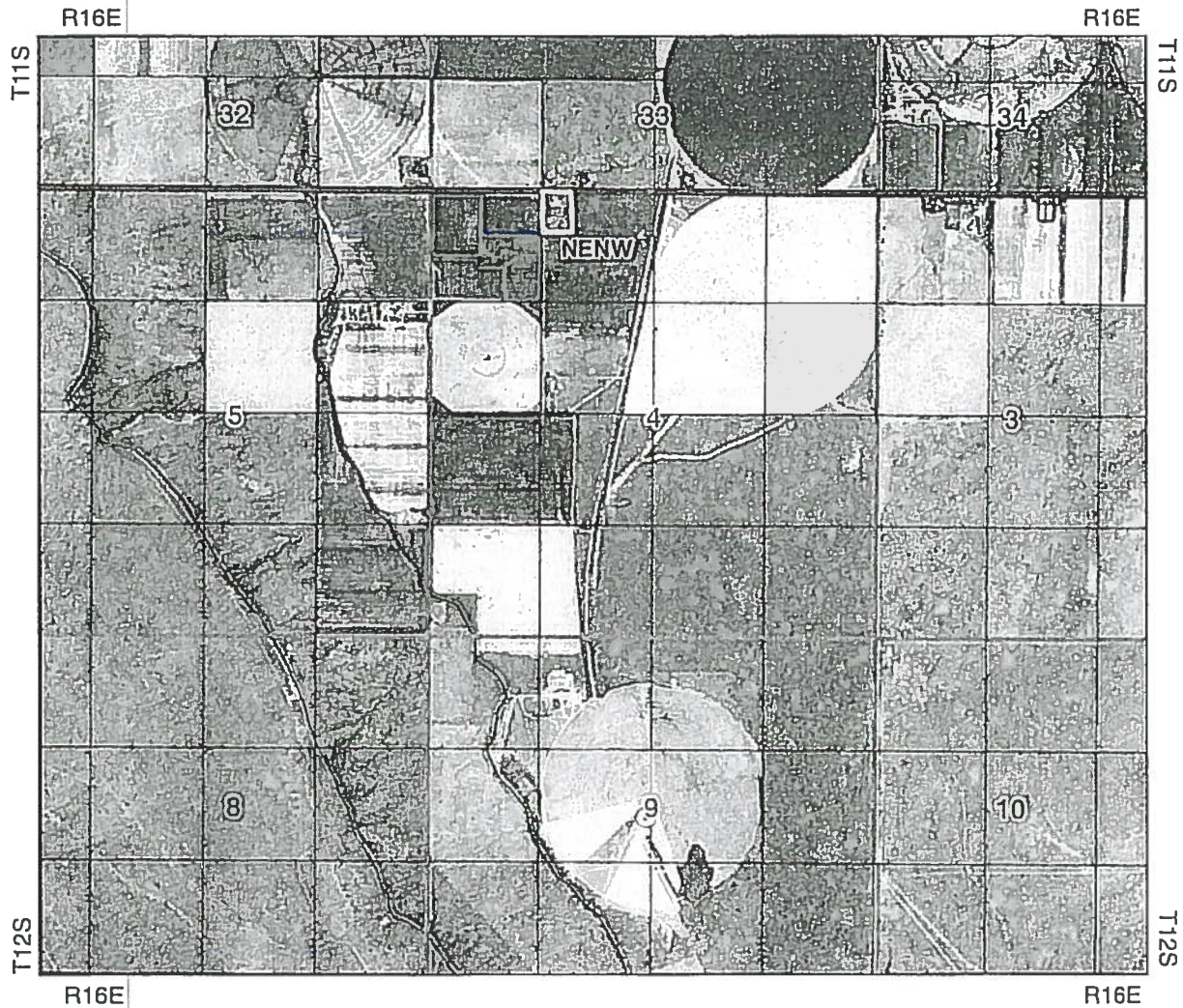
State of Idaho  
Department of Water Resources

## Attachment To Transfer Of Water Right

Transfer No. 77669

Rights: 47-17509

This map depicts the DOMESTIC place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



0 0.25 0.5 1 Miles

- Point of Diversion
- Place Of Use Boundary

- Townships
- PLS Sections
- Quarter Quarters



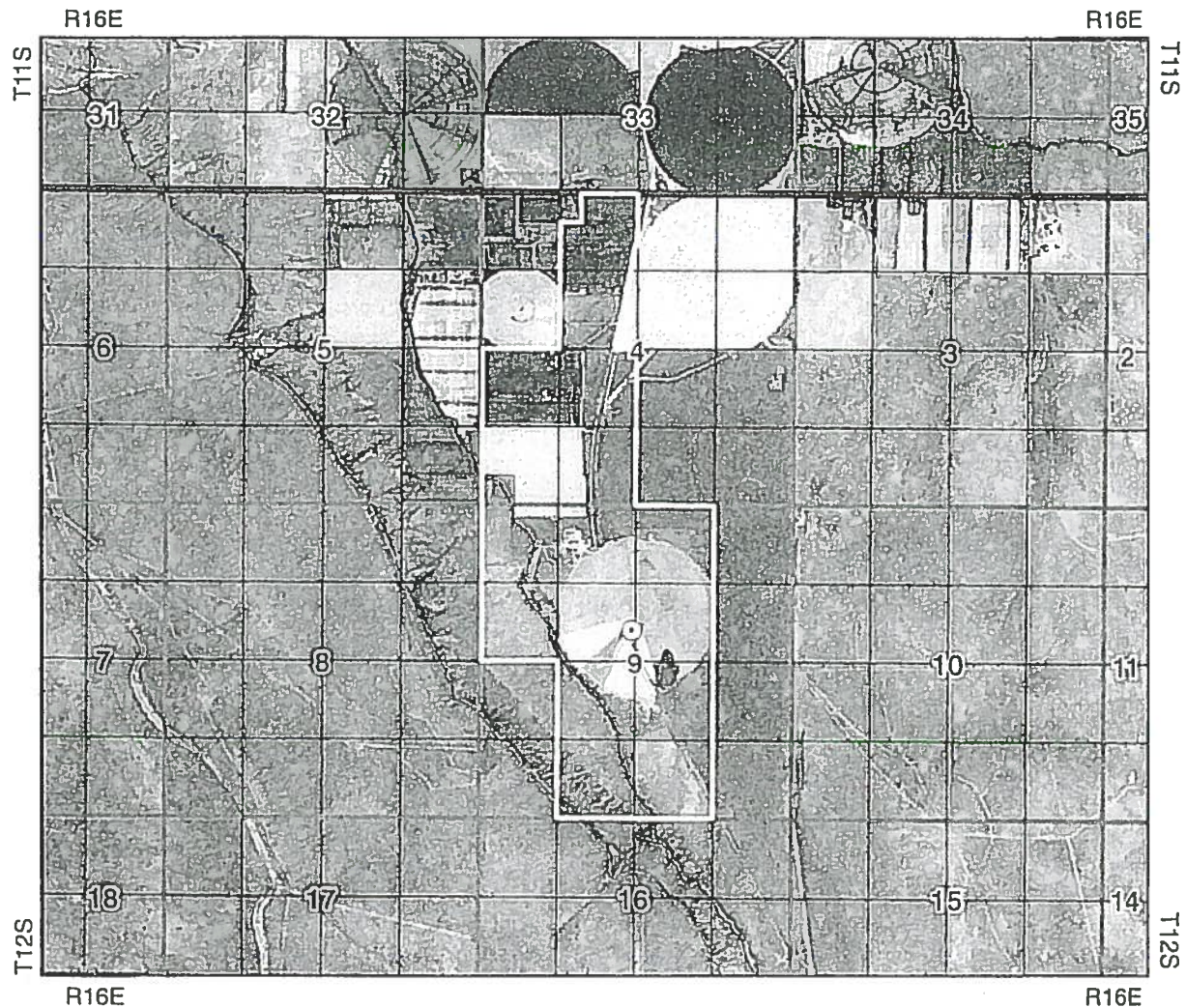
State of Idaho  
Department of Water Resources

# Attachment To Transfer Of Water Right

Transfer No. 77669

Rights: 47-17509, 47-17572

This map depicts the STOCKWATER & COMMERCIAL place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



0 0.35 0.7 1.4 Miles

- Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters



## MEMORANDUM

**Date:** December 5, 2012  
**To:** Transfer 78127 File  
**From:** Corey Skinner  
**Re:** Evaluation of Sufficiency of Information Submitted

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Application proposes transferring a 25.8 acre (0.30 cfs & 48.2 afa) portion of a groundwater irrigation right, 47-17571, from a farm located approximately 14.5 miles south and 1.0 mile west of Rogerson to stockwater and commercial uses associated with a dairy facility located approximately 1.4-1.7 miles south and 5.2-5.6 miles west of Buhl. The application also proposes to modify the authorized place of use of the existing domestic and stockwater right, 47-8251, (0.11 cfs & 16.9 afa) at the site of the dairy facility to reflect the entire proposed site of the dairy facility. Two existing wells at the dairy facility will be used to divert up to a total of 0.41 cfs and 65.1 afa of water. Note that the place of use of groundwater right 47-17571 overlaps the place of use of two Mule Creek Rights, 47-7287 and 47-14285. The application includes a detailed supplemental analysis of the past use of right 47-17571. This analysis indicates that for each acre of right 47-17571 that is transferred, 1.87 AFA of consumptive use would be available to be transferred. The application also includes a relinquishment form signed by the current owner of right 47-14285 relinquishing a 25.8 acre portion of right 47-14285. In addition, the application also includes a signed statement reducing the authorized place of use of right 47-7287 by 25.8 acres. However, note that the 47-7287 statement proposes to retain the full amount (actually a rather small amount) of irrigation storage volume and irrigation from storage volume authorized by right 47-7287. Note that rights 47-17571, 47-7287, and 47-14285, in the name of Thomas or Dorothy Leno, resulted from previous similar approved transfers # 77406 (approved 11/1/2011) and # 77669 (approved 3/13/2012).

- **Authority to File:**

The application includes purchase and sale documents that give the applicant (Idaho Water Company) authority to file a transfer involving right 47-17571. Documents signed by the current owner address overlapping rights 47-7287 and 47-14285. Note that the 25.8 acres are described by three separate purchase and sale documents from Leno to Idaho Water Company. A 10/8/2011 agreement describes 10 acres, a 4/6/2011 agreement describes 17 acres, and an 8/14/2012 agreement describes 25.5 acres. These three agreements describe a total of 52.5 total acres. Of these 52.5 total acres, 26.7 acres were transferred away via approved transfer # 77406 (9.1 acres) and transfer # 77669 (17.6 acres) leaving 25.8 acres available for this transfer (#78127). An authorization form signed by the current owner (Farmers National Bank) of right 47-8251 authorizes the applicant to modify right 47-8251 via the transfer. Note that the ownership of right 47-8251 is also being updated in this transfer (based on enclosed Certificate of Sale/Sheriff Sale) to Farmers National Bank.

- **Water Right Validity:**

All the rights involved with the transfer were decreed in the SRBA in 2010 or 2011.

- **Injury to Other Water Rights:**

The current point of diversion for right 47-17571 and the proposed points of diversion at the dairy facility are located approximately 41 miles away from each other. However, both locations are located within IDWR administrative basin 47. In addition, the application includes copies of published reports relating to studies of the groundwater within the Salmon Falls Creek Basin in an attempt to show the interconnection of the aquifer between the current point of diversion for right 47-17571 and the dairy site. In addition, IDWR has approved a couple of transfers # 77406 (approved 11/1/2011) and # 77669 (approved 3/13/2012) involving these same rights, with transfer # 77406 moving the Leno groundwater right to the Buhl area.

- **Enlargement of Use:**

None anticipated. Conversion from irrigation to stock water and commercial use (based on consumptive use of irrigation right) will result in a net decrease in the allowable annual diversion volume.

- **Local Public Interest:**

No issues anticipated. The application has been subject to public notice and protest with no protests received.

- **Beneficial Use/Conservation of Water Resources:**

Proposed uses are recognized as beneficial uses of water.

**Review of the application finds there is no clear inconsistency with criteria set forth in Section 42-222 Idaho Code preventing processing of this application.**

STATE OF IDAHO  
DEPARTMENT OF WATER RESOURCES  
**TRANSFER OF WATER RIGHT**  
TRANSFER NO. 78127

This is to certify that: IDAHO WATER CO LLC  
1135 VALLEY RD S  
EDEN ID 83325  
(208) 312-1135

has requested a change to the water right(s) listed below. This change in water right(s) is authorized pursuant to the provisions of Section 42-222, Idaho Code. A summary of the changes is also listed below. The authorized change for each affected water right, including conditions of approval, is shown on the following pages of this document.

Summary of Water Rights Before the Proposed Change

| <u>Right</u> | <u>Origin/Basis</u> | <u>Priority</u> | <u>Rate</u> | <u>Volume</u> | <u>Acre Limit</u> | <u>Total Acres</u> | <u>Source</u> |
|--------------|---------------------|-----------------|-------------|---------------|-------------------|--------------------|---------------|
| 47-8251      | WR/License          | 09/04/1990      | 0.11 cfs    | 16.9 af       | N/A               | N/A                | GROUND WATER  |
| 47-17571     | WR/Decreed          | 12/25/1970      | 1.51 cfs    | 384.9 af      | N/A               | 128.3              | GROUND WATER  |

Associated Water Rights Included in Transfer Approval (POU Reduction and Conditions Updated)

| <u>Right</u> | <u>Origin/Basis</u> | <u>Priority</u> | <u>Rate</u> | <u>Volume</u> | <u>Acre Limit</u> | <u>Total Acres</u> | <u>Source</u> |
|--------------|---------------------|-----------------|-------------|---------------|-------------------|--------------------|---------------|
| 47-7287      | WR/Decreed          | 11/04/1974      | N/A         | 24.8 af       | N/A               | 128.3              | MULE CREEK    |
| 47-14285     | WR/Decreed          | 12/31/1969      | 3.91 cfs    | N/A           | N/A               | 195.3              | MULE CREEK    |

Purpose of Transfer (Changes Proposed)

| <u>Current Number</u> | <u>Split</u> | <u>POD</u> | <u>POU</u> | <u>Add POD</u> | <u>Period of Use</u> | <u>Nature of Use</u> |
|-----------------------|--------------|------------|------------|----------------|----------------------|----------------------|
| 47-8251               | NO           | NO         | YES        | YES            | NO                   | NO                   |
| 47-17571              | YES          | YES        | YES        | NO             | YES                  | YES                  |

Summary of Water Rights After the Approved Change

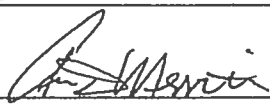
| <u>Existing Right</u> | <u>New No. (changed portion)</u> | <u>Transfer Rate</u> | <u>Transfer Volume</u> | <u>Acre Limit</u> | <u>Total Acres</u> | <u>New No. (remaining portion)</u> | <u>Remaining Rate</u> | <u>Remaining Volume</u> | <u>Remaining Acre Limit</u> | <u>Remaining Total Acres</u> |
|-----------------------|----------------------------------|----------------------|------------------------|-------------------|--------------------|------------------------------------|-----------------------|-------------------------|-----------------------------|------------------------------|
| 47-8251               | 47-8251                          | 0.11 cfs             | 16.9 af                | N/A               | N/A                |                                    | N/A                   | N/A                     | N/A                         | N/A                          |
| 47-17571              | 47-17590                         | 0.30 cfs             | 48.2 af                | N/A               | N/A                | 47-17589                           | 1.21 cfs              | 307.5 af                | N/A                         | 102.5                        |
| <b>COMBINED</b>       |                                  |                      |                        |                   |                    |                                    |                       |                         |                             |                              |
| <b>TOTALS</b>         |                                  | <b>0.41 cfs</b>      | <b>65.1 af</b>         | <b>N/A</b>        | <b>N/A</b>         |                                    | <b>N/A</b>            | <b>N/A</b>              | <b>N/A</b>                  | <b>N/A</b>                   |

Detailed Water Right Description(s) attached

Dated this 6<sup>th</sup> day of December, 2012

SUPPORT DATA

IN FILE # 47-8251

  
Southern Region Manager

SCANNED

DEC 11 2012

**Right Holder:** FARMERS NATIONAL BANK  
914 MAIN STREET  
BUHL ID 83316

**Source:** GROUND WATER

LOCATION OF POINT(S) OF DIVERSION:

GROUND WATER                      L1 (NWNW)                      Sec. 7   Twp 10S   Rge 14E   TWIN FALLS  
County

GROUND WATER                      L1 (NWNW)                      Sec. 7   Twp 10S   Rge 14E   TWIN FALLS  
County

PLACE OF USE: STOCKWATER

[illegible]

PLACE OF USE: COMMERCIAL

[illegible]

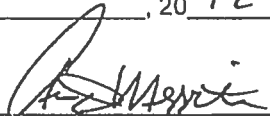
**WATER RIGHT NO. 47-8251**  
**As Modified by Transfer No. 78127**

**CONDITIONS OF APPROVAL**

1. Rights 47-8251 and 47-17590 when combined shall not exceed a total diversion rate of 0.41 cfs or a total annual maximum diversion volume of 65.1 af.
2. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
3. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable county zoning and use ordinances.
4. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable water quality permitting requirements administered by the Department of Environmental Quality or the Department of Agriculture.
5. The right holder shall accomplish the change authorized by this transfer within one year of the date of this approval.
6. Failure of the right holder to comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.

This water right is subject to all prior water rights and shall be administered in accordance with Idaho law and applicable rules of the Department of Water Resources.

Dated this 6<sup>th</sup> day of December, 20 12

  
\_\_\_\_\_  
Southern Region Manager

Right Holder: THOMAS Or DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

Source: GROUND WATER

| <u>BENEFICIAL USE</u> | <u>From</u> | <u>To</u> | <u>Diversion Rate</u> | <u>Volume</u> |
|-----------------------|-------------|-----------|-----------------------|---------------|
| IRRIGATION            | 04/01       | to 11/01  | 1.21 CFS              | 307.5 AF      |
|                       |             |           | 1.21 CFS              | 307.5 AF      |

LOCATION OF POINT(S) OF DIVERSION:  
GROUND WATER                      NWSWSW                      Sec. 20 Twp 16S                      Rge 16E                      TWIN FALLS  
County

[illegible]

### CONDITIONS OF APPROVAL

1. This right when combined with all other rights shall provide no more than 0.02 cfs per acre nor more than 3.0 afa per acre at the field headgate for irrigation of the lands below.
2. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.

Dated this 6<sup>th</sup> day of December, 2012

Southern Region Manager

**WATER RIGHT NO. 47-17590**  
As Modified by Transfer No. 78127

In accordance with the approval of Transfer No. 78127, Water Right No. 47-17590 is now described as follows.

Right Holder: THOMAS Or DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

Priority Date: December 25, 1970

Source: GROUND WATER

| <u>BENEFICIAL USE</u> | <u>From</u> | <u>To</u> | <u>Diversion Rate</u> | <u>Volume</u> |
|-----------------------|-------------|-----------|-----------------------|---------------|
| COMMERCIAL            | 01/01       | to 12/31  | 0.30 CFS              | 48.2 AF       |
| STOCKWATER            | 01/01       | to 12/31  | 0.30 CFS              | 48.2 AF       |
|                       |             |           | 0.30 CFS              | 48.2 AF       |

**LOCATION OF POINT(S) OF DIVERSION:**

GROUND WATER L1 (NWNW) Sec. 7 Twp 10S Rge 14E TWIN FALLS County

GROUND WATER                      L1 (NWNW)                      Sec. 7   Twp 10S   Rge 14E   TWIN FALLS  
County

**PLACE OF USE:** COMMERCIAL

[illegible]

PLACE OF USE: STOCKWATER

[illegible]

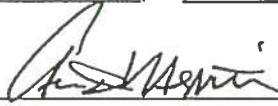
**WATER RIGHT NO. 47-17590**  
**As Modified by Transfer No. 78127**

**CONDITIONS OF APPROVAL**

1. Rights 47-8251 and 47-17590 when combined shall not exceed a total diversion rate of 0.41 cfs or a total annual maximum diversion volume of 65.1 af.
2. After specific notification by the Department, the right holder shall install a suitable measuring device or shall enter into an agreement with the Department to use power records to determine the amount of water diverted and shall annually report the information to the Department.
3. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable county zoning and use ordinances.
4. Prior to the diversion and use of water under this approval, the right holder shall comply with applicable water quality permitting requirements administered by the Department of Environmental Quality or the Department of Agriculture.
5. The right holder shall accomplish the change authorized by this transfer within one year of the date of this approval.
6. Failure of the right holder to comply with the conditions of this transfer is cause for the Director to rescind approval of the transfer.
7. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.

This water right is subject to all prior water rights and shall be administered in accordance with Idaho law and applicable rules of the Department of Water Resources.

Dated this 6<sup>th</sup> day of December, 2012

  
\_\_\_\_\_  
Southern Region Manager

Right Holder: THOMAS Or DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

**Tributary:** SHOSHONE CREEK

MULE CREEK                      SESWSW                      Sec. 17 Twp 16S    Rge 16E    TWIN FALLS  
County

[illegible]

1. The approval of this transfer redefines all of the elements of this water right, and the new use of water authorized by this approval shall constitute the full extent of the right.
2. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.

Dated this 6<sup>th</sup> day of December, 20 12

  
Southern Region Manager

**WATER RIGHT NO. 47-14285**  
**As Modified by Transfer No. 78127**

In accordance with the approval of Transfer No. 78127, Water Right No. 47-14285 is now described as follows.

