

## **WORK SESSION – Tuesday, May 23, 2023**

**Minutes of the Huntsville Town Council work session held at the Huntsville Maintenance Office, 165 South 7500 East, 7 p.m.**

**The work session was scheduled to discuss the purchase of water shares under the contract with the Monastery.**

**Attending: TC Members Sandy Hunter, Bruce Ahlstrom, Artie Powell, Mayor Sorensen, Beckki Endicott – Clerk, Jim Truett, Bill White, Blake Bingham, Ron Gault, Lewis Johnson**

Mayor Sorensen called the meeting to order. He turned the time over to Bill White for a presentation on the water. Bill White has provided the committees with copies of the Monastery contracts.

Bill White stated this work session was called to clarify the purchase that the Town Council wanted to make in April. The Town Council wants to purchase \$400,000 worth of water shares at a price of \$5,000 a share. The contract price was set to expire in April with an extension until July 12 to accommodate this meeting.

Bill White set out to explain the difference between water rights, which is the document the state gives you the right to find water from a specific source of water, and actual wet water. Your water right might provide you with the opportunity to find water from a certain stream and from a certain location. If available, you can use it. If it is not available, you will not be able to use it.

Wet water is an issue in our Valley. Huntsville Town has an actual source from the Monastery Well. Bill rehearsed the history of the Wishing Well and his participation in providing water to Huntsville Town.

In the Monastery contract, the first 100 gallons per minute of the Wishing Well Water is set aside for redundant water purposes only. You can only dip into the redundant source if the spring drops below 150 gallons per minute. As compensation for the Monastery allowing Huntsville Town to drill the Wishing Well on their property, anything above 150 gallons belongs to the Monastery. As a concession to the Town because of the need for additional water in Town, Bill White agreed to allow the Town to purchase water shares above the 150 gallons per minute at the rate of an in town culinary water hook up. The price was and currently is \$5,000. This would allow for the undeveloped lots in Town which Ron Gault estimates to be 40 lots. The future of the water in Huntsville would be secured.

The well is a great well. It has affected the Town's springs. The effect is hard to measure because of the pipe size of 18 inches. The Town has been using the Wishing Well flow exclusively to test the water flow. At the end of the test, the Town should go back to using the Town owned springs, as agreed upon, and using the Wishing Well as it's redundant source.

The State of Utah has looked at Huntsville Town's water system and determined that the safe yield for the Wishing Well is 150 gallons per minute. Bill White stated that number could be challenged but he thinks it is a number that both he and the Town can work with at this time. This means that there is 50 gallons per minute above the redundant safeguard that the Town can purchase which is equivalent to 100 connections. There has been a record kept for the shares purchased since the start of the contract. **(See Attachment #1)** This record has been provided to the Town Council. The Town has purchased 35.5 gallons per minute which is equivalent to 71 connections. Of these 71 connections, 20 of the connections are connections which Bill White has purchased for use at the Monastery. Instead of giving the Town the \$150,000 for the connections needed for the Monastery and the Town giving \$150,000 for the 30 connections that the Town wanted, they amended the agreement to swap the connections. This was approved at the time of Mayor Truett's last term.

Sage Development was requesting water from the Town in an annexation. They agreed to pay a higher price for the water which excess would be used to buy the rest of the water needed for the empty lots in Huntsville Town. This would be done before the expiration of the Monastery purchase agreement in April 2023. Bill White stated he would never use the 20 connections, but opted to prepay the connections just in case he ever needed them. Bill White went on to calculate that since the Town had purchased 71 connections, there were only 14.5 gallons per minute and 29 connections available connections to purchase under the Division of Drinking Water standards. With the recent purchases and the additional 29 connections that can be purchased, there should be 70 connections available. This would cover Sage Development and all the other vacant lots in Town.

Bill White states there is an agreement in place and the Town can purchase what it would like to purchase in accordance with the agreement. He wanted to make sure the Town Council Members had all the information prior to making this decision, because it affects other decisions they are called on to make; for example, annexation decisions.

Mayor Sorensen explained the Town received \$400,000 net from the Sage Development Agreement. They intended to use the money to purchase additional water for the remainder of the Town. Mayor Sorensen asked Bill White if the Town Council could make a purchase that was above the Division of Drinking Water's estimated safe yield rate of 150 gallons per minute. Bill White explained that the safe yield could be challenged. He recognized it was important not to purchase something that does not exist above 150 gallons per minute. But if the Town Council did this knowingly, he would not prevent the purchase. The State is telling Huntsville Town that there are not shares above the 150 gallons per minute.

The Town Council discussed when to use the Wishing Well as a redundant source and when to use the Springs. Bill White stated his concern is that there is continued talk and education with regards to not only the Wishing Well but the Springs so that the Town does not lose its redundancy. Bill White has been working with Ron Gault regarding the timing of sources. He stated that operationally it is beneficial to the Town to use the well water.

It is easier on the water plant and system. However, there are times when it is beneficial for the Town to use the Springs as their primary source.

The discussion turned to the max gallons per minute capacity of the water treatment plant. Ron Gault stated the plant was designed to run at maximum capacity of 200 gallons per minute, but optimal operating speed is somewhere between 150-175 gallons per minute. Blake Bingham clarified what the Division of Drinking Water Standards were for the plant operation. He recommended buying all the water the Town could afford at the price that the contract allowed. He believes that the price of water will escalate in the future.

The drawn down effect on Bennett Springs was discussed. It was recommended the Town put a measuring device on the Springs to measure the effect. The device was quoted to be as high as six figures and became prohibitive. Blake Bingham stated there was a report produced by Laughlin that measures the effect of the Wishing Well on Bennett Springs. He produced the report and email the report to Beckki. **(See Attachment #2).**

Former Mayor Jim Truett stated if given the opportunity he would have presented this purchase of water shares to his Town Council. He believes the purchase of water shares to supply the build out of Town to be a good purchase.

Mayor Sorensen confirmed the expiration date of the purchase price of \$5,000 a share is the middle of July.

Louis Johnson spoke to the prudence of making the purchase of water shares now for the future. He said this is a great opportunity presented before the Town Council.

Former Mayor Truett stated this would be an investment in the future. He pointed out that Huntsville Town would receive the connection money back in the building out of Town over time.

**TCM Bruce Ahlstrom motioned to adjourn the meeting.** TCM Kevin Anderson seconded the motion. All votes Aye. Motion passed.

**Meeting adjourned at 8:38 p.m.**



Beckki Endicott, Huntsville Town Clerk

**RESOLUTION 2021-6-17**

**A RESOLUTION OF HUNTSVILLE TOWN, UTAH**, to enter into a contract to exchange source capacity to Huntsville Town for water connections for Abbey Farm, LLC.

**WHEREAS**, Huntsville Town (hereafter "Town") is a municipal corporation duly organized and existing under the laws of the State of Utah;

**WHEREAS**, the Town Council is the municipal legislative body;

**WHEREAS**, the Town entered into the Amended and Restated Water System Improvement Agreement, dated April 9, 2018, with Huntsville Abbey Farm, LLC (hereafter "Abbey"), which among other things allocates capacity rights in the Town's municipal well and is referred to as the Wishing Well Agreement.

**WHEREAS**, the Wishing Well Agreement grants to the Town the option to purchase any of Abbey's New Connection Capacity rights in the Wishing Well for a discounted price of five thousand Dollars per connection for a period of five years after execution of the Wishing Well Agreement.

**WHEREAS**, the Wishing Well Agreement grants to Abbey the right to purchase from Town new connections to the Huntsville municipal water service for a price not to exceed one and one-half times the price paid by Town residents for their water impact fee for a residential connection. Abbey is also required to dedicate to Town New Connection Capacity equivalent to the water required to serve the new connections. The current price charged by Town to residents for water impact fees is \$5,000 per connection. Therefore, Abbey may purchase water connections from Town for \$7,500 per connection.

**WHEREAS**, the Mayor has entered an Agreement with Huntsville Abbey Farm, LLC, for the exchange of source capacity and equivalent residential connections and the Town Council desires to ratify that Agreement;

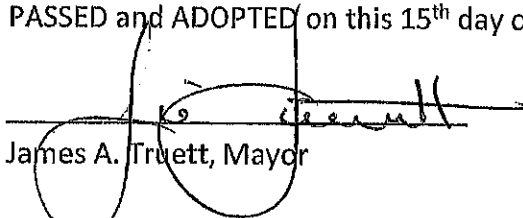
**NOW, THEREFORE, BE IT RESOLVED** by the Huntsville Town Council as follows;

**Section 1.** Ratification. That the Agreement between Huntsville Town and Huntsville Abbey Farm, LLC, attached hereto as Exhibit "A" and incorporated

herein by this reference is hereby ratified by the Town Council and shall continue in full force and effect according to the terms of the Agreement.

**Section 2. Effective Date.** This Resolution is effective immediately upon adoption by the Town Council.

PASSED and ADOPTED on this 15<sup>th</sup> day of July, 2021.

  
James A. Truett, Mayor

ATTEST:

  
Beckki Endicott, Clerk



<b>VOTES: APPROVED</b>	
AYES:	Mayor Jim Truett Council Member Richard Sorensen Council Member Max Ferre' Council Member Wendy McKay Council Member Blake Bingham
NAYS:	
EXCUSED:	

HUNTSVILLE TOWN  
WISHING WELL CAPACITY ACQUISITION  
AND  
GRANT OF HUNTSVILLE ABBEY FARM WATER CONNECTIONS

This agreement is entered among Huntsville Abbey Farm, LLC (Abbey) and Huntsville Town (Town).

RECITALS

- A. Abbey and Town entered into the Amended and Restated Water System Improvement Agreement, dated April 9, 2018, which among other things allocates capacity rights in the Town's municipal well and is referred to as the Wishing Well Agreement.
- B. The Wishing Well Agreement grants to the Town the option to purchase any of Abbey's New Connection Capacity rights in the Wishing Well for a discounted price of five thousand dollars per connection for a period of five years after execution of the Wishing Well Agreement.
- C. The Wishing Well Agreement grants to Abbey the right to purchase from Town new connections to the Huntsville municipal water service for a price not to exceed one and one-half times the price paid by Town residents for their water impact fee for a residential connection. Abbey is also required to dedicate to Town New Connection Capacity equivalent to the water required to serve the new connections. The current price charged by Town to residents for water impact fees is \$5,000 per connection. Therefore, Abbey may purchase water connections from Town for \$7,500 per connection.

