ALPINE WATER SUPPLY LEVEL I MASTER PLAN

Wyoming Water Development Commission

August 2025

SUNRISE ENGINEERING

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1.0 INTRODUCTION

The Town of Alpine is an incorporated community at the north end of Lincoln County, Wyoming and is situated at the confluence of the Snake, Greys, and Salt Rivers (see Figure A in Large Figures for service area). As of the 2020 U.S. Census, the Town population had grown to 1,220 people in an area of approximately 0.9 square miles. The Alpine water system was originally constructed for the Alpine Water and Sewer District in the early 1970's, which obtained water from a spring collection system near the Mill Creek area approximately 1 ¼ miles southeast of the Town. Due to variable flows from the springs and a drought in 1977, a well was drilled to provide a more reliable water source, and outfitted with a 50 hp pump. A second well with a 40 hp pump was drilled in 1988 (Sunrise Engineering, 2009).

The Town of Alpine was incorporated in February 1989, at which time the water system and water rights were transferred to the Town. Following an E. coli outbreak in 1998, the springs were removed as a source of the water system as they were the suspected source. Two storage tanks were installed in 1996 to serve two pressure zones. A third well was drilled in 2008 as part of a WWDC Level II Study (Rendezvous Engineering, 2009).

The Town has annexed numerous parcels into its boundaries over the years, including large developments north of the Snake River. Many of these areas were served by North Star Utility (NSU) for water and sewer. NSU water and sewer facilities were turned over to the Town in 2015, and were then connected across Snake River Bridge to the Town systems. The NSU system included two wells located at the Flying Saddle Resort, along with a 543K gallon storage tank located on US Forest Service (USFS) lands. Various parcels and developments have continued to be annexed, some served by existing water facilities and some not.

A large well located north of the Snake River was purchased by the Town in 2018 in exchange for connection credits and other considerations. Called the "Megawell" due to its apparent large production capability, the well serves two residential areas and is not currently connected to the Town system, although it has piping in close proximity to the former NSU system.

The Wyoming Water Development Commission (WWDC) contracted with Sunrise Engineering in April 2024 to conduct this Alpine Water Supply Level I Master Plan Study. The project sponsor is the Town of Alpine.

2.0 INFORMATION REVIEW

This section is a review of existing information from past relevant studies, other documents available from the sponsor, and Town data (development plans, zoning ordinance, etc.). It also contains a discussion of recommended improvements from previous studies and whether the improvements have been implemented.

Existing information gathered and reviewed during this study include the following documents:

1. WWDC Star Valley Regional Master Plan, Town of Alpine, Water System Investigation and Evaluation – 2009, Sunrise Engineering
2. WWDC Level II – Alpine Master Plan Update – 2009, Rendezvous Engineering
3. WWDC Alpine Junction Water Level I Study – 1995, Sunrise Engineering
4. Town of Alpine Master Plan, 2006
5. Town of Alpine Land Use & Development Code, 2025
6. Lincoln County Land Use Regulations
7. EPA Sanitary Surveys

2.1 WWDC STAR VALLEY REGIONAL MASTER PLAN (2009) – TOWN OF ALPINE

The 2009 Star Valley Regional Master Plan (Sunrise Engineering, 2009) investigated the concept of regionalizing water systems in the Star Valley area. The study sponsored by the Lincoln County Board of Commissioners compiled information and evaluated 19 public water systems. The "Water System Investigation and Evaluation" for the Town of Alpine system, included as Appendix A to the report, noted:

- Several areas north of the Snake River were being investigated for annexation into the Town.
- The system had two sources, Alpine Wells No. 1 and No. 2. A third well was being put into service.
- The system had excess capacity of approximately 167,000 gpd, enough for 79 ERUs.
- The system had excess storage capacity of 286,000 gallons.

2.2 WWDC LEVEL II ALPINE MASTER PLAN UPDATE (2009)

The Level II report noted:

- Population growth within the Town and potential for annexation of areas outside the Town (particularly north of the Snake River) were significant.
- The North Star Utility water system north of the Snake River was constructed with potential future connection to the Town system in mind. The infrastructure is well positioned for expansion into a regional water system.
- Proposed improvements included expansion of well capacities as well as piping connectivity to the storage tanks and central Town areas. Extending piping across the Snake River is also discussed.

2.3 PREVIOUS PROJECTS

2.3.1 WWDC Level III Project - 2010

A Level III construction project funded by WWDC began in 2010 to complete the connections to Well #3 along with other various upgrades. The project, designed by Rendezvous Engineering, included upgrades to piping and electrical components in and near the wellhouse, along with addition of a backup generator and replacement of all three well pumps with new 75 hp pumps.

2.3.2 Purchase of North Star Utility Systems

North Star Utility (NSU) constructed water and sewer systems to serve various developments located north of the Snake River, including the Alpine Meadows, Snake River Junction, Flying Saddle, Targhee Landing, and Refuge Subdivisions. The systems were initially constructed in approximately 2006. Operations of these private systems were subject to the Wyoming Public Service Commission. Many developments were provided with water and sewer service while some were only provided with water service. These utility systems were sold to the Town of Alpine in 2015 at which time operations were assumed by the Town. The sale included over 20,000 feet of transmission and distribution piping, two water wells located near the Flying Saddle resort, and a 543,000-gallon storage tank located on Targhee National Forest lands north of the Snake River. Piping and appurtenances to and throughout these developments were included in the purchase.

2.3.3 Expansion Across Snake River Bridge

With the completion of the purchase of the NSU water and sewer systems, a project was completed to expand the Town of Alpine systems south of the Snake River to connect to the NSU systems north of the river. This project moved forward in 2015 with installation of a 12-inch ductile iron water pipe complete with heat trace equipment, insulation, and 20-inch steel outer casing. A 6-inch ductile iron sewer pipe was installed in a similar manner. These connections to the Town systems were accomplished by attaching the piping under the Snake River Bridge on hangars.

2.3.4 Purchase of Megawell

A large 16-inch well was constructed in 2017 by developer William Wiemann to serve the proposed Alpine Lakes development along with other residences. The well and other facilities were sold to the Town in 2018 in exchange for connection credits and other considerations. Called the "Megawell" due to its apparent large production capability (initially tested at 2,500 gpm), the well serves two residential areas (Targhee Place and Capital Lodge) and is not currently connected to the Town system, although it has piping in close proximity to the former NSU system.

2.3.5 Water Pipe Replacement Projects

Various water pipe replacement projects have been completed since the last master plan report. Replacement of pipe along Meadows Drive and a portion of East Mill Road was completed in 2011. Pipe replacement along the west side of Greys River Road from the Bank of Star Valley to the Forest

boundary was completed in 2022. The replacement projects generally replaced failing pipe that was non-municipal grade with PVC C-900 water pipe and appurtenances.

2.4 TOWN OF ALPINE INFORMATION

The Town of Alpine Master Plan and Land Use Regulations were reviewed as part of this Study. The Master Plan adopted October 25, 2006 covers general information regarding various topics of land use. The Master Plan discussed the significant number of lots within Town boundaries that had not yet been developed. Developments anticipated near the Town, such as Alpine Meadows and Snake River Junction, have since been annexed into the Town, approved, and significantly developed. The Plan discussed future improvements to the water system which have since been completed (well pump upsizing, additional well, expansion across Snake River bridge). Average day water usage was estimated at approximately 150,000 gallons per day, with a maximum day of 720,000 gallons per day with significant unmetered irrigation use. The Town is currently working on an update to the Master Plan, with the completed update expected later in 2025.

The Town of Alpine Land Use and Development Code has been updated periodically over the years with the latest version adopted in November 2023. There is currently an updated 2024 version recommended by the Planning and Zoning Board but has not yet been approved by the Town Council. The Code addresses the water utilities in the Town generally with respect to zoning and development of the Town.

Current zoning maps for the Town include areas with the following zones shown in Table 2.1:

Table 2.1 Town of Alpine Zoning Designations

ABBREVIATION	ZONING DESIGNATION
C	Commercial
LI	Light Industrial
MRC	Mixed Residential & Commercial
PDF	Public and Community Facilities
R-1	Single Family Residential
R-2	Multi-Unit Residential
RC	Recreation and Conservation

The latest Town zoning map includes the Alpine Meadows annexation but not subsequent annexations.

2.5 LINCOLN COUNTY INFORMATION

The Lincoln County Comprehensive Plan and Land Use Regulations were reviewed as part of this Study. The Comprehensive Plan adopted July 6, 2005 covers general information regarding various topics of land use. Overlay Districts in Lincoln County are used in combination with zones to establish and maintain heritage and character of the unique area of the county and protect the critical resources of the county. Whenever

an Overlay District is used with zones, the more restrictive provisions required by the Overlay prevail for the area involved.

The Town of Alpine is surrounded by the Alpine Community Plan Area overlay zone. This overlay calls for restrictions on certain land uses depending on zone as follows:

1. The following uses shall not be allowed in the Mixed Zone of the Alpine Community Plan Area: Commercial Storage Units, Mobile Home Parks, and Commercial Storage Yards.
2. The following uses shall not be allowed in the Rural Zone of the Alpine Community Plan Area: Truck Stops and Man Camps.

The Alpine Community Plan Area includes all private lands north of the Snake River, and also extends roughly 4 miles south of the Town to Stewart Trail County Road #106. The area surrounding the Town of Alpine has a mix of Mixed, Rural, and Recreation zones.

2.6 EPA SANITARY SURVEYS

Sanitary surveys are conducted on public water systems by Environmental Protection Agency (EPA) representatives on a regular basis every 3 to 5 years. The latest surveys for the Alpine water system can be found in Appendix B.

3.0 INVENTORY AND EVALUATION

Information for the Alpine water system was collected from previous studies and record drawings. Site visits and information obtained from Town representatives were completed to verify and proof the existing mapping and to make an inventory of the system. Major system components were also visited on the ground and evaluated in the field.

A map of the Alpine water system is shown in Figure B in Large Figures.

3.1 EVALUATION OF WATER SYSTEM COMPONENTS

3.1.1 Water Source

The Town of Alpine water system has three well sources as part of the Town water system: UW 39163 Alpine Water District Well #1; UW 77717 Alpine Water & Sewer District Well #2; UW 198240 Alpine Well #3. All three wells are located just south of the Town boundaries near Greys River Road. A detailed analysis of the sources is included in Section 5.0.

In addition, the Town obtained two additional wells located north of the Snake River as part of the purchase of the NSU water system: UW 101241 Flying Saddle Lodge Well #1; UW 101242 Flying Saddle Lodge Well #2. These two wells are located at the Flying Saddle Lodge property at the mouth of Snake River Canyon. These wells have not been actively used since the water system connection across the Snake River Bridge was completed.

The Town also obtained a well from a developer as part of negotiations regarding the proposed Alpine Lakes development: UW 206257 Excel Development Well #1 (also known colloquially as the Mega Well). This well currently serves the Targhee Place, Alpine Lakes, and Timberview Apartments developments, and is not connected to the Town system. The well is located in the partially completed Alpine Lakes development.

This Section contains an analysis of the sources ability to meet the current and future demands of the system. For the purposes of this evaluation, source capacity is analyzed based on current Wyoming Department of Environmental Quality Rules and Regulations (WDEQ, 2023) in units of gallons per day (gpd).

1. *Groundwater source development shall include two wells that are each capable of supplying the average daily demand with the largest well out of service, (WDEQ, 2023, p. 12-22).*

Table 3.1 Water Source Capacity Compared to Average Day Demand

Source	Permitted Capacity (gpd)	Permitted Capacity (gpm)	Current Production (gpm)
Alpine Well #1 Capacity (largest well, not included)	~~1,008,000~~	~~700~~	~~455~~
+ Alpine Well #2 Capacity	1,008,000	700	445
+ Alpine Well #3 Capacity	936,000	650	361
- Average Daily Demand (2050)	973,000	676	676
Excess Capacity =	971,000 gpd	674 gpm	130 gpm

The estimated flow rates of the various wells were taken from past studies and adjudicated flow rates. Flow measurements taken during this study for Alpine Wells #1, #2, and #3 indicated that the wells are currently operating at lower flow rates than what is permitted. Per the operator, running the wells at full production can result in tripping electrical breakers (or some other unknown fault), so the current production flowrate as shown in the table is somewhat less (observed as 52 Hz on variable frequency drives, and motor speed of roughly 3080 rpm versus full speed of 3450 rpm).

Production from the Flying Saddle wells was not included as they are currently not in use due to broken equipment and are isolated from the system by closed valves. Production from Excel Development #1 Well was not included as it is currently not connected to the Town water system.

The latest U.S. Environmental Protection Agency (EPA) sanitary survey of the Town of Alpine water system was conducted on July 24, 2024, which was received by the Town in April, 2025. Deficiencies were noted for the two Flying Saddle wells as they were considered inactive but are still connected to the water system and isolated by a gate valve. These wells must either be physically disconnected from the system (along with the buried chlorine contact tank), or corrective action taken to consider them active in the system.

While the WDEQ requirement to meet average day demand is met, the current water sources are utilized to their capacity during the summer months. During the past two summers, SCADA data show that all three wells are running 24 hours per day for several days. This indicates that the wells cannot fill the tanks and catch up to demands over that time. Additional source capacity would help alleviate this issue.

A recent water main break in June 2025 illuminated the concern with all three wells being in one location. The main broke in front of the wellhouse, so all three wells were disconnected from the system until repairs were completed. A source in another location would have allowed for filling of the tanks and supplying water to residents, even if under limited emergency conditions. As it was,

the tanks were completely emptied before repairs were completed, prompting a boil order by EPA due to low system pressure.

2. *Groundwater source development shall include one well and finished water storage that together equal twice the maximum daily demand (WDEQ, 2023, p. 12-22).*

Table 3.2 Water Source + Storage Capacity Compared to Maximum Day Demand

	Permitted Capacity	Current Production
Well Capacity	2,952,000 gpd	1,815,840 gpd
+ Storage capacity	1,295,000 gallons	1,295,000 gallons
- 2 x Maximum daily demand (2050)	2 x 2,308,000 gpd	2 x 2,308,000 gpd
Capacity Deficit =	(980,000 gpd)	(1,505,160 gpd)

Based on this analysis the system currently has a deficit of combined source and storage through the 25-year planning horizon of this study. Per WDEQ Water Quality Rules & Regulations Chapter 12 (which were updated in 2023 and now include references to the Ten States Standards), excess storage capacity is discouraged due to impacts on water quality. A combination of additional source and additional storage is likely the best option to meet the above-mentioned WDEQ requirements. Again, production from the Megawell was not included as it is currently not connected to the Town water system.

Figure 3-1 Alpine Well #1 and Wellhouse

3.1.2 Water Treatment

Chlorination equipment installed in the Control Building adjacent to Alpine Wells #1, #2, and #3 is capable of chlorinating the water produced by those wells. A peristaltic pump injects disinfectant into the pipeline from a tank of sodium hypochlorite. The chlorine injection location is prior to water leaving the Control Building to either storage or the distribution system.

Similar facilities are installed in the Megawell wellhouse for that system, consisting of a peristaltic pump to inject sodium hypochlorite into the system.

The latest U.S. Environmental Protection Agency (EPA) sanitary survey of the Town of Alpine water system was conducted on July 24, 2024. The Town received the report from the survey in April, 2025. No deficiencies were noted for the treatment facilities. A recommendation was made to provide redundant treatment equipment and/or spare parts to prevent future interruption in treatment.

3.1.3 Transmission Lines

There is one 10-inch pipe and one 8-inch pipe running from the Control Building to the valve cluster just east of Greys River Road. From that point, there is an 8-inch pipe running to the 500,000-gallon tank, along with 8-inch and 10-inch lines running along the west and east sides of Greys River Road toward the center of Town. In addition, there is an 8-inch pipeline running east from the Control Building to the system.

A pipeline running along the north side of US Highway 89 serves the central business district of Town using 6- and 8-inch pipes. There are four highway crossings consisting of 4-inch, 8-inch, and 10-inch diameter pipes. An 8-inch pipe continues west along the highway to serve the River View Meadows area. As discussed in Section 2.3.3 above, a connection across the Snake River Bridge was installed in 2015 to connect the Town water system to the former NSU water system north of the river. This connection uses 12-inch diameter ductile iron pipe.

The former NSU water system has a 12-inch pipeline extending down from the storage tank to US Highway 26/89, and extends west to the junction of US Highway 89 and US Highway 26 (Alpine Junction). Other 8-inch pipelines extend to and through Alpine Meadows Subdivision, Snake River Junction Subdivision, and Refuge Subdivision.

Per the 2009 WWDC study (Rendezvous, 2009), the original Alpine water system was constructed beginning in the 1970's with non-municipal grade pipe and depths of less than 6 feet. Much of that pipe has been replaced over the years as areas had issues with water main breaks. Known recent pipeline improvements are listed in Section 2.3.

The former NSU water system was constructed in the Alpine Meadows Subdivision in 2006 and 2007 using municipal grade (AWWA C900 Class 150) PVC pipe. Additional piping was later installed to serve various developments such as Snake River Junction (with AWWA C909 PVC pipe) and Refuge (with AWWA C900 PVC pipe).

3.1.4 Distribution Lines

The distribution piping in the Town of Alpine system consists of mainly 6-inch piping, with some 8-inch and 4-inch diameter pipes. As mentioned in the previous section, many pipelines have been replaced with PVC C-900 pipe as the originally installed pipelines were sometimes constructed with non-municipal grade pipe and were subject to leaks.

The pipelines throughout the Town of Alpine system are generally in good condition due to age, as many areas were constructed in the last 30 to 40 years. There are also likely many areas in the system that still use the older non-municipal grade pipe that will require replacement in the near future. Leaks can be difficult to locate due to the granular nature of the soils in the area, so system operation may be affected for a long period of time before the problem can be isolated and repaired.

The latest U.S. Environmental Protection Agency (EPA) sanitary survey of the Town of Alpine water system was conducted on July 24, 2024, which was received by the Town in April, 2025. One deficiency was noted for a high hazard cross-connection at the wastewater treatment plant that requires a reduced pressure backflow assembly (RPZ) or air gap instead of the current dual check valve.

3.1.5 Water Storage

3.1.5.1 Current Storage

Water storage in the Town of Alpine system is located on both sides of the Snake River. The main storage facility is the 500,000-gallon cylindrical reinforced concrete storage tank located just south of the Town on Forest Service property. The tank was constructed in 1996 and is in good condition. The tank is mostly buried, which theoretically keeps significant ice from forming in the tank. Water is delivered to the tank through an 8-inch pipeline, and water is gravity fed into the lower pressure zone through a 10-inch pipeline. Water is also delivered to the higher 250,000-gallon tank through a 6-inch line with duplex 15-hp booster pumps.

The 250,000-gallon cylindrical reinforced concrete storage tank is also located south of Town on Forest Service property. This tank was constructed in 1996 and is also partially buried to protect from freezing. The tank is located further up the hill, and water is gravity fed into the upper pressure zone.

A 543,000-gallon cylindrical glass-fused-to-steel tank was constructed on the hill north of the Snake River as part of the Alpine Meadows Subdivision and North Star Utility (NSU) water system in approximately 2006. The overflow elevation of this tank was constructed to match that of the 500,000-gallon tank south of the Town in order to be compatible with the Town of Alpine water system. A survey completed during this master plan indicated that the overflow elevations are roughly equal (within 2 inches or so). The tank is served by a 12-inch pipeline.

The NSU Tank has cathodic protection installed to protect components from corrosion. It is unknown if cathodic bars have been replaced since construction of the tank, or if interior seams have been resealed.

Figure 3-2 Alpine 500K (Lower) Storage Tank

The latest U.S. Environmental Protection Agency (EPA) sanitary survey of the Town of Alpine water system was conducted on July 24, 2024. The Town received the report from the survey in April, 2025. No deficiencies were noted for the storage facilities. A recommendation was made to install telemetry equipment in the NSU tank to better control tank levels.

3.1.5.2 Future Storage Capacity

Referenced by WDEQ Water Quality Rules & Regulations (WQRR) Chapter 12 Section 15, the Ten States Standards (TSS) Section 7.0.1 states that "storage facilities shall have sufficient capacity, as determined from engineering studies, to meet domestic demands, and where fire protection is provided, fire flow demands." The section also says that "excessive storage capacity should be avoided to prevent potential water quality deterioration problems."

Lincoln County has adopted the 2006 International Building Code, Appendix B, C and D for fire flow for buildings, fire hydrant locations and distribution and fire apparatus access roads. These appendices are in the Lincoln County Land Use Regulations, Appendix N.

The regulations state that for one and two-family dwellings having a fire flow calculation area which does not exceed 3,600 square feet, the fire flow shall be 1,000 gpm. Fire flow

calculation area generally refers to the total floor area of all floor levels within the exterior walls of the structure. Fire-flow and flow duration for one and two-family dwellings larger than 3,600 square feet and for buildings other than one and two-family dwellings are required to follow Table B105.1 (See Lincoln County Land Use Regulations Appendix N).

Fire flows and durations in Table B105.1 range from a minimum of 1,500 gpm for a duration of two hours to 8,000 gpm for a duration of four hours. The flows and durations are based on building size and construction type. Many of the dwellings in the Alpine area would be estimated to be less than 3,600 square feet, with exceptions for some larger commercial buildings. Fire flow calculations for individual structures were not completed for this study, and it is unknown if the large buildings have automatic fire sprinkler systems in place. A fire flow rate of 1,000 gpm is a good target minimum for residential areas, although the central business district will likely require 1,500 gpm or more.

Assuming a two-hour fire event and the previously mentioned fire flow rate, a fire storage amount of 120,000 gallons will be used.

WDEQ Rules & Regulations Chapter 12 Section 10 (i) (WDEQ, 2023) states the following:

(i) Where the finished water storage volume that floats on the distribution system is not capable of supplying the maximum daily demand, the proposed design shall include alternative power for the finished water pumps that demonstrates:

(i) The combined finished water storage volume and pumping capacity supplied by alternative power will be at least adequate to provide the maximum daily demand; and
(ii) The alternative power source will include engine generators, engine drive pumps, or a second independent electrical supply that will provide sufficient power to run the system.

Existing and projected 2050 demands for this redundancy requirement are shown in Table 3.3.

Table 3.3 WYDEQ Redundancy Requirement with Fire Flow

	Existing (2025) (gallons)	Projected (2050) (gallons)
Maximum Daily Demand	1,800,000	2,308,000
+ Fire Protection	120,000	120,000
- Pumping Capacity w/ backup power	1,815,840	2,952,000
- Storage Capacity	1,295,000	1,295,000
Excess Redundancy	1,190,840	1,819,000

If the design fire flow is increased to 1,500 gpm, this would decrease the capacity excess by 60,000 gallons.

While some individual WDEQ requirements discussed above show that source and storage are adequate, Table 3.2 above indicates that the combined source and storage are not adequate for maximum use days in the summer, which has been verified by the system operator. One reason that the system seems to operate with less capacity is likely the layout of the water system. The majority of the water use takes place south of the Snake River, estimated at 85% based on number of connections. Yet the south side of the river only has 58% of the storage capacity. Further yet, the Upper Tank (250K) is only available to the upper pressure zone, as the PRV valves are closed during typical operations to help protect against emptying tanks during a main break event. This leaves the majority of users to be served by essentially only 500,000 gallons of storage (about 39% of the total available).

3.1.6 SCADA Evaluation

As of this writing, the Alpine water source Supervisory Control and Data Acquisition (SCADA) system includes real-time monitoring and recording of the daily run times (minutes) of each of the pumps in Well Nos. 1, 2, and 3 and in the Megawell. Flow rates are reported for Well Nos. 1, 2, and 3, but are unstable and widely variable. For example, Figure 3-3 is a screen capture from October 2024 showing the wild variations in SCADA-reported flow rates for Well No. 1. Thus, the system computes pumped volumes based on SCADA pre-set pumping rates of 450, 350, and 515 gpm for the three wells, respectively. No volume data are produced for the Megawell. The source of those discharge rates has not been identified, but independent measurements by Sunrise Engineering on April 8, 2025 document rates of 455, 445, and 361 gpm for Well Nos. 1, 2, and 3 respectively. Town personnel report (consistent with observations for this report) that these pumps run at constant rates (i.e. VFDs are not used to modulate flow).

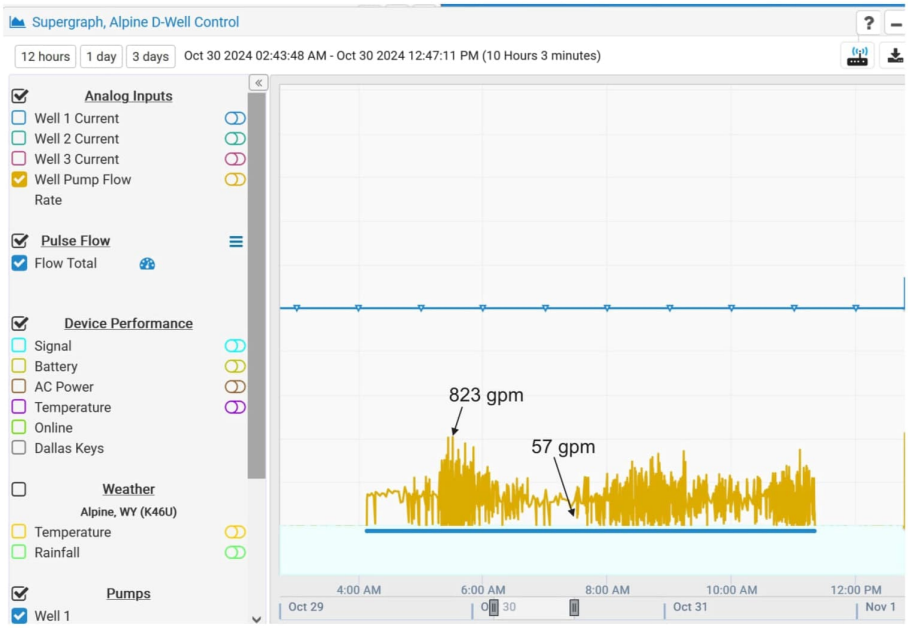

Figure 3-3 Alpine Well No. 1 SCADA Discharge Trace – October 2024

SCADA system pressure on 9/13/2024 read 66.5 psi, while wellhouse gage read 82 psi. Thus, it's not clear where the SCADA system was reporting pressure or if the readings are simply in error.

As a semi-quantitative check on the well production rates, combined with drawdown measurements for this report, they produce specific capacity values reasonably consistent with Table 1, whereas the SCADA pre-set rates do not.

No well water level data are monitored for any of the Alpine wells, nor is there installed equipment to do so. The water level data for this report were measured with an electric sounder. Wellhead metering should be improved and integrated into a stable and reliable SCADA system.

The SCADA system also provides water levels in the primary and upper storage tanks at 2-minute intervals. Assuming the primary and north storage tanks function together without substantial water-level lags, water demands and pump inflow rates can be estimated by examination of tank drain and fill rates, respectively. (Drain rate is a direct measure of system use; that rate, combined with the fill rate, gives the total input to the tank.) Select examination of tank levels is also reasonably consistent with the pump discharge rates measured for the present report. Figure 3-4 presents the automatic operation of the three Alpine wells in response to SCADA-monitored storage tank levels. Additional wells are brought on if the storage level continues to decline.

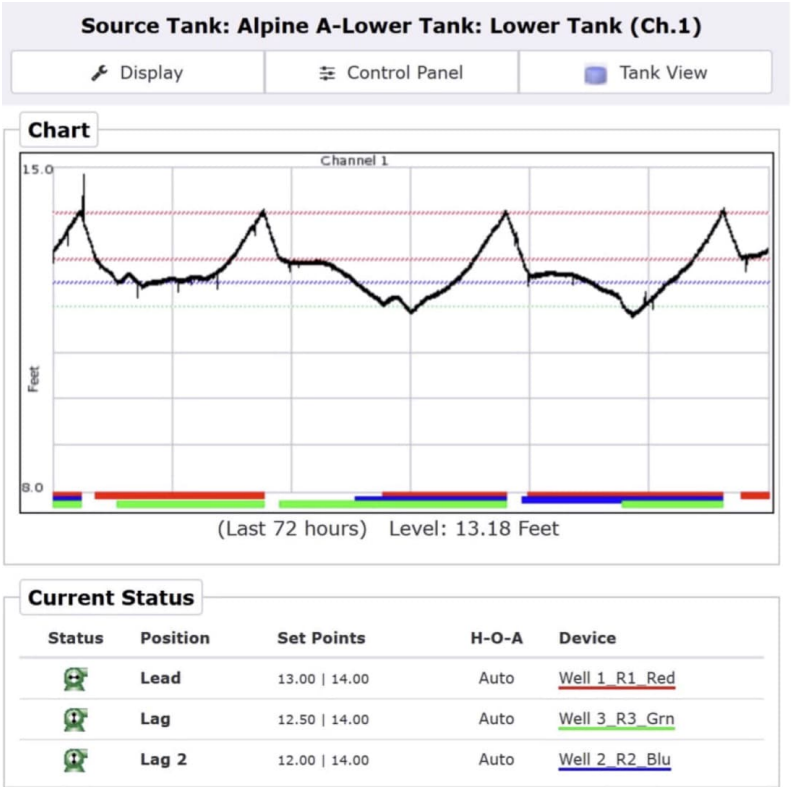

Figure 3-4 Tank Level Set Points for Well Operation

Daily, monthly, and annual water use has been estimated for this report by applying the measured pump discharge rates to the SCADA-archived daily run times. The observed flow of the Megawell varies between 40 and 400 gpm as a function of VFD modulation so volumes cannot be estimated based on runtimes. The only Megawell production data located for the present report are from a manual log started in November, 2024, based on the totalizer readings at the wellhead.

Figure 3-5 NSU 543K Storage Tank

3.2 SNAKE RIVER BRIDGE CROSSING

At the beginning of this master plan study, the Public Works Director expressed his concerns regarding the water pipeline that crosses the Snake River on the Snake River Bridge. His concern is that any issues that may occur with this pipeline would leave the service area north of the river with no water, as the Flying Saddle wells are currently not operational. If a failure occurs during the winter months, it may be nearly impossible to make the repairs in a timely manner. It was decided to use a portion of the Discretionary funds for this project to conduct a visual inspection of the pipeline using a drone. A check of the heat trace system would also be included.

The water pipeline (as well as a sewer force main pipeline) was installed on the bridge as part of a 2015 project to connect water and sewer facilities on the north side of the Snake River (formerly owned by NSU) to the Town systems on the south side. For the water connection, roughly 540 feet of 12-inch diameter ductile iron pipe with restrained joints was installed with polyurethan foam insulation within a 20-inch steel casing. The pipeline is installed on hangers at 10-foot spacing below the bridge deck. A heat trace system was installed with the pipe to prevent freezing.

3.2.1 Visual Inspection

On December 11, 2024, a visual inspection was conducted on the pipeline using a drone to obtain photos and videos for the entirety of the pipe length (over 800 photos in JPG format were taken at various elevations and zoom levels; eight videos in MP4 format were also captured). These photos and videos were carefully reviewed to see if any abnormalities were visible. No issues such as damaged casing, damaged pipe, or apparent leaks were identified during the visual inspection, with the 10-year-old facility appearing to be in good shape. The digital files for these photos and videos are part of the deliverables for this report.

3.2.2 Heat Trace System

Sunrise Engineering conducted a Heat System Assessment at the bridge on Highway 89 crossing the Snake River. The goal of this assessment was to determine if the heat system is functioning properly and to make recommendations for yearly inspections to ensure that the system continues to function properly.

System Description: One 12" DIP Water Pipe and one 6" DIP Sewer Pipe are installed under the deck of the bridge crossing the Snake River. Both pipes have been installed with heat tracing cable to prevent freezing in the pipes. Per the design drawings, the heat tracing is installed inside conduit which has been strapped to the pipes. Each pipe has been installed in an insulated pipe casing.

Each pipe is equipped with a Urecon UTC-2030 Electric Thermostat (Controller) which is designed to control the heating cables with a total current draw per thermostat not to exceed 30A (installation instructions for the system were found during an online search, see Appendix C). Each controller powers two heat trace cables and one sensor cable installed which are installed to its respective pipe. The sensor cable allows the controller to automatically maintain the temperature above freezing. The controllers are installed on an equipment rack located north of the bridge on the west side of the highway. Electric utility service is installed on the same equipment rack. Each controller is fed from an existing distribution panel with a 2-Pole, 30A circuit breaker.

Each controller is equipped with an indication light which provides the status of the heating system. The indication light has four modes:

- Green: Power On

  This mode indicates that the power supply to the controller is 'on' and the pipe temperature at the sensor is above the setpoint. If there is no light the power supply is 'off'.

- Amber: Cable On

  This mode indicates that the power is On and that the controller is calling for heat.

- Red: Alarm, Cable Off

  This mode indicates that there is an alarm condition and that the controller is not calling for heat.

- Red & Amber (alternating): Alarm, Cable On

This mode indicates that there is an alarm condition and that the controller is calling for heat.

- Alarms

Depending on factory setup, an alarm condition can indicate a number of possible alarms:

  - High Limit: If enabled, this alarm will be present if the sensor temperature is above the high temperature setpoint, typically used for plastic piping.
  - Low Temp: If enabled, this alarm will be present if the sensor temperature is below the low temperature setpoint.
  - TS Failure: Temperature Sensor Failure. This alarm indicates that one of the sensors is not operating properly.
  - GFI Alarm: This alarm is caused by a ground fault leakage current in excess of the setting.

Individual alarm indication is located inside the controller. There are four (4) LED lights labeled: High Limit, Low Temp, TS Failure and GFI Alarm.

Assessment: A site visit was conducted to review the performance of the heating system. A visual inspection of the power supply and controllers was completed with the following observations:

- Utility power was present and energized
- Circuits to the two (2) controllers were switched 'on'
- Both controllers were showing the Green indication light on the exterior of the controller door indicating that the power supply to the controller was 'on' and that there was no current call for heat.
- Each controller was opened to inspect the wiring for possible failures. Wiring inside the controller appears to be in good condition and the controller appears to be operating correctly.
- There is no access to the heating cables given that they are installed inside the insulated pipe casings, so the physical appearance of the heating cables could not be determined. It is assumed that they are in good condition due to the lack of an alarm condition.
- The indicator light is not very bright in daylight conditions, so a visual inspection should be done while near the front of the controllers.
- Each controller is equipped with an alarm output. The alarm output includes a set of contacts which include terminals for Normally Open, Normally Closed and Common. The alarm output is not currently being used.
- The system for each pipe appears to be functioning correctly.

Recommendations: The following is a list of recommendations and options to verify that the system is functioning correctly.

- Visually inspect the controller on a periodic basis to confirm that the system is operating correctly. An inspection during early fall months would allow some time for any needed repairs prior to winter.

- Visually inspect the pipe casings for damage that may indicate damage to heating cables or temperature sensors inside the casing.
- If there are any alarms present, open the controller to determine the alarm. If an alarm is present, refer to the Troubleshooting section of the Installation Instruction manual.
- To increase awareness of an alarm condition, the following options may be implemented:
    - Use the alarm contact located inside the controller to connect to an existing SCADA system or to an autodialer
    - Install an indicator beacon at the equipment rack location tied to the alarm contacts inside the controller to make the alarm condition more visible from the roadway.

3.3 SYSTEM MANAGEMENT AND OPERATION

The Town of Alpine is an incorporated municipality that owns and operates the water system along with other infrastructure (sewer system, road system, etc.). The Town has a water department with employees to operate and maintain the water system. Among these employees is the Public Works Director who is a certified operator, as well as other employees working on certification. Billing and bookkeeping are conducted by Town employees including the Public Works Administrator and Clerk/Treasurer. The system appears to be well managed, maintained, and operated.

3.3.1 New Connections and Annexations

Since the last master plan study in 2009, large areas in various stages of development north of the Snake River have been annexed into the Town boundaries. Many of these areas were previously served by the NSU water system which was turned over to the Town in 2016. These areas were natural additions to the Town as they were served by Town water and sewer infrastructure. These areas included the following developments:

- Alpine Meadows
- Boardwalk
- Targhee Place
- Snake River Junction

Other adjacent areas have also been annexed into the Town along with the major subdivisions. With the connection across the Snake River Bridge, all areas are served by one connected system with the exception of the areas served by the MegaWell (Targhee Place, Gibby Acres).

Only a couple of areas served by the Town water systems are not currently within Town boundaries, including the Alpine Lakes area (which is mainly undeveloped other than warehouse units) and The Refuge (which is roughly 2/3 developed with residential and airpark use). In April 2025, the Town Council passed an ordinance to prohibit additional water connections outside of Town boundaries. Connections can be approved pending agreement of the Council with ¾ vote approval, and the condition of annexation into the Town.

The Town allows new connections to be added throughout the system (within Town boundaries). New customers pay the cost of the connection fee as discussed below.

3.3.2 Mainline Extensions

Mainline extensions have been constructed in the past to extend water service to previously unserved areas. In general all areas within the Town boundaries are served by existing water mains. There have been discussions in recent years to extend water to areas both north and south of the Town. Requests for future extensions will require approval of the Town Council and generally annexation into the Town.

3.3.3 Meter Reading and Billing

Individual services are metered, however the meters have limited capability for data collection. Service meters south of the Snake River (within historic Town boundaries) are typically read once per year as they must be physically raised from the meter pit to be read. Service meters north of the Snake River (former NSU system) are typically read once per month with a required site visit to each meter to be read from a touch pad. In both cases, the meter reading process is labor intensive and subject to numerous issues related to physical site visits and manual data collection. With readings on a monthly or yearly basis, there is little opportunity to collect and analyze the data with sufficient detail to analyze individual days or weeks for minimum or maximum use. The meter replacement project that is currently underway will greatly enhance the meter reading capabilities of the Town.

3.3.4 Water Use and Record Keeping

Water use data within the system is being collected by the SCADA system, which utilizes Mission Communications equipment and software. Data are obtained from each of the three Alpine wells for run-time minutes, gallons, and starts. From the data, it appears that the "gallons" are derived from multiplying the minutes with an assumed well flow rate (450 gpm for Well #1, 350 gpm for Well #2, and 515 gpm for Well #3). Additional SCADA data from the flow meter have also been obtained, however the data provided by the meter is a scatter of points that do not represent actual flow rates, rendering this data unusable. This is assumed to be an issue with the output signal at the flow meter.

Run time data is also collected for the booster pump, along with level data for the two south storage tanks (upper and lower).

Data is also collected for the various service meters as part of the billing process. This data does not match well with the data provided by the SCADA system, indicating that there may be significant losses due to leakage. This is further discussed in Section 6.2 of this report.

3.3.5 Operation and Maintenance Schedule

The Public Works Director indicated that they keep a regular schedule of maintenance on the system including system flushing, valve exercising, and other routine items. A list of suggested

daily, weekly, monthly, and annual items is included in Appendix C. This list is available from the EPA Region 8 office online at:

https://www.epa.gov/region8-waterops/operations-maintenance-checklist-tasks

3.3.6 Connection Fees

Services in the Town system are generally for residential use, along with a number of commercial use connections. Connection fees have been set by the Town Council. With the inclusion of the NSU system in 2016, there were different fees in place for that NSU utility district. As mentioned previously, some of those areas have not been annexed into the Town at this time and are still subject to fees outlined for that district, which must be approved by the Wyoming Public Service Commission (WPSC). Changes to those fees must follow the WPSC procedures which include substantial public comment periods and meetings. Due to these procedures, rates for the district area have not been adjusted for some time and therefore do not match the Town rates. Connection fees for the system are as follows:

Table 3.4 Town of Alpine Water Connection Fees

Location	Size	Fee
Town of Alpine	¾" (Residential)	$3,500
Town of Alpine	1"	$5,000
Town of Alpine	1 ½"	$6,500
Town of Alpine	2"	$10,000
Alpine Utility District	¾" (Residential)	$3,000
Alpine Utility District	1" – 2"	$11,800
Alpine Utility District	3" – 4"	$19,800

The connection fees shown include parts and installation of the meter by Town crews, connected to the water main. The Town Council has commissioned a study to analyze water and sewer fees. This study is being completed by Raftelis with a projected completion expected late 2025. It is assumed that the Town will revise the connection fees based on the recommendations of that study.

In theory a connection fee represents the cost to buy-in to a water system. In other words, the connection fee purchases the excess capacity that is available in the system in terms of available source, storage, water rights, and so forth. Thus it makes sense that connection fees vary based on the size, with cost increasing proportionally to the amount of water that can be used with the connection.

3.4 GEOGRAPHIC INFORMATION SYSTEM

The Town of Alpine does not currently utilize a geographic information system (GIS) for management of the water system. As part of this study, GPS data points were collected for all

known valves, hydrants, wells, storage tanks, and so forth. Known information regarding pipes throughout the system was also added. This data will be provided to the Town as a base map for a GIS that can be used to manage the system.

3.5 REPAIR AND REPLACEMENT OF EXISTING COMPONENTS

This section contains a summary of the major components of the Alpine water system along with their installation year, estimated useful life, and anticipated year of repair and replacement.

Table 3.5 Repair & Replacement Schedule Summary

	Installation Date	Expected Useful Life (years)	Estimated Repair or Replacement Date	Estimated Repair or Replacement Cost (2025 $)
PVC Pipe (lower grade)	1970-1990	30	2000	$60-$80/ft
PVC Pipe (municipal grade)	1990-2020	80	2070	$60-$80/ft
Mainline Valves	1970-2020	50	2020	$3,500 each
Fire Hydrants	1995-2020	50	2045	$9,000 each
PRV Valve & Appurtenances	1995	30	2025	$15,000-$30,000
Master Meter *	2010	10	2020	$7,000
Well Pump & Equipment	2010	30	2040	$50,000
Water Tank (Concrete)	1995	50	2045	$1,000,000
Water Tank (Glass Fused Steel)	2006	40	2046	$1,200,000
Water Meters *	1995-2020	20	2015	$250 each
Water Meter Encoders/Batteries *	1995-2020	20	2015	$250 each
Water Meter Pits	1995-2020	30	2025	$2,000 each
Chlorination Equipment	2010	20	2030	$3,000
SCADA Equipment	2010	20	2030	$50,000

** Being replaced under current project*

Many of the system components will need attention in the next 20 years (shaded cells in table above). The Town should begin planning and budgeting to replace these items. More detailed recommendations are given below.

Wellhouse: Per the Public Works Director, when the wells are operated at 100% capacity the electrical breakers may trip (or some other fault occurs), causing the wells to stop operation until someone manually resets the breaker or VFD in the wellhouse. For this reason, the wells are currently set to run at roughly 89% of capacity. The electrical system will need to be investigated to determine what components need upgrading to accommodate all three wells operating at full capacity.

An attempt was made on June 12, 2025 to cause a "trip" or "fault" by increasing the speed of the pumps. All three pumps were increased to 55 Hz, and then Well #3 was increased to 59 Hz with no

fault or issues observed. All three pumps were left with a maximum setting of 55 Hz since that time, with no issues observed as of the date of this report.

Chlorination Equipment: The age of the sodium hypochlorite injection system is unknown, but it is assumed that the equipment was installed as part of the 2010 wellhouse improvements. Assuming a 20-year design life, replacement will likely be needed in upcoming years.

Master Meters: The master meter at the wellhouse is not operational, nor is the meter at the booster pump. Replacement of both of these meters is planned for the summer of 2025 as part of an ongoing meter upgrade project.

Service Meters: Service meters within the original Town system (south of the Snake River) were installed in the mid-1990's if not earlier. Meters within the former NSU system were installed in roughly 2006, although many were installed when construction took place on individual lots years later. Meters typically have a 20-year life for the registers and require testing after 10 years to maintain accuracy. Replacement of all service meters is planned for the summer of 2025 as part of an ongoing meter upgrade project.

Water Meter Pits: The meter pits in the Alpine system are coil-type pit setters. Assuming a 30-year design life, the tubing in these pits can be brittle or weak over time.

NSU Water Storage Tank: The NSU storage tank is glass-fused-to-steel, which has a design life of 30+ years. The tank was constructed in 2006, so there is at least another decade of life remaining (some glass-fused-to-steel tanks have lasted well over 30 years). Due to the glass lining, recoating of the tank should not be needed. Per the manufacturer, cathodic bars installed at the base of the tank should be inspected and tested every year, and are normally replaced every 7 years. Reseal of interior seams should be completed every 10 to 15 years. Evidence of damage due to ice may require additional rehabilitation and adjustments to winter operations.

PRV Valves & Appurtenances: Per the Sunrise 1995 study, the PRV vault was constructed at the same time as the storage tanks in 1995 or 1996. With a 30 year design life, the PRV equipment is likely in need of replacement. The 1995 study indicated that the valve would have "a pressure sustaining pilot control function set to ensure that the tank is not totally drained" in the event of a fire or break. This pilot control is likely not operational at this time.

SCADA Equipment: The SCADA system appears to be operational for the various data collection points throughout the system. It is assumed that installation occurred during the 2010 wellhouse improvements. With a 20-year design life, the SCADA components may need replacement in the upcoming years. With installation of new meters in the wellhouse planned for this year, the SCADA should be tied to both meters for collection of flow data.

4.0 HYDRAULIC MODEL

Hydraulic modeling was conducted to evaluate the current performance of the Alpine water system and to project future needs through 2050. The analysis was performed using Aquanuity's AquaTwin software, which simulated system behavior under various demand conditions.

4.1 MODEL INPUTS AND ASSUMPTIONS

Demand Scenarios Assessed:

- Average Day Demand (ADD): Total annual water use is divided by 365 days.
- Maximum Day Demand (MDD): Highest 24-hour water demand during the year.
- Peak Hour Demand (PHD): Highest single-hour demand on the system.

In addition to these scenarios, an Extended Period Simulation (EP) was performed to reflect real-world conditions, particularly during peak summer months when the wells reportedly run 24 hours a day for an extended period. While the system currently meets ADD, MDD, and PHD, the EP simulation identified areas of concern during prolonged high-demand periods, especially during peak summer months.

Model inputs and assumption were necessary to ensure accuracy, the model incorporated:

- Water usage data is provided by the Town of Alpine.
- Elevation data per USGS WY Southwest 1 2020 LiDAR
- Infrastructure details include pumps, tanks, pipes, and valves.
- Pipe layouts based on as-built drawings (with minor expected discrepancies).
- SCADA data was excluded due to reliability concerns.

The model was developed to assess the system's ability to provide safe, reliable drinking water under current and future conditions. It also evaluated water age and fire flow capacity. Modeling followed standards set by the Wyoming Department of Environmental Quality (WDEQ), the Ten States Standards, and best practices from the American Water Works Association (AWWA) M32, 4th Edition.

4.2 EXISTING MODEL

The hydraulic model was developed to reflect the current operation of the Alpine water system, incorporating reasonable assumptions where necessary. All model inputs, assumptions, results, and recommendations are detailed in this section and further supported in Appendix D.

4.2.1 Pipes

The existing system includes approximately 118,500 linear feet (22.5 miles) of pipe, composed of mainly PVC for the bulk of the system and ductile iron for the bridge crossing. The table below summarizes the existing pipe inventory by diameter:

Table 4.1 Alpine System Existing Pipe Data

Existing Pipes		
Diameter	Length	Unit
4	8,485	ft
6	53,875	ft
8	42,459	ft
10	2,035	ft
12	11,644	ft
Total	118,499	ft

For modeling purposes, a Hazen-Williams roughness coefficient of 140 was utilized. This value reflects the assumed condition of the system, where a typical PVC roughness coefficient ranges from 140 to 150; this model used 140 as a conservative value.

4.2.2 Tanks

Model parameters for the three tanks are shown below:

Table 4.2 Alpine System Existing Tank Data

Existing Tanks					
Tank	Diameter (ft)	Floor Elevation (ft)	Initial Level (ft)	Max Level (ft)	Mixing Model
NSU	60	5,855	21	22	Lifo
250K	53.75	5,950	14.0	15.0	Lifo
500K	77	5,862	14.0	15.0	Lifo

All tanks were modeled using a Last-In, First-Out (LIFO) mixing assumption. It was assumed that tanks were not completely full at the start of the Extended Period Simulation (EP), and that overflow conditions were not permitted during the simulation.

4.2.3 Pumps

The system Pumps modeled in the existing scenario include three active wells: Alpine Wells #1, #2, and #3. These wells were modeled based on available specifications and reasonable assumptions regarding pump types and performance.

- Wells #2 and #3 were assumed to be equipped with Robbco 75 HP 7THE 5-stage pumps, installed in 2010.
- Well #1 was assumed to have a Goulds 7THC 75 HP pump, replaced in 2021. For modeling purposes, the pump curve for the Goulds 7THC was used for all three wells.

The table below summarizes the key input data and modeling criteria for each well:

Table 4.3 Alpine System Existing Well Data

Well Input Data and Modeling Criteria						
Wells	Ground Elevation (ft)	Pump Set Depth (ft)	Pump Elevation (ft)	HP	Max Flow (gpm)	Model Flow (70% of Max)
Alpine Water District Well #1	5,695	192	5,503	75	700	490
Alpine Water District Well #2	5,696	143.5	5,552.5	75	700	490
Alpine Water District Well #3	5,700	206.5	5,493.5	75	650	455
Flying Saddle Lodge Well #1	Not used	Not used	Not used	Not used	Not used	Not used
Flying Saddle Lodge Well #2	Not used	Not used	Not used	Not used	Not used	Not used
Excel Development Well #1 (Megawell)	Not used	Not used	Not used	Not used	Not used	Not used

The Flying Saddle Lodge wells and the Excel Development Megawell were excluded from the model. The Flying Saddle wells are currently inactive, and the Megawell is not connected to the system.

Field observations indicated that actual pump outputs are lower than expected. To reflect this, the model uses 70% of the maximum rated flow for each pump, which aligns more closely with observed performance.

4.2.4 Demands

Water demand for the existing system was based on meter reading data provided by the Town of Alpine. SCADA data was excluded from the analysis due to reliability issues.

While meter data provides a valuable baseline, it is subject to several limitations, including:

- Reduced accuracy due to meter aging
- Occasional recording errors
- Inconsistent reading frequency
- Unaccounted-for system leaks

To improve data quality, the meter readings were reviewed, and abnormally high or low values were removed. Months where readings were unavailable due to snow cover, an estimated usage based on the average of four adjacent months was utilized.

For modeling purposes, 2024 data was used, as it represented the highest recorded usage. To simulate peak conditions, the following assumptions were applied:

$$MDD = 2.4 * ADD$$

$$MHD = 4 * Average\ Hour\ Demand\ (AHD)$$

The resulting demand values are summarized below:

Table 4.4 Alpine System Existing Demand Data

2024 Data		
Demand	Value	Unit
ADD	759,000	Gal/Day
MDD	1,800,000	Gal/Day
MHD	126,500	Gal/HR

The Town of Alpine plans to replace water meters this year, once meters are replaced, it is highly recommended to reassess the demands in the system, refining the above assumptions and calculations.

4.2.5 Patterns

To complete the EP simulation, demand patterns were applied to reflect hourly variations in water use. Ideally, these patterns are derived from detailed hourly meter data. However, due to the limited resolution of the available meter data, standard assumptions were necessary.

The model incorporated assumed demand patterns for residential, commercial, institutional, and industrial users. These patterns were designed to simulate realistic fluctuations in demand throughout the day with higher demand expected in the morning and then again in the evenings. The demand curves were adjusted to not exceed the MHD during the highest usage parts of the day. It is highly recommended to create the patterns with hourly meter data when that becomes available. Detailed pattern profiles and multipliers are provided in Appendix D.