Right Holder: THOMAS Or DOROTHY LENO  
4236 N 1900 E  
BUHL ID 83316

**Priority Date:** December 31, 1969

Source: MULE CREEK

**Tributary:** SHOSHONE CREEK

| <u>BENEFICIAL USE</u> | <u>From</u> | <u>To</u> | <u>Diversion Rate</u> |
|-----------------------|-------------|-----------|-----------------------|
| IRRIGATION            | 04/01       | to 10/31  | 3.39 CFS              |
|                       |             |           | 3.39 CFS              |

**LOCATION OF POINT(S) OF DIVERSION:**

MULE CREEK                      SESWSW                      Sec. 17 Twp 16S                      Rge 16E TWIN FALLS  
County

MULE CREEK                      SESWSW                      Sec. 17 Twp 16S    Rge 16E    TWIN FALLS  
County

(Injection)

MULE CREEK                      NESWNW                      Sec. 20 Twp 16S    Rge 16E    TWIN FALLS  
County

(Rediversion)

PLACE OF USE: IRRIGATION

| Twp | Rge | Sec | NE        |           |           |           | NW        |           |           |           | SW        |           |           |           | SE        |           |           |           | Totals |
|-----|-----|-----|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--------|
|     |     |     | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> | <u>NE</u> | <u>NW</u> | <u>SW</u> | <u>SE</u> |        |
| 16S | 16E | 20  |           |           |           |           |           |           |           |           |           |           | 37.0      | 6.0       |           |           |           |           | 43.0   |
| 16S | 16E | 29  |           |           |           |           | 24.0      | 22.5      | 20.0      | 14.0      | 12.0      | 34.0      |           |           |           |           |           |           | 126.5  |

Total Acres: 169.5

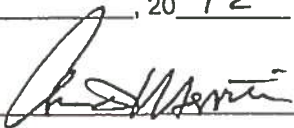
**WATER RIGHT NO. 47-14285**  
**As Modified by Transfer No. 78127**

**CONDITIONS OF APPROVAL**

1. The approval of this transfer redefines all of the elements of this water right, and the new use of water authorized by this approval shall constitute the full extent of the right.
2. Right includes accomplished change in point of diversion pursuant to Section 42-1425, Idaho Code.
3. This right when combined with all other rights shall provide no more than 0.02 cfs per acre for irrigation of the place of use.
4. Pursuant to Section 42-1412(6), Idaho Code, this water right is subject to such general provisions necessary for the definition of the rights or for the efficient administration of water rights as may be determined by the Snake River Basin Adjudication court at a point in time no later than the entry of the final unified decree.

This water right is subject to all prior water rights and shall be administered in accordance with Idaho law and applicable rules of the Department of Water Resources.

Dated this 6<sup>th</sup> day of December, 20 12

  
Southern Region Manager

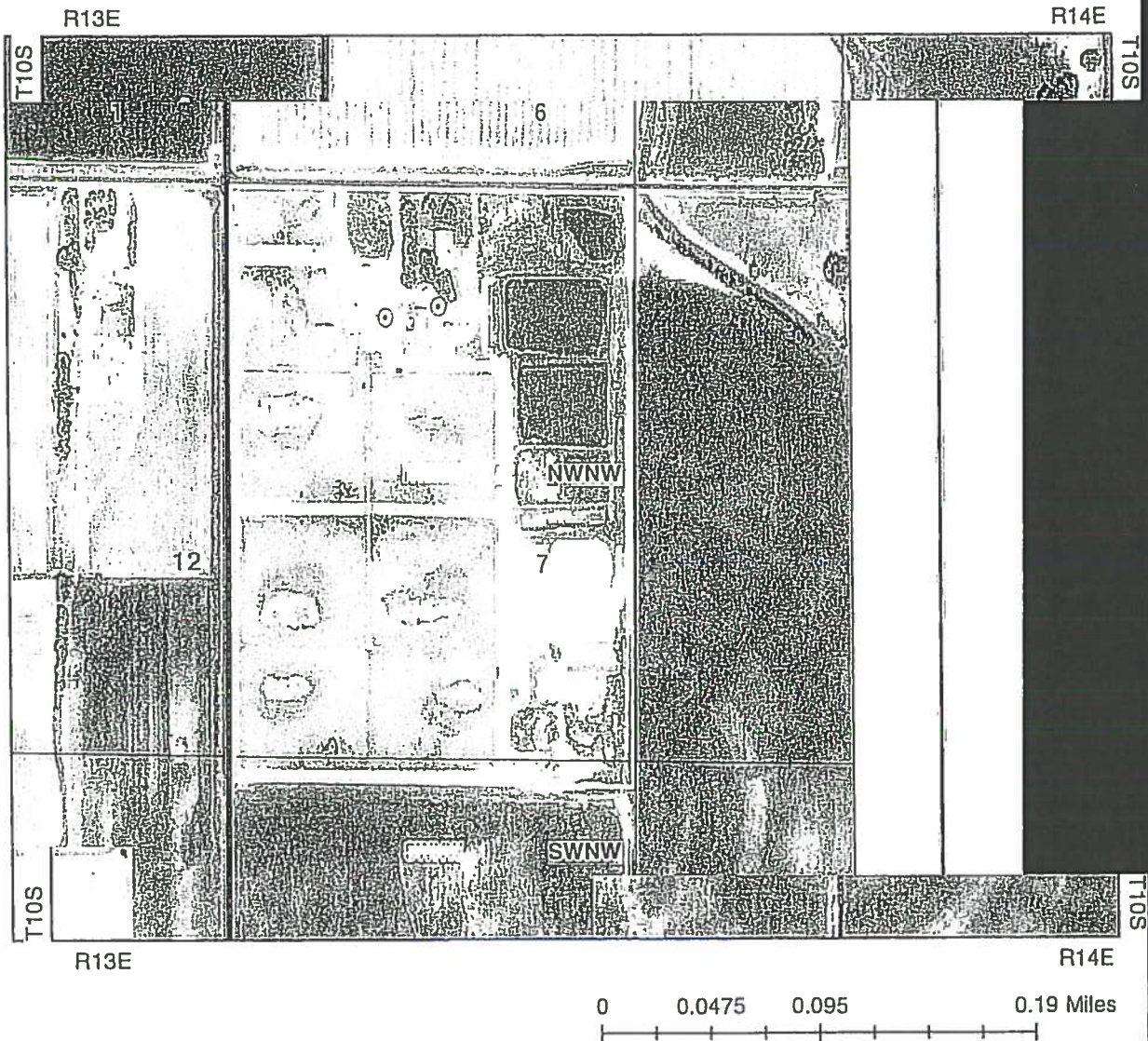
State of Idaho  
Department of Water Resources

# Attachment To Transfer Of Water Right

Transfer No. 78127

Rights: 47-8251, 47-17590

This map depicts the COMMERCIAL & STOCKWATER place of use boundary for these water rights at the time of this approval and is attached to the approval document solely for illustrative purposes.



- ● Point of Diversion
- Place Of Use Boundary
- Townships
- PLS Sections
- Quarter Quarters



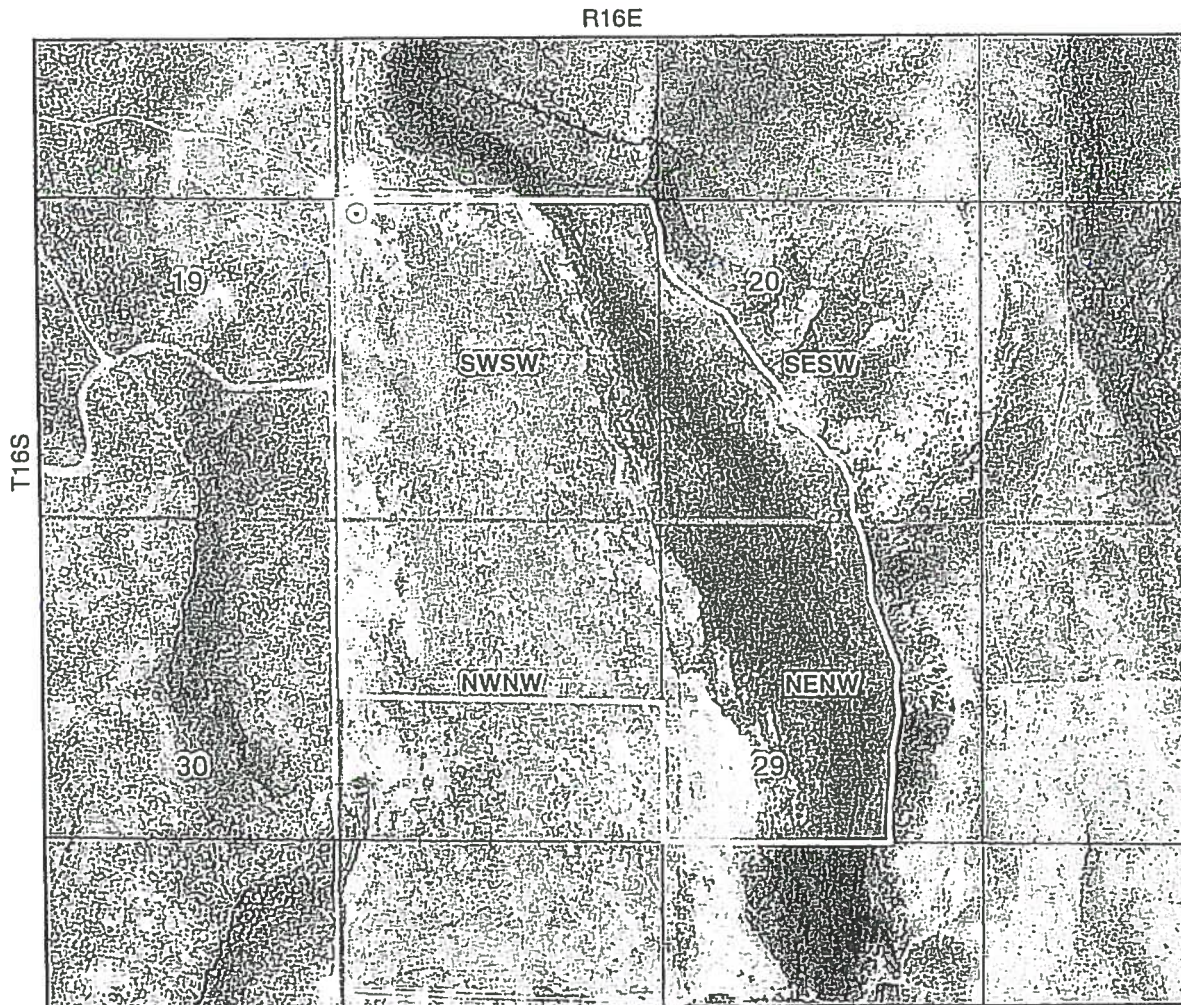
State of Idaho  
Department of Water Resources

# Attachment To Transfer Of Water Right

Transfer No. 78127

Rights: 47-17589

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



0 0.075 0.15 0.3 Miles

- ⊙ Point of Diversion
- Place Of Use Boundary

- Townships
- PLS Sections
- Quarter Quarters



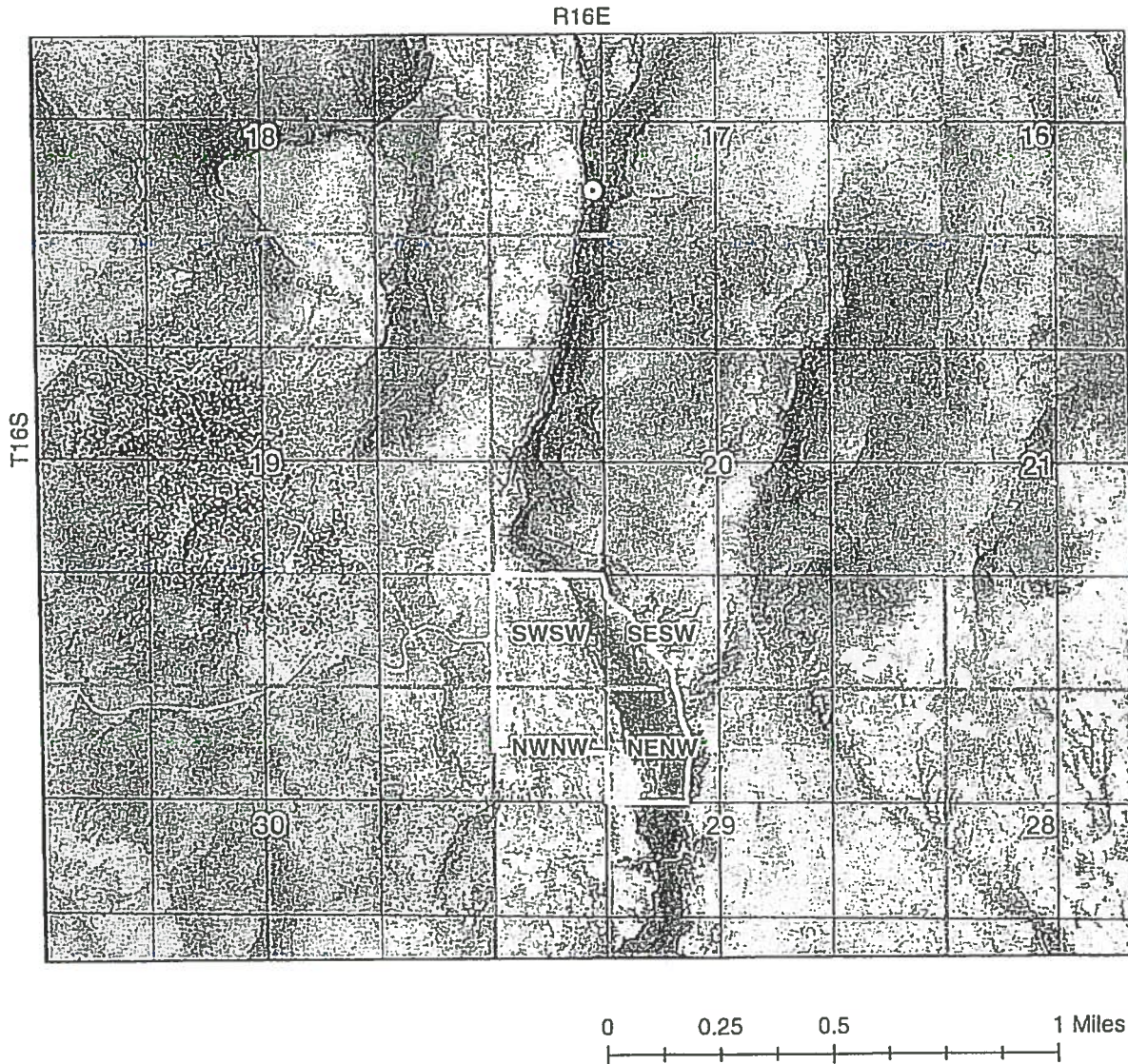
State of Idaho  
Department of Water Resources

# Attachment To Transfer Of Water Right

Transfer No. 78127

Rights: 47-7287

This map depicts the IRRIGATION FROM STORAGE place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



- ⊙ Point of Diversion
- Place Of Use Boundary

- ▭ Townships
- ▭ PLS Sections
- ▭ Quarter Quarters



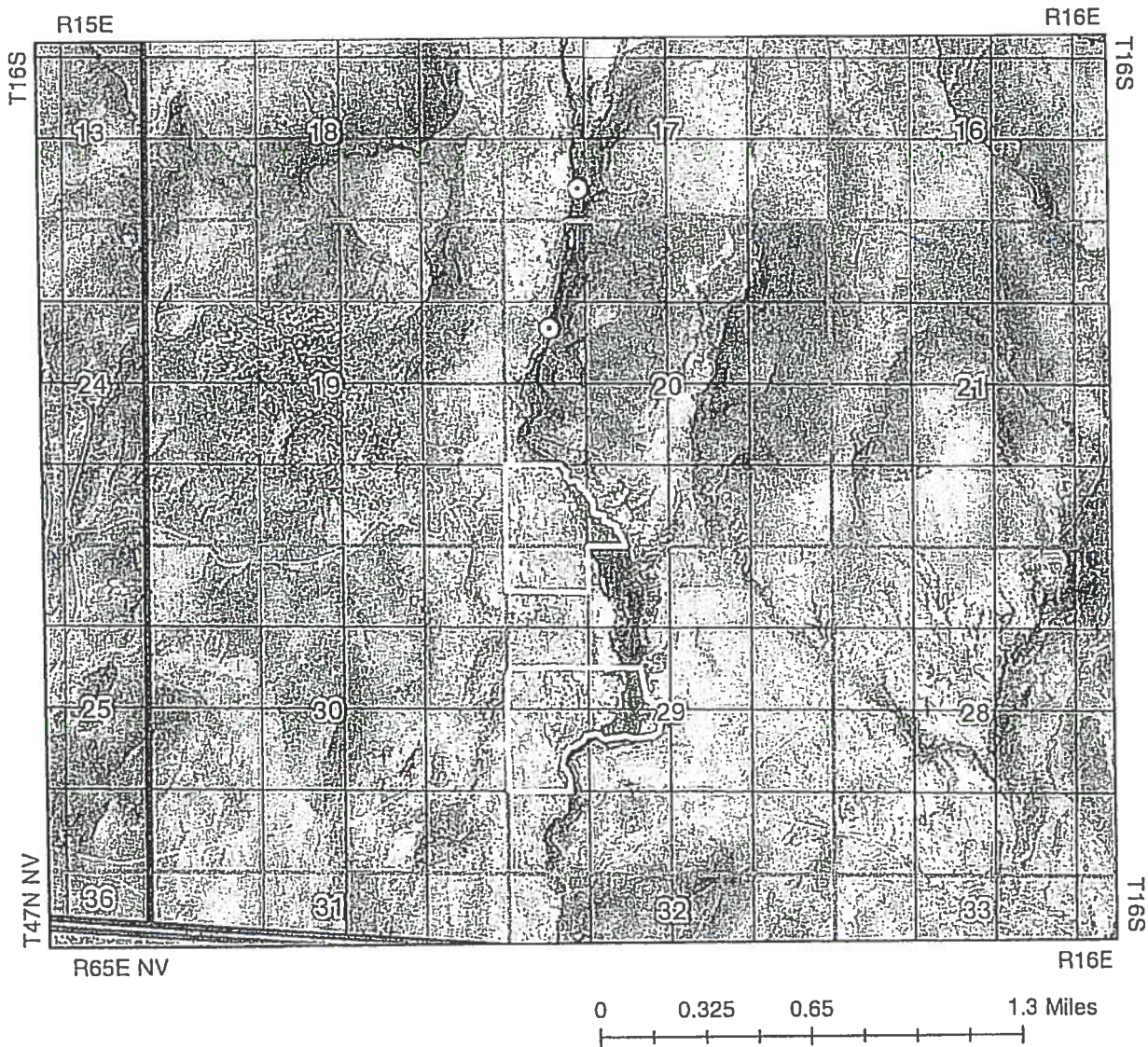
State of Idaho  
Department of Water Resources

# Attachment To Transfer Of Water Right

Transfer No. 78127

Rights: 47-14285

This map depicts the IRRIGATION place of use boundary for this water right at the time of this approval and is attached to the approval document solely for illustrative purposes.



- ⊙ Point of Diversion
- Place Of Use Boundary

- Townships
- PLS Sections
- Quarter Quarters



## Appendix D:



# Memo

**To:** Hank Hafliger  
**From:** Amy Runser  
**Cc:**  
**Date:** 12/10/2014  
**Re:** Static Water Levels in the Aquifer Analysis

Contours generated were based on the National Elevation Data (NED), 10 meter 1999 elevation data. The National Elevation Data is the best available information for the area south of Filer, Idaho at this time that we know of. The NED data represents the ground surface.

Static water elevations were obtained by examining local well logs from wells that were drilled after 2000. The well drillers recorded the static water level in the wells when the drilling process was constructed.

The static water level contours of the aquifer were calculated by subtracting the depth of the static water level for an individual well from the elevation provided by the 1999 NED data.

The static water depth from the surface contours were calculated by subtracting the calculated static water level elevations from the surface elevation provided by the 1999 NED data. This procedure allows the static water elevation from individual wells to be analyzed based on elevation and not sole on depth from the ground surface.

Reference: National Elevation Dataset by United States Geological Survey, EROS data center, 1999

HAFLLGER, HANK  
WELLS ANALYSIS  
BROCKWAY ENGINEERING, PLLC  
12/10/2014

| well # | MetaTag # | Construction Date | Owner                  | AppType          | WellUse          | T.  | R.  | Sec. | QQ | QQ | Quarter | Measurement Date | Production | SWL | Casing Diam | Casing Depth | Total Depth |
|--------|-----------|-------------------|------------------------|------------------|------------------|-----|-----|------|----|----|---------|------------------|------------|-----|-------------|--------------|-------------|
| 114    | D0065005  | 10/14/2013        | KIMBERLY CONSTRUCTION  | Domestic         | Domestic         | 10S | 15E | 36   | SE | NW | NW      |                  | 20.0       | 250 | 6           | 38           | 343         |
| 113    | D0062362  | 6/26/2013         | DARREN DAUGHENBAUGH    | Domestic         | Domestic         | 11S | 15E | 1    | SE | NW | NW      |                  | 0.0        | 283 | 6           | 40           | 380         |
| 112    | D0060495  | 4/10/2012         | TONY MARTINS           | Domestic         | Domestic         | 10S | 15E | 36   | SE | SW | SW      |                  | 30.0       | 294 | 6           | 279          | 360         |
| 111    | D0060420  | 5/16/2011         | JEFF SKINNER           | Domestic         | Domestic         | 11S | 15E | 1    | NW | NE | NE      |                  | 0.0        | 260 | 6           | 38           | 380         |
| 110    | D0050798  | 7/10/2009         | LEE BAKER              | Domestic         | Domestic         | 10S | 16E | 32   | SE | SW | SW      |                  | 40.0       | 227 | 6           | 375          | 375         |
| 107    | D0050472  | 10/7/2008         | GREG SCOTT             | Domestic         | Domestic         | 11S | 16E | 16   | SW | NE | NE      |                  | 0.0        | 243 | 6           | 18           | 450         |
| 104    | D0050334  | 7/15/2008         | DRAGT CONSTRUCTION     | Domestic         | Domestic         | 10S | 16E | 32   | SW | NW | NW      |                  | 0.0        | 212 | 6           | 19           | 284         |
| 101    | D0044496  | 6/25/2007         | K2 RED                 | Domestic         | Domestic         | 10S | 16E | 32   | SW | NW | NW      |                  | 0.0        | 212 | 6           | 18           | 295         |
| 100    | D0043538  | 4/9/2007          | JAMES RAY CONSTRUCTION | Domestic         | Domestic         | 11S | 16E | 17   | SW | SE | SE      |                  | 0.0        | 307 | 6           | 280          | 530         |
| 99     | D0043358  | 3/26/2007         | TERRY HUMPHREY         | Domestic         | Domestic         | 11S | 15E | 1    | NW | NW | NW      |                  | 24.0       | 264 | 6           | 292          | 380         |
| 98     | D0043357  | 3/19/2007         | GARY HOOLEY            | Domestic         | Domestic         | 10S | 16E | 32   | SE | NE | NE      |                  | 25.0       | 60  | 6           | 40           | 240         |
| 97     | D0037159  | 2/9/2006          | TRACO BUILDERS         | Domestic         | Domestic         | 10S | 15E | 36   | SE | SE | SE      |                  | 0.0        | 260 | 6           | 18           | 360         |
| 95     | D0036839  | 12/21/2005        | LYNN WILLIAMSON        | Domestic         | Domestic         | 11S | 16E | 16   | NE | NW | SW      |                  | 0.0        | 235 | 6           | 19           | 455         |
| 93     | D0037064  | 11/21/2005        | DAVE SLOTTEN           | Domestic         | Domestic         | 10S | 15E | 35   | SE | SE | SE      |                  | 0.0        | 248 | 6           | 18           | 355         |
| 94     | D0037096  | 11/21/2005        | JACK WHITE             | Domestic         | Domestic         | 10S | 15E | 35   | SE | NE | NE      |                  | 0.0        | 198 | 6           | 18           | 305         |
| 92     |           | 4/22/2005         | WAYNE LINCOLN          | Domestic         | Domestic         | 10S | 16E | 32   | NW | NE | NW      |                  | 0.0        | 0   | 4           | 0            | 0           |
| 91     | D0034682  | 3/29/2005         | WAYNE LINCOLN          | Domestic         | Domestic         | 10S | 16E | 32   | NW | NE | NW      |                  | 0.0        | 182 | 6           | 19           | 240         |
| 82     | D0034694  | 2/18/2005         | HANK HAFLLGER          | Commercial       | Commercial       | 11S | 16E | 6    | SE | NE | NE      |                  | 0.0        | 262 | 8           | 0            | 450         |
| 83     | D0034700  | 2/17/2005         | HANK HAFLLGER          | Domestic         | Domestic         | 11S | 16E | 6    | NW | NE | NE      |                  | 0.0        | 282 | 6           | 0            | 424         |
| 81     | D0034693  | 2/16/2005         | HANK HAFLLGER          | Commercial       | Commercial       | 11S | 16E | 6    | SE | NE | NE      |                  | 0.0        | 262 | 6           | 0            | 448         |
| 79     | D0034502  | 1/18/2005         | TYSON COOK             | Domestic         | Domestic         | 11S | 16E | 16   | NW | SW | SW      |                  | 0.0        | 236 | 6           | 319          | 370         |
| 60     | D0023640  | 5/15/2003         | BRIAN TUBBS            | Domestic         | Domestic         | 11S | 15E | 1    | SE | SE | SE      |                  | 0.0        | 280 | 8           | 338          | 405         |
| 58     | D0016383  | 6/14/2001         | DAVID HIGBEE           |                  | Domestic         | 11S | 15E | 1    | SE | NW | NW      |                  | 0.0        | 287 | 8           | 405          | 405         |
| 57     | D0016377  | 6/12/2001         | HANK HAFLLGER          |                  | Domestic         | 11S | 16E | 6    | NW | NW | NW      |                  | 0.0        | 280 | 8           | 19           | 345         |
| 56     | D0008627  | 1/21/2000         | ERIC CLAR              |                  | Domestic         | 11S | 16E | 17   | NW | NW | NW      |                  | 40.0       | 256 | 8           | 19           | 460         |
|        |           | 5/16/1957         | Hank Hafllger          | Irrigation       | Irrigation       | 11S | 16E | 6    | NW | SE | SE      | 5/19/2014        |            | 290 | 20          |              | 975         |
|        |           |                   | Dairy #3 (Hafllger)    | Stock/Commercial | Stock/Commercial | 11S | 16E | 6    | SE | NE | NE      | 1/15/2014        |            | 288 |             |              |             |
|        |           |                   | Hank Hafllger          | Domestic         | Domestic         | 11S | 16E | 8    | SW | SW | SW      | 10/7/2014        |            | 247 | 8           |              |             |
|        |           |                   | Dairy #2 (Hafllger)    | Stock/Commercial | Stock/Commercial | 11S | 16E | 5    | NE | SE | SE      | 3/1/2014         |            | 232 |             |              |             |
|        |           |                   | Dairy #1 (Hafllger)    | Stock/Commercial | Stock/Commercial | 11S | 16E | 4    | SW | SW | SW      | 4/10/2014        |            | 271 |             |              |             |