AGREEMENT

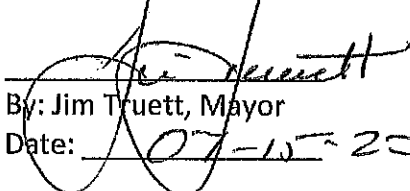
1. The attached Exhibit A contains a description of the New Connection Capacity owned by the parties.
2. The parties hereby agree that the following is an equal value exchange:
  - a. Abbey hereby conveys to Town 25 gallons per minute (gpm) of New Connection Capacity. Twenty-five gpm is sufficient to provide water source capacity for 50 new residential connections under current Utah Division of Drinking Water standards. Twenty of the new residential connections will be reserved by Town for future new connections requested by Abbey as described in section 2.b. below. The remaining 30 connections will belong to Town as compensation paid by Abbey for the twenty connections received by Abbey.
  - b. Town hereby conveys and transfers to Abbey the right to 20 new residential connections for municipal water service from Town (Prepaid Connection Credits). The Prepaid Connection Credits satisfy any and all impact fees, connection fees, water rights and fee in lieu of water rights required for water service. The Prepaid Connection Credits granted to Abbey will

not be charged a standby-fee or other fee during the time prior to connecting to the Town system. The Prepaid Connection Credits may be used for new water service within or outside of Town boundary and may be freely assigned by Abbey to any third party. Abbey will pay the cost to extend a pipeline if the new connection is not adjacent to Town water pipeline. The extended pipeline will then be owned and operated by Town. Included with the twenty residential connections acquired by Abbey is the right for Abbey to install two fire hydrants on Town's water line at Abbey's expense. If Abbey desires any additional fire hydrants, Abbey will be charged the same impact fee Town charges to any other out of town customer for a new fire hydrant.


3. This Agreement shall inure to the benefit of the parties' successors and assigns.

The parties have executed this Agreement to be effective the 15th day of July, 2021.

TOWN OF HUNTSVILLE

  
By: Jim Truett, Mayor  
Date: 07-15-2021

HUNTSVILLE ABBEY FARM, LLC

  
By: Marc Wangsgard, Manager  
Date: 08-24-2021



RESOLUTION 2018-05-17-1

P.O. Box 267  
Huntsville, UT 84317

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Mayor  
James A. Truett

Town Council  
Max Ferrel  
Vendy McKay  
Bill Wangsgard  
Bill White

Town Clerk/Recorder  
Gail Ahlstrom

Treasurer  
Linda Laws

Attorney  
Bill Morris

A RESOLUTION OF HUNTSVILLE TOWN, UTAH, TO ENTER INTO AN AGREEMENT WITH HUNTSVILLE ABBEY FARM, LLC., FOR THE DEVELOPMENT AND OPERATION OF THE WISHING WELL PROJECT.

WHEREAS, Huntsville Town (hereafter "Town") is a municipal corporation duly organized and existing under the laws of the State of Utah;

WHEREAS, the Town Council is the municipal legislative body;

WHEREAS, the Town is in need of the Wishing Well Project for the development and sustainability of the Town's culinary water system and for the benefit of the health, safety, and welfare of the public;

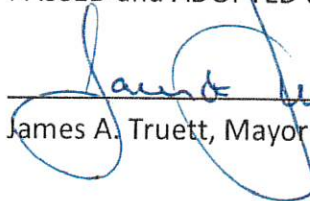
WHEREAS, the Mayor has entered an Agreement with Huntsville Abbey Farm, LLC, for the development and operation of the Wishing Well Project and the Town Council desires to ratify that Agreement;

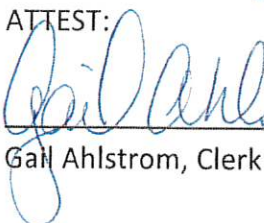
NOW, THEREFORE, BE IT RESOLVED by the Huntsville Town Council as follows;

**Section 1. Ratification.** That the Agreement between Huntsville Town and Huntsville Abbey Farm, LLC, attached hereto as Exhibit "A" and incorporated herein by this reference is hereby ratified by the Town Council and shall continue in full force and effect according to the terms of the Agreement.

**Section 2. Effective Date.** This Resolution is effective immediately upon adoption by the Town Council.

PASSED and ADOPTED on this 17<sup>th</sup> day of May, 2018.

  
James A. Truett, Mayor

ATTEST:  
  
Gail Ahlstrom, Clerk





<b>VOTES: APPROVED</b>	
<b>AYES:</b>	Mayor Jim Truett Council Member Bill Wangsgard Council Member Max Ferre' Council Member Wendy McKay
<b>NAYS:</b>	
<b>EXCUSED:</b>	Council Member Bill White

**AMENDED AND RESTATED WATER SYSTEM IMPROVEMENT  
AGREEMENT**

This agreement is made and entered into between **Huntsville Abbey Farm, LLC** and **Huntsville Rangeland Company, LLC** (“Abbey”) and **Huntsville Town**, a Utah municipality, at 7309 East 200 South, P.O. Box 267, Huntsville, UT 84317 (“Town”). This Agreement amends and restates in its entirety that certain agreement dated October 1, 2015 (“Original Agreement”) made and entered into between Abbey’s predecessor, the **Abbey of Our Lady of the Holy Trinity**, a corporation sole (“Monastery”) and Town.

**RECITALS**

A. Monastery was the owner of a farm and certain water rights located to the southeast of Town boundaries. Monastery sold that farm and water rights to Abbey in January of 2016. A series of springs, known as Upper Bennett Spring and Lower Bennett Springs (“Springs”), originate on the farm. These Springs are the primary source of drinking water for Town and Upper Bennett Spring was the exclusive source of drinking water for Monastery and is still a significant source of irrigation water for the monastery farm, and year around water for uses related to the monastery and farm.

B. Prior to the date Monastery purchased the farm in 1947, Town made two separate purchases of water rights from Monastery’s predecessors-in-interest in the farm. The first purchase of water, dated February 21, 1936, conveyed to Town one-fourth (1/4) of a second foot of water from Lower Bennett Springs. (That Agreement is attached for reference purposes only as Exhibit A). The second purchase of water rights, dated September 18, 1940, conveyed to Town four-tenths (4/10) of a second foot of water from Upper Bennett Spring so long as the spring yielded a minimum of one second foot of water. If the spring drops below one second foot of water, Town is limited to forty percent (40%) of the available flow of the spring. (That Agreement is attached for reference purposes only as Exhibit B).

C. Monastery and Town constructed a cement collection box (“Collection Box”) at Upper Bennett Spring to divide the water between themselves according to the terms of the September 18, 1940 Agreement and a subsequent Stipulation between the Parties that further clarified the division of water between the Parties dated December 5, 1947. (That Stipulation is attached for reference purposes only as Exhibit C).

D. Town carries its water from the Collection Box through a pipeline (“Town Springs Line”) to its culinary water treatment plant (“Treatment Plant”). The Collection Box and Treatment Plant are shown on Exhibit D.

E. Abbey currently separates its water from the Collection Box into an 18-inch irrigation line (“Irrigation Line”) and a 6-inch culinary line (“Old Culinary Line”).

F. In exchange for certain easements granted to Town and detailed below, Town expended \$150,000 to run a new culinary water line from the Treatment Plant to the old

monastery building to provide culinary quality water to the Monks living at the monastery. ("New Culinary Line"). At the time of the Original Agreement, the Monks intended to live at the monastery for the rest of their lives but later decided to move.

G. In the Original Agreement, Town agreed to construct another water line and a water meter to connect the monastery's Old Culinary Line to the Town Springs Line to carry the Monastery's water to the Treatment Plant and then deliver the treated water to the Monastery. Town and Monastery agreed to this so Town would be able to use, on a temporary basis, some of Monastery's spring water when not used at the monastery. The Town decided this plan proved to be too costly and abandoned it. Instead, Town plugged Monastery's Old Culinary Line at the point at which it entered the monastery building, which caused Monastery water to flow into the Town Springs Line at the Collection Box and then to the Treatment Plant. Abbey has informed Town that Abbey now needs all of its Spring water rights and will be utilizing all of its rights out of the Spring.

H. Abbey also receives irrigation water from the South Fork of the Ogden River as a shareholder in the Co-op Farm Irrigation Company ("Co-op"). The water is diverted from the river into the Co-op's 24-inch pipe ("River Pipeline").

I. Town has an approved water right change application with the Utah Division of Water Rights to divert water from the South Fork but has not yet constructed conveyance facilities to carry the water from the river to the Treatment Plant.

J. Town wishes to carry the water it diverts from the South Fork through a portion of the Co-op's 24-inch pipe. Abbey does not have authority to grant Town access to the Co-op pipeline. However, Abbey is willing to support Town's request to Co-op to allow it to convey its water in the pipe, provided Town pays the cost to upsize the pipe, if necessary, and pays its proportionate share of maintenance and operation costs of the Co-op pipeline.

K. In the Original Agreement, Monastery granted to Town a license to drill up to three exploratory wells on its property. Town used its best efforts to develop a well at one of the three well sites (Nugget Well). Upon completion of drilling and test pumping the well, Town determined it was not a viable source because the flows were less than 30 gallons per minute and the cost of developing the well was not justified. Town decided to abandon that well. Based on the geologic data collected during the well development, Town decided the remaining two other well locations would likely yield similar disappointing results and at great expense.

L. Town now seeks Abbey's permission to drill a well close to the Springs to establish a redundant water source to comply with a requirement imposed by Utah Division of Drinking Water. Town refers to this new location as the "Wishing Well." Abbey and Town acknowledge that drilling the Wishing Well could intercept the same underground water source as feeds the Springs and therefore interfere with the Parties' water rights in the Springs. Abbey is willing to grant Town the right to drill, equip, operate and maintain the new Wishing Well under the terms contained in this Agreement.

M. Bill White is currently a member of the Huntsville Town Council and is also one of two principal owners of Huntsville Abbey Farm, LLC and Huntsville Rangeland Company, LLC. All parties to this Agreement understand and acknowledge that Bill White has a conflict of interest and has recused himself from voting on behalf of the Town to entering into this Agreement. Town has hired outside legal counsel with expertise in matters relating to water and water rights to advise Town in drafting and negotiating the terms of this Agreement. Town has also assembled a "water committee" consisting of engineers and others citizens with experience in Town's water system to advise Town on all issues related to this Agreement.