4.2.6 Elevations

To estimate system elevations, topographic data was obtained from the Elevation data per USGS WY Southwest 1 2020 LiDAR. An assumed burial depth of 6 feet was applied to determine the pipe elevations used in the model. All elevation values used in the model are referenced in the junction and pipe tables provided in Appendix D.

4.2.7 Controls

For the existing and the future model the following, simple on/off control logic was applied:

Table 4.5 Alpine System Existing Demand Data

Well Control		
Wells	**Turn On @ Tank Level (ft)**	**Turn Off @ Tank Level (ft)**
Well1	13	14
Well2	12.5	14
Well3	12	14
Megawell	14	21

Well pumps were assumed to operate based on tank levels in the 500K tank, turning on or off when specific assumed elevation thresholds were reached. The booster pump was modeled to activate immediately when the upper tank dropped below an assumed designated level, with no assumed delay in response time. It was also observed during modeling that all water in the system flows through the 500K tank. Under Average Day Demand (ADD) conditions, the tank level drops significantly when the booster pump is activated—particularly during fire flow scenarios. If tanks are allowed to drop to lower levels before pump activation, pump run times are reduced, but this may impact system performance during peak demand or emergency events.

Figure 4-1 Hydrant Flow Test at Hydrant J346

4.3 MODEL CALIBRATION

To calibrate the model, fire hydrants were tested in three locations and compared with calculated available flow and pressure. These fire hydrants tests were used to ensure accurate data collection and validate test results. The hydrants tests compared to model results are shown below:

Table 4.6 Alpine System Calibration Results

Hydrant ID	Location	Static Model Pressure	Model Flow (gpm)	Static Actual Pressure	Actual Flow (gpm)
J52	Riverview Dr	96	1931	94	1867
J346	Refuge	99	1626	98	1690
J630	Grand View Dr.	107	1508	98	1845

Hydrant J52 and J346 were as expected, however J630 was different than expected. This difference can be due to elevation in the tanks and demands at the time of the test. Fire hydrant test results are shown in Appendix D.

4.4 FUTURE MODEL

The future scenario model builds upon the existing system by incorporating the recommended improvements detailed in Section 7 below. This includes several key modifications to reflect projected 2050 conditions. These include upsizing pipes, enhanced pump performance, the addition of the Megawell, an extra 500,000 gallons of storage, and anticipated increases in system demand.

4.4.1 Pipes

The future system includes approximately 131,896 linear feet (24.98 miles) of pipe, incorporating both existing and newly added segments. The following table shows the pipes broken down by size for the existing system.

Table 4.7 Alpine System Future Pipe Data

Future Pipes		
Diameter	Length	Unit
4	10,358	ft
6	51,432	ft
8	46,395	ft
10	6,206	ft
12	17,505	ft
Total	131,896	ft

A Hazen-Williams roughness coefficient of 140 was applied to all pipes.

4.4.2 Tanks

The future model includes all existing tanks, with the addition of a new 500,000-gallon tank adjacent to the current 500K tank. This added storage increases system resilience and capacity during peak demand periods.

4.4.3 Pumps

The future scenario includes Alpine Wells #1, #2, #3 along with the Megawell as shown below. It is assumed that all wells are equipped with Goulds 7THC 75 HP pumps, which were found to meet the projected 2050 demand requirements.

Table 4.8 Alpine System Future Well Data

Well Input Data and Modeling Criteria					
Wells	Ground Elevation (ft)	Pump Set Depth (ft)	Pump Elevation (ft)	HP	Anticipated Flow (gpm)
Well #1	5,695	192	5,503	75	700
Well #2	5,696	143.5	5,552.5	75	700
Well #3	5,700	206.5	5,493.5	75	650
Flying Saddle Lodge Well #1	Not used	Not used	Not used	Not used	Not used
Flying Saddle Lodge Well #2	Not used	Not used	Not used	Not used	Not used
Megawell	Not used	Not used	Not used	100	1,200

4.4.4 Demands

Demands for the future system are based on SCADA run time method as described in 6.2.2. The future model demands are shown below:

Table 4.9 Alpine System Future Demand Data

2024 Data		
Demand	Value	Unit
ADD	973,000	Gal/Day
MDD	2,308,000	Gal/Day

4.5 EXISTING SYSTEM PRESSURES

Pressures during ADD range from 53 to 98. During MDD the pressure are higher than 35psi for all junctions. Detailed results can be found in Appendix D.

4.6 FIRE FLOW

Fire flow was evaluated for the existing and future system. Both existing and future systems had adequate pressure and flow of 1,000 gpm for all hydrants and did not drop below 20psi for residual pressure. Detailed results can be found in Appendix D.

4.7 WATER AGE

During ADD the highest water age found in the system was at J400 at 8 days. Detailed results are shown in Appendix D.

5.0 WATER SOURCES

5.1 INTRODUCTION

The Alpine municipal water supply currently comes from 3 wells on the south side of Town, Well Nos. 1, 2, and 3. The original water system came from a developed spring south of town. The first well (No. 1) was added in 1977, providing a dual source system. Since then, the spring has been abandoned and the system consolidated into the original well and two more (Nos. 2 and 3), constructed in 1988 and 2012.

Other centralized groundwater-based supplies serve or have served areas within or adjacent to the Town of Alpine system. Included in the present study are the Flying Saddle Wells No. 1 and 2, constructed in 1982 and 1949 and the "Excel Development No. 1" well (aka the "Megawell"), constructed in 2017. The Flying Saddle wells were drilled in association with the construction of the Palisades Reservoir (Well No. 2) and to supply the adjacent motel (Well No. 1). They subsequently came to serve the North Star Utility, which supplied various customers on the north side of the Snake River until the Town of Alpine system was extended into those areas. The Megawell was constructed to serve a large development in the surrounding area that has not yet materialized. Although of vastly greater capacity, the well currently supplies only a few relatively small local users at present. See Figure B in Large Figures for well locations.

This chapter presents the hydrogeology of the Alpine area, the construction of the relevant wells, and the results of well testing, followed by discussion of the pumping equipment installed in each well. Next, water quality data are presented. Current water rights and historical reporting under those rights are reviewed. A final section presents opportunities and recommendations for improvements and expansion of the Alpine municipal water system to more reliably meet the present and future demands outlined in Sections 3.0 and 6.0.

5.2 HYDROGEOLOGY

Figure C in Large Figures presents the mapped geology of the study area. There are three relevant formations or formation groups. From oldest to youngest: 1) the Paleozoic-age Mission Canyon and Lodgepole Limestone formations ("Mm" and "Ml" on Fig. C); 2) the overlying Tertiary-age Salt Lake Formation ("Ttc"); and 3) surficial deposits of alluvial material deposited by the Snake and Greys Rivers ("Qal"). (The deposits labeled "Tc" and "Qc" on Figure C are colluvium, i.e. shallow landslide deposits derived from the underlying bedrock units.)

The distinctions between these three sets of material can be obscure in drill cuttings due to the predominance of limestone in all of them. The Salt Lake Formation is basically a poorly sorted, limestone conglomerate. The underlying bedrock limestone formations are intensely folded and faulted, creating limestone breccia. And the alluvial materials are the erosional debris from the Salt Lake and bedrock formations, washed down from outcrops in the surrounding uplands and from upstream portions of the Snake, Greys, and Salt River watersheds. Further confounding the clear identification of stratigraphic

boundaries is the presence of a high-displacement fault system whose surface expression (and thus, location) is obscured by the overlying alluvial deposits.

The complex stack of formations and faults forming the highlands east of Alpine (east half of Figure C in Large Figures) are part of the Wyoming Overthrust Belt. The Alpine area, and the Star Valley extending southward along the Wyoming-Idaho border, have been faulted downward relative to the highlands east of the "Grand Valley Fault Zone". Figure C in Large Figures presents that fault as inferred by the USGS mapping, along with a refined (or additional) location based on previous Alpine-area groundwater investigations, e.g. Rendezvous (2009). The areas of interest to the present study lie along and west of this major fault boundary.

Albee and Cullins (1975) describe the Mission Canyon and Lodgepole Limestones as:

> "Mission Canyon Limestone (Upper and Lower Mississippian) - Light to dark-gray medium- to coarse-grained massive bioclastic limestone; forms clIffs; all outcrops are faulted; about 1,000 feet (300 m) thick a few miles east of quadrangle"
>
> "Lodgepole Limestone (Lower Mississippian) - Medium- to dark-gray thin- to medium - bedded fine-grained limestone; thickbedded bioclastic limestone near top; about 600 feet (180 m) thick."

"The underlying bedrock carbonates (Mission Canyon and Lodgepole Limestones) have little intrinsic permeability, but are extensively deformed in the Alpine area, creating zones of greatly enhanced permeability. The fracturing associated with the Grand Valley Fault Zone along the east side of the Alpine area appears to be the reason for dramatically higher well yields at the North Alpine Service and Improvement District (NASID) wellfield on the north side of the Snake River and at the Town of Alpine wellfield (Existing Well Nos. 1 and 2 and test well No. 3)." (Hinckley, 2009).

The Alpine Lakes Subdivision report (Sunrise, 2018) describes the Pliocene-age Salt Lake Formation deposits:

> Pliocene Bedrock (Salt Lake Formation). Bedrock beneath the gently sloping portions of the study area consists of Pliocene-age sediments. These are mapped as simply "Tuff, conglomerate, and siltstone (Pliocene)" by Albee and Cullins (1975), as the "Teewinot" formation by Merritt (1958), and the "Salt Lake" formation by Lines and Glass (1975). As described by Merritt (1958), the Pliocene deposits consist of well over 5,000 feet of siltstone, claystone, and conglomerate. Merritt presents a measured section 5250 feet thick, but ends his description in strata dipping eastward at 23 degrees, at least a mile west of the easternmost outcrop of the formation. Extrapolation of these dips beneath the study area suggests an additional thickness of some 2500 feet.
>
> Due to the eastward dip of these strata (18 to 31 degrees; Merritt, 1958), the study area is underlain by the upper units of this formation. These comprise a "conglomerate sequence" or "conglomerate facies" more than 700 feet thick, as described by Merritt

(1958) in a section along the Snake River. The conglomerates are described as "subangular to rounded, poorly sorted granules, pebbles, and cobbles with an average diameter of about 3 inches. Pebbles are imbedded in a soft, silty, sandy and in places tuffaceous, calcareous matrix." "Paleozoic limestone fragments and quartzite pebbles are the predominant rock types represented in the conglomerate facies ... "

Over the full area of occurrence of the Salt Lake Formation, Lines and Glass (1975) are skeptical of its water-bearing potential. They suggest "the availability of water from these aquifers is limited because the conglomerates are usually well indurated, poorly sorted, and have little primary permeability." They go on to describe one notable (8,000 gpm) exception - the springs east of Thayne - which are attributed to a "fractured conglomerate" within the formation. No detailed descriptions of the Pliocene deposits within the study area have been located. However, Merritt (1958) interprets the source for the limestone cobbles in his upper, "conglomerate" sequence as being the mountains to the east. This suggests the size and abundance of conglomeratic material may increase in that direction. (The Pliocene section examined in detail by Merritt stops at the Wyoming/Idaho state line.)

The productivity of wells developed in the Pliocene-age strata in the study area varies, and it can be difficult to distinguish alluvial terrace deposits from the underlying conglomerates of Pliocene age. However, a fairly wide variation in productivity is consistent with the lithology of these deposits, i.e. the interlayered nature of individual "cleaner" lenses and channels within the generally silt-rich formation.

Groundwater production from the Salt Lake Formation is notoriously variable throughout its area of occurrence in western Wyoming. In some areas, e.g. east of Etna, productive wells have been completed in this formation. In the Alpine area, however, experience suggests the formation generally contains too much fine-grained material (e.g. a conglomerate in a clay matrix) to be more than minimally productive.

Rendezvous (2002) examined wells in the area of Figure C mapped as “Ttc” outcrop north of the Snake River and concluded groundwater potential was generally poor. A well at the west end of the bench above the valley floor in the middle of Section 20, for example, “penetrates 500 feet of aquifer below the water table to produce a reported 5 - 12 gpm and demonstrated large drawdown during a recent pump test (Permit 122727; Coletti). “

In contrast to the local Salt Lake Formation, the overlying alluvial deposits (“Qal” on Figure C) are generally quite permeable. Sunrise (2018) describes the alluvial deposits:

At the surface over most of the study area are alluvial sand, gravel, and silt deposits laid down on the ancient floodplains of the Snake, Salt and Greys Rivers. Area mapping describes "an unconsolidated boulder bed which ranges from 5 to more than 50 feet in thickness." (Merritt, 1958; p. 28). ... These deposits are quite variable in thickness across the larger study area, depending upon how the river channels eroded into the underlying bedrock. Photographs of the banks of the Snake River taken by JD. Love before

construction of Palisades Reservoir (Merritt, 1958) show terrace deposits on the order of 30 feet thick. In some areas, the surface deposits may not be consistently saturated, although inspection of the lithologic logs for wells in the immediate area of the proposed Alpine Lakes development indicates these surface deposits as the primary aquifer in that area.

The test well completed on the subject property (UW 206257) [i.e. the Megawell] is an example of finding a particularly "sweet spot" in these deposits, i.e. a site of maximum saturated thickness and material permeability. This well penetrated "sand & gravel" to a depth of 100 feet, with saturated conditions below 26 feet. This outstanding well produced 2500 gpm over an 8-hour pump test, with only 2 feet of drawdown according to the driller-supplied Statement of Completion filed with the Wyoming State Engineer's Office.

Similar, but less dramatic results have been reported from gravel pits excavated into these deposits in the SW 1/4, NW 1/4 Section 20; the NE1/4, SE1/4 Section 19; and the SE 1/ 4, SW 1 / 4 Section 30. A de-watering well in the last of these has a permitted yield of 200 gpm (permit no. 17215).

Sunrise (1995) captured the variable thickness of the alluvial deposits as well as the permeability contrast with the underlying Salt Lake Formation, “Local residents report very active spring systems issuing from gravel lenses in the banks of the reservoir adjacent to the study area when the reservoir level is low.” That report also noted depth-to-water values commonly with “differences as large as 40-50 feet”, that, “the water surface elevation of Palisades Reservoir exerts a significant influence on groundwater levels through much of the study area”, and quoted a local resident that, “years ago, when wells could rarely be constructed deeper than 60 feet, they would often go dry in the late fall and winter.”

5.3 ALPINE WELL NOS. 1, 2, AND 3

5.3.1 Aquifer

The most complete hydrogeologic evaluation to date of Alpine Well Nos. 1, 2, and 3 is provided in the 2009 Level II study and attached technical memoranda (Rendezvous, 2009), to which the interested reader is referred for additional details.

Figure D in Large Figures presents a schematic east-west cross section through the Alpine wellfield from that 2009 report; “schematic” because the exact location and orientation of the indicated faults is unknown. In any case, based on drillers’ lithologic logs and our own observations during the drilling of Well No. 3, the thickness of the deposits overlying the bedrock limestones at Alpine Well Nos. 1, 2, and 3 is interpreted as being 203, 95, and 215 feet, respectively. Thus, a fault with displacement on the order of 100 ft. (again, west-side-down) between Well Nos. 1 and 2 is included in the interpretation of Figure D.

In terms of groundwater production, the stratigraphic details are not critical. Water level measurement at all three wells during various pumping cycles makes it clear that all three are in close hydraulic communication. Whether fractured limestone, fractured Salt Lake Formation, locally higher permeability zones of Salt Lake Formation (e.g. due to the absence of the typical clay matrix), alluvial deposits, or some combination of these, the material behaves as a single, largely unconfined aquifer.

Table 5.1 provides summary construction and aquifer water levels for the Town of Alpine Wells 1, 2, and 3. Table 5.2 provides well testing results. Figure E in Large Figures illustrates the well construction (copied from Rendezvous, 2010).

Table 5.1 Construction & Aquifer Levels – Alpine Wells 1, 2, and 3

	Well No. 1	Well No. 2	Well No. 3
Permit (yr)	39163 (1978)	77717 (1988)	198240 (2010)
Depth (ft)	275	243	267
Casing Dia. (In)	10	10-3/4	10
Open Interval	180-275 (torch slots), gravel pack	101-110, 138-144 knife slots; open hole below 147	230-267 (125-slot screen)
WBZ	gravel, limestone	"broken limestone", limestone	fractured limestone
Static Water Levels (ft (date))			
SEO Statement of Completion	60 (12/1978)	85.5 (10/1988)	75 (9/2011)
Rendezvous (2009)	83 (6/27/05) 89 (9/23/05) 60 (4/19/06) 74 (5/ /06) 90 (4/3/08) 78 (5/10/08) 74 (5/22/08) 81 (6/16/08) 91 (7/7/08)	84 (6/27/05) 93 (10/1/05) 68 (5/ /06)	 91 (6/18/2008) 91 (7/7/2008)
This Study	114.48 (9/13/2024)		
This Study	90.95 (12/10/2024)	90.72 (12/10/2024)	94.80 (12/10/2024)
	The 12/10/2024 measurements follow 17, 11, and 5 hours without pumping of Well Nos. 1, 2, and 3, respectively.		

Static water levels are important for two reasons: 1) they provide a measure of long-term aquifer sustainability, e.g. "Is the aquifer in decline?"; and 2) they determine the available drawdown in a well, i.e. the larger the difference between the static water level and the pump setting in a well, the more water can be produced.

The static water level data of Table 5.1, along with consideration of aquifer characteristics and recharge areas, suggest no long-term decline in the aquifer(s) serving the Town of Alpine. Abundant recharge is available through infiltration of precipitation and snowmelt across wide exposures of the relevant formations south and east of Alpine and, at times, from Palisades Reservoir.

However, static water levels in the Well Nos. 1, 2, and 3 wellfield have been measured to vary by at least 31 feet. At a specific capacity of 15 gpm/ft, for example, 31 feet represents a difference in a well's production potential of 465 gpm. Past studies have concluded changes in the water level elevation in Palisades Reservoir are a major factor in seasonal changes in depth-to-water in the aquifer. At full volume, the reservoir backs water up to at least one mile above the confluence of the Greys and Snake Rivers (e.g. 6/30/14 GoogleEarth image).

Figure 5-1 presents a 25-year record of daily reservoir levels and a summary of monthly averages. Reservoir levels peak at 5620 feet elevation. Reservoir levels have fallen to as low as 5500 feet, although once the reservoir level falls below that of the river channel, the river becomes the hydraulic control on surrounding groundwater levels. Opposite Alpine Well Nos. 1, 2, and 3, the Greys River channel is at approximately 5600 feet elevation, so only the highest reservoir levels are likely to have a direct effect on the Well Nos. 1, 2, 3 wellfield. (Further downstream, the Snake River channel west of the Megawell is at approximately 5520 feet.) Reservoir and river channel elevations represent the base level to which groundwater gradients in the Alpine area are tied, i.e. groundwater flows into or out of the river/reservoir based on the relative elevations of the water level in the aquifer and the water level in the river/reservoir.

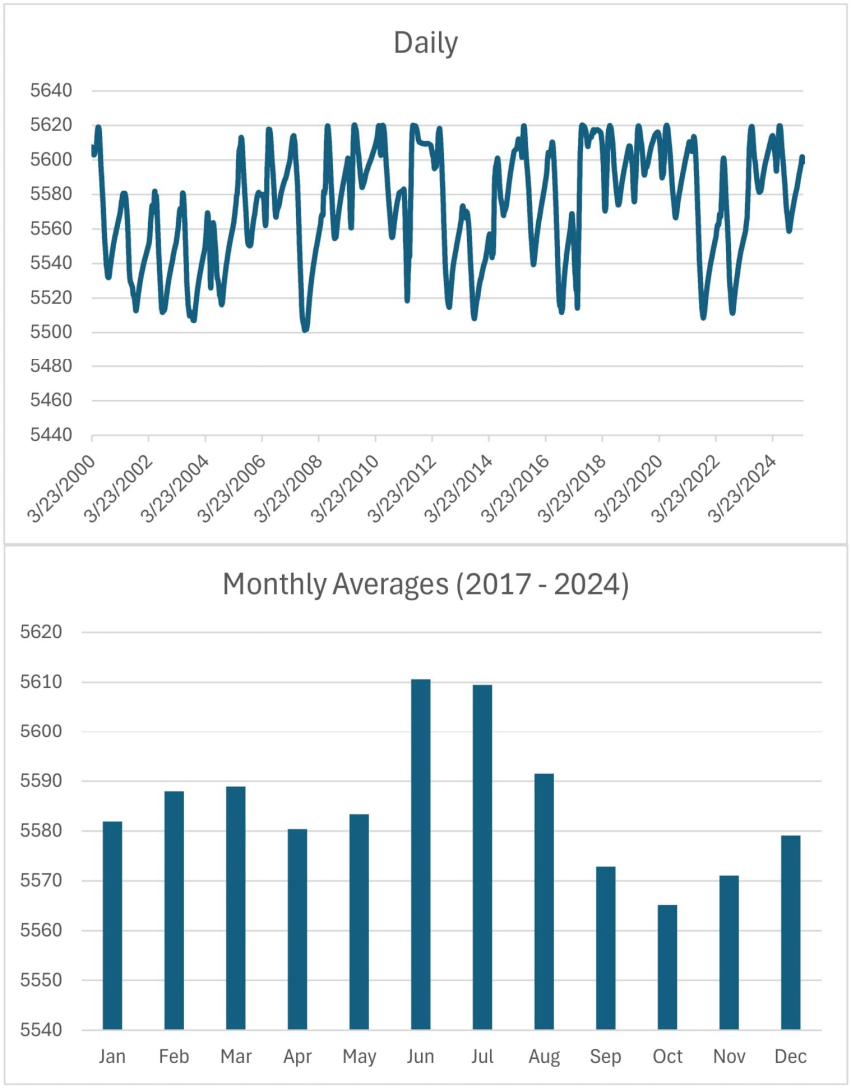

Figure 5-1 Palisades Reservoir Levels 2017 - 2024

Figure F in Large Figures summarizes the water level elevation data for Palisades Reservoir, the Greys and Snake River channels, and the wells of interest to the present project. (The specific values behind this Figure are provided in Table 5.2.) The range in static water levels on the Figure are based on measured values and may not span the full range over time. The pumping water level elevations are based on measured drawdown at specific discharge rates and durations. A pumping water level elevation will be lower as pumping rates and pumping times increase.

Table 5.2 Alpine Water Level Elevations and Depths

Alpine Water Level Elevations (feet, MSL) and Depths (feet)					
	Surface Elevation	Static Water Elevation (Depth)[1]	Pumping Water Elevation (Depth)[2]	Water Production Zone Elevation (Depth)	River Channel Elevation
Well No. 1	5695	5603 - 5640 (60 - 92)	5578 - 5615	5515-5420	5600
Well No. 2	5696		5550 - 5587	5595, 5549-5453	5600
Well No. 3	5700		5536 - 5573	5470-5433	5600
Megawell	5641	5584 -5615 (26 - 57)	5582 - 5613 (28 - 59)	5539 - 5599 (42 - 102)	5520
Flying Saddle No. 1	5650	5570 - 5590 (60-80)	5488 - 5524 (66 - 82)	5490 - 5570 (80 - 160)	5570
Flying Saddle No. 2	5650	5570 - 5590 (60-80)	5548 (102)	5530 (120)	5570
Palisades Reservoir	5500 - 5620				

[1] - *The full range of static water levels likely exceeds the measurements compiled here.*

[2] - *Pumping water levels fall with increasing discharge rate or pumping time. Those listed here have been measured at various rates and times.*

With respect to the Alpine Well Nos. 1, 2, & 3 wellfield, Figure F illustrates that static water levels in the Alpine wellfield are generally above the water level in the river/reservoir. Only were the depth-to-water in the wellfield greater than 80 feet and the reservoir were full would there be a gradient from the reservoir towards the wellfield under static conditions. However, when the wells are being pumped, depths-to-water may exceed 147 feet, i.e. falling to elevations less than 5550 feet, at which times the reservoir elevation could be higher by as much as 70 feet. At such times, there is a substantial gradient from the reservoir toward the wells.

Groundwater levels at distance from the river (e.g. the Alpine municipal wells) will not precisely track the reservoir elevations, but will present a delayed and much-damped response as local groundwater gradients adjust to those changes, superimposed on an overall groundwater flow towards river/reservoir discharge. Because of the lagged response, there are likely times when groundwater flow is temporarily reversed, i.e. out of the reservoir and into the surrounding aquifers. For example, on the 7/7/2008 date of water level measurements (Table 5.1), the reservoir reported a water level elevation 4 feet higher than the static water level in the Alpine wells. (This phenomenon is discussed further below in association with the "Megawell".)

Table 5.3 Pump Test Data – Alpine Wells 1, 2, and 3

Pumping Water Levels (ft) - 9/13/2024 - Well No. 2 running			
This Study	(114.48)	146.48	133.11
	No. *2 on for "several days" prior to measurements; No. 3 on for 30 hrs; No. 1 well off for 22 hrs, but reflects drawdown from Nos. 1 and 2 (a pumping level would have been lower).*		
Pumping Water Levels (ft) - December, 2024			
Depth-to-Water (ft)	106	110 (approx)	114.2
Discharge (gpm)	455	445	361
	Discharge Rates measured for this study April 4, 2025		
Drawdown (ft)	15	20 (approx)	19.4
Specific Cap (gpm/ft)	30.3	22.3	18.6
Previous Pump Testing			
SEO Statement of Completion	300 gpm; 24 hr; 25' drdn; spec cap 12 gpm/ft	330 gpm; 5 hr; 14' drdn; spec cap 23.6 gpm/ft	600 gpm; 1 hr; 67' drdn; spec cap 9.0 gpm (see text)
Hinckley (2005)	380 gpm; 7 days; 15' drdn; 25 gpm/ft	370 gpm; 16 days; 26' drdn; 14 gpm/ft	
Hinckley (2006)	900 gpm; 24 hr; 63' drdn; 14 gpm/ft	1010 gpm; 6 hr; 53' drdn; 19 gpm/ft	
Rendezvous (2009)	375 gpm; 14' drdn; 25.8 gpm/ft		800 gpm; 3 hr; 42' drdn; 19.0 gpm/ft

5.3.2 Well Conditions

Table 5.3 presents past pump testing and the cursory drawdown measurements for the present study on December 10, 2024. Aquifer water levels at the time of these measurements were likely near seasonal lows, but reflect 5 - 17 hours of water level recovery (Table 5.1). The pumping water levels measured in September reflected many weeks of aggressive pumping, including inter-well interference drawdown.

Specific capacity values (gpm per foot of drawdown) are provided to allow comparison to past tests conducted under different background groundwater levels. For the most part, the December 2024 specific capacities are consistent with past results, i.e. approximately 20 gpm/ft under 300-400 gpm production rates.

The performance of Well No. 1 may have improved somewhat since the original test due to aquifer development over time, and both Well Nos. 1 and 2 show the expected decrease in specific capacity at much higher pumping rates (e.g. the 900 gpm test at Well No. 1). Well No. 2 specific capacities

are similar across a range of pumping rates; understanding that the 2005 test was substantially longer than the others. (The specific capacity of all wells will decline under extended pumping periods.) The relatively poor performance reported on the Statement of Completion for Well No. 3 was a function of incomplete development (the clearing of drill cuttings and loose sediment from the well). Additional testing following aggressive development work is reflected in the "Rendezvous (2009)" values, which are similar to our 2024 measurements.

Past studies have provided considerable analysis of the three current Alpine wells (e,g, Hinckley, 2005; Hinckley, 2006; Rendezvous, 2009), although those tests have been complicated by widely varying "static" water levels and the need to maintain water production to meet contemporaneous municipal demands. The reader is referred to those reports (appended to the Rendezvous (2009) report) for full details.

Table 5.4 is copied from Rendezvous (2009). It provided an analysis of the Alpine well testing with respect to projecting expanded production opportunities, including inter-well drawdown impacts. (Pumping of any one of these wells produces a drawdown increment in its neighboring wells.) At that time, Well Nos. 1 and 2 were equipped with 350 gpm pumps and Well No. 3 had not been brought into the system. As measured on 4/8/2025 for the present report, production from Alpine Well Nos. 1, 2 and 3 into the pressurized (82 psi) water system were 455, 445, and 361 gpm, respectively (and individually). While these discharge rates reflect an increase over the 2009 values, comparison with Table 5.3 suggests there is additional capacity available, depending on well management strategies, equipment, and season. For example, individual wells may be equipped for maximum production in the event all three wells are not available, but routinely pumped at lower rates to maximize wellfield efficiency.

Well No. 3 appears to have the most additional capacity under either scenario (alone or together). Although less productive than Well No. 1 in terms of specific capacity, Well No. 3 benefits from its large available drawdown (e.g. see Figure F).

Table 5.4 Alpine Well Field Summary & Production Projections

	Well No. 1	Well No. 2	Well No. 3
Available Drawdown from 90 ft. "static" (ft)	90	60	120
Local Transmissivity (gpd/ft)	20,000	34,000	25,000
Maximum Sustained Capacity Alone (gpm)	750	750	1,000 (sediment may be an issue)
Maximum Sustained Capacity Together (gpm)	400 500 500	400 300 500	800 900 500
Modeling based on wellfield-wide transmissivity approx. 40,000 gpd/ft; storage coefficient - 0.03			

The Table 5.4 note on Well No. 3 reflects the documented development and testing experience at that well, as it produced considerable sediment under high-discharge pumping. (Well Nos. 1 and 2 may have had the same experience, but no detailed records for those wells are available.) As noted in Rendezvous (2009), installation of a higher-discharge pump in this well should be accompanied by a period of additional well development.

Well No. 2 is problematic due to the placement of slotted casing in the 101-110 and 138 - 144 feet intervals (see Figures E and F). As noted in the 2009 report and observed in the December 2024 testing for the present report, once the water level in this well is drawn down into these slots, water cascades into the wellbore, entraining air. (The expelling of this air at the wellhead is apparent as a sputtering in the air-release valve on Well No. 2.) The "available drawdown" for Well No. 2 in Table 5.4 was calculated ignoring these upper-level casing slots. Figure E shows the pump in this well is set just below the casing in the open-hole portion of the well. This maximizes the drawdown available above the pump setting, but exposes the pump to air entrainment when the pumping water level falls below 110 feet. (While this may decrease pump life, the experience of the Alpine wellfield appears to indicate the impact is not severe.)

At times of high aquifer water levels, e.g. the "60 feet" static water level measured 4/19/2006, Well No. 2 would have 50 feet of available drawdown above the casing slots at 110 feet. At the specific capacity measured for the present report, 20 gpm/ft, a maximum production rate of 1,000 gpm is suggested. Equipping the well with a variable speed pump and keying discharge rates to contemporaneous water levels would allow maximum production while avoiding air entrainment. Alternatively, the limited amount of air entrainment could simply be accommodated through air-release equipment (as is presently the case) and acceptance of a potentially reduced pump life.

5.3.3 Pump Performance

With a pumping water level of approximately 110 feet (Table 5.1) and the observed discharge pressure of 82 psi, the total dynamic head for these wells is approximately 300 feet.

The most recent data identified for this report indicates the pump in Well No. 1 is a Goulds 7THC 75 hp, installed in 2021; equipped with a shroud because it is set below the top of the screened interval (Bob Ablondi, pers comm. 3/5/2025). Comparison of the measured discharge and pumping water level of Well No. 1 with the manufacturer's performance curve for this pump (see Figure G in Large Figures) suggests near-expected performance.

Based on the 2010 system upgrade specifications, Well Nos. 2 and 3 have Robbco 75 hp 7THE-5 stage pumps installed. (No records of subsequent replacements have been found.) Comparison of the measured discharge and pumping water levels of these wells with the manufacturer's performance curve for this pump (see Figure H in Large Figures) suggests satisfactory performance at Well No. 2, but significant underperformance at Well No. 3. Figure H indicates the SCADA pre-set discharge rate for Well No. 3, 515 gpm, would be reasonable for this pump were it operating up to specifications. This suggests the "515" value may have been correct at one time.

Based on this evaluation of pump performance, it was recommended to remove the pump and drop pipe in Well No. 3 for inspection. This was completed in July 2025 and the pump impellers were found to be considerably worn. The occurrence of sediment in the discharge from Well No. 3 was noted upon its initial completion (see Section 5.3.2, with further discussion in Section 5.6). Thus, the bulk of pump wear may have occurred early in the pump's life, as sediment continued to be cleared from the well. Absent an immediate replacement, the worn pump was reinstalled in the well. As of this writing, a new pump has been ordered but not yet installed. It is expected to usefully increase the output of the well.

5.3.4 Conclusions

- Well Nos. 1, 2, and 3 continue to perform well, have access to a deep-seated aquifer with abundant recharge, and should remain the core of the Alpine municipal water system.
- Pump performance in Well No. 3 should be further evaluated, with equipment repair/replacement if indicated.
- Additional pumping capacity may be available in all three wells at times of high aquifer water levels.
- Wells should be equipped with water-level monitoring equipment to allow flow modulation in response to large seasonal changes in background aquifer water levels.

5.4 MEGAWELL

5.4.1 Aquifer

Figure I in Large Figures provides a schematic cross section of our current understanding of the hydrogeology at the Megawell (modified from Sunrise, 2018). With the bedrock Salt Lake Formation at 100 feet beneath the alluvial deposits, the Megawell appears to have encountered a particularly large thickness of productive material, i.e. something of a low spot in the topography upon which the alluvium was deposited.

Based on the materials encountered by the Alpine-area wells, Well Nos. 1, 2, and 3 draw water from the older bedrock, limestone formations, whereas the Megawell is completed in the alluvial deposits associated with the Snake River terrace.

The full depth of this well is 142 feet, but the bottom 42 feet were described as "cemented gravel", "consolidated". The water-production characteristics of this lower 42 feet are unclear, but we interpret this as Salt Lake Formation and the "cemented" and "consolidated" descriptors suggest substantially lower permeability than the overlying "sand & gravel". That the well is only screened to a depth of 102 feet, with blank casing across the remaining 40 feet, similarly indicates the driller's judgement of a lack of water-production potential from the Salt Lake Formation.

This stratigraphy is critical to sustainable production from the well because the local water table, and thus the thickness of saturated sand and gravel, varies considerably in response to the water levels in adjacent Palisades Reservoir. This relationship is shown schematically on the Figure I cross-section, with the lowest aquifer water levels perhaps restricting the productive aquifer at the Megawell to a narrow channel.

Contemporaneous reservoir and Megawell water level elevation data are plotted on Figure J in Large Figures. The lower plots are simply expanded views of select portions of the data from the upper plot. The normal range in water level elevation in Palisades Reservoir is between approximately 5570 feet and 5620 feet (full), although in some years the elevation has dropped to 5510 feet. As indicated on the figures, once the reservoir elevation drops below 5520 feet, the Snake River is free flowing adjacent to the North Alpine area and lower reservoir elevations are irrelevant as the river becomes the base level to which local groundwater gradients adjust.

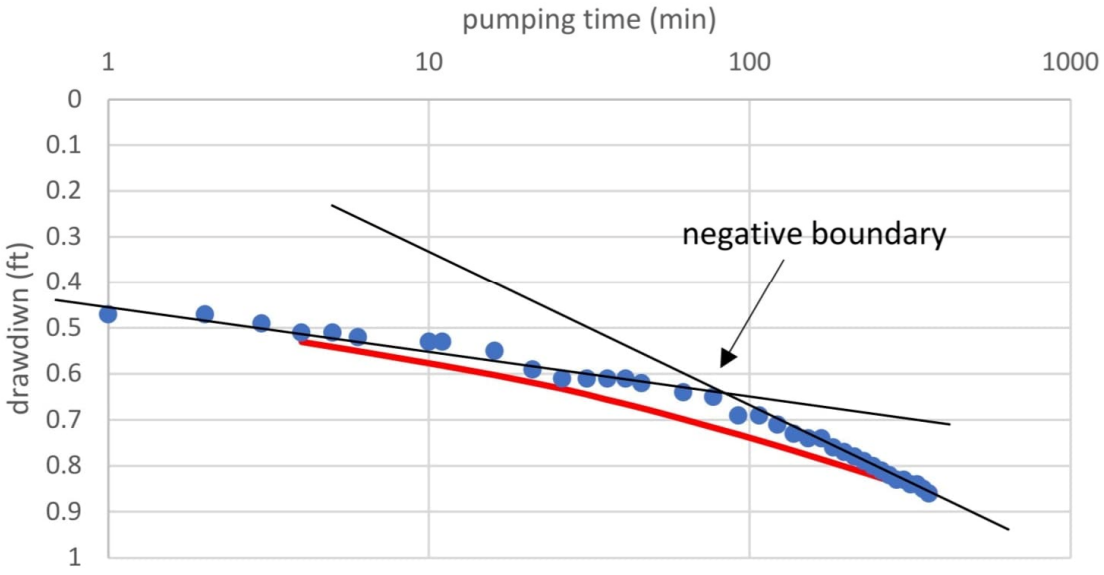

Figure 5-2 Megawell Testing 12/2024

The lower plot on Figure 5.1 presents long-term monthly average reservoir water elevations. Favorable to Alpine well production is the coincidence of the months of high reservoir levels and the months of high municipal water demands, i.e. June and July. August and September are problematic in this regard, as summer water demands have not abated, but the reservoir typically is drawn down to meet downstream irrigation demands.

The elevation of the base of the productive aquifer, i.e. the alluvial deposits, at the Megawell appears to be at approximately 5540 feet. Thus, were the local groundwater table to fully adjust to a reservoir level lower than that, the primary aquifer at the Megawell would be dry. Although a datalogger was installed in the Megawell 10/18/24, the logging instrument was lost down the well during attempted retrieval on 4/8/2025. Still, the periodic manual measurements of well water

levels show the expected decline with reservoir levels - lagged by a couple of months - followed by a rise as the reservoir is re-filled. The line drawn to connect the measurements on Figure J (in Large Figures) is conjectural as to "bottom" and the timing of the turn-around in aquifer water level.

Based on the trajectory of aquifer water level at the Megawell, it appears unlikely to fall below elevation 5585 if Palisades Reservoir is operated normally, i.e. seasonal low elevation of 5560 - 5570 feet. This leaves a saturated aquifer thickness of 45 feet in the well, which was demonstrated to produce prolifically in our December 2024 testing.

Figure I in Large Figures illustrates the likely quite variable character of groundwater flow in the area. Sunrise (1995) presented a regional groundwater gradient from east-to-west (i.e. from the upland areas groundwater flows west and south toward the river) but noted, "There are likely periods of time in which the general groundwater flow is stagnated or reversed due to reservoir level changes and local areas of concentrated groundwater withdrawals."

Rendezvous (2002) documented steep groundwater gradients westward and southward off the highlands east of the Megawell. For example, the water level elevation in a well on the bench southeast of the Megawell was nearly 50 feet higher than at the Megawell.

The December 2024 testing of the Megawell is presented on Figure 5-2. (Note the log time scale, i.e. a much larger time increment between data points as one moves from left to right across the plot.) The linearity of the drawdown plot over the first 2,000 minutes (1.4 days) indicates an "ideal" (Theis Equation) aquifer with a transmissivity of approximately 250,000 gpd/ft, i.e. the very high productivity expected from the texture (gravel) and observed infiltration capacity of the alluvial deposits. (Discharge of 390 gpm to the ground surface for 4 days created a pond of less than 3,000 ft^2 surface area.) Assuming this production came uniformly from the 46 feet of saturated alluvium present at the time of the test, an aquifer hydraulic conductivity of 5,400 gpd/ft^2 is indicated.

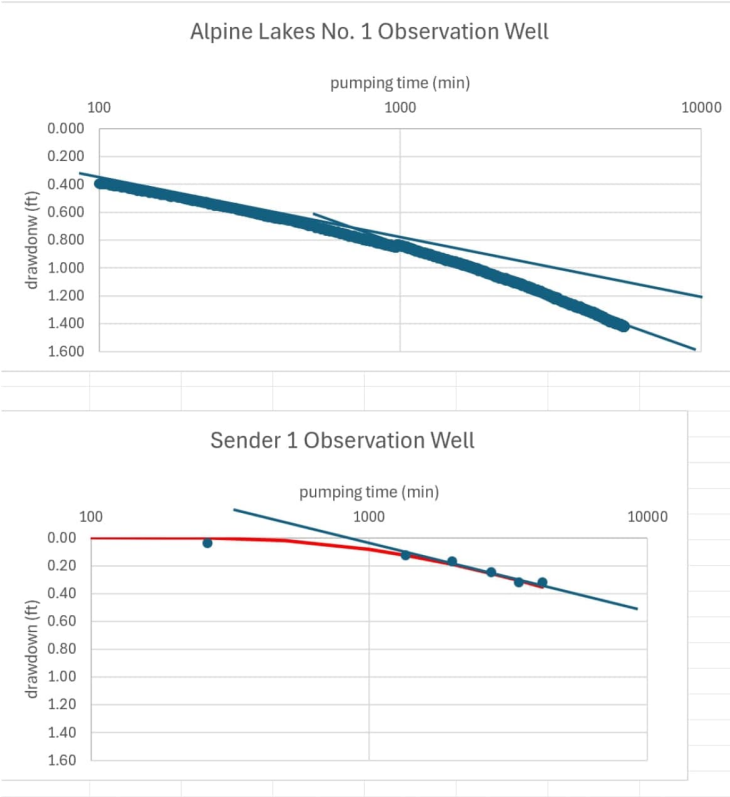

Figure 5-3 Megawell Test Observation Wells 12/2024

Beyond approximately 2,000 minutes, the slope of the drawdown plot (Figure 5-2) approximately doubles. This indicates the presence of a "boundary" in the aquifer, most likely a significant reduction in thickness of the prolific gravel deposit encountered by the well. Nonetheless, the 4-day drawdown in the well created by the continuous production of 390 gpm was only 1.8 feet, for a specific capacity of 216 gpm/ft.

The December 2024 test of the Megawell included two observation wells, for which data are plotted on Figure 5-3 (see Figure 5-4 for locations). Based on location, depth, and lithology, both wells are completed in the same, alluvial aquifer as the Megawell. The Alpine Lakes #1 and Sender 1 wells are 81 and 89 feet deep, respectively, and are 129 feet and 870 feet, respectively, from the Megawell.

Figure 5-4 Megawell Test Map 12/2024

The Alpine Lakes #1 well, for which high-frequency water level measurements were recorded with a transducer datalogger, shows the same drawdown pattern as the Megawell, i.e. time-drawdown relationship indicating an aquifer transmissivity of 216,000 gpd/ft over the first day, with subsequent data indicating an effective transmissivity approximately ½ that value. As with the Megawell, this indicates the presence of a substantial reduction in aquifer transmissivity (akin to a complete termination of the aquifer) at some distance away. Located 129 feet from the Megawell, the Alpine Lakes #1 well is sampling a large portion of the aquifer and its drawdown data are not impacted by the wellbore hydraulics of the pumping well. Thus, the storage coefficient of 0.05 indicated by the observation well data is an accurate measure of this parameter. This is a reasonable value for this unconfined aquifer.

The Sender 1 well, much further from the Megawell, began to "see" the pumping of the Megawell in approximately 10 hours. The Figure 5.3 data were collected manually, but also indicate the presence of a highly transmissive aquifer extending across the intervening area. Quantitative aquifer parameters indicated by these data are: transmissivity = 206,000 gpd/ft; and storage coefficient = 0.06.

The Statement of Completion for the Megawell reported an 8-hour pump test at 2500 gpm produced only 2 feet of drawdown, i.e. specific capacity of 1250 gpm/ft, with a "full" aquifer (80

feet of saturation). However, this test discharged to the surface at the wellhead, providing opportunity to recycle water via rapid infiltration to aquifer recharge.

The 11/14/18 test at 435 gpm for 6 hours produced 0.86 feet of drawdown, i.e. a specific capacity of 506 gpm/ft, with 52 feet of saturation. However, neither the Statement of Completion test nor the 2018 test were run for time long enough to experience the aquifer boundary(s) expected to exist, and as at least partially revealed in the December 2024 testing for the present report. The December 2024 test was discharged through the existing transmission lines at a distance of 2,200 feet from the well to preclude discharge/infiltration recycling.

The lithologic log of the Megawell provides no information on variations in lithology through the alluvial section. It is all described as simply, "sand & gravel". Assuming the permeability is similarly consistent, the aquifer likely remains quite productive throughout, but no testing has been completed at lower static water levels. (It is not unreasonable to assume that, if anything, aquifer permeability increases with depth, as coarser material may have accumulated in the low spots in the sub-alluvium topography.)

A first approximation of the sustainable production of the Megawell is guided by the December, 2024 4-day specific capacity of 216 gpm/ft and the saturated thickness of 46 feet. Limiting drawdown to 1/3 of the saturated thickness (leaving 30 ft of saturation) suggests a potential production rate of 3,200 gpm. However, this calculation makes no allowance for lower background water levels or the additional decreases in aquifer thickness or permeability likely present in the surrounding aquifer.

5.4.2 Well Conditions

It appears the Megawell was constructed at a time of relatively high groundwater levels. This provided a particularly favorable view of the well's production capabilities, but unfortunately, led to placement of the screened section such that portions of it are above the water table at less favorable times of year (see Figure F in Large Figures). As examined in December 2024, for example, the depth to water of 57 feet left the upper 15 feet (25%) of screen above the water table.

While theoretically exposing the pump to air entrainment from water cascading into the wellbore, the relatively small drawdowns expected in this prolific well would minimize this effect.

5.4.3 Pump Performance

2019 communication to Sunrise Engineering from the pump installer indicates the pump in the Megawell was set at a depth of 115 feet. Presumably, at that depth, the pump is equipped with a shroud to ensure water entering the well from above the pump is drawn past the pump motor to ensure adequate cooling. This setting also accommodates the large fluctuations in the static and pumping water levels in this well.

5.4.4 Conclusions

- The Megawell was completed in a particularly favorable location, i.e. a relatively large thickness of highly-permeable sand and gravel. This makes the well extraordinarily productive (hence the name, "Megawell").
- The particularly productive deposits in which the Megawell is completed extend hundreds of feet from the well, but are not continuous across the larger north Alpine area.
- The local transmissivity of the aquifer is approximately 210,000 gpd/ft and the storage coefficient is approximately 0.05. This transmissivity is based on testing with 45 feet of saturated aquifer. At times of higher background water levels, saturated thickness is as much as 77 feet, and the transmissivity of the aquifer would be proportionately greater than that tested here.
- Water levels in the aquifer from which the Megawell draws are intimately tied to the water level elevations in Palisades Reservoir, which vary as much as 100 feet. Because the productivity of the well is a function of the saturated thickness of the aquifer, production potential varies from several thousand gpm when the aquifer is "full", to relatively little were the aquifer to decline to "empty".
- 1,200 gpm is recommended as a conservative design rate for the Megawell going forward. This rate would accommodate substantially lower aquifer water levels than have been tested to date and substantial decreases in aquifer transmissivity as sustained production draws upon areas of the aquifer beyond the reach of the testing conducted to date.
- Additional testing at rates up to 2,000 gpm for durations on the order of weeks, at a time of relatively low water levels, with careful attention to remote discharge of test water, would usefully refine understanding of this aquifer if production rates in excess of the design rate recommended above are desired.
- There is no way to avoid setting a production pump within the screened interval of this well. To ensure a pump setting sufficiently deep to accommodate potential fluctuations in aquifer water levels, a depth of at least 90 feet is recommended, equipped with a pump shroud to ensure adequate cooling flow across the pump motor.
- Similarly, if high discharge rates are desired, a program of regular water-level monitoring, either through SCADA connected transducer or routine manual measurement, should be established. Once a clearer relationship between aquifer and reservoir water levels has been established over several annual cycles, it may be possible to confidently assess pumping rates without reference to water level contemporaneous measurements.

5.5 FLYING SADDLE

Sunrise (1995) describes the Flying Saddle Lodge as having "two wells which supply the motel rooms and other facilities associated with the motel. Additionally, there is a well which provides irrigation water for the surrounding lands and the area west of the motel." The Flying Saddle wells subsequently became the source for the North Star Utility company, which supplied water to various properties on the north side of the Snake River. Rendezvous (2009) state, "The North Star Utility company has also added several new supply wells on the Flying Saddle property adjacent to the Snake River. Total current capacity is estimated

to be about 200 gpm." Apparently, the "several new supply wells" are simply the two existing Flying Saddle wells, as that report goes on to state, "Several exploratory wells have been attempted on private land away from the general north-south fault line ... on the north side of the river. However most of the wells attempted reported yields less than 25gpm." The "200 gpm" value appears to be associated with a cancelled water right enlargement; it is unclear whether that flow rate was ever measured.

The North Star service area and associated infrastructure was subsequently absorbed into the Town of Alpine municipal system once a water transmission line was constructed across the river. The two original Flying Saddle wells were investigated for the present report, as they are the only wells understood to have become part of the Town of Alpine system. The wells were inoperable in that capacity at the time of the present investigation due to mechanical failures at the point of system interconnection.

5.5.1 Aquifer

Rendezvous (2002) examined the area of the Flying Saddle wells in association with the North Alpine Service and Improvement District (NAISD; "Reese Subdivision"), which is supplied by 2 wells immediately north across the highway, 750 feet from the Flying Saddle wells. These wells, John Clinger No. 1 (permit 102467) and John Clinger No. 2 (permit 102468) are of comparable depth to the Flying Saddle wells, i.e. 109 and 150 feet, respectively.

Based on the sketchy lithologic and completion data reported for the NAISD wells, the source was suggested to be some combination of the Salt Lake Formation and the underlying limestone strata, with local permeability enhancement due to fracturing along the valley-bounding fault system (see Figure C in Large Figures).

Lithologic logs for both the Flying Saddle and NAISD wells are cursory and are dated 6, 14, and 48 years after the actual construction of the wells. The NAISD wells report "gravel" to 60 feet, and "limestone and shale" to total depth; the Flying Saddle wells report "clay and gravel" to 40 feet, and "gravel and sand" to total depth. Thus, a potential paleo-channel aligned with the current Snake River may be indicated (i.e. sand and gravel deposits extend deeper, closer to the river).

Pump testing of NAISD Well No. 2 at 50 gpm for 13 hours produced 7.5 feet of drawdown, for a specific capacity of 6.7 gpm/ft. (Well No. 1 was used as an observation well.) Drawdown analysis indicated an aquifer transmissivity of approximately 3,300 gpd/ft.

The association between groundwater levels in area wells and the water level in Palisades Reservoir was noted, e.g. a 50-feet variation in static water levels even this far upstream of the Palisades Dam. The available drawdown in the NAISD during times of low water levels was identified as a constraint on expansion of well discharge rates. (Testing was performed in July, 2002, a time when the Snake River was free flowing adjacent to this area.) Comparisons with 1995 groundwater level measurements indicated there are times when the groundwater flow gradient is from the river/reservoir towards the wells rather than normal situation of groundwater flow towards the river.

5.5.2 Well Conditions

Table 5.5 summarizes the limited data available on the history and construction of the two Flying Saddle wells. "Well #2" was reportedly drilled by the US Bureau of Reclamation in approximately 1949. Data on file with the State Engineer's Office were submitted from memory of lost files and conjecture by the long-time property owner in 1995. "Well #1" was drilled in 1982, with information presumably recorded by the driller.

(These two wells are only 80 feet apart and have been equipped with identical wellheads. Table 5.5 draws data from the Statements of Completion for the two wells on file with the Wyoming State Engineer's Office and from direct measurements for the present study. However, the assignment between well numbers (1 and 2) and well location (north and south) is ambiguous. The wellhouse assignments of "1" and "2" appear to be reversed as number "1" is the more productive, which better matches the completion information for No. 2.)