| Well # | Protestant                       | Estimated Depth to Water (feet) |
|--------|----------------------------------|---------------------------------|
| 1      | Elizabeth B. Slifer              | no estimation                   |
| 2      | Margaret Winsryg                 | 250-260                         |
| 3      | Martin F Hackard                 | 250-260                         |
| 4      | Scott R Houtz                    | 250-260                         |
| 5      | Richard Parrott and Eric Parrott | 270-280                         |
| 6      | Pam Ritter                       | 250-260                         |
| 7      | Louis m Rice                     | 250-260                         |
| 8      | Victoria B Henson                |                                 |
| 9      | Jeanie McCreary                  | 250-260                         |
| 10     | William D Hamby                  | no estimation                   |
| 11     | Lynn & Barbara Stephens          | 240-250                         |
| 12     | Leslie Ellsworth                 | no estimation                   |
| 13     | Ed Smith                         | no estimation                   |
| 14     | Mike Humphries                   | no estimation                   |
| 15     | Jimmie LeConder                  | no estimation                   |
| 16     | Delea C Miller                   | 250-260                         |

| Well # | Protestant                                | Well Driller Log Static Water Level and Year of Log | Static Water Level Provided by Protestant and Year of Measurement |
|--------|-------------------------------------------|-----------------------------------------------------|-------------------------------------------------------------------|
| 1      | Elizabeth B. Slifer                       | no well log                                         | none                                                              |
| 2      | Margaret Winsryg                          | 256 (2000)                                          | 257 (2014)                                                        |
| 3      | Martin F Hackard                          | 260 (1996)                                          | none                                                              |
|        |                                           | 290 (2002)                                          | none                                                              |
| 4      | Scott R Houtz                             | 274                                                 | none                                                              |
| 5      | Richard Parrott and Eric Parrott (Well 1) | no well log                                         | 400 (1972)                                                        |
|        | Richard Parrott and Eric Parrott (Well 1) | no well log                                         | 280 (2014)                                                        |
|        | Richard Parrott and Eric Parrott (Well 2) | no well log                                         | 300 (2014)                                                        |
| 6      | Pam Ritter                                | 145 (1972)                                          | 378                                                               |
| 7      | Louis m Rice                              | 225 (1995)                                          | none                                                              |
| 8      | Victoria B Henson                         |                                                     |                                                                   |
| 9      | Jeanie McCreary                           | 310 (1995)                                          | none                                                              |
| 10     | William D Hamby                           | no well log                                         | 280 (recent)                                                      |
| 11     | Lynn & Barbara Stephens                   | no well log                                         | none                                                              |
| 12     | Leslie Ellsworth                          | 115 (1984)                                          | none                                                              |
| 13     | Ed Smith                                  | 147 (1997)                                          | none                                                              |
| 14     | Mike Humphries                            | no well log                                         | none                                                              |
| 15     | Jimmie LeConder                           | 215 (1973)                                          | 220                                                               |
| 16     | Delea C Miller                            | 246 (1998)                                          | none                                                              |

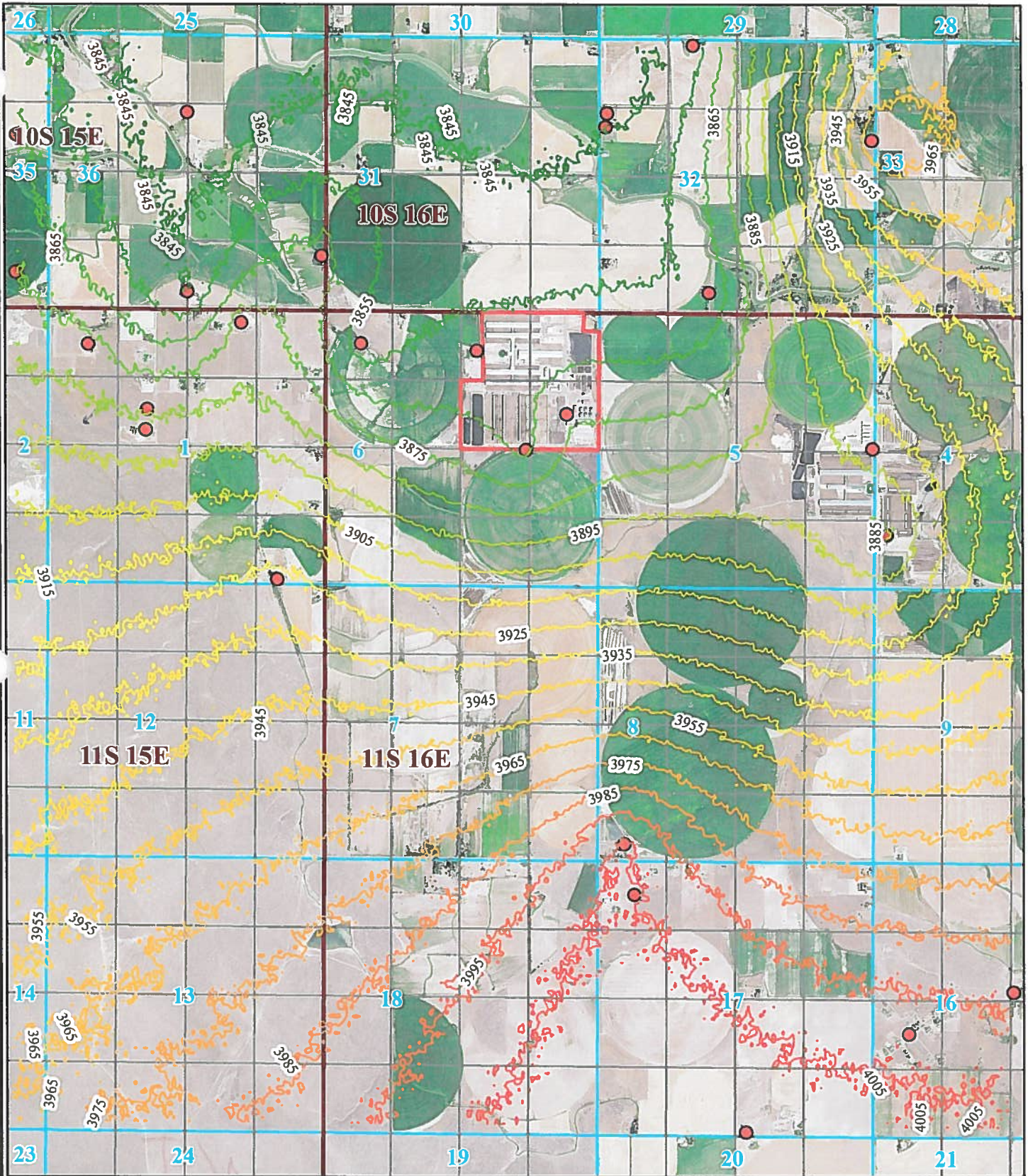


0 1,000 2,000 4,000 Feet

**GROUND SURFACE CONTOURS  
WELL LOGS 2000 THROUGH 2013  
NAIP 2013 AERIAL**

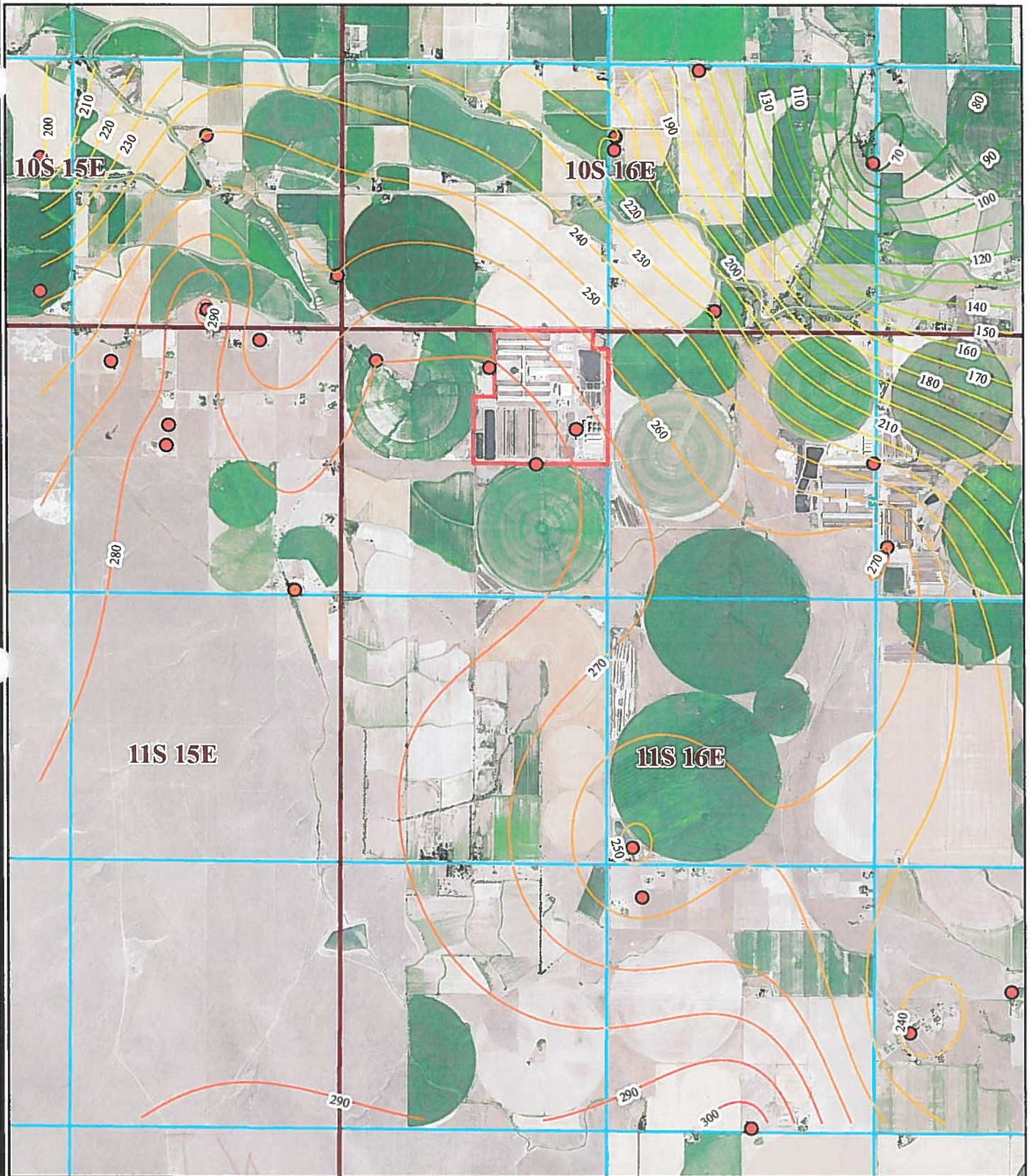
- Legend**
- Well Drilled 2000-2014
  - Dairy #3 POU
  - twshp
  - Sections





# **STATIC WATER LEVELS OF AQUIFER WELL LOGS 2000 THROUGH 2013 NAIP 2013 AERIAL**

- Legend**
- Well Drilled 2000-2014
  - Dairy #3 POU
  - township
  - Sections
  - QQ Lines



**DEPTH TO STATIC WATER LEVEL  
WELL LOGS 2000 THROUGH 2013  
NAIP 2013 AERIAL**

**Legend**

- Well Drilled 2000-2014
- Dairy #3 POU
- twnshp
- Sections

## Appendix E:

## Monthly flows for groundwater model - Irrigation Transfer

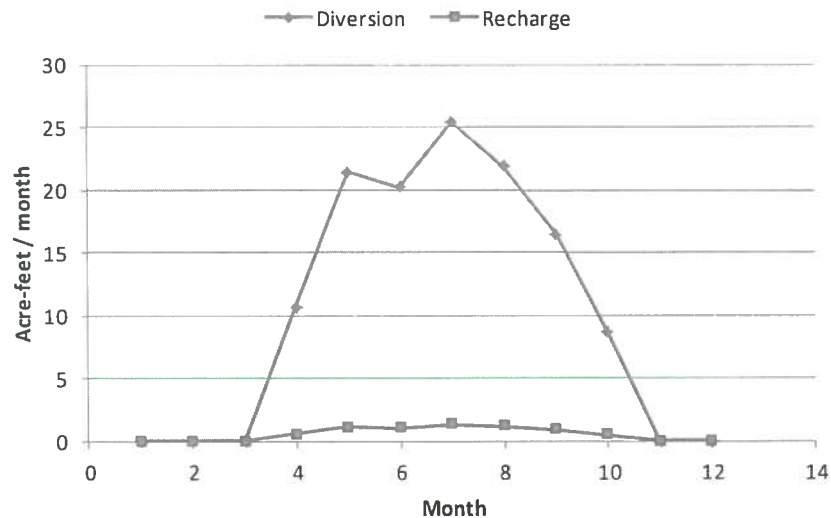
Hafliger project

Irrigation: 0.49 cfs / 124.8 afa new use, follow Pdef curve for ET Idaho Buhl Station

| Month     | No. Days | Pdef<br>(mm/d) | Pdef<br>(af) | Diversion<br>vol (af)* | Avg div<br>rate (gpm) | Rechg<br>(af) | Rchg<br>(in/day) |
|-----------|----------|----------------|--------------|------------------------|-----------------------|---------------|------------------|
| January   | 1 31     | 0              | 0            | 0                      | 0                     | 0             |                  |
| February  | 2 28     | 0              | 0            | 0                      | 0                     | 0             |                  |
| March     | 3 31     | 0              | 0            | 0                      | 0                     | 0             |                  |
| April     | 4 30     | 2.48           | 10.2         | 10.7                   | 81.0                  | 0.6           | 5.57E-03         |
| May       | 5 31     | 4.79           | 20.3         | 21.4                   | 156.4                 | 1.2           | 1.08E-02         |
| June      | 6 30     | 4.66           | 19.1         | 20.2                   | 152.1                 | 1.1           | 1.05E-02         |
| July      | 7 31     | 5.68           | 24.0         | 25.4                   | 185.4                 | 1.4           | 1.28E-02         |
| August    | 8 31     | 4.9            | 20.7         | 21.9                   | 160.0                 | 1.2           | 1.10E-02         |
| September | 9 30     | 3.81           | 15.6         | 16.5                   | 124.4                 | 0.9           | 8.56E-03         |
| October   | 10 31    | 1.94           | 8.2          | 8.7                    | 63.3                  | 0.5           | 4.36E-03         |
| November  | 11 30    | 0              | 0            | 0                      | 0                     | 0             |                  |
| December  | 12 31    | 0              | 0            | 0                      | 0                     | 0             |                  |
| Totals:   |          |                | 118.1        | 124.8                  |                       | 6.7           |                  |

\* Based on implied irrigation efficiency = Pdef / water right volume limit = 0.946

## Monthly Distribution of Annual Volume



Hafliger Model Scenario: Irrigation well new pumping

| Modeled drawdown at well: |        |        |        |        |        |        |        |        |         |         |         |         |         |         |         |  |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--|
| Time (d)                  | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |  |
| 0.0001                    | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |  |
| 30.4                      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |  |
| 60.8                      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |  |
| 91.3                      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |  |
| 121.7                     | 0      | 0.122  | 0.013  | 0.107  | 0.037  | 0.013  | 0.013  | 0.172  | 0       | 0.002   | 0       | 0       | 0       | 0       | 0.088   |  |
| 152.1                     | 0      | 0.271  | 0.045  | 0.24   | 0.1    | 0.044  | 0.045  | 0.368  | 0.003   | 0.013   | 0       | 0       | 0.004   | 0       | 0.202   |  |
| 182.5                     | 0      | 0.317  | 0.077  | 0.286  | 0.141  | 0.075  | 0.076  | 0.413  | 0.009   | 0.03    | 0       | 0       | 0.013   | 0       | 0.249   |  |
| 212.9                     | 0      | 0.399  | 0.107  | 0.362  | 0.185  | 0.105  | 0.106  | 0.516  | 0.017   | 0.047   | 0       | 0.001   | 0.023   | 0       | 0.316   |  |
| 243.3                     | 0      | 0.399  | 0.129  | 0.366  | 0.207  | 0.128  | 0.129  | 0.5    | 0.027   | 0.064   | 0       | 0.001   | 0.035   | 0       | 0.326   |  |
| 273.8                     | 0      | 0.362  | 0.14   | 0.336  | 0.207  | 0.138  | 0.139  | 0.441  | 0.036   | 0.077   | 0.001   | 0.003   | 0.046   | 0.001   | 0.304   |  |
| 304.2                     | 0.001  | 0.27   | 0.135  | 0.256  | 0.182  | 0.134  | 0.135  | 0.312  | 0.044   | 0.083   | 0.002   | 0.004   | 0.054   | 0.002   | 0.239   |  |
| 334.6                     | 0.001  | 0.153  | 0.116  | 0.152  | 0.137  | 0.116  | 0.116  | 0.155  | 0.049   | 0.082   | 0.003   | 0.006   | 0.057   | 0.003   | 0.15    |  |
| 365                       | 0.001  | 0.116  | 0.096  | 0.116  | 0.108  | 0.096  | 0.096  | 0.117  | 0.049   | 0.075   | 0.005   | 0.008   | 0.056   | 0.005   | 0.115   |  |
| 395.4                     | 0.002  | 0.095  | 0.082  | 0.095  | 0.09   | 0.082  | 0.082  | 0.096  | 0.048   | 0.067   | 0.005   | 0.01    | 0.053   | 0.006   | 0.095   |  |
| 425.8                     | 0.003  | 0.081  | 0.072  | 0.081  | 0.077  | 0.072  | 0.072  | 0.081  | 0.046   | 0.06    | 0.008   | 0.012   | 0.05    | 0.008   | 0.081   |  |
| 456.3                     | 0.004  | 0.071  | 0.064  | 0.071  | 0.068  | 0.064  | 0.064  | 0.071  | 0.043   | 0.055   | 0.009   | 0.013   | 0.047   | 0.009   | 0.071   |  |
| 486.7                     | 0.004  | 0.185  | 0.071  | 0.17   | 0.098  | 0.071  | 0.071  | 0.235  | 0.041   | 0.053   | 0.01    | 0.014   | 0.044   | 0.01    | 0.15    |  |
| 517.1                     | 0.005  | 0.328  | 0.098  | 0.297  | 0.155  | 0.096  | 0.097  | 0.425  | 0.041   | 0.059   | 0.011   | 0.015   | 0.045   | 0.011   | 0.259   |  |
| 547.5                     | 0.006  | 0.369  | 0.125  | 0.338  | 0.191  | 0.123  | 0.124  | 0.465  | 0.045   | 0.073   | 0.011   | 0.015   | 0.051   | 0.011   | 0.3     |  |
| 577.9                     | 0.006  | 0.447  | 0.151  | 0.409  | 0.232  | 0.149  | 0.15   | 0.564  | 0.051   | 0.087   | 0.012   | 0.016   | 0.059   | 0.012   | 0.363   |  |
| 608.3                     | 0.007  | 0.443  | 0.171  | 0.41   | 0.25   | 0.169  | 0.17   | 0.545  | 0.059   | 0.102   | 0.013   | 0.017   | 0.069   | 0.013   | 0.369   |  |
| 638.8                     | 0.007  | 0.403  | 0.178  | 0.377  | 0.247  | 0.177  | 0.177  | 0.482  | 0.067   | 0.112   | 0.014   | 0.018   | 0.078   | 0.014   | 0.345   |  |
| 669.2                     | 0.008  | 0.308  | 0.171  | 0.295  | 0.219  | 0.17   | 0.171  | 0.35   | 0.073   | 0.117   | 0.015   | 0.019   | 0.084   | 0.015   | 0.277   |  |
| 699.6                     | 0.009  | 0.189  | 0.15   | 0.188  | 0.172  | 0.135  | 0.135  | 0.191  | 0.077   | 0.114   | 0.016   | 0.021   | 0.087   | 0.016   | 0.186   |  |
| 730                       | 0.009  | 0.15   | 0.129  | 0.15   | 0.141  | 0.128  | 0.128  | 0.151  | 0.076   | 0.105   | 0.018   | 0.023   | 0.084   | 0.018   | 0.149   |  |
| 760.4                     | 0.01   | 0.127  | 0.113  | 0.127  | 0.121  | 0.113  | 0.113  | 0.128  | 0.074   | 0.096   | 0.019   | 0.025   | 0.08    | 0.019   | 0.127   |  |
| 790.8                     | 0.011  | 0.111  | 0.101  | 0.112  | 0.107  | 0.101  | 0.101  | 0.112  | 0.07    | 0.088   | 0.021   | 0.026   | 0.075   | 0.021   | 0.111   |  |
| 821.3                     | 0.012  | 0.099  | 0.091  | 0.1    | 0.096  | 0.091  | 0.091  | 0.1    | 0.067   | 0.081   | 0.022   | 0.027   | 0.071   | 0.022   | 0.099   |  |
| 851.7                     | 0.013  | 0.213  | 0.097  | 0.197  | 0.125  | 0.097  | 0.097  | 0.263  | 0.064   | 0.078   | 0.023   | 0.028   | 0.067   | 0.023   | 0.178   |  |
| 882.1                     | 0.014  | 0.354  | 0.123  | 0.323  | 0.181  | 0.122  | 0.122  | 0.451  | 0.063   | 0.083   | 0.023   | 0.029   | 0.068   | 0.023   | 0.285   |  |
| 912.5                     | 0.014  | 0.394  | 0.149  | 0.363  | 0.216  | 0.148  | 0.148  | 0.49   | 0.066   | 0.096   | 0.024   | 0.029   | 0.073   | 0.024   | 0.325   |  |
| 942.9                     | 0.015  | 0.471  | 0.174  | 0.433  | 0.255  | 0.172  | 0.173  | 0.588  | 0.072   | 0.109   | 0.024   | 0.029   | 0.08    | 0.024   | 0.387   |  |
| 973.3                     | 0.015  | 0.466  | 0.193  | 0.433  | 0.272  | 0.191  | 0.192  | 0.568  | 0.079   | 0.123   | 0.025   | 0.03    | 0.089   | 0.025   | 0.392   |  |
| 1003.8                    | 0.016  | 0.425  | 0.2    | 0.399  | 0.269  | 0.198  | 0.199  | 0.505  | 0.086   | 0.133   | 0.025   | 0.031   | 0.098   | 0.025   | 0.367   |  |
| 1034.2                    | 0.016  | 0.33   | 0.192  | 0.316  | 0.24   | 0.191  | 0.191  | 0.371  | 0.092   | 0.137   | 0.026   | 0.032   | 0.103   | 0.026   | 0.298   |  |
| 1064.6                    | 0.017  | 0.21   | 0.17   | 0.209  | 0.193  | 0.17   | 0.17   | 0.212  | 0.095   | 0.133   | 0.028   | 0.034   | 0.105   | 0.028   | 0.207   |  |