### AGREEMENT

In consideration of the payments and covenants set forth herein and for other good and valuable consideration, the receipt, adequacy, and legal sufficiency of which are hereby acknowledged by the Parties, the Parties agree as follows:

#### **INSTALLATION OF INFRASTRUCTURE TO PROVIDE CULINARY WATER TO ABBEY PROPERTY**

1. Town contributed \$150,000 and Monastery contributed \$41,000 to construct the New Culinary Line to carry treated water from the Treatment Plant to Abbey's farm as depicted in Exhibit D. The treated water delivered to Abbey through the New Culinary Line is metered. Abbey will pay the same rate for the treated water it receives as all other Town water customers located outside of Town Boundaries. Town will own and maintain the New Culinary Line.
  
2. Abbey currently has two, one-inch culinary water connections from the New Culinary Line that are approved by Town. Abbey, or its successors, will only be allowed to connect additional residential units or new educational, commercial, irrigation or other uses on its property to the New Culinary Line if Abbey conveys to Town sufficient source capacity from the spring or Wishing Well for the new uses. Abbey will pay to Town the same impact and connection fees as other Huntsville customers located outside Town boundaries and who have provided source capacity to the Town, provided that those fees will not be greater than 1.5 times the combined connection fee and impact fee Town charges at the time of dedication to in-town connections. Town will not treat any other landowner desiring to annex into Town or to connect to its water system more favorably than Abbey. For example, currently Town Code section 10.9 requires that Town may only add new connections to its system from an area outside of Town's existing municipal boundary if the party seeking a connection dedicates to Town both a water source and water rights acceptable to Town and approved by the Utah State Division of Drinking Water to meet the anticipated culinary water demand of the new connection. If Town decides to allow any new connections to its water system under more favorable terms, Town must extend those same favorable terms to Abbey or its successors.

3. Abbey or its successor may elect to disconnect the New Culinary Line from the Treatment Plant and discontinue receiving treated culinary water from Town at any time. If Abbey elects this option, Abbey shall assume ownership of the New Culinary Line and Town will deed said New Culinary Line and related easements to Abbey. Abbey shall have five years to exercise this option. If Abbey elects to disconnect the New Culinary Line, its right to receive water from the Treatment Plant under this Agreement will terminate and Abbey must renegotiate new terms to recommence receiving water from the Treatment Plant.

#### **EASEMENT FOR INSTALLATION OF TOWN PIPELINE FROM RIVER TO TREATMENT PLANT**

4. Monastery granted Town a non-exclusive easement for the installation, maintenance, operation, repair and replacement of a pipeline that will connect the River Pipeline to the Treatment Plant as shown on Exhibit D ("Pipeline Easement"). The Pipeline Easement is attached as Exhibit E. Before construction occurs, Abbey will grant Town a temporary construction easement in substantially the form at Exhibit E. If requested by Abbey, Town will cooperate with Abbey to change the location of the pipeline easement at any time prior to completion of construction of the pipeline by Town as long as such relocation will not negatively affect the operation of the pipeline and Abbey pays any increase in construction costs resulting from such relocation.

5. In the Original Agreement, Monastery granted Town the right to divert its water rights, up to 500 gallons per minute (gpm), from the diversion facility on the South Fork of the Ogden River and deliver Town water through the River Pipeline and then into Town's newly installed pipeline, but only so long as Monastery had excess capacity in the River Pipeline beyond its own water rights and the rights of others claiming an interest in the River Pipeline. Unfortunately, Monastery was mistaken in its belief that it owned and had authority to grant this right to Town. The River Pipeline is owned by Co-op and not Monastery. Abbey agrees to support Town's request to Co-op to allow Town to use the diversion facility and convey its water in the River Pipeline, provided there is sufficient unused capacity or Town pays the cost to upsize the pipe, if necessary, and Town pays its proportionate share of maintenance and operation costs of the Co-op's pipeline. The use of the diversion facility and River Pipeline by Town shall not negatively affect the Abbey's water rights in any regard. Abbey's support required in this section shall include requesting a Co-op shareholder meeting to hold a shareholder vote on allowing Town to use the River Pipeline as described in this Paragraph 5 and voting its shares in favor of allowing Town to use the River Pipeline under the terms set forth herein.

6. Abbey agrees to grant an easement in the form attached as Exhibit E if Town decides to construct a pipeline to bypass the Co-op Pipeline and connect Town's pipeline from the diversion facility on the South Fork to its Treatment Plant.

**LICENSE TO DRILL EXPLORATORY WELLS AND EASEMENT FOR  
WISHING WELL AND PIPELINE TO TREATMENT PLANT**

7. In the Original Agreement, Monastery granted Town a temporary license to drill a maximum of three exploratory wells in approximately the locations marked on Exhibit D. The license to drill the exploratory wells is shown in Exhibit F and was executed by Monastery. Town used its best efforts to develop a well at one of the three well sites. Upon completion of drilling and test pumping, Town determined the well was not a viable source because the flows were less than 30 gallons per minute and the cost of developing the well was not justified. Based on the geologic data collected during the well development, Town decided the remaining two other well locations it acquired in the Original Agreement would likely yield similar disappointing results and at great expense.

8. Abbey hereby grants Town access to Abbey property to drill the Wishing Well at the location shown on Exhibit G. Town will not drill any other wells or conduct any other exploratory activities on Abbey property other than the Wishing Well at the site shown on Exhibit G.

a. Safe Yield Determination.

- i. Within 60 days after drilling is completed, Town's consultant ("Consultant") will perform all necessary testing to determine the Wishing Well's maximum Safe Yield, which is the maximum amount of water that can be pumped on a continuous basis ("Safe Yield"). Town and Abbey will review the Consultant's determination and agree on the Safe Yield determination in writing. If the Parties do not agree, they will mutually select a second consultant who will determine the Safe Yield of the Wishing Well, and that determination shall then be binding on the Parties for purposes of defining the Parties' rights and duties under this Agreement.
- ii. The Safe Yield Determination will determine the allocation of the Wishing Well's capacity as set forth in section 8.b.i below.

b. Allocation of Wishing Well Production.

- i. Town shall be allocated the first 100 gallons per minute ("gpm") of Safe Yield capacity. The first 100 gpm from the Wishing Well is referred to herein as "Redundant Capacity," because the capacity is only to be used by Town as a backup source and not a primary source of water supply. Town may only deliver water under its Redundant Capacity when Town's water supply from all its water sources in Bennett Canyon, (Upper and Lower Bennett Springs) falls below 150 gpm. The Wishing Well may be used by Town to make up the difference between 150 gpm and flow available from Town's water rights in the Springs. As an example:

- 1) If Town's share of Upper and Lower Bennett Springs is producing 130 gpm, Town can pump up to 20 gpm from the Wishing Well.
- 2) If Town's share of Bennett Springs is producing less than 50 gpm, Town can use up to 100 gpm from the Wishing Well, but cannot exceed more than 100 gpm under any circumstances.

ii. Abbey shall be allocated the remaining Safe Yield capacity in excess of 100 gpm Redundant Capacity (New Connection Capacity).

9. Interference of Abbey's Water Rights in Upper Bennett Spring.

a. Town acknowledges that drilling and pumping water from the Wishing Well in such close proximity to the Abbey's primary water source in Upper Bennett Spring is likely to interfere with and diminish Abbey's water source from Upper Bennett Spring, even if the affect is not immediate.

b. Town also acknowledges that Abbey's water source from Upper Bennett Spring is the most valuable asset owned by Abbey and the continued existence of the farm is wholly dependent upon Abbey's use of water from the Upper Bennett Spring.

c. Town will notify Abbey 24 hours prior to pumping Redundant Capacity water from the Wishing Well. When Town pumps water from the Wishing Well, Abbey will determine the amount of water such pumping diminishes the flow of the Upper Bennett Spring. Abbey will then instruct Town in writing to deliver an equal amount of water to Abbey through the New Culinary Line at no Cost to Abbey. For example, if Town pumps 100 gpm from the Wishing Well and Abbey determines that the Spring's flow is diminished by 20 gpm for four hours, Abbey will be entitled to receive from Town the volume of water produced by a flow of 20 gpm for four hours to place to beneficial use through Town's pipeline at no cost to Abbey. Abbey shall use all of the water available to it under this provision 9c within 30 days of it accruing, after which time, Town shall have no obligation to provide this replacement water.

10. Abandonment of Town's Other Three Wells Sites And Easements on Abbey Property.

a. If the Wishing Well's Safe Yield is equal to or above 100 gpm, Town shall forever abandon its property interest in the three wells sites growing out of the Original Agreement. Further, Town shall: (1) convey to Abbey the Town's existing well drilled on Abbey property in 2017 (Nugget Well) shown on Exhibit D as Exploratory Well Site # 1; (2) if requested by Abbey within one year of the Safe Yield determination and agreement called for in paragraph 8.a., Town shall, at its expense, seal the Nugget Well and perform any other work to formally abandon the Nugget Well per standards of the Utah Division of Water Rights and/or Division of Drinking Water; and (3) convey back to Abbey all easements and property interests related to the three well sites granted to Town in the Original Agreement.

b. If the Safe Yield is less than 100 gpm, Town will determine whether it desires to abandon the Wishing Well and pursue drilling a well at one or more of the three sites granted to it under the Original Agreement, as set forth in Exhibit H (excluding exhibits), or keep the Wishing Well and abandon the original three well sites. Town will notify Abbey in writing of its determination within 60 days after the Safe Yield is agreed to as described in Section 8.a. above. If Town decides to proceed with the Wishing Well, it will convey back to Abbey the easements and property interests related to those well sites as described in this Section 10.a.

11. Well Equipping, Ownership, and Operation. Town shall own, operate, maintain and repair the Wishing Well and all related property interests. Town shall have the right to maintain the well, including operating it periodically to keep it in good repair; such periodic maintenance activities shall not be considered to cause interference with Abbey's water rights and not subject to Paragraph 9.c replacement water. Town will bear all costs associated with the Wishing Well, including but not limited to, developing and equipping the well to deliver water at a volume equal to its full Safe Yield, and all costs for operating and maintaining the well.

12. Use of Town's Redundant Capacity. The Redundant Capacity in the Wishing Well is not to be used to support or add new water connections to Town's water system outside of Town municipal boundary, as such municipal boundary exists as of the date of this Agreement. If Town's municipal boundary is expanded at a future date, for example by annexing property, the Redundant Capacity will not be used to support or add new connections located in any area annexed into Town.