Static and pumping depths-to-water were measured in the two wells on 12/11/24, with discharge to the surface at a distance of 400 feet (i.e. far enough away to preclude water recycling over these short tests).

Table 5.5 Flying Saddle Well Summary

	Well #1	Well #2
Completion Date	5/5/1982	1949
Depth (ft)	162.9 or 120??	120
Open Interval (ft)	80 - 160 torch slots	open-ended casing at 120(?)
WBZ	"gravel & sand"	- unknown -
Water Level (date)	40 (5/5/82)	60 (unknown)
SOC Q (gpm)	50	50
SOC Test	80 gpm; 1 hr; 6' drdn; 13.3 gpm/ft	- none -
SOC SWL		60
Dec 11, 2024 Investigations		
	North Well	South Well
Static Water Level (ft)	79.85	80
Pumping Water Level (ft)	81.85	102.4
Rate (gpm)	95	43
Drawdown	2.0	22.6
Specific Capacity (gpm/ft)	47.5	1.9

Figure F in Large Figures illustrates the basic construction of the Flying Saddle wells, including reference to water elevations in the wells and adjacent Snake River.

Not surprisingly, the water levels in the Flying Saddle are influenced by the level of Palisades Reservoir, when it is sufficiently full to extend that far upstream. The free river elevation is approximately 5570 feet at Flying Saddle; the full reservoir is at 5620 feet; the reservoir level on the day of our December 2024 testing was 5572 feet. Thus, our testing was likely near seasonally low water levels in the aquifer.

With a surface elevation of approximately 5650 feet, the reported open intervals of the wells are below 5570 and 5530 feet, for wells #1 and #2, respectively. Thus, at low water levels (e.g. at the time of our December 2024 testing), the north well drew the pumping water level in the well down just to the top of the casing slots (assuming the north well is #1) and even with the river level. Statement of Completion information for well #2 is sparse (and somewhat speculative), but suggests pumping water levels remain within solid casing despite the much greater drawdown.

The much higher specific capacity in the north well measured for the present report relative to that remembered for submission with the Statement of Completion may be due to well development over time or simply errors in memory and reporting. In any case, as observed in December 2024, the north well is significantly more productive than the south well in terms of drawdown per unit of discharge.

5.5.3 Pumps

No investigations were made of pump performance relative to manufacturer's specifications.

5.5.4 Conclusions

- Although far less tested than the aquifer at Alpine Well Nos. 1, 2, and 3, the aquifer at Flying Saddle may have comparable productivity given adequate well construction. The cursory well logs available for adjacent wells suggest deeper drilling could access the deep and more extensive fractured limestone bedrock aquifer.
- The aquifer at Flying Saddle has similar groundwater level vs. Palisades Reservoir issues as elsewhere in the Alpine area, although as the reservoir level drops, the river channel is exposed at a much higher elevation adjacent to these wells than at the Megawell, for example. The additional characteristic of close proximity to the river potentially provides more immediate hydrologic connection.
- Little reliable information has been located on the construction or lithology of the Flying Saddle wells.
- Drawdown measurements for this report show the south well to be poorly productive and suggest production has deteriorated substantially over time. The potential contributions of this well to the Alpine municipal water supply as it stands are minimal and inefficient. The production of the well could potentially be restored by downhole cleaning and re-development.

- Drawdown measurements for this report show the north well to be moderately productive, perhaps even having improved over time as the near-well aquifer has been further developed. With repaired interconnection plumbing, this well could contribute on the order of 100 gpm to the Alpine municipal system.
- Downhole video of these wells could identify construction details relevant to optimization of pump settings, production rates, and possible well rehabilitation.
- Long-term reliance on the aquifer at this site would best be established by construction of new, larger-diameter, carefully designed and constructed replacement well(s).

5.6 WATER QUALITY

Table A compiles past analyses of major anions and cations, identifying Alpine-area groundwater as calcium bicarbonate dominated, as expected based on the predominance of limestone in the source deposits. Well Nos. 1 and 2 were extensively sampled for all relevant drinking water quality parameters in 2004, and Well No. 3 and the Megawell were extensively tested upon construction (2009 and 2016).

As the source of an EPA-certified Public Water Supply, these wells are also routinely sampled for those constituents for which EPA has established drinking water standards (listed in the final two columns of Table A, found in Large Tables). Those analyses are the basis for annual Consumer Confidence Reports (CCR) which are available to system users. Review of those reports for the Town of Alpine, i.e. Well Nos. 1, 2, and 3, from the last 5 years populates the "CCR" column of Table A. (Select CCR examples are provided in Appendix E.) Although there have been scattered "violations" with respect to sampling schedules, no exceedances of standards have occurred.

(Despite consistently reporting "ND", i.e. non-detect, for arsenic, the Town of Alpine CCR's include the statement, "While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic." No detection limit is listed with the CCR's "ND", but the Table A analyses for arsenic found a maximum of 0.002 mg/L, which is one fifth of the drinking water standard.)

Finally, the Rendezvous 2009 report noted, "although the great bulk of mobilizable sediment appears to have been removed from Alpine Well No. 3, the well will likely produce additional fine sediment (giving it a cloudy appearance) if pumped at rates approaching 800 gpm. Higher rates would likely entrain sediment that was not mobilized during the 800 gpm test pumping.

Basically, it is reasonable to assume that the Table A values fairly characterizes current water quality in the absence of upsets. Alpine Well Nos. 1, 2, and 3 have been found to consistently produce groundwater of excellent quality, easily meeting all EPA Drinking Water Standards (Primary and Secondary).

To augment the comprehensive sampling of the Megawell in 2018, out of concern that the sustained high-discharge pumping for the present study might mobilize contamination from the surrounding aquifer, serial samples were taken for nitrate and chloride sampling during that test. (These two constituents were chosen as common markers of septic system contamination.)

Table 5.6 Megawell Serial Water Quality (December 2024)

Gallons Pumped	Nitrate (mg/L)	Chloride (mg/L)
93,600	0.36	2
521,430	0.37	2
950,430	0.37	2
1,514,760	0.36	2
2,042,430	0.37	2

As listed in Table 5.6, there was no significant change in either parameter over the course of the 2+ million gallons pumped from the aquifer. Nor are these concentrations of concern. (The drinking water standard for nitrates is 10 mg/L; there is no standard for chloride.)

While the Flying Saddle wells supplied the North Star Utility, they too produced CCRs. The most recent edition reviewed for this report was for 2015, which provided the values compiled in Table A. An earlier report, for 2011, cited the detection of coliform bacteria in 5% of monthly samples and that "one [sample] is also fecal coliform, or E-Coli, positive". The status of chlorination facilities at that time is unclear and the Flying Saddle motel has since been connected to the Town sewer system.

Protection of groundwater quality from contamination is a concern for all systems. This is particularly true of Alpine, given the extraordinary permeability of surface materials and the unconfined nature of the developed aquifers. Basically, any objectionable substance on the surface (e.g. accidental spills or overapplication of herbicides, pesticides, fertilizer) or shallow subsurface (e.g. leaking storage tanks, wastewater disposal systems) is likely to travel quickly and easily downward to the groundwater table. This has been dramatically demonstrated by the soil infiltration capacity being sufficient to preclude runoff from multi-day pump tests with 400 - 1,000 gpm discharge.

Groundwater flow is a function of the permeability and thickness of aquifer materials and of the gradients driving groundwater from points of recharge to points of discharge. In most situations, groundwater flow serves to dilute contamination entering the aquifer via infiltration from the surface. Here, however, groundwater gradients change dramatically on a seasonal basis and are likely temporarily reversed as a result of changing water levels in Palisades Reservoir. For the Megawell, for example, there may be a period of relatively stagnant groundwater flow as local groundwater levels rise to "catch up" with the rising reservoir each spring. Contaminant dilution by groundwater flow is minimal at such times, potentially allowing contaminant levels to temporarily build up.

A cursory "Source Water Protection for Alpine, Wyoming" was prepared in 2004 as part of a statewide survey of public water supplies (Trihydro, 2004). This was prior to the construction of Well No. 3 and the abandonment of the Mill Creek Spring system. Figure K is the relevant portion of the map produced by that investigation.

Based on generalized hydrogeologic parameters, that study "delineated three contaminant inventory zones ... for the purpose of inventorying possible sources of contamination that could affect drinking water quality":

Zone 1 - “accident prevention”, “within a 100 foot radius of the well”;
Zone 2 - “attenuation zone”, the groundwater “2-year travel time” to the well; and
Zone 3 - the groundwater 5-year travel time to the well

These three zones are the progressively larger shaded areas around Alpine Well Nos. 1 and 2 on Figure K. Although based on very limited hydrogeologic investigation, the delineated areas are qualitatively correct, indicating that the area around the wells and including direct recharge from the Greys River are of greatest concern with respect to well contamination by local land uses. Inclusion of Well No. 3 would not have materially changed the results of that investigation.

(The large shaded area south and west of the wellfield identifies the area of potential contamination concern with respect to the long-abandoned spring system.)

The 2004 source water protection study tagged the vulnerabilities of having unfenced wellheads as well as the unconfined nature of the aquifer. Fortunately, the Alpine Well Nos. 1, 2, &3 wellfield is located at the edge of town and is largely removed from major areas of commercial development.

No specific source water protection programs have been developed for the Megawell or the Flying Saddle wells, but the concepts are the same. Both receive recharge from their immediate surroundings, and both are subject to seasonal groundwater flow stagnation or reversal as a function of pumping water levels and water levels in Palisades Reservoir.

Particularly for the Megawell, which lies in the midst of potentially developable parcels, adjacent land use should be constrained to minimize potential aquifer exposure to hazardous materials. The extension of the town sewer system throughout this area has substantially reduced the exposure of the Megawell to the routine, low-grade contaminant flow from septic systems.

The close proximity of the Flying Saddle wells to the Snake River, with pumping water levels below the water level in the river, adds an additional element of water-quality vulnerability at that location, i.e. direct recharge from the river.

Finally, the 2008 Source Water Protection Plan recommended fencing wellheads to prevent vandalism or malicious contamination. In areas of such high infiltration rates, casing seals may have limited value, but have been required for new public water supply wells for some time. According to the Statements of Completion, casing seals are reported as follows:

Alpine Well No. 1 - surface casing used, no seal provided
Alpine Well No. 2 - surface casing used, seal provided
Alpine Well No. 3 - surface casing used, no seal provided, but well was drilled with casing advance
Megawell - surface casing used, no seal provided
Flying Saddle No. 1 - surface casing used, no information on seal
Flying Saddle No. 2 - surface casing used, seal provided

None of the wells addressed in this report are fenced or have locking caps.

5.6.1 Conclusions

- The natural groundwater quality of the Alpine-associated aquifers is excellent.
- The primary recharge area for Well Nos. 1, 2, and 3 is across undeveloped, US Forest Service administered lands to the south and west, providing a substantial measure of long-term protection of groundwater quality.
- Recharge areas for the Megawell include the undeveloped uplands to the east, but also the immediately surrounding area of developed residential and commercial use and the transportation corridor of Highway 89. Measures to limit the potential for contamination in this area should be considered.
- Recharge for the Flying Saddle wells likely comes primarily from the lightly-developed uplands to the south, but, like all the other wells, they too are vulnerable to contaminants infiltrating from the local surface.
- Basically, any objectionable substance on the surface (e.g. accidental spills or overapplication of herbicides, pesticides, fertilizer) or shallow subsurface (e.g. leaking storage tanks, wastewater disposal systems) is likely to travel quickly and easily downward to the groundwater table.
- Sediment production from Alpine wells may also compromise delivered water quality. If the Megawell is equipped with a higher capacity pump, or if production from the existing Alpine wells is expanded, attention should be given to sediment production and the potential need for additional, aggressive well development.

5.7 WATER RIGHTS / REPORTING

Table 5.7 presents the water rights relevant to this project, i.e. those for the existing and prospective Town of Alpine municipal water supply. (Permits and Statements of Completion from the files of the Wyoming State Engineer's Office are provided in Appendix F.)

Table 5.7 Town of Alpine and Associated Water Rights

Well	Permit	Priority	GPM	Use	Notes
Mill Cr. Spring	24104	7/9/73			developed spring
	6910E				
Alpine No. 1	39163	7/20/77	200	MUN	
	78067	12/27/85	100	MUN	enl of gpm; total = 300
	98662	3/27/95	50	MUN	enl of gpm; total 350
	189882	10/23/08	350	MUN	enl of gpm; total 700
Alpine No. 2	77717	6/23/88	375	MUN	
	189883	10/23/08	325	MUN	enl of gpm; total 700
Alpine No. 3	198240	1/3/12	650	MUN	

Some individual permits have annual volume limits. Permit 198240 sets a volumetric cap for all three Alpine wells (with enlargements) of no more than 400 ac-ft on a 10-year average and 500 ac-ft in any single year. This cap will change if the Megawell is added to the system.					
Flying Saddle #1	101241	12/12/95	50	MIS	1.5 ac-ft/yr volume cap
	178318	9/12/06	50	MIS	enl of gpm; 100 gpm total 113.5 ac-ft/yr volume cap
	182139	6/12/07	200	MIS	"Cancelled" for lack of followup.
Flying Saddle #2	101242	12/12/95	60	MIS	permit for a long-existing well 1.5 ac-ft/yr cap
	178319	9/12/05	50	MIS	113.5 ac-ft/yr cap
	182140	6/12/07	200	MIS	"Cancelled" for lack of followup.
"Megawell"	206257	9/16/16	500	MIS	official name is ""Excel Development Well No. 1"; 350 ac-ft cap
	209144	5/23/18	0	MIS	enl of annual cap and area of use 20 ac-ft cap (this permit)
As of 5/5/2025, application has been made to replace this permit with municipal-use, 2500 gpm, and system-wide volumetric cap of 1800 ac-ft/yr (TFN 47-3-001)					

5.7.1 Well Nos. 1, 2, & 3

Current permits for Alpine Well Nos. 1, 2, and 3, include the following "determination":

The water appropriated under this groundwater permit and the waters of the Greys River and its tributaries have been determined to constitute one source of supply ...

As such, any required regulation of the water rights of the Greys River and its tributaries in the future shall consider this permit under the priority date shown, together with all other rights to use water from the Greys River and its tributaries.

In practice, this determination has no impact on the use of these water rights as there is little to no chance of priority administration of water rights in this area.

Permit 198240 (Well No. 3) consolidates "Additional Conditions and Limitations" for Alpine Well Nos. 1, 2, and 3:

1. A meter acceptable to the State Engineer is required to accurately measure the total quantity of water produced from this well.

2. An annual report shall be submitted to the State Engineer no later than February 15 of each year stating the total amount of water produced from this well and other wells used to supply water to the Alpine Water & Sewer District each month during the previous January 1 to December 31, twelve (12) month period.

3. The report shall identify the well(s) by name(s), location(s), permit number(s) and shall identify the type of meter(s) used for the measurement(s).

4. The report shall contain at least two (2) semi-annual measurements of the pumping water level in this well and the other wells used to supply water to the Alpine Water & Sewer District, as measured after a minimum of twenty-four (24) consecutive hour of pumping. The dates the measurements were obtained and the period of time the well was pumped prior to obtaining the measurements must be specified.

5. The report shall contain at least two (2) semi-annual measurements of the static water level in this well and the other wells used to supply water to the Alpine Water & Sewer District, as measured twenty-four (24) consecutive hours after pumping has ceased. The dates the measurements were obtained and the period of time the well and the other wells were "shut-in" prior to obtaining the measurements must be specified.

6. Water produced from Alpine Water District No. 1 Well, Permit No. U.W. 39163, First Enlargement of Alpine Water District No. 1 Well, Permit No. U.W. 78067, 2nd Enlargement Alpine Water District No. 1 Well, Permit No. U.W. 98662, 3rd Enlargement Alpine Water District No. 1 Well, Permit No. U.W. 189882, Alpine Water & Sewer District Well #2, Permit No. U.W. 77717, First Enlargement Alpine Water & Sewer District Well #2, Permit No. U.W. 189883, and Alpine Well No. 3, T.F. No. 42-5-518 shall not exceed:

a. an annual average combined total of 400 acre-feet.
b. a combined total of 500 acre-feet in any one given year.
c. a total of 4 ,000 acre-feet in any consecutive 10-year period.

7. The State Engineer may, upon written request, waive or modify all or any portion of these conditions and limitations.

The well flow rates measured 4/8/2025 were 455, 445, and 361 gpm, for Well Nos. 1, 2, and 3 respectively. These compare with combined water rights of 700, 700, and 650 gpm, respectively. Thus, all wells are operating within their water right flow rate limits, with substantial margins for expansion.

As far as we have been able to determine, none of the reporting required under items 2 - 5 has been provided to the State Engineer's Office.

Comparison of the use history developed for these wells (see "Demands" section) indicates that both the 500 ac-ft/year maximum and the 400 ac-ft/year average volumetric limitations for the combined production have been exceeded for the last three years (2022 - 2024).

We have found no requests for modification of these permit conditions.

Although similar reporting requirements have become routine for municipal-use groundwater rights across the state, they are rarely monitored or enforced. Reporting requirements typically are subject to review at the point when a user is requesting an enlargement of existing water rights or issuance of additional water rights, as is the case with the Megawell.

Regardless of enforcement exposure, however, these requirements reflect good management practices in providing a groundwater user the information necessary to track changes and identify potential needs for adjustment of water source management.

5.7.2 Flying Saddle

The most recent water right for these wells (182139), includes the following "determination":

> The water appropriated under this groundwater permit and the waters of the Snake River and its tributaries have been determined to constitute one source of supply ...
>
> As such, any required regulation of the water rights of the Snake River and its tributaries in the future shall consider this permit under the priority date shown, together with all other rights to use water from the Greys River and its tributaries.

In practice, this determination has no impact on the use of these water rights as there is little to no chance of priority administration of water rights in this area.

The most recent active permit for these wells (178318) [no "determination"] includes "Additional Considerations and Limitations":

> 1. A meter acceptable to the State Engineer is required to accurately measure the total quantity of water produced from this well.
>
> 2. An annual report shall be submitted to the State Engineer no later than February 15 of each year stating the total amount of water produced from this well each month during the previous January 1 to December 31, twelve (12) month period.
>
> 3. The report shall identify the well by name, location, permit number and shall identify the type of meter used for the measurement.
>
> 4. The report shall contain at least two (2) semi-annual measurements of the static water level in the well as measured twenty-four (24) consecutive hours after pumping has ceased. The dates the measurements were obtained and the period of time the well was "shut-in" prior to obtaining the measurements must be specified.
>
> 5 . The State Engineer reserves the right, upon written request, to modify or waive all or any portion of these conditions and limitations.

The discharge rates measured for the present report are well within the water-right limitations for these wells. We have identified no volumetric information for these wells, but their lack of use in recent years precludes them having exceeded those water-right limitations.

We have identified no reporting under the requirements of the "Additional Considerations and Limitations".

5.7.3 Megawell

The enlargement permit for this well (209144) includes "Additional Considerations and Limitations":

> 1. A meter acceptable to the State Engineer is required to accurately measure the total quantity of water produced from this well.
>
> 2. An annual report shall be submitted to the State Engineer no later than February 15 of each year stating the total amount of water produced from this well each month during the previous January 1 to December 31, twelve (12) month period.
>
> 3. The report shall identify the well by name, location, permit number and shall identify the type of meter used for the measurement.
>
> 4. The State Engineer reserves the right, upon written request, to modify or waive all or any portion of these conditions and limitations.

The pump currently installed in the Megawell is not capable of exceeding the water-right discharge rate. While there is a meter at this wellhead, it is not part of the SCADA system and is not routinely read. For the present study, manual readings were recorded sporadically from Nov. 8 to May 28. These readings document daily average pumping rates from 21 to 153 gpm, with the great majority of days reporting values close to 50 gpm. We have identified no credible volumetric information for the well, but the relatively minor use precludes it having exceeded that water-right limitation.

We have identified no reporting under the requirements of the "Additional Considerations and Limitations".

Regarding permitting through Wyoming Department of Environmental Quality (WDEQ), the Megawell was previously permitted as a drinking water source for the Targhee Place and Alpine Lakes developments under Permit #18-203. We are not aware of any coordination with EPA prior to the well being transferred to the Town. To our knowledge the well and system serving Targhee Place has not been assigned its own public water system number but is being monitored by EPA under the Town of Alpine system.

5.7.4 Recommendations

1. The required water-use reporting should be brought up to date to the extent possible, and routine reporting should be established going forward. The data to fulfill these requirements are readily available through the SCADA system. On-line reporting is available through the Wyoming State Engineer's Office. See: https://seo.wyo.gov/ground-water/metering-and-reporting

2. A program should be instituted to measure and report the required water-level data. This will require manual measurement with a conventional sounder or equipping the wells with down-hole pressure transducers. Ideally such transducers would be incorporated into the SCADA system, allowing real-time monitoring of water levels. On-line reporting is available through the Wyoming State Engineer's Office. See: https://seo.wyo.gov/ground-water/metering-and-reporting

3. Alpine should request enlargement of the system-wide cap on groundwater production, both to reflect recent production history and to establish a margin for future growth. (This process has been initiated in association with re-permitting the Megawell as "Alpine Well No. 4", with a permit flow rate of 2500 gpm, and a system volumetric cap of 1800 ac-ft/yr (TFN 47-3-001).

4. The future use of the Megawell and the Flying Saddle wells will be "municipal", rather than the present "miscellaneous" To approach this as a permit enlargement would require Board of Control action and documentation of past use. Easier would be to simply apply for new, current-day priority permits for municipal use. Given the very low chance of priority regulation, there is little reason to try to preserve the priority date of the existing permits. This is the approach currently being pursued by the Town for the Megawell, i.e. re-permitting as "Alpine Well No. 4" with a 5/5/2025 priority date.

5. Alpine should update SEO records to reflect the current ownership of all wells.

6. Alpine should enlarge the Megawell permit to accommodate the design flow rate and service area once the well is added to the municipal system. (This is being pursued by the Town under TFN 47-3-001.)

7. Item 7 of the existing permits provide for requesting modification of conditions and limitations. Alpine should request modifications:
- a single meter is adequate to monitor the combined production of Well Nos. 1, 2, and 3. This is the current setup, although meter calibration and SCADA integration is deficient.

8. Static water level measurement at one of the three wells (Nos. 1, 2, and 3) is sufficient given the proximity and demonstrated interconnectedness of these wells.

9. To be meaningful, pumping water levels should be measured in close association with static water level. A single measurement, consistently in a month of low aquifer levels would provide sufficient monitoring of well performance. (Both this and the previous modification of reporting requirements would be unnecessary if SCADA-connected pressure transducers were installed.)

5.8 EXPANSION OPPORTUNITIES

Short-term increases in Alpine groundwater production may be available through the existing wells:

> The pump in Well No. 3 appears to be significantly underperforming. Restoration to pump specifications could potentially add 150 gpm of production.
>
> The north well at Flying Saddle has a demonstrated capacity of nearly 100 gpm, apparently available through repair of the connection of the Flying Saddle wells to the Alpine municipal system. Along with the south well, this would add approximately 140 gpm in their current condition and as currently equipped. Additional permitting (SEO, EPA, and DEQ) and associated water-quality compliance monitoring may be required.

The most obvious long-term expansion opportunity for the Alpine municipal water supply is, of course, the incorporation of the Megawell into the system. That opportunity is being pursued by the Town in parallel with the present report. An approximate doubling of the system production capacity is anticipated. While likely to provide a long-term, high-production, sustainable supply, the Megawell is vulnerable to productivity decreases associated with the management of Palisades Reservoir and to water-quality impacts from inappropriate land use and accidental spills in the surrounding area.

Although not creating an increase in production, significant reduction of system leakage may have the potential for usefully increasing the available water supply.

It may be possible to increase production from the existing Well Nos. 1, 2, and 3 wellfield by installing higher-capacity pumps, as guided by the 2009 optimization investigations. Well No. 3 is particularly suited for additional production due to having the greatest available drawdown. A program to maximize production from these wells should include real-time water level monitoring to ensure seasonally variable aquifer water levels are accommodated and, in the case of Well No. 2, that air entrainment is minimized (if desired).

At Flying Saddle, additional production could likely be gained through well re-development, particularly of the south well.

If groundwater production beyond these measures is desired, additional wells would likely be successful in areas along the fault system south of the existing 1, 2, 3 wellfield. Development of groundwater from these deep-seated aquifers is not vulnerable to water-level fluctuations, and southward expansion would avoid vulnerability to water-quality degradation by incompatible surrounding land uses. Sufficient offset to minimize inter-well drawdown impacts from the existing wellfield is recommended.

6.0 GROWTH AND DEMAND PROJECTIONS

6.1 POPULATION TRENDS

The Town of Alpine is an incorporated municipality and a Town in the U.S. Census, with an area of 0.9 square miles. The Town was incorporated in February 1989, and so data for the community has been part of the U.S Census since that time. Annexations to the Town have occurred on occasion, with significant annexations north of the Snake River since the purchase of the NSU water and sewer systems. Since incorporation, the Town of Alpine has been one of the fastest growing municipalities in Wyoming.

Beginning with the 2000 Census, a Census Designated Place (CDP) for Alpine Northeast and Alpine Northwest were included, which are both located north of the Snake River. These areas have seen portions annexed into the Town boundaries over the last couple of decades, and so an overall population including these CDP's will give a better idea of the population increase in the area.

A historical population summary for Alpine area from the US Census for years 2010 and 2020 is shown in Table 6.1.

Table 6.1 – Historical Population – Alpine Area (2010-2020)

Place	Population (2020)	Population (2010)	% Change
Alpine Town, WY	1,220	828	47.3
Alpine Northeast, WY	246	196	25.5
Alpine Northwest, WY	305	244	25.0
Total	1,771	1,268	39.7

For this 10-year time period, the average annual growth rate for the Alpine area was 3.40%. The population in the Alpine area has increased at a higher rate than most other areas of Star Valley.

CDP's in the lower Star Valley area ranged from 3.8% to 131.3% from 2010 to 2020 (it is unknown if increase in area contributed to the large outlier), with average annual growth rates ranging from 0.38% to 8.75%. It is believed that growth was relatively slow at the beginning of the decade and then increased throughout the middle and end of the 2010's. It is assumed that growth since 2020 has continued at a relatively high rate based on empirical evidence.

The number of water connections served by the Town of Alpine water system has increased over the years. This has been from infill of lots within the Town and additions through annexations. There are currently 663 connections on the Town system, each with a meter. Per the Sunrise 2009 report, the Town had 413 connections and 400 Equivalent Residential Units (ERUs) taking the varied usage for apartments and commercial units into account. Much of the growth since 2009 involved the purchase of the NSU water system, which served areas north of the Snake River. The following table shows the current breakdown of service connections by whether they are south of the Snake River (and thereby located within the historic

Town of Alpine service area) or north of the Snake River (and thereby located within the NSU or adjacent service area).

Table 6.2 Alpine Water Service Connections by Location

Service Connection Location	Number of Connections (2024)
South of Snake River (original Town of Alpine system)	516
North of Snake River (formerly NSU system)	147
Total	663

When breaking out the original Town area connections (south of the Snake River) and comparing them to past studies, it is apparent that there has been significant growth in that area over the last 15 years. The resulting growth rate was over 15% from 2009 to 2024, which is an average annual growth rate of approximately 1%. This shows that while the bulk of the population growth for the Town of Alpine has been through annexation, growth within the historic Town boundaries has also been strong.

During and after the Covid pandemic in 2020, the housing market in the region increased dramatically. From anecdotal experience, much of this demand was driven by people moving from more populated areas such as California, Oregon, and Washington that wanted to live in a more rural setting. Costs for land, houses, and rent also increased dramatically. With the proximity to the Jackson Hole area, many who work in Teton County live in nearby areas such as Alpine due to the lower (although still well above Wyoming average) cost of living. This also drives demand for housing in the Alpine area, which is expected to continue for the foreseeable future.

While most new service connections have been for residential use, there have also been commercial connections added to service businesses such as the new grocery store, medical clinic, hotels, and expanded convenience store. Other large projects are currently in process such as apartment buildings and an extended-stay hotel.

The Alpine community is bisected by the Snake River and Palisades Reservoir, which is operated by the US Bureau of Reclamation. The area is also bounded by the Targhee and Bridger-Teton National Forests, and Wyoming Game & Fish Department lands, so areas available for expansion of the Town are quite limited. However the majority of private lands located north of the Snake River are located outside of Town boundaries within Lincoln County. There are still a significant number of parcels that could be annexed into the Town in the future if desired by the Town and landowners.

The 2020 U.S. Census Bureau estimate of the number of individuals per household in the Alpine area was 2.31 persons per household, using a weighted average for the Town and both CDP areas. For this study, each current active water connection will represent 2.31 individuals. Therefore, the estimated population currently served by the Alpine water system is 663 connections x 2.31 persons/ connection = 1,532 people.

The Economic Analysis Division of the Wyoming Department of Administration & Information (EAD/DA&I) has population forecast data through 2050 for the Town of Alpine. In general, the predicted growth rates decrease gradually over the next 25 years. The EAD/DA&I forecast predicts varying annual growth rates

over the next 25 years ranging from 0.39% to 0.97%, with an average annual growth rate of 0.81 % from 2020 to 2050.

The Alpine water system has grown faster than this rate in the past due to the addition of the NSU system, as well as the significant growth experienced both inside and outside of the Town boundaries. Additional annexations are likely to continue, however most areas served by the water system have now been annexed. Recent ordinances passed by the Town essentially require annexation of areas to be added to the water system.

Based on review of population and service connection growth as described above, a community population growth rate of 1.0% will be assumed for the next 25 years. The projected population served by the Alpine system will increase as shown in Table 6.3. If actual growth rates experienced are higher, then those projected population numbers will be reached sooner.

Table 6.3 – Projected Population and Water Connections Alpine (2020-2050 – 1.0% Growth Rate)

	2025	2030	2040	2050
Alpine System Population	1532	1610	1779	1965
Alpine System Connections	663	697	770	850

6.2 SYSTEM DEMAND

For planning purposes, the projected annual population growth rate of 1.0% can be applied to estimated current-system water demand to determine future system water demand. See Appendix G for estimates of population and system growth and demands.

6.2.1 Current Water Demand

Previous studies (Rendezvous, 2009 and Sunrise, 2009) estimated the average day water demand at that time at less than 200,000 gpd, and the maximum daily demand at roughly 850,000 gpd (this did not include the NSU service area as it had not been added to the Town system yet). Additionally, a maximum daily demand of about 950,000 gpd was estimated based on well pump operations.

The Town of Alpine system has a meter at the south wellhouse to observe production from the three wells, which is tied to the SCADA system. There is also a meter at the booster pump that provides water to the upper storage tank. According to the Town operators, these meters have not been functional over recent years, and so there are no data available for the quantity of water sent to each of the storage tanks.

Run-time data for the wells are available, so a clamp-on meter was used to determine typical flows from each well. Flow measurements for each of Well #1, #2, and #3, were taken for 30 minutes

from start up to observe how the flowrates changed as drawdown presumably stabilized. The data showed that each well stabilized after a few minutes, with the following approximate flow rates: Well #1 = 455 gpm; Well #2 = 445 gpm, Well #3 = 360 gpm. These three wells are currently the only sources of water for the Alpine system.

SCADA Run Time Method: Using these flow rates in conjunction with well run-times obtained from the SCADA data, average daily demands showed a dramatic increase from 334,000 gpd (232 gpm) in 2021 to 759,000 gpd (527 gpm) in 2024. Maximum day demands were approximately 1,800,000 gpd (1,250 gpm) in July, which is essentially the maximum source currently available in the system (all three Alpine wells running concurrently for 24 hours/day). Per 2024 SCADA data and estimated population, the per capita ADD is 495 gpcpd, and the per capita MDD is 1,175 gpcpd.

There is a possibility that Well No. 3 has seen a rapid decline over the last few years, and that could partially explain the dramatic increase in run-time and thus demands. For example, if Well No. 3 was producing 450 gpm in previous years, less run-time would be needed to produce a given volume of water. However, we are confident that the well is only producing in the 360 gpm range at present, and are equally confident that the 2024 demands are valid (earlier years may be underestimated by assuming the lower flow rate).

Service Meter Method: Individual services are also metered, although the meters have limited capability for data collection. Service meters south of the Snake River (within historic Town boundaries) are typically read once per year as they must be physically raised from the meter pit to be read. Service meters north of the Snake River (former NSU system) are typically read once per month with a site visit to each meter to be read from a touch pad. Water serves both indoor and outdoor uses throughout the Town.

Based on service meter data, the average daily demand for the system (including south and north of Snake River) is 236,000 gpd in 2024. The maximum daily demand is estimated at 950,000 gpd (the MDD is assumed to be 4 times the ADD, as meter data is only available on a monthly or yearly basis).

There is a significant gap between the ADD and MDD from these two sources of data. It seems that the meter data represents lower usage than expected, as discussions with Town personnel indicate that the wells are running full-time during some summer days. There were also inconsistencies in the raw service meter data due to various reasons such as missing data, meter reading issues, and other items consistent with obtaining data from hundreds of meters manually. Unknown leaks in the system could also be a reason for a portion of the discrepancy between SCADA and service meter totals. Soils in a vast majority of the system area are classified as gravelly loams or sandy gravelly loams, which could drain significant leakage without surfacing.

Minimum storage tank drain rates were examined to assess potential leakage from the Alpine system. Examination of 2024 middle-of-the-night January and February (i.e. minimal in-house and

no outside water use) tank levels finds minimum drain rates of approximately 175 gpm, which equates to 252,000 gpd.

The 2009 Rendezvous report cited, “2005. No recent system wide leakage measurements have been taken; however losses in the range of 100,000 to 150,000 gpd [70 - 100 gpm] are estimated”, and stated, “The leakage study from the summer 2005 also identified a number of specific locations within the system that indicated leaks, most of which were related to service connections.”

Based on these findings, this study will assume average day and maximum day demands based on well flow rates measured by the clamp-on meter and run times per SCADA data as described above.

Per Town personnel, all meters throughout the water system will be replaced later in 2025 with radio-read capability. Master meters at the wellhouse will also be replaced and added to the SCADA system. Following collection of data through future years, a better idea of actual water demands and usage patterns should be available.

Figure 6-1 Greys River Road Area

6.2.2 Projected Water Demand

For planning purposes, this study will anticipate a planning period of 25 years, from 2025 to 2050. The Town of Alpine water system does not sell water to rural or independent water districts, systems, or industries.

The table below shows the projected water rate using rounded numbers at a growth rate of 1.0%.

Table 6.4 Estimated Current and Future Water Demand

Period	Current Demand (2025)	Estimated Future Demand (2050)
Average Daily Water Use (gallons/day)	759,000	973,000
Maximum Daily Water Use (gallons/day)	1,800,000	2,308,000

6.2.3 Regionalization Discussion

The Town of Alpine water system is in relatively close proximity to several other water systems north of the Snake River, although many of them are quite small. A number of these systems are described in Sunrise (1995) and Rendezvous (2009), and will not be further described in this report. The larger systems include the North Alpine Improvement and Service District (NAISD) which serves 201 lots (per Rendezvous, 2009), and the Reserve water system which serves 18 lots. Regionalization offers the benefits of shared operational costs and the increased reliability through source redundancy. For systems such as the Reserve, storage could be provided by the Town system for domestic use along with fire protection. NAISD has storage that provides for typical demands and fire protection, although the elevation of their storage tank compared to Town tanks is unknown.

6.2.4 Water Conservation

With the demands experienced by the Town over recent years, employing water conservation measures would help to moderate increases in water use. The following measures could be taken to accomplish this:

- Implement a summer-use rate structure that encourages conservation, also known as an increasing block rate. The current charge for all water use is $2.00 per 1,000 gallons. Adding a higher rate over a set volume (i.e. $2.50 per 1,000 gallons for 10,000 to 20,000 gallons in a given month) will encourage a reduction of water use. A rate study is currently being conducted by the Town, it is unknown if an increasing block rate will be recommended.
- Replacement of meters being conducted this summer will allow for better data collection which is needed to implement increasing block rates (most meters are currently read annually).

- Water conservation can be emphasized during summer months, letting residents know that the system is being stressed during peak weeks in July and August. This can include promoting nighttime lawn watering, limiting lawn watering days per week, use of water shut-off nozzles when washing cars, encouraging water smart landscaping, etc.

7 RECOMMENDATIONS AND COST ESTIMATES

7.1 ANALYSIS OF ALTERNATIVES

Based on the analysis presented in this study several alternatives for improvements will be investigated. The Alpine system is lacking in source capacity and/or storage capacity at this time. The transmission system is in need of improvement to connect the Megawell to the system with adequate capacity for transmission of water from this large well. The distribution system has areas with aging pipelines that likely have leak issues. Alternatives are also presented for adding additional storage to the system as dictated by future demand. A project to replace all service and mainline meters is currently underway, with completion expected later this year. Because of this, no meter replacements are included in the examined alternatives.

The proposed improvements are shown on the attached Figure L and described below.

Improvement 1 – Connection to Megawell Water System

This project would connect the existing water main at the northeast corner of The Refuge to the Megawell water system located nearby. This well could then be used to supply water to the system and therefore backfeed the system to fill the NSU and Lower Tanks. This would require a bore under US Highway 26. The initial connection to the Megawell system would be adequate for supplying water to the system using the existing well pump. The Town is already working toward this improvement by repermitting the well through SEO to accommodate this addition.

Improvement 2 – Increase Megawell Production

This project would replace the existing pump in the Megawell with a larger pump that could provide 1,200 gpm to the system. This increase in production will create bottlenecks in the 8-inch pipes between the well and key points in the system, so these locations would need to be upsized. These key points are the NSU Tank and the Snake River Bridge (to serve water across the bridge and to the south side of the river). For example, flows of 800 gpm or more would result in velocities over 5 feet/second over relatively long lengths of pipe, which would experience significant head loss. This would result in a larger pump in the Megawell to produce a given flow which could cause pressures in the vicinity of the well to be higher than desired. Constructing pipes that add loops to the system could also create alternate flow paths and may also be sufficient to relieve expected bottlenecks in some locations.

When the Megawell is upgraded to provide more water and becomes a more integral part of the overall water system, it would be beneficial to also add a backup power source to the well so that water supply is not interrupted during power outages. Based on a flow rate of 1,200 gpm, it is assumed that a pump of 100 hp will be required, which would require a roughly 100 kW backup generator. The easement around the wellhouse is somewhat restricted, so further investigations will be necessary to determine if additional easement area will be needed.

Improvement 3 – Additional 500K Gallon Storage Tank

This improvement would construct a new storage tank to better meet demands during the summer months, as the system is currently at capacity during maximum demand days. Most of the system demand is located south of the Snake River in the lower pressure zone, so the new storage could be located next to the existing 500K tank at the same elevation. This would be located on USFS lands and would require adding the facility to the current special use permit. Assuming that some improvements to well production are made, this study recommends a new tank size of 500,000 gallons.

Improvement 4 – Alpine Wellhouse Improvements

This improvement would include a number of upgrades at the wellhouse serving Alpine Well Nos. 1, 2, and 3. These upgrades would include the following:

- Continue with the project currently underway to replace the pump in Well No. 3. This is expected to significantly increase production.
- Repair or replace electrical equipment so that all three well pumps can be operated simultaneously without fear of tripping a breaker or other part. This would allow all three well pumps to be operated at 60 Hz and full 3450 rpm.
- Water level measurement equipment would be added to all wells, which at this time would include Alpine Well Nos. 1, 2, and 3, and the Megawell (Flying Saddle wells not included a with this alternative). In conjunction with this, the wells could utilize their VFD drives to modulate flow if needed in response to large seasonal changes in aquifer levels. Data obtained from the level measurement equipment would help determine if wells are being used to their capacity or if installing larger pumps would be feasible. This data would also help determine if improvements could be made to reduce air entrainment in Well No. 2.
- As recommended in the 2024 EPA Sanitary Survey, a backup pump or replacement pump parts would be purchased in case of breakdown of the sole chlorination injection pump.

Improvement 5 – Leak Detection & Repairs

This option would conduct leak detection operations in areas deemed susceptible to unknown leakage. Many of the older portions of Alpine still have older pipes that are past their design life. Other newer areas could be sampled to see if there are any apparent issues. It is anticipated that commercial acoustic leak detection services would be utilized for this work. Use of meters in various locations to observe losses would be difficult due to the interconnected network of pipelines across Town.

With the project currently underway to replace all mainline and service meters in the system, data provided by those new meters will provide a better understanding of how much water is being lost. Water produced to the system will be known from the mainline meters, and can be compared to the water being delivered to end users through the service meters.

Improvement 6 – Flying Saddle Wellhouse Improvements

This project includes necessary repairs and rehabilitation to bring the Flying Saddle Wells (or at least the north well) into compliance and full production. Repairs would be completed on the chlorine contact chamber that has been previously broken per the Public Works Director. Since the Flying Saddle Resort is now connected to the Town sewer system, concerns regarding contamination from domestic wastewater have been removed, and the broken chlorine contact chamber could be bypassed.

The wells would be rehabilitated to increase production rates. As an alternative to rehabilitation, a new well could be drilled and constructed in the same vicinity as to take advantage of the productive location.

Improvement 7 – Upgrade Pipe to Lower Tank

This project will upgrade approximately 800 feet of existing 8-inch PVC pipe from the valve cluster adjacent to Greys River Road up to the Lower (500K) Tank. With all three wells running under current conditions, a flow rate of over 1,200 gpm is delivered to the system and Lower Tank, which could result in velocities of approximately 7.5 feet/second (or more if improvements to the Alpine wells increase their production). Reduction in head loss through this section will allow for more flow for a given pump.

Improvement 8 – Upgrade SCADA

This option will upgrade the current Mission Communications SCADA system. The SCADA would be added to the NSU Tank to provide water level data similar to the other storage tanks. Connection to the water meter at the Megawell wellhouse would also be completed to provide flow data (not just run-time data as presently configured). It is assumed that the SCADA system will be connected to the new mainline meters as part of the current project scheduled for summer of 2025.

Improvement 9 – Maintenance at NSU Tank

This project would check the cathodic protection system and seals at the NSU tank and upgrade as necessary. Per the manufacturer, cathodic bars installed at the base of the tank should be inspected and tested every year, and are normally replaced every 7 years. Reseal of interior seams should be completed every 10 to 15 years. Evidence of damage due to ice may require additional rehabilitation and adjustments to winter operations. Addition of water level monitoring is included in Alternative 8 above.

Improvement 10 – Water Rights

As discussed in Section 5.7.4 of this report, a number of items are needed to correct the water rights. This includes:

1. The required water right reporting should be brought up to date and routine reporting should be established going forward.
2. A program should be instituted to measure and report the required water-level data. The addition of water-level measurement equipment as discussed in Improvement 4 above will enable this. Water level readings could also be added to the SCADA system discussed in Improvement 8 above. Both static and pumping water levels should be recorded.

3. Alpine should request enlargement of the system-wide cap on groundwater production to allow for current and future use. (This process has been initiated with the re-permitting of the Megawell.)
4. Re-permit the Megawell and Flying Saddle wells with "municipal" use, to correct from the present "miscellaneous" use. (This process has been initiated with the re-permitting of the Megawell.)
5. Ownership of all wells should be updated to the Town of Alpine.
6. Enlarge Megawell to proposed flowrate and area of use (this should be completed in conjunction with Improvement 2 above).
7. Request modification to permits to allow a single meter to monitor Well Nos. 1, 2, and 3 to match the current meter configuration.

Improvement 11 – Future Meter Data Analysis

As mentioned previously, the Town will be replacing all mainline and service meters in the system during 2025. This will provide data on a daily basis for both system production and demands at all services. Analysis of this data after at least one year will provide a much clearer picture of water use in the system for average day, maximum day, maximum hour, and annual use, and would allow for adjustments to findings and recommendations of this report.

7.2 PROBABLE COSTS

An Engineers Opinion of Probable Cost was prepared for the first four improvements which are included in Appendix H. Costs for Improvement 5 are highly dependent on the findings of the leak detection survey and could vary greatly, so probable costs were not determined. Costs for Improvement 6 depend on whether the well is rehabilitated or replaced with a new well. The estimated project costs are summarized below.

Table 7.1 – Estimated Project Costs

Improvement 1	Connection to Megawell Water System	$405,000
Improvement 2	Increase Megawell Production	$1,830,000
Improvement 3	Additional 500K Gallon Storage Tank	$1,610,000
Improvement 4	Alpine Wellhouse Improvements	$255,000
Improvement 7	Upgrade Pipe to Lower Tank	$245,000

7.3 SYSTEM MANAGEMENT AND OPERATION RECOMMENDATIONS

Recommendations related to management and operation of the water system are as follows:

- It is recommended that the water systems follow a schedule for system maintenance that includes system flushing, valve exercising, hydrant testing and other routine maintenance items. A list of suggested daily, weekly, monthly, and annual checklist items is included as follows in Table 7.2:

Table 7.2 – Maintenance Procedures and Frequency

Component	Action	Frequency
Concrete Tanks	Operator Inspection. Professional inspection/cleaning.	Yearly 3-5 years
Glass-Fused-to-Steel Tanks	Operator Inspection. Check cathodic protection system and seals. Professional inspection/cleaning. Replace cathodic protection system. Reseal interior seams.	Yearly 3-5 years 5-10 years 10-15 years
Spring Sources	Inspect/repair fencing. Inspect screens on overflows. Remove large vegetation above and around collection area. Ensure cutoff ditch is clean and functional. Inspect spring boxes and lids.	Yearly
Well House	Inspect and clean if necessary, maintain, valves, meters, gages, and electronic controls in accordance with manufacturers recommendations.	Yearly
Mainline Meter	Check operation, check for noise. Check mounting and alignment.	Monthly Yearly
Service Meter	Visually inspect. Replace.	Yearly 15-20 years
Distribution System Valves	Locate, inspect, and exercise. Check valve box alignment and remove any debris.	Yearly
Fire Hydrants	Operate, check for proper draining, exercise isolation valve, check nozzle threads and caps, inspect operating nuts for roundness, check for leaks.	Yearly
Dead Ends	Flush, flow velocity in pipe greater than 2.5 feet/second.	Variable

8 WATER SYSTEM FINANCING

8.1 WATER FEES

The Town of Alpine water system serves connections inside and outside of Town boundaries. Rates for connections within the Town are set by the Town Council. Rates for the Alpine Utility District are also set by the Council, but must be approved by the Wyoming Public Service Commission through their extensive process. Current water rates are shown in Table 8.1, and connection fees are shown in Table 8.2.

In April 2025, the Town Council passed an ordinance to prohibit additional water connections outside of Town boundaries. Nearly all of the areas originally serviced by the NSU system have been annexed into the Town; essentially the only served area outside of Town boundaries is The Refuge development at the Alpine Airpark, of which roughly 2/3 of the lots have been developed.

Table 8.1 Town of Alpine Water Rates

Location	Base Rate	Volume Charge (per 1,000 gal)
Town of Alpine	$31	$2.00
Alpine Utility District	$30	$2.75

Current rates are close to Wyoming statewide averages per the 2022 Public Water System Survey Report produced by the Wyoming Water Development Commission. The average monthly water bill for Alpine is approximately $65. For a monthly use of 5,000 gallons, the bill would amount to $41; for 10,000 gallons would be $51; and for 20,000 gallons would be $71. Per Section 6.2.4 of this report, use of increasing block rate billing could provide more revenue while promoting water conservation.

Table 8.2 Town of Alpine Water Connection Fees

Location	Size	Fee
Town of Alpine	¾" (Residential)	$3,500
Town of Alpine	1"	$5,000
Town of Alpine	1 ½"	$6,500
Town of Alpine	2"	$10,000
Alpine Utility District	¾" (Residential)	$3,000
Alpine Utility District	1" – 2"	$11,800
Alpine Utility District	3" – 4"	$19,800

8.2 INCOME AND EXPENSES

Financial data covering a 6-year period were received from the Town of Alpine, which included totals from 2019 through 2024. The water fund expenses and income are summarized below in Table 8.3.

Table 8.3 – Alpine Water Revenue and Expenses

	Actual					Budget
	FY 2019-20	FY 2020-21	FY 2021-22	FY 2022-23	FY 2023-24	FY 2025
System Expenses	$400,192	$437,669	$498,599	$491,690	$457,709	$501,000
General Expenses	$40,433	$83,952	$112,146	$88,170	$66,625	$88,200
Capital Project	$0	$0	$0	$137,942	$64,638	$1,255,000
Debt Payments	$7,054	$6,411	$5,804	$28,398	$23,430	$34,000
Total Expenses	$447,679	$528,032	$616,549	$746,200	$612,402	$1,878,200
Income	$447,778	$528,567	$617,786	$602,856	$650,316	$1,878,500

The water fund has cash in a combined fund of approximately $1.17 million. The water fund currently has three loans: Drinking Water SRF loan (apparently a match to SLIB grant) with annual payment of about $6,550, to be paid off in 2031; Drinking Water SRF loan (for well rehabilitation work) with annual payment of about $7,400, to be paid off in 2031; and a local loan (may have paid off a previous federal loan) with annual payment of nearly $14,450, to be paid off in 2026.

Financial Capacity Development Sheets in Appendix I provide more detail on the Alpine water fund financial status and include a 5-year projection of revenue, operation expenses, debt payments, and reserves.

The following is a summary of the Town's water system income and expenses:

- The water fund is self-supporting. Over the last five years income has exceeded expenses except for one year in which capital expenses occurred.
- Expenses have increased over the last five years, and income has also increased.
- The water fund has reserve accounts for emergencies and future capital projects. It appears that the account balances have been relatively stable.
- Existing debt payments are manageable and will be paid off in the next six years.

The Town has expressed a desire to raise connection fees in the near future to cover demands to a growing system and to ensure payment for connection materials.

8.3 PROJECT FUNDING SCENARIOS

This study will review two funding scenarios for the Alternatives and Phases identified in Section 7. The scenarios are:

1. No State or Federal Funding Assistance.
2. WWDC funding for 50% grant 50% loan for eligible costs. All other costs by loan from other sources.
3. WWDC funding for 50% grant eligible costs. All other costs from one of the following:
    a. Wyoming Drinking Water State Revolving Fund Program (DWSRF)
    b. USDA Rural Utilities Series (RUS)

8.4 FUNDING PROGRAM OUTLINES

8.4.1 Wyoming Water Development Commission

The WWDC will historically provide up to a 67% grant for qualifying project components related to supply, storage and transmission. In recent years, WWDC current policy has been providing up to 50% grant due to grant requests exceeding the funds available. The matching funds can come from other State or Federal programs such as SLIB, USDA, or NRCS. Districts are encouraged to demonstrate need for the project by raising assessments to be at or near the maximum that the users can bear. Larger projects can be phased to reduce the strain on the WWDC biennial appropriations and improve chances of being funded.

Funding applications for Level I and Level II projects (studies) are due each year by March 1 and Level III (construction) applications are due on September 1.

8.4.2 Office of State Lands and Investments

The State Loan and Investments Board (SLIB) provides a variety of loans and Mineral Royalty Grants in connection with water resources. The grants are primarily used to comply with Federal or State mandates, provide essential public service, or alleviate emergency situations that threaten public health, safety or welfare. The interest rate on these loans is between 3% and 6% with terms up to 25 years.

8.4.3 Wyoming Drinking Water State Revolving Fund

This program offers loans up to 30 years at interest rates of 1.5% plus a 0.5% origination fee. Drinking water related projects including distribution and transmission lines and storage tanks for municipalities are eligible facilities for DWSRF funding. The project must be added to the Intended Use Plan prior to the loan application, which is updated every February. The loan application should be made 6-12 months prior to planned bidding of the project. SRF loans do not require any matching funds and can even serve as matching funds for various grant programs such as Mineral Royalty Grants and the Wyoming Water Development Commission. Reduced interest rates are

available for some specific projects, including 0% interest for applicants that will consolidate a smaller system into an already existing system.