Haffliger Model Scenario: Irrigation well new pumping

| Modeled drawdown at well: |        |        |        |        |        |        |        |        |         |         |         |         |         |         |         |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| Time (d)                  | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |
| 1095                      | 0.048  | 0.17   | 0.148  | 0.17   | 0.161  | 0.148  | 0.148  | 0.171  | 0.094   | 0.123   | 0.029   | 0.036   | 0.102   | 0.029   | 0.169   |
| 1125.4                    | 0.019  | 0.147  | 0.132  | 0.147  | 0.14   | 0.131  | 0.131  | 0.147  | 0.091   | 0.114   | 0.03    | 0.037   | 0.097   | 0.03    | 0.146   |
| 1155.8                    | 0.02   | 0.13   | 0.119  | 0.13   | 0.126  | 0.119  | 0.119  | 0.131  | 0.087   | 0.105   | 0.032   | 0.038   | 0.092   | 0.031   | 0.13    |
| 1186.3                    | 0.02   | 0.118  | 0.109  | 0.118  | 0.114  | 0.109  | 0.109  | 0.118  | 0.083   | 0.098   | 0.033   | 0.039   | 0.087   | 0.032   | 0.117   |
| 1216.7                    | 0.021  | 0.23   | 0.114  | 0.215  | 0.143  | 0.114  | 0.114  | 0.28   | 0.079   | 0.094   | 0.033   | 0.04    | 0.083   | 0.033   | 0.195   |
| 1247.1                    | 0.022  | 0.371  | 0.139  | 0.34   | 0.198  | 0.138  | 0.139  | 0.468  | 0.078   | 0.099   | 0.034   | 0.04    | 0.083   | 0.034   | 0.302   |
| 1277.5                    | 0.022  | 0.41   | 0.165  | 0.38   | 0.233  | 0.164  | 0.164  | 0.506  | 0.081   | 0.112   | 0.034   | 0.04    | 0.088   | 0.034   | 0.342   |
| 1307.9                    | 0.023  | 0.487  | 0.19   | 0.449  | 0.271  | 0.188  | 0.189  | 0.604  | 0.086   | 0.125   | 0.034   | 0.04    | 0.095   | 0.034   | 0.403   |
| 1338.3                    | 0.023  | 0.482  | 0.208  | 0.449  | 0.288  | 0.206  | 0.208  | 0.583  | 0.093   | 0.138   | 0.035   | 0.041   | 0.104   | 0.035   | 0.408   |
| 1368.8                    | 0.024  | 0.44   | 0.215  | 0.414  | 0.284  | 0.213  | 0.214  | 0.52   | 0.1     | 0.148   | 0.035   | 0.042   | 0.112   | 0.035   | 0.382   |
| 1399.2                    | 0.024  | 0.345  | 0.207  | 0.331  | 0.255  | 0.205  | 0.206  | 0.386  | 0.105   | 0.151   | 0.036   | 0.043   | 0.117   | 0.036   | 0.313   |
| 1429.6                    | 0.025  | 0.224  | 0.185  | 0.223  | 0.207  | 0.184  | 0.184  | 0.226  | 0.108   | 0.147   | 0.037   | 0.044   | 0.118   | 0.037   | 0.221   |
| 1460                      | 0.026  | 0.184  | 0.162  | 0.184  | 0.175  | 0.162  | 0.162  | 0.185  | 0.107   | 0.137   | 0.039   | 0.046   | 0.115   | 0.038   | 0.183   |
| 1490.4                    | 0.026  | 0.16   | 0.145  | 0.16   | 0.154  | 0.145  | 0.145  | 0.161  | 0.103   | 0.127   | 0.04    | 0.047   | 0.11    | 0.04    | 0.16    |
| 1520.8                    | 0.027  | 0.144  | 0.132  | 0.144  | 0.139  | 0.132  | 0.132  | 0.144  | 0.099   | 0.118   | 0.041   | 0.048   | 0.105   | 0.041   | 0.143   |
| 1551.3                    | 0.028  | 0.131  | 0.122  | 0.131  | 0.127  | 0.122  | 0.122  | 0.131  | 0.095   | 0.111   | 0.042   | 0.049   | 0.1     | 0.042   | 0.131   |
| 1581.7                    | 0.029  | 0.243  | 0.127  | 0.228  | 0.156  | 0.127  | 0.127  | 0.293  | 0.091   | 0.107   | 0.042   | 0.049   | 0.095   | 0.042   | 0.208   |
| 1612.1                    | 0.029  | 0.384  | 0.152  | 0.352  | 0.21   | 0.151  | 0.151  | 0.481  | 0.09    | 0.112   | 0.043   | 0.049   | 0.095   | 0.043   | 0.315   |
| 1642.5                    | 0.03   | 0.423  | 0.177  | 0.392  | 0.245  | 0.176  | 0.177  | 0.519  | 0.092   | 0.123   | 0.043   | 0.049   | 0.099   | 0.043   | 0.354   |
| 1672.9                    | 0.03   | 0.499  | 0.202  | 0.462  | 0.283  | 0.2    | 0.201  | 0.616  | 0.097   | 0.136   | 0.043   | 0.049   | 0.106   | 0.043   | 0.415   |
| 1703.3                    | 0.031  | 0.494  | 0.22   | 0.461  | 0.3    | 0.218  | 0.219  | 0.595  | 0.104   | 0.15    | 0.043   | 0.05    | 0.115   | 0.043   | 0.42    |
| 1733.8                    | 0.031  | 0.452  | 0.226  | 0.426  | 0.296  | 0.224  | 0.225  | 0.532  | 0.111   | 0.159   | 0.044   | 0.05    | 0.123   | 0.044   | 0.394   |
| 1764.2                    | 0.031  | 0.356  | 0.218  | 0.342  | 0.266  | 0.217  | 0.217  | 0.398  | 0.116   | 0.162   | 0.044   | 0.051   | 0.128   | 0.044   | 0.325   |
| 1794.6                    | 0.032  | 0.235  | 0.196  | 0.235  | 0.218  | 0.195  | 0.195  | 0.237  | 0.118   | 0.158   | 0.045   | 0.053   | 0.129   | 0.045   | 0.232   |
| 1825                      | 0.032  | 0.195  | 0.173  | 0.195  | 0.186  | 0.172  | 0.173  | 0.196  | 0.117   | 0.147   | 0.047   | 0.054   | 0.126   | 0.046   | 0.194   |
| 1855.4                    | 0.033  | 0.171  | 0.156  | 0.171  | 0.165  | 0.156  | 0.156  | 0.172  | 0.113   | 0.137   | 0.048   | 0.055   | 0.12    | 0.048   | 0.17    |
| 1885.8                    | 0.034  | 0.154  | 0.143  | 0.154  | 0.15   | 0.143  | 0.143  | 0.155  | 0.109   | 0.128   | 0.049   | 0.056   | 0.115   | 0.049   | 0.154   |
| 1916.3                    | 0.035  | 0.141  | 0.132  | 0.142  | 0.138  | 0.132  | 0.132  | 0.142  | 0.105   | 0.121   | 0.049   | 0.057   | 0.109   | 0.049   | 0.141   |
| 1946.7                    | 0.035  | 0.254  | 0.137  | 0.238  | 0.166  | 0.137  | 0.137  | 0.304  | 0.101   | 0.116   | 0.05    | 0.057   | 0.105   | 0.05    | 0.219   |
| 1977.1                    | 0.036  | 0.394  | 0.162  | 0.363  | 0.22   | 0.161  | 0.161  | 0.491  | 0.099   | 0.121   | 0.05    | 0.057   | 0.104   | 0.05    | 0.325   |
| 2007.5                    | 0.036  | 0.433  | 0.187  | 0.402  | 0.255  | 0.186  | 0.186  | 0.529  | 0.102   | 0.133   | 0.05    | 0.057   | 0.109   | 0.05    | 0.364   |
| 2037.9                    | 0.037  | 0.509  | 0.211  | 0.471  | 0.293  | 0.21   | 0.211  | 0.626  | 0.106   | 0.146   | 0.05    | 0.057   | 0.116   | 0.05    | 0.425   |
| 2068.3                    | 0.037  | 0.503  | 0.23   | 0.47   | 0.309  | 0.228  | 0.229  | 0.605  | 0.113   | 0.159   | 0.051   | 0.057   | 0.124   | 0.05    | 0.43    |
| 2098.8                    | 0.037  | 0.461  | 0.236  | 0.435  | 0.305  | 0.234  | 0.235  | 0.541  | 0.12    | 0.168   | 0.051   | 0.058   | 0.131   | 0.051   | 0.403   |
| 2129.2                    | 0.038  | 0.365  | 0.227  | 0.352  | 0.276  | 0.226  | 0.226  | 0.407  | 0.125   | 0.171   | 0.052   | 0.059   | 0.137   | 0.052   | 0.334   |
| 2159.6                    | 0.038  | 0.244  | 0.205  | 0.244  | 0.227  | 0.204  | 0.204  | 0.246  | 0.127   | 0.166   | 0.053   | 0.06    | 0.138   | 0.052   | 0.242   |

Hafliger Model Scenario: Irrigation well new pumping

| Modeled drawdown at well: |        |        |        |        |        |        |        |        |         |         |         |         |         |         |         |  |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--|
| Time (d)                  | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |  |
| 2190                      | 0.039  | 0.204  | 0.182  | 0.204  | 0.195  | 0.181  | 0.181  | 0.205  | 0.125   | 0.156   | 0.054   | 0.061   | 0.134   | 0.053   | 0.203   |  |
| 2220.4                    | 0.039  | 0.18   | 0.165  | 0.18   | 0.174  | 0.164  | 0.164  | 0.181  | 0.122   | 0.146   | 0.055   | 0.063   | 0.129   | 0.054   | 0.179   |  |
| 2250.8                    | 0.04   | 0.163  | 0.151  | 0.163  | 0.158  | 0.151  | 0.151  | 0.163  | 0.117   | 0.137   | 0.055   | 0.063   | 0.123   | 0.055   | 0.163   |  |
| 2281.3                    | 0.04   | 0.15   | 0.141  | 0.15   | 0.146  | 0.141  | 0.141  | 0.15   | 0.113   | 0.129   | 0.056   | 0.064   | 0.118   | 0.056   | 0.15    |  |
| 2311.7                    | 0.041  | 0.262  | 0.146  | 0.246  | 0.174  | 0.145  | 0.145  | 0.312  | 0.109   | 0.125   | 0.057   | 0.064   | 0.113   | 0.056   | 0.227   |  |
| 2342.1                    | 0.042  | 0.402  | 0.17   | 0.371  | 0.229  | 0.169  | 0.17   | 0.499  | 0.107   | 0.129   | 0.057   | 0.064   | 0.112   | 0.057   | 0.333   |  |
| 2372.5                    | 0.042  | 0.441  | 0.195  | 0.41   | 0.263  | 0.194  | 0.195  | 0.537  | 0.109   | 0.141   | 0.057   | 0.064   | 0.117   | 0.057   | 0.372   |  |
| 2402.9                    | 0.042  | 0.517  | 0.22   | 0.479  | 0.301  | 0.218  | 0.219  | 0.634  | 0.114   | 0.154   | 0.057   | 0.064   | 0.123   | 0.057   | 0.433   |  |
| 2433.3                    | 0.043  | 0.511  | 0.238  | 0.478  | 0.317  | 0.236  | 0.237  | 0.613  | 0.121   | 0.167   | 0.057   | 0.064   | 0.132   | 0.057   | 0.438   |  |
| 2463.8                    | 0.043  | 0.469  | 0.243  | 0.443  | 0.313  | 0.242  | 0.243  | 0.549  | 0.127   | 0.176   | 0.057   | 0.064   | 0.139   | 0.057   | 0.411   |  |
| 2494.2                    | 0.043  | 0.373  | 0.235  | 0.359  | 0.283  | 0.234  | 0.234  | 0.415  | 0.132   | 0.179   | 0.058   | 0.065   | 0.144   | 0.058   | 0.342   |  |
| 2524.6                    | 0.044  | 0.252  | 0.212  | 0.251  | 0.235  | 0.212  | 0.212  | 0.254  | 0.134   | 0.174   | 0.059   | 0.067   | 0.145   | 0.059   | 0.249   |  |
| 2555                      | 0.044  | 0.212  | 0.189  | 0.212  | 0.203  | 0.189  | 0.189  | 0.213  | 0.132   | 0.164   | 0.06    | 0.068   | 0.141   | 0.06    | 0.211   |  |
| 2585.4                    | 0.045  | 0.188  | 0.172  | 0.188  | 0.181  | 0.172  | 0.172  | 0.188  | 0.129   | 0.153   | 0.061   | 0.069   | 0.136   | 0.061   | 0.187   |  |
| 2615.8                    | 0.045  | 0.17   | 0.159  | 0.171  | 0.166  | 0.159  | 0.159  | 0.171  | 0.124   | 0.144   | 0.061   | 0.07    | 0.13    | 0.061   | 0.17    |  |
| 2646.3                    | 0.046  | 0.157  | 0.148  | 0.157  | 0.154  | 0.148  | 0.148  | 0.158  | 0.12    | 0.136   | 0.062   | 0.07    | 0.125   | 0.062   | 0.157   |  |
| 2676.7                    | 0.046  | 0.269  | 0.153  | 0.253  | 0.182  | 0.152  | 0.153  | 0.319  | 0.115   | 0.132   | 0.062   | 0.07    | 0.12    | 0.062   | 0.234   |  |
| 2707.1                    | 0.047  | 0.409  | 0.177  | 0.378  | 0.236  | 0.176  | 0.177  | 0.507  | 0.114   | 0.136   | 0.063   | 0.07    | 0.119   | 0.062   | 0.34    |  |
| 2737.5                    | 0.047  | 0.448  | 0.202  | 0.417  | 0.27   | 0.201  | 0.202  | 0.544  | 0.116   | 0.148   | 0.063   | 0.07    | 0.123   | 0.062   | 0.379   |  |
| 2767.9                    | 0.047  | 0.524  | 0.226  | 0.486  | 0.308  | 0.224  | 0.226  | 0.641  | 0.121   | 0.16    | 0.063   | 0.07    | 0.13    | 0.062   | 0.44    |  |
| 2798.3                    | 0.048  | 0.518  | 0.244  | 0.485  | 0.324  | 0.242  | 0.243  | 0.62   | 0.127   | 0.173   | 0.063   | 0.07    | 0.138   | 0.063   | 0.444   |  |
| 2828.8                    | 0.048  | 0.476  | 0.25   | 0.45   | 0.32   | 0.248  | 0.249  | 0.556  | 0.134   | 0.182   | 0.063   | 0.07    | 0.146   | 0.063   | 0.418   |  |
| 2859.2                    | 0.048  | 0.38   | 0.241  | 0.366  | 0.29   | 0.24   | 0.241  | 0.422  | 0.138   | 0.185   | 0.063   | 0.071   | 0.151   | 0.063   | 0.348   |  |
| 2889.6                    | 0.049  | 0.259  | 0.219  | 0.258  | 0.242  | 0.218  | 0.218  | 0.261  | 0.14    | 0.18    | 0.064   | 0.072   | 0.151   | 0.064   | 0.256   |  |
| 2920                      | 0.049  | 0.219  | 0.196  | 0.218  | 0.209  | 0.195  | 0.195  | 0.22   | 0.139   | 0.17    | 0.065   | 0.073   | 0.148   | 0.065   | 0.217   |  |
| 2950.4                    | 0.05   | 0.194  | 0.178  | 0.194  | 0.188  | 0.178  | 0.178  | 0.195  | 0.135   | 0.16    | 0.066   | 0.074   | 0.142   | 0.066   | 0.193   |  |
| 2980.8                    | 0.05   | 0.177  | 0.165  | 0.177  | 0.172  | 0.165  | 0.165  | 0.177  | 0.13    | 0.151   | 0.067   | 0.075   | 0.136   | 0.067   | 0.176   |  |
| 3011.3                    | 0.051  | 0.164  | 0.154  | 0.164  | 0.16   | 0.154  | 0.154  | 0.164  | 0.126   | 0.143   | 0.067   | 0.076   | 0.131   | 0.067   | 0.163   |  |
| 3041.7                    | 0.051  | 0.276  | 0.159  | 0.26   | 0.188  | 0.159  | 0.159  | 0.326  | 0.122   | 0.138   | 0.068   | 0.076   | 0.126   | 0.068   | 0.241   |  |
| 3072.1                    | 0.052  | 0.415  | 0.183  | 0.384  | 0.242  | 0.182  | 0.183  | 0.513  | 0.12    | 0.143   | 0.068   | 0.075   | 0.125   | 0.068   | 0.347   |  |
| 3102.5                    | 0.052  | 0.454  | 0.208  | 0.423  | 0.276  | 0.207  | 0.208  | 0.55   | 0.122   | 0.154   | 0.068   | 0.075   | 0.129   | 0.068   | 0.385   |  |
| 3132.9                    | 0.052  | 0.53   | 0.232  | 0.492  | 0.314  | 0.231  | 0.232  | 0.647  | 0.127   | 0.166   | 0.068   | 0.075   | 0.136   | 0.068   | 0.446   |  |
| 3163.3                    | 0.052  | 0.524  | 0.25   | 0.491  | 0.33   | 0.248  | 0.249  | 0.626  | 0.133   | 0.179   | 0.068   | 0.075   | 0.144   | 0.068   | 0.451   |  |
| 3193.8                    | 0.053  | 0.482  | 0.256  | 0.456  | 0.326  | 0.254  | 0.255  | 0.562  | 0.139   | 0.188   | 0.068   | 0.075   | 0.151   | 0.068   | 0.424   |  |
| 3224.2                    | 0.053  | 0.386  | 0.247  | 0.372  | 0.296  | 0.246  | 0.247  | 0.428  | 0.144   | 0.191   | 0.068   | 0.076   | 0.156   | 0.068   | 0.354   |  |
| 3254.6                    | 0.053  | 0.265  | 0.225  | 0.264  | 0.247  | 0.224  | 0.224  | 0.267  | 0.146   | 0.186   | 0.069   | 0.077   | 0.157   | 0.069   | 0.262   |  |