13. New Connections to Town and Use of Abbey's New Connection Capacity.

a. Town Code section 10.9 requires that Town may add new connections to its system from an area outside of Town's existing municipal boundary if the party seeking a connection dedicates to Town both a water source and water rights acceptable to Town and approved by the Utah State Division of Drinking Water to meet the anticipated culinary water demand of the new connection. Town may amend section 10.9 to allow those seeking to annex into Town or to rezone their property from agricultural uses to residential or commercial uses to pay a fee in lieu of conveying water rights and water source capacity to Town.

b. For a period of five years, beginning with the execution of this Agreement, Town shall have the option to purchase any of Abbey's New Connection Capacity that Abbey has not dedicated to Town for development of its own property ("Option Period"). The purchase price for Abbey's New Connection Capacity shall be \$5,000 for each one-half gallon per minute of source capacity, which is roughly equivalent to the amount of culinary water source capacity necessary for each new residential connection. Town may purchase any amount of Abbey's New Connection Capacity at any time during the Option Period. Only at the end of the Option Period, Abbey may sell its New Connection Capacity directly to property owners outside of Town boundaries who receive permission



from Town to receive culinary water service from Town (surplus water contract) or who annex into Town boundaries and are required to convey culinary water source capacity to Town.

c. Town may decide whether Abbey's dedication of culinary water source capacity is adequate to cover the demands of the new connections and meets its water dedication requirements in Town Code and wishes to accept the dedication. Upon the dedication/assignment, Town will own that portion of Abbey's New Connection Capacity and may use such capacity to meet the water use requirements of the water connections for the newly annexed property or surplus sales contract ("Dedicated Water").

d. Town's use of Dedicated Water shall not be considered to cause interference with Abbey's water right and not subject to Paragraph 9.c. Town may use the Dedicated Water as a primary water source, not just a Redundant Supply as required by Paragraphs 8.b.i and 12. Any Dedicated Water Town uses shall not be calculated as part of Town's Redundant Supply.

e. Estimated annual water demand for all new connections to Town's water system will comply with standards of the Utah Division of Drinking Water.

14. Easements. In the event that Town determines to equip and put into production the Wishing Well and abandon its other three well sites or determines to equip and put into production one of the other three well sites, Town will request and Abbey will convey to Town: (1) an easement to access, maintain, repair and replace the production well and for a pipeline to carry water from the well to the Treatment Plant in substantially the form as Exhibit I; (2) a well protection zone easement needed to meet Utah Division of Drinking Water source protection requirements, provided that such easement minimizes impact to Abbey property to the greatest extent possible; the easement shall be substantially in the form as Exhibit J; and (3) a roadway easement for access and infrastructure to deliver power to the well site and pipe water from the well into the Town's water storage tank shown on Exhibit D. All of these easements shall be at no cost to Town and shall be permanent easements. Town may install a fence to enclose the well protection zone easement. If Town elects to fence the well protection zone, the fence posts will be constructed of new railroad ties and the horizontal rails will be constructed of treated, two by six lumber. The fence will be maintained in excellent condition and will be stained or repainted at least once every two years. Town will maintain the land within the fence enclosure, keeping it free of noxious weeds and mowed at least once a month May through September.

15. Source Protection. Once the Wishing Well is established or one of the other three well sites, Abbey agrees to comply with Weber County's source protection ordinance as amended, presently Title 108, Chapter 108, Section 108-18-6, and any other applicable Utah Division of Drinking Water source protection requirements.

16. Water Right Change Applications.

a. The Parties will each file change applications with the Division of Water Rights to include the Wishing Well as a point of diversion for their water rights and to include municipal use of the Abbey existing water rights.

b. The parties will cooperate with each other to gain approval of their respective change applications.

c. The parties acknowledge that domestic uses of water has declined at the monastery as the number of Monks at the monastery declined, and that other monastery uses for its water rights has also diminished. For example dairy cow, pigs, sheep and livestock operations, bread making, poultry and egg production, and honey production have diminished or ceased completely. During this decline, the parties both agreed that Town would use Monastery's water rights to supplement the Town's water supply from the Springs.

d. Each party shall pay their own expenses for filing and pursuing the approval of their change applications.

e. Each party may file more than one change application to include the Wishing Well as an approved point of diversion.

f. Abbey may, in its sole discretion, decide at any time to move all or a portion of its water rights out of the Wishing Well by withdrawing any filed change application or filing a new change application, and in that event, Abbey shall convey to Town that portion of its New Connection Capacity that is in excess of Abbey's water rights that remain available for use at the Wishing Well.

16. Wishing Well Construction and Operating Costs. Any and all costs related to the Wishing Well shall be borne by Town and at no cost to Abbey. The Parties' acknowledge that Abbey's contributions to Town by virtue of this Agreement are full and fair consideration to Town for Abbey's capacity rights in the Wishing Well.

17. Abbey will grant to Town any other easement(s) necessary to install and use said production well(s), such as power easements. All power easements will require that all power lines will be installed underground.

18. Town will re-convey to Abbey and/or Monastery the easements granted under the Original Agreement, recorded, by the Monastery related to the use of the diversions facility and River Pipeline. In the event Town does not construct, within 20 years from the date of this Agreement, a pipeline to deliver its river water to Town, Town will convey back or formally abandoned any easements granted under the Original Agreement or this Agreement related thereto.

19. If the production well(s) adversely impact Abbey's diversions from the Bennett Spring, Town will discontinue the use from said wells, unless the parties, or their successors, agree in writing that Town may continue to use said wells.

## MISCELLANEOUS

20. Abbey shall have no ownership interest in or liability from the construction or operation of these wells, unless Town conveys the Nugget Well to Abbey.

21. Abbey makes no warranty, express or implied, as to its title to the property over which it agrees to grant Town any easement herein.

22. Subject to a ninety-day right to cure, either party may terminate this Agreement if the other party fails to perform its obligations by sending written notice identifying the provision of this Agreement the party has failed to comply with.

23. The notice required by this section shall be sent to Town and Abbey at:

Huntsville Town  
Attn: Mayor of Huntsville  
7309 East 200 South  
P.O. Box 267  
Huntsville, UT 84317

Huntsville Abbey Farm, LLC  
Attn: Marc Wangsgard  
2933 Estates Cir  
Park City, UT 84060

24. Town shall exercise care to preserve the natural landscape and shall conduct its construction operations so as to prevent any unnecessary destruction, scarring, or defacing of the natural surroundings. All trees, native shrubbery and vegetation shall be preserved and shall be protected from damage to the extent possible. Upon completion of the installation of any of the projects authorized herein, Town will return the construction sites to conform to the natural topography of the landscape. Town will access the easements granted to Town by the route least destructive to Abbey lands and crops, typically entering Abbey land via the Abbey's paved road. Abbey may direct Town to access Town easements by whatever route Abbey deems best, provided the designated route does not cause undo inconvenience to Town.

25. This Agreement shall inure to the benefit of the Parties' successors and assigns. The Parties will record this Agreement in the Weber County Recorder's office and it shall run with Abbey Property, Weber County Tax Parcel ID #21-036-0008 described as all of Section 27, Township 6 North, Range 2 East, Salt Lake Meridian,

26. This Agreement shall be enforced and governed under the laws of the State of Utah, and jurisdiction for any action based on this Agreement shall be with the District Court of Weber County, State of Utah.

27. The Exhibits attached and numbered D through K are a part of this Agreement as if fully set forth herein. Exhibits A through C are attached for reference only.

The parties have executed this Agreement to be effective the 9<sup>th</sup> day of April, 2018.

**Huntsville Town**

By   
Jim Truett, Mayor

Date: April 27th 18

**Huntsville Abbey Farm, LLC and Huntsville Rangeland Company, LLC**

By   
Marc Wangsgard, Manager

Date: 4/9/18

I CAPACITY PURCHASE HISTORY FOR HUNTSVILLE TOWN

DATE OF PURCHASE	GPM PURCHASED	TOTAL GPM PURCHASE BY TOWN	GPM ABBEY CAPACITY REMAINING	COMMENTS
10/29/2018	0.5	0	300 GPM	Safe yield set at 150 gpm as per State Div. Drinking Water. Final safe yield determination is subject to change as per MOU.
1/10/2020	1.5	2	299.5	Watkins connection to Town's system
11/5/2020	7.5	9.5	298	Balance of Watkins impact fees collected
11/5/2020	1	10.5	290.5	Use Bank of Utah bond account closed to purchase 15 shares
			289.5	White and Davis impact fees collected
7/15/2021	25	35.5	264.5	Wishing Well Capacity and Water Service Agreement dated July 15, 2021. Thirty connections for Town and 20 connections for Huntsville Abbey Farm



April 28, 2021

Huntsville Town

**Attn: Mr. James Truett, Mayor**

P.O. Box 267, 7309 East 200 South

Huntsville, Utah 84317

Subject: **Huntsville Town Wishing Well Performance  
Data Collected During the First Year of Operation  
Ogden Valley, Weber County, Utah  
for Huntsville Town**

Dear Mayor:

This letter summarizes the results of an assessment of the Wishing Well after approximately one year of production and full-time use by Huntsville Town (Huntsville). We use monitoring data collected by Huntsville Water System Operators to provide an opinion regarding the recent performance of the well and its ability to meet current and future possible increase in water demand.

We consider our work to be an on-going assessment of Safe Yield for the Wishing Well, building upon our observations and assessment summarized in the report titled *Huntsville Town Wishing Well, Well Completion Report, April 2019*. The Wishing Well is Utah Division of Drinking Water source number WS006 of Huntsville Town's Water System #29007.

## **BACKGROUND**

The Wishing Well was drilled during the summer of 2018 into the Park City Formation in Bennett Springs Canyon east of Huntsville, Utah. Upon drilling and constructing the well we performed well tests to assess the performance of the well. These included step-rate tests at progressively higher pumping rates and a 48-hour constant rate test at 595 gallons per minute (gpm).

Figures 1 and 2 illustrate the step-rate and time-drawdown constant rate curves from the 2018 testing. Using available well performance data we offered an initial design pumping-rate Safe Yield of 400 gpm for the well based on Utah Division of Drinking Water (DDW) guidelines.

The Wishing Well was not immediately placed into service and was turned into the Town water system for use on April 6, 2020. Simultaneously with well start up, all Upper Bennett Spring flow was diverted to the Monastery and the Peterson (Middle Bennett) and Lower Bennett Springs were isolated from delivery into the Huntsville water system. The test pump was removed from the Wishing Well and it is not presently equipped with

a down-hole production pump; presently all well water is produced from artesian aquifer flow.