Principal forgiveness is available if: 1) funds are available, and 2) the community meets median household income guidelines, population, and unemployment requirements. It is unknown if Alpine would qualify for principal forgiveness (i.e. grant) for SRF projects if principal forgiveness funds are available. Most water entities in the Star Valley area qualify for 25% or 50% principal forgiveness on most projects. If principal forgiveness funds are not available, communities that would have qualified can obtain a decreased interest rate.

Loan applicants must show that they can repay the loan, must demonstrate capacity development, and must adhere to federal environmental, social, and economic cross-cutting requirements and state procurement requirements. The project must be listed on the current year's DWSRF Intended Use Plan (IUP).

All SRF loans must go through the State Environmental Review Process (SERP). The process is similar to a NEPA process and identifies issues and concerns to be addressed during project planning and design.

Some planning, feasibility and environmental costs can be reimbursed even if incurred prior to loan approval. Construction costs are eligible only after the completion of the environmental review.

Several other procedures during the advertising and bidding phase must be followed. Consult the current web-based guidelines for current guidance:

https://lands.wyo.gov/grants-loans/srf-programs/drinking-water-state-revolving-funds.

8.4.4 USDA Rural Utility Service

This Federal program, as administered in Wyoming, provides funding for several utility types including drinking water systems. Governmental entities serving rural areas and towns with populations of 10,000 or less are eligible to apply for long term low interest loans. The Town of Alpine would only be eligible for market rates at this time, which is 4.25% as of May 2025.

USDA applications can be submitted any time, however a Preliminary Engineering Report (PER) must be submitted and approved along with an Environmental Report (ER). If the system has a WWDC study, it will typically work as the PER with some additions and modifications. However, WWDC projects do not contain the environmental data needed to develop the PER. Preparation and approval of a PER and ER take about six months to complete with a cost of about $10,000 each, if a WWDC study has already been completed. Grants are available based on poverty rating of the community and ability to pay.

The RUS funds may be used for items that other funding sources sometimes cannot fund. These include Legal, Engineering, Land Acquisition, Rights of Way, Permits and Equipment. Also, interest during construction and other costs deemed necessary for completion of the project are eligible for RUS funding.

8.4.5 Abandoned Mine Lands

The AML program helps lands and waters needing reclamation caused by mining and processing prior to August 3, 1997. Lands and waters left in an un-reclaimed or inadequate state of reclamation for which there is no continuing reclamation responsibility. Protection of public health, safety and general welfare from extreme danger and adverse effects and processing practices are considered in ranking projects.

Eligible public facilities and utilities include:

1) Existing public utilities servicing the public and adversely affected by mining and processing practices which occurred prior to August 3, 1977.
2) The construction of new public facilities or utilities in communities impacted by mining and processing practices.

Eligible communities include incorporated cities and joint powers boards which have relied on the mining industries for a significant portion of their economic base prior to, and since, August 3, 1977, or for this same time period can demonstrate significant impact on their tax revenues and services as a result of these industries.

It is not anticipated that the Town of Alpine would qualify for AML funding.

8.4.6 Wyoming Business Council

The Wyoming Business Council (WBC) offers a variety of programs to help communities build infrastructure needed for economic development so Wyoming towns, cities and counties may become "business ready." The program provides grants of up to 90%. Applications are taken throughout the year with final approval of grants being made by the State Loan and Investment Board. Applications should be submitted at least 90 days in advance. The grant application is very comprehensive and requires demonstration of economic benefit of the project. Usually a grant writer is used to prepare the grant application.

8.5 PROJECT FUNDING ANALYSIS

Based on the Alternatives and costs developed in Section 8.0, and the funding scenarios as outlined at the beginning of this section, multiple funding scenarios were prepared. These funding scenarios determine the effects on user rates and fees required to support the project. The following financing terms and rates are based on current program criteria at the date of this report. The funding scenarios for each Improvement are provided in Table 8.4.

Table 8.4 – Funding Scenarios

Funding Scenario	Total Project Cost	WWDC Grant	DWSRF Loan @ 1.5% - 20 yr	RUS Loan @ 4.25% - 30 yr	DWSRF w/ 50% P.F.	Other 5% - 20 yr	Annual Loan Payments	Required Increase to User Rates*
Improvement 1: Connection to Megawell Water System								
No Assistance-Self Funded	$ 405,000					405,000	$32,498	6.28%
WWDC 50% Grant, DWSRF Loan		202,500	202,500	-			$11,795	2.28%
WWDC 50% Grant, RUS Loan		202,500	-	202,500			$12,069	2.33%
WWDC 50% Grant, DWSRF Loan PF		202,500			101,250		$5,897	1.14%
Improvement 2: Increase Megawell Production								
No Assistance-Self Funded	$1,830,000					1,830,000	$146,844	28.40%
WWDC 50% Grant, DWSRF Loan		915,000	915,000	-			$53,295	10.31%
WWDC 50% Grant, RUS Loan		915,000	-	915,000			$54,532	10.54%
WWDC 50% Grant, DWSRF Loan PF		915,000			457,500		$26,647	5.15%
Improvement 3: Additional 500K Gallon Storage Tank								
No Assistance-Self Funded	$1,610,000					1,610,000	$129,191	24.98%
WWDC 50% Grant, DWSRF Loan		805,000	805,000	-			$46,888	9.07%
WWDC 50% Grant, RUS Loan		805,000	-	805,000			$47,977	9.28%
WWDC 50% Grant, DWSRF Loan PF		805,000			402,500		$23,444	4.53%
Improvement 4: Alpine Wellhouse Improvements								
No Assistance-Self Funded	$255,000					255,000	$20,462	3.96%
WWDC 50% Grant, DWSRF Loan		127,500	127,500	-			$7,426	1.44%
WWDC 50% Grant, RUS Loan		127,500	-	127,500			$7,599	1.47%
WWDC 50% Grant, DWSRF Loan PF		127,500			63,750		$3,713	0.72%
Improvement 7: Upgrade Pipe to Lower Tank								
No Assistance-Self Funded	$245,000					245,000	$19,659	3.80%
WWDC 50% Grant, DWSRF Loan		122,500	122,500	-			$7,135	1.38%
WWDC 50% Grant, RUS Loan		122,500	-	122,500			$7,301	1.41%
WWDC 50% Grant, DWSRF Loan PF		122,500			61,250		$3,568	0.69%

** based 663 connections at $65 per month*

9 CONCLUSIONS

Maintenance

The Town of Alpine water system is in good condition. The main system was constructed in the 1970's to 1990's and has seen a number of pipeline replacements over the last 30 years. Some of the existing components currently need repair and replacement. The Town should plan and budget to continue with pipeline replacements, repairs at the wells and wellhouses, and replace cathodic protection and seals at the NSU Tank.

Source

The water sources are in good condition with good water quality but are operating under full capacity. The current system configuration is utilizing the three Alpine wells on the south side of the Snake River to serve users on both sides. The Flying Saddle wells are currently not operational. The Megawell currently only serves a limited area. While there is some redundancy in source for the system, improvements could strengthen the source situation.

Storage

The Alpine water system has nearly 1.3 million gallons of storage serving two pressure zones and on both sides of the Snake River. Based on analysis in this study, additional storage would help operations during maximum day demands in the summer, particularly south of the Snake River in the lower pressure zone where the majority of the demand is seen.

Transmission

The Alpine system has transmission lines from the wellhouse to the storage tanks that are currently 8-inch diameter, which is smaller than ideal under current conditions and will present a larger bottleneck as the wells are brought to full capacity. Transmission lines extending from the wellhouse and tanks into the center of Town are acceptable as there is a network of pipelines allowing for multiple flow paths. Fire flow capacity is acceptable throughout the service area assuming typical residential use fire flow requirements.

Transmission lines north of the Snake River are acceptable under current conditions. When the Megawell is added to the system and the pump enlarged to produce 1,200 gpm, there will be bottlenecks in the piping between the well and the storage tank. Fire flow capacity is acceptable throughout the service area assuming typical residential use fire flow requirements.

Water Losses

Water loss in the Alpine system is suspected due to water at the service meters accounting for much less than the calculated water that is being produced by the wells and delivered to the tanks. Soils in the service area are very rocky and coarse, which would allow significant leaks to continue undetected from the surface. It is unknown where water may be leaking and lost, and further investigation is needed to determine locations of leaks.

Finances

Water rates, income and expenses of the Alpine system were reviewed as part of this report. The Town's water income is greater than the expenses and the system actively maintains and builds a reserve. The system has two

Drinking Water SRF loans that will be paid off in 2031 and a local loan that will be paid off in 2026. The additional available budget should be used for making needed repairs to some of the aging infrastructure in the system.

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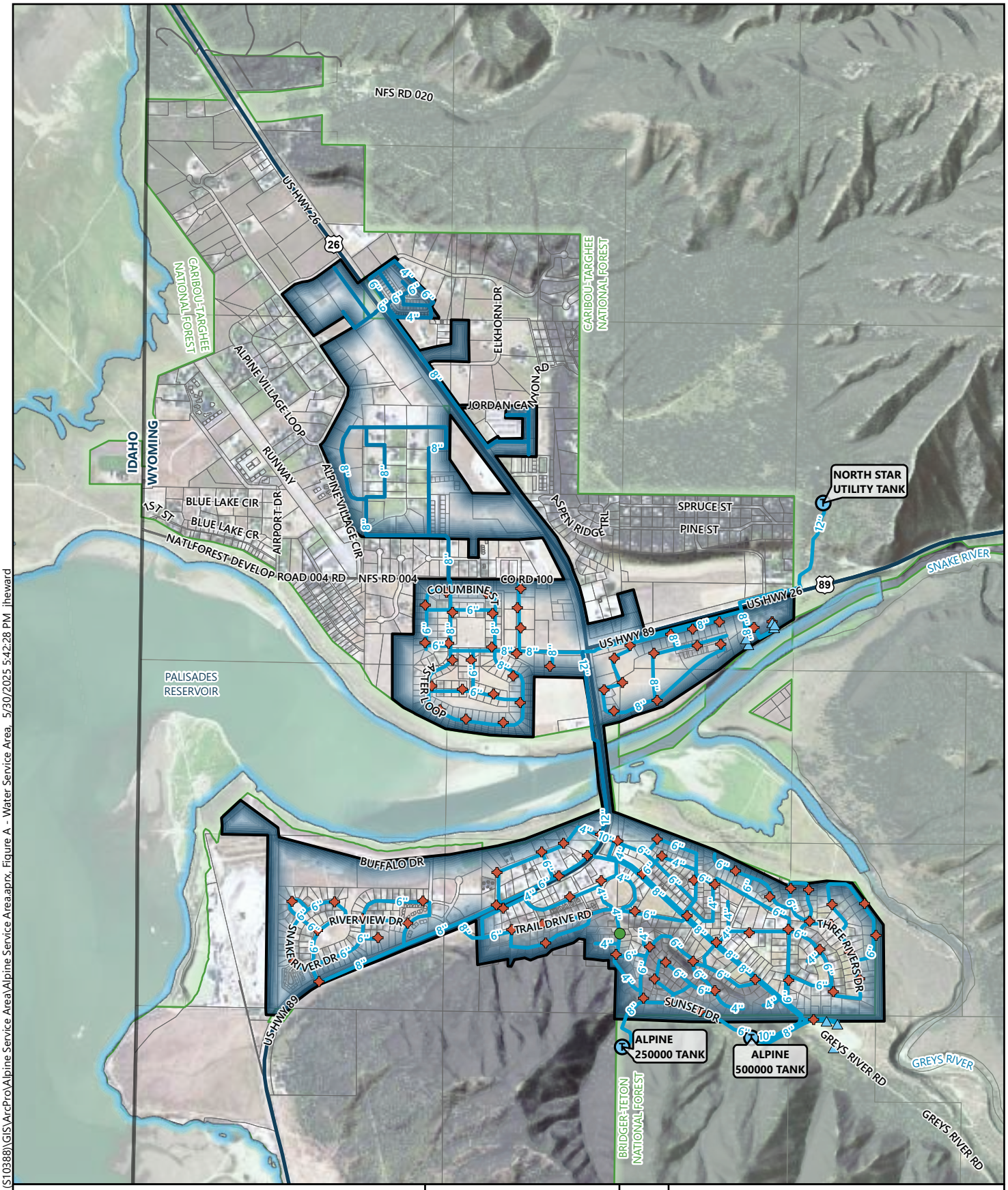
LARGE FIGURES & TABLES



Legend

- Approximate Water Service Boundary
- Water Main (Approximate Location)
- Tank
- Well
- PRV
- Fire Hydrant
- Forest Service

0 500 1,000 2,000

Feet

SCALE: 1" = 2,000'

North

FIGURE A

WATER SERVICE AREA

ALPINE, WYOMING

SUNRISE ENGINEERING

770 S WASHINGTON STREET SUITE A
AFTON, WYOMING 83110
TEL 307.885.8500 · FAX 307.885.8501
www.sunrise-eng.com

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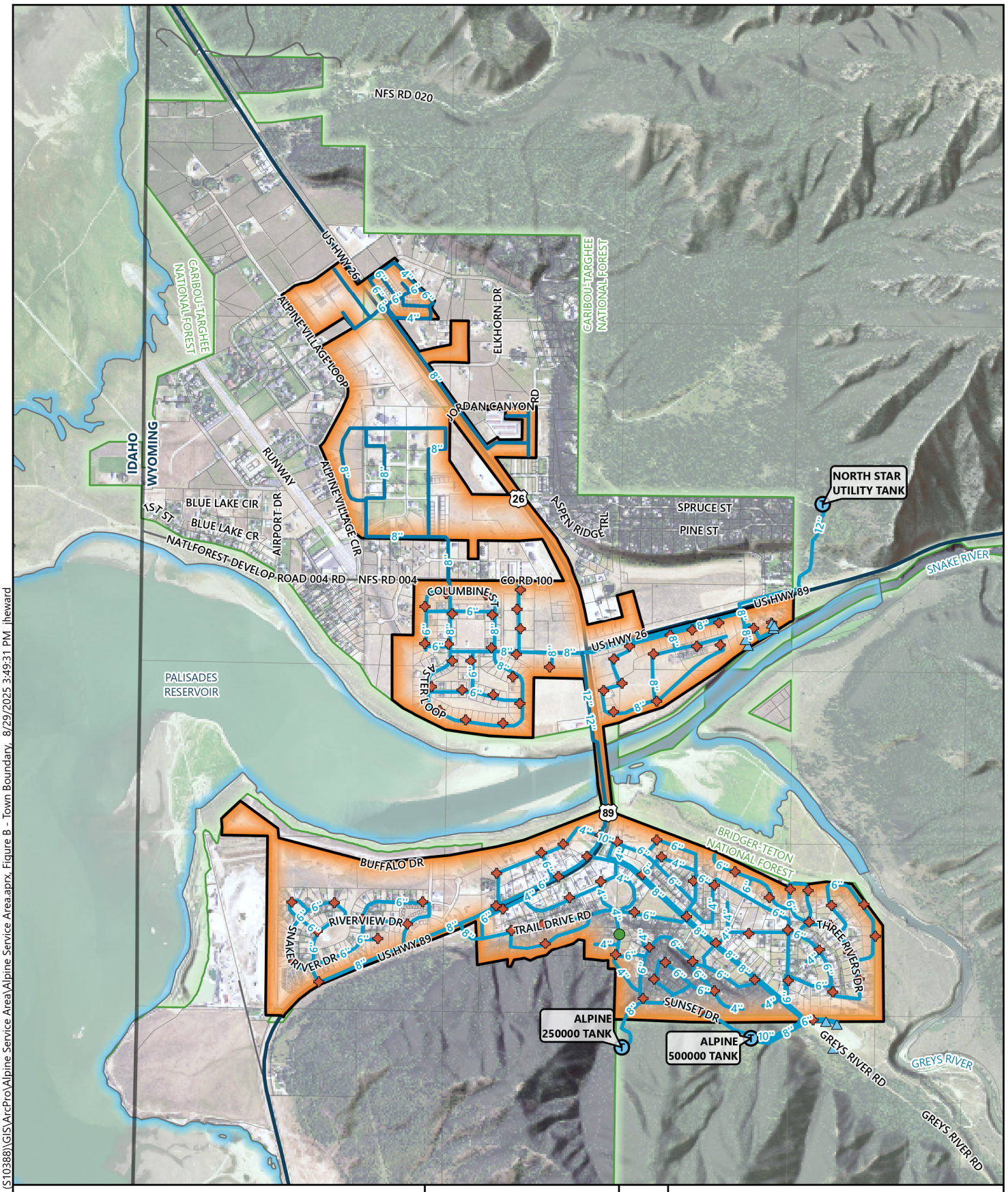

Legend

- Approximate Town Boundary
- Water Main (Approximate Location)
- Tank
- Well
- PRV
- Fire Hydrant
- Forest Service

0 500 1,000 2,000

Feet

SCALE: 1" = 2,000'

North

FIGURE B

ALPINE WATER SYSTEM

ALPINE, WYOMING

SUNRISE ENGINEERING

770 S WASHINGTON STREET SUITE A
AFTON, WYOMING 83110
TEL 307.885.8500 · FAX 307.885.8501
www.sunrise-eng.com

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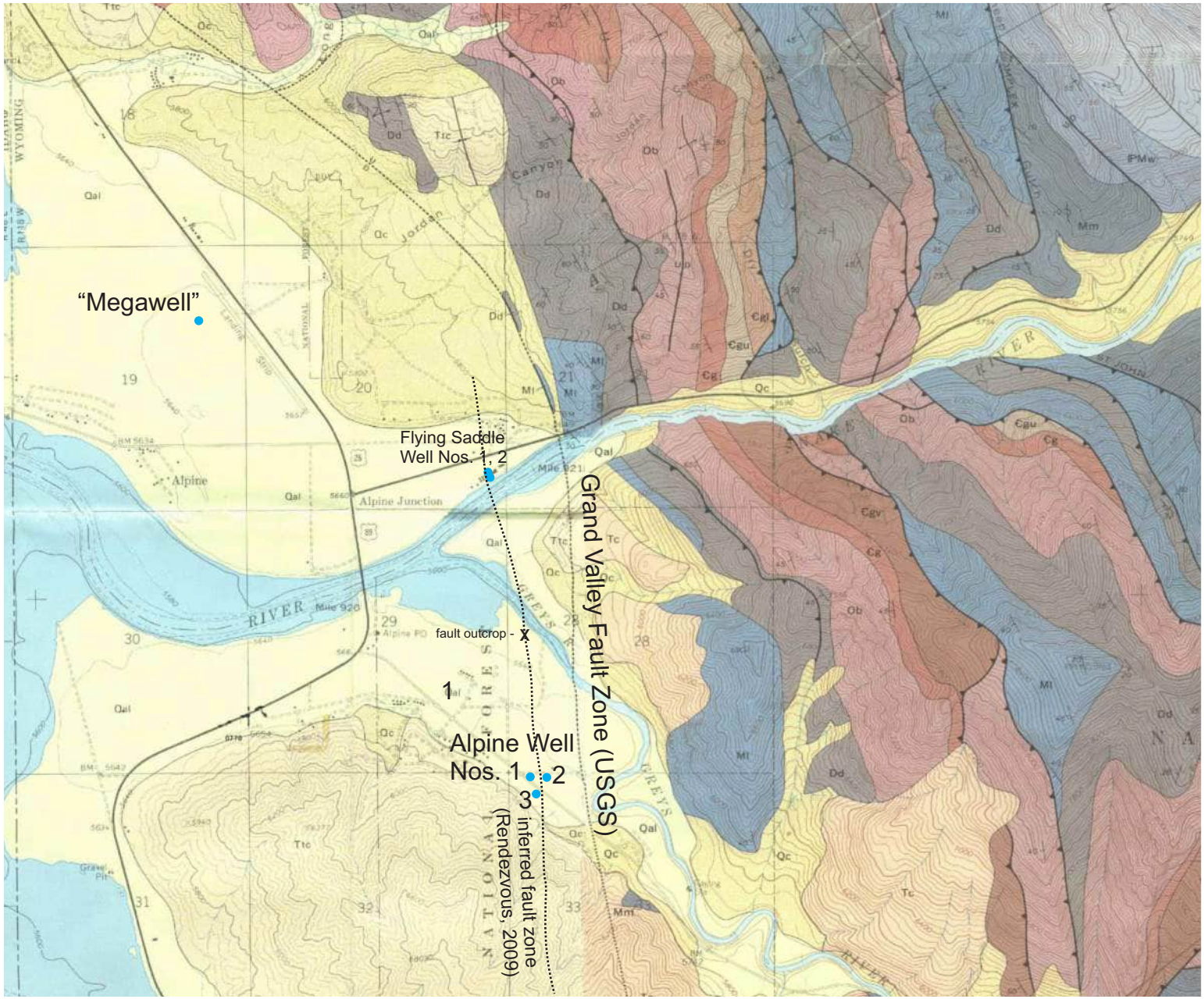
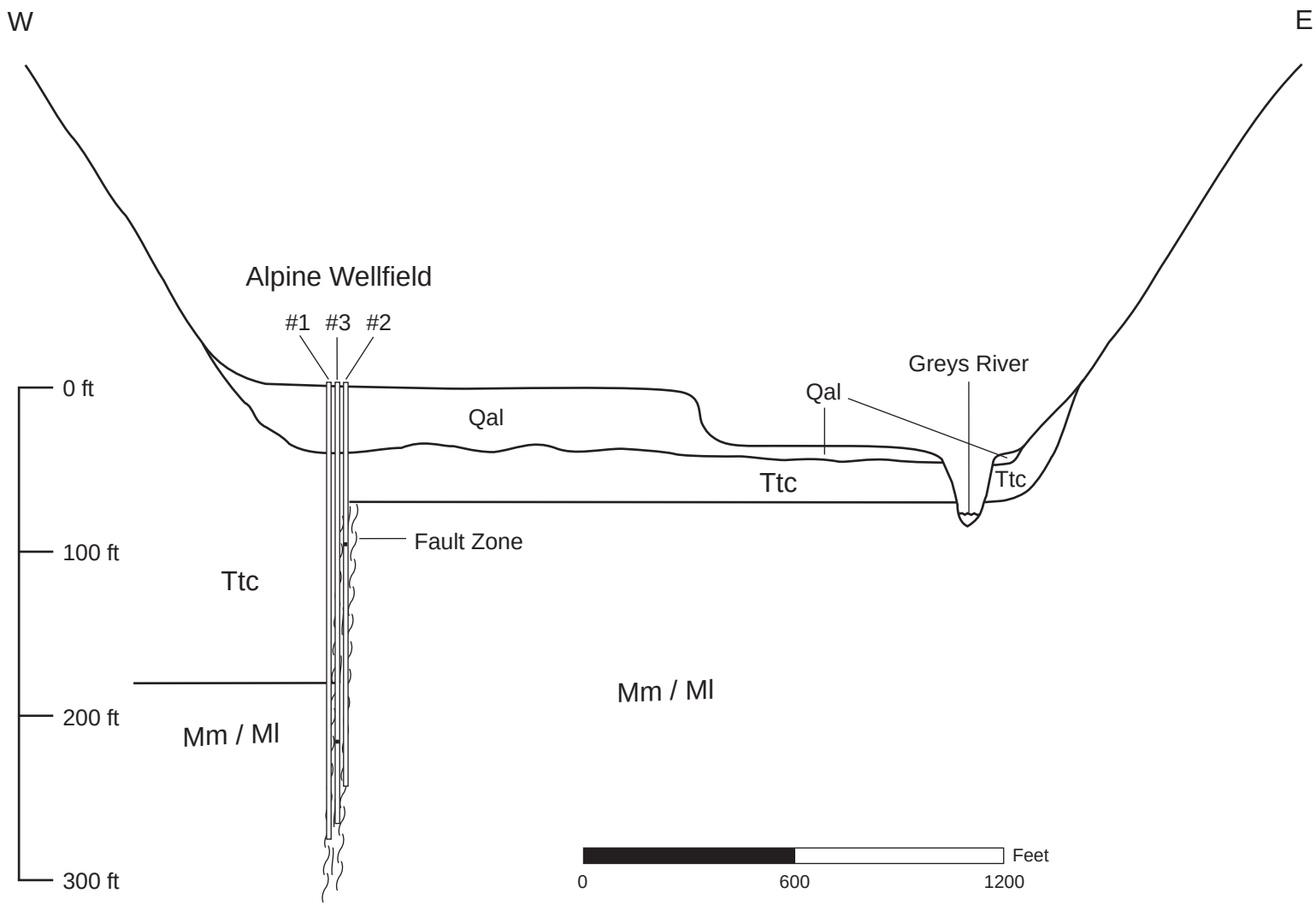


Figure C - Alpine Area Geology

geology: U.S. Geological Survey (Albee and Collins, 1975; Jobin, 1972)

Figure D - Alpine Wellfield Schematic Cross-Section



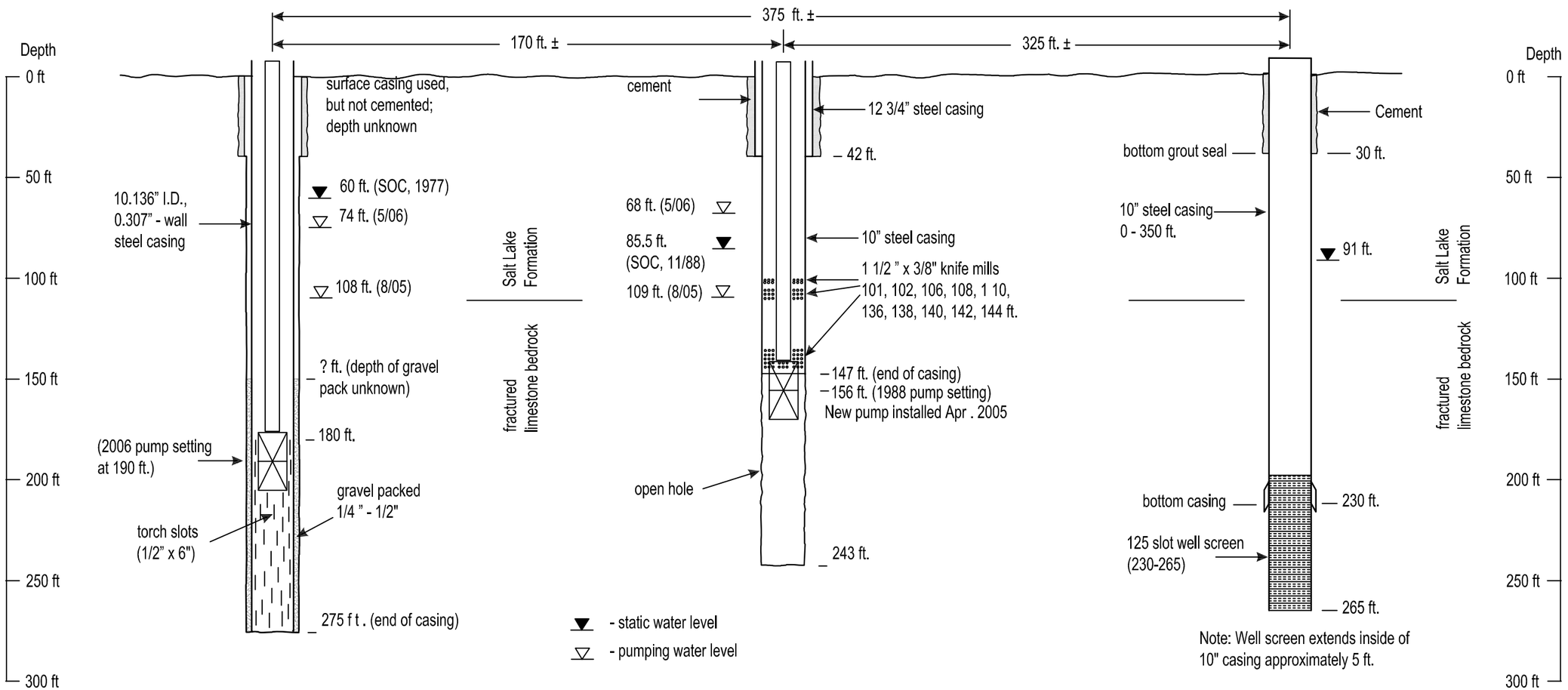


Figure E - Well Nos. 1, 2, and 3 Construction

NO SCALE

Prepared By: JKC
Date: 10/21/08
Rev. Date:

RENDEZVOUS ENGINEERING, P.C.
P.O. BOX 4858 JACKSON, WYOMING 83001
25 SOUTH GROS VENTRE STREET
PHONE - 307.733.5252 FAX - 307.733.2334

DRAWING TITLE: WELL DETAILS WELLS #1, #2 AND #3

PROJECT TITLE: WWDC ALPINE FIGURE 9

PROJECT NUMBER: 05-024

DRAWING NUMBER: FIG. 9

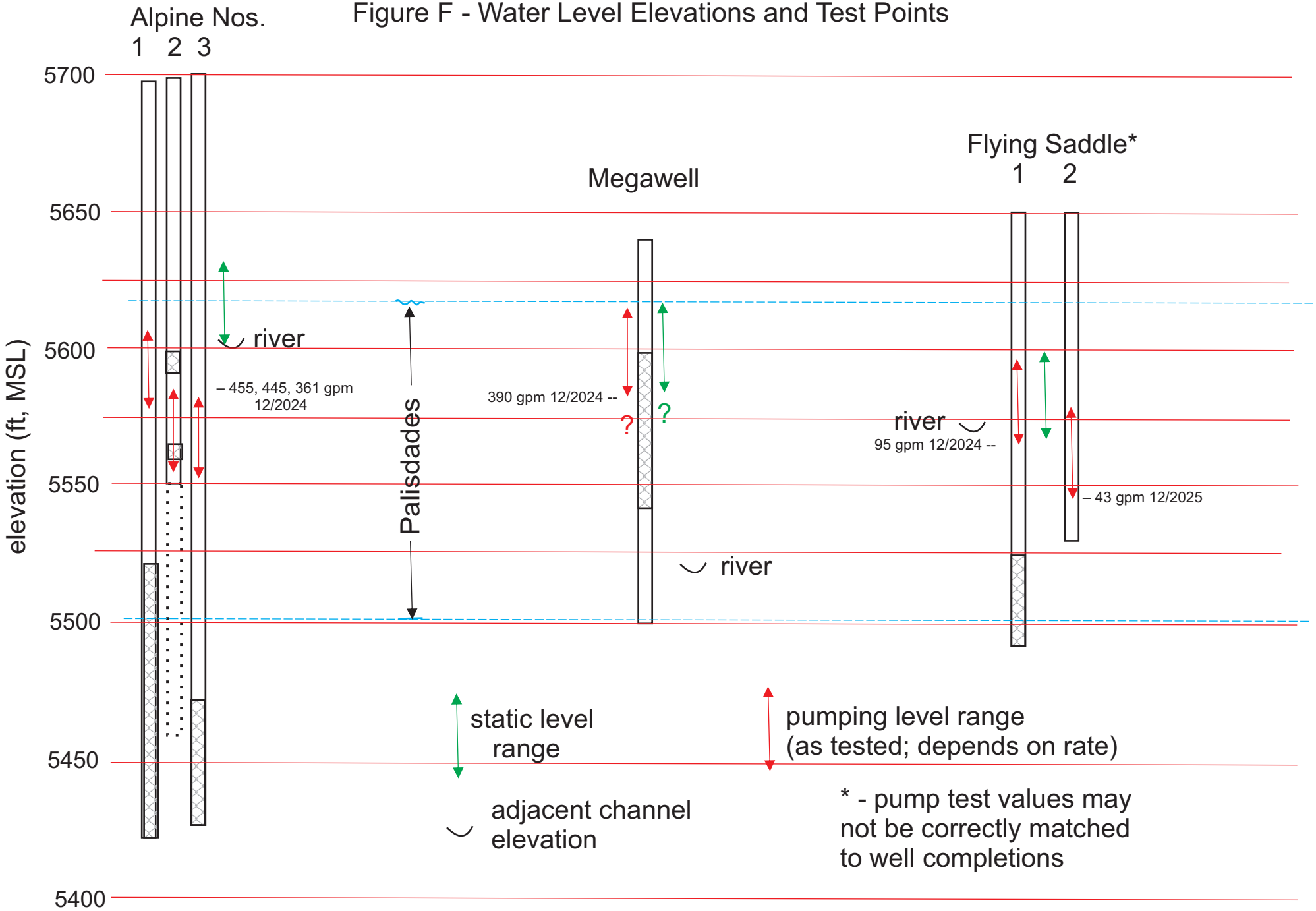


Figure F - Water Level Elevations and Test Points
Alpine Nos.
1 2 3
Megawell
Flying Saddle*
1 2
elevation (ft, MSL)
5700
5650
5600
5550
5500
5450
5400
river
– 455, 445, 361 gpm
12/2024
Palisdades
390 gpm 12/2024 --
?
?
river
river
95 gpm 12/2024 --
– 43 gpm 12/2025
static level
range
adjacent channel
elevation
pumping level range
(as tested; depends on rate)
* - pump test values may
not be correctly matched
to well completions

Model 7THC 700 GPM

GOULDS PUMPS

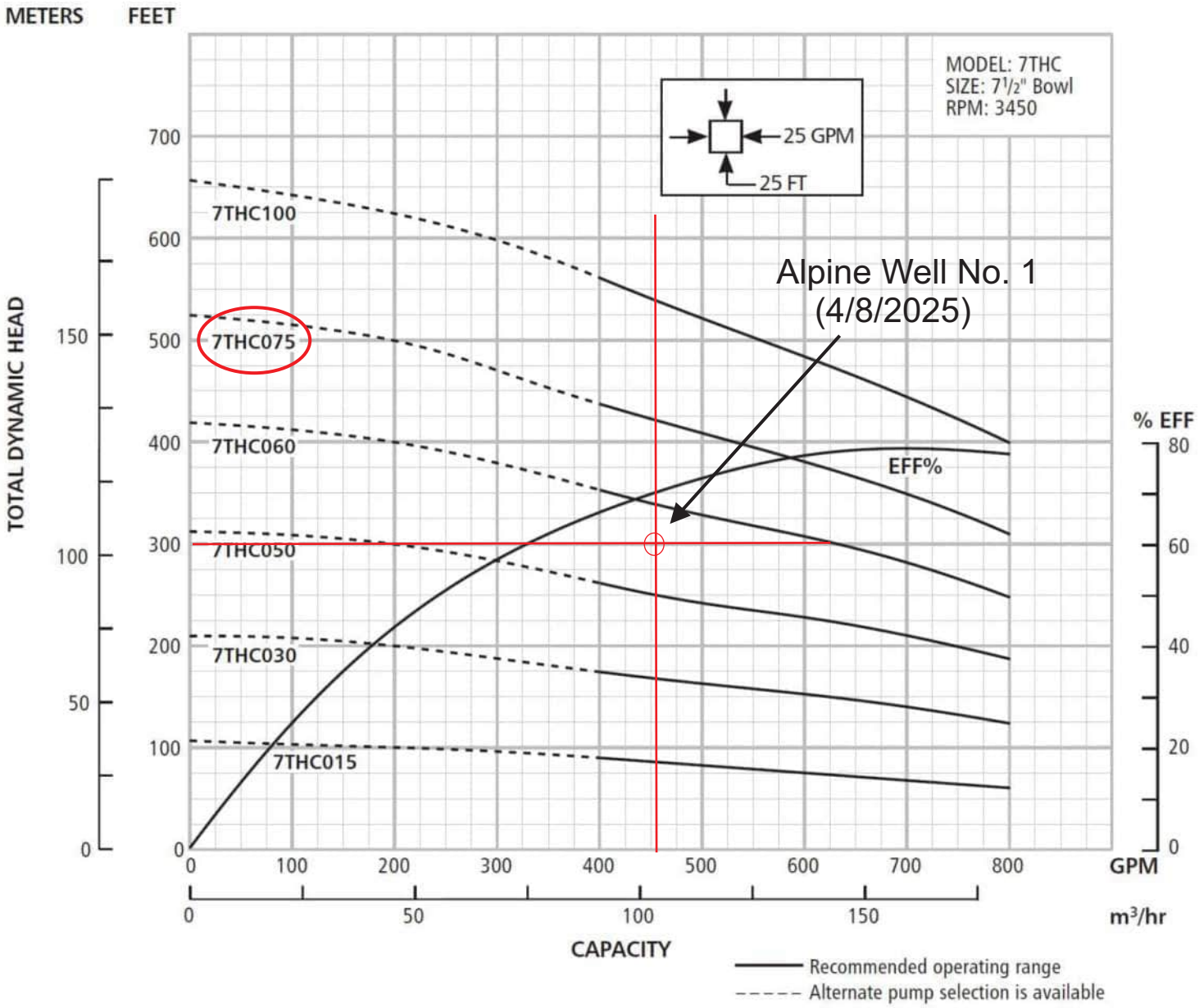
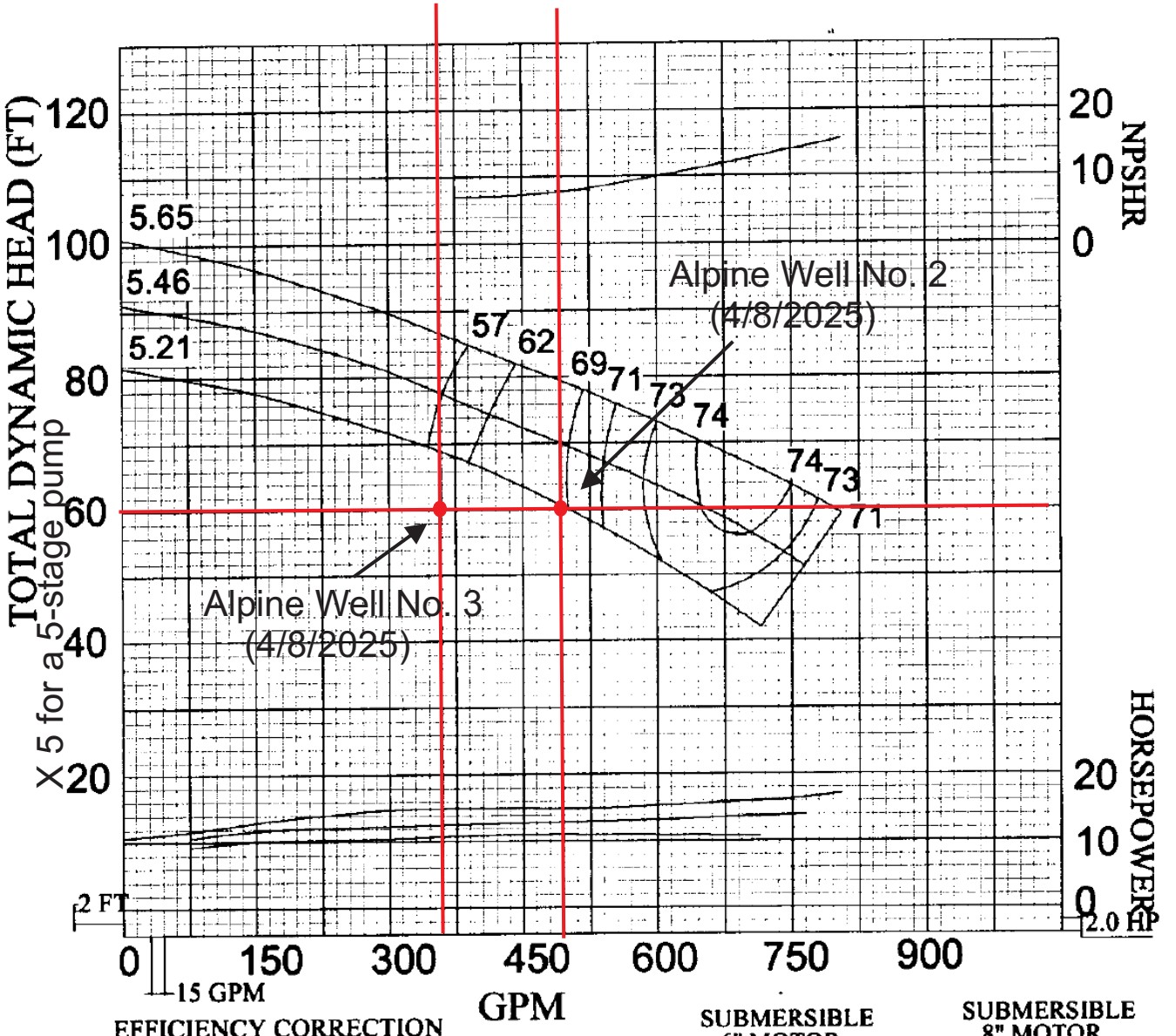


Figure G - Alpine Well No. 1 Pump Performance

DATE: 08-01-03
SUPERCEDES:
01-01-01

ROBBCO PUMPS
12610 N FM 400
IDALOU, TX 79329

7THE
3450 RPM
ENCLOSED IMPELLER



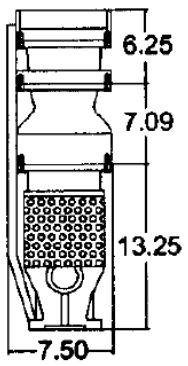
EFFICIENCY CORRECTION

STAGES 1	-3.0
STAGES 2	-2.0
STAGES 3	-1.0
STAGES 4	0.0
STAGES 5	0.0

BOWL DATA

DISC DIA (IN)	4,5.6
SUCT DIA (IN)	4
SHAFT DIA (IN)	1.19
LATERAL (IN)	0.38
ONE STG WT (LB)	50
ADD'L STG WT (LB)	28
THRUST FACTOR (LB/FT)	4.56
PSI MAX	310

SUBMERSIBLE 6" MOTOR



SUBMERSIBLE 8" MOTOR

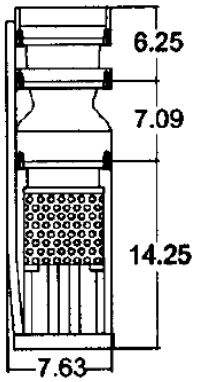


Figure H - Alpine Well Nos. 2 & 3 Pump Performance

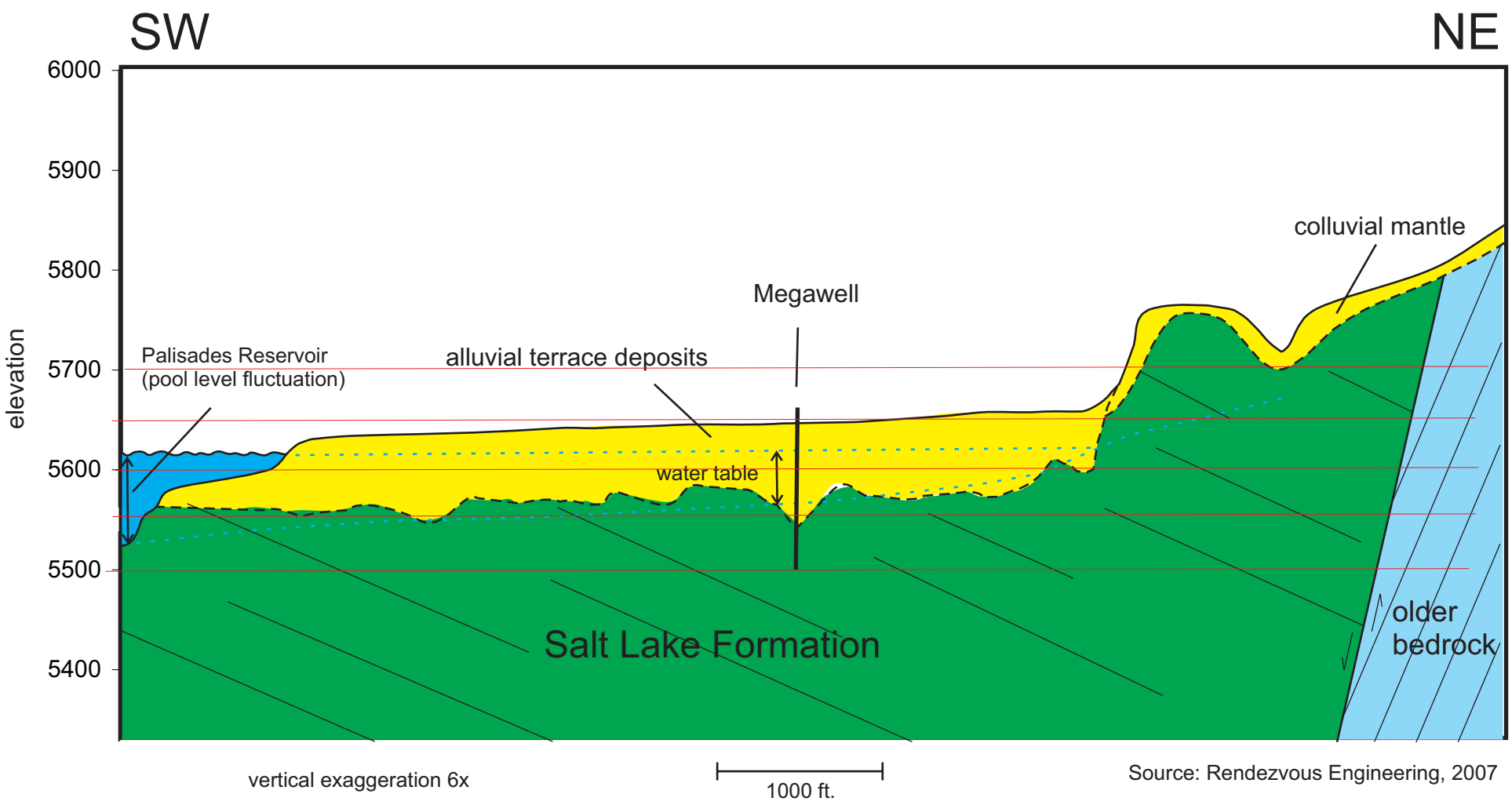
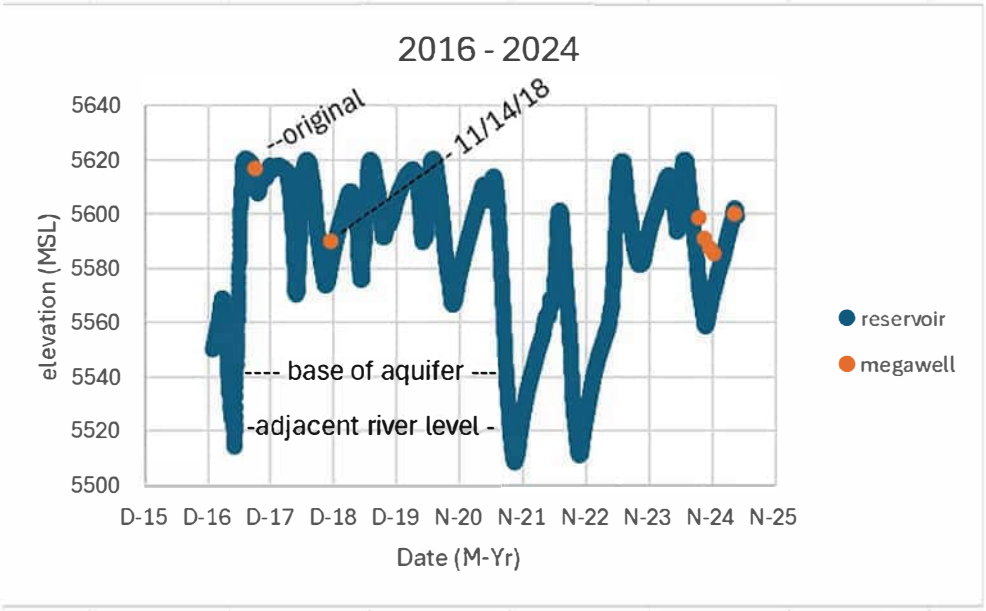
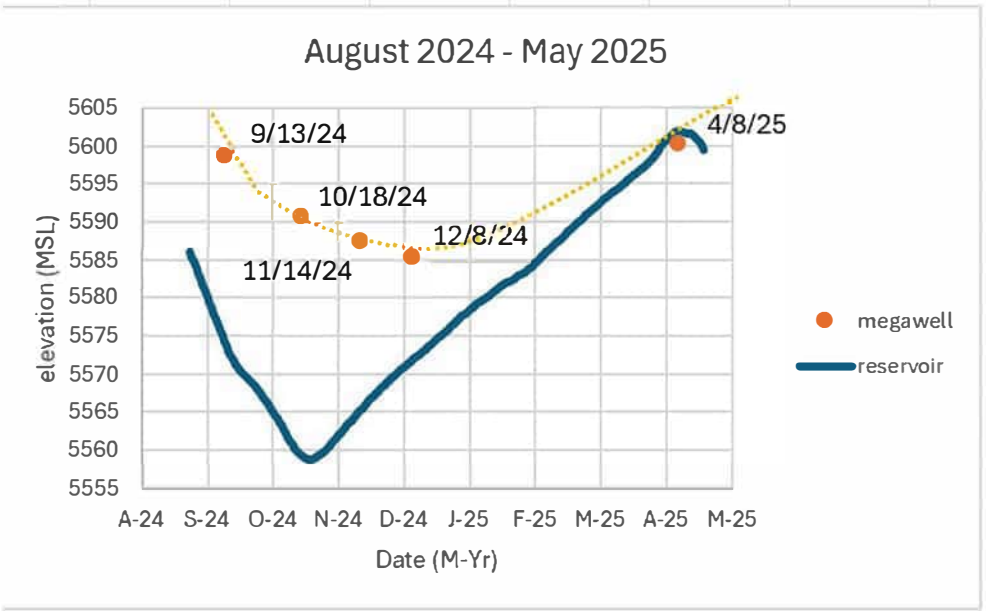