Hafliger Model Scenario: Irrigation well new pumping

| Time (d) | Modeled drawdown at well: |        |        |        |        |        |        |        |         |         |         |         |         |         |         |       |
|----------|---------------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|-------|
|          | Well 1                    | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |       |
| 3285     | 0.054                     | 0.224  | 0.201  | 0.224  | 0.215  | 0.201  | 0.201  | 0.201  | 0.225   | 0.144   | 0.176   | 0.07    | 0.078   | 0.153   | 0.07    | 0.223 |
| 3315.4   | 0.054                     | 0.2    | 0.184  | 0.2    | 0.184  | 0.184  | 0.184  | 0.184  | 0.201   | 0.14    | 0.165   | 0.071   | 0.079   | 0.148   | 0.071   | 0.199 |
| 3345.8   | 0.055                     | 0.183  | 0.171  | 0.183  | 0.178  | 0.171  | 0.171  | 0.183  | 0.183   | 0.136   | 0.156   | 0.072   | 0.08    | 0.142   | 0.072   | 0.182 |
| 3376.3   | 0.055                     | 0.169  | 0.16   | 0.169  | 0.166  | 0.16   | 0.16   | 0.17   | 0.131   | 0.148   | 0.072   | 0.081   | 0.136   | 0.072   | 0.169   | 0.169 |
| 3406.7   | 0.056                     | 0.281  | 0.165  | 0.265  | 0.193  | 0.164  | 0.164  | 0.331  | 0.127   | 0.143   | 0.073   | 0.081   | 0.132   | 0.072   | 0.246   | 0.246 |
| 3437.1   | 0.056                     | 0.421  | 0.189  | 0.39   | 0.247  | 0.188  | 0.188  | 0.518  | 0.125   | 0.148   | 0.073   | 0.08    | 0.131   | 0.072   | 0.352   | 0.352 |
| 3467.5   | 0.056                     | 0.46   | 0.214  | 0.429  | 0.282  | 0.212  | 0.213  | 0.556  | 0.127   | 0.159   | 0.072   | 0.08    | 0.135   | 0.072   | 0.391   | 0.391 |
| 3497.9   | 0.057                     | 0.536  | 0.238  | 0.498  | 0.32   | 0.236  | 0.237  | 0.652  | 0.132   | 0.172   | 0.072   | 0.08    | 0.141   | 0.072   | 0.452   | 0.452 |
| 3528.3   | 0.057                     | 0.53   | 0.256  | 0.497  | 0.336  | 0.254  | 0.255  | 0.631  | 0.138   | 0.185   | 0.072   | 0.08    | 0.149   | 0.072   | 0.456   | 0.456 |
| 3558.8   | 0.057                     | 0.488  | 0.261  | 0.462  | 0.331  | 0.26   | 0.261  | 0.567  | 0.144   | 0.193   | 0.073   | 0.08    | 0.157   | 0.072   | 0.429   | 0.429 |
| 3589.2   | 0.057                     | 0.391  | 0.253  | 0.377  | 0.301  | 0.251  | 0.252  | 0.433  | 0.149   | 0.196   | 0.073   | 0.081   | 0.161   | 0.073   | 0.36    | 0.36  |
| 3619.6   | 0.057                     | 0.27   | 0.23   | 0.269  | 0.253  | 0.229  | 0.229  | 0.272  | 0.151   | 0.191   | 0.074   | 0.082   | 0.162   | 0.074   | 0.267   | 0.267 |
| 3650     | 0.058                     | 0.23   | 0.207  | 0.229  | 0.22   | 0.206  | 0.206  | 0.231  | 0.149   | 0.181   | 0.075   | 0.083   | 0.158   | 0.074   | 0.228   | 0.228 |
| 3680.4   | 0.058                     | 0.205  | 0.189  | 0.205  | 0.199  | 0.189  | 0.189  | 0.206  | 0.145   | 0.17    | 0.075   | 0.084   | 0.153   | 0.075   | 0.204   | 0.204 |
| 3710.8   | 0.059                     | 0.188  | 0.176  | 0.188  | 0.183  | 0.176  | 0.176  | 0.175  | 0.136   | 0.153   | 0.076   | 0.085   | 0.147   | 0.076   | 0.187   | 0.187 |
| 3741.3   | 0.059                     | 0.174  | 0.165  | 0.175  | 0.171  | 0.165  | 0.165  | 0.175  | 0.136   | 0.153   | 0.077   | 0.085   | 0.141   | 0.076   | 0.174   | 0.174 |
| 3771.7   | 0.06                      | 0.286  | 0.17   | 0.27   | 0.198  | 0.169  | 0.169  | 0.336  | 0.132   | 0.148   | 0.077   | 0.085   | 0.136   | 0.077   | 0.251   | 0.251 |
| 3802.1   | 0.06                      | 0.426  | 0.194  | 0.395  | 0.252  | 0.193  | 0.193  | 0.523  | 0.13    | 0.153   | 0.077   | 0.085   | 0.135   | 0.077   | 0.357   | 0.357 |
| 3832.5   | 0.06                      | 0.465  | 0.219  | 0.434  | 0.287  | 0.217  | 0.218  | 0.561  | 0.132   | 0.164   | 0.077   | 0.084   | 0.14    | 0.077   | 0.396   | 0.396 |
| 3862.9   | 0.06                      | 0.541  | 0.243  | 0.503  | 0.325  | 0.241  | 0.242  | 0.657  | 0.137   | 0.177   | 0.077   | 0.084   | 0.146   | 0.076   | 0.457   | 0.457 |
| 3893.3   | 0.061                     | 0.535  | 0.261  | 0.501  | 0.341  | 0.259  | 0.26   | 0.636  | 0.143   | 0.189   | 0.077   | 0.084   | 0.154   | 0.076   | 0.461   | 0.461 |
| 3923.8   | 0.061                     | 0.492  | 0.266  | 0.466  | 0.336  | 0.264  | 0.265  | 0.572  | 0.149   | 0.198   | 0.077   | 0.084   | 0.161   | 0.077   | 0.434   | 0.434 |
| 3954.2   | 0.061                     | 0.396  | 0.257  | 0.382  | 0.306  | 0.256  | 0.257  | 0.438  | 0.154   | 0.201   | 0.077   | 0.085   | 0.166   | 0.077   | 0.364   | 0.364 |
| 3984.6   | 0.061                     | 0.275  | 0.235  | 0.274  | 0.257  | 0.234  | 0.234  | 0.277  | 0.156   | 0.196   | 0.078   | 0.086   | 0.167   | 0.078   | 0.272   | 0.272 |
| 4015     | 0.062                     | 0.234  | 0.211  | 0.234  | 0.225  | 0.211  | 0.211  | 0.235  | 0.154   | 0.186   | 0.079   | 0.087   | 0.163   | 0.079   | 0.233   | 0.233 |
| 4045.4   | 0.062                     | 0.21   | 0.194  | 0.21   | 0.203  | 0.194  | 0.194  | 0.21   | 0.15    | 0.175   | 0.08    | 0.088   | 0.157   | 0.079   | 0.209   | 0.209 |
| 4075.8   | 0.063                     | 0.192  | 0.18   | 0.192  | 0.188  | 0.18   | 0.18   | 0.193  | 0.145   | 0.166   | 0.08    | 0.089   | 0.151   | 0.08    | 0.192   | 0.192 |
| 4106.3   | 0.063                     | 0.179  | 0.169  | 0.179  | 0.175  | 0.17   | 0.169  | 0.179  | 0.141   | 0.158   | 0.081   | 0.089   | 0.146   | 0.08    | 0.179   | 0.179 |
| 4136.7   | 0.063                     | 0.291  | 0.174  | 0.275  | 0.203  | 0.174  | 0.174  | 0.341  | 0.136   | 0.153   | 0.081   | 0.089   | 0.141   | 0.081   | 0.256   | 0.256 |
| 4167.1   | 0.064                     | 0.43   | 0.198  | 0.399  | 0.257  | 0.197  | 0.198  | 0.528  | 0.134   | 0.157   | 0.081   | 0.089   | 0.14    | 0.081   | 0.362   | 0.362 |
| 4197.5   | 0.064                     | 0.469  | 0.223  | 0.438  | 0.291  | 0.222  | 0.223  | 0.565  | 0.136   | 0.169   | 0.081   | 0.088   | 0.144   | 0.081   | 0.4     | 0.4   |
| 4227.9   | 0.064                     | 0.545  | 0.247  | 0.507  | 0.329  | 0.245  | 0.246  | 0.662  | 0.141   | 0.181   | 0.081   | 0.088   | 0.15    | 0.08    | 0.461   | 0.461 |
| 4258.3   | 0.064                     | 0.539  | 0.265  | 0.506  | 0.345  | 0.263  | 0.264  | 0.641  | 0.147   | 0.194   | 0.08    | 0.088   | 0.158   | 0.08    | 0.465   | 0.465 |
| 4288.8   | 0.064                     | 0.497  | 0.271  | 0.471  | 0.34   | 0.269  | 0.27   | 0.576  | 0.153   | 0.203   | 0.081   | 0.088   | 0.166   | 0.08    | 0.438   | 0.438 |
| 4319.2   | 0.065                     | 0.4    | 0.262  | 0.386  | 0.31   | 0.26   | 0.261  | 0.442  | 0.158   | 0.205   | 0.081   | 0.089   | 0.17    | 0.081   | 0.369   | 0.369 |
| 4349.6   | 0.065                     | 0.279  | 0.239  | 0.278  | 0.262  | 0.238  | 0.238  | 0.281  | 0.16    | 0.2     | 0.082   | 0.09    | 0.171   | 0.082   | 0.276   | 0.276 |

Halliger Model Scenario: Irrigation well new pumping

| Modeled drawdown at well: |        |        |        |        |        |        |        |        |         |         |         |         |         |         |         |  |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--|
| Time (d)                  | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |  |
| 4380                      | 0.065  | 0.239  | 0.216  | 0.238  | 0.229  | 0.215  | 0.215  | 0.24   | 0.158   | 0.19    | 0.082   | 0.091   | 0.167   | 0.082   | 0.237   |  |
| 4410.4                    | 0.066  | 0.214  | 0.198  | 0.214  | 0.208  | 0.198  | 0.198  | 0.215  | 0.154   | 0.179   | 0.083   | 0.092   | 0.162   | 0.083   | 0.213   |  |
| 4440.8                    | 0.066  | 0.196  | 0.185  | 0.197  | 0.192  | 0.185  | 0.184  | 0.197  | 0.149   | 0.17    | 0.084   | 0.093   | 0.156   | 0.084   | 0.196   |  |
| 4471.3                    | 0.066  | 0.183  | 0.174  | 0.183  | 0.179  | 0.174  | 0.174  | 0.183  | 0.145   | 0.162   | 0.084   | 0.093   | 0.15    | 0.084   | 0.183   |  |
| 4501.7                    | 0.067  | 0.295  | 0.178  | 0.279  | 0.207  | 0.178  | 0.178  | 0.345  | 0.14    | 0.157   | 0.085   | 0.093   | 0.145   | 0.084   | 0.26    |  |
| 4532.1                    | 0.067  | 0.435  | 0.202  | 0.403  | 0.261  | 0.201  | 0.202  | 0.532  | 0.138   | 0.161   | 0.085   | 0.093   | 0.144   | 0.084   | 0.366   |  |
| 4562.5                    | 0.067  | 0.473  | 0.227  | 0.442  | 0.295  | 0.226  | 0.227  | 0.569  | 0.14    | 0.173   | 0.084   | 0.092   | 0.148   | 0.084   | 0.404   |  |
| 4592.9                    | 0.068  | 0.549  | 0.251  | 0.511  | 0.333  | 0.249  | 0.25   | 0.666  | 0.145   | 0.185   | 0.084   | 0.092   | 0.154   | 0.084   | 0.465   |  |
| 4623.3                    | 0.068  | 0.543  | 0.269  | 0.51   | 0.349  | 0.267  | 0.268  | 0.645  | 0.151   | 0.198   | 0.084   | 0.092   | 0.162   | 0.084   | 0.469   |  |
| 4653.8                    | 0.068  | 0.501  | 0.275  | 0.475  | 0.344  | 0.273  | 0.274  | 0.58   | 0.157   | 0.206   | 0.084   | 0.092   | 0.169   | 0.084   | 0.442   |  |
| 4684.2                    | 0.068  | 0.404  | 0.266  | 0.39   | 0.314  | 0.264  | 0.265  | 0.446  | 0.162   | 0.209   | 0.085   | 0.093   | 0.174   | 0.084   | 0.373   |  |
| 4714.6                    | 0.068  | 0.283  | 0.243  | 0.282  | 0.266  | 0.242  | 0.242  | 0.285  | 0.164   | 0.204   | 0.085   | 0.094   | 0.175   | 0.085   | 0.28    |  |
| 4745                      | 0.068  | 0.243  | 0.219  | 0.242  | 0.233  | 0.219  | 0.219  | 0.244  | 0.162   | 0.194   | 0.086   | 0.095   | 0.171   | 0.086   | 0.241   |  |
| 4775.4                    | 0.069  | 0.218  | 0.202  | 0.218  | 0.211  | 0.202  | 0.202  | 0.219  | 0.158   | 0.183   | 0.087   | 0.096   | 0.165   | 0.087   | 0.217   |  |
| 4805.8                    | 0.069  | 0.2    | 0.188  | 0.201  | 0.196  | 0.188  | 0.188  | 0.201  | 0.153   | 0.174   | 0.087   | 0.096   | 0.159   | 0.087   | 0.2     |  |
| 4836.3                    | 0.07   | 0.187  | 0.178  | 0.187  | 0.183  | 0.178  | 0.177  | 0.187  | 0.148   | 0.166   | 0.088   | 0.096   | 0.154   | 0.088   | 0.187   |  |
| 4866.7                    | 0.07   | 0.299  | 0.182  | 0.283  | 0.211  | 0.182  | 0.182  | 0.349  | 0.144   | 0.161   | 0.088   | 0.096   | 0.149   | 0.088   | 0.264   |  |
| 4897.1                    | 0.07   | 0.438  | 0.206  | 0.407  | 0.265  | 0.205  | 0.206  | 0.536  | 0.142   | 0.165   | 0.088   | 0.096   | 0.148   | 0.088   | 0.37    |  |
| 4927.5                    | 0.071  | 0.477  | 0.231  | 0.446  | 0.299  | 0.23   | 0.23   | 0.573  | 0.144   | 0.176   | 0.088   | 0.096   | 0.152   | 0.088   | 0.408   |  |
| 4957.9                    | 0.071  | 0.553  | 0.255  | 0.515  | 0.337  | 0.253  | 0.254  | 0.67   | 0.149   | 0.189   | 0.088   | 0.095   | 0.158   | 0.087   | 0.469   |  |
| 4988.3                    | 0.071  | 0.547  | 0.273  | 0.514  | 0.353  | 0.271  | 0.272  | 0.648  | 0.155   | 0.201   | 0.087   | 0.095   | 0.166   | 0.087   | 0.473   |  |
| 5018.8                    | 0.071  | 0.504  | 0.278  | 0.478  | 0.348  | 0.276  | 0.277  | 0.584  | 0.161   | 0.21    | 0.088   | 0.095   | 0.173   | 0.087   | 0.446   |  |
| 5049.2                    | 0.071  | 0.408  | 0.269  | 0.394  | 0.318  | 0.268  | 0.269  | 0.45   | 0.166   | 0.213   | 0.088   | 0.096   | 0.178   | 0.088   | 0.376   |  |
| 5079.6                    | 0.071  | 0.287  | 0.246  | 0.286  | 0.269  | 0.246  | 0.246  | 0.289  | 0.167   | 0.208   | 0.089   | 0.097   | 0.178   | 0.088   | 0.284   |  |
| 5110                      | 0.072  | 0.246  | 0.223  | 0.246  | 0.237  | 0.223  | 0.223  | 0.247  | 0.165   | 0.197   | 0.089   | 0.098   | 0.175   | 0.089   | 0.245   |  |
| 5140.4                    | 0.072  | 0.221  | 0.206  | 0.222  | 0.215  | 0.205  | 0.205  | 0.222  | 0.161   | 0.187   | 0.09    | 0.099   | 0.169   | 0.09    | 0.221   |  |
| 5170.8                    | 0.072  | 0.204  | 0.192  | 0.204  | 0.199  | 0.192  | 0.192  | 0.205  | 0.157   | 0.177   | 0.091   | 0.1     | 0.163   | 0.091   | 0.204   |  |
| 5201.3                    | 0.073  | 0.191  | 0.181  | 0.191  | 0.187  | 0.181  | 0.181  | 0.191  | 0.152   | 0.169   | 0.091   | 0.1     | 0.157   | 0.091   | 0.19    |  |
| 5231.7                    | 0.073  | 0.302  | 0.186  | 0.287  | 0.214  | 0.185  | 0.185  | 0.352  | 0.147   | 0.164   | 0.091   | 0.099   | 0.151   | 0.091   | 0.267   |  |
| 5262.1                    | 0.073  | 0.442  | 0.21   | 0.411  | 0.268  | 0.209  | 0.209  | 0.539  | 0.146   | 0.169   | 0.091   | 0.099   | 0.155   | 0.091   | 0.373   |  |
| 5292.5                    | 0.074  | 0.481  | 0.235  | 0.45   | 0.303  | 0.233  | 0.234  | 0.576  | 0.148   | 0.18    | 0.091   | 0.099   | 0.155   | 0.091   | 0.412   |  |
| 5322.9                    | 0.074  | 0.556  | 0.258  | 0.519  | 0.34   | 0.257  | 0.258  | 0.673  | 0.152   | 0.192   | 0.091   | 0.098   | 0.161   | 0.091   | 0.473   |  |
| 5353.3                    | 0.074  | 0.55   | 0.276  | 0.517  | 0.356  | 0.274  | 0.275  | 0.652  | 0.158   | 0.205   | 0.091   | 0.098   | 0.169   | 0.09    | 0.476   |  |
| 5383.8                    | 0.074  | 0.508  | 0.282  | 0.482  | 0.351  | 0.28   | 0.281  | 0.588  | 0.164   | 0.214   | 0.091   | 0.099   | 0.177   | 0.091   | 0.45    |  |
| 5414.2                    | 0.074  | 0.411  | 0.273  | 0.398  | 0.321  | 0.271  | 0.272  | 0.453  | 0.169   | 0.216   | 0.091   | 0.099   | 0.181   | 0.091   | 0.38    |  |
| 5444.6                    | 0.074  | 0.29   | 0.25   | 0.289  | 0.273  | 0.249  | 0.249  | 0.292  | 0.171   | 0.211   | 0.092   | 0.1     | 0.182   | 0.091   | 0.287   |  |

Hafflinger Model Scenario: Irrigation well new pumping

| Time (d) | Modeled drawdown at well: |        |        |        |        |        |        |        |         |         |         |         |         |         |         |  |
|----------|---------------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--|
|          | Well 1                    | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |  |
| 5475     | 0.075                     | 0.25   | 0.226  | 0.249  | 0.24   | 0.226  | 0.226  | 0.251  | 0.169   | 0.201   | 0.092   | 0.101   | 0.178   | 0.092   | 0.248   |  |
| 5505.4   | 0.075                     | 0.225  | 0.209  | 0.225  | 0.218  | 0.209  | 0.209  | 0.226  | 0.165   | 0.19    | 0.093   | 0.102   | 0.172   | 0.093   | 0.224   |  |
| 5535.8   | 0.075                     | 0.207  | 0.195  | 0.208  | 0.203  | 0.195  | 0.195  | 0.208  | 0.16    | 0.181   | 0.094   | 0.103   | 0.166   | 0.094   | 0.207   |  |
| 5566.3   | 0.076                     | 0.194  | 0.184  | 0.194  | 0.19   | 0.184  | 0.184  | 0.194  | 0.155   | 0.172   | 0.094   | 0.103   | 0.16    | 0.094   | 0.194   |  |
| 5596.7   | 0.076                     | 0.306  | 0.189  | 0.29   | 0.218  | 0.189  | 0.189  | 0.356  | 0.151   | 0.168   | 0.094   | 0.103   | 0.155   | 0.094   | 0.271   |  |
| 5627.1   | 0.076                     | 0.445  | 0.213  | 0.414  | 0.272  | 0.212  | 0.212  | 0.543  | 0.149   | 0.172   | 0.094   | 0.102   | 0.154   | 0.094   | 0.376   |  |
| 5657.5   | 0.077                     | 0.484  | 0.238  | 0.453  | 0.306  | 0.236  | 0.237  | 0.58   | 0.151   | 0.183   | 0.094   | 0.102   | 0.158   | 0.094   | 0.415   |  |
| 5687.9   | 0.077                     | 0.56   | 0.262  | 0.522  | 0.344  | 0.26   | 0.261  | 0.676  | 0.155   | 0.195   | 0.094   | 0.101   | 0.165   | 0.094   | 0.476   |  |
| 5718.3   | 0.077                     | 0.553  | 0.279  | 0.52   | 0.359  | 0.277  | 0.278  | 0.655  | 0.161   | 0.208   | 0.094   | 0.101   | 0.173   | 0.093   | 0.48    |  |
| 5748.8   | 0.077                     | 0.511  | 0.285  | 0.485  | 0.355  | 0.283  | 0.284  | 0.591  | 0.167   | 0.217   | 0.094   | 0.102   | 0.18    | 0.094   | 0.453   |  |
| 5779.2   | 0.077                     | 0.415  | 0.276  | 0.401  | 0.325  | 0.275  | 0.275  | 0.456  | 0.172   | 0.219   | 0.094   | 0.102   | 0.184   | 0.094   | 0.383   |  |
| 5809.6   | 0.077                     | 0.293  | 0.253  | 0.293  | 0.276  | 0.252  | 0.253  | 0.295  | 0.174   | 0.214   | 0.095   | 0.103   | 0.185   | 0.094   | 0.29    |  |
| 5840     | 0.077                     | 0.253  | 0.23   | 0.253  | 0.243  | 0.229  | 0.229  | 0.254  | 0.172   | 0.204   | 0.095   | 0.104   | 0.181   | 0.095   | 0.251   |  |
| 5870.4   | 0.078                     | 0.228  | 0.212  | 0.228  | 0.222  | 0.212  | 0.212  | 0.229  | 0.168   | 0.193   | 0.096   | 0.105   | 0.175   | 0.096   | 0.227   |  |
| 5900.8   | 0.078                     | 0.21   | 0.199  | 0.211  | 0.206  | 0.199  | 0.198  | 0.211  | 0.163   | 0.184   | 0.097   | 0.106   | 0.169   | 0.096   | 0.21    |  |
| 5931.3   | 0.078                     | 0.197  | 0.188  | 0.197  | 0.193  | 0.188  | 0.187  | 0.197  | 0.158   | 0.175   | 0.097   | 0.106   | 0.163   | 0.097   | 0.197   |  |
| 5961.7   | 0.079                     | 0.309  | 0.192  | 0.293  | 0.221  | 0.192  | 0.192  | 0.359  | 0.154   | 0.171   | 0.097   | 0.106   | 0.158   | 0.097   | 0.274   |  |
| 5992.1   | 0.079                     | 0.448  | 0.216  | 0.417  | 0.275  | 0.215  | 0.216  | 0.546  | 0.152   | 0.175   | 0.097   | 0.105   | 0.157   | 0.097   | 0.379   |  |
| 6022.5   | 0.079                     | 0.487  | 0.241  | 0.456  | 0.309  | 0.239  | 0.24   | 0.583  | 0.154   | 0.186   | 0.097   | 0.105   | 0.161   | 0.097   | 0.418   |  |
| 6052.9   | 0.079                     | 0.563  | 0.265  | 0.525  | 0.347  | 0.263  | 0.264  | 0.679  | 0.158   | 0.198   | 0.097   | 0.104   | 0.168   | 0.096   | 0.479   |  |
| 6083.3   | 0.079                     | 0.557  | 0.282  | 0.523  | 0.362  | 0.28   | 0.282  | 0.658  | 0.164   | 0.211   | 0.096   | 0.104   | 0.176   | 0.096   | 0.483   |  |
| 6113.8   | 0.079                     | 0.514  | 0.288  | 0.488  | 0.358  | 0.286  | 0.287  | 0.594  | 0.17    | 0.22    | 0.096   | 0.104   | 0.183   | 0.096   | 0.456   |  |
| 6144.2   | 0.08                      | 0.418  | 0.279  | 0.404  | 0.328  | 0.278  | 0.278  | 0.459  | 0.175   | 0.222   | 0.097   | 0.105   | 0.187   | 0.097   | 0.386   |  |
| 6174.6   | 0.08                      | 0.296  | 0.256  | 0.296  | 0.279  | 0.255  | 0.256  | 0.298  | 0.177   | 0.217   | 0.097   | 0.106   | 0.188   | 0.097   | 0.293   |  |
| 6205     | 0.08                      | 0.256  | 0.233  | 0.256  | 0.246  | 0.232  | 0.232  | 0.257  | 0.175   | 0.207   | 0.098   | 0.107   | 0.184   | 0.098   | 0.254   |  |
| 6235.4   | 0.08                      | 0.231  | 0.215  | 0.231  | 0.225  | 0.215  | 0.215  | 0.232  | 0.171   | 0.196   | 0.099   | 0.108   | 0.178   | 0.099   | 0.23    |  |
| 6265.8   | 0.081                     | 0.213  | 0.201  | 0.214  | 0.209  | 0.201  | 0.201  | 0.214  | 0.166   | 0.187   | 0.099   | 0.108   | 0.172   | 0.099   | 0.213   |  |
| 6296.3   | 0.081                     | 0.2    | 0.19   | 0.2    | 0.196  | 0.191  | 0.19   | 0.2    | 0.161   | 0.178   | 0.1     | 0.109   | 0.166   | 0.1     | 0.2     |  |
| 6326.7   | 0.081                     | 0.312  | 0.195  | 0.296  | 0.224  | 0.195  | 0.195  | 0.362  | 0.157   | 0.174   | 0.1     | 0.108   | 0.161   | 0.1     | 0.277   |  |
| 6357.1   | 0.082                     | 0.451  | 0.219  | 0.42   | 0.278  | 0.218  | 0.218  | 0.549  | 0.155   | 0.178   | 0.1     | 0.108   | 0.16    | 0.1     | 0.382   |  |
| 6387.5   | 0.082                     | 0.49   | 0.244  | 0.459  | 0.312  | 0.242  | 0.243  | 0.586  | 0.157   | 0.189   | 0.099   | 0.107   | 0.164   | 0.099   | 0.421   |  |
| 6417.9   | 0.082                     | 0.566  | 0.268  | 0.528  | 0.35   | 0.266  | 0.267  | 0.682  | 0.161   | 0.201   | 0.099   | 0.107   | 0.171   | 0.099   | 0.482   |  |
| 6448.3   | 0.082                     | 0.559  | 0.285  | 0.526  | 0.365  | 0.283  | 0.284  | 0.661  | 0.167   | 0.214   | 0.099   | 0.107   | 0.178   | 0.099   | 0.486   |  |
| 6478.8   | 0.082                     | 0.517  | 0.291  | 0.491  | 0.36   | 0.289  | 0.29   | 0.597  | 0.173   | 0.223   | 0.099   | 0.107   | 0.185   | 0.099   | 0.459   |  |
| 6509.2   | 0.082                     | 0.42   | 0.282  | 0.407  | 0.331  | 0.281  | 0.281  | 0.462  | 0.178   | 0.225   | 0.099   | 0.108   | 0.19    | 0.099   | 0.389   |  |
| 6539.6   | 0.082                     | 0.299  | 0.259  | 0.298  | 0.282  | 0.258  | 0.258  | 0.301  | 0.18    | 0.22    | 0.1     | 0.109   | 0.191   | 0.1     | 0.296   |  |