Huntsville Town Water System Operators have collected monthly data from the water system including wellhead artesian pressures and flow rates into the Huntsville Water Treatment Plant. Although the Wishing Well meets drinking water quality standards without treatment, in the present piping configuration the well water is delivered to the Treatment Plant where it is processed before it is boosted to the Town's water storage tank. Huntsville is now reviewing the possibility of committing to additional water service connections that would be sourced from the well.

### **WELL PERFORMANCE TESTING IN 2018**

The well testing performed in 2018 remains the best available data to assess the well at higher production rates that stress the aquifer. Well performance testing was performed with a temporary pump installed with the intake set at a depth of approximately 145 feet below the ground surface. In 2018 we monitored wellhead shut-in (closed) pressures and groundwater levels in the production well prior to, during, and following construction and performance testing operations. Spring discharge rates for the nearby Upper, Middle (Peterson), and Lower Bennett Springs were also monitored throughout the drilling and assessment period.

We conducted well performance tests with the temporary pump between September 19 and 26, 2018. Additional monitoring of the Well and Spring sources was performed prior to and following the pumping test. A step-rate pumping test of the Wishing Well was conducted to evaluate well and aquifer performance at different pumping rates. Figure 1 presents measured water level and drawdown data in the Wishing Well versus time of pumping for 4 progressively higher pumping rates ranging between 300 gpm and 640 gpm.

A rate of 595 gpm was selected for the constant rate test based on the results of the step-rate test. Figure 2 illustrates the time-drawdown curve for the constant rate test in relationship to the well construction. Drawdown of the well remained in the upper, cased portion of the well as illustrated in Figure 2.

During the performance testing we monitored spring discharge rates before and after operation of the well. Well pumping captured water that had previously discharged from Petersen and Lower Bennett Springs and flow returned to these springs upon suspension of pumping. We observed no change in the flow rate of Upper Bennett Spring during the drilling and performance testing periods.

As summarized in our Well Completion Report (2019), Upper Bennett Spring discharges groundwater from the Doughnut and Humbug Formations. Based on available well performance data it appears Upper Bennett Spring is located in an isolated groundwater compartment separated from the Park City Formation Compartment containing the Wishing Well, Petersen Spring, and Lower Bennett Spring by a regional thrust fault and associated fault gouge.

## SAFE YIELD AND OPERATING PERMIT

*Safe Yield* is a groundwater resource concept designating the rate at which water can be withdrawn from an aquifer without depleting the supply, impairing nearby water sources, or preventing damage to the aquifer. According to DDW guidance and UAC R309-110, the “Desired Design Discharge Rate” means the discharge rate selected for the permanent pump installed in a public drinking water well source. The DDW uses pumping test results to establish the number of equivalent residential connections or ERC’s that a well source can support. The DDW generally considers  $\frac{2}{3}$  of the rate of the constant rate pumping test as the safe yield of the well.

The Wishing Well performance data collected in 2018 indicate that the well can sustain shorter duration peak production rates over 500 gpm, but that a pumping-rate of **400 gpm** based on DDW safe yield guidelines, was found to be an acceptable estimate for sustained production.

On March 19, 2020 the DDW issued an *Amended Temporary Operating Permit* for the Wishing Well with an expiration date of May 31, 2022. The conditional approval requires a minimum of monthly (preferably weekly) monitoring of Wishing Well Performance for a period of two years. These data must be submitted to the DDW no later than May 31, 2022 to assess the production capabilities of the Wishing Well and to obtain a permanent Operating Permit.

Huntsville Water System Operators started collecting operational data when the Wishing Well was diverted into the Town system on April 6, 2020. Table 1 provides a summary of the operational data collected on a weekly then monthly schedule and Table 2 tabulates total water use by Huntsville Town from January 2018 through December 2020.

## ESTIMATED CURRENT WATER USE AND DEMANDS

The best available information for estimating actual water diversion for Huntsville Town indoor water use comes from operational records provided by Huntsville Water System Operators (refer to Tables 1 and 2). Where indoor water use is sourced by the Huntsville water system, outdoor water use is provided by a secondary water system and is not sourced by the Wishing Well.

Table 2 is a tabulation of total monthly use by Huntsville Town for the period January 2018 through December 2020 in millions of gallons per month. During our review we discovered three abnormal outlying monthly water use data points, these have been adjusted in the data presented.

Total annual water diversions by Huntsville Town for indoor use ranged between approximately 18.04 and 20.35 million gallons (55.35 to 62.45 ac-ft/yr). Figure 3 illustrates that the peak demands occur during the summer and the lowest recorded water use is generally during the spring and early winter periods. All indoor water demands for Huntsville Town have been met entirely from the Wishing Well since June 2020.



## **Loughlin Water Associates, LLC**

We use the metering data collected by Huntsville Town Water System Operators to estimate sustained flow rate demands on the Wishing Well. Diversion from the Wishing is programmed in cycles to meet water use demands. The treatment plant operates to replenish water diverted from tank storage for Town use. The system cycles through a 3-foot drop in tank level equating to approximately 200,000 gallons of water use per cycle.

We make no attempt at estimating peak-day source demands necessary to meet the programmed schedule. Our goal with this source assessment is to review available data to determine whether the well has met long-term source demands and whether it is able to provide additional water for future possible Town growth.

Figure 4 estimates the *sustained* source flow rate necessary to produce the monthly water diversions recorded for the period 2018 through 2020. Based on the average monthly data recorded by Water System Operators, to meet the instantaneous source demands for sustained use, the well would need to maintain monthly constant production rates between approximately 24 to 62 gpm as illustrated on Figure 4. Again, this simple relationship does not address peak-day source demands, but it provides the best available estimate of the continuous water diversion necessary to instantaneously satisfy Town water demands.

Figure 5 illustrates that the well inflow into the treatment plant is in the range of 180 to 270 gpm. Again, for comparison, the continuous monthly-average source demand flow rate is presently below 62 gpm. Furthermore, our 2018 assessment stressed the aquifer with an installed pump, suggesting the Wishing Well is capable of sustained rates of 400 gpm.

An additional comparison can be made with the treatment plant capabilities processing the source inflow. Water System Operators report that the treatment plant operates in the range of 195 to 260 gpm while filling the tank. Using the estimated current water use and demands as a comparison with source capabilities, it is our opinion that the Wishing Well can be utilized at a higher rate to meet future potential growth in Huntsville Town.

### **RECENT WELL PERFORMANCE**

We use data collected during the first year of well operation to calibrate and build upon our 2018 assessment of the Wishing Well. The Wishing Well continues to be a robust source of groundwater that has met all indoor water demands for Huntsville Town for over 12 months.

### **ADMINISTRATIVE MONITORING REQUIREMENTS**

The March 19, 2020 Temporary Operating Permit requires monitoring of the Wishing Well on a regular schedule. The DDW requires that the 1) Wellhead Pressure and 2) Artesian Flow Rate of the well be measured at least monthly, and preferably once a week, for at least two years to establish the safe yield of the well.

**Wellhead Pressure.** As tabulated in Table 1, once the Wishing Well was turned into the Town's water system on April 6, 2020, Huntsville Water System Operators measured wellhead pressure on a weekly, then monthly schedule. As illustrated on Figure 6, the well did not maintain artesian flow during performance testing operations in 2018, but the well recovered and peak artesian flows returned during the spring of 2019.

Figure 6 also provides an illustration of how the Wishing Well has responded following April 6, 2020 when it became the sole Huntsville water source. The Wishing Well met all Huntsville indoor water demands and continued to maintain wellhead pressures between 3 and 11 pounds per square inch (psi) during the period. There is nothing in the wellhead pressure trends shown in Figure 6 that would suggest a limited groundwater resource.

During the first year of operation wellhead pressures have generally increased. Our opinion is that the Wishing Well is a robust source that is completed in an aquifer that is capable of increased water diversion to meet possible town growth.

**Artesian Flow Rate.** The Wishing Well has provided water on-demand and has met all Huntsville indoor water demands at desired flow rates during the first year of use. When not programmed to replenish tank storage, it remains shut-in (closed) without flow. As summarized in Table 1 and illustrated in Figure 5, Water System Operators measure the flow rate of the water source where it enters the Water Treatment Plant.

During the first year of use the measured flow rates ranged between 180 and 270 gpm, similar to the artesian un-pumped production rates measured in 2018. We see nothing in the Figure 5 flow rate trend that should be of concern and it is our opinion that the well is capable of cycling more often, thereby producing additional groundwater.

## **SPRING FLOW MONITORING**

Figure 7 provides a compilation of spring discharge rates for the three Bennett Spring sources from the period prior to Town use of the Wishing Well through recent operational monitoring.

The Wishing Well clearly shares the same water resource as Petersen and Lower Bennett Spring. Upon diversion of all Upper Bennett Spring flow to the Monastery we no longer have a mechanism of measuring flow from that source. We provide a recommendation for equipping Upper Bennett Spring with flow monitoring equipment later in this letter.

As documented during our 2018 well and spring assessment, we see an almost immediate capture of water tributary to Petersen Spring and a delayed but clear response of Wishing Well groundwater diversion at Lower Bennett Spring.

Figure 7 illustrates that nearly all flow from the combined Petersen and Lower Bennett spring discharge is captured by the well. But it is important to recognize that the Wishing Well is capable of much greater production rates than the combined spring sources. Furthermore, the Wishing Well produces water that meets drinking water quality standards without treatment.

## **WELL PRODUCTION POTENTIAL**

During the first year of operation no diversions from the Bennett Spring Complex were necessary to supplement Wishing Well water production. Based on our assessment and operational monitoring, we continue to consider a well pumping rate of 400 gpm as a reasonable safe-yield for the well. The Well can only provide this sustained diversion rate if it is equipped with a down-hole pump.

Based on this assessment, annual diversion from the Wishing Well can increase substantially from the present demands, perhaps by 4 to 6 times, while maintaining within the early safe yield estimate (refer to Figure 4).

## **SOURCE REDUNDANCY**

The Wishing Well was drilled to provide source redundancy with the Bennett Spring Complex source capacity. Because the well is completed in the same groundwater compartment as Petersen and Lower Bennett Springs, they share in the water resource. The capture of spring water by the well is most dramatically shown in Figure 7 and is addressed in some detail in our Wishing Well Completion Report (2019).