Figure I -"Megawell" Schematic Geologic Cross-Section





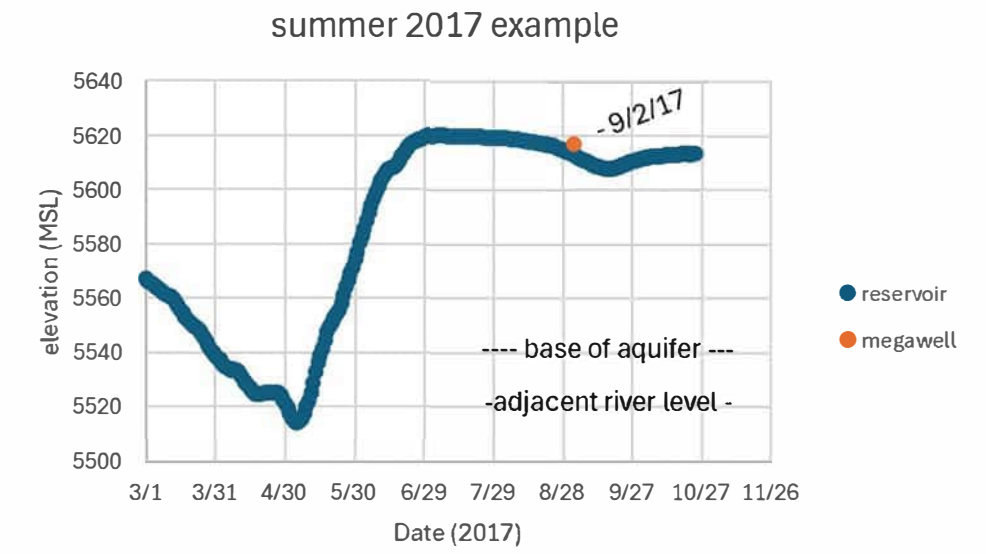
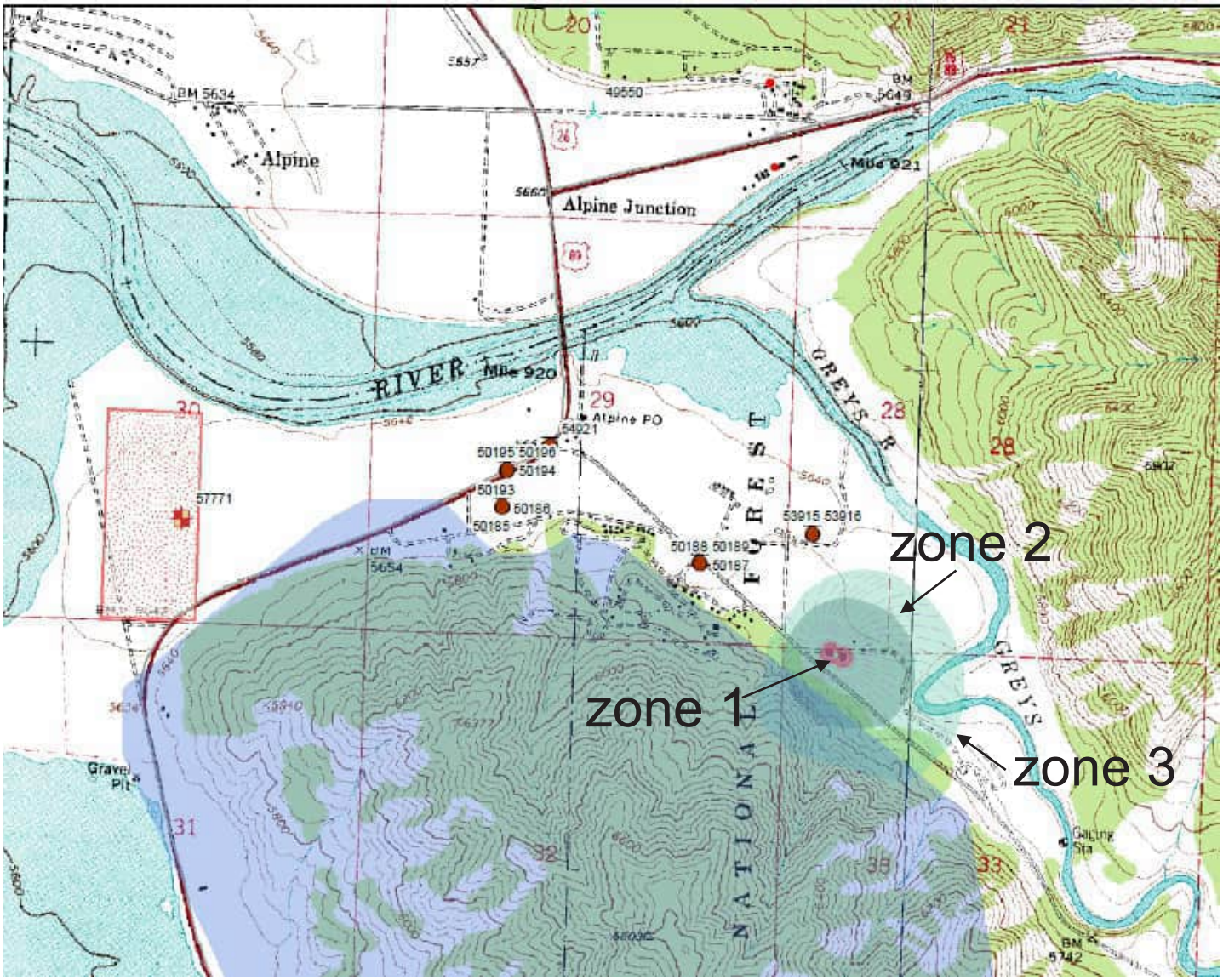
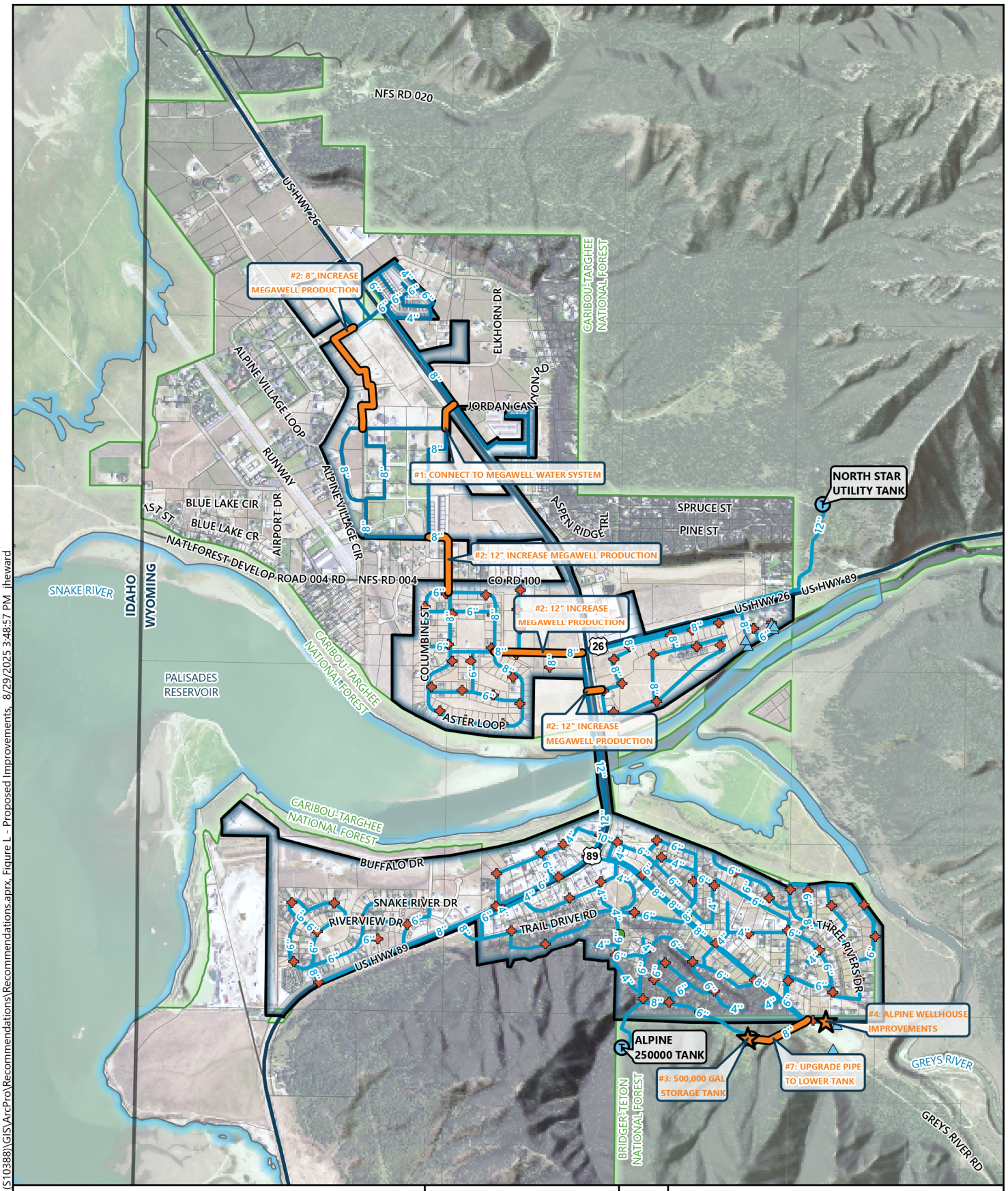


Figure J - Palisades Reservoir and Megawell Elevations



(extracted from TriHydro (2008)

Figure K - Source Water Protection Map



Legend

- Proposed Improvement (pipe)
- Proposed Improvement (star)
- Tank
- Well
- PRV
- Fire Hydrant
- Water Main (Approximate Location)
- Approximate Water Service Boundary

0 500 1,000 2,000

Feet

North

SUNRISE ENGINEERING

770 S WASHINGTON STREET SUITE A
AFTON, WYOMING 83110
TEL 307.885.8500 · FAX 307.885.8501
www.sunrise-eng.com

FIGURE L

PROPOSED IMPROVEMENTS

ALPINE, WYOMING

P:\WWDC Alpine Water Master Plan (S10388)\GIS\ArcPro\Recommendations\Recommendations.aprx, Figure L - Proposed Improvements, 8/29/2025 3:48:57 PM, jheward

Table 5 - Groundwater Quality Data

Analyte	Well Nos. 1 & 2 System[1]			Well #3		"Megawell"	Clinger No. 2	Flying Saddle	EPA Drinking Water Standards	
				Midway	Final[2]		9/16/2002	1 & 2		
CollectionDate	7/20/1995	8/30/2004	CCR composite	7/1/2008	7/2/2008	11/15/2018		2015	Primary	Secondary
MICROBIOLOGICAL (CFU/ml and P/A)										
Bacteria, Iron Related				<1	2300					
Bacteria, Total Coliform				absent	absent	present		absent		
Bacteria, E-Coli						absent				
MAJOR IONS (mg/L)										
Acidity, Total as CaCO3					<1	233				
Alkalinity, Total as CaCO3				250	254					
Bicarbonate as HCO3	340			305	282		330			
Carbonate as CO3				<1	14					
Calcium	80			74	73	61	67			
Chloride	10			6	6	2	5.3			250
Fluoride	0.19	0.3	0.3		0.3	<0.1	0.3	0.3	4	2
Magnesium	22			21	22	21	35			
Nitrogen, Nitrate+Nitrite as N	0.34	0.2	0.45, 0.29, 0 .19		0.1	0.46	0.9	1.3	10	
Nitrogen, Nitrite as N		<0.10			<0.10				1	
Potassium	1.4			<1	0.8		1			
Silica					4.6					
Sodium		2.1	3, 3.2, 3, 3.2	2	1.7	2	4	7.4		
Sulfate	6	10		9	10	3	33			250
NON-METALS (mg/L)	**0**									
Cyanide		<0.005			<0.005	<0.2			0.2	
PHYSICAL PROPERTIES										
Color (c.u.)					<5.0					15
Conductivity (umhos/cm)				475	489	430				
Corrosivity (unitless)					0.57					non-corrosive
Hardness as CaCO3	279				272	239	312			
Odor (T.O.N.)					NOO					3
pH (s.u.)				7.60	7.71	7.6				6.5 - 8.5
Total Dissolved Solids, TDS @ 180 C (mg/L)	286			267	244	240	310			500
Turbidity (NTU)					4.1					
METALS - TOTAL (mg/L)										
Aluminum	<0.005				<0.1					0.05 - 0.2
Antimony		<0.001			<0.001	<0.006			0.006	
Arsenic		<0.005			0.002	<0.01			0.01	
Barium		0.2	0.1, 0.2		0.2	<0.05	0	0.3	2	
Beryllium		<0.0005			<0.001	<0.001			0.004	
Boron					<0.1					
Cadmium		<0.0005			<0.001	<0.001			0.005	
Chromium		<0.05			<0.05	<0.005			0.1	
Copper	<0.05	0.01			<0.01	<0.01	0.12	0.2	1.3	1
Iron	0.11				<0.03		0.041		0.3	0.3
Lead		<0.001			<0.001	<0.001		10	0.015	
Manganese	<0.02				<0.01		<0.001			0.05
Mercury		<0.0005			<0.001	<0.0001			0.002	
Nickel		<0.02			<0.05	<0.01			0.1	
Selenium		<0.005	0.002		<0.001	<0.001			0.05	
Silver					<0.01					0.1
Thallium		<0.0004			<0.0004	<0.0005			0.002	
Uranium			0.0006	0.0008	0.0007				0.03	
Zinc	0.061				<0.01		0.145			5
RADIONUCLIDES - TOTAL (pCi/L)										
Gross Alpha			4	0.2	5.3	ND	1.8		15	
Gross Beta				-9	0.2				50	
Radium 226				0.15	0.3					
Radium 228				3.0	0.5					
Radium 226 + Radium 228			0.8, .06	3.1	0.8			0.5	5	

[1]All VOCs and SOCs tested for the existing system in 2004 resulted in "non-detects," with the exception of two VOCs: Chlorodibromomethane (0.67 ug/L) and Total Trihalomethanes (0.67 ug/L), neither of which were tested in Well #3 for the Final Test.

[2]All VOCs and SOCs tested resulted in "non-detects."

APPENDIX A

WWDC Star Valley Regional Master Plan – Town of Alpine

TOWN OF ALPINE

WATER SYSTEM INVESTIGATION AND EVALUATION

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2.0 WATER SYSTEM EVALUATION 3

3.0 SUMMARY 10

4.0 REFERENCES 11

FIGURES & PHOTOS

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APPENDIX B - SOURCE & STORAGE EVALUATION

APPENDIX C - WATER WELL STATEMENTS OF COMPLETION

APPENDIX D - WATER MODELING DATA & RESULTS

APPENDIX E - WATER QUALITY TEST RESULTS

SUNRISE ENGINEERING

1.0 BACKGROUND AND INFORMATION

1.1 BACKGROUND

The Town of Alpine is located on Highway 89 at the north end of Star Valley. It is 36 miles southwest of Jackson Hole and 35 miles north of Afton. It sits at the confluence of the Snake, Greys and Salt Rivers and lies at the edge of Palisades Reservoir. In the 2000 U.S. Census, Alpine had 550 residents living in an area of approximately 0.7 square miles. It is estimated that the population of Alpine has grown to 625 in 2008 (Pedersen Planning Consultants, 2005). The area surrounding Alpine has been growing rapidly the last few years. Alpine is studying the possibility of annexing several subdivisions and properties that lie north of the Snake River directly north of the Town. These areas include, Snake River Junction Subdivision, Alpine Meadows Subdivision, Best Western Flying Saddle property, and Alpendorf, Landis, and Hafeez property.

1.2 SYSTEM OVERVIEW

The Alpine Water and Sewer District was formed in the early 1970's. In 1974 a spring collection system was constructed near Little Jenny Lake, or the Mill Creek area which lies approximately 1 and ¾ miles southeast of Town. The collection area was a system of approximately 18 small springs which transmitted water to a 50,000 gallon concrete tank. From the tank, water was delivered by pipeline to the Town. Flow from the springs varied through months and seasons of the year. In 1977, a severe drought caused the springs to go nearly dry. This was the year that the first well was drilled. A second well was drilled in 1988. Well No. 1 appropriation was enlarged in 1985 and again in 1995. Total water rights for the two wells, is 725 gpm.

The Alpine Water and Sewer District was incorporated as the Town of Alpine in February 1989. At this time water rights were transferred to the Town.

In the summer of 1998 the spring fed water system was contaminated with E. coli. The EPA required the Town to remove the springs from the system unless the spring water was treated. Costs to treat the water were deemed too expensive by the Town and the springs were removed as a source for the system.

The current system consists of two sources, Alpine Wells No. 1 and 2, two concrete storage tanks, 8 and 10 inch transmission lines and 4 and 6 inch distribution lines. The Town has meters installed on connections. At the time of this study, Alpine is putting an additional well into service.

1.3 WATER SYSTEM GOVERNMENT

The Town of Alpine is incorporated with a Mayor and four City Council Members. The Town also has a City Manager. Val Jensen is the operator of the city's water system.

1.4 WATER USERS

Alpine has 379 residential connections (single family dwellings and apartments) and 34 commercial connections. Typically water use is analyzed in terms of equivalent residential units (ERUs) where the water used by each connection is compared to that of an average house. For the purposes of this study, the existing connections were grouped into 2 categories. Table 1.4.1 summarizes the connections.

TABLE 1.4.1 - CONNECTIONS AND EQUIVALENT RESIDENTIAL UNITS (ERUS)

	Existing Conn. / Units			Existing ERU's per Unit	Total Existing ERU's
Single Family Dwellings	325	/	325	1	325
Apartments	54	/	54	0.67	36
Commercial	34	/	34	1.14	39
Total:	**413**	**/**	**413**		**400**

1.5 WATER USE

Although the Alpine water system does have meters on individual connections, water use is estimated from data taken from meters on each well. Historically, the Town water operator has taken readings every few days at the meters. This data can be used to estimate average and maximum daily demands as shown in the table below. For comparison purposes the table also shows historical water use estimates for metered and unmetered water connections in Star Valley. A detailed spreadsheet showing monthly water use is included in Appendix A.

TABLE 1.5.1 – WATER USE SUMMARY

	Alpine Water Use		Typical Star Valley Water Use (gpd/ERU)	
	(gpd)	(gpd/ERU)	Metered Water Systems	Un-Metered Water Systems
Average Daily Demand	283,615	709	915	1,727
Maximum Daily Demand	840,833	2,102	2,489	4,697

Alpine's water use is similar to other metered systems in the valley and much lower than unmetered systems.

2.0 WATER SYSTEM EVALUATION

2.1 WATER SOURCES

The Alpine water system is served by two sources; Alpine Well No. 1, and Alpine Well No. 2. Alpine Well No. 3 is in the process of being permitted and being added to the system. Because Well No. 3 is not operational, it will not be included in the system evaluation for this study.

2.1.1 ALPINE WELL NO. 1

Alpine Well No. 1 is located on Forest Service property just off of the Grays River Road southeast of Town. It was drilled in 1977 following a severe drought that caused the springs, which were supplying the system, to nearly go dry. It is cased to its total depth of 275 feet. Depth to the first water bearing formation is 60 feet. The well has a 50 hp submersible pump set at 175 feet. The well produces approximately 350 gpm. Operation of Well No. 1 is alternated with Well No. 2 to enhance the life of the pumps. In 2006 an investigation was completed by Hinckley Consulting to determine the capacity of the two wells. The purpose of the study was to look at measures that could be taken to enlarge the system's source capacity. The results showed that Well No. 1 could have a sustained pumping rate of 750 gpm during peak-use periods. This will require a larger pump to be placed in the well. Also, it appears that there would need to be an enlargement in the water right to implement this increased pumping rate. Water rights for the well have been enlarged twice since it was drilled.

2.1.2 ALPINE WELL NO. 2

Alpine Well No. 2 is located 172 feet east of Well No 1. It was drilled in 1988 and is 243 feet deep. At the time of drilling static water depth was 85 feet. The well is cased to 147 feet. The 50 hp submersible pump is set at a depth of 156 feet. Well No. 2 also produces approximately 350 gpm. The 2006 Hinckley investigation showed that Well No. 2 would be able to produce 600 gpm. However, if this rate is maintained for months on end there could be problems from entrainment of air from water cascading into the well through perforations above the pumping water level. Well No. 2 will also require a larger pump being set to reach this higher production rate along with increased water rights.

2.1.3 ALPINE DISTRICT WELL NO. 3

At the time of this study, a third well has been drilled and tested. Plans are to place this well into service by the end of 2008. Anticipated capacity for Well No. 3 is 500 gpm. Because the well has not been incorporated into the system at the time of this study, it will not be included in source capacity calculations.

2.1.4 WATER SOURCE SUMMARY

A summary of the Town's water sources is shown below.

TABLE 2.1.4.1 – WATER SOURCE SUMMARY

	Existing Capacity (gpm)	Potential Capacity (gpm)
Alpine Well No. 1	350	750
Alpine Well No. 2	350	600
Total	**700**	**1,350**

2.1.5 WATER SOURCE ANALYSIS

For the purposes of this evaluation, source capacity is analyzed based on current Wyoming Department of Environmental Quality Rules and Regulations (WDEQ, 2006). WDEQ regulations concerning source capacity are shown below along with the analysis for the Alpine system:

1. *The total developed ground water source, along with other water source, shall provide a combined capacity that shall equal or exceed the design maximum daily demand (WDEQ, 2006, p. 12-17).*

Existing source capacity	1,008,000 gpd	700 gpm	479 ERU
-Maximum daily demand	840,833 gpd	584gpm	400 ERU
Excess capacity =	**167,167 gpd**	**116 gpm**	**79 ERU**

2. *A minimum of two wells (includes springs), or one well and finished water storage equal to twice the maximum daily demand shall be provided. (WDEQ, 2006, p.12-17)*

Alpine has two sources.

3. *Where two sources are provided, the sources (and storage) shall be capable of equaling or exceeding the design average daily demand with the largest producing well out of service. (WDEQ, 2006, p. 12-17).*

Capacity with largest source out of service	504,000 gpd
+ Storage capacity	750,000 gpd
- Average daily demand	283,615 gpd
Excess capacity	**970,385 gpd (1,369 ERU)**

Based on the above analysis, the Town has an excess source capacity of 167,167 gpd under the first rule. This equates to 79 ERU's (based on 2,102 gpd/ERU maximum daily demand). A summary sheet showing the water source, storage, and water right analysis is included in Appendix B.

2.2 WATER RIGHTS

The Town of Alpine has municipal water rights for Alpine Wells No. 1, and No. 2 in the amounts of 350 gpm and 375 gpm. A summary of the Town's water rights is shown below. The associated water rights documents are included in Appendix C.

TABLE 2.2.1 – ALPINE WATER RIGHTS SUMMARY

Permit	Source	Priority	Amount	Comments
U.W 39163	Alpine Well No. 1	07/20/1977	200 gpm (0.445 cfs)	
U.W. 78067	Alpine Well No. 1	12/27/1985	100 gpm (0.222 cfs)	Enlarged Alpine No. 1
U.W. 98662	Alpine Well No. 1	03/27/1995	50 gpm (0.111 cfs)	Enlarged Alpine No. 1
U.W. 77717	Alpine Well No. 2	06/23/1988	375 gpm (0.836 cfs)	

2.3 WATER STORAGE

Alpine has 2 storage tanks. One tank is a 250,000 gallon tank and the other is a 500,000 gallon tank.

2.3.1 ALPINE 250,000 GALLON TANK

Alpine's 250,000 gallon reinforced concrete cylindrical storage tank is located south of Town on the hillside. The property that the tank rests on is Forest Service property (see Figure 1). The tank was constructed in 1996 and is in good condition. The tank is partially buried to protect it from freezing. The 250,000 gallon tank is at a higher elevation than the 500,000 gallon tank and feeds the upper pressure zone of the system. Water is delivered to this tank from the 500,000 gallon tank by a booster pump through a 6 inch diameter line. The booster pump is located just west of the wells. The line is enlarged to an 8 inch line before dumping into the tank. The booster pump can feed the zone the tank is on and move water to the tank at the same time.

According to Val Jensen, Alpine water system operator, the tank was last cleaned and inspected by divers in 2005.

2.3.2 ALPINE 500,000 GALLON TANK

Alpine's 500,000 gallon concrete reinforced cylindrical storage tank is also located on Forest Service property on the hillside east of the 250,000 gallon tank (see Figure 1). This tank was constructed in 1996 and is in good condition. The tank is partially buried. Water is delivered to this tank from the wells through an 8-inch line. Water from this tank is gravity feed into the lower pressure zone of the system through a 10-inch line. Water from the 500,000 gallon tank is also delivered to the 250,000 gallon tank through a

6-inch line that passes through a booster pump. This tank was last cleaned and inspected by divers in 2005.

TABLE 2.3.1 – WATER STORAGE SUMMARY

	Volume (gallons)	Type	Year Constructed
Alpine Tank	250,000	Concrete, Cylindrical	1996
Alpine Tank	500,000	Concrete, Cylindrical	1996
Total	**750,000**		

2.3.3 WATER STORAGE ANALYSIS

The WDEQ regulations for storage are based on the size of the water system. As the systems increase in size (based on the average daily demand of the system), the required storage per the number of gallons served decreases. The WDEQ requirements for storage capacity are listed below along with the analysis for the Alpine System.

1. *Water systems serving less than 50,000 gallons on the design average daily demand shall provide clearwell and system storage capacity equal to the average daily demand (WDEQ, 2006, 12-65).*

   Not applicable.

2. *Water systems serving from 50,000 to 500,000 gallons on the design average daily demand shall provide clearwell and system storage capacity equal to the average daily demand plus fire storage, based on recommendations established by the State Fire Marshall or local fire agency (WDEQ, 2006, 12-65).*

   The Alpine average daily demand is estimated at 283,615 gallons. Required fire storage is estimated as 180,000 gallons (1,500 gallons for 120 minutes). Therefore the total required storage is 283,615 plus 180,000 or 463,615 gallons. The Alpine tanks have a capacity of 750,000 gallons. So currently, Alpine has an excess capacity of 286,385 gallons.

3. *Water systems serving in excess of 500,000 gallons on the design average daily demand shall provide clearwell and system storage capacity equal to 25 percent of the design maximum daily demand, plus added fire storage based on recommendations established by the State Fire Marshall or local fire agency (WDEQ, 2006, 12-65).*

   Not applicable.

4. *Storage need not be provided in well supply system where a minimum of two wells are provided and a maximum hour demand or fire demand, whichever is greater, can be supplied with the largest well out of service (WDEQ, 2006, 12-65).*

Not applicable.

5. *If the system only has one source, the finished water storage shall be equal to twice the maximum daily demand (WDEQ, 2006, 12-17).*

   Not applicable.

According to the WDEQ Rules and Regulations the Alpine system has 286,385 gallons of excess capacity. This equates to 404 ERUs, based on 709 gpd/ERU average daily demand.

2.4 WATER DISTRIBUTION SYSTEM

In order to model the distribution system, a water system modeling software, (H20 Net) was used. This software analyzes the ability of the system to perform based on its given pipe sizes, pipe lengths, system elevations, tank locations, and pipe configurations. The program models various demand scenarios that the system may be required to meet. These scenarios include average and peak daily demands, and fire flows at various locations on the system.

Results from the water model indicate that static pressures in the Alpine system range from 60 psi at Junction 190 located just below the 250,000 gallon tank to 98 psi at Junction 240 on Forest Circle Drive. Under maximum daily demand, pressures in the Alpine system are only slightly less (about 1 psi) than the static pressure. Under WDEQ rules and regulations, the normal working pressure in the system should not be less than 35 psi (DEQ, 2006, p. 12-99). According to the water model there are no connections that have less than 35 psi.

Wyoming DEQ requires distribution systems to be sized to maintain a minimum pressure of 20 psi at ground level at all points under all conditions of flow (DEQ, 2006, 12-69). For analysis purposes, the worst-case flow condition would be a fire flow demand superimposed upon the maximum daily demand. This scenario was modeled with H2O Net. The model determined the available fire flow at each fire hydrant location while maintaining 20 psi at all nodes in the system. The result of this analysis shows that the estimated available fire flow ranges from 954 gpm to 4,275 gpm. Detailed results from the H20 Net water model are included in Appendix D.

Fire flow requirements are regulated in Lincoln County by the International Fire Code. The typical fire flow requirement for residential construction is 1,000 gpm. For commercial areas, the requirement is 1,500 gpm and up depending on the size of the building, the type of construction and whether the building has sprinklers.

2.5 WATER QUALITY AND TREATMENT

The water quality of the Alpine system has historically been good. There have been 4 MCL (maximum contaminant level) violations in the past 10 years. These have involved the presence of coliform bacteria in the samples. There have been 23 monitoring violations in the past 10

years. This means that the system failed to complete all samples or sample in a timely manner (SDWIS, 2008).

In June of 1998, Town residents and visitors came down with flu like symptoms, part of those individuals were diagnosed with E coli. Following the outbreak which was attributed to the drinking water, the springs, which had been a partial source of the Town's water, were disconnected from the system. Since that time, the Town has used two wells as their water sources.

As part of this study, water quality tests were performed at the well house. The wells were sampled at the sample tap located inside the well house. A list of the constituents that were tested along with the results is shown in Appendix E.

The Alpine system has the ability to chlorinate the water at the well house. The well house is equipped with a hypochlorite system with a metering pump that pumps the chlorine directly into the pipeline.

Water quality test results found in Appendix E indicate that water sources for the Alpine System have an average Total Dissolved Solids (TDS) of 288 mg/L. The Maximum Contaminant Level (MCL) allowed by the EPA is 500. The highest level of Nitrogen, Nitrate+Nitrite+N found in any Alpine source is 1.46 mg/L. The MCL is 10. There are no other values tested that are close to the MCLs allowed.

2.6 SYSTEM OPERATIONS

As discussed in Section 1.3, the Alpine water system is owned and operated by the Town of Alpine and governed by the Town Council.

The responsibilities of the water operator include the operation, maintenance, repair, and water quality testing of the system. They are directly responsible to the customers for the quality of drinking water provided and to the Town or district for keeping the system in good repair and proper working order.

Each system has different components that require maintenance. It is important that the operator have a maintenance schedule that outlines when various components of the system require attention. The schedule will depend on the operators experience with the system as well as manufactures recommendations for maintenance.

2.6.1 MAINTENANCE RECOMMENDATIONS

The following is a list of the major components that were identified in the Afton system and suggested maintenance procedures and frequency.

TABLE 2.6.1.1 – MAINTENANCE PROCEDURES AND FREQUENCY

Component	Action	Frequency
Concrete Tanks	Operator inspection Professional inspection/cleaning	Yearly 3-5 yrs
Well House	Inspect and clean if necessary, maintain valves, meters, gages, and electronic controls in accordance with manufactures recommendations (see O& M manual).	Yearly
PRV Vault	Inspect vault, clean and repair if necessary. Clean, adjust, disassemble, and repair PRVs as necessary (see manufacturers instructions). Inspect pressure gages. Exercise gate valves.	Yearly
Mainline Meter	Check operation, check for noise. Check mounting and alignment.	Monthly Yearly
Service Meter	Visually inspect. Replace.	Yearly 15-20 yr
Distribution System Valves	Locate, inspect, and exercise. Check valve box alignment and remove any debris.	Yearly
Fire Hydrants	Operate, check for proper draining, exercise isolation valve, check nozzle threads and caps, inspect operating nuts for roundness, check for leaks.	Yearly
Dead Ends	Flush, flow velocity in pipe greater than 2.5 ft/s	Variable

2.6.2 FLOW MEASUREMENT

The Alpine system has master meters in the pump/wellhouse as well as meters on individual connections. Flow is the most important measurement made in a water system. The Town operators have done a good job over the years of collecting flow data for the system. Flow measurement can help in identifying leaks. An accurate flow record can also assist the board in determining how much excess capacity the system has and how many additional connections the system can handle.

3.0 SUMMARY

The Alpine system is in good condition. Water usage is consistent with similar sized systems in Star Valley. In comparison to the Afton system which recently under went a major project to replace the majority of the water mainlines; Alpine uses less than 1/2 the amount of water per connection.

The Alpine water sources are in good condition and the system has adequate water source capacity to handle 79 ERUs or 79 additional single family residential connections, assuming new connections have similar water demands as the existing connections.

Alpine currently has a water storage excess of 286,385 gallons, according to the WDEQ rules and regulations for storage capacity. This capacity is sufficient to accommodate 404 additional ERUs. Any improvements to the water system would require that the system meet WDEQ regulations. As mentioned earlier, the system is in the process of adding an additional well.

The distribution system appears to be able to accommodate the existing demands, according to the water model that was created. Water pressures range from 60 psi to 119 psi during maximum daily demand. Available fire flows are around 2,000 gpm for the 58 existing fire hydrants.

4.0 REFERENCES

Wyoming Department of Environmental Quality (2006). *Water Quality Rules and Regulations Chapter 12.*

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Hinckley Consulting Memorandum (2005). *Alpine 2005 Master Plan Update, Increased Yield Investigations-Alpine Wells Nos. 1 and 2.*

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Sunrise Engineering (Oct. 1995). *Alpine Junction Water Level I Study.* Wyoming Water Development Commission.

FIGURES & PHOTOS

SUNRISE
ENGINEERING

Figure 1
Alpine
Water System

Legend

- Fire Hydrant
- Well
- PRV
- Storage Tank

Water Line
Diameter

- 4
- 6
- 8
- 10

- Township
- Sections

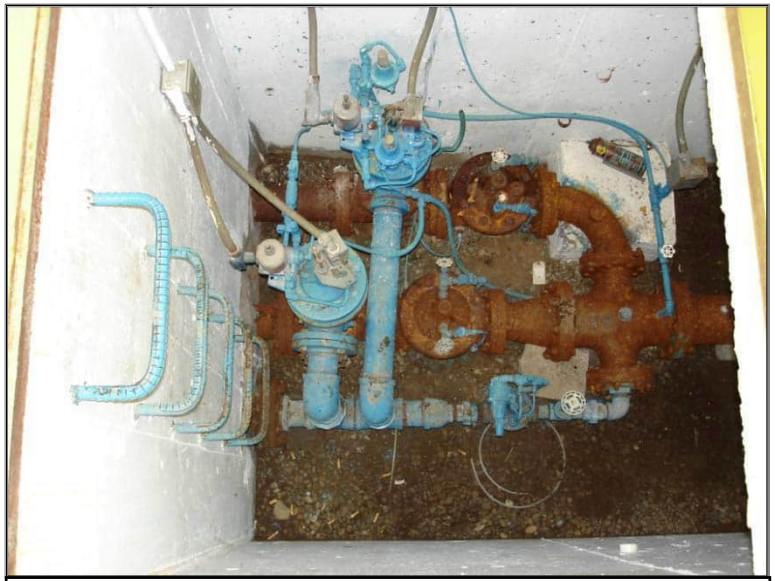
0 300 600 1,200 Feet

SUNRISE ENGINEERING

For display purposes only.

WELL CONTROL & BOOSTER PUMP BUILDING

BOOSTER PUMPS (Pump water from 500,000 gallon tank up to 250,000 gallon tank.)



WELL CONTROL VALVING

ALPINE 500,000 GALLON TANK

ALPINE 250,000 GALLON TANK

APPENDIX A

WATER USE DATA

SUNRISE ENGINEERING

TOWN OF ALPINE
Water Use Summary

Average and Maximum Daily Water Use by Month in Gallons per Day

	2004			2005			2006			2007		
	Ave Day	Max Day	Min Day	Ave Day	Max Day	Min Day	Ave Day	Max Day	Min Day	Ave Day	Max Day	Min Day
January	255,800	344,500	183,000	152,548	224,000	14,000				171,672	226,000	23,000
February	266,414	532,000	111,400	145,143	259,000	19,500	159,647	204,000	49,000	199,143	256,000	118,000
March	298,194	406,000	238,000	159,387	455,000	23,000	165,056	225,667	123,000	207,871	348,500	83,000
April	295,967	449,000	255,000	154,321	213,000	11,000	168,094	267,000	88,667	216,033	412,500	127,000
May	341,679	631,000	240,250	200,818	356,000	30,000				321,500	570,000	200,000
June	392,545	301,333	559,000	257,481	375,200	197,000	291,330	585,500	228,333	511,300	961,000	283,500
July	515,300	609,000	392,000	534,138	673,000	409,571	523,161	859,000	190,000	706,348	941,000	553,000
August	484,065	711,000	181,000	487,778	832,333	166,000	483,613	856,000	308,667			
September	299,278	419,667	164,500	378,692	563,000	180,000	339,679	521,000	143,500			
October	239,098	270,286	88,000	376,429	498,000	37,000						
November	146,563	230,000	49,000	154,231	275,000	38,000						
December	136,048	201,000	22,000									

Average Daily Demand (gpd):	283,615
Maximum Daily Demand (gpd):	840,833

TOWN OF ALPINE
Water Use 2004-2007

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
1-Jan-04	663,882,000			
2-Jan-04	664,132,000	1	250,000	250,000
3-Jan-04	664,374,000	1	242,000	242,000
4-Jan-04	664,623,000	1	249,000	249,000
5-Jan-04	664,862,000	1	239,000	239,000
6-Jan-04	665,109,000	1	247,000	247,000
7-Jan-04	665,351,000	1	242,000	242,000
8-Jan-04	665,602,000	1	251,000	251,000
9-Jan-04	665,843,000	1	241,000	241,000
10-Jan-04	666,093,000	1	250,000	250,000
11-Jan-04	666,329,000	1	236,000	236,000
12-Jan-04	666,577,000	1	248,000	248,000
13-Jan-04	666,828,000	1	251,000	251,000
14-Jan-04	667,083,000	1	255,000	255,000
15-Jan-04	667,333,000	1	250,000	250,000
16-Jan-04	667,594,000	1	261,000	261,000
17-Jan-04	667,845,000	1	251,000	251,000
19-Jan-04	668,360,000	2	515,000	257,500
20-Jan-04	668,625,000	1	265,000	265,000
21-Jan-04	668,876,000	1	251,000	251,000
22-Jan-04	669,130,000	1	254,000	254,000
23-Jan-04	669,384,000	1	254,000	254,000
25-Jan-04	670,073,000	2	689,000	344,500
26-Jan-04	670,291,000	1	218,000	218,000
27-Jan-04	670,474,000	1	183,000	183,000
28-Jan-04	670,760,000	1	286,000	286,000
29-Jan-04	670,963,000	1	203,000	203,000
31-Jan-04	671,556,000	2	593,000	296,500
1-Feb-04	671,840,000	1	284,000	284,000
6-Feb-04	672,397,000	5	557,000	111,400
8-Feb-04	673,156,000	2	759,000	379,500
9-Feb-04	673,688,000	1	532,000	532,000
10-Feb-04	673,958,000	1	270,000	270,000
12-Feb-04	674,472,000	2	514,000	257,000
13-Feb-04	674,706,000	1	234,000	234,000
14-Feb-04	674,964,000	1	258,000	258,000
16-Feb-04	675,710,000	2	746,000	373,000
17-Feb-04	676,006,000	1	296,000	296,000
19-Feb-04	676,326,000	2	320,000	160,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
20-Feb-04	676,615,000	1	289,000	289,000
21-Feb-04	676,926,000	1	311,000	311,000
22-Feb-04	677,224,000	1	298,000	298,000
23-Feb-04	677,526,000	1	302,000	302,000
24-Feb-04	677,809,000	1	283,000	283,000
25-Feb-04	678,104,000	1	295,000	295,000
26-Feb-04	678,387,000	1	283,000	283,000
27-Feb-04	678,686,000	1	299,000	299,000
28-Feb-04	678,976,000	1	290,000	290,000
29-Feb-04	679,282,000	1	306,000	306,000
1-Mar-04	679,560,000	1	278,000	278,000
2-Mar-04	679,857,000	1	297,000	297,000
3-Mar-04	680,145,000	1	288,000	288,000
4-Mar-04	680,441,000	1	296,000	296,000
5-Mar-04	680,723,000	1	282,000	282,000
6-Mar-04	681,018,000	1	295,000	295,000
7-Mar-04	681,291,000	1	273,000	273,000
8-Mar-04	681,581,000	1	290,000	290,000
9-Mar-04	681,819,000	1	238,000	238,000
10-Mar-04	682,059,000	1	240,000	240,000
11-Mar-04	682,358,000	1	299,000	299,000
12-Mar-04	682,713,000	1	355,000	355,000
13-Mar-04	683,119,000	1	406,000	406,000
15-Mar-04	683,704,000	2	585,000	292,500
16-Mar-04	683,976,000	1	272,000	272,000
17-Mar-04	684,222,000	1	246,000	246,000
18-Mar-04	684,573,000	1	351,000	351,000
19-Mar-04	684,940,000	1	367,000	367,000
20-Mar-04	685,223,000	1	283,000	283,000
22-Mar-04	685,785,000	2	562,000	281,000
23-Mar-04	686,098,000	1	313,000	313,000
24-Mar-04	686,390,000	1	292,000	292,000
25-Mar-04	686,697,000	1	307,000	307,000
26-Mar-04	686,987,000	1	290,000	290,000
29-Mar-04	687,917,000	3	930,000	310,000
30-Mar-04	688,211,000	1	294,000	294,000
31-Mar-04	688,526,000	1	315,000	315,000
1-Apr-04	688,975,000	1	449,000	449,000
2-Apr-04	689,278,000	1	303,000	303,000
5-Apr-04	690,145,000	3	867,000	289,000
6-Apr-04	690,431,000	1	286,000	286,000
7-Apr-04	690,706,000	1	275,000	275,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
8-Apr-04	690,979,000	1	273,000	273,000
9-Apr-04	691,234,000	1	255,000	255,000
12-Apr-04	692,085,000	3	851,000	283,667
13-Apr-04	692,372,000	1	287,000	287,000
14-Apr-04	692,673,000	1	301,000	301,000
15-Apr-04	692,949,000	1	276,000	276,000
16-Apr-04	693,233,000	1	284,000	284,000
19-Apr-04	694,112,006	3	879,006	293,002
21-Apr-04	694,645,000	2	532,994	266,497
22-Apr-04	694,943,000	1	298,000	298,000
23-Apr-04	695,228,000	1	285,000	285,000
26-Apr-04	696,164,000	3	936,000	312,000
27-Apr-04	696,483,000	1	319,000	319,000
28-Apr-04	696,823,000	1	340,000	340,000
29-Apr-04	697,101,000	1	278,000	278,000
30-Apr-04	697,405,000	1	304,000	304,000
4-May-04	698,721,000	4	1,316,000	329,000
5-May-04	699,024,000	1	303,000	303,000
6-May-04	699,353,000	1	329,000	329,000
7-May-04	699,715,000	1	362,000	362,000
10-May-04	700,907,000	3	1,192,000	397,333
11-May-04	701,436,000	1	529,000	529,000
13-May-04	702,053,000	2	617,000	308,500
14-May-04	702,377,000	1	324,000	324,000
18-May-04	703,338,000	4	961,000	240,250
19-May-04	703,630,000	1	292,000	292,000
20-May-04	703,924,000	1	294,000	294,000
21-May-04	704,555,000	1	631,000	631,000
24-May-04	705,587,000	3	1,032,000	344,000
25-May-04	705,902,000	1	315,000	315,000
26-May-04	706,243,000	1	341,000	341,000
27-May-04	706,607,000	1	364,000	364,000
28-May-04	706,972,000	1	365,000	365,000
1-Jun-04	708,192,000	4	1,220,000	305,000
2-Jun-04	708,631,000	1	439,000	439,000
3-Jun-04	709,013,000	1	382,000	382,000
4-Jun-04	709,454,000	1	441,000	441,000
7-Jun-04	710,817,000	3	1,363,000	454,333
8-Jun-04	711,269,000	1	452,000	452,000
9-Jun-04	711,731,000	1	462,000	462,000
10-Jun-04	712,222,000	1	491,000	491,000
14-Jun-04	713,802,000	4	1,580,000	395,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
15-Jun-04	714,361,000	1	559,000	559,000
16-Jun-04	714,703,000	1	342,000	342,000
17-Jun-04	715,240,000	1	537,000	537,000
18-Jun-04	715,590,000	1	350,000	350,000
21-Jun-04	716,494,000	3	904,000	301,333
22-Jun-04	716,937,000	1	443,000	443,000
23-Jun-04	717,381,000	1	444,000	444,000
24-Jun-04	717,744,000	1	363,000	363,000
25-Jun-04	718,067,000	1	323,000	323,000
28-Jun-04	719,259,000	3	1,192,000	397,333
29-Jun-04	719,623,000	1	364,000	364,000
30-Jun-04	719,926,000	1	303,000	303,000
1-Jul-04	720,340,000	1	414,000	414,000
2-Jul-04	720,732,000	1	392,000	392,000
6-Jul-04	722,452,000	4	1,720,000	430,000
7-Jul-04	722,914,000	1	462,000	462,000
8-Jul-04	723,412,000	1	498,000	498,000
9-Jul-04	723,937,000	1	525,000	525,000
12-Jul-04	725,401,000	3	1,464,000	488,000
13-Jul-04	725,952,000	1	551,000	551,000
14-Jul-04	726,509,000	1	557,000	557,000
15-Jul-04	727,065,000	1	556,000	556,000
16-Jul-04	727,614,000	1	549,000	549,000
19-Jul-04	729,275,000	3	1,661,000	553,667
20-Jul-04	729,836,000	1	561,000	561,000
21-Jul-04	730,385,000	1	549,000	549,000
22-Jul-04	730,934,000	1	549,000	549,000
23-Jul-04	731,492,000	1	558,000	558,000
26-Jul-04	733,311,000	3	1,819,000	606,333
27-Jul-04	733,920,000	1	609,000	609,000
28-Jul-04	734,360,000	1	440,000	440,000
29-Jul-04	734,861,000	1	501,000	501,000
30-Jul-04	735,385,000	1	524,000	524,000
2-Aug-04	737,353,000	3	1,968,000	656,000
3-Aug-04	737,949,000	1	596,000	596,000
4-Aug-04	738,501,000	1	552,000	552,000
5-Aug-04	739,212,000	1	711,000	711,000
6-Aug-04	739,806,000	1	594,000	594,000
9-Aug-04	741,599,000	3	1,793,000	597,667
10-Aug-04	742,167,000	1	568,000	568,000
11-Aug-04	742,779,000	1	612,000	612,000
12-Aug-04	743,351,000	1	572,000	572,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
13-Aug-04	743,892,000	1	541,000	541,000
16-Aug-04	745,316,000	3	1,424,000	474,667
17-Aug-04	745,856,000	1	540,000	540,000
18-Aug-04	746,366,000	1	510,000	510,000
19-Aug-04	746,547,000	1	181,000	181,000
20-Aug-04	746,904,000	1	357,000	357,000
23-Aug-04	748,034,000	3	1,130,000	376,667
24-Aug-04	748,329,000	1	295,000	295,000
25-Aug-04	748,608,000	1	279,000	279,000
30-Aug-04	750,391,000	5	1,783,000	356,600
1-Sep-04	750,720,000	2	329,000	164,500
2-Sep-04	750,994,000	1	274,000	274,000
3-Sep-04	751,288,000	1	294,000	294,000
6-Sep-04	752,547,000	3	1,259,000	419,667
8-Sep-04	753,192,000	2	645,000	322,500
9-Sep-04	753,509,000	1	317,000	317,000
13-Sep-04	754,704,000	4	1,195,000	298,750
14-Sep-04	754,922,000	1	218,000	218,000
16-Sep-04	755,476,000	2	554,000	277,000
17-Sep-04	755,778,000	1	302,000	302,000
1-Oct-04	759,562,000	14	3,784,000	270,286
4-Oct-04	760,335,000	3	773,000	257,667
5-Oct-04	760,572,000	1	237,000	237,000
6-Oct-04	760,817,000	1	245,000	245,000
7-Oct-04	761,056,000	1	239,000	239,000
8-Oct-04	761,302,000	1	246,000	246,000
13-Oct-04	762,568,000	5	1,266,000	253,200
14-Oct-04	762,815,000	1	247,000	247,000
15-Oct-04	763,058,000	1	243,000	243,000
18-Oct-04	763,815,000	3	757,000	252,333
19-Oct-04	764,035,000	1	220,000	220,000
20-Oct-04	764,268,000	1	233,000	233,000
21-Oct-04	764,452,000	1	184,000	184,000
22-Oct-04	764,540,000	1	88,000	88,000
25-Oct-04	765,023,000	3	483,000	161,000
26-Oct-04	765,197,000	1	174,000	174,000
28-Oct-04	765,581,000	2	384,000	192,000
1-Nov-04	765,991,000	4	410,000	102,500
2-Nov-04	766,214,000	1	223,000	223,000
3-Nov-04	766,414,000	1	200,000	200,000
4-Nov-04	766,561,000	1	147,000	147,000
5-Nov-04	766,610,000	1	49,000	49,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
8-Nov-04	767,013,000	3	403,000	134,333
9-Nov-04	767,226,000	1	213,000	213,000
10-Nov-04	767,422,000	1	196,000	196,000
12-Nov-04	767,618,000	2	196,000	98,000
15-Nov-04	768,031,000	3	413,000	137,667
16-Nov-04	768,250,000	1	219,000	219,000
17-Nov-04	768,447,000	1	197,000	197,000
22-Nov-04	769,030,000	5	583,000	116,600
23-Nov-04	769,260,000	1	230,000	230,000
24-Nov-04	769,467,000	1	207,000	207,000
29-Nov-04	770,271,000	5	804,000	160,800
1-Dec-04	770,463,000	2	192,000	96,000
2-Dec-04	770,485,000	1	22,000	22,000
6-Dec-04	771,137,000	4	652,000	163,000
7-Dec-04	771,338,000	1	201,000	201,000
20-Dec-04	773,128,000	13	1,790,000	137,692
3-Jan-05	775,432,000	14	2,304,000	164,571
4-Jan-05	775,600,000	1	168,000	168,000
6-Jan-05	775,842,000	2	242,000	121,000
7-Jan-05	776,043,000	1	201,000	201,000
10-Jan-05	776,452,000	3	409,000	136,333
14-Jan-05	777,057,000	4	605,000	151,250
18-Jan-05	777,689,000	4	632,000	158,000
19-Jan-05	777,703,000	1	14,000	14,000
20-Jan-05	777,897,000	1	194,000	194,000
21-Jan-05	778,094,000	1	197,000	197,000
23-Jan-05	778,292,000	2	198,000	99,000
24-Jan-05	778,516,000	1	224,000	224,000
25-Jan-05	778,699,000	1	183,000	183,000
26-Jan-05	778,723,000	1	24,000	24,000
27-Jan-05	778,910,000	1	187,000	187,000
28-Jan-05	779,100,000	1	190,000	190,000
31-Jan-05	779,535,000	3	435,000	145,000
1-Feb-05	779,724,000	1	189,000	189,000
2-Feb-05	779,777,000	1	53,000	53,000
3-Feb-05	779,937,000	1	160,000	160,000
6-Feb-05	780,567,000	3	630,000	210,000
9-Feb-05	780,785,000	3	218,000	72,667
10-Feb-05	780,970,000	1	185,000	185,000
11-Feb-05	781,169,000	1	199,000	199,000
14-Feb-05	781,586,000	3	417,000	139,000
18-Feb-05	782,187,000	4	601,000	150,250