Hufliger Model Scenario: Irrigation well new pumping

Modeled drawdown at well:

| Time (d) | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 6570     | 0.082  | 0.259  | 0.235  | 0.258  | 0.249  | 0.235  | 0.235  | 0.235  | 0.178   | 0.209   | 0.101   | 0.11    | 0.187   | 0.1     | 0.257   |
| 6600.4   | 0.083  | 0.234  | 0.218  | 0.234  | 0.227  | 0.218  | 0.218  | 0.235  | 0.174   | 0.199   | 0.101   | 0.11    | 0.181   | 0.101   | 0.233   |
| 6630.8   | 0.083  | 0.216  | 0.204  | 0.216  | 0.212  | 0.204  | 0.204  | 0.217  | 0.169   | 0.189   | 0.102   | 0.111   | 0.175   | 0.102   | 0.216   |
| 6661.3   | 0.084  | 0.203  | 0.193  | 0.203  | 0.199  | 0.193  | 0.193  | 0.203  | 0.164   | 0.181   | 0.102   | 0.111   | 0.169   | 0.102   | 0.202   |
| 6691.7   | 0.084  | 0.314  | 0.198  | 0.299  | 0.227  | 0.197  | 0.197  | 0.365  | 0.159   | 0.176   | 0.102   | 0.111   | 0.164   | 0.102   | 0.279   |
| 6722.1   | 0.084  | 0.454  | 0.222  | 0.423  | 0.28   | 0.221  | 0.221  | 0.551  | 0.157   | 0.181   | 0.102   | 0.111   | 0.163   | 0.102   | 0.385   |
| 6752.5   | 0.084  | 0.493  | 0.247  | 0.462  | 0.315  | 0.245  | 0.246  | 0.588  | 0.159   | 0.192   | 0.102   | 0.11    | 0.167   | 0.102   | 0.424   |
| 6782.9   | 0.084  | 0.568  | 0.27   | 0.531  | 0.352  | 0.268  | 0.269  | 0.685  | 0.164   | 0.204   | 0.102   | 0.11    | 0.173   | 0.102   | 0.485   |
| 6813.3   | 0.084  | 0.562  | 0.288  | 0.529  | 0.368  | 0.286  | 0.287  | 0.664  | 0.17    | 0.217   | 0.102   | 0.109   | 0.181   | 0.101   | 0.488   |
| 6843.8   | 0.084  | 0.52   | 0.293  | 0.494  | 0.363  | 0.292  | 0.293  | 0.599  | 0.176   | 0.225   | 0.102   | 0.11    | 0.188   | 0.101   | 0.461   |
| 6874.2   | 0.084  | 0.423  | 0.284  | 0.409  | 0.333  | 0.283  | 0.284  | 0.465  | 0.18    | 0.228   | 0.102   | 0.11    | 0.193   | 0.102   | 0.392   |
| 6904.6   | 0.085  | 0.302  | 0.262  | 0.301  | 0.284  | 0.261  | 0.261  | 0.304  | 0.182   | 0.223   | 0.102   | 0.111   | 0.193   | 0.102   | 0.299   |
| 6935     | 0.085  | 0.261  | 0.238  | 0.261  | 0.252  | 0.238  | 0.238  | 0.262  | 0.18    | 0.212   | 0.103   | 0.112   | 0.189   | 0.103   | 0.26    |
| 6965.4   | 0.085  | 0.236  | 0.221  | 0.237  | 0.23   | 0.22   | 0.22   | 0.237  | 0.176   | 0.201   | 0.104   | 0.113   | 0.184   | 0.104   | 0.236   |
| 6995.8   | 0.086  | 0.219  | 0.207  | 0.219  | 0.214  | 0.207  | 0.207  | 0.219  | 0.171   | 0.192   | 0.104   | 0.113   | 0.178   | 0.104   | 0.218   |
| 7026.3   | 0.086  | 0.205  | 0.196  | 0.206  | 0.202  | 0.196  | 0.196  | 0.206  | 0.166   | 0.184   | 0.105   | 0.114   | 0.172   | 0.105   | 0.205   |
| 7056.7   | 0.086  | 0.317  | 0.2    | 0.301  | 0.229  | 0.2    | 0.2    | 0.367  | 0.162   | 0.179   | 0.105   | 0.113   | 0.167   | 0.105   | 0.282   |
| 7087.1   | 0.086  | 0.457  | 0.224  | 0.425  | 0.283  | 0.223  | 0.223  | 0.554  | 0.16    | 0.183   | 0.105   | 0.113   | 0.166   | 0.105   | 0.388   |
| 7117.5   | 0.087  | 0.495  | 0.249  | 0.464  | 0.317  | 0.248  | 0.248  | 0.591  | 0.162   | 0.194   | 0.104   | 0.112   | 0.169   | 0.104   | 0.426   |
| 7147.9   | 0.087  | 0.571  | 0.273  | 0.533  | 0.355  | 0.271  | 0.271  | 0.688  | 0.166   | 0.207   | 0.104   | 0.112   | 0.176   | 0.104   | 0.487   |
| 7178.3   | 0.087  | 0.565  | 0.291  | 0.532  | 0.371  | 0.289  | 0.29   | 0.666  | 0.172   | 0.219   | 0.104   | 0.112   | 0.184   | 0.104   | 0.491   |
| 7208.8   | 0.087  | 0.522  | 0.296  | 0.496  | 0.366  | 0.294  | 0.295  | 0.602  | 0.178   | 0.228   | 0.104   | 0.112   | 0.191   | 0.104   | 0.464   |
| 7239.2   | 0.087  | 0.426  | 0.287  | 0.412  | 0.336  | 0.286  | 0.286  | 0.467  | 0.183   | 0.23    | 0.104   | 0.113   | 0.195   | 0.104   | 0.394   |
| 7269.6   | 0.087  | 0.304  | 0.264  | 0.304  | 0.287  | 0.263  | 0.264  | 0.306  | 0.185   | 0.225   | 0.105   | 0.114   | 0.196   | 0.105   | 0.301   |
| 7300     | 0.087  | 0.264  | 0.241  | 0.264  | 0.254  | 0.24   | 0.24   | 0.265  | 0.183   | 0.215   | 0.105   | 0.114   | 0.192   | 0.105   | 0.262   |

## Appendix F:

Hafflinger Model Scenario: Irrigation well new pumping

| Modeled drawdown at well: |        |        |        |        |        |        |        |        |         |         |         |         |         |         |         |  |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--|
| Time (d)                  | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |  |
| 0.0001                    | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |  |
| 30.4                      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |  |
| 60.8                      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |  |
| 91.3                      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0      | 0       | 0       | 0       | 0       | 0       | 0       | 0       |  |
| 121.7                     | 0      | 0.227  | 0.002  | 0.179  | 0.022  | 0.002  | 0.001  | 0.39   | 0       | 0       | 0       | 0       | 0       | 0       | 0.126   |  |
| 152.1                     | 0      | 0.55   | 0.017  | 0.451  | 0.091  | 0.017  | 0.017  | 0.877  | 0       | 0.001   | 0       | 0       | 0       | 0       | 0.339   |  |
| 182.5                     | 0      | 0.712  | 0.051  | 0.608  | 0.178  | 0.049  | 0.05   | 1.044  | 0       | 0.005   | 0       | 0       | 0       | 0       | 0.485   |  |
| 212.9                     | 0      | 0.915  | 0.091  | 0.788  | 0.26   | 0.088  | 0.09   | 1.319  | 0.001   | 0.015   | 0       | 0       | 0.003   | 0       | 0.639   |  |
| 243.3                     | 0      | 0.973  | 0.136  | 0.857  | 0.335  | 0.131  | 0.134  | 1.332  | 0.004   | 0.03    | 0       | 0       | 0.007   | 0       | 0.717   |  |
| 273.8                     | 0      | 0.934  | 0.176  | 0.839  | 0.381  | 0.171  | 0.174  | 1.221  | 0.008   | 0.047   | 0       | 0       | 0.013   | 0       | 0.722   |  |
| 304.2                     | 0      | 0.768  | 0.204  | 0.712  | 0.39   | 0.2    | 0.202  | 0.928  | 0.013   | 0.065   | 0       | 0       | 0.022   | 0       | 0.639   |  |
| 334.6                     | 0      | 0.525  | 0.216  | 0.511  | 0.359  | 0.212  | 0.215  | 0.548  | 0.02    | 0.081   | 0       | 0       | 0.031   | 0       | 0.488   |  |
| 365                       | 0      | 0.406  | 0.211  | 0.399  | 0.311  | 0.208  | 0.21   | 0.418  | 0.027   | 0.093   | 0       | 0       | 0.04    | 0       | 0.387   |  |
| 395.4                     | 0      | 0.335  | 0.199  | 0.331  | 0.272  | 0.196  | 0.198  | 0.343  | 0.033   | 0.1     | 0       | 0       | 0.048   | 0       | 0.323   |  |
| 425.8                     | 0      | 0.286  | 0.185  | 0.284  | 0.241  | 0.183  | 0.184  | 0.292  | 0.039   | 0.102   | 0       | 0.001   | 0.054   | 0       | 0.278   |  |
| 456.3                     | 0      | 0.251  | 0.172  | 0.249  | 0.216  | 0.171  | 0.171  | 0.255  | 0.044   | 0.103   | 0       | 0.001   | 0.058   | 0       | 0.244   |  |
| 486.7                     | 0      | 0.45   | 0.162  | 0.401  | 0.218  | 0.161  | 0.161  | 0.617  | 0.047   | 0.101   | 0       | 0.001   | 0.061   | 0       | 0.344   |  |
| 517.1                     | 0      | 0.752  | 0.167  | 0.651  | 0.27   | 0.165  | 0.166  | 1.081  | 0.05    | 0.1     | 0       | 0.002   | 0.062   | 0.001   | 0.536   |  |
| 547.5                     | 0      | 0.896  | 0.191  | 0.79   | 0.343  | 0.188  | 0.19   | 1.23   | 0.051   | 0.102   | 0.001   | 0.003   | 0.064   | 0.001   | 0.665   |  |
| 577.9                     | 0      | 1.084  | 0.223  | 0.956  | 0.413  | 0.219  | 0.221  | 1.49   | 0.054   | 0.109   | 0.001   | 0.003   | 0.066   | 0.001   | 0.805   |  |
| 608.3                     | 0      | 1.129  | 0.26   | 1.012  | 0.478  | 0.255  | 0.258  | 1.49   | 0.057   | 0.12    | 0.002   | 0.004   | 0.07    | 0.002   | 0.871   |  |
| 638.8                     | 0      | 1.079  | 0.293  | 0.983  | 0.514  | 0.288  | 0.291  | 1.368  | 0.061   | 0.135   | 0.002   | 0.005   | 0.076   | 0.002   | 0.866   |  |
| 669.2                     | 0.001  | 0.904  | 0.316  | 0.847  | 0.516  | 0.311  | 0.314  | 1.066  | 0.066   | 0.15    | 0.003   | 0.005   | 0.084   | 0.003   | 0.773   |  |
| 699.6                     | 0.001  | 0.652  | 0.322  | 0.638  | 0.478  | 0.318  | 0.32   | 0.676  | 0.072   | 0.163   | 0.003   | 0.006   | 0.092   | 0.003   | 0.614   |  |
| 730                       | 0.001  | 0.526  | 0.312  | 0.519  | 0.424  | 0.309  | 0.311  | 0.539  | 0.079   | 0.172   | 0.004   | 0.007   | 0.1     | 0.004   | 0.506   |  |
| 760.4                     | 0.001  | 0.449  | 0.295  | 0.444  | 0.379  | 0.292  | 0.294  | 0.457  | 0.085   | 0.177   | 0.004   | 0.008   | 0.107   | 0.004   | 0.435   |  |
| 790.8                     | 0.001  | 0.394  | 0.277  | 0.391  | 0.342  | 0.275  | 0.276  | 0.401  | 0.09    | 0.177   | 0.005   | 0.009   | 0.112   | 0.005   | 0.385   |  |
| 821.3                     | 0.001  | 0.353  | 0.26   | 0.351  | 0.313  | 0.259  | 0.26   | 0.358  | 0.094   | 0.175   | 0.005   | 0.01    | 0.115   | 0.006   | 0.346   |  |
| 851.7                     | 0.002  | 0.548  | 0.247  | 0.498  | 0.311  | 0.245  | 0.246  | 0.716  | 0.097   | 0.171   | 0.006   | 0.011   | 0.117   | 0.006   | 0.441   |  |
| 882.1                     | 0.002  | 0.846  | 0.249  | 0.745  | 0.359  | 0.247  | 0.248  | 1.175  | 0.099   | 0.168   | 0.007   | 0.012   | 0.117   | 0.007   | 0.629   |  |
| 912.5                     | 0.002  | 0.986  | 0.27   | 0.879  | 0.428  | 0.267  | 0.269  | 1.32   | 0.1     | 0.168   | 0.008   | 0.013   | 0.118   | 0.008   | 0.754   |  |
| 942.9                     | 0.002  | 1.17   | 0.299  | 1.041  | 0.495  | 0.295  | 0.297  | 1.576  | 0.101   | 0.173   | 0.009   | 0.014   | 0.119   | 0.009   | 0.89    |  |
| 973.3                     | 0.003  | 1.212  | 0.333  | 1.094  | 0.557  | 0.328  | 0.331  | 1.573  | 0.103   | 0.183   | 0.009   | 0.015   | 0.122   | 0.009   | 0.953   |  |
| 1003.8                    | 0.003  | 1.159  | 0.364  | 1.062  | 0.59   | 0.359  | 0.362  | 1.447  | 0.107   | 0.195   | 0.01    | 0.017   | 0.127   | 0.01    | 0.944   |  |
| 1034.2                    | 0.003  | 0.981  | 0.385  | 0.924  | 0.589  | 0.379  | 0.382  | 1.142  | 0.111   | 0.209   | 0.011   | 0.018   | 0.133   | 0.011   | 0.849   |  |
| 1064.6                    | 0.004  | 0.726  | 0.389  | 0.712  | 0.549  | 0.384  | 0.387  | 0.751  | 0.117   | 0.221   | 0.012   | 0.019   | 0.141   | 0.012   | 0.688   |  |

Huffler Model Scenario: Irrigation well new pumping

Modeled drawdown at well:

| Time (d) | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 1095     | 0.004  | 0.598  | 0.377  | 0.59   | 0.492  | 0.373  | 0.375  | 0.611  | 0.123   | 0.228   | 0.013   | 0.02    | 0.148   | 0.013   | 0.577   |
| 1125.4   | 0.005  | 0.518  | 0.358  | 0.513  | 0.445  | 0.355  | 0.357  | 0.527  | 0.128   | 0.231   | 0.014   | 0.021   | 0.154   | 0.014   | 0.504   |
| 1155.8   | 0.005  | 0.461  | 0.338  | 0.458  | 0.407  | 0.336  | 0.337  | 0.468  | 0.133   | 0.23    | 0.015   | 0.022   | 0.158   | 0.015   | 0.451   |
| 1186.3   | 0.005  | 0.418  | 0.32   | 0.416  | 0.375  | 0.318  | 0.319  | 0.423  | 0.136   | 0.227   | 0.016   | 0.023   | 0.16    | 0.016   | 0.41    |
| 1216.7   | 0.006  | 0.611  | 0.304  | 0.561  | 0.371  | 0.303  | 0.304  | 0.779  | 0.138   | 0.222   | 0.017   | 0.025   | 0.161   | 0.017   | 0.504   |
| 1247.1   | 0.006  | 0.907  | 0.305  | 0.806  | 0.418  | 0.303  | 0.304  | 1.237  | 0.139   | 0.218   | 0.018   | 0.026   | 0.161   | 0.018   | 0.69    |
| 1277.5   | 0.007  | 1.045  | 0.325  | 0.939  | 0.486  | 0.321  | 0.323  | 1.379  | 0.139   | 0.217   | 0.019   | 0.027   | 0.16    | 0.019   | 0.813   |
| 1307.9   | 0.007  | 1.228  | 0.353  | 1.099  | 0.551  | 0.348  | 0.351  | 1.634  | 0.14    | 0.221   | 0.02    | 0.029   | 0.161   | 0.02    | 0.947   |
| 1338.3   | 0.008  | 1.268  | 0.385  | 1.151  | 0.611  | 0.38   | 0.383  | 1.629  | 0.142   | 0.229   | 0.021   | 0.03    | 0.163   | 0.021   | 1.009   |
| 1368.8   | 0.008  | 1.213  | 0.415  | 1.117  | 0.643  | 0.409  | 0.412  | 1.502  | 0.145   | 0.241   | 0.022   | 0.031   | 0.167   | 0.022   | 0.999   |
| 1399.2   | 0.009  | 1.034  | 0.434  | 0.977  | 0.641  | 0.428  | 0.432  | 1.196  | 0.149   | 0.253   | 0.023   | 0.033   | 0.173   | 0.023   | 0.902   |
| 1429.6   | 0.009  | 0.778  | 0.437  | 0.764  | 0.6    | 0.432  | 0.435  | 0.803  | 0.154   | 0.264   | 0.024   | 0.034   | 0.18    | 0.024   | 0.739   |
| 1460     | 0.01   | 0.649  | 0.424  | 0.641  | 0.542  | 0.42   | 0.422  | 0.662  | 0.159   | 0.271   | 0.025   | 0.035   | 0.186   | 0.025   | 0.627   |
| 1490.4   | 0.01   | 0.568  | 0.404  | 0.563  | 0.493  | 0.401  | 0.403  | 0.576  | 0.164   | 0.273   | 0.026   | 0.036   | 0.191   | 0.026   | 0.553   |
| 1520.8   | 0.011  | 0.51   | 0.383  | 0.506  | 0.454  | 0.381  | 0.382  | 0.516  | 0.168   | 0.271   | 0.027   | 0.037   | 0.195   | 0.027   | 0.499   |
| 1551.3   | 0.012  | 0.466  | 0.364  | 0.463  | 0.422  | 0.362  | 0.363  | 0.471  | 0.17    | 0.267   | 0.028   | 0.039   | 0.196   | 0.028   | 0.458   |
| 1581.7   | 0.012  | 0.658  | 0.348  | 0.607  | 0.417  | 0.346  | 0.347  | 0.825  | 0.172   | 0.262   | 0.029   | 0.04    | 0.196   | 0.029   | 0.55    |
| 1612.1   | 0.013  | 0.952  | 0.348  | 0.851  | 0.462  | 0.345  | 0.346  | 1.282  | 0.172   | 0.256   | 0.03    | 0.041   | 0.196   | 0.03    | 0.735   |
| 1642.5   | 0.013  | 1.09   | 0.366  | 0.983  | 0.529  | 0.363  | 0.365  | 1.424  | 0.172   | 0.255   | 0.031   | 0.043   | 0.195   | 0.031   | 0.858   |
| 1672.9   | 0.014  | 1.272  | 0.393  | 1.143  | 0.594  | 0.389  | 0.392  | 1.678  | 0.173   | 0.258   | 0.032   | 0.044   | 0.195   | 0.032   | 0.991   |
| 1703.3   | 0.015  | 1.311  | 0.426  | 1.193  | 0.653  | 0.42   | 0.423  | 1.672  | 0.174   | 0.266   | 0.033   | 0.045   | 0.197   | 0.033   | 1.051   |
| 1733.8   | 0.015  | 1.255  | 0.454  | 1.159  | 0.684  | 0.448  | 0.452  | 1.544  | 0.176   | 0.277   | 0.035   | 0.047   | 0.2     | 0.034   | 1.041   |
| 1764.2   | 0.016  | 1.075  | 0.473  | 1.018  | 0.681  | 0.467  | 0.47   | 1.237  | 0.18    | 0.289   | 0.036   | 0.048   | 0.205   | 0.035   | 0.943   |
| 1794.6   | 0.016  | 0.819  | 0.475  | 0.804  | 0.639  | 0.47   | 0.473  | 0.843  | 0.184   | 0.299   | 0.037   | 0.049   | 0.212   | 0.036   | 0.78    |
| 1825     | 0.017  | 0.688  | 0.461  | 0.68   | 0.58   | 0.457  | 0.46   | 0.701  | 0.189   | 0.306   | 0.038   | 0.05    | 0.218   | 0.037   | 0.667   |
| 1855.4   | 0.018  | 0.606  | 0.441  | 0.601  | 0.531  | 0.438  | 0.439  | 0.615  | 0.193   | 0.307   | 0.039   | 0.052   | 0.222   | 0.039   | 0.592   |
| 1885.8   | 0.018  | 0.548  | 0.42   | 0.544  | 0.491  | 0.417  | 0.418  | 0.555  | 0.197   | 0.305   | 0.04    | 0.053   | 0.225   | 0.04    | 0.537   |
| 1916.3   | 0.019  | 0.503  | 0.399  | 0.5    | 0.458  | 0.397  | 0.398  | 0.508  | 0.199   | 0.3     | 0.041   | 0.054   | 0.226   | 0.041   | 0.495   |
| 1946.7   | 0.02   | 0.695  | 0.383  | 0.644  | 0.453  | 0.381  | 0.382  | 0.862  | 0.2     | 0.294   | 0.042   | 0.055   | 0.226   | 0.042   | 0.586   |
| 1977.1   | 0.02   | 0.988  | 0.382  | 0.887  | 0.498  | 0.379  | 0.381  | 1.318  | 0.201   | 0.288   | 0.043   | 0.057   | 0.225   | 0.043   | 0.771   |
| 2007.5   | 0.021  | 1.125  | 0.4    | 1.019  | 0.564  | 0.397  | 0.399  | 1.46   | 0.2     | 0.286   | 0.044   | 0.058   | 0.224   | 0.044   | 0.893   |
| 2037.9   | 0.022  | 1.306  | 0.427  | 1.177  | 0.628  | 0.422  | 0.425  | 1.713  | 0.2     | 0.289   | 0.045   | 0.059   | 0.223   | 0.045   | 1.025   |
| 2068.3   | 0.022  | 1.345  | 0.458  | 1.227  | 0.687  | 0.453  | 0.456  | 1.707  | 0.201   | 0.297   | 0.046   | 0.06    | 0.225   | 0.046   | 1.086   |
| 2098.8   | 0.023  | 1.289  | 0.487  | 1.193  | 0.718  | 0.481  | 0.484  | 1.578  | 0.203   | 0.307   | 0.048   | 0.062   | 0.228   | 0.047   | 1.074   |
| 2129.2   | 0.024  | 1.109  | 0.505  | 1.051  | 0.714  | 0.499  | 0.502  | 1.271  | 0.206   | 0.319   | 0.049   | 0.063   | 0.233   | 0.048   | 0.976   |
| 2159.6   | 0.024  | 0.851  | 0.507  | 0.837  | 0.671  | 0.502  | 0.505  | 0.876  | 0.21    | 0.329   | 0.05    | 0.064   | 0.239   | 0.049   | 0.812   |