Upper Bennett Spring discharges groundwater from the Doughnut and Humbug Formations, and based on available geologic data, it appears to be located in an isolated groundwater compartment separated from the Park City Formation Compartment tapped by the Wishing Well. Metering should be installed on Upper Bennett Spring to assess whether the groundwater compartments remain isolated during sustained groundwater production. Because Peterson Spring, Lower Bennett Spring and the Wishing Well are located in the same Park City Formation groundwater compartment, Huntsville must either operate the Well or the Springs, without an opportunity to operate both sources simultaneously unless the Well flow rate is decreased substantially.

## **RECOMMENDATIONS**

The DDW Temporary Operating Permit requires monitoring of the Wishing Well on a regular schedule for a period of two years. The present operational monitoring should continue, and we offer seven recommendations for consideration before Huntsville Town commits to future increases in water demand:

- 1) Continued monitoring of the Wishing Well and nearby springs should continue on a weekly or biweekly schedule. Also, Water System Operators should consider tracking the turbidity and conductivity of the produced water from the well and/or springs. This monitoring can be done on a quarterly to semi-annual basis as recommended in our 2019 report.

- 2) An incremental increase in water demand may require that the Wishing Well be equipped with a down-hole pump placed in the cased section of the well. The down-hole pump will allow production of water when the potentiometric surface of the aquifer drops below the ground surface. Although we do not know the increase in water demands that will trigger a decline in well artesian flow rates, we recommend installing a pump in the well before well demands are increased by an additional 10% above the present water demands to ensure that all existing and proposed demands are satisfied.
- 3) When the future well pump system is engineered, it should be configured to allow the well to flow on-demand as it is presently, but also produce water by pumping from the aquifer, when artesian flow rates decline from increased diversion.
- 4) Monitoring data is vitally important to the proper Management of the Wishing Well. We recommend that the planned SCADA system be installed at the earliest opportunity to provide real-time, nearly continuous data of well conditions including wellhead pressures, artesian flow rate at the wellhead, and depth to water once the aquifer level drops below the ground surface. The spring flow meters should also be tied into the Scada system.
- 5) J-U-B Engineers should be tasked with refining the current Town water demands, ideally with a Water System Model that can assess peak-day demands and other important parameters. The Model will be vitally important to assess spatial water system constraints and needed infrastructure modifications.
- 6) Consideration must be made for the type of Source Redundancy the Town would like as it expands. Presently the principal sources of water, Bennett Springs and the Wishing Well, share the same resource and cannot be operated simultaneously at the present water demands.
- 7) Huntsville has a flow meter on their Upper Bennett Spring pipeline, but the Monastery does not have the ability to measure spring performance when all water is diverted for their use. Once the entire flow of Upper Bennett Spring was diverted to the Monastery, we lost the opportunity to assess the long-term potential for interference between the Wishing Well and this critical Monastery source. Early monitoring and geologic mapping suggest that the well and Monastery spring source are isolated from one another. To further assess the possible connection between the spring and well sources we recommend installation of a flow meter on the Monastery Upper Bennett Spring pipeline.

**OPINION ON SOURCE PERFORMANCE**

The Wishing Well has proved to be a robust water source during its first year of use by satisfying all indoor water demands for Huntsville Town. If recent water use patterns and monitoring data are representative of present conditions, the Wishing Well is capable of a sustained production rate increase to meet Town growth. The 2018 performance testing data and the results of recent operational monitoring suggest that the well is capable of producing 4 to 6 times more water than present diversions.



If you have any questions about our findings or the information used in our assessment, please call me at (801)-842-3495.

**Loughlin Water Associates, LLC**

A handwritten signature in blue ink, appearing to read 'V.F. King'.

Van F. King, P.G.  
Principal Hydrogeologist

Table 1  
Operator Field Log Notes  
Water System Operational Performance  
Huntsville Town Wishing Well

Date	Well Head (PSI)	Plant Source Line (PSI)	Upper Spring (gpm)	Peterson (middle) Spring (gpm)	Lower Spring (gpm)	Flow Rate of Water Treatment Plant (gpm)	Flow Rate to Tank (gpm)	Notes
4/6/2020	15	80	325	88.5	17.1			Prior to turn into Town System
4/6/2020	12	92	-	-	-	200	160	200 gpm for 60 min tank filled at 160 gpm
4/14/2020	8	90	365	0	13.2		30	Artisan flow + Head caused continuous flow 24/7 to storage tank at 30 gpm. See solution completed 4-17-20 MMF outlet valves will now close when plant is not filtering. This is a programming fix, well water does not flow past the Treatment Plant without treatment.
4/22/2020	7	88	330	0	11.8	200		Ran plant @ 200 gpm during last fill cycle approx 200,000 gal.
4/27/2020	7.5	7.5	-	0	11.7	200		Upper spring diverted to Monastery on 4/26/20. Plant produced 200,000 gal @ 200 gpm while filling tank.
5/8/2020	3	85	-	0	11	180		Plant PSI recorded while filtering, Upper spring diverted @ spring, measurements were observed during plant filtering at 180 gpm.
5/14/2020	7	87	-	0	10.4			Upper spring diverted. Measurements taken while plant was resting - Not Producing.
6/15/2020	10	95	-	0	9.7			Upper spring diverted. Measurements taken after air vac leak down stream of Wishing Well was found and shut off (locally) and plant rested for 4 days.
7/14/2020	5	94	-	0	7	195		Upper spring diverted. Measurement taken during plant production 195 gpm near end of cycle (tank at 14.75 ft).
8/16/2020	7	94	-	0	5			Upper Spring diverted by Monastery. Measurements taken while plant was resting. Tank level 14.57 ft.
8/21/2020	7	95	-	0	9.5			Measurements taken while Plant was producing water
9/4/2020	11	98	-	0	9			Monastery reports No Flow. They are receiving 100% of upper spring. Inspected upper spring and flow is adequate to fill 6 inch pipe to Monastery. Because it is all diverted we can't
10/5/2020	8	95	-	0	8	220		Flow rate: Tested at 260 gpm. Plant set to run at 220 (60 min).
11/4/2020	9	98	-	0	11	260		Flow rate: Tested to 260 gpm by adjusting raw water setpoint to 83, Ran for 30 min.
12/3/2020	10	98	-	0	12	270		Flow rates test: 270 gpm for 60 min.
1/10/2021		99	-	0	13	270		Ran plant @ 270 gpm for 60 min.
2/14/2021	-	99	-	-	-	260		No data due to snow, No physical inspection. Wishing Well is the sole source & has no problem meeting current demand. Flow tested at plant to 260 gpm for 60 min without issue.
3/17/2021	-	-	-	-	-	250		No data due to snow. Source meets demands of town. Flow rate at plant tested at 250 gpm for 60 min. No issues.
4/20/21?????								

All Data collected by Huntsville Town Water System Operators

**Table 2  
Monthly Water Use Data  
Huntsville Town Water System, Ogden Valley, Utah**

Year	Monthly Water Use (million gallons per month)												Total Annual Water Use (Million Gallons)	Total Annual Water Use (Acre-Feet)
	January	February	March	April	May	June	July	August	September	October	November	December		
<b>2020</b>	1.17	1.13	1.23	1.32	2.12	2.27	2.78	2.76	1.83	1.35	1.26	1.12	20.35	62.45
<b>2019</b>	1.51	1.07	1.15	1.11	1.34	1.59	2.58	2.14	1.41	1.37	1.12	1.66	18.04	55.35
<b>2018</b>	1.51	1.51	1.08	1.44	1.35	1.67	2.52	1.70	1.95	1.34	1.07	1.42	18.57	56.98

Note: Three water use data outliers have been adjusted.

Figure 1  
 Step-Rate Test Well,  
 Huntsville Town Wishing Well, September 19, 2018

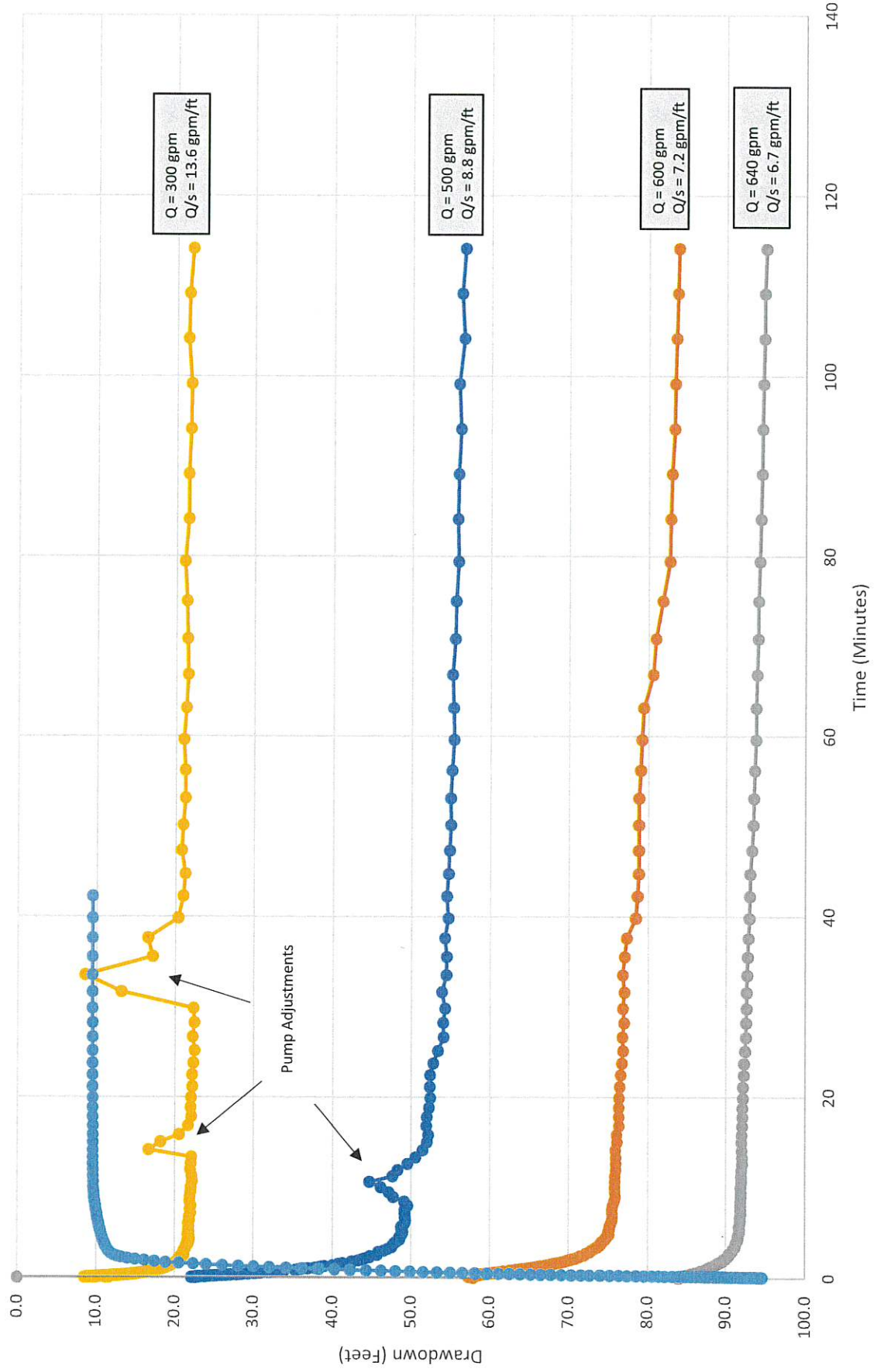




Figure 2  
 Time-Drawdown Curve Relative to Well Construction  
 Constant Rate Test  
 Huntsville Town Wishing Well, September 24-26, 2018