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
20-Feb-05	782,449,000	2	262,000	131,000
22-Feb-05	782,967,000	2	518,000	259,000
24-Feb-05	783,006,000	2	39,000	19,500
25-Feb-05	783,201,000	1	195,000	195,000
28-Feb-05	783,599,000	3	398,000	132,667
1-Mar-05	783,810,000	1	211,000	211,000
3-Mar-05	784,159,000	2	349,000	174,500
4-Mar-05	784,219,000	1	60,000	60,000
7-Mar-05	784,401,000	3	182,000	60,667
8-Mar-05	784,856,000	1	455,000	455,000
9-Mar-05	785,024,000	1	168,000	168,000
10-Mar-05	785,228,000	1	204,000	204,000
11-Mar-05	785,420,000	1	192,000	192,000
26-Mar-05	787,739,000	15	2,319,000	154,600
27-Mar-05	787,934,000	1	195,000	195,000
28-Mar-05	788,126,000	1	192,000	192,000
29-Mar-05	788,149,000	1	23,000	23,000
30-Mar-05	788,339,000	1	190,000	190,000
31-Mar-05	788,540,000	1	201,000	201,000
1-Apr-05	788,705,000	1	165,000	165,000
2-Apr-05	788,752,006	1	47,006	47,006
4-Apr-05	789,163,000	2	410,994	205,497
5-Apr-05	789,314,000	1	151,000	151,000
7-Apr-05	789,577,000	2	263,000	131,500
8-Apr-05	789,769,000	1	192,000	192,000
10-Apr-05	789,988,000	2	219,000	109,500
11-Apr-05	790,198,000	1	210,000	210,000
13-Apr-05	790,428,000	2	230,000	115,000
15-Apr-05	790,792,000	2	364,000	182,000
18-Apr-05	791,203,000	3	411,000	137,000
19-Apr-05	791,408,000	1	205,000	205,000
21-Apr-05	791,796,000	2	388,000	194,000
22-Apr-05	791,807,000	1	11,000	11,000
25-Apr-05	792,446,000	3	639,000	213,000
26-Apr-05	792,639,000	1	193,000	193,000
27-Apr-05	792,787,000	1	148,000	148,000
28-Apr-05	792,861,000	1	74,000	74,000
1-May-05	793,499,000	3	638,000	212,667
2-May-05	793,699,000	1	200,000	200,000
3-May-05	793,910,000	1	211,000	211,000
4-May-05	794,111,000	1	201,000	201,000
5-May-05	794,141,000	1	30,000	30,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
6-May-05	794,357,000	1	216,000	216,000
9-May-05	794,982,000	3	625,000	208,333
10-May-05	795,146,000	1	164,000	164,000
11-May-05	795,223,000	1	77,000	77,000
12-May-05	795,436,000	1	213,000	213,000
16-May-05	796,264,000	4	828,000	207,000
17-May-05	796,424,000	1	160,000	160,000
18-May-05	796,488,000	1	64,000	64,000
23-May-05	797,531,000	5	1,043,000	208,600
27-May-05	798,354,000	4	823,000	205,750
28-May-05	798,661,000	1	307,000	307,000
29-May-05	799,017,000	1	356,000	356,000
31-May-05	799,488,000	2	471,000	235,500
1-Jun-05	799,737,000	1	249,000	249,000
3-Jun-05	800,182,000	2	445,000	222,500
6-Jun-05	800,883,000	3	701,000	233,667
7-Jun-05	801,091,000	1	208,000	208,000
13-Jun-05	802,273,000	6	1,182,000	197,000
14-Jun-05	802,497,000	1	224,000	224,000
17-Jun-05	803,214,000	3	717,000	239,000
21-Jun-05	804,323,000	4	1,109,000	277,250
22-Jun-05	804,564,000	1	241,000	241,000
27-Jun-05	806,440,000	5	1,876,000	375,200
4-Jul-05	809,307,000	7	2,867,000	409,571
5-Jul-05	809,717,000	1	410,000	410,000
7-Jul-05	810,807,000	2	1,090,000	545,000
9-Jul-05	811,936,000	2	1,129,000	564,500
10-Jul-05	812,469,000	1	533,000	533,000
11-Jul-05	813,004,000	1	535,000	535,000
12-Jul-05	813,438,000	1	434,000	434,000
13-Jul-05	813,999,000	1	561,000	561,000
17-Jul-05	816,293,000	4	2,294,000	573,500
18-Jul-05	816,857,000	1	564,000	564,000
19-Jul-05	817,474,000	1	617,000	617,000
20-Jul-05	818,147,000	1	673,000	673,000
21-Jul-05	818,818,000	1	671,000	671,000
22-Jul-05	819,422,000	1	604,000	604,000
23-Jul-05	820,070,000	1	648,000	648,000
24-Jul-05	820,661,000	1	591,000	591,000
26-Jul-05	821,930,000	2	1,269,000	634,500
1-Aug-05	825,601,000	6	3,671,000	611,833
2-Aug-05	826,131,000	1	530,000	530,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
3-Aug-05	826,461,000	1	330,000	330,000
4-Aug-05	826,944,000	1	483,000	483,000
5-Aug-05	827,490,000	1	546,000	546,000
8-Aug-05	829,124,000	3	1,634,000	544,667
9-Aug-05	829,651,000	1	527,000	527,000
12-Aug-05	830,149,000	3	498,000	166,000
13-Aug-05	830,740,000	1	591,000	591,000
16-Aug-05	833,237,000	3	2,497,000	832,333
17-Aug-05	833,796,000	1	559,000	559,000
18-Aug-05	834,105,000	1	309,000	309,000
23-Aug-05	835,538,000	5	1,433,000	286,600
24-Aug-05	835,989,000	1	451,000	451,000
26-Aug-05	837,183,000	2	1,194,000	597,000
27-Aug-05	837,731,000	1	548,000	548,000
28-Aug-05	838,094,000	1	363,000	363,000
29-Aug-05	838,519,000	1	425,000	425,000
31-Aug-05	839,490,000	2	971,000	485,500
1-Sep-05	839,881,000	1	391,000	391,000
2-Sep-05	840,444,000	1	563,000	563,000
3-Sep-05	840,771,000	1	327,000	327,000
7-Sep-05	842,680,000	4	1,909,000	477,250
8-Sep-05	843,120,000	1	440,000	440,000
9-Sep-05	843,670,000	1	550,000	550,000
10-Sep-05	843,995,000	1	325,000	325,000
12-Sep-05	844,673,000	2	678,000	339,000
13-Sep-05	844,964,000	1	291,000	291,000
21-Sep-05	847,152,000	8	2,188,000	273,500
22-Sep-05	847,551,000	1	399,000	399,000
23-Sep-05	847,731,000	1	180,000	180,000
26-Sep-05	849,336,000	3	1,605,000	535,000
3-Oct-05	852,622,000	7	3,286,000	469,429
19-Oct-05	860,590,000	16	7,968,000	498,000
20-Oct-05	860,938,000	1	348,000	348,000
24-Oct-05	861,435,000	4	497,000	124,250
25-Oct-05	861,627,000	1	192,000	192,000
26-Oct-05	861,664,000	1	37,000	37,000
27-Oct-05	862,077,000	1	413,000	413,000
31-Oct-05	862,511,000	4	434,000	108,500
1-Nov-05	862,582,000	1	71,000	71,000
2-Nov-05	862,788,000	1	206,000	206,000
3-Nov-05	862,826,000	1	38,000	38,000
4-Nov-05	863,101,000	1	275,000	275,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
8-Nov-05	863,612,000	4	511,000	127,750
13-Nov-05	864,516,000	5	904,000	180,800
1-Feb-06	877,456,000	80	12,940,000	161,750
2-Feb-06	877,505,000	1	49,000	49,000
3-Feb-06	877,690,000	1	185,000	185,000
6-Feb-06	878,178,000	3	488,000	162,667
7-Feb-06	878,263,000	1	85,000	85,000
8-Feb-06	878,461,000	1	198,000	198,000
10-Feb-06	878,729,000	2	268,000	134,000
13-Feb-06	879,183,000	3	454,000	151,333
14-Feb-06	879,387,000	1	204,000	204,000
17-Feb-06	879,901,000	3	514,000	171,333
21-Feb-06	880,547,000	4	646,000	161,500
23-Feb-06	880,800,000	2	253,000	126,500
1-Mar-06	881,688,000	6	888,000	148,000
2-Mar-06	881,888,000	1	200,000	200,000
3-Mar-06	882,101,000	1	213,000	213,000
6-Mar-06	882,541,000	3	440,000	146,667
7-Mar-06	882,742,000	1	201,000	201,000
10-Mar-06	883,187,000	3	445,000	148,333
13-Mar-06	883,633,000	3	446,000	148,667
14-Mar-06	883,840,000	1	207,000	207,000
16-Mar-06	884,096,000	2	256,000	128,000
20-Mar-06	884,791,000	4	695,000	173,750
22-Mar-06	885,037,000	2	246,000	123,000
24-Mar-06	885,446,000	2	409,000	204,500
27-Mar-06	885,923,000	3	477,000	159,000
28-Mar-06	886,065,000	1	142,000	142,000
31-Mar-06	886,742,000	3	677,000	225,667
3-Apr-06	887,008,000	3	266,000	88,667
4-Apr-06	887,275,000	1	267,000	267,000
6-Apr-06	887,522,000	2	247,000	123,500
7-Apr-06	887,749,000	1	227,000	227,000
10-Apr-06	888,194,000	3	445,000	148,333
17-Apr-06	889,599,600	7	1,405,600	200,800
1-Jun-06	900,114,000	45	10,514,400	233,653
2-Jun-06	900,610,000	1	496,000	496,000
4-Jun-06	901,398,000	2	788,000	394,000
5-Jun-06	901,739,000	1	341,000	341,000
7-Jun-06	902,504,000	2	765,000	382,500
9-Jun-06	903,061,000	2	557,000	278,500
12-Jun-06	903,868,000	3	807,000	269,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
14-Jun-06	904,775,000	2	907,000	453,500
17-Jun-06	905,460,000	3	685,000	228,333
19-Jun-06	906,242,000	2	782,000	391,000
21-Jun-06	906,898,000	2	656,000	328,000
23-Jun-06	907,633,000	2	735,000	367,500
26-Jun-06	909,145,000	3	1,512,000	504,000
28-Jun-06	910,316,000	2	1,171,000	585,500
29-Jun-06	910,783,000	1	467,000	467,000
30-Jun-06	911,158,000	1	375,000	375,000
1-Jul-06	911,564,000	1	406,000	406,000
4-Jul-06	913,195,000	3	1,631,000	543,667
6-Jul-06	913,575,000	2	380,000	190,000
8-Jul-06	915,029,000	2	1,454,000	727,000
11-Jul-06	915,893,000	3	864,000	288,000
13-Jul-06	916,779,000	2	886,000	443,000
15-Jul-06	917,699,000	2	920,000	460,000
17-Jul-06	918,792,000	2	1,093,000	546,500
19-Jul-06	919,902,000	2	1,110,000	555,000
20-Jul-06	920,761,000	1	859,000	859,000
21-Jul-06	921,441,000	1	680,000	680,000
23-Jul-06	922,788,000	2	1,347,000	673,500
24-Jul-06	923,285,000	1	497,000	497,000
25-Jul-06	924,011,000	1	726,000	726,000
26-Jul-06	924,526,000	1	515,000	515,000
29-Jul-06	926,332,000	3	1,806,000	602,000
31-Jul-06	927,376,000	2	1,044,000	522,000
1-Aug-06	928,232,000	1	856,000	856,000
4-Aug-06	929,158,000	3	926,000	308,667
6-Aug-06	929,973,000	2	815,000	407,500
9-Aug-06	931,533,000	3	1,560,000	520,000
13-Aug-06	933,605,000	4	2,072,000	518,000
17-Aug-06	935,561,000	4	1,956,000	489,000
18-Aug-06	936,106,000	1	545,000	545,000
19-Aug-06	936,662,000	1	556,000	556,000
20-Aug-06	937,201,000	1	539,000	539,000
22-Aug-06	938,304,000	2	1,103,000	551,500
24-Aug-06	939,358,000	2	1,054,000	527,000
26-Aug-06	940,393,000	2	1,035,000	517,500
27-Aug-06	940,722,000	1	329,000	329,000
28-Aug-06	941,164,000	1	442,000	442,000
30-Aug-06	942,003,000	2	839,000	419,500
31-Aug-06	942,368,000	1	365,000	365,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
1-Sep-06	942,823,000	1	455,000	455,000
2-Sep-06	943,316,000	1	493,000	493,000
4-Sep-06	944,242,000	2	926,000	463,000
6-Sep-06	945,137,000	2	895,000	447,500
7-Sep-06	945,658,000	1	521,000	521,000
8-Sep-06	946,026,000	1	368,000	368,000
10-Sep-06	946,940,000	2	914,000	457,000
11-Sep-06	947,447,000	1	507,000	507,000
12-Sep-06	947,791,000	1	344,000	344,000
14-Sep-06	948,649,000	2	858,000	429,000
18-Sep-06	949,992,000	4	1,343,000	335,750
19-Sep-06	950,169,000	1	177,000	177,000
20-Sep-06	950,355,000	1	186,000	186,000
21-Sep-06	950,612,000	1	257,000	257,000
25-Sep-06	951,285,000	4	673,000	168,250
26-Sep-06	951,592,000	1	307,000	307,000
28-Sep-06	951,879,000	2	287,000	143,500
2-Jan-07	968,577,000	96	16,698,000	173,938
3-Jan-07	968,760,000	1	183,000	183,000
4-Jan-07	968,783,000	1	23,000	23,000
6-Jan-07	969,195,000	2	412,000	206,000
8-Jan-07	969,466,000	2	271,000	135,500
9-Jan-07	969,692,000	1	226,000	226,000
10-Jan-07	969,745,000	1	53,000	53,000
11-Jan-07	969,903,000	1	158,000	158,000
15-Jan-07	970,565,000	4	662,000	165,500
16-Jan-07	970,752,000	1	187,000	187,000
17-Jan-07	970,960,000	1	208,000	208,000
18-Jan-07	971,026,000	1	66,000	66,000
19-Jan-07	971,231,000	1	205,000	205,000
22-Jan-07	971,731,000	3	500,000	166,667
23-Jan-07	971,920,000	1	189,000	189,000
24-Jan-07	971,978,000	1	58,000	58,000
25-Jan-07	972,184,000	1	206,000	206,000
26-Jan-07	972,387,000	1	203,000	203,000
31-Jan-07	973,338,000	5	951,000	190,200
2-Feb-07	973,574,000	2	236,000	118,000
6-Feb-07	974,449,000	4	875,000	218,750
7-Feb-07	974,595,000	1	146,000	146,000
8-Feb-07	974,717,000	1	122,000	122,000
9-Feb-07	974,947,000	1	230,000	230,000
11-Feb-07	975,407,000	2	460,000	230,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
12-Feb-07	975,622,000	1	215,000	215,000
13-Feb-07	975,847,000	1	225,000	225,000
14-Feb-07	976,010,000	1	163,000	163,000
15-Feb-07	976,182,000	1	172,000	172,000
20-Feb-07	977,294,000	5	1,112,000	222,400
21-Feb-07	977,435,000	1	141,000	141,000
22-Feb-07	977,579,000	1	144,000	144,000
23-Feb-07	977,835,000	1	256,000	256,000
28-Feb-07	978,914,000	5	1,079,000	215,800
1-Mar-07	978,997,000	1	83,000	83,000
2-Mar-07	979,237,000	1	240,000	240,000
5-Mar-07	979,898,000	3	661,000	220,333
10-Mar-07	980,991,000	5	1,093,000	218,600
11-Mar-07	981,206,000	1	215,000	215,000
12-Mar-07	981,419,000	1	213,000	213,000
14-Mar-07	982,116,000	2	697,000	348,500
20-Mar-07	983,072,000	6	956,000	159,333
21-Mar-07	983,314,000	1	242,000	242,000
22-Mar-07	983,518,000	1	204,000	204,000
23-Mar-07	983,753,000	1	235,000	235,000
30-Mar-07	985,258,000	7	1,505,000	215,000
31-Mar-07	985,358,000	1	100,000	100,000
1-Apr-07	985,535,000	1	177,000	177,000
2-Apr-07	985,796,000	1	261,000	261,000
6-Apr-07	986,760,000	4	964,000	241,000
8-Apr-07	987,585,000	2	825,000	412,500
9-Apr-07	987,827,000	1	242,000	242,000
10-Apr-07	988,017,000	1	190,000	190,000
11-Apr-07	988,241,000	1	224,000	224,000
12-Apr-07	988,368,000	1	127,000	127,000
15-Apr-07	989,062,000	3	694,000	231,333
18-Apr-07	989,587,000	3	525,000	175,000
20-Apr-07	989,975,000	2	388,000	194,000
24-Apr-07	990,615,000	4	640,000	160,000
30-Apr-07	991,839,000	6	1,224,000	204,000
2-May-07	992,346,000	2	507,000	253,500
4-May-07	992,877,000	2	531,000	265,500
8-May-07	993,898,000	4	1,021,000	255,250
9-May-07	994,098,000	1	200,000	200,000
10-May-07	994,382,000	1	284,000	284,000
11-May-07	994,695,000	1	313,000	313,000
12-May-07	994,985,000	1	290,000	290,000

Date	Total Gallons Pumped	No. Days in Period	Gallons per Period	Gallons per Day
17-May-07	996,906,000	5	1,921,000	384,200
18-May-07	997,202,000	1	296,000	296,000
19-May-07	997,772,000	1	570,000	570,000
23-May-07	999,123,000	4	1,351,000	337,750
27-May-07	431,000	4	1,308,000	327,000
30-May-07	1,484,000	3	1,053,000	351,000
1-Jun-07	2,414,000	2	930,000	465,000
2-Jun-07	3,375,000	1	961,000	961,000
3-Jun-07	3,914,000	1	539,000	539,000
4-Jun-07	4,648,000	1	734,000	734,000
6-Jun-07	5,589,000	2	941,000	470,500
8-Jun-07	6,156,000	2	567,000	283,500
12-Jun-07	7,646,000	4	1,490,000	372,500
13-Jun-07	8,002,000	1	356,000	356,000
15-Jun-07	8,989,000	2	987,000	493,500
19-Jun-07	11,007,000	4	2,018,000	504,500
22-Jun-07	12,454,000	3	1,447,000	482,333
23-Jun-07	13,107,000	1	653,000	653,000
24-Jun-07	13,677,000	1	570,000	570,000
26-Jun-07	14,879,000	2	1,202,000	601,000
28-Jun-07	16,239,000	2	1,360,000	680,000
29-Jun-07	16,823,000	1	584,000	584,000
1-Jul-07	17,929,000	2	1,106,000	553,000
2-Jul-07	18,532,000	1	603,000	603,000
3-Jul-07	19,244,000	1	712,000	712,000
4-Jul-07	19,998,000	1	754,000	754,000
5-Jul-07	20,939,000	1	941,000	941,000
6-Jul-07	21,659,000	1	720,000	720,000
8-Jul-07	23,134,000	2	1,475,000	737,500
9-Jul-07	23,739,000	1	605,000	605,000
11-Jul-07	25,234,000	2	1,495,000	747,500
15-Jul-07	28,223,000	4	2,989,000	747,250
22-Jul-07	33,069,000	7	4,846,000	692,286

APPENDIX B

SOURCE & STORAGE EVALUATION

SUNRISE ENGINEERING

TOWN OF ALPINE WATER SYSTEM
Source and Storage Evaluation

SUNRISE ENGINEERING

1) EXISTING WATER USE

Number of ERUs:	400			
Average Daily Demand[1]:	283,615	gpd	709	gpd/eru
Maximum Daily Demand[1]:	840,833	gpd	2,102	gpd/eru
Fire Flow Requirment[2]:	180,000	gallons		

2) EXISTING SOURCES

Source Name	Source Capacity (gpm)	(gpd)
Alpine Well No. 1	350	504,000
Alpine Well No. 2	350	504,000
total:	700	1,008,000

Notes:

ERU (Equivalent Residential Unit)

[1] Average and maximum daily demand based on well house meter read almost daily.

[2] 1,500 gpm for 2 hour duration

[3] WDEQ Water Quality Rules and Regulations Chapter 12, Section 9(b)(i)

[4] WDEQ Water Quality Rules and Regulations Chapter 12, Section 13(a)(i)

3) EXISTING STORAGE

Reservoir Name	Capacity (gallons)
Alpine Tank	250,000
Alpine Tank	500,000
total:	750,000

4) WYOMING DEQ COMPLIANCE

	Yes/No	Excess/Deff.	
Is source capacity greater than maximum daily demand?[3]	Yes	167,167	gpd
		80	eru
Are sources and storage capable of exceeding the average daily demand with the largest source out of service?[3]	Yes	970,385	gpd
If there is only one source, is storage equal to twice the maximum daily demand?[3]	N/A		gallons
For average daily demand less than 50,000 gallons, does storage equal average daily demand.[4]	N/A		gallons
For average daily demand between 50,000 and 500,000 gallons, does storage equal average daily demand plus fire flow.[4]	Yes	286,385	gallons
For average daily demand greater than 500,000 gallons, does storage equal 25% of maximum daily demand plus fire flow.[4]	N/A		gallons

APPENDIX C

WATER WELL STATEMENTS OF COMPLETION

SUNRISE ENGINEERING

RECEIVED JAN 26 1979 STATE ENGINEER Cheyenne
RECEIVED FEB 7 1979 STATE ENGINEER Cheyenne, Wyo.
MICRO FILMED MAR 26 '80
MICRO-FILMED JUL 11 '79

W. 6

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

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STATE OF WYOMING

OFFICE OF THE STATE ENGINEER

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL

T NO. U.W. 39163 NAME OF WELL Alpine Water District #1

ME OF OWNER ~~Alpine Water and Sewer District~~ Town of Alpine

DRESS ~~PO Box 3~~ P.O. Box 239 Alpine, Wyoming Zip Code 83128

E OF WATER: Domestic ☐ Stock Watering ☐ Irrigation ☐ Municipal ☒ Industrial ☐ Miscellaneous ☐
A water district serving commercial and residential dwellings

CATION OF WELL: NW ¼ NW ¼ of Section 33, T. 37 N., R. 118 W., of the 6th P.M. (or W.R.M.),

oming, being specifically
(Bearing and Distance)

80 ft. ~~North~~ South and 450 ft. East ~~West~~ from the NW corner of Section 33, T. 37 N., R. 118 W.
rike out words not needed).

PE OF CONSTRUCTION: Drilled ☒ Rotary (Type of Rig) Dug ☐ Driven ☐ Jetted ☐

ler

NSTRUCTION: Total Depth 275 ft. Depth to Water Level 60 ft.

Casing Schedule New ☒ Used ☐

10.136" Inside diameter from 0 ft. to 270 ft. Material steel Gage .307"

____ diameter from ____ ft. to ____ ft. Material ____ Gage ____

____ diameter from ____ ft. to ____ ft. Material ____ Gage ____

Perforations: Type of perforator used Acetylene Torch

Size of perforations ½ inches by 6 inches.

Number of perforations and depths where perforated:

3 sets perforations from 180 ft. to 275 feet.

____ perforations from ____ ft. to ____ feet.

Was well screen installed? Yes ☐ No ☒

Diameter: ____ slot size: ____ set from ____ feet to ____ feet.

Diameter: ____ slot size: ____ set from ____ feet to ____ feet.

Was well gravel packed? Yes ☒ No ☐ Size of gravel ¼" minimum to ½" maximum

Was surface casing used Yes ☒ No ☐ Was it cemented in place? Yes ☐ No ☒

ME & ADDRESS OF DRILLER MCO Drilling Co., Inc. PO Box 13, Alpine, Wyoming 83128

TE OF COMPLETION OF WELL (including pump installation) December 4, 1978

MP INFORMATION: Manufacturer Jacuzzi Brothers, Inc. Type Submersible

rce of power 480 volt - 3 phase supplied by Lower Valley Power & Light Horsepower 50 Depth of Pump Setting 175'

ount of Water Being Pumped ~~300~~ 200 Gallons Per Minute.
gpm

No. U.W. 39163 Book No. 206 Page No. 50

VELL IS TO BE ABANDONED, complete Items 1 through 8, Item 12 (Log of Well) and state reason for abandonment w.

; the responsibility of the owner to properly plug or fill in the well in order to prevent contamination of ground water to cover or cap the well at ground level.

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, nd complete.

Peter M. Jorgensen, Consulting Engineer — January 9, 19 79
Signature of Owner or Authorized Agent — Date

Agent

Receipt JAN 10 1979, 19
FEB 7 1979 DW

Priority July 20, 19 77

Approval June 28, 19 79

for State Engineer

of Wyoming)
ss
y of Teton)

I , Peter M. Jorgensen, hereby certify that Alpine Water District No. 1 well was com-d and the pump installed December 4, 1978.

Peter M. Jorgensen, Agent for Alpine Water and Sewer District

The foregoing instrument was acknowledged before me by Peter M. Jorgensen this 31st f January, 1979.

Witness my hand and official seal.

Mary S. Seavy
Notary Public

mmission expires: March 31, 1980

ULATION

! for irrigation, the land proposed to be irrigated should be described in the following tabulation. Describe in the Remarks" section, under Item 14, the means of conveying the water to the lands and the method of irrigation.

Give irrigable acreage in each legal subdivision. If proposed use is for supplemental supply for lands with a right from nother source, indicate in the tabulation the priority or permit number, the source of supply and the name of the ditch r other well.)

f not used for irrigation, show the area and point(s) of use and location of well in the tabulation below. Also describe he method of conveyance in the "Remarks" section under Item 14.

Sec.	NE¼				NW¼				SW¼				SE¼				TOTALS
	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

TOTAL NUMBER OF ACRES TO BE IRRIGATED_____

Original Supply_____acres

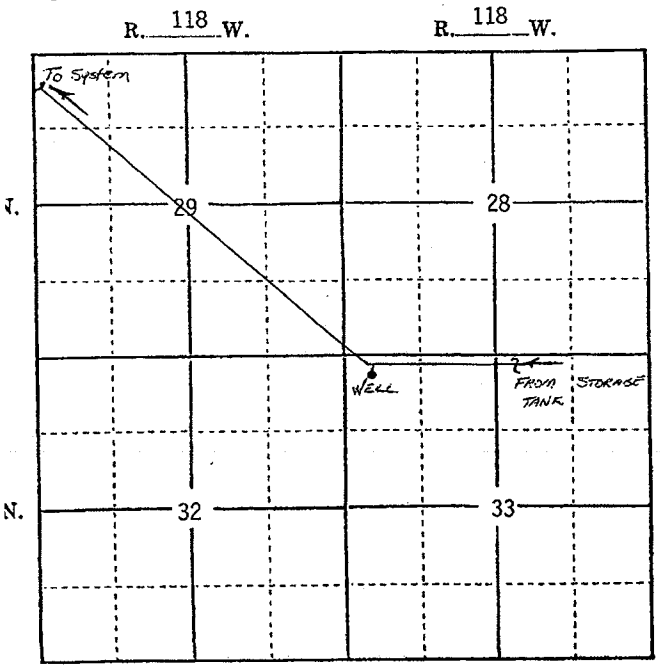
Supplemental Supply_____acres

AT

If the well is to be used for irrigation, industrial, miscellaneous or municipal use, show the location of the well on the plat below. For such uses, a plat certified by a licensed engineer or land surveyor is required to be submitted at the time the Proof of Appropriation and Beneficial Use of Ground Water is submitted.

For other uses, accurately show the well location, point of use or uses and describe method of conveyance of water to points of use on plat and in "Remarks" section below. Make certain location on plat agrees with written description.

A separate map may be submitted if the information required cannot be shown on this plat.



REMARKS: The Alpine Well #1 is connected to the existing water distribution system rving Alpine, Wyoming. This system includes a 40,000 gallon storage tank which supplies ter through gravity flow.

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER

MICRO FILMED MAR 26 '90

MICRO FILMED JUL 13 '89

L IS TO BE ONED, SEE 5, PAGE 4

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

T NO. U.W. 77717 NAME OF WELL Alpine Water & Sewer District Well #2

E OF OWNER ~~ALPINE WATER & SEWER DISTRICT~~ Town of Alpine

ESS P.O. Box ~~lot~~ 239 Alpine, Wyo Zip Code 83128

OF WATER: Domestic ☐ Stock Watering ☐ Irrigation ☐ Municipal ☒ Industrial ☐ Miscellaneous ☐

TION OF WELL: NW¼ NW¼ of Section 33, T. 37 N., R. 118 W., of the 6th P.M. (or ~~W.R.M.~~),

ring, being specifically South 80° 26' 56" EAST 769.5' (Bearing and Distance)

~~____ ft. North South~~ and ~~____ ft. East West~~ from the NW corner of Section 33, T. 37 N., R. 118 W.
(Cross out words not needed).

OF CONSTRUCTION: Drilled ☐ CABLE TOOL (Type of Rig) Dug ☐ Driven ☒ Jetted ☐

STRUCTION: Total Depth of Well 243 ft. Depth to Static Water Level 85'6" ft.

asing Schedule New ☒ Used ☐ * Pitless Adapter From ground level to 7' Depth.

2 3/4" diameter from 9' ft. to 42' ft. Material STEEL Gage .250

10 3/4" diameter from 7' ft. to 147' ft. Material STEEL Gage .366

____ diameter from ____ ft. to ____ ft. Material ____ Gage ____

RECEIVED SEP 12 1988 STATE ENGINEER CHEYENNE, WYO.

erforations: Type of perforator used KNIFE - MILLS-

ize of perforations 3/8" inches by 1 1/2" inches.

umber of perforations and depths where perforated:

8 eq perforations from 101 ft. to 102 feet, 106, 108, 110, 136, 138, 140, 142, 144, end.

____ perforations from ____ ft. to ____ feet.

* 8 perforation at each of Above Levels.

Was well screen installed? Yes ☒ No ☐

iameter: ____ slot size: ____ set from ____ feet to ____ feet.

iameter: ____ slot size: ____ set from ____ feet to ____ feet.

Was well gravel packed? Yes ☐ No ☒ Size of gravel ____

Was surface casing used? Yes ☒ No ☐ Was it cemented in place? Yes ☒ No ☐ Pitless Adapter

ME & ADDRESS OF DRILLER WEBER Drilling - 1240 - Gregory Lane Jackson, Wy 83001

TE OF COMPLETION OF WELL (including pump installation) 12-1-88

MP INFORMATION: Manufacturer Red Jacket. Type Submersible

ource of power 460 Volt 3 phase Horsepower 40 HP. Depth of Pump Setting 156'

mount of Water Being Pumped ~~330~~ 375 GPM. Gallons Per Minute. (For springs or flowing wells, see item 11.)
(Adj. Amt.)

Permit No. U.W. 77717 Book No. 558 Page No. 13

UWI

MP TEST: Was a pump test made? Yes [X] No [ ]

io, by whom WEBER Drilling - (Torman) Address 1240 Gregory Lane Jackson. Wy 83001

ild: 330 gal./min. with 14' foot drawdown after 5 hours.

ild: 412 gal./min. with 31' foot drawdown after 3 hours.

OWING WELL (Owner is responsible for control of flowing well). N/A.

well yields artesian flow, yield is — gal./min. Surface pressure is — lb./sq. inch, or — feet of water.

e flow is controlled by: valve [ ] cap [ ] plug [ ]

oes well leak around casing? Yes [ ] No [ ]

OG OF WELL: Total depth drilled 243' feet.

Depth of completed well 243' feet. Diameter of well 12 3/4 - to 10 3/4 inches. to 42' 42' to 147' — open hole to 243'

Depth to first water bearing formation 88' - 95' feet.

Depth to principal water bearing formation. Top 147' feet to Bottom 243' feet.

round Elevation, if known 5700' Approx elevation

To Feet	Material Type, Texture, Color	REMARKS (Cementing, Shutoff, Packing, etc.)	Indicate Water Bearing Formation	Indicate Perforated Casing Location
		See Attached Information		

LITY OF WATER INFORMATION:

a chemical analysis made? Yes [ ] No [ ]

so, please include a copy of the analysis with this form.

not, do you consider the water as: Good [X] Acceptable [ ] Poor [ ] Unusable [ ]

JLATION

for irrigation, the land proposed to be irrigated should be described in the following tabulation. Describe in the Remarks" section, under Item 14, the means of conveying the water to the lands and the method of irrigation.

ive irrigable acreage in each legal subdivision. If proposed use is for additional supply for lands with a right from nother source, indicate in the tabulation the priority or permit number, the source of supply and the name of the ditch r other well.)

not used for irrigation, show the area and point(s) of use and location of well in the tabulation below. Also describe ne method of conveyance in the "Remarks" section under Item 14.

Sec.	NE¼				NW¼				SW¼				SE¼				TOTALS
	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

TOTAL NUMBER OF ACRES TO BE IRRIGATED_____

Original Supply _____ acres

Additional Supply _____ acres

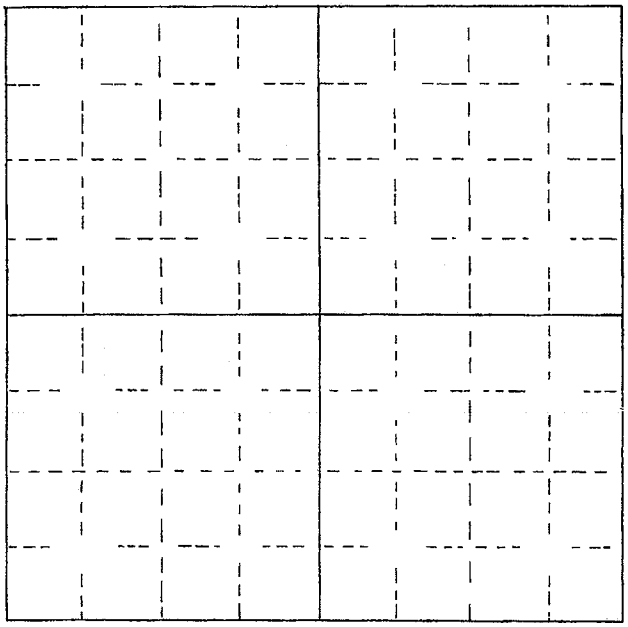
.T

f the well is to be used for irrigation, industrial, miscellaneous or municipal use, show the location of the well on the plat below. For such uses, a plat certified by a licensed engineer or land surveyor is required to be submitted at the time he Proof of Appropriation and Beneficial Use of Ground Water is submitted.

For other uses, accurately show the well location, point of use or uses and describe method of conveyance of water to points of use on plat and in "Remarks" section below. Make certain location on plat agrees with written description.

A separate map may be submitted if the information required cannot be shown on this plat. See ATTACHED MAP-

R._____W. R._____W.



Scale: 2" = 1 Mile

T._____N.

T._____N.

MARKS: WELL is to be USED together with Points of USE under permits UW 39163 AND 24104

17717

ELL IS TO BE ABANDONED, complete Items 1 through 8, Item 12 (Log of Well) and state reason for abandonment and ls of the plugging below.

he responsibility of the owner to properly plug or fill in the well in order to prevent contamination of ground water and ıver or cap the well at ground level.

er penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, ınd complete.

Kern County Water & Sewer District

e of Owner or Authorized Agent

x June 2, 1989
Date

Receipt JUN 12 1989, 19

Priority JUNE 23, 1988

Approval JUNE 28, 1989

D. Gilmer

e Engineer

Statement Of Completion For

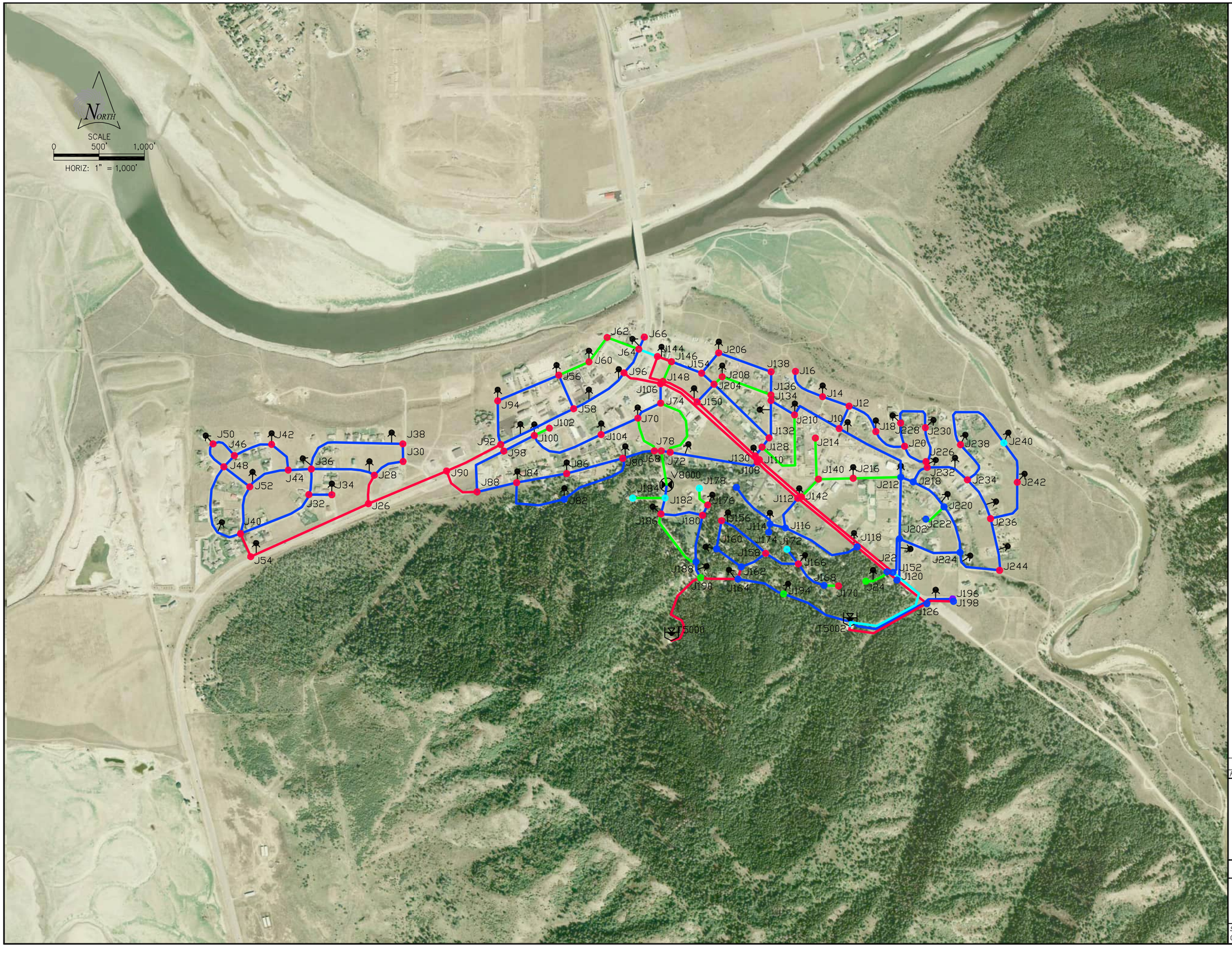
Alpine District Well No. 3

Not Available

APPENDIX D

WATER MODELING & DATA RESULTS

SUNRISE ENGINEERING



LEGEND

- PRESSURE JUNCTION
- WATER TANK
- SPRING SOURCE
- PRESSURE REDUCING VALVE
- FIRE HYDRANT
- PUMP

- 2-INCH WATERLINE
- 3-INCH WATERLINE
- 4-INCH WATERLINE
- 6-INCH WATERLINE
- 8-INCH WATERLINE
- 10-INCH WATERLINE
- 12-INCH WATERLINE
- 18-INCH WATERLINE

PRESSURE DURING PEAK DAY DEMAND

- LESS THAN 35 PSI
- 35 PSI TO 50 PSI
- 50 PSI TO 65 PSI
- 65 PSI TO 80 PSI
- 80 PSI TO 95 PSI
- 95 PSI TO 110 PSI
- GREATER THAN 110 PSI

REV NO.	COMMENT	DATE

SUNRISE ENGINEERING
47 EAST 4TH AVENUE / PO BOX 609
AFTON, WYOMING 83110
TEL 307.885.8500 · FAX 307.885.8501
www.sunrise-eng.com

WWDC

STAR VALLEY REGIONAL MASTER PLAN
H2ONET WATER MODEL
ALPINE WATER SYSTEM

SEI NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.	
02700	RVH	RVH	JJL	1 of 1	WM-1

P:\WWDC Star Valley Regional Plan\B. Existing Systems\Dwg\Alpine\Alpine Water Model.dwg Sep 24, 2008 11:39am rhood01

Alpine - Pressure During Maximum Daily Demand

	ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
	J10	5.12	5,678	5,863	80
	J100	5.12	5,660	5,863	88
	J102	5.12	5,662	5,863	87
	J104	5.12	5,662	5,863	87
	J106	5.12	5,666	5,863	85
	J108	5.12	5,672	5,863	83
	J110	5.12	5,672	5,863	83
	J112	5.12	5,676	5,863	81
	J114	5.12	5,688	5,863	76
	J116	5.12	5,690	5,863	75
	J118	5.12	5,692	5,864	74
	J12	5.12	5,666	5,863	85
	J120	5.12	5,694	5,864	74
	J126	5.12	5,696	5,864	73
	J128	5.12	5,672	5,863	83
	J130	5.12	5,672	5,863	83
	J132	5.12	5,670	5,863	84
	J134	5.12	5,670	5,863	84
	J136	5.12	5,670	5,863	84
	J138	5.12	5,662	5,863	87
	J14	5.12	5,664	5,863	86
	J140	5.12	5,674	5,863	82
	J142	5.12	5,676	5,863	81
	J144	5.12	5,664	5,863	86
	J146	5.12	5,662	5,863	87
	J148	5.12	5,666	5,863	85
	J150	5.12	5,668	5,863	85
	J152	5.12	5,694	5,864	74
	J154	5.12	5,664	5,863	86
	J156	5.12	5,770	5,970	87
	J158	5.12	5,766	5,970	88
	J16	5.12	5,662	5,863	87
	J160	5.12	5,800	5,970	74
	J162	5.12	5,800	5,970	74
	J164	5.12	5,810	5,970	69
	J166	5.12	5,752	5,970	94
	J168	5.12	5,788	5,970	79
	J170	5.12	5,780	5,970	82
	J172	5.12	5,730	5,970	104
	J174	5.12	5,700	5,863	71
	J176	5.12	5,752	5,970	94

Alpine - Pressure During Maximum Daily Demand

	ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
	J178	5.12	5,740	5,970	100
	J18	5.12	5,668	5,863	85
	J180	5.12	5,762	5,970	90
	J182	5.12	5,740	5,970	100
	J184	5.12	5,732	5,970	103
	J186	5.12	5,752	5,970	94
	J188	5.12	5,810	5,970	69
	J190	5.12	5,832	5,970	60
	J194	5.12	5,830	5,970	61
	J196	5.12	5,694	5,970	119
	J198	5.12	5,694	5,864	74
	J20	5.12	5,654	5,863	91
	J202	5.12	5,684	5,864	78
	J204	5.12	5,668	5,863	85
	J206	5.12	5,660	5,863	88
	J208	5.12	5,666	5,863	85
	J210	5.12	5,672	5,863	83
	J212	5.12	5,682	5,863	79
	J214	5.12	5,674	5,863	82
	J216	5.12	5,678	5,863	80
	J218	5.12	5,682	5,863	79
	J22	5.12	5,694	5,864	74
	J220	5.12	5,686	5,863	77
	J222	5.12	5,686	5,863	77
	J224	5.12	5,688	5,863	76
	J226	5.12	5,660	5,863	88
	J228	5.12	5,652	5,863	92
	J230	5.12	5,654	5,863	91
	J232	5.12	5,660	5,863	88
	J234	5.12	5,658	5,863	89
	J236	5.12	5,660	5,863	88
	J238	5.12	5,656	5,863	90
	J24	5.12	5,720	5,864	62
	J240	5.12	5,638	5,863	98
	J242	5.12	5,648	5,863	93
	J244	5.12	5,666	5,863	86
	J246	5.12	5,700	5,863	71
	J26	5.12	5,654	5,863	90
	J28	5.12	5,654	5,863	90
	J30	5.12	5,654	5,863	90
	J32	5.12	5,652	5,863	91

Alpine - Pressure During Maximum Daily Demand

	ID	Demand (gpm)	Elevation (ft)	Head (ft)	Pressure (psi)
	J34	5.12	5,652	5,863	91
	J36	5.12	5,654	5,863	90
	J38	5.12	5,654	5,863	90
	J40	5.12	5,650	5,863	92
	J42	5.12	5,652	5,863	91
	J44	5.12	5,654	5,863	90
	J46	5.12	5,652	5,863	91
	J48	5.12	5,652	5,863	91
	J50	5.12	5,652	5,863	91
	J52	5.12	5,652	5,863	91
	J54	5.12	5,650	5,863	92
	J56	5.12	5,662	5,863	87
	J58	5.12	5,662	5,863	87
	J60	5.12	5,662	5,863	87
	J62	5.12	5,662	5,863	87
	J64	5.12	5,664	5,863	86
	J66	5.12	5,662	5,863	87
	J68	5.12	5,666	5,863	85
	J70	5.12	5,664	5,863	86
	J72	5.12	5,666	5,863	85
	J74	5.12	5,664	5,863	86
	J78	5.12	5,666	5,863	85
	J80	5.12	5,664	5,863	86
	J82	5.12	5,694	5,863	73
	J84	5.12	5,664	5,863	86
	J86	5.12	5,664	5,863	86
	J88	5.12	5,664	5,863	86
	J90	5.12	5,656	5,863	90
	J92	5.12	5,660	5,863	88
	J94	5.12	5,660	5,863	88
	J96	5.12	5,664	5,863	86
	J98	5.12	5,660	5,863	88

Alpine - Available Fire Flow During Maximum Daily Demand

	ID	Available Flow @Hydrant (gpm)	Critical Node 1 ID	Critical Node 1 Pressure (psi)	Critical Node 2 ID	Critical Node 2 Pressure (psi)	Design Flow (gpm)
	J10	2,948	J24	59	J10	20	2,951
	J100	2,232	J24	59	J102	19	2,216
	J104	2,258	J24	59	J104	20	2,259
	J108	4,721	J24	59	J82	13	4,284
	J112	4,173	J24	58	J246	14	3,821
	J114	2,157	J246	56	J246	15	2,041
	J118	3,900	J24	58	J118	20	3,910
	J126	4,872	J24	59	J24	20	4,878
	J134	3,432	J24	59	J134	20	3,437
	J14	1,978	J24	59	J14	20	1,978
	J146	3,729	J24	59	J146	20	3,734
	J150	3,879	J24	59	J150	20	3,885
	J156	2,072	J194	49	J160	18	2,021
	J160	1,926	J194	49	J160	20	1,927
	J164	2,299	J194	49	J194	11	2,064
	J166	1,751	J194	49	J168	4	1,538
	J176	1,817	J190	51	J176	20	1,817
	J18	2,573	J24	59	J18	20	2,574
	J186	1,770	J190	51	J186	20	1,770
	J194	1,293	J194	35	J194	20	1,293
	J202	4,267	J24	59	J202	20	4,275
	J208	2,135	J24	59	J208	20	2,136
	J212	3,347	J24	59	J212	20	3,351
	J216	1,469	J216	50	J216	20	1,470
	J220	2,532	J24	59	J222	20	2,534
	J224	2,769	J24	59	J224	20	2,771
	J228	2,602	J24	59	J228	20	2,604
	J230	2,539	J24	59	J230	20	2,541
	J232	3,116	J24	59	J232	20	3,118
	J234	2,480	J24	59	J234	20	2,481
	J236	2,372	J24	59	J236	20	2,373
	J238	1,997	J24	59	J238	20	1,998
	J24	954	J24	16	J24	20	954
	J240	1,965	J24	59	J240	20	1,965
	J242	2,002	J24	59	J242	20	2,003
	J244	2,391	J24	59	J244	20	2,392
	J28	1,887	J24	59	J28	20	1,887
	J34	1,503	J34	56	J34	20	1,503
	J36	1,785	J24	59	J36	20	1,785
	J38	1,650	J24	59	J38	20	1,651

Alpine - Available Fire Flow During Maximum Daily Demand

	ID	Available Flow @Hydrant (gpm)	Critical Node 1 ID	Critical Node 1 Pressure (psi)	Critical Node 2 ID	Critical Node 2 Pressure (psi)	Design Flow (gpm)
	J40	1,803	J24	59	J40	20	1,803
	J42	1,631	J24	59	J42	20	1,631
	J50	1,609	J24	59	J50	20	1,609
	J52	1,713	J24	59	J52	20	1,713
	J54	1,811	J24	59	J54	20	1,811
	J56	2,384	J24	59	J56	20	2,385
	J58	2,669	J24	59	J58	20	2,671
	J60	1,537	J60	55	J60	20	1,537
	J64	3,763	J24	59	J64	20	3,768
	J70	2,774	J24	59	J70	20	2,776
	J72	3,208	J24	59	J72	20	3,211
	J80	2,510	J82	58	J82	12	2,221
	J82	1,736	J82	52	J82	20	1,736
	J84	2,343	J82	58	J82	13	2,136
	J86	2,068	J82	58	J86	20	2,069
	J92	2,688	J24	59	J92	20	2,690
	J94	2,234	J24	59	J94	20	2,235
	J96	3,667	J24	59	J82	20	3,641

APPENDIX E

WATER QUALITY TEST RESULTS

SUNRISE ENGINEERING

Presence/Absence Coliform Analysis
Lincoln Water Quality Lab
PO Box 310 Afton, WY 83110
Phone (307) 885-9698 or (307) 885-9831

Type Supply	Water Source	Sample Type		Thiosulfate Used
☐ Public (EPA Monitored)	☐ Spring	☐ Routine	☐ Other	☒ Yes
☒ Private (Non-EPA)	☒ Well	☒ Special	☐ Non-certified NO3	☐ No
☐ Recreational (Pool, Spa, Etc.)	☐ Surface (Stream, Lake Etc.)	☐ Repeat	☐ Replacement	

Coliform $15.00 Non Certified Nitrate $10.00

Shaded areas are for Lab use only

Inc. #	Sample ID	EPA PWS#	Location	Sample Cond.	Date	Time	Chlorine Res	Sample Type	Results TC	Results EC	Results NO3	Final Analysis
34			Alpine Well (1)	Good	4-3-08	10:00	—		—	—		S
35			Alpine Well (2)	Good	4-3-08	10:20	—		—	—		S
36			Thayne Well	Good	4-3-08	11:09	—		—	—		S

Results To:

Name: Sunrise Engineering
Address: P.O. Box 609
City State Zip Afton Wy. 83110
Phone 307-885-8500
Fax 307-885-8501

Date Received: 04/03/08
Time Received: 1430
Collected By: John Roberts
Date Set Up: 04/03/08
Time Set Up: 1445
Analyst: [signature]
Date completed: 04/04/08
Time Completed: 1440
Media: Coliscan

ENERGY LABORATORIES, INC. • 2393 Salt Creek Highway (82601) • P.O. Box 3258 • Casper, WY 82602
Toll Free 888.235.0515 • 307.235.0515 • Fax 307.234.1639 • casper@energylab.com • www.energylab.com

LABORATORY ANALYTICAL REPORT

ent:	Sunrise Engineering Inc
oject:	Star Valley Regional Water Plan
b ID:	C08040245-001
ent Sample ID:	Alpine Well 1

Report Date:	05/21/08
Collection Date:	04/03/08 09:45
DateReceived:	04/04/08
Matrix:	Aqueous

alyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
JOR IONS							
alinity, Total as CaCO3	261	mg/L		1		A2320 B	04/07/08 21:13 / ljl
cium	76	mg/L		1		E200.7	04/15/08 08:31 / cp
oride	5	mg/L		1		A4500-Cl B	04/16/08 11:01 / jl
oride	0.3	mg/L		0.1		A4500-F C	04/08/08 13:45 / ljl
gnesium	23	mg/L		1		E200.7	04/15/08 08:31 / cp
ogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/14/08 12:40 / eli-b
ogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	04/17/08 16:00 / eli-b
ogen, Nitrate+Nitrite as N	0.3	mg/L		0.1		E353.2	04/07/08 12:38 / jal
ogen, Organic	ND	mg/L		0.500		Calculation	04/25/08 13:54 / sec
ogen, Total	ND	mg/L		0.5		A4500-N A	04/19/08 17:53 / sec
assium	ND	mg/L		1		E200.7	04/15/08 08:31 / cp
ium	5	mg/L		1		E200.7	04/15/08 08:31 / cp
ate	9	mg/L		1		A4500-SO4 E	04/14/08 14:15 / jal
N-METALS							
sphorus, Total as P	0.01	mg/L		0.01		E365.1	04/11/08 10:58 / eli-h
YSICAL PROPERTIES							
ductivity	493	umhos/cm		1		A2510 B	04/07/08 12:09 / rw
dness as CaCO3	285	mg/L				A2340 B	04/21/08 10:51 / sec
	7.67	s.u.		0.01		A4500-H B	04/07/08 12:09 / rw
ds, Total Dissolved TDS @ 180 C	262	mg/L		10		A2540 C	04/07/08 17:51 / dd
TALS - TOTAL							
enic	0.001	mg/L		0.001		E200.8	04/20/08 17:12 / sml
per	0.06	mg/L		0.01		E200.8	04/20/08 17:12 / sml
	ND	mg/L		0.03		E200.7	04/15/08 08:31 / cp
l	ND	mg/L		0.05		E200.7	04/15/08 08:31 / cp
ganese	ND	mg/L		0.01		E200.7	04/15/08 08:31 / cp
	2.79	mg/L		0.01		E200.7	04/15/08 08:31 / cp
TA QUALITY							
Balance (± 5)	2.85	%				Calculation	04/21/08 11:35 / sw
ns	5.59	meq/L				Calculation	04/21/08 11:35 / sw
ons	5.91	meq/L				Calculation	04/21/08 11:35 / sw
ds, Total Dissolved Calculated	285	mg/L				Calculation	04/21/08 11:35 / sw
Balance (0.80 - 1.20)	0.920	dec. %				Calculation	04/21/08 11:35 / sw
GANIC CHARACTERISTICS							
anic Halides, Total	ND	mg Cl/L		0.1		SW9020B	04/09/08 13:59 / wen

ort RL - Analyte reporting limit. MCL - Maximum contaminant level.
nitions: QCL - Quality control limit. ND - Not detected at the reporting limit.