Hafliger Model Scenario: Irrigation well new pumping

Modeled drawdown at well:

| Time (d) | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 2190     | 0.025  | 0.72   | 0.492  | 0.713  | 0.612  | 0.488  | 0.491  | 0.734  | 0.215   | 0.335   | 0.051   | 0.065   | 0.244   | 0.05    | 0.699   |
| 2220.4   | 0.026  | 0.638  | 0.471  | 0.633  | 0.563  | 0.468  | 0.47   | 0.647  | 0.219   | 0.336   | 0.052   | 0.066   | 0.249   | 0.051   | 0.624   |
| 2250.8   | 0.027  | 0.579  | 0.449  | 0.576  | 0.522  | 0.447  | 0.448  | 0.586  | 0.222   | 0.333   | 0.053   | 0.068   | 0.251   | 0.052   | 0.569   |
| 2281.3   | 0.027  | 0.534  | 0.429  | 0.531  | 0.489  | 0.427  | 0.428  | 0.539  | 0.224   | 0.328   | 0.054   | 0.069   | 0.252   | 0.053   | 0.526   |
| 2311.7   | 0.028  | 0.725  | 0.412  | 0.674  | 0.482  | 0.41   | 0.411  | 0.893  | 0.225   | 0.321   | 0.055   | 0.07    | 0.252   | 0.054   | 0.617   |
| 2342.1   | 0.029  | 1.018  | 0.411  | 0.917  | 0.527  | 0.408  | 0.41   | 1.348  | 0.225   | 0.316   | 0.056   | 0.071   | 0.25    | 0.055   | 0.801   |
| 2372.5   | 0.029  | 1.155  | 0.429  | 1.048  | 0.593  | 0.425  | 0.427  | 1.489  | 0.224   | 0.313   | 0.057   | 0.073   | 0.249   | 0.057   | 0.922   |
| 2402.9   | 0.03   | 1.336  | 0.455  | 1.207  | 0.657  | 0.45   | 0.453  | 1.742  | 0.224   | 0.316   | 0.058   | 0.074   | 0.248   | 0.058   | 1.055   |
| 2433.3   | 0.031  | 1.374  | 0.486  | 1.256  | 0.715  | 0.48   | 0.484  | 1.736  | 0.225   | 0.323   | 0.059   | 0.075   | 0.249   | 0.059   | 1.114   |
| 2463.8   | 0.032  | 1.317  | 0.514  | 1.221  | 0.745  | 0.508  | 0.511  | 1.607  | 0.226   | 0.333   | 0.06    | 0.076   | 0.252   | 0.06    | 1.103   |
| 2494.2   | 0.032  | 1.137  | 0.532  | 1.079  | 0.741  | 0.526  | 0.529  | 1.299  | 0.229   | 0.344   | 0.061   | 0.077   | 0.257   | 0.061   | 1.004   |
| 2524.6   | 0.033  | 0.879  | 0.533  | 0.865  | 0.698  | 0.528  | 0.531  | 0.904  | 0.233   | 0.354   | 0.062   | 0.078   | 0.263   | 0.062   | 0.84    |
| 2555     | 0.034  | 0.748  | 0.519  | 0.74   | 0.639  | 0.515  | 0.517  | 0.761  | 0.238   | 0.36    | 0.063   | 0.08    | 0.268   | 0.063   | 0.726   |
| 2585.4   | 0.034  | 0.665  | 0.497  | 0.66   | 0.589  | 0.494  | 0.496  | 0.674  | 0.241   | 0.36    | 0.064   | 0.081   | 0.272   | 0.064   | 0.651   |
| 2615.8   | 0.035  | 0.606  | 0.475  | 0.602  | 0.548  | 0.473  | 0.474  | 0.613  | 0.244   | 0.357   | 0.065   | 0.082   | 0.274   | 0.065   | 0.595   |
| 2646.3   | 0.036  | 0.56   | 0.454  | 0.557  | 0.514  | 0.452  | 0.453  | 0.565  | 0.246   | 0.352   | 0.066   | 0.083   | 0.275   | 0.066   | 0.552   |
| 2676.7   | 0.037  | 0.751  | 0.437  | 0.7    | 0.508  | 0.435  | 0.436  | 0.919  | 0.247   | 0.345   | 0.067   | 0.084   | 0.274   | 0.067   | 0.643   |
| 2707.1   | 0.037  | 1.044  | 0.435  | 0.943  | 0.553  | 0.433  | 0.434  | 1.374  | 0.247   | 0.339   | 0.068   | 0.085   | 0.273   | 0.068   | 0.826   |
| 2737.5   | 0.038  | 1.18   | 0.453  | 1.074  | 0.618  | 0.449  | 0.451  | 1.515  | 0.246   | 0.336   | 0.069   | 0.086   | 0.271   | 0.069   | 0.948   |
| 2767.9   | 0.039  | 1.361  | 0.479  | 1.232  | 0.681  | 0.474  | 0.477  | 1.767  | 0.245   | 0.339   | 0.07    | 0.088   | 0.27    | 0.07    | 1.08    |
| 2798.3   | 0.039  | 1.399  | 0.51   | 1.281  | 0.739  | 0.504  | 0.507  | 1.76   | 0.245   | 0.345   | 0.071   | 0.089   | 0.271   | 0.071   | 1.139   |
| 2828.8   | 0.04   | 1.342  | 0.537  | 1.246  | 0.77   | 0.532  | 0.535  | 1.631  | 0.247   | 0.356   | 0.072   | 0.09    | 0.274   | 0.072   | 1.127   |
| 2859.2   | 0.041  | 1.161  | 0.555  | 1.103  | 0.765  | 0.549  | 0.552  | 1.323  | 0.25    | 0.366   | 0.073   | 0.091   | 0.278   | 0.073   | 1.029   |
| 2889.6   | 0.042  | 0.903  | 0.556  | 0.889  | 0.722  | 0.551  | 0.554  | 0.928  | 0.254   | 0.376   | 0.074   | 0.092   | 0.283   | 0.074   | 0.864   |
| 2920     | 0.042  | 0.771  | 0.541  | 0.764  | 0.662  | 0.537  | 0.54   | 0.785  | 0.258   | 0.381   | 0.075   | 0.093   | 0.289   | 0.075   | 0.75    |
| 2950.4   | 0.043  | 0.688  | 0.52   | 0.683  | 0.612  | 0.517  | 0.518  | 0.698  | 0.261   | 0.382   | 0.076   | 0.094   | 0.293   | 0.076   | 0.674   |
| 2980.8   | 0.044  | 0.629  | 0.497  | 0.625  | 0.571  | 0.495  | 0.496  | 0.636  | 0.264   | 0.379   | 0.077   | 0.095   | 0.295   | 0.077   | 0.618   |
| 3011.3   | 0.044  | 0.583  | 0.476  | 0.58   | 0.537  | 0.474  | 0.475  | 0.588  | 0.266   | 0.373   | 0.078   | 0.096   | 0.295   | 0.078   | 0.575   |
| 3041.7   | 0.045  | 0.774  | 0.459  | 0.723  | 0.53   | 0.457  | 0.458  | 0.941  | 0.266   | 0.366   | 0.079   | 0.097   | 0.294   | 0.079   | 0.665   |
| 3072.1   | 0.046  | 1.067  | 0.457  | 0.965  | 0.575  | 0.455  | 0.456  | 1.397  | 0.266   | 0.36    | 0.08    | 0.098   | 0.292   | 0.08    | 0.849   |
| 3102.5   | 0.047  | 1.202  | 0.475  | 1.096  | 0.64   | 0.471  | 0.473  | 1.537  | 0.265   | 0.357   | 0.081   | 0.099   | 0.29    | 0.081   | 0.97    |
| 3132.9   | 0.047  | 1.383  | 0.5    | 1.254  | 0.703  | 0.495  | 0.498  | 1.789  | 0.264   | 0.359   | 0.082   | 0.101   | 0.289   | 0.082   | 1.101   |
| 3163.3   | 0.048  | 1.42   | 0.531  | 1.303  | 0.761  | 0.525  | 0.529  | 1.782  | 0.264   | 0.366   | 0.083   | 0.102   | 0.29    | 0.083   | 1.161   |
| 3193.8   | 0.049  | 1.363  | 0.558  | 1.267  | 0.791  | 0.552  | 0.556  | 1.653  | 0.266   | 0.375   | 0.084   | 0.103   | 0.293   | 0.084   | 1.148   |
| 3224.2   | 0.049  | 1.182  | 0.576  | 1.125  | 0.786  | 0.57   | 0.573  | 1.344  | 0.268   | 0.386   | 0.085   | 0.104   | 0.297   | 0.084   | 1.05    |
| 3254.6   | 0.05   | 0.924  | 0.577  | 0.91   | 0.743  | 0.572  | 0.575  | 0.949  | 0.272   | 0.396   | 0.086   | 0.105   | 0.302   | 0.085   | 0.885   |

Hafliger Model Scenario: Irrigation well new pumping

Modeled drawdown at well:

| Time (d) | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 3285     | 0.051  | 0.792  | 0.562  | 0.784  | 0.683  | 0.558  | 0.56   | 0.506  | 0.276   | 0.401   | 0.087   | 0.106   | 0.307   | 0.086   | 0.77    |
| 3315.4   | 0.051  | 0.709  | 0.54   | 0.704  | 0.633  | 0.537  | 0.538  | 0.718  | 0.279   | 0.401   | 0.088   | 0.107   | 0.311   | 0.087   | 0.694   |
| 3345.8   | 0.052  | 0.65   | 0.517  | 0.646  | 0.591  | 0.515  | 0.516  | 0.656  | 0.282   | 0.398   | 0.089   | 0.108   | 0.313   | 0.088   | 0.639   |
| 3376.3   | 0.053  | 0.603  | 0.496  | 0.601  | 0.557  | 0.494  | 0.495  | 0.609  | 0.283   | 0.392   | 0.09    | 0.109   | 0.313   | 0.089   | 0.595   |
| 3406.7   | 0.054  | 0.794  | 0.478  | 0.743  | 0.55   | 0.476  | 0.477  | 0.962  | 0.284   | 0.385   | 0.091   | 0.11    | 0.312   | 0.09    | 0.685   |
| 3437.1   | 0.054  | 1.086  | 0.476  | 0.985  | 0.594  | 0.474  | 0.475  | 1.417  | 0.283   | 0.378   | 0.091   | 0.111   | 0.31    | 0.091   | 0.869   |
| 3467.5   | 0.055  | 1.222  | 0.494  | 1.115  | 0.659  | 0.49   | 0.492  | 1.557  | 0.282   | 0.375   | 0.092   | 0.112   | 0.308   | 0.092   | 0.989   |
| 3497.9   | 0.056  | 1.402  | 0.519  | 1.273  | 0.722  | 0.514  | 0.517  | 1.808  | 0.281   | 0.377   | 0.093   | 0.113   | 0.307   | 0.093   | 1.121   |
| 3528.3   | 0.056  | 1.44   | 0.55   | 1.322  | 0.78   | 0.544  | 0.547  | 1.801  | 0.281   | 0.384   | 0.094   | 0.114   | 0.307   | 0.094   | 1.18    |
| 3558.8   | 0.057  | 1.383  | 0.577  | 1.286  | 0.81   | 0.571  | 0.574  | 1.672  | 0.282   | 0.393   | 0.095   | 0.115   | 0.31    | 0.095   | 1.168   |
| 3589.2   | 0.058  | 1.201  | 0.594  | 1.144  | 0.805  | 0.588  | 0.592  | 1.363  | 0.285   | 0.404   | 0.096   | 0.116   | 0.314   | 0.096   | 1.069   |
| 3619.6   | 0.058  | 0.943  | 0.595  | 0.928  | 0.761  | 0.59   | 0.593  | 0.968  | 0.288   | 0.413   | 0.097   | 0.117   | 0.319   | 0.096   | 0.903   |
| 3650     | 0.059  | 0.811  | 0.58   | 0.803  | 0.701  | 0.576  | 0.578  | 0.824  | 0.292   | 0.418   | 0.098   | 0.118   | 0.324   | 0.097   | 0.789   |
| 3680.4   | 0.06   | 0.728  | 0.558  | 0.723  | 0.651  | 0.555  | 0.556  | 0.737  | 0.296   | 0.419   | 0.099   | 0.119   | 0.328   | 0.098   | 0.713   |
| 3710.8   | 0.061  | 0.668  | 0.535  | 0.664  | 0.61   | 0.533  | 0.534  | 0.675  | 0.298   | 0.415   | 0.1     | 0.119   | 0.329   | 0.099   | 0.657   |
| 3741.3   | 0.061  | 0.622  | 0.514  | 0.619  | 0.575  | 0.512  | 0.513  | 0.627  | 0.299   | 0.409   | 0.101   | 0.12    | 0.33    | 0.1     | 0.613   |
| 3771.7   | 0.062  | 0.812  | 0.496  | 0.761  | 0.568  | 0.494  | 0.495  | 0.98   | 0.3     | 0.402   | 0.101   | 0.121   | 0.328   | 0.101   | 0.703   |
| 3802.1   | 0.063  | 1.104  | 0.494  | 1.003  | 0.612  | 0.491  | 0.493  | 1.434  | 0.299   | 0.395   | 0.102   | 0.122   | 0.326   | 0.102   | 0.886   |
| 3832.5   | 0.063  | 1.24   | 0.511  | 1.133  | 0.677  | 0.507  | 0.509  | 1.574  | 0.298   | 0.392   | 0.103   | 0.123   | 0.324   | 0.102   | 1.007   |
| 3862.9   | 0.064  | 1.42   | 0.536  | 1.291  | 0.74   | 0.532  | 0.534  | 1.826  | 0.297   | 0.394   | 0.104   | 0.124   | 0.323   | 0.103   | 1.138   |
| 3893.3   | 0.065  | 1.457  | 0.567  | 1.339  | 0.797  | 0.561  | 0.564  | 1.819  | 0.297   | 0.4     | 0.105   | 0.125   | 0.323   | 0.104   | 1.197   |
| 3923.8   | 0.065  | 1.4    | 0.594  | 1.303  | 0.827  | 0.588  | 0.591  | 1.689  | 0.298   | 0.41    | 0.106   | 0.126   | 0.326   | 0.105   | 1.185   |
| 3954.2   | 0.066  | 1.218  | 0.611  | 1.161  | 0.822  | 0.605  | 0.608  | 1.38   | 0.3     | 0.42    | 0.107   | 0.127   | 0.33    | 0.106   | 1.086   |
| 3984.6   | 0.067  | 0.96   | 0.612  | 0.945  | 0.778  | 0.607  | 0.61   | 0.985  | 0.304   | 0.429   | 0.108   | 0.128   | 0.335   | 0.107   | 0.92    |
| 4015     | 0.067  | 0.828  | 0.596  | 0.82   | 0.718  | 0.592  | 0.595  | 0.841  | 0.307   | 0.434   | 0.108   | 0.129   | 0.339   | 0.108   | 0.806   |
| 4045.4   | 0.068  | 0.744  | 0.574  | 0.739  | 0.667  | 0.571  | 0.573  | 0.754  | 0.311   | 0.434   | 0.109   | 0.13    | 0.343   | 0.109   | 0.73    |
| 4075.8   | 0.069  | 0.684  | 0.551  | 0.681  | 0.626  | 0.549  | 0.55   | 0.691  | 0.313   | 0.431   | 0.11    | 0.131   | 0.345   | 0.109   | 0.674   |
| 4106.3   | 0.069  | 0.638  | 0.53   | 0.635  | 0.591  | 0.528  | 0.529  | 0.643  | 0.314   | 0.425   | 0.111   | 0.132   | 0.345   | 0.11    | 0.63    |
| 4136.7   | 0.07   | 0.828  | 0.512  | 0.777  | 0.584  | 0.51   | 0.511  | 0.996  | 0.314   | 0.417   | 0.112   | 0.132   | 0.343   | 0.111   | 0.72    |
| 4167.1   | 0.071  | 1.121  | 0.51   | 1.019  | 0.628  | 0.507  | 0.509  | 1.451  | 0.313   | 0.411   | 0.113   | 0.133   | 0.341   | 0.112   | 0.903   |
| 4197.5   | 0.071  | 1.256  | 0.527  | 1.149  | 0.693  | 0.523  | 0.525  | 1.59   | 0.312   | 0.407   | 0.113   | 0.134   | 0.339   | 0.113   | 1.023   |
| 4227.9   | 0.072  | 1.436  | 0.552  | 1.307  | 0.756  | 0.547  | 0.58   | 1.842  | 0.311   | 0.409   | 0.114   | 0.135   | 0.337   | 0.114   | 1.154   |
| 4258.3   | 0.073  | 1.473  | 0.582  | 1.355  | 0.813  | 0.577  | 0.58   | 1.835  | 0.311   | 0.415   | 0.115   | 0.136   | 0.338   | 0.114   | 1.213   |
| 4288.8   | 0.073  | 1.416  | 0.609  | 1.319  | 0.843  | 0.603  | 0.607  | 1.705  | 0.312   | 0.425   | 0.116   | 0.137   | 0.34    | 0.115   | 1.201   |
| 4319.2   | 0.074  | 1.234  | 0.626  | 1.176  | 0.838  | 0.62   | 0.624  | 1.396  | 0.314   | 0.435   | 0.117   | 0.138   | 0.344   | 0.116   | 1.101   |
| 4349.6   | 0.075  | 0.975  | 0.627  | 0.961  | 0.794  | 0.622  | 0.625  | 1      | 0.318   | 0.444   | 0.118   | 0.139   | 0.349   | 0.117   | 0.936   |