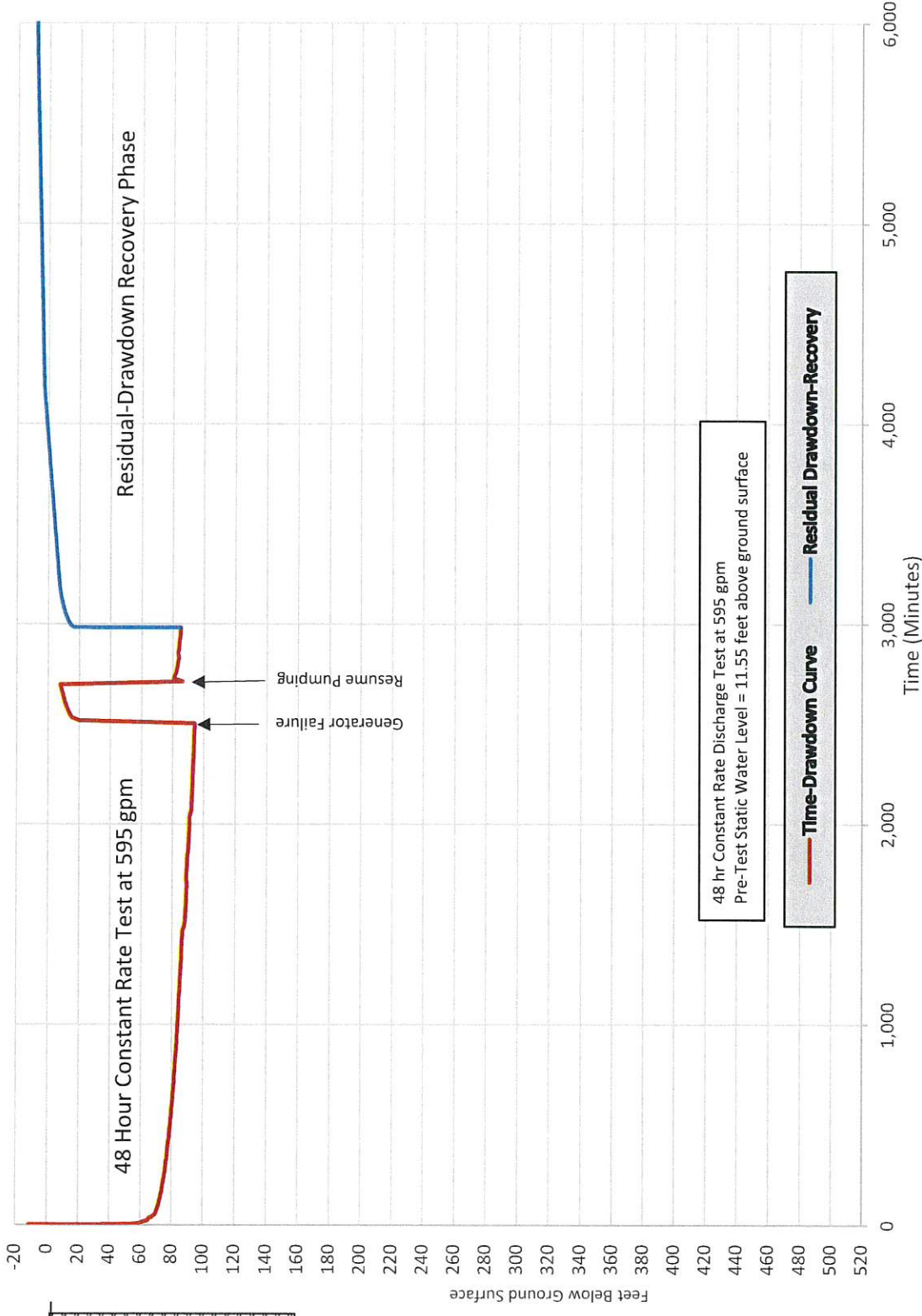


Figure 3  
Average Monthly Water Demands in Acre-Feet  
Huntsville Town Water Use

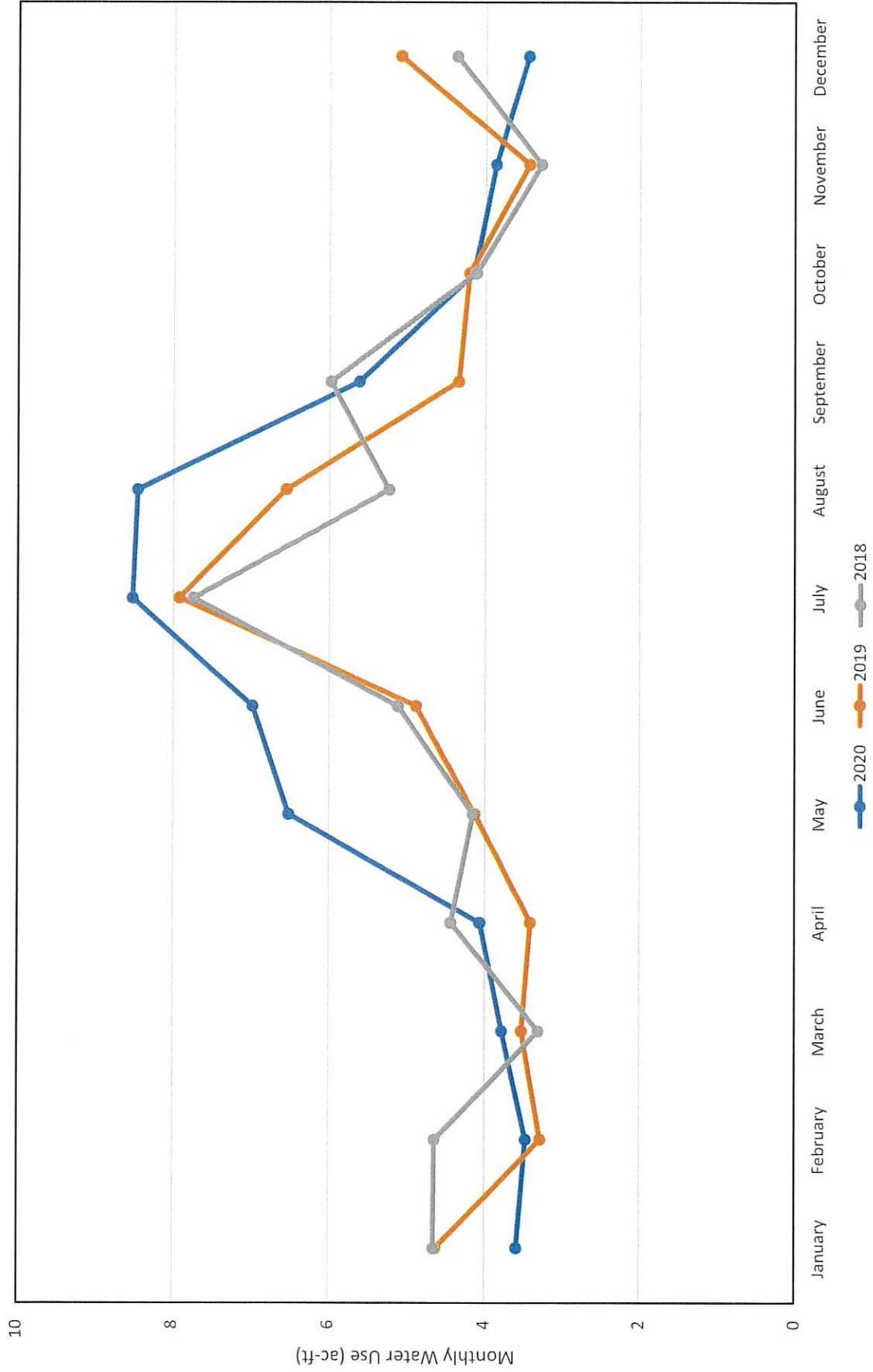


Figure 4  
 Average Monthly Sustained Flow Rate Comparison  
 Huntsville Town Source Demand Estimate