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LABORATORY ANALYTICAL REPORT

ient: Sunrise Engineering Inc
oject: Star Valley Regional Water Plan
b ID: C08040245-001
ent Sample ID: Alpine Well 1

Report Date: 05/21/08
Collection Date: 04/03/08 09:45
DateReceived: 04/04/08
Matrix: Aqueous

alyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
)LATILE ORGANIC COMPOUNDS							
,1,2-Tetrachloroethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
,1-Trichloroethane	ND	ug/L		0.50	200	E524.2	04/12/08 00:23 / jlr
,2,2-Tetrachloroethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
,2-Trichloroethane	ND	ug/L		0.50	5	E524.2	04/12/08 00:23 / jlr
-Dichloroethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
-Dichloroethene	ND	ug/L		0.50	7	E524.2	04/12/08 00:23 / jlr
-Dichloropropene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
,3-Trichlorobenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
,3-Trichloropropane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
,4-Trichlorobenzene	ND	ug/L		0.50	70	E524.2	04/12/08 00:23 / jlr
4-Trimethylbenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
-Dibromo-3-chloropropane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
-Dibromoethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
-Dichlorobenzene	ND	ug/L		0.50	600	E524.2	04/12/08 00:23 / jlr
-Dichloroethane	ND	ug/L		0.50	5	E524.2	04/12/08 00:23 / jlr
-Dichloropropane	ND	ug/L		0.50	5	E524.2	04/12/08 00:23 / jlr
5-Trimethylbenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
-Dichlorobenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
-Dichloropropane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
Dichlorobenzene	ND	ug/L		0.50	75	E524.2	04/12/08 00:23 / jlr
Dichloropropane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
hlorotoluene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
hlorotoluene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
zene	ND	ug/L		0.50	5	E524.2	04/12/08 00:23 / jlr
nobenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
nochloromethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
nodichloromethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
noform	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
nomethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
on tetrachloride	ND	ug/L		0.50	5	E524.2	04/12/08 00:23 / jlr
robenzene	ND	ug/L		0.50	100	E524.2	04/12/08 00:23 / jlr
rodibromomethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
roethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
roform	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
romethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
,2-Dichloroethene	ND	ug/L		0.50	70	E524.2	04/12/08 00:23 / jlr
,3-Dichloropropene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
omomethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
lorodifluoromethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
lbenzene	ND	ug/L		0.50	700	E524.2	04/12/08 00:23 / jlr
achlorobutadiene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
ropylbenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr

ort
nitions: RL - Analyte reporting limit.
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LABORATORY ANALYTICAL REPORT

ient:	Sunrise Engineering Inc
oject:	Star Valley Regional Water Plan
.b ID:	C08040245-001
ient Sample ID:	Alpine Well 1

Report Date:	05/21/08
Collection Date:	04/03/08 09:45
DateReceived:	04/04/08
Matrix:	Aqueous

alyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
)LATILE ORGANIC COMPOUNDS							
:p-Xylenes	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
thyl tert-butyl ether (MTBE)	ND	ug/L		2.0		E524.2	04/12/08 00:23 / jlr
thylene chloride	ND	ug/L		0.50	5	E524.2	04/12/08 00:23 / jlr
phthalene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
:utylbenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
'ropylbenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
ylene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
:opropyltoluene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
-Butylbenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
rene	ND	ug/L		0.50	100	E524.2	04/12/08 00:23 / jlr
-Butylbenzene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
rachloroethene	ND	ug/L		0.50	5	E524.2	04/12/08 00:23 / jlr
uene	ND	ug/L		0.50	1000	E524.2	04/12/08 00:23 / jlr
is-1,2-Dichloroethene	ND	ug/L		0.50	100	E524.2	04/12/08 00:23 / jlr
is-1,3-Dichloropropene	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
:hloroethene	ND	ug/L		0.50	5	E524.2	04/12/08 00:23 / jlr
:hlorofluoromethane	ND	ug/L		0.50		E524.2	04/12/08 00:23 / jlr
yl chloride	ND	ug/L		0.50	2	E524.2	04/12/08 00:23 / jlr
enes, Total	ND	ug/L		0.50	10000	E524.2	04/12/08 00:23 / jlr
alomethanes, Total	ND	ug/L		0.50	80	E524.2	04/12/08 00:23 / jlr
urr: Dibromofluoromethane	94.0	%REC		80-120		E524.2	04/12/08 00:23 / jlr
urr: p-Bromofluorobenzene	100	%REC		80-120		E524.2	04/12/08 00:23 / jlr
urr: Toluene-d8	102	%REC		80-120		E524.2	04/12/08 00:23 / jlr

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LABORATORY ANALYTICAL REPORT

ient:	Sunrise Engineering Inc	**Report Date:**	05/21/08
oject:	Star Valley Regional Water Plan	**Collection Date:**	04/03/08 10:15
b ID:	C08040245-002	**DateReceived:**	04/04/08
ient Sample ID:	Alpine Well 2	**Matrix:**	Aqueous

alyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
AJOR IONS							
alinity, Total as CaCO3	262	mg/L		1		A2320 B	04/07/08 21:20 / ljl
lcium	73	mg/L		1		E200.7	04/15/08 08:38 / cp
loride	4	mg/L		1		A4500-Cl B	04/16/08 11:02 / jl
oride	0.4	mg/L		0.1		A4500-F C	04/08/08 13:47 / ljl
gnesium	24	mg/L		1		E200.7	04/15/08 08:38 / cp
ogen, Ammonia as N	ND	mg/L		0.1		E350.1	04/14/08 12:41 / eli-b
ogen, Kjeldahl, Total as N	ND	mg/L		0.5		E351.2	04/17/08 16:02 / eli-b
ogen, Nitrate+Nitrite as N	0.2	mg/L		0.1		E353.2	04/07/08 12:40 / jal
ogen, Organic	ND	mg/L		0.500		Calculation	04/25/08 13:54 / sec
ogen, Total	ND	mg/L		0.5		A4500-N A	04/19/08 17:53 / sec
assium	ND	mg/L		1		E200.7	04/15/08 08:38 / cp
ium	2	mg/L		1		E200.7	04/15/08 08:38 / cp
fate	14	mg/L		1		A4500-SO4 E	04/11/08 14:45 / jal
N-METALS							
sphorus, Total as P	ND	mg/L		0.01		E365.1	04/11/08 11:01 / eli-h
YSICAL PROPERTIES							
ductivity	488	umhos/cm		1		A2510 B	04/07/08 12:12 / rw
dness as CaCO3	278	mg/L				A2340 B	04/21/08 10:51 / sec
	7.63	s.u.		0.01		A4500-H B	04/07/08 12:12 / rw
ds, Total Dissolved TDS @ 180 C	255	mg/L		10		A2540 C	04/07/08 17:52 / dd
TALS - TOTAL							
enic	0.001	mg/L		0.001		E200.8	04/20/08 17:17 / sml
per	ND	mg/L		0.01		E200.8	04/20/08 17:17 / sml
	ND	mg/L		0.03		E200.7	04/15/08 08:38 / cp
d	ND	mg/L		0.05		E200.7	04/15/08 08:38 / cp
nganese	ND	mg/L		0.01		E200.7	04/15/08 08:38 / cp
	0.17	mg/L		0.01		E200.7	04/15/08 08:38 / cp
TA QUALITY							
Balance (± 5)	0.217	%				Calculation	04/21/08 11:36 / sw
ns	5.65	meq/L				Calculation	04/21/08 11:36 / sw
ons	5.68	meq/L				Calculation	04/21/08 11:36 / sw
ds, Total Dissolved Calculated	283	mg/L				Calculation	04/21/08 11:36 / sw
Balance (0.80 - 1.20)	0.900	dec. %				Calculation	04/21/08 11:36 / sw
GANIC CHARACTERISTICS							
anic Halides, Total	ND	mg Cl/L		0.1		SW9020B	04/09/08 14:32 / wen

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ent:	Sunrise Engineering Inc
oject:	Star Valley Regional Water Plan
b ID:	C08040245-002
ent Sample ID:	Alpine Well 2

Report Date:	05/21/08
Collection Date:	04/03/08 10:15
DateReceived:	04/04/08
Matrix:	Aqueous

alyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
LATILE ORGANIC COMPOUNDS							
,1,2-Tetrachloroethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
,1-Trichloroethane	ND	ug/L		0.50	200	E524.2	04/12/08 01:02 / jlr
,2,2-Tetrachloroethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
,2-Trichloroethane	ND	ug/L		0.50	5	E524.2	04/12/08 01:02 / jlr
-Dichloroethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
-Dichloroethene	ND	ug/L		0.50	7	E524.2	04/12/08 01:02 / jlr
-Dichloropropene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
3-Trichlorobenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
3-Trichloropropane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
4-Trichlorobenzene	ND	ug/L		0.50	70	E524.2	04/12/08 01:02 / jlr
4-Trimethylbenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
-Dibromo-3-chloropropane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
-Dibromoethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
-Dichlorobenzene	ND	ug/L		0.50	600	E524.2	04/12/08 01:02 / jlr
-Dichloroethane	ND	ug/L		0.50	5	E524.2	04/12/08 01:02 / jlr
-Dichloropropane	ND	ug/L		0.50	5	E524.2	04/12/08 01:02 / jlr
5-Trimethylbenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
Dichlorobenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
Dichloropropane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
Dichlorobenzene	ND	ug/L		0.50	75	E524.2	04/12/08 01:02 / jlr
Dichloropropane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ılorotoluene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ılorotoluene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
zene	ND	ug/L		0.50	5	E524.2	04/12/08 01:02 / jlr
nobenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
nochloromethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
nodichloromethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
noform	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
nomethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ɔon tetrachloride	ND	ug/L		0.50	5	E524.2	04/12/08 01:02 / jlr
ıobenzene	ND	ug/L		0.50	100	E524.2	04/12/08 01:02 / jlr
ıodibromomethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ıoethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ıoform	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ıomethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
,2-Dichloroethene	ND	ug/L		0.50	70	E524.2	04/12/08 01:02 / jlr
,3-Dichloropropene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ɔmomethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
lorodifluoromethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
lbenzene	ND	ug/L		0.50	700	E524.2	04/12/08 01:02 / jlr
ıchlorobutadiene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ropylbenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr

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ent: Sunrise Engineering Inc
oject: Star Valley Regional Water Plan
b ID: C08040245-002
ent Sample ID: Alpine Well 2

Report Date: 05/21/08
Collection Date: 04/03/08 10:15
DateReceived: 04/04/08
Matrix: Aqueous

alyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
LATILE ORGANIC COMPOUNDS							
p-Xylenes	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
hyl tert-butyl ether (MTBE)	ND	ug/L		2.0		E524.2	04/12/08 01:02 / jlr
hylene chloride	ND	ug/L		0.50	5	E524.2	04/12/08 01:02 / jlr
phthalene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
utylbenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ropylbenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ylene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
opropyltoluene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
-Butylbenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
ene	ND	ug/L		0.50	100	E524.2	04/12/08 01:02 / jlr
-Butylbenzene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
achloroethene	ND	ug/L		0.50	5	E524.2	04/12/08 01:02 / jlr
ene	ND	ug/L		0.50	1000	E524.2	04/12/08 01:02 / jlr
s-1,2-Dichloroethene	ND	ug/L		0.50	100	E524.2	04/12/08 01:02 / jlr
s-1,3-Dichloropropene	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
hloroethene	ND	ug/L		0.50	5	E524.2	04/12/08 01:02 / jlr
hlorofluoromethane	ND	ug/L		0.50		E524.2	04/12/08 01:02 / jlr
yl chloride	ND	ug/L		0.50	2	E524.2	04/12/08 01:02 / jlr
enes, Total	ND	ug/L		0.50	10000	E524.2	04/12/08 01:02 / jlr
alomethanes, Total	ND	ug/L		0.50	80	E524.2	04/12/08 01:02 / jlr
urr: Dibromofluoromethane	102	%REC		80-120		E524.2	04/12/08 01:02 / jlr
urr: p-Bromofluorobenzene	95.0	%REC		80-120		E524.2	04/12/08 01:02 / jlr
urr: Toluene-d8	96.0	%REC		80-120		E524.2	04/12/08 01:02 / jlr

ort nitions:
RL - Analyte reporting limit.
QCL - Quality control limit.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.

Water Sampling Results For

Alpine District Well No. 3

Not Available

APPENDIX B

Sanitary Surveys

REGION 8
1595 Wynkoop Street
Denver, CO 80202-1129

Ref: 8WD-SD-F

SENT VIA EMAIL
DIGITAL READ RECEIPT REQUESTED

Melody Leseberg
P.O. Box 3070
Alpine, WY 83128
admin@alpinewy.gov

Re: **2024 Sanitary Survey Report**
PWS ID#: **WY5600156**

Dear Melody Leseberg,

Enclosed is a report prepared for the U. S. Environmental Protection Agency (EPA) following a sanitary survey of the Town of Alpine water system on July 24, 2024. Please note each significant deficiency listed at the beginning of the report. To avoid receiving a violation, you must correct **each identified significant deficiency and submit documentation of the corrective action to the EPA within 6 months** from receipt of this letter and sanitary survey report.

If you will be unable to meet this standard corrective action timeframe, you must contact the EPA with a written justification and proposed completion schedule as soon as possible. Each significant deficiency for this water system is listed below:

Significant Deficiencies

Significant deficiencies include, but are not limited to, defects in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system, that the EPA determines to be causing, or have the potential for causing, the introduction of contamination into the water delivered to consumers. Please note the instructions for responding to significant deficiencies in the attached cover letter. Failure to provide a response to the EPA could result in a violation.

Prior to making physical modifications to your water system, a permit issued by the Wyoming Department of Environmental Quality (WY DEQ) may be required. Contact the respective WY DEQ District Engineer for your area to determine if a permit is needed before making corrections for

significant deficiencies followed by an asterisk (*). The email and phone number for the DEQ District Engineer may be found in your Sanitary Survey Report.

1) **No Facility ID: Well NS1**

Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment*.

After the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water, but it is connected to the drinking water system (isolated by a gate valve). Please note that if you intend to keep the existing well physically connected, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well. If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed. The well must also be valved off to keep stagnant water from entering the system if the pump is removed. The associated chlorine contact tank must also be physically disconnected from the system.

In order to correct this significant deficiency, please confirm whether this well is active or inactive. If the well is to be considered active, EPA may require additional corrective action. If this well is to be considered inactive, must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice.

2) **No Facility ID: Well NS2**

Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment*.

After the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water, but it is connected to the drinking water system (isolated by a gate valve). Please note that if you intend to keep the existing well physically connected, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well. If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed. The well must also be valved off to keep stagnant water from entering the system if the pump is removed. The associated chlorine contact tank must also be physically disconnected from the system.

In order to correct this significant deficiency, please confirm whether this well is active or inactive. If the well is to be considered active, EPA may require additional corrective action. If this well is to be considered inactive, must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice.

3) **No Facility ID: Buried Chlorine Contact Tank**

Clarify Status of Tank and Complete Checklist or Provide Documentation of Physical Disconnection or Abandonment*.

After the sanitary survey, EPA was notified that this facility is considered inactive and there are no plans to use it for potable water, but it is connected to the drinking water system (isolated by a gate valve). Please note that if you intend to keep the existing tank physically connected, it must be inspected as part of the sanitary survey and you must address any significant deficiencies related to this tank. If you wish this tank to be considered inactive, it must be physically disconnected from the system. This means the line from the tank to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped.

In order to correct this significant deficiency, please confirm whether this tank is active or inactive. If the tank is to be considered active, please fill out the enclosed unknown integrity of storage tank checklist. EPA may require additional corrective action based on responses. If this tank is to be considered inactive, it must be physically disconnected. Photos must be taken to document the inactive status of this tank, and should be provided to EPA with your completed correction notice.

4) **Unprotected, high hazard cross-connection present*.**

Cross-connections provide a pathway for contamination to enter the drinking water system during backflow events and therefore present a potential public health threat. *The surveyor identified that the Wastewater Treatment Plant connection to the drinking water system via a dual check valve and an isolation valve is a high hazard cross connection.* A reduced pressure backflow assembly (RPZ) or air gap must be installed at the service connection to this facility. An RPZ must be inspected and tested at least annually to ensure proper function. For corrective actions refer to WY DEQ Chapter 12 Section 14(i) regulations on Cross Connections.

Within 6 months from receipt of this letter, you must do the following:

- Prior to making physical modifications to your water system, a permit issued by the Wyoming Department of Environmental Quality (WY DEQ) may be required. Contact the respective WY DEQ District Engineer for your area to determine if a permit is needed before making corrections for significant deficiencies followed by an asterisk (*). The email and phone number for the DEQ District Engineer may be found in your Sanitary Survey Report.
- Correct *each* significant deficiency.
- Provide a completed Significant Deficiency Correction Notice listing *each* individual deficiency and the date of correction. If a WY DEQ permit was required to make any of the significant deficiency corrections, please include the permit number on your completed Correction Notice form.
- Provide labeled photos of *each* correction.
- **If you will be unable to meet the 6-month standard corrective action timeframe, you must contact the EPA as soon as possible with a written justification and proposed completion schedule to receive a time extension. Your time extension request must include:**
  - Your public water system name and number;
  - Description of why you will be unable to meet the 6-month timeframe;

- Description of the corrective action(s) to be taken to address each significant deficiency;
- A schedule including specific proposed dates for completing each corrective action, which may include short-term interim steps and long-term completion dates.

The Significant Deficiency Correction Notice is enclosed and can also be found at the following website: http://www.epa.gov/region8-waterops/reporting-forms-and-instructions-reporting-forms and by selecting the Sanitary Survey link. To avoid receiving a violation, please provide this documentation to:
Mr. Matthew Langenfeld, Groundwater Rule Manager
EPA Region 8, 8WD-SD-F
1595 Wynkoop Street
Denver, CO 80202
Email: langenfeld.matthew@epa.gov
Phone: 303-312-6284

If you have any questions regarding a significant deficiency or your corrective action plan, contact Matthew Langenfeld. If you propose a different corrective action timeframe, Matthew will provide you with a confirmation email or letter. The sanitary surveyor identified at least one recommendation to improve the operation of the water system and to protect public health. While not required, the EPA recommends that all such items be corrected. Please see the enclosed Sanitary Survey report for any recommendations.

Please contact us if your system has a change in the treatment process; you add or remove a water source; there is a change in the number of people served or the number of water connections; or different contact information becomes available for your water system. This allows us to keep you up to date on monitoring requirements and keeps our inventory current. Failure to notify EPA about water source or treatment changes may result in a violation. To access the EPA's change form, use the following link and send us the completed form or give us a call:

https://www.epa.gov/region8-waterops/epa-r8-public-water-system-inventory-change-form

EPA should also be notified if your system has a pressure loss (less than 20 psi for more than one hour), or if the system experiences any other emergency that may compromise water quality. Systems should contact Kyle St. Clair at 303 312-6791 in these situations. If one of these events occurs after business hours, or on a weekend/holiday, the system should call the EPA Region 8 24-hour drinking water emergency line at 303 312-6327

Thank you for your cooperation during the sanitary survey. If you have any questions regarding the sanitary survey, please call Lucien Gassie at 720 987-4598. If you have questions on specific regulations, please refer to the brochure enclosed with this letter, which contains the names and phone numbers for the EPA drinking water staff.

Sincerely,

Lucien Gassie, PhD, PE
Environmental Engineer
Field Services and Tribal Section
Drinking Water Program

Enclosures

cc:
Eric Green
Mayor
Town of Alpine
mayor@alpinewy.gov

Dustin Murrell
Operator
operator-wwtp@alpinewy.gov

John Burbridge
Chief Counsel, Wyoming Public Services Commission
john.burbridge@wyo.gov

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

EPA Region 8 WY Sanitary Survey Form
Inventory

Surveyor name: Lucien Gassie
System representatives present at survey: Craig Leseberg, Operator; Ryen Kolb, Operator
Others present: Evelyn Hoffman, EPA Region 8

Primary Administrative Contact (to receive all correspondence from EPA)

Name: Melody Leseberg
Address: P.O. Box 3070, Alpine, WY 83128
Business phone: 307-654-7757
Email: admin@alpinewy.gov

System Owner or Municipal Legal Representative

Name: Eric Green | Town of Alpine | Title: Mayor
Address: P.O. Box 3070, Alpine, WY 83128
Business phone: 307-654-7757 | Cell phone: 307-699-1991
Email: mayor@alpinewy.gov

Emergency Contact

Name: Craig Leseberg
Address: P.O. Box 3070, Alpine, WY 83128
Emergency phone: 307-880-2869 | Email: publicworks@alpinewy.gov

Additional Contacts

Name: John Burbridge | Title: Chief Counsel, WY Public Services Commission
Address: 2515 Warren Ave. Suite 300, Cheyenne, WY 82002
Business phone: 307-777-7427
Email: john.burbridge@wyo.gov

Name: Ryen Kolb | Title: Operator
Address: PO Box 3070, Alpine, WY 83128
Business phone: 307-654-7757

Designated Operator

Name: Craig Leseberg
Operator Adequately Certified? ☑ Yes ☐ No ☐ Not required (NC)
Certificate Level: 1 | Area: Treatment | Expiration Year: 2026
Certificate Level: 1 | Area: Distribution | Expiration Year: 2026
Address: P.O. Box 3070, Alpine, WY 83128
Business phone: 307-880-2869
Email: publicworks@alpinewy.gov

Additional Operator

Name: Dustin Murrell

Operator Adequately Certified? ☑ Yes ☐ No ☐ Not required (NC)

Certificate Level: 1 Area: Well Expiration Year: 2027

Address: P.O. Box 3070, Alpine, WY 83128

Business phone: 307-654-7757 Cell phone: 503-720-7729

Email: operator-wwtp@alpinewy.gov

DEQ District Engineer	**CHS Sanitarian**
Dennis Lewis, District Engineer	Dru Haderlie, CHS Specialist
Phone: 307-777-7088	Phone: 307-279-3276
Email: dennis.lewis@wyo.gov	Email: dru.haderlie@wyo.gov

Water System Physical Address and Location

Address: 250 River Circle, Alpine, WY 83128 County: Lincoln

Physical Location and Directions: From the intersection of US-26 and US-89 (Alpine Junction), proceed south on US-89 for 1.2-miles to the south entrance into River Circle; turn right (west/northerly). The Town Hall parking lot driveway is on the right, approximately 135-feet into River Circle.

Service Connections

Total Service Connections:	700
Metered Service Connections:	700

Population

Residential:	1,300
Non-Transient:	NI
Transient:	NI
Info Source:	Operators – there are significant NT and T populations, but the operators were not sure how many people.

Water System Classification

Source: GW = Groundwater

Classification: C = Community

Period of Operation: Year Round

WYDEQ System Classification:

Area: Well Level: 1

Owner Type: Local Government Authority (Commission, District, Municipality, City etc.)

Service Categories:

- BR Bar
- CG Campground

- CH Church
- DC Daycare Center
- HS Hospital
- IB Interstate Bottler
- LB Local Bottler
- LO Lodge
- MO Motel/Hotel
- RS Residential
- RV RV Park
- VC Visitor Center

Primary Service Category: Residential

System Summary

Is the current water source adequate in quantity?

☐ Yes ☑ No Planning to connect mega well to system

Have there been any interruptions in service since the last survey?

☐ Yes ☑ No

Have there been reports of a water borne disease?

☐ Yes ☑ No

Have there been any changes to the water system since the last survey?

☐ Yes ☑ No

Are there any changes planned?

☑ Yes ☐ No Connect the mega well

Summary: The Town of Alpine water system is classified as a community groundwater system. Approximately 1,310 people are served through 700 connections. Three wells provide groundwater to the system's treatment plant (TP01) where flow is chlorinated before being sent to the Lower Tank (ST03). From ST03, flow is to the main areas of the Town's Distribution System, and to Pumphouse (PF01) where it is pumped to the Upper Tank (ST02). ST02 only provides potable water to the Alpine Hillside area; yet can supply the main distribution system in an emergency, through a PRV. The North Star Tank (ST04) floats on the distribution system, serving system demand and maintaining system pressure. The system recently annexed in an area that includes a "Mega-well" and an additional 88 connections. Short-term plans are to connect and bring the "Mega-well" into the Alpine drinking water system. There are two additional wells and a chlorine contact tank physically connected to the system but not in use.

Significant Deficiencies

Significant deficiencies include, but are not limited to, defects in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system, that the EPA determines to be causing, or have the potential for causing, the introduction of contamination into the water delivered to consumers. Please note the instructions for responding to significant deficiencies in the attached cover letter. Failure to provide a response to the EPA could result in a violation.

Prior to making physical modifications to your water system, a permit issued by the Wyoming Department of Environmental Quality (WY DEQ) may be required. Contact the respective WY DEQ District Engineer for your area to determine if a permit is needed before making corrections for significant deficiencies followed by an asterisk (*). The email and phone number for the DEQ District Engineer may be found in your Sanitary Survey Report.

1) **No Facility ID: Well NS1**

Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment*.

After the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water, but it is connected to the drinking water system (isolated by a gate valve). Please note that if you intend to keep the existing well physically connected, you must monitor this well for compliance in the same way you would if the well was used on a regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well. If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed. The well must also be valved off to keep stagnant water from entering the system if the pump is removed. The associated chlorine contact tank must also be physically disconnected from the system.

In order to correct this significant deficiency, please confirm whether this well is active or inactive. If the well is to be considered active, EPA may require additional corrective action. If this well is to be considered inactive, must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice.

2) **No Facility ID: Well NS2**

Clarify Status of Groundwater Well and Perform Appropriate Monitoring, Physical Disconnection, or Abandonment*.

After the sanitary survey, EPA was notified that this well is considered inactive and there are no plans to use it for potable water, but it is connected to the drinking water system (isolated by a gate valve). Please note that if you intend to keep the existing well physically connected, you must monitor this well for compliance in the same way you would if the well was used on a

regular basis. This well will also be inspected as part of the sanitary survey and you must address any significant deficiencies related to this well. If you wish this well to be considered inactive, it must be either plugged and abandoned, or physically disconnected from the system. This means the line from the well to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped, or the pump must be removed. The well must also be valved off to keep stagnant water from entering the system if the pump is removed. The associated chlorine contact tank must also be physically disconnected from the system.

In order to correct this significant deficiency, please confirm whether this well is active or inactive. If the well is to be considered active, EPA may require additional corrective action. If this well is to be considered inactive, must be physically disconnected or abandoned. Photos must be taken to document the inactive status of this well, and should be provided to EPA with your completed correction notice.

3) No Facility ID: Buried Chlorine Contact Tank

Clarify Status of Tank and Complete Checklist or Provide Documentation of Physical Disconnection or Abandonment*.

After the sanitary survey, EPA was notified that this facility is considered inactive and there are no plans to use it for potable water, but it is connected to the drinking water system (isolated by a gate valve). Please note that if you intend to keep the existing tank physically connected, it must be inspected as part of the sanitary survey and you must address any significant deficiencies related to this tank. If you wish this tank to be considered inactive, it must be physically disconnected from the system. This means the line from the tank to the pumphouse or to the transmission line must be severed (section of piping removed) and properly capped.

In order to correct this significant deficiency, please confirm whether this tank is active or inactive. If the tank is to be considered active, please fill out the enclosed unknown integrity of storage tank checklist. EPA may require additional corrective action based on responses. If this tank is to be considered inactive, it must be physically disconnected. Photos must be taken to document the inactive status of this tank, and should be provided to EPA with your completed correction notice.

4) Unprotected, high hazard cross-connection present*.

Cross-connections provide a pathway for contamination to enter the drinking water system during backflow events and therefore present a potential public health threat. *The surveyor identified that the Wastewater Treatment Plant connection to the drinking water system via a dual check valve and an isolation valve is a high hazard cross connection.* A reduced pressure backflow assembly (RPZ) or air gap must be installed at the service connection to this facility. An RPZ must be inspected and tested at least annually to ensure proper function. For corrective actions refer to WY DEQ Chapter 12 Section 14(i) regulations on Cross Connections.

Uncorrected Significant Deficiencies from Prior Sanitary Survey

No uncorrected significant deficiencies from prior sanitary survey.

Recommendations

1) **Storage Tank ID: ST04 - North Star Tank (540K)**
Adequate Tank Controls Should be Installed

Adequate controls must be provided to maintain water levels in the storage tank. Pumps to supply the tank should be controlled from tank levels with a signal transmitted by telemetering equipment. At the time of the survey, water level indicator equipment and associated controls for the storage tank were not in place. Since the tank is at the same elevation as the Lower Storage Tank, the water is naturally kept at the same level as the Lower Storage Tank. The system should consider installing telemetry equipment in the North Star Tank as well to better control tank levels.

2) **Treatment Plant ID: TP01 - Chlorinator**
Treatment System Lacks Redundant Equipment

When treatment is used for the protection of the water supply, redundant equipment should be available. The treatment setup at the water system lacks redundant equipment and/or the spare parts to avoid an interruption of treatment should the treatment units go down. EPA recommends acquiring redundant treatment equipment to be employed in a standby mode to prevent an interruption in treatment.

3) **Storage Capacity not Adequate to Meet Future Needs**

The minimum storage capacity (or equivalent capacity) for systems not providing fire protection should be equal to the average daily consumption. This requirement may be reduced when the source and treatment facilities have sufficient capacity with standby power to supplement peak demands of the system. Where fire protection is provided, fire flow requirements are established by the appropriate state Insurance Services Office. EPA recommends initiating investigations into options available to increase system storage to recommended levels.

4) **Visual Inspection of Storage Tank Components**

The storage tank vent, hatch, and overflow should be visually inspected regularly. EPA recommends that the system visually inspect these components at least twice per year.

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Wells and Well Pumps

Facility ID & Name: WL01 - Alpine Well #1

Well permit #: P39163; 3rd Enl P189882 Statement of Completion on site? Yes

Should this well be inactivated? No
Are there any approved WY DEQ variances approved for this well? No
Total Well Depth: 275 ft
Depth range of shallowest casing perforations: 180 ft to 275 ft
Current yield: 600 gpm

Well Location: Pitless adapter
Is the well protected from vehicle damage? Yes
Does SW runoff drain away from the wellhead? Yes
Well casing height: 21"
Does well casing terminate at least 12" above the concrete floor (for indoor wells)?
Does well casing terminate at least 18" above natural ground surface (outdoor wells)? Yes
Are there any holes or openings observed in the well? No
Does the well have a sanitary seal with a tightly bolted cap? Yes
Is a gasket visible? No
Does the well cap move? No
Explain: Bolts removed to view gasket

Is well vented (not required)? Yes
Height of the vent: 23
Does the vent terminate at or above the top of the casing? Yes
Is the vent screened with #24-mesh? Yes

Is there a source water sample tap for GWR compliance? Yes
Is the tap located prior to any treatment or storage? Yes
Where is the source water tap located relative to other water system facilities? Well house

Is there an air release/vacuum relief valve? Yes
Does it terminate in a downward position? Yes
Does it terminate at least 8" above the floor? Yes
Is it screened with #24 mesh? Yes

Well Pumps

Is the pump submersible? Yes
Pump make, model, and HP: Jacuzzi Brothers, Inc./NI/50 HP
Controlled by variable frequency drive? Yes
VFD make and model: ABB
Pump run time (min): 5
NSF-60 lubricant used? NA
Maintenance program in place? No
Spare parts or pump available? No

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Facility ID & Name: WL02 - Alpine Well #2

Well permit #: P77717; Enl P189883 Statement of Completion on site? Yes

Should this well be inactivated? No
Are there any approved WY DEQ variances approved for this well? No
Total Well Depth: 243 ft
Depth range of shallowest casing perforations: 101 ft to 102 ft
Current yield: 450 gpm

Well Location: Pitless adapter
Is the well protected from vehicle damage? Yes
Does SW runoff drain away from the wellhead? Yes
Well casing height: 20"
Does well casing terminate at least 18" above natural ground surface (outdoor wells)? Yes
Are there any holes or openings observed in the well? No
Does the well have a sanitary seal with a tightly bolted cap? Yes
Is a gasket visible? No
Does the well cap move? No
Explain: Gasket visible in bolt holes

Is well vented (not required)? Yes
Height of the vent: 22
Does the vent terminate at or above the top of the casing? Yes
Is the vent screened with #24-mesh? Yes

Is there a source water sample tap for GWR compliance? Yes
Is the tap located prior to any treatment or storage? Yes
Where is the source water tap located relative to other water system facilities? Well house prior to chlorination

Is there an air release/vacuum relief valve? Yes
Does it terminate in a downward position? Yes
Does it terminate at least 8" above the floor? Yes
Is it screened with #24 mesh? Yes

Well Pumps

Is the pump submersible? Yes
Pump make, model, and HP: Red Jacket/NI/40 HP
Controlled by variable frequency drive? Yes
VFD make and model: ABB
Pump run time (min): 5
NSF-60 lubricant used? NA
Maintenance program in place? No
Spare parts or pump available? No

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Facility ID & Name: WL03 - Alpine Well #3

Well permit #: P198240 Statement of Completion on site? Yes

Should this well be inactivated? No
Are there any approved WY DEQ variances approved for this well? No
Total Well Depth: 267 ft
Depth range of shallowest casing perforations: 230 ft to 267 ft
Current yield: 400 gpm

Well Location: Pitless adapter
Is the well protected from vehicle damage? Yes
Does SW runoff drain away from the wellhead? Yes
Well casing height: 20"
Does well casing terminate at least 18" above natural ground surface (outdoor wells)? Yes
Are there any holes or openings observed in the well? No
Does the well have a sanitary seal with a tightly bolted cap? Yes
Is a gasket visible? No
Does the well cap move? No
Explain: Gasket visible in bolt holes

Is well vented (not required)? Yes
Height of the vent: 22
Does the vent terminate at or above the top of the casing? Yes
Is the vent screened with #24-mesh? Yes

Is there a source water sample tap for GWR compliance? Yes
Is the tap located prior to any treatment or storage? Yes
Where is the source water tap located relative to other water system facilities? Well house prior to chlorine injection

Is there an air release/vacuum relief valve? Yes
Does it terminate in a downward position? Yes
Does it terminate at least 8" above the floor? Yes
Is it screened with #24 mesh? Yes

Well Pumps

Is the pump submersible? Yes
Pump make, model, and HP: Robbco/7THC, 5- Stage/75 HP
Controlled by variable frequency drive? Yes
VFD make and model: ABB
Pump run time (min): 5
NSF-60 lubricant used? NA
Maintenance program in place? No
Spare parts or pump available? No

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

All Wells

Are there known sources of pollution near the wells which may impact water quality? No
Are there mice, other animals, or their droppings near the well? No
Are there seasonal variations in the quantity of water? No
Are there seasonal variations in the quality of water? No
System sewage system:
- Centralized Sewage Treatment
- Septic Systems with Leach Fields (note direction and distance if near wells)

Comments: Hillside residences are on septic systems

Emergency Backup Source Water

System has no backup source water.

Raw Water to Treatment Plant Transmission Line

Raw Water Line Name: Transmission Line **Line Length: 1.5 miles**
Water Type: GW **Pipe Material: 8-inch PVC**
Line from Wells to Lower Storage Tank (500K; ST03)

Is there any asbestos pipe along the transmission line? No
Are there any service connections off the transmission line? Yes
What does each connection serve? Wastewater Treatment Plant
Is there a legal agreement or contract in place? NA
Is the water treated at the connection? No

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Water Treatment Data: GW and Consecutive Systems

Facility ID & Name: TP01 - Chlorinator
Treatment process: Sodium hypochlorite is injected prior to storage. The treatment was originally required by EPA due to issues with the spring source which is no longer in use.
Design output rate: 800,000 gal/day Max output rate: 850,000 gal/day
Any changes to treatment since last survey? No

Step #1: Treatment type: Chemical

Manufacturer: Thatcher
Product: T-Chlor 12.5 (12.5% Sodium Hypochlorite)
NSF 60 certified? Yes
Dosage: 0.6 mg/L
Objective: Disinfection
Is the process adequate to meet the objective? Yes
Is this process required by EPA? Yes
Location: At Treatment Plant
Frequency of use: Permanent
Is there redundant equipment? No
Is there backup power? Yes
Comments: Generator available at Well #1 (WL01) and Pumphouse Pump (PF01). System is interested in learning if chlorine is still required, since the requirement was associated with a spring source that is no longer in use.

Water Treatment Data: Corrosion Control

Does this system treat the water for corrosion control? No

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Storage Tanks

Tank ID & Name: ST02 - Upper Storage Tank (250K)

Location: Outdoor
Date put into service: 1977
Tank type: Below Ground (buried or partially buried)/ Concrete, Treated water tank
Tank capacity: 250000 gallons
Are there any approved variances? No

Is the site subject to flooding? No
Can the tank be isolated from the system? Yes
Is the water level indicator accurate? Yes
Does the tank have a mixer? No
Does the tank appear structurally sound? Yes
Does the foundation appear structurally sound? NA
Are there unprotected openings in the tank? No

Tank inspection and cleaning

How often are the tank hatch, vent, and overflow visually inspected? Once per year
Was the tank cleaned and inspected within the last 10 years? Yes
When was it last cleaned and inspected? 2018
How was it cleaned and inspected? Divers
Who cleaned and inspected it? Rubicon Applied Divers
How was it disinfected after cleaning? NA
Was surveyor able to view cleaning report? No

Overflow

Does tank have an overflow separate from the vent? Yes
Is the overflow accessible for inspection? Yes
Overflow has #24 mesh screening, a duckbill valve, or a properly sealed flapper valve with a screen of any size inside: Yes
Does the overflow terminate 12 to 24 inches above the ground? Yes
Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? Yes
Is overflow discharge visible? Yes
Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? NA

Drain Line

How is the tank drained? Drain combined with overflow

Air Vent

Does the tank have a vent separate from the overflow? Yes
Is the vent accessible for inspection? Yes
Is there #24-mesh screen? Yes
Is the screen on the inside of the vent to discourage vandals? Yes

Does the air vent terminate downwards? Yes
Is the air vent at least 24" above the roof or ground surface? Yes

Access Hatch

Are all hatch components accessible for inspection? Yes
Is the hatch raised at least 24" above ground/roof level? No
Height OK
Actual height of the hatch above the ground/roof (in): 14
Does the hatch have a shoebox cover? Yes
Is the hatch cover tight and sealed with a rubber gasket? Yes
Is the hatch cover locked? Yes

General tank comments: System plans to have the tanks inspected/cleaned by divers in 2025

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Tank ID & Name: ST03 - Lower Storage Tank (500K)

Location: Outdoor
Date put into service: 1997
Tank type: Below Ground (buried or partially buried)/ Concrete, Treated water tank
Tank capacity: 500000 gallons
Are there any approved variances? No
Is the site subject to flooding? No
Can the tank be isolated from the system? Yes
Is the water level indicator accurate? Yes
Does the tank have a mixer? No
Does the tank appear structurally sound? Yes
Does the foundation appear structurally sound? NA
Are there unprotected openings in the tank? Yes

Tank inspection and cleaning

How often are the tank hatch, vent, and overflow visually inspected? Once per year
Was the tank cleaned and inspected within the last 10 years? Yes
When was it last cleaned and inspected? 2018
How was it cleaned and inspected? Divers
Who cleaned and inspected it? Rubicon Applied Divers
How was it disinfected after cleaning? NA
Was surveyor able to view cleaning report? No

Overflow

Does tank have an overflow separate from the vent? Yes
Is the overflow accessible for inspection? Yes
Overflow has #24 mesh screening, a duckbill valve, or a properly sealed flapper valve with a screen of any size inside: Yes
Does the overflow terminate 12 to 24 inches above the ground? Yes
Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? Yes
Is overflow discharge visible? Yes
Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? NA

Drain Line

How is the tank drained? Drain combined with overflow

Air Vent

Does the tank have a vent separate from the overflow? Yes
Is the vent accessible for inspection? Yes
Is there #24-mesh screen? Yes
Is the screen on the inside of the vent to discourage vandals? Yes
Does the air vent terminate downwards? Yes
Is the air vent at least 24" above the roof or ground surface? Yes

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Access Hatch

Are all hatch components accessible for inspection? Yes
Is the hatch raised at least 24" above ground/roof level? No
Height OK
Actual height of the hatch above the ground/roof (in): 15
Does the hatch have a shoebox cover? Yes
Is the hatch cover tight and sealed with a rubber gasket? Yes
Is the hatch cover locked? Yes

General tank comments: System plans to have tank inspected/cleaned by divers in 2025.

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Tank ID & Name: ST04 - North Star Tank (540K)

Location: Outdoor
Date put into service: 2006
Tank type: Ground level/ Steel, Treated water tank
Tank capacity: 543000 gallons
Are there any approved variances? No

Is the site subject to flooding? No
Can the tank be isolated from the system? Yes
Is the water level indicator accurate? No
Does the tank have a mixer? No
Does the tank appear structurally sound? Yes
Does the foundation appear structurally sound? Yes
Are there unprotected openings in the tank? No

Tank inspection and cleaning

How often are the tank hatch, vent, and overflow visually inspected? Once per year
Was the tank cleaned and inspected within the last 10 years? Yes
When was it last cleaned and inspected? 2018
How was it cleaned and inspected? Drain and clean
Who cleaned and inspected it? NI
How was it disinfected after cleaning? Disinfection per AWWA standards
Was surveyor able to view cleaning report? No

Overflow

Does tank have an overflow separate from the vent? Yes
Is the overflow accessible for inspection? Yes
Overflow has #24 mesh screening, a duckbill valve, or a properly sealed flapper valve with a screen of any size inside: Yes
Does the overflow terminate 12 to 24 inches above the ground? No
height OK
Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? Yes
Is overflow discharge visible? Yes
Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? NA

Drain Line

How is the tank drained? Drains through system

Air Vent

Does the tank have a vent separate from the overflow? Yes
Is the vent accessible for inspection? Yes
Is there #24 mesh screening? Yes
Does the tank have a vacuum/pressure release valve to prevent damage? No
Is the screen on the inside of the vent to discourage vandals? Yes

Downturned vent: is the vent at least 24" above the roof?
Non-downturned vent: is the screen at least 8" above the roof surface? Yes
Non-downturned vent: is there a solid cover to the bottom of the vent screen? Yes
Comments: Vent height photograph reviewed during the survey and was taken by the operator the day before the survey.

Access Hatch

Are all hatch components accessible for inspection? Yes
Is the hatch raised at least 4" above the roof? Yes
Actual height of the hatch above the ground/roof (in): 4
Does the hatch have a shoebox cover? Yes
Is the hatch cover tight and sealed with a rubber gasket? Yes
Is the hatch cover locked? No
Design OK
Hatch comments: Hatch height photo reviewed during the survey and taken the day prior to the survey

General tank comments: System plans to have tank inspected/cleaned by divers in 2025

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Distribution Pump Booster Stations

Total # of booster stations: 1

Are there any new booster stations? No
Are there any booster stations the system has had problems with? No

Pump station ID and name: PF01 - Booster Pumps (2)

Number of pumps: 2
Pump details: Pentair/Aurora/15 HP
Are booster pumps operated with variable frequency drives? No
Pressure change: 81 psi to 132 psi
Estimated run time of booster pumps: 0 min
Are lubricants NSF-60 certified? Yes
Is the pump station subject to flooding? No
Is there a maintenance program in operation? No
Are there spare pumps or parts available? No

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Distribution Data

Description of distribution system: 6", 8" and 10" PVC Mains. 90% of service lines are poly tubing; others are galvanized or copper

Is there asbestos pipe in the distribution system? No

Have lines broken due to freezing? No
Have lines broken due to traffic load? No
Are lines properly disinfected after repairs are made? Yes
Does the system provide fire protection? Yes
Describe: Fire hydrants

Water Use:

Annual volume distributed (MG/yr): 300
Peak Month: July
Volume distributed in peak month (MG): 50
Total number of days of storage (summer): 0.5
Total number of days of storage (winter): 7
Is the storage capacity adequate to meet current needs? Yes
Is the storage capacity adequate to meet future needs? No

Are there any bulk water supply/fill stations attached to this station? No

Are there any air relief valves in vaults/pits located in the distribution system? Yes
Are they regularly inspected and maintained? Yes
Do they have any leaks and/or standing water that covers the discharge point?