Haffiger Model Scenario: Irrigation well new pumping

| Time (d) | Modeled drawdown at well: |        |        |        |        |        |        |        |         |         |         |         |         |         |         |  |
|----------|---------------------------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|--|
|          | Well 1                    | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |  |
| 4380     | 0.075                     | 0.843  | 0.611  | 0.835  | 0.733  | 0.607  | 0.61   | 0.857  | 0.321   | 0.449   | 0.118   | 0.14    | 0.353   | 0.118   | 0.821   |  |
| 4410.4   | 0.076                     | 0.76   | 0.589  | 0.755  | 0.683  | 0.586  | 0.588  | 0.769  | 0.324   | 0.449   | 0.119   | 0.14    | 0.357   | 0.118   | 0.745   |  |
| 4440.8   | 0.077                     | 0.7    | 0.566  | 0.696  | 0.641  | 0.564  | 0.565  | 0.706  | 0.327   | 0.445   | 0.12    | 0.141   | 0.359   | 0.119   | 0.689   |  |
| 4471.3   | 0.077                     | 0.653  | 0.545  | 0.65   | 0.606  | 0.542  | 0.544  | 0.659  | 0.328   | 0.439   | 0.121   | 0.142   | 0.359   | 0.12    | 0.645   |  |
| 4501.7   | 0.078                     | 0.843  | 0.527  | 0.792  | 0.599  | 0.525  | 0.526  | 1.011  | 0.328   | 0.432   | 0.121   | 0.143   | 0.357   | 0.121   | 0.735   |  |
| 4532.1   | 0.079                     | 1.135  | 0.524  | 1.034  | 0.643  | 0.522  | 0.523  | 1.466  | 0.327   | 0.425   | 0.122   | 0.144   | 0.355   | 0.122   | 0.917   |  |
| 4562.5   | 0.079                     | 1.271  | 0.541  | 1.164  | 0.708  | 0.537  | 0.54   | 1.605  | 0.326   | 0.421   | 0.123   | 0.145   | 0.352   | 0.122   | 1.038   |  |
| 4592.9   | 0.08                      | 1.45   | 0.566  | 1.321  | 0.77   | 0.562  | 0.564  | 1.857  | 0.324   | 0.423   | 0.124   | 0.146   | 0.351   | 0.123   | 1.169   |  |
| 4623.3   | 0.08                      | 1.488  | 0.596  | 1.37   | 0.827  | 0.591  | 0.594  | 1.849  | 0.324   | 0.429   | 0.125   | 0.147   | 0.351   | 0.124   | 1.228   |  |
| 4653.8   | 0.081                     | 1.43   | 0.623  | 1.334  | 0.857  | 0.617  | 0.621  | 1.719  | 0.325   | 0.438   | 0.126   | 0.147   | 0.353   | 0.125   | 1.215   |  |
| 4684.2   | 0.082                     | 1.248  | 0.64   | 1.191  | 0.852  | 0.634  | 0.638  | 1.41   | 0.327   | 0.449   | 0.126   | 0.148   | 0.357   | 0.126   | 1.116   |  |
| 4714.6   | 0.082                     | 0.99   | 0.641  | 0.975  | 0.808  | 0.636  | 0.639  | 1.015  | 0.33    | 0.458   | 0.127   | 0.149   | 0.362   | 0.126   | 0.95    |  |
| 4745     | 0.083                     | 0.857  | 0.625  | 0.85   | 0.748  | 0.621  | 0.624  | 0.871  | 0.334   | 0.462   | 0.128   | 0.15    | 0.366   | 0.127   | 0.835   |  |
| 4775.4   | 0.084                     | 0.774  | 0.603  | 0.769  | 0.697  | 0.6    | 0.602  | 0.783  | 0.337   | 0.462   | 0.129   | 0.15    | 0.37    | 0.128   | 0.759   |  |
| 4805.8   | 0.084                     | 0.714  | 0.58   | 0.71   | 0.655  | 0.577  | 0.579  | 0.72   | 0.339   | 0.458   | 0.129   | 0.151   | 0.371   | 0.129   | 0.703   |  |
| 4836.3   | 0.085                     | 0.667  | 0.558  | 0.664  | 0.62   | 0.556  | 0.557  | 0.672  | 0.34    | 0.452   | 0.13    | 0.152   | 0.371   | 0.129   | 0.658   |  |
| 4866.7   | 0.086                     | 0.857  | 0.54   | 0.806  | 0.613  | 0.538  | 0.539  | 1.025  | 0.34    | 0.445   | 0.131   | 0.153   | 0.37    | 0.13    | 0.748   |  |
| 4897.1   | 0.086                     | 1.149  | 0.538  | 1.048  | 0.657  | 0.535  | 0.537  | 1.479  | 0.339   | 0.438   | 0.132   | 0.154   | 0.367   | 0.131   | 0.931   |  |
| 4927.5   | 0.087                     | 1.284  | 0.555  | 1.178  | 0.721  | 0.551  | 0.553  | 1.619  | 0.338   | 0.434   | 0.132   | 0.155   | 0.365   | 0.132   | 1.052   |  |
| 4957.9   | 0.087                     | 1.464  | 0.58   | 1.335  | 0.784  | 0.575  | 0.578  | 1.87   | 0.337   | 0.436   | 0.133   | 0.155   | 0.363   | 0.132   | 1.183   |  |
| 4988.3   | 0.088                     | 1.501  | 0.61   | 1.383  | 0.841  | 0.604  | 0.607  | 1.863  | 0.336   | 0.442   | 0.134   | 0.156   | 0.364   | 0.133   | 1.241   |  |
| 5018.8   | 0.089                     | 1.443  | 0.637  | 1.347  | 0.87   | 0.631  | 0.634  | 1.733  | 0.337   | 0.451   | 0.135   | 0.157   | 0.366   | 0.134   | 1.228   |  |
| 5049.2   | 0.089                     | 1.262  | 0.653  | 1.204  | 0.865  | 0.647  | 0.651  | 1.424  | 0.339   | 0.462   | 0.135   | 0.158   | 0.37    | 0.135   | 1.129   |  |
| 5079.6   | 0.09                      | 1.003  | 0.654  | 0.988  | 0.821  | 0.649  | 0.652  | 1.028  | 0.343   | 0.47    | 0.136   | 0.159   | 0.374   | 0.135   | 0.963   |  |
| 5110     | 0.091                     | 0.87   | 0.638  | 0.863  | 0.761  | 0.634  | 0.636  | 0.884  | 0.346   | 0.475   | 0.137   | 0.159   | 0.379   | 0.136   | 0.849   |  |
| 5140.4   | 0.091                     | 0.787  | 0.616  | 0.782  | 0.71   | 0.613  | 0.614  | 0.796  | 0.349   | 0.475   | 0.138   | 0.16    | 0.382   | 0.137   | 0.772   |  |
| 5170.8   | 0.092                     | 0.727  | 0.593  | 0.723  | 0.668  | 0.59   | 0.592  | 0.733  | 0.351   | 0.471   | 0.138   | 0.161   | 0.384   | 0.138   | 0.716   |  |
| 5201.3   | 0.092                     | 0.68   | 0.571  | 0.677  | 0.633  | 0.569  | 0.57   | 0.685  | 0.352   | 0.465   | 0.139   | 0.162   | 0.383   | 0.138   | 0.671   |  |
| 5231.7   | 0.093                     | 0.87   | 0.553  | 0.819  | 0.626  | 0.551  | 0.552  | 1.038  | 0.352   | 0.457   | 0.14    | 0.162   | 0.382   | 0.139   | 0.761   |  |
| 5262.1   | 0.094                     | 1.162  | 0.55   | 1.06   | 0.669  | 0.548  | 0.549  | 1.492  | 0.351   | 0.45    | 0.14    | 0.163   | 0.379   | 0.14    | 0.944   |  |
| 5292.5   | 0.094                     | 1.297  | 0.567  | 1.19   | 0.734  | 0.563  | 0.565  | 1.632  | 0.35    | 0.446   | 0.141   | 0.164   | 0.377   | 0.14    | 1.064   |  |
| 5322.9   | 0.095                     | 1.477  | 0.592  | 1.347  | 0.796  | 0.587  | 0.59   | 1.883  | 0.348   | 0.448   | 0.142   | 0.165   | 0.375   | 0.141   | 1.195   |  |
| 5353.3   | 0.095                     | 1.514  | 0.622  | 1.396  | 0.853  | 0.616  | 0.62   | 1.875  | 0.348   | 0.454   | 0.143   | 0.166   | 0.375   | 0.142   | 1.254   |  |
| 5383.8   | 0.096                     | 1.456  | 0.649  | 1.359  | 0.883  | 0.643  | 0.646  | 1.745  | 0.349   | 0.463   | 0.143   | 0.166   | 0.377   | 0.143   | 1.241   |  |
| 5414.2   | 0.097                     | 1.274  | 0.665  | 1.216  | 0.877  | 0.659  | 0.663  | 1.436  | 0.351   | 0.473   | 0.144   | 0.167   | 0.381   | 0.143   | 1.141   |  |
| 5444.6   | 0.097                     | 1.015  | 0.666  | 1.001  | 0.833  | 0.661  | 0.664  | 1.04   | 0.354   | 0.482   | 0.145   | 0.168   | 0.386   | 0.144   | 0.976   |  |

Haffliger Model Scenario: Irrigation well new pumping

Modeled drawdown at well:

| Time (d) | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 5475     | 0.098  | 0.883  | 0.65   | 0.875  | 0.773  | 0.646  | 0.648  | 0.896  | 0.357   | 0.487   | 0.146   | 0.168   | 0.39    | 0.145   | 0.861   |
| 5505.4   | 0.098  | 0.799  | 0.628  | 0.794  | 0.722  | 0.624  | 0.626  | 0.808  | 0.36    | 0.486   | 0.146   | 0.169   | 0.393   | 0.145   | 0.784   |
| 5535.8   | 0.099  | 0.739  | 0.605  | 0.735  | 0.68   | 0.602  | 0.603  | 0.746  | 0.362   | 0.482   | 0.147   | 0.17    | 0.395   | 0.146   | 0.728   |
| 5566.3   | 0.1    | 0.692  | 0.583  | 0.689  | 0.645  | 0.581  | 0.582  | 0.697  | 0.363   | 0.476   | 0.148   | 0.171   | 0.395   | 0.147   | 0.683   |
| 5596.7   | 0.1    | 0.882  | 0.564  | 0.831  | 0.637  | 0.562  | 0.564  | 1.05   | 0.363   | 0.469   | 0.148   | 0.171   | 0.393   | 0.147   | 0.773   |
| 5627.1   | 0.101  | 1.174  | 0.562  | 1.072  | 0.681  | 0.559  | 0.561  | 1.504  | 0.362   | 0.461   | 0.149   | 0.172   | 0.39    | 0.148   | 0.956   |
| 5657.5   | 0.101  | 1.309  | 0.579  | 1.202  | 0.745  | 0.575  | 0.577  | 1.643  | 0.36    | 0.458   | 0.15    | 0.173   | 0.388   | 0.149   | 1.076   |
| 5687.9   | 0.102  | 1.488  | 0.603  | 1.359  | 0.808  | 0.599  | 0.601  | 1.895  | 0.359   | 0.459   | 0.15    | 0.174   | 0.386   | 0.15    | 1.207   |
| 5718.3   | 0.102  | 1.525  | 0.633  | 1.407  | 0.865  | 0.628  | 0.631  | 1.887  | 0.359   | 0.465   | 0.151   | 0.174   | 0.386   | 0.15    | 1.265   |
| 5748.8   | 0.103  | 1.467  | 0.66   | 1.371  | 0.894  | 0.654  | 0.658  | 1.757  | 0.359   | 0.474   | 0.152   | 0.175   | 0.388   | 0.151   | 1.252   |
| 5779.2   | 0.104  | 1.286  | 0.677  | 1.228  | 0.889  | 0.671  | 0.674  | 1.448  | 0.361   | 0.484   | 0.152   | 0.176   | 0.392   | 0.152   | 1.153   |
| 5809.6   | 0.104  | 1.027  | 0.677  | 1.012  | 0.845  | 0.672  | 0.675  | 1.052  | 0.364   | 0.493   | 0.153   | 0.177   | 0.396   | 0.152   | 0.987   |
| 5840     | 0.105  | 0.894  | 0.661  | 0.886  | 0.784  | 0.657  | 0.66   | 0.908  | 0.368   | 0.498   | 0.154   | 0.177   | 0.401   | 0.153   | 0.872   |
| 5870.4   | 0.105  | 0.81   | 0.639  | 0.805  | 0.733  | 0.636  | 0.637  | 0.82   | 0.371   | 0.497   | 0.154   | 0.178   | 0.404   | 0.154   | 0.795   |
| 5900.8   | 0.106  | 0.75   | 0.616  | 0.746  | 0.691  | 0.613  | 0.615  | 0.757  | 0.373   | 0.493   | 0.155   | 0.178   | 0.405   | 0.154   | 0.739   |
| 5931.3   | 0.107  | 0.703  | 0.594  | 0.7    | 0.656  | 0.592  | 0.593  | 0.709  | 0.374   | 0.487   | 0.156   | 0.179   | 0.405   | 0.155   | 0.695   |
| 5961.7   | 0.107  | 0.893  | 0.575  | 0.842  | 0.649  | 0.573  | 0.575  | 1.061  | 0.374   | 0.479   | 0.156   | 0.18    | 0.404   | 0.156   | 0.784   |
| 5992.1   | 0.108  | 1.185  | 0.573  | 1.083  | 0.692  | 0.57   | 0.572  | 1.515  | 0.372   | 0.472   | 0.157   | 0.181   | 0.401   | 0.156   | 0.967   |
| 6022.5   | 0.108  | 1.32   | 0.59   | 1.213  | 0.756  | 0.586  | 0.588  | 1.654  | 0.371   | 0.468   | 0.158   | 0.181   | 0.398   | 0.157   | 1.087   |
| 6052.9   | 0.109  | 1.499  | 0.614  | 1.37   | 0.819  | 0.61   | 0.612  | 1.906  | 0.369   | 0.47    | 0.158   | 0.182   | 0.396   | 0.158   | 1.218   |
| 6083.3   | 0.109  | 1.536  | 0.644  | 1.418  | 0.876  | 0.639  | 0.642  | 1.898  | 0.369   | 0.476   | 0.159   | 0.183   | 0.397   | 0.158   | 1.276   |
| 6113.8   | 0.11   | 1.478  | 0.671  | 1.382  | 0.905  | 0.665  | 0.668  | 1.768  | 0.37    | 0.485   | 0.16    | 0.184   | 0.398   | 0.159   | 1.263   |
| 6144.2   | 0.11   | 1.296  | 0.687  | 1.239  | 0.9    | 0.681  | 0.685  | 1.458  | 0.372   | 0.495   | 0.16    | 0.184   | 0.402   | 0.16    | 1.164   |
| 6174.6   | 0.111  | 1.037  | 0.688  | 1.023  | 0.855  | 0.683  | 0.686  | 1.062  | 0.375   | 0.503   | 0.161   | 0.185   | 0.407   | 0.16    | 0.998   |
| 6205     | 0.112  | 0.905  | 0.672  | 0.897  | 0.795  | 0.668  | 0.67   | 0.918  | 0.378   | 0.508   | 0.162   | 0.185   | 0.411   | 0.161   | 0.883   |
| 6235.4   | 0.112  | 0.821  | 0.649  | 0.816  | 0.744  | 0.646  | 0.648  | 0.83   | 0.381   | 0.508   | 0.162   | 0.186   | 0.414   | 0.162   | 0.806   |
| 6265.8   | 0.113  | 0.761  | 0.626  | 0.757  | 0.702  | 0.624  | 0.625  | 0.767  | 0.383   | 0.504   | 0.163   | 0.187   | 0.415   | 0.162   | 0.75    |
| 6296.3   | 0.113  | 0.714  | 0.604  | 0.711  | 0.667  | 0.602  | 0.603  | 0.719  | 0.384   | 0.497   | 0.164   | 0.187   | 0.415   | 0.163   | 0.705   |
| 6326.7   | 0.114  | 0.903  | 0.586  | 0.853  | 0.659  | 0.584  | 0.585  | 1.071  | 0.383   | 0.489   | 0.164   | 0.188   | 0.413   | 0.163   | 0.795   |
| 6357.1   | 0.114  | 1.195  | 0.583  | 1.094  | 0.702  | 0.581  | 0.582  | 1.526  | 0.382   | 0.482   | 0.165   | 0.189   | 0.411   | 0.164   | 0.977   |
| 6387.5   | 0.115  | 1.33   | 0.6    | 1.224  | 0.767  | 0.596  | 0.598  | 1.665  | 0.38    | 0.479   | 0.165   | 0.189   | 0.408   | 0.165   | 1.098   |
| 6417.9   | 0.115  | 1.51   | 0.625  | 1.38   | 0.829  | 0.62   | 0.623  | 1.916  | 0.379   | 0.48    | 0.166   | 0.19    | 0.406   | 0.165   | 1.228   |
| 6448.3   | 0.116  | 1.547  | 0.654  | 1.429  | 0.886  | 0.649  | 0.652  | 1.908  | 0.378   | 0.486   | 0.167   | 0.191   | 0.406   | 0.166   | 1.287   |
| 6478.8   | 0.117  | 1.489  | 0.681  | 1.392  | 0.915  | 0.675  | 0.679  | 1.778  | 0.379   | 0.495   | 0.167   | 0.192   | 0.408   | 0.167   | 1.274   |
| 6509.2   | 0.117  | 1.307  | 0.697  | 1.249  | 0.91   | 0.692  | 0.695  | 1.469  | 0.381   | 0.505   | 0.168   | 0.192   | 0.412   | 0.167   | 1.174   |
| 6539.6   | 0.118  | 1.048  | 0.698  | 1.033  | 0.865  | 0.693  | 0.696  | 1.073  | 0.384   | 0.513   | 0.169   | 0.193   | 0.416   | 0.168   | 1.008   |

Haffiger Model Scenario: Irrigation well new pumping

Modeled drawdown at well:

| Time (d) | Well 1 | Well 2 | Well 3 | Well 4 | Well 5 | Well 6 | Well 7 | Well 9 | Well 10 | Well 11 | Well 12 | Well 13 | Well 14 | Well 15 | Well 16 |
|----------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|---------|
| 6570     | 0.118  | 0.915  | 0.682  | 0.907  | 0.805  | 0.678  | 0.68   | 0.929  | 0.387   | 0.518   | 0.169   | 0.193   | 0.42    | 0.168   | 0.893   |
| 6600.4   | 0.119  | 0.831  | 0.659  | 0.826  | 0.754  | 0.656  | 0.658  | 0.84   | 0.39    | 0.517   | 0.17    | 0.194   | 0.424   | 0.169   | 0.816   |
| 6630.8   | 0.119  | 0.771  | 0.636  | 0.767  | 0.712  | 0.633  | 0.635  | 0.778  | 0.392   | 0.513   | 0.17    | 0.195   | 0.425   | 0.17    | 0.76    |
| 6661.3   | 0.12   | 0.724  | 0.614  | 0.721  | 0.676  | 0.612  | 0.613  | 0.729  | 0.393   | 0.507   | 0.171   | 0.195   | 0.425   | 0.17    | 0.715   |
| 6691.7   | 0.12   | 0.913  | 0.596  | 0.862  | 0.669  | 0.594  | 0.595  | 1.081  | 0.393   | 0.499   | 0.172   | 0.196   | 0.423   | 0.171   | 0.805   |
| 6722.1   | 0.121  | 1.205  | 0.593  | 1.104  | 0.712  | 0.59   | 0.592  | 1.535  | 0.391   | 0.492   | 0.172   | 0.197   | 0.42    | 0.171   | 0.987   |
| 6752.5   | 0.121  | 1.34   | 0.609  | 1.233  | 0.777  | 0.606  | 0.608  | 1.675  | 0.39    | 0.488   | 0.173   | 0.197   | 0.417   | 0.172   | 1.107   |
| 6782.9   | 0.122  | 1.519  | 0.634  | 1.39   | 0.839  | 0.629  | 0.632  | 1.926  | 0.388   | 0.489   | 0.174   | 0.198   | 0.416   | 0.173   | 1.238   |
| 6813.3   | 0.122  | 1.556  | 0.664  | 1.438  | 0.896  | 0.658  | 0.662  | 1.918  | 0.388   | 0.495   | 0.174   | 0.199   | 0.415   | 0.173   | 1.296   |
| 6843.8   | 0.123  | 1.498  | 0.691  | 1.402  | 0.925  | 0.685  | 0.688  | 1.788  | 0.388   | 0.504   | 0.175   | 0.199   | 0.417   | 0.174   | 1.283   |
| 6874.2   | 0.123  | 1.316  | 0.707  | 1.259  | 0.919  | 0.701  | 0.704  | 1.478  | 0.39    | 0.514   | 0.175   | 0.2     | 0.421   | 0.175   | 1.184   |
| 6904.6   | 0.124  | 1.057  | 0.707  | 1.043  | 0.875  | 0.702  | 0.705  | 1.082  | 0.393   | 0.523   | 0.176   | 0.2     | 0.425   | 0.175   | 1.018   |
| 6935     | 0.124  | 0.924  | 0.691  | 0.917  | 0.814  | 0.687  | 0.69   | 0.938  | 0.396   | 0.527   | 0.177   | 0.201   | 0.43    | 0.176   | 0.903   |
| 6965.4   | 0.125  | 0.841  | 0.669  | 0.835  | 0.763  | 0.665  | 0.667  | 0.85   | 0.399   | 0.527   | 0.177   | 0.202   | 0.433   | 0.176   | 0.826   |
| 6995.8   | 0.126  | 0.78   | 0.645  | 0.776  | 0.721  | 0.643  | 0.644  | 0.787  | 0.401   | 0.522   | 0.178   | 0.202   | 0.434   | 0.177   | 0.769   |
| 7026.3   | 0.126  | 0.733  | 0.623  | 0.73   | 0.686  | 0.621  | 0.622  | 0.739  | 0.402   | 0.516   | 0.178   | 0.203   | 0.433   | 0.177   | 0.725   |
| 7056.7   | 0.127  | 0.923  | 0.605  | 0.872  | 0.678  | 0.603  | 0.604  | 1.091  | 0.401   | 0.508   | 0.179   | 0.203   | 0.432   | 0.178   | 0.814   |
| 7087.1   | 0.127  | 1.215  | 0.602  | 1.113  | 0.722  | 0.6    | 0.601  | 1.545  | 0.4     | 0.501   | 0.179   | 0.204   | 0.429   | 0.179   | 0.997   |
| 7117.5   | 0.128  | 1.349  | 0.619  | 1.243  | 0.786  | 0.615  | 0.617  | 1.684  | 0.398   | 0.497   | 0.18    | 0.205   | 0.426   | 0.179   | 1.117   |
| 7147.9   | 0.128  | 1.529  | 0.643  | 1.4    | 0.848  | 0.639  | 0.641  | 1.935  | 0.397   | 0.498   | 0.181   | 0.205   | 0.424   | 0.18    | 1.247   |
| 7178.3   | 0.129  | 1.566  | 0.673  | 1.448  | 0.905  | 0.668  | 0.671  | 1.927  | 0.396   | 0.504   | 0.181   | 0.206   | 0.424   | 0.18    | 1.306   |
| 7208.8   | 0.129  | 1.508  | 0.7    | 1.411  | 0.934  | 0.694  | 0.697  | 1.797  | 0.397   | 0.513   | 0.182   | 0.207   | 0.426   | 0.181   | 1.292   |
| 7239.2   | 0.13   | 1.325  | 0.716  | 1.268  | 0.928  | 0.71   | 0.713  | 1.488  | 0.399   | 0.523   | 0.183   | 0.207   | 0.43    | 0.182   | 1.193   |
| 7269.6   | 0.13   | 1.066  | 0.716  | 1.052  | 0.884  | 0.711  | 0.714  | 1.091  | 0.402   | 0.531   | 0.183   | 0.208   | 0.434   | 0.182   | 1.027   |
| 7300     | 0.131  | 0.934  | 0.7    | 0.926  | 0.823  | 0.696  | 0.699  | 0.947  | 0.405   | 0.536   | 0.184   | 0.208   | 0.438   | 0.183   | 0.912   |