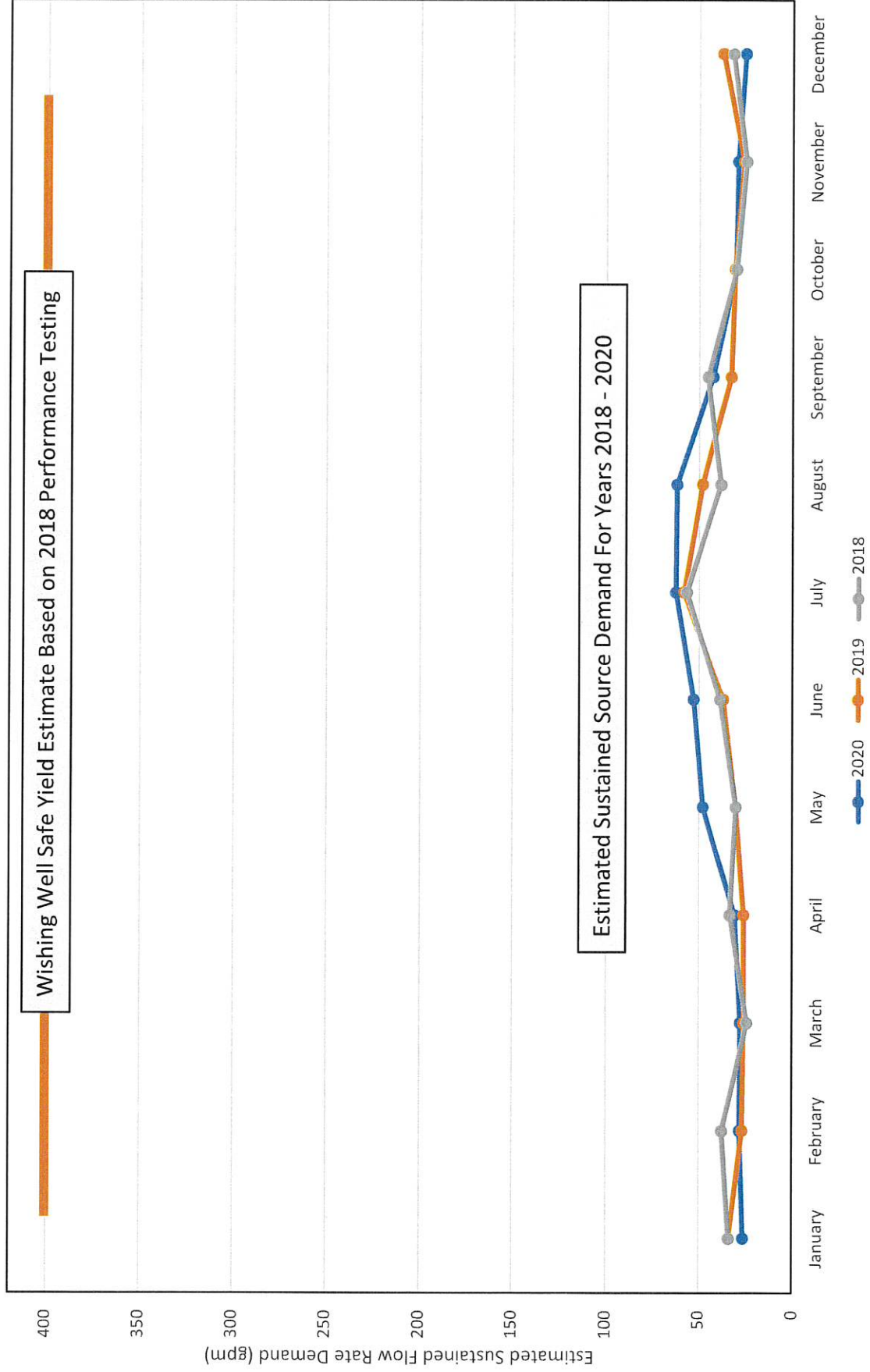


Figure 5  
Rate of Flow into Huntsville Water Treatment Plant  
Huntsville Wishing Well

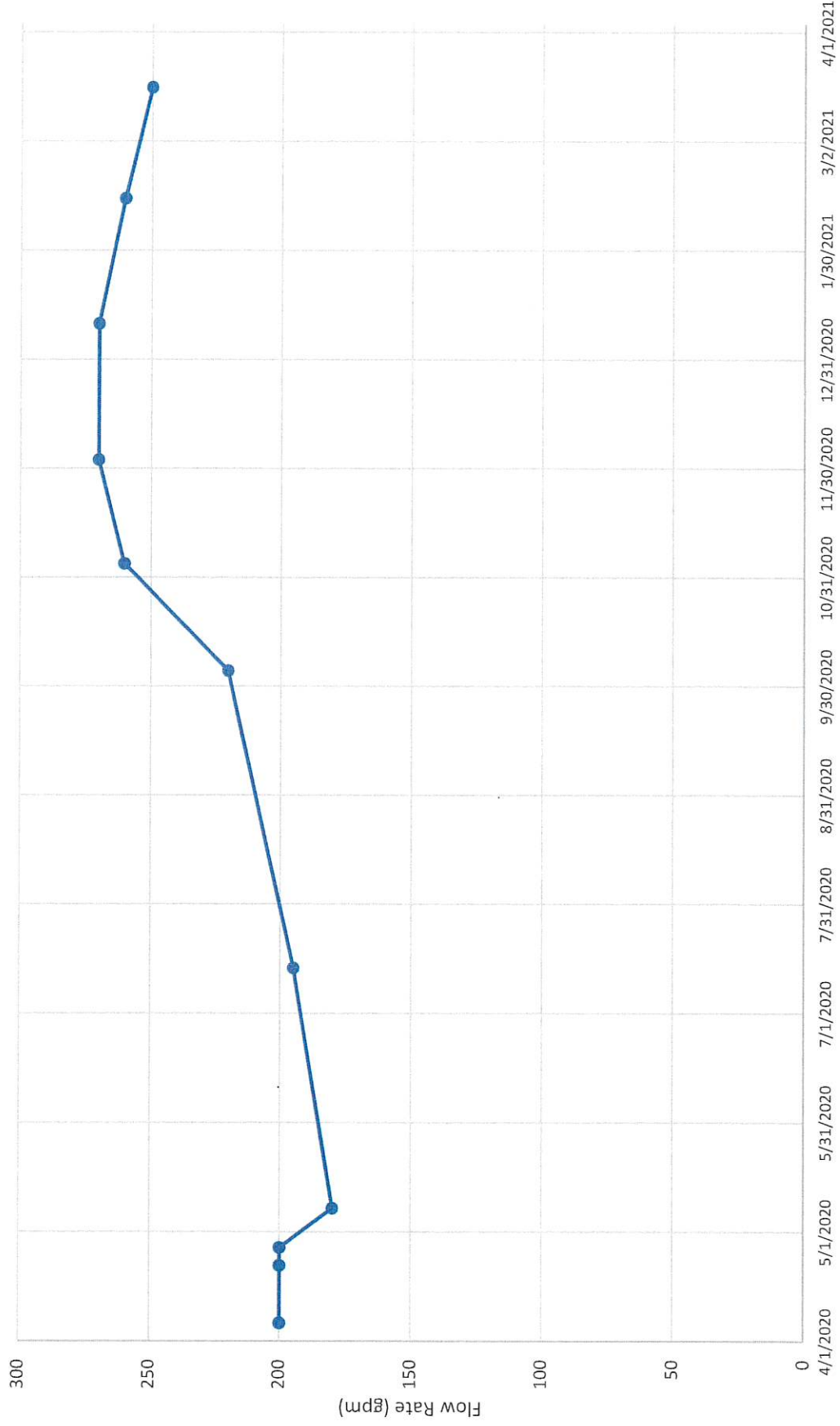


Figure 6  
Wellhead Pressure Monitoring  
Huntsville Town Wishing Well

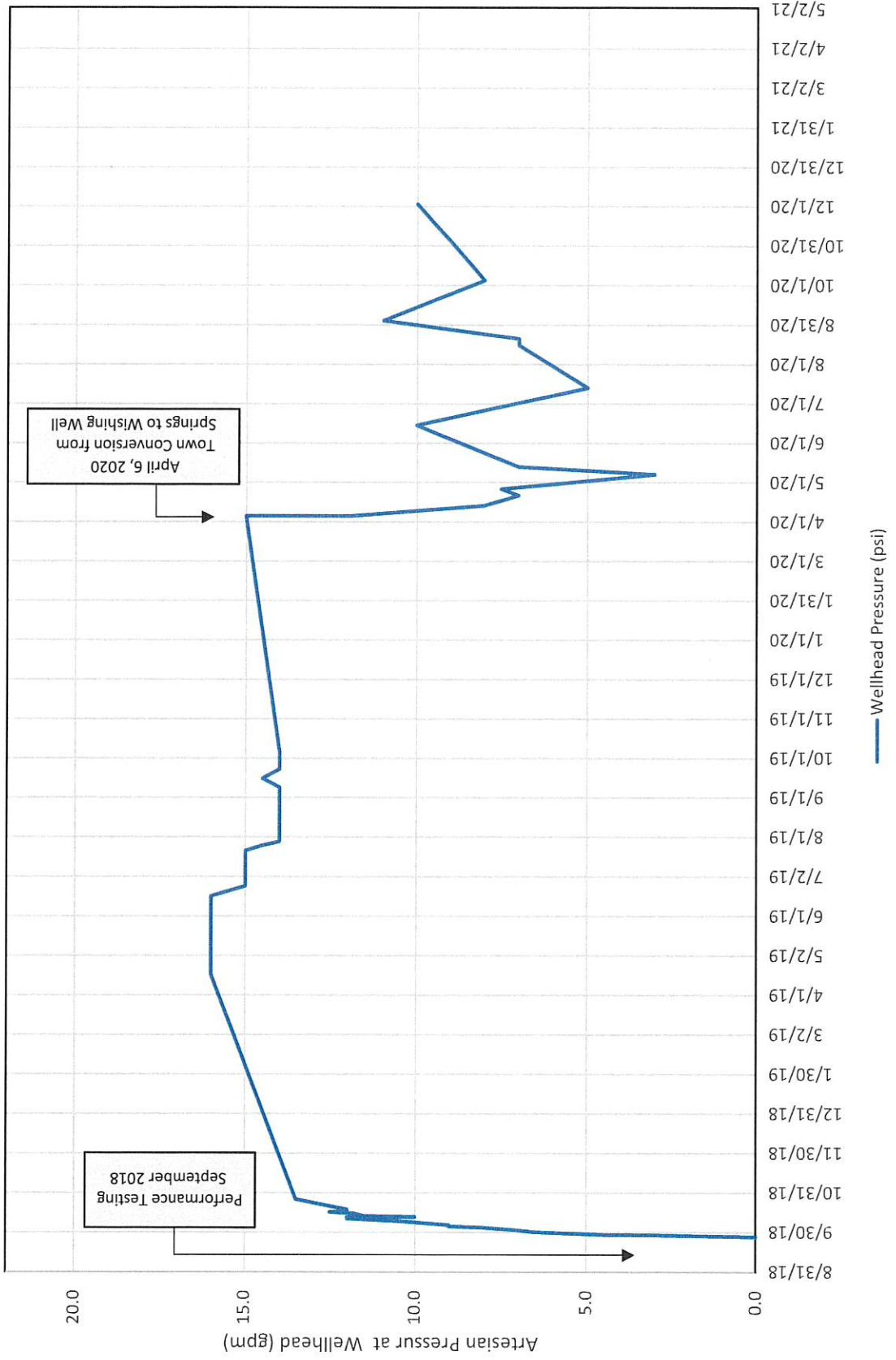


Figure 7  
Spring Discharge Monitoring  
Bennett Spring Complex, Huntsville Town, Utah