Are there long dead end lines in excess of 500 feet in the distribution system? No
Does the system have a flushing plan to ensure all fire hydrants and valves are exercised regularly? Yes
How often does the system perform flushing operations in the distribution system? Annually
Are distribution system drawings maintained? Yes

For systems that add chemical disinfectant/receive disinfected water from a wholesaler:

Is equipment available for measuring chlorine residual in the distribution system? Yes
Describe equipment: Hach Pocket Colorimeter II
Are reagents up to date? Yes
Does the operator know how to properly measure chlorine residual? Yes
Measured chlorine residual distribution system location: Town Hall
Time of analysis: 209
Residual measured by Surveyor (mg/L): 0.50
Residual measured by PWS (mg/L): 0.54
Was free or total chlorine measured? Free

Distribution pressure:

According to the system representative, is there at least 35 psi pressure in the distribution system at peak flow? Yes
According to the system representative, is there at least 20 psi at all points in the system at all times? Yes
How does the water system monitor distribution pressure? Tank level
Was the pressured measured at the time of the survey? No
Distribution water loss rate (%): 10
Comments: System is in the process of getting radio-read meters to assist with loss tracking

Cross Connection Control

Has the system conducted a service connections audit to determine if any high or severe hazard connections exist? Yes
Does the system have a cross connection control/backflow prevention program in place? Yes

Hazardous connections

Are there any severe hazard connections to the system? No
Are there any high hazard connections to the system? Yes
Does each high hazard connection in the treatment plant or distribution system have the appropriate air gap or reduce pressure backflow assembly installed? No
Describe each high hazard and its location: Wastewater Treatment Plant, it's currently a dual check valve and an isolation valve
Do all low hazard connections have the appropriate dual check valve assemblies installed at the meter or service connections? Yes

Other potential cross connections

Do trailers or mobile homes connected directly to the PWS via a yard hydrant have a residential dual check valve at each connection? NA
Are any frost-free hydrants that drain into the soil directly connected to this PWS? No
Are there any leaking system components in the water system observed by the surveyor that are not previously noted? No
Approved air gap or atmospheric vacuum breaker at stock tanks? NA
Vacuum breaker or double check valve assembly at Threaded yard hydrants? Yes

Does the system have a record keeping program and management procedures to ensure:

The installation and certification by test or inspection (as applicable) of all backflow preventers (BFPs) at new service connections: Yes
The annual certification by a certified tester of all high-hazard BFPs in the system: No

Safety

General Safety

Is the fire department familiar with the facilities and their contents? Yes

Personnel Safety

Are all personnel trained in proper handling of all utilized chemicals and materials? Yes
Are adequate masks, protective clothing, and safety equipment provided? Yes
Does the operator understand relevant Occupational Safety and Health Administration (OSHA) regulations? Yes

Chemical Safety

Are oxidizers, corrosives, and flammables stored in separate areas and in closed, marked containers? Yes
Are flammables stored in appropriate containers and cabinets away from combustion sources? NA
Is there adequate ventilation in the areas where solvents, aerosols, and chemical feeders are in use? Yes
Are bulk storage areas physically isolated from treatment areas to prevent spills from entering the water system? Yes

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Management Data

Are there rules governing new hookups to protect the integrity of this water system? Yes
Are DEQ construction standards followed? Yes
Is the treatment plant being properly operated to prevent inadequately treated water from being sent to the distribution system? Yes
Does the system have arrangements in place to assure prompt supply and repair service? Yes
Does the system have a current operations and maintenance manual which describes all procedures, equipment, sampling schedules and inspection data? Yes
Is there a schedule for routine preventative maintenance for all facilities and equipment? Yes
Does the system (treatment plant, finished water storage) have security measures in place (fencing, locks, lighting, alarms, etc.)? Yes

Does the system have an Emergency Procedure Plan (EPP) that includes: Yes

- Emergency contact phone numbers? Yes
- Procedures to respond to a pressure loss/water outage? Yes
- Procedures to respond to a water contamination incident? Yes
- Is the EPP accessible to the operator on-site? Yes

Is the system part of the state Water/Wastewater Agency Response Network (WARN)? Yes
Is the system familiar with EPA's Technical Assistance programs and providers? Yes
Have you evaluated possible impacts to your system from extreme weather events? Yes
Have you evaluated your facilities to see if they are in the 100 and 500 year flood plains? Yes
Describe any outcomes to extreme weather or floodplain evaluation: No changes to system based on extreme weather evaluation, facilities not in flood plain
Is emergency power available to the system? Yes
Does any of the system's power comes from it's own renewable energy sources? No

For Community Systems (including consecutives):

Does the water system have an annual budget? Yes
Is the rate structure for water customers based on metered water use? Yes
Are procedures in place to handle delinquent accounts? Yes
Are purchasing procedures in place for equipment, materials, chemicals, analysis, etc.? Yes
Describe rates and rate structure $31 + $2 per 1,000 gallons
What percentage of your customer accounts are delinquent? <1% (1 account)

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Monitoring and Records

Revised Total Coliform Rule (RTCR) monitoring

Does the operator know how to collect and label samples for total coliform analysis? Yes
Does the operator know what to do in the event of a total coliform positive result? Yes
Are extra bottles available on site in case of need for repeat total coliform sampling? Yes
Does the system have an RTCR sampling plan available for the surveyor's review? Yes
Date of plan: 2020
Is the system following their RTCR sampling plan? Yes

Ground Water Rule (GWR)

Does the operator know when they have to collect a triggered GWR source sample Yes
Does the system know how to submit source water sample results utilizing the triggered Ground Water Source Sampling Form located on the Drinking Water Online site? Yes
Are extra bottles available on site in case of the need for GWR source sampling? Yes

Community and NTNC Systems (including consecutives)

Is there a Disinfection Byproducts Rule Monitoring Plan on-site available for review? Yes
Does the plan have an exhibit representing the current distribution system layout? Yes
Does the operator feel that the current Total Trihalomethanes (TTHM) sample is at the oldest water age in the distribution system? Yes
Is there a Lead & Copper Tap Sample Site Plan on site and available for review? Yes
Is the system following the tiering criteria in the rule? Yes
Does the system reach out to the LCR Manager when there are issues accessing sites? NA

All Systems

Does the operator know the location of each sample tap that represents the entry point(s) to the distribution system? Yes
Does the operator know how to properly label samples taken from the entry point(s) to the distribution system? Yes
Has the PWS completed the monitoring that is specified in the EPA-provided monitoring schedule so far for this calendar year? Yes
Has the PWS completed the monitoring that is specified in the EPA-provided monitoring schedule so far for this calendar year? Yes
Are copies of all monitoring results filed and readily accessible? Yes
Is the operator familiar with the Drinking Water Online and Drinking Water Watch? Yes

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo Log

Photo #WL01-1: Alpine Well #1 - Well Air Vac

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-2: Alpine Well #1 - Well Air Vac

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-3: Alpine Well #1 - Well Air Vac

Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-4: Alpine Well #1 - Well Groundwater Rule Tap

Sample tap prior to treatment

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-5: Alpine Well #1 - Well Gasket
Gasket visible in bolt hole

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-6: Alpine Well #1 - Well Vent

Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-7: Alpine Well #1 - Well Reference

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-8: Alpine Well #1 - Well Reference

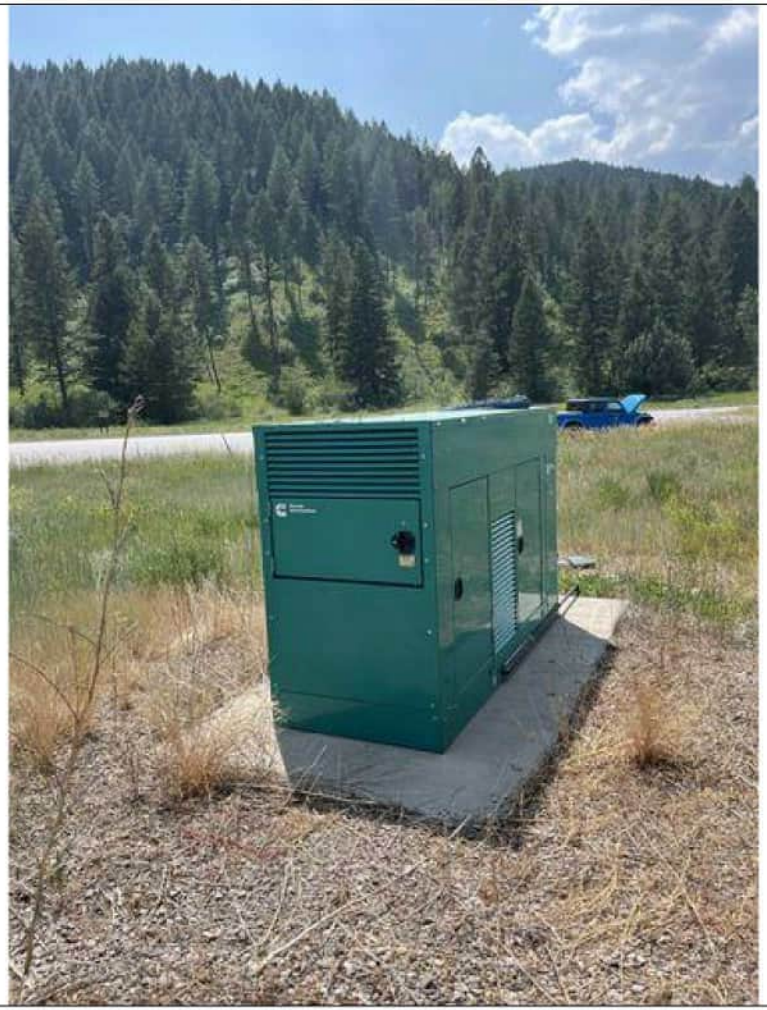
System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-9: Alpine Well #1 - Well Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL01-10: Alpine Well #1 - Other (describe in comments)

Emergency power next to the well



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL02-1: Alpine Well #2 - Well Air Vac

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL02-2: Alpine Well #2 - Well Air Vac

Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL02-3: Alpine Well #2 - Well Groundwater Rule Tap

Located prior to chlorine injection

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL02-4: Alpine Well #2 - Well Gasket

Gasket visible in bolt holes

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL02-5: Alpine Well #2 - Well Vent

Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL02-6: Alpine Well #2 - Well Reference

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL02-7: Alpine Well #2 - Well Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL02-8: Alpine Well #2 - Well Reference

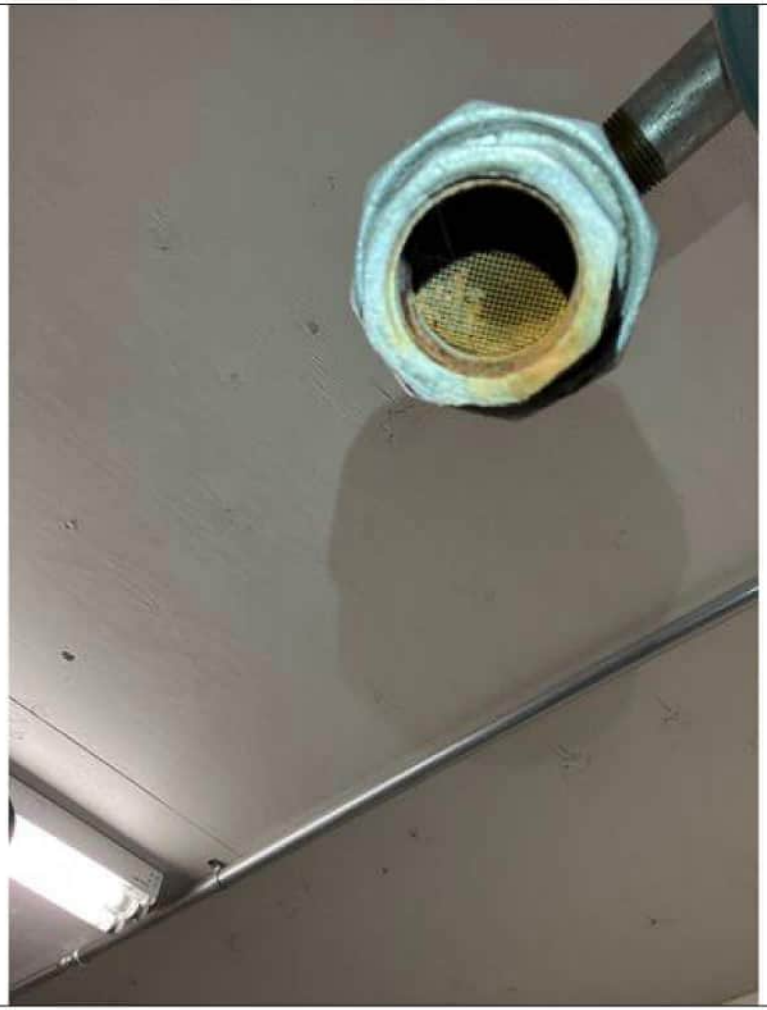
System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-1: Alpine Well #3 - Well Air Vac

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-2: Alpine Well #3 - Well Air Vac

Screened with #24 mesh



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-3: Alpine Well #3 - Well Groundwater Rule Tap

Located prior to chlorination

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-4: Alpine Well #3 - Well Gasket
Gasket visible in bolt hole

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-5: Alpine Well #3 - Well Reference

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-6: Alpine Well #3 - Well Reference

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-7: Alpine Well #3 - Well Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-8: Alpine Well #3 - Well Reference

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #WL03-9: Alpine Well #3 - Well Vent

Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #TP01/SP02-1: Chlorinator & Sample Point - Treatment Process

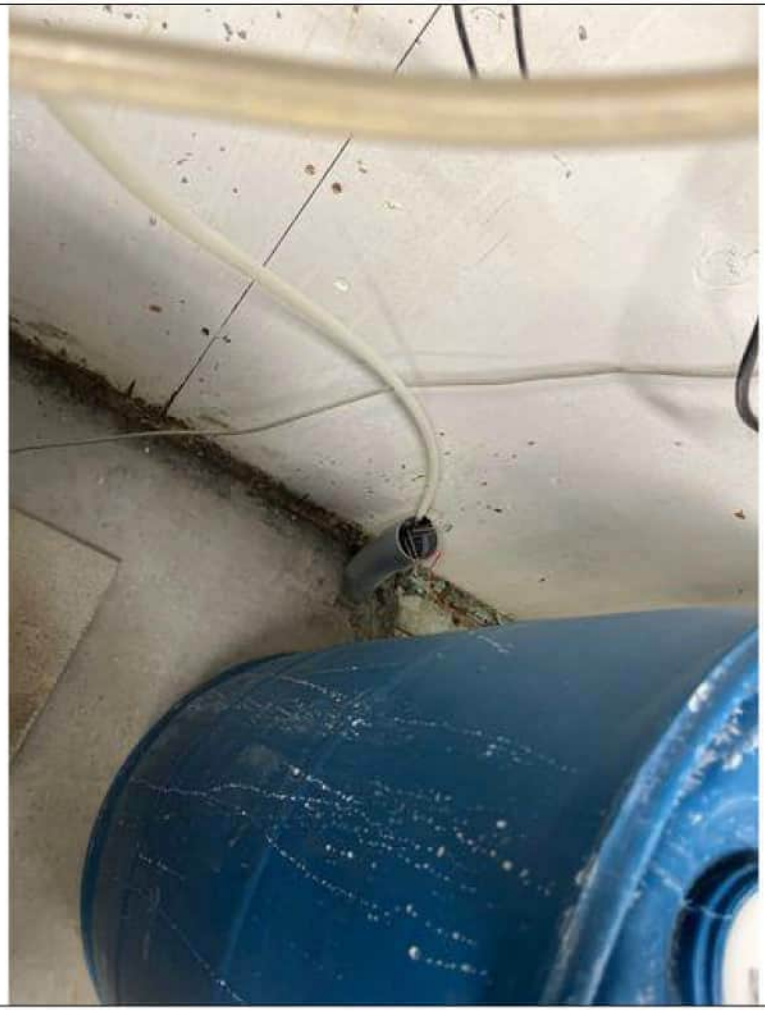
Chlorine injection point, after the GWR sample taps

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #TP01/SP02-2: Chlorinator & Sample Point - Treatment Process

Chlorine injection equipment

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #TP01/SP02-3: Chlorinator & Sample Point - Treatment Process
Chlorine injection tubing


System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

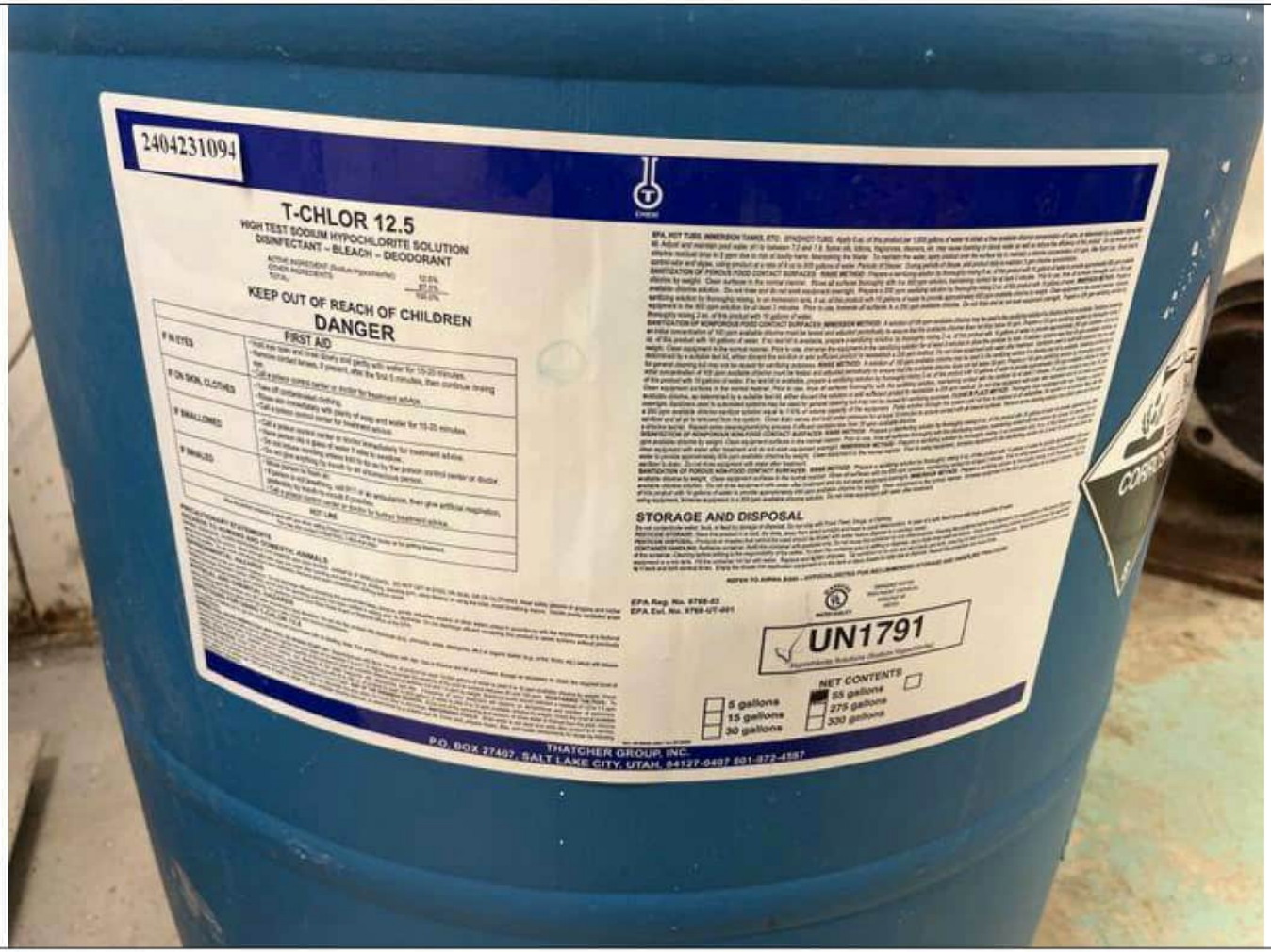
Photo #TP01/SP02-4: Chlorinator & Sample Point - Treatment Process

Chlorine injection pump

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #TP01/SP02-5: Chlorinator & Sample Point - Treatment Process

Chemical



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-1: Upper Storage Tank (250K) - Overflow Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-2: Upper Storage Tank (250K) - Overflow Screen

Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-3: Upper Storage Tank (250K) - Overflow Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-4: Upper Storage Tank (250K) - Other (describe in comments)

Drainage area

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-5: Upper Storage Tank (250K) - Other (describe in comments)

Solar panels for telemetry

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-6: Upper Storage Tank (250K) - Vent Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-7: Upper Storage Tank (250K) - Vent Screen
Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-8: Upper Storage Tank (250K) - Hatch lock

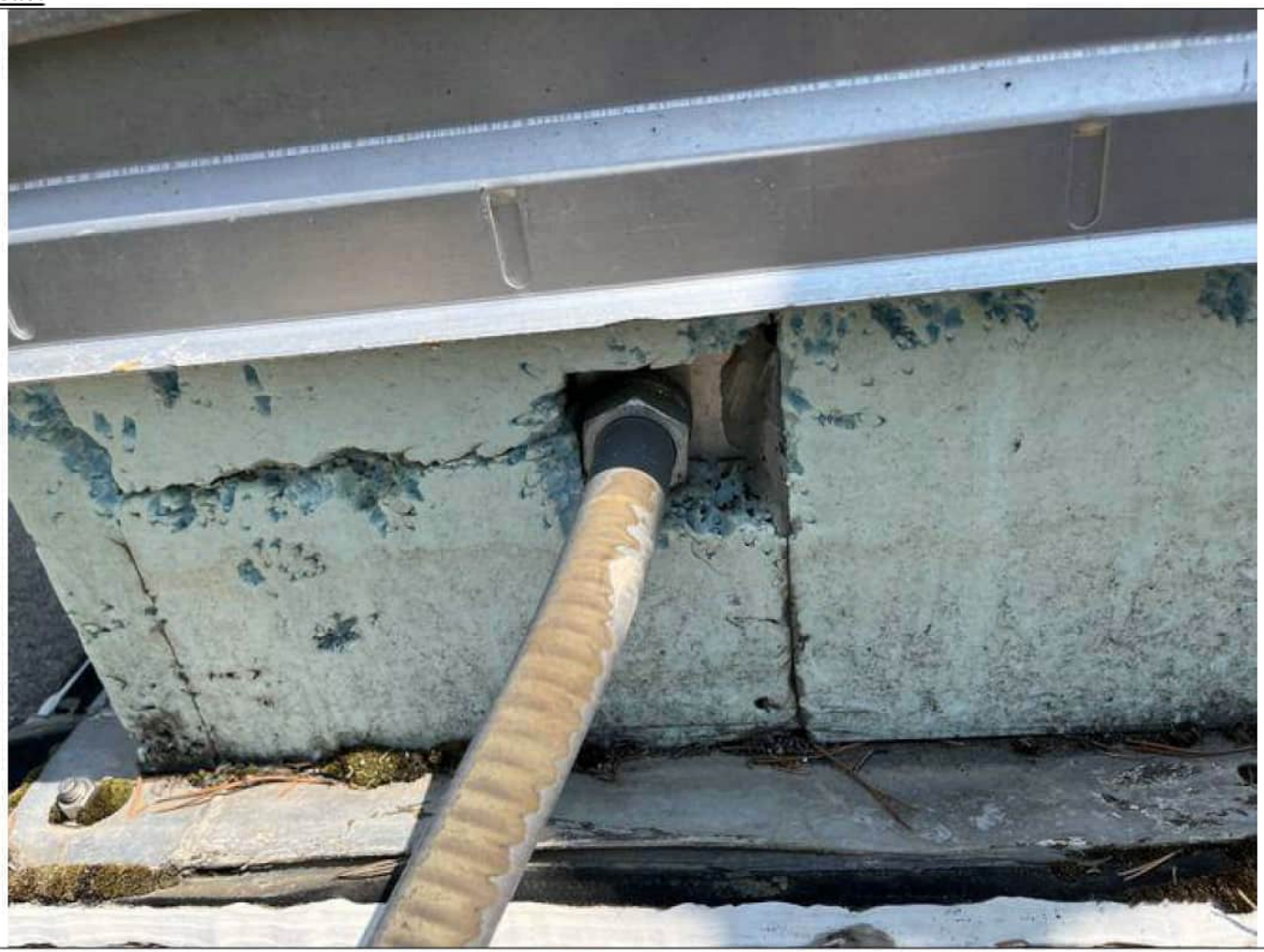
System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-9: Upper Storage Tank (250K) - Hatch height when closed

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-10: Upper Storage Tank (250K) - Other (describe in comments)

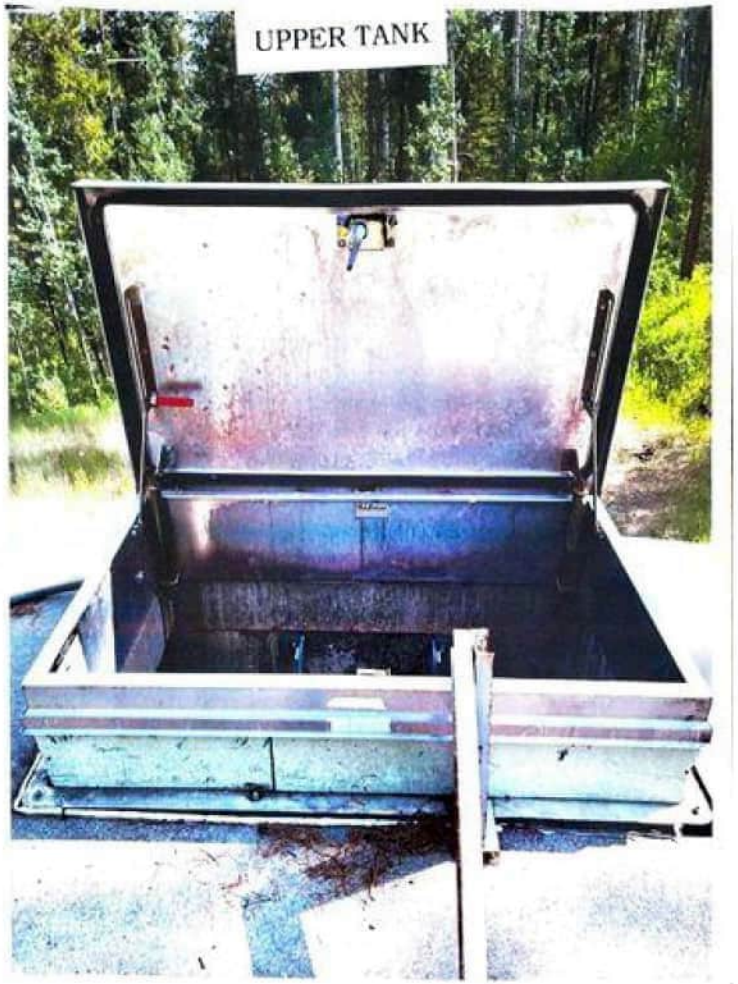
Electrical entry point



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-11: Upper Storage Tank (250K) - Hatch gasket

Gasket present - photo provided by operator and taken the day of the survey



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST02-12: Upper Storage Tank (250K) - Vent Height

Vent height - photo taken by operator the day of survey

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-1: Lower Storage Tank (500K) - Reference/Overview

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-2: Lower Storage Tank (500K) - Other (describe in comments)

Overflow drainage area

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-3: Lower Storage Tank (500K) - Overflow Screen

Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-4: Lower Storage Tank (500K) - Vent Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-5: Lower Storage Tank (500K) - Vent Screen

Screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-6: Lower Storage Tank (500K) - Vent Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-7: Lower Storage Tank (500K) - Vent Screen

Second vent screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-8: Lower Storage Tank (500K) - Vent Height

Second vent same height as the first - 24 inches

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-9: Lower Storage Tank (500K) - Hatch height when closed

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-10: Lower Storage Tank (500K) - Openings in Tank

Conduit into the tank is broken in multiple places

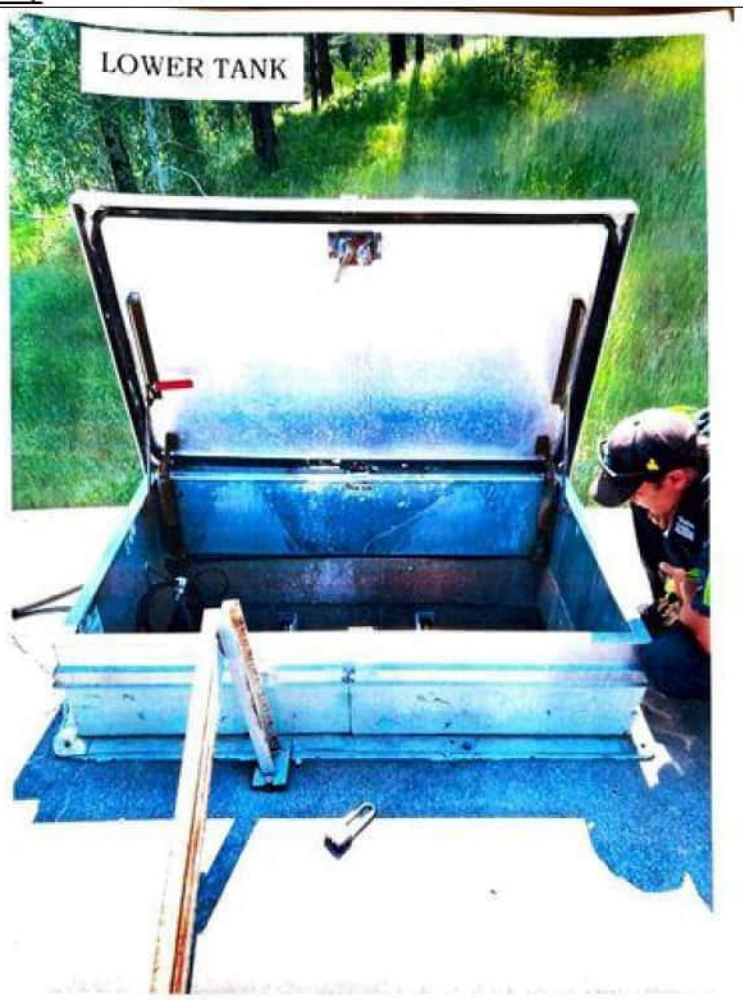
Photo #ST03-11: Lower Storage Tank (500K) - Openings in Tank

Break in conduit – the entry point into the hatch itself is secured with a fitting under the sealant.

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-12: Lower Storage Tank (500K) - Hatch gasket

Photo taken by system the day of the survey



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-13: Lower Storage Tank (500K) - Openings

Conduit repaired with gasket material. Photo provided by system on August 1, 2024.

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST03-14: Lower Storage Tank (500K) – Openings

Conduit interior entry point – photo provided by system on August 1, 2024

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST04-1: North Star Tank (540K) - Reference/Overview

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST04-2: North Star Tank (540K) - Overflow Height

Overflow discharges approximately 3 ft above the riprap into a drainage channel

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST04-3: North Star Tank (540K) - Overflow Height

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

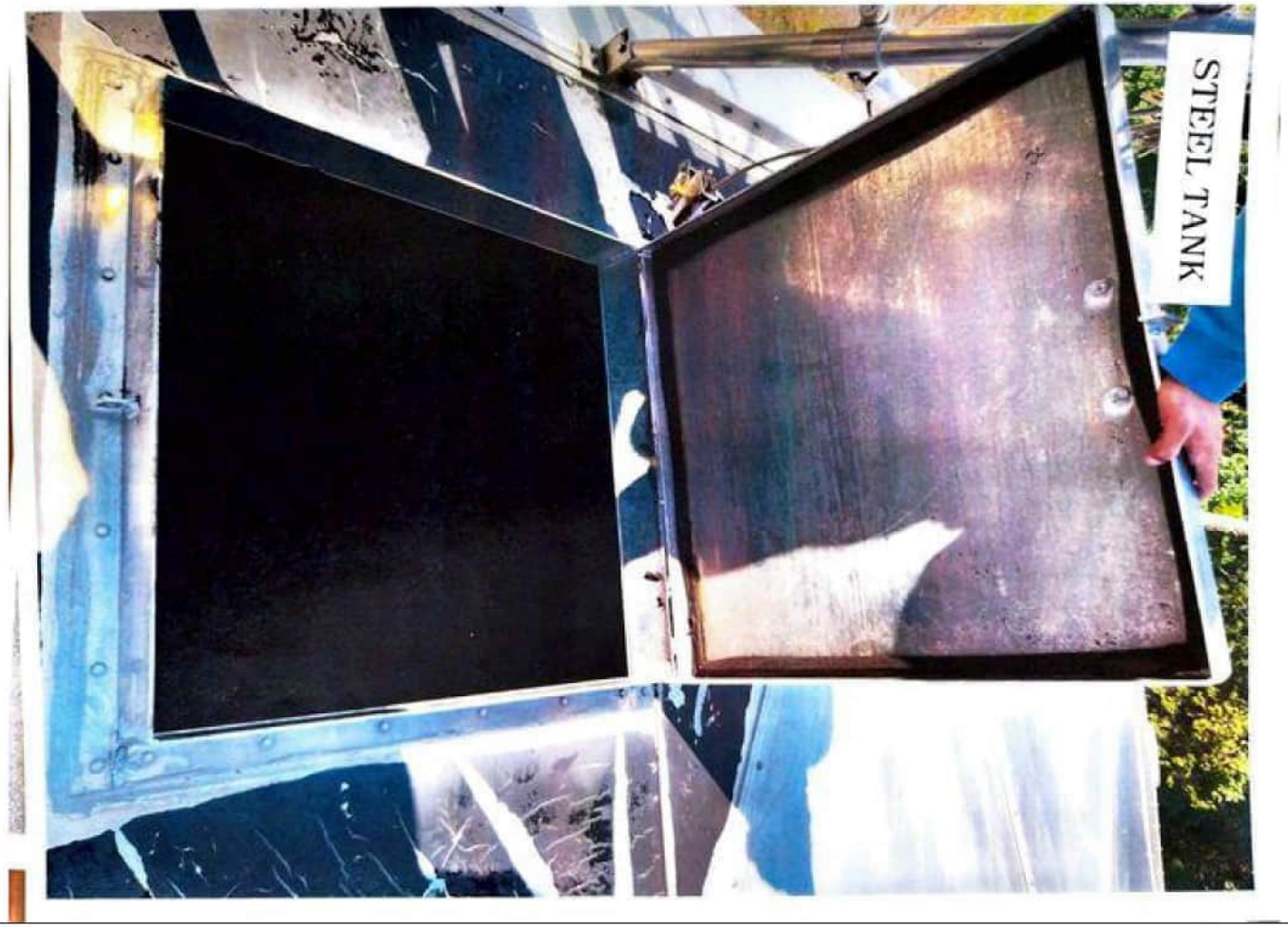
Photo #ST04-4: North Star Tank (540K) - Overflow Height

Overflow is approximately 3 ft above the drainage area

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST04-5: North Star Tank (540K) - Hatch gasket

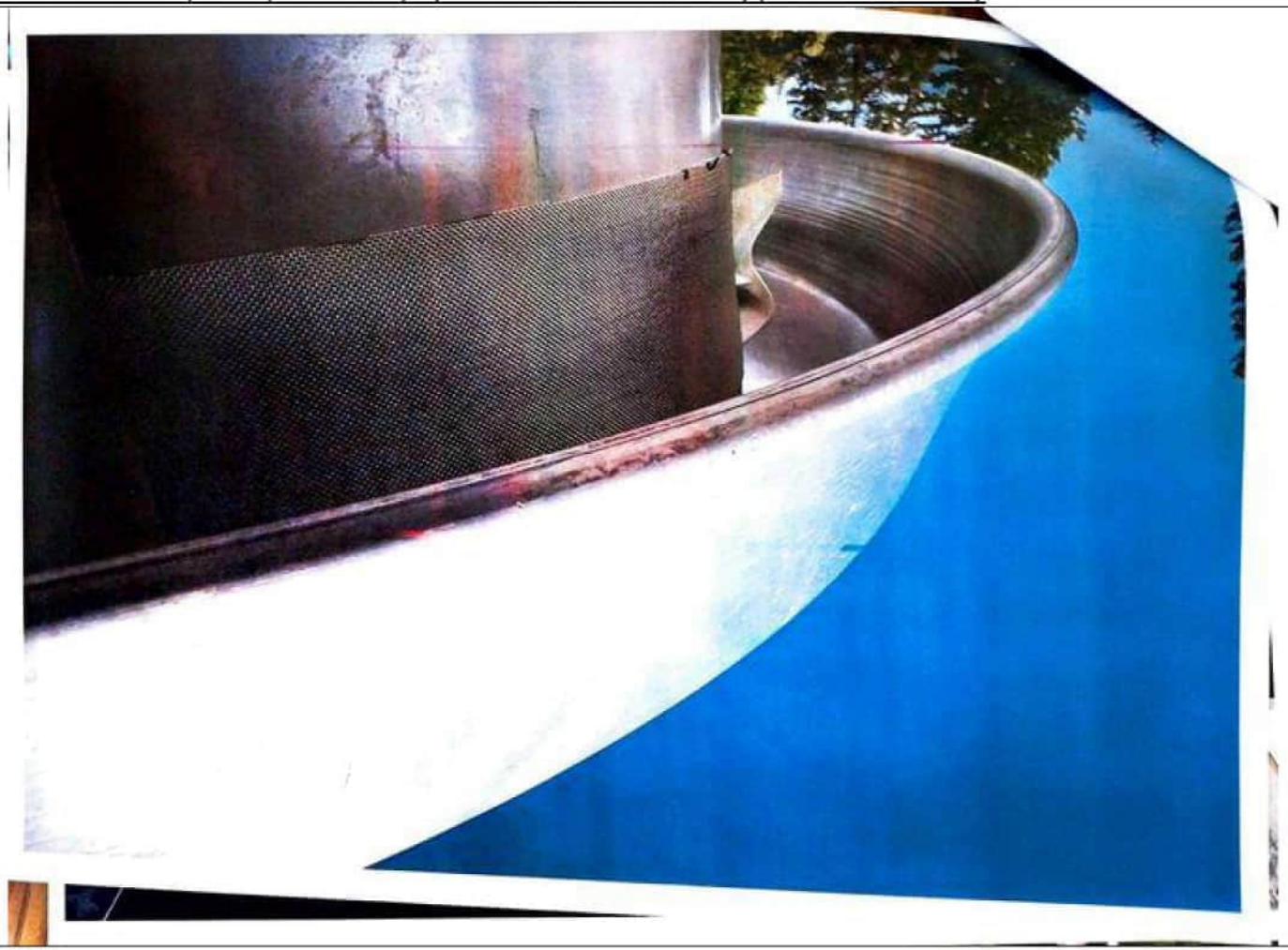
Hatch equipped with gasket - photo provided by system and taken the day prior to the survey. The hatch measurement of 4-inches was verified from a photo viewed during the survey.



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST04-6: North Star Tank (540K) - Vent Screen

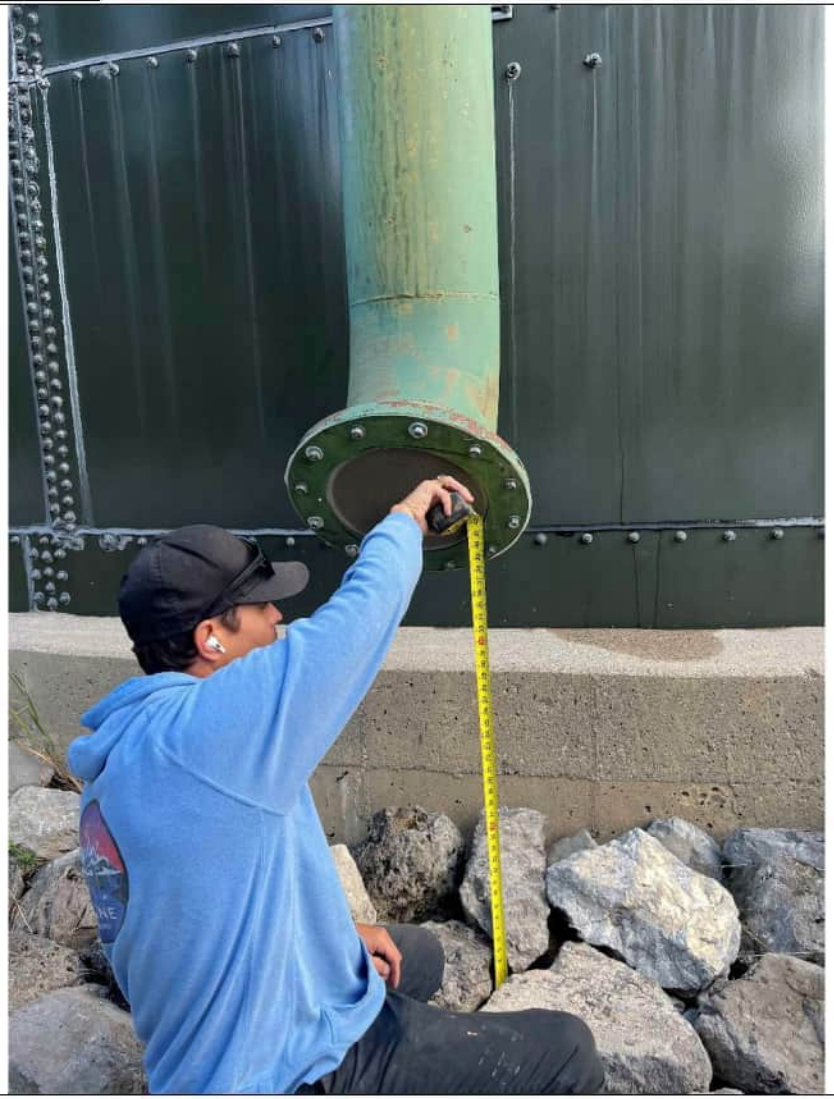
Vent screened with #24 mesh - photo provided by operator and taken the day prior to the survey



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST04-7: North Star Tank (540K) – Overflow Height

Photo provided by system on August 1, 2024



System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #ST04-8: North Star Tank (540K) – Vent Height

Photo provided by system on August 1, 2024

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #PF01-R1: Reference - Booster Pumps (2)

Pump station is located in a separate section of the well house building

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #PF01-I1: Interior - Booster Pumps (2)
Booster pump station interior photo

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #DIST-A1: Representative distribution representative air release valve

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #A-1: WL01

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #A-2: WL01

ARV for all 3 wells combined - separate from individual well ARVs

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

Photo #A-3: WL01
ARV screened with #24 mesh

System Name: Town of Alpine PWS ID: WY5600156
Date of Survey: July 24th, 2024 Document Control Number: R8FQPForm-1010 R9

DID YOU KNOW …

EPA Region 8 is responsible for the implementation of the National Primary Drinking Water Regulations in the state of Wyoming and the tribal lands in Utah, Colorado, Wyoming, Montana, North Dakota, and South Dakota.

For public water systems in Wyoming, EPA Region 8 and the state of Wyoming share responsibilities:

Region 8 responsibilities in the State of Wyoming:

- Compliance determination of public water system sampling results
- Sanitary surveys
- Technical assistance
- Laboratory certification
- Formal enforcement

State of Wyoming responsibilities:

- Plan and specification review
- Construction/well drilling permits
- Water rights
- Operator certification
- Capacity development
- Source water and wellhead protection
- Operation of state laboratories
- Food and beverage inspections
- Financing drinking water projects
- County health services

For public water systems located on tribal lands, EPA Region 8 shares responsibilities with other federal agencies:

Region 8 is responsible for the following activities in tribal lands:

- Monitoring/reporting of water testing
- Sanitary surveys
- Technical assistance to water system operators
- Laboratory certification
- Compliance determinations
- Formal enforcement
- Water security
- Tribal operator certification
- Tribal capacity development
- Financing drinking water projects
- Source water and wellhead protection

Other federal agencies which include Indian Health Services, USDA-Rural Development, Bureau of Reclamation and Bureau of Indian Affairs provide:

- Design, engineering, and construction assistance.
- Drinking water project financing
- General public health assistance on tribal lands.

DRINKING WATER PROGRAM

US EPA, Region 8
Drinking Water Program
Mail Code: 8WD-SDA
1595 Wynkoop Street
Denver, Colorado 80202

Telephone Numbers:
Business Hour Voice: 303-312-6312
or: 1-800-227-8917
Fax: 877-876-9101
After-Hours Emergency:
303-312-6327

Web Address:
https://www.epa.gov/region8-waterops

General E-mail for Drinking Water Program and Sample Results:
R8DWU@epa.gov

Drinking Water Staff

All Numbers (303) 312-(extension)
All e-mail addresses are:
last name.first name@epa.gov

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- Drinking Water Section A Supervisor

Judy Bloom (ext. 6395)
- Drinking Water Section B Supervisor

Kyle St. Clair (ext. 6791)
- Wyoming Liaison

Motaz Zarooq (ext. 6780)
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Emily Bedell (ext. 6269)
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- Tribal Sanitary Surveys

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- Wyoming Sanitary Surveys

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- Wyoming Sanitary Survey Specialist
- Emergency Response Team Coordinator

Robert Clement (ext. 6653)
- Technical Assistance
- State Oversight – CO

Jake Crosby (ext. 6389)
- Surface Water Treatment Rule Manager
- Interim/Long Term 1 Enhanced Surface Water Treatment Rules
- Long Term 2 Enhanced SWTR Manager
- Filter Backwash Recycling Rule Manager

Bryce Faliskie (ext. 6651)
- Water Security Program Coordinator

Megan Falk (406-457-5041)
- Tribal Technical Assistance Montana
- Tribal Sanitary Surveys

Lucien Gassie (ext. 6620)
- Wyoming Sanitary Survey Manager

Jamie Harris (ext. 6072)
- Revised Total Coliform Rule Manager
- Triggered Ground Water Rule Manager

Evelyn Hoffman (ext. 7039)
- Wyoming Sanitary Surveys

Marcella Hutchinson (ext. 6753)
- Groundwater Under the Direct Influence of Surface Water Manager
- Source Water Protection Manager

Sijo Kodiyan (ext. 6679)
- IT Technical Support

Matthew Langenfeld (ext. 6284)
- Ground Water Rule Manager

Kim Le (ext. 6973)
- Radionuclides Rule Manager

Angela Mendrala (ext. 6533)
- PWS Inventory & Treatment/Source Changes Manager

Jill Minter (ext. 6084)
- Lead Service Line Replacement Coordinator

Shirley Mlachak (ext. 6061)
- SDWIS/State and SDWIS/Fed Database Manager

Kendra Morrison (ext. 6145)
- IOC/VOC/SOC Rule Manager
- Unregulated Contaminant Monitoring Rule

Susan Nachtrieb (ext. 6857)
- Sanitary Survey Technical Support

Sienna Paquin (406-457-5026)
- Lead/Copper Rule Manager

Karen Simpson (ext. 6449)
- Drinking Water Emerging Contaminants Coordinator

Bailey Smith (ext. 6940)
- Consumer Confidence Report Rule Manager
- Nitrates Rule Manager

Jasmine SummersEvans (ext. 6673)
- State Oversight Lead for North Dakota and South Dakota

Seth Tourney (ext. 6579)
- Disinfection By-Products Rule Manager
- Maximum Residual Disinfectant Level Rule Manager

Brett Vanhoughton (ext. 6593)
- Wyoming Sanitary Surveys Specialist

Erica Wenzel (ext. 6411)
- Lead Service Line Inventory Specialist

Grantee (Support) Staff

- Greg Bachman (ext. 6154)
- Diana Bellamy (ext. 6244)
- David Buswell (ext. 7004)
- Pam DeSantis (ext. 6178)
- JD Droddy (ext. 6172)
- Joseph Faubion (406-457-5005)
- Evelyn Hoffman (ext. 7039)
- Laura Hult (ext. 6820)
- Ronald Morgan (ext. 6332)
- Claire Ohman (ext. 6578)
- Donna Roberts (ext. 6371)
- Jane Shalkey (ext. 6132)
- Joy Shulman (ext. 6074)
- Curt Tandy (ext. 6080)
- Charles Weinberg (ext. 6557)
- Lori Williams (ext. 6479)

End of Document

EPA Region 8 – Significant Deficiency Correction Notice

Public Water System Name _____
Public Water System ID# _____
Public Water System Source Type: (choose one) ☐Groundwater ☐Surface Water ☐Mixed
Contact Name _____ Phone Number _____ Email _____

Instructions:
Please use this form to report the correction of sanitary survey significant deficiencies identified during your sanitary survey. List the individual significant deficiencies (SDs) and the date of correction below. Include the Sanitary Survey (SS) year and individual SD number. Labeled pictures of corrections and a description of each correction is required. Label all pictures and correlate them to a specific significant deficiency. Include the name of the facility (e.g., well name and number, tank name and number, treatment plant, etc.).

If a WY DEQ permit was required to make any of the significant deficiency corrections, please include the permit number on the specific correction line below.

Facility (e.g. Well or Tank Number)	Sanitary Survey Year and SD Number (e.g. SS 2023, SD#1)	Significant Deficiency (SD)	Date Corrected	Photos? ☐ Yes ☐ NA Include ID number	WYDEQ Permit #

I certify that the information submitted with this report is true and accurate.

_____ _____ ____/____/____
Print Name Signature Date

Corrections described on attached Significant Deficiency Letter ☐
Supportive documentation and pictures attached ☐

For groundwater and surface water systems submit to: Langenfeld.Matthew@epa.gov and to R8DWU@epa.gov
Or Fax to: 1-877-876-9101

EPA Region 8 Drinking Water Unit **Finished Water Storage Tank Inspection/ Cleaning Checklist** Fill out one checklist per storage tank & submit labeled photos of each tank component with this form			
PWS Name: _____		PWS ID: _____	
Tank Name: _____		Tank ID: _____	
Proposed Inspection Date: _____		Actual Inspection Date: _____	
Name of Person Filling Out Form: _____		Title of Person Filling Out Form: _____	
I certify that this information is complete and accurate:		Date:	

Inspector Qualifications (answer to all questions must be "yes")	
Name and contact information of inspector (if water system personnel) or inspection company: _____	
☐ Yes ☐ No	Has the inspector completed confined space training?
☐ Yes ☐ No	Did the inspector have a confined space entry permit?

Overall Tank Condition				
Significant Deficiency		**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
☐ Yes ☐ No	Does the tank appear to be structurally sound?	If no, what repairs are suggested by the tank inspector? _____	_____	_____
☐ Yes ☐ No	Are there any unprotected openings in the tank (breaches, leaks, daylight coming through tank in spots, etc)	If yes, indicate type of breach and how it should be repaired. _____	_____	_____

Air Vent				
Significant Deficiency		**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
☐ Yes ☐ No ☐ NA	Does the tank have a vent separate from the overflow?	If no, indicate proposed correction:_____	_____	_____
Above Ground Tanks (Ground Level or Elevated) ☐ Check if NA				
☐ Yes ☐ No ☐ NA	Downturned vent: Is the vent at least 24" or 3 pipe diameters above the roof?	If no reconfigure vent to provide proper air gap.	_____	_____
☐ Yes ☐ No ☐ NA	Non-downturned vent: Is there a solid cover down to the bottom of the vent screen?	If no, indicate deficiency and proposed correction: _____	_____	_____
☐ Yes ☐ No ☐ NA	Non-downturned vent: Is the screen at least 8" above the roof surface? What is the height of the start of the screening above the tank? _____	If no, indicate deficiency and proposed correction: _____	_____	_____

☐ Yes ☐ No	Is the vent covered with #24 mesh corrosion resistant screening (some exceptions apply)? Mesh Size: _____	If no, indicate deficiency and proposed correction: _____	_____	_____
Buried or Partially Buried Tanks ☐ Check if NA				
☐ Yes ☐ No	Is the vent covered with #24 mesh corrosion resistant screening?	If no, install proper #24 mesh corrosion resistant screening.	_____	_____
☐ Yes ☐ No	Does the air vent terminate downward?	If no, re-configure the vent so that it terminates downward.	_____	_____
☐ Yes ☐ No	Is the air vent at least 24" above the tank roof or ground surface (whichever is higher)? What is the height of the vent above the roof or ground surface? _____	If no, raise air vent to provide for an appropriate air gap.	_____	_____

Access Hatch				
Significant Deficiency		**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
☐ Yes ☐ No	Is the hatch raised at least 4" above the roof (for ground level or elevated tanks) or at least 24 inches above the roof or ground, whichever is higher (for buried or partially buried tanks)? What is the height of the access hatch above the roof or ground surface? _____	If no, the hatch should be raised to the appropriate height above the tank roof or ground.	_____	_____
☐ Yes ☐ No	Does the hatch have a shoe box lid?	If no, a properly designed shoe box type lid should be installed.	_____	_____
☐ Yes ☐ No	Is the lid water tight and sealed with a rubber gasket?	If no, the reason for the lack of a seal should be investigated and repaired.	_____	_____
☐ Yes ☐ No	Is the hatch locked?	If no, the hatch should be equipped with a lock.	_____	_____

Overflow				
Significant Deficiency		**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
☐ Yes ☐ No ☐ NA	Does the tank have an overflow separate from the vent?	If no, indicate proposed correction:_____	_____	_____
☐ Yes ☐ No	Discharge has #24 mesh corrosion resistant screen OR a duckbill valve OR a properly sealed flapper valve with a screen inside (EPA recommends #24 mesh screen)?	If no, indicate proposed correction: _____	_____	_____
☐ Yes ☐ No	Overflow terminates between 12 and 24 inches above the ground surface? At what height does the overflow discharge? _____	If no, modify overflow to provide for an appropriate air gap.	_____	_____
☐ Yes ☐ No	Overflow discharges over an inlet structure, splash plate, or engineered rip-rap?	If no, indicate proposed correction: _____	_____	_____
☐ Yes ☐ No ☐ NA	Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewers?	If yes, indicate proposed correction: _____	_____	_____
☐ Yes ☐ No	Is there blockage in the overflow, an inadequately sized overflow, a malfunction of the level control system, or other issue that is causing the tank to overflow through the hatch or vent?	If yes, indicate what is causing the problem and how it should be repaired: _____	_____	_____
☐ Yes ☐ No	Is the overflow discharge point visible? If no, it is recommended that the discharge point be moved to a location that is visible.		Not Required	

Drain				
Significant Deficiency		**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
☐ Yes ☐ No	Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewers?	If no, indicate proposed correction: _____	_____	_____
☐ Yes ☐ No	Does the discharge have a #24 mesh corrosion resistant screen OR a duckbill valve OR a properly sealed flapper valve with a screen inside? If no, EPA recommends that a #24 mesh screen be installed.		Not Required	
☐ Yes ☐ No	Does the drain terminate between 12 and 24 inches above the ground surface and discharges over an inlet structure or splash plate? If no, it is recommended that the discharge point be modified to provide for the appropriate air gap.		Not Required	

Cleaning and Other Items			
Significant Deficiency	**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
Describe any other items noted by the inspector that have the potential to cause contamination of the finished drinking water: _____	What repairs are suggested to prevent or eliminate the source of contamination? _____	_____	_____
Depth of sediment found in the tank before cleaning (inches): _____ How was the storage tank cleaned? _____ How was the storage tank disinfected after cleaning? _____ List any objects found inside the tank during cleaning that may have introduced contamination into the water system (examples: debris, animals, etc): _____			
☐ Yes ☐ No ☐ NA	If animal carcasses or other animal debris were found, was EPA notified immediately?		
☐ Yes ☐ No ☐ NA	Was the entry point for the carcass or debris eliminated? Describe:_____		
Please attach tank as-built drawings (if available) or a sketch of the tank's configuration and dimensions including the location, layout and dimensions of all major components (i.e. access hatch, vent, overflow, drain)			

EPA Region 8 Drinking Water Unit
Unknown Integrity of Well Checklist

Fill out one checklist per each well & submit labeled photos of each well component the sanitary surveyor was unable to access and completely evaluate with this form

PWS Name: _____	PWS ID: _____		
Well Name: _____ (Review your schematic to find the well name and ID)	Well ID: _____		
Proposed Inspection Date: _____	Actual Inspection Date: _____		
Name of Person Filling Out Form: _____	Title of Person Filling Out Form: _____		
I certify that this information is complete and accurate:		Date:	

Well Construction

Significant Deficiency		Required Correction	Proposed Completion Date	Actual Completion Date
☐ Yes ☐ No	Measure the height of the well casing and note it here: _____.	If the well does not terminate at least 12" above a concrete pad or 18" above natural ground level the well height may be required to be raised.	_____	_____
☐ Yes ☐ No	Is there a proper sanitary seal? Take a picture of the top of the well and side of the well to aid in the determination if there is a sanitary seal.		_____	_____

Well Vent
(If there is no well vent, please put N/A in the proposed completion date)

Significant Deficiency		Required Correction	Proposed Completion Date	Actual Completion Date
☐ Yes ☐ No	Does the well vent terminate in a downward position?	If no, reconfigure vent.	_____	_____
☐ Yes ☐ No	Is the vent covered with #24 mesh corrosion resistant screening (some exceptions apply)?_____ What is the mesh size? _____	If no, install #24 mesh corrosion resistant screen.	_____	_____

Well Location				
Significant Deficiency		**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
☐ Yes ☐ No	Is the well protected from vehicle damage?	If no, how will you address this deficiency? _____	_____	_____
☐ Yes ☐ No	If in a pit or vault is it completed with drainage or a sump pump for permanent or portable use?	If no, how you will address this deficiency? _____	_____	_____
☐ Yes ☐ No	Does surface water drain away from the wellhead (including in pits or vaults)?	If yes, how will you address this deficiency? _____	_____	_____
☐ Yes ☐ No	Are there any sources of pollution near any of the wells (e.g., chemical storage, agricultural activities, industrial activities, rodents and rodent droppings, or cleaning supplies)?	If yes, note how you will address this deficiency after consulting with EPA. _____	_____	_____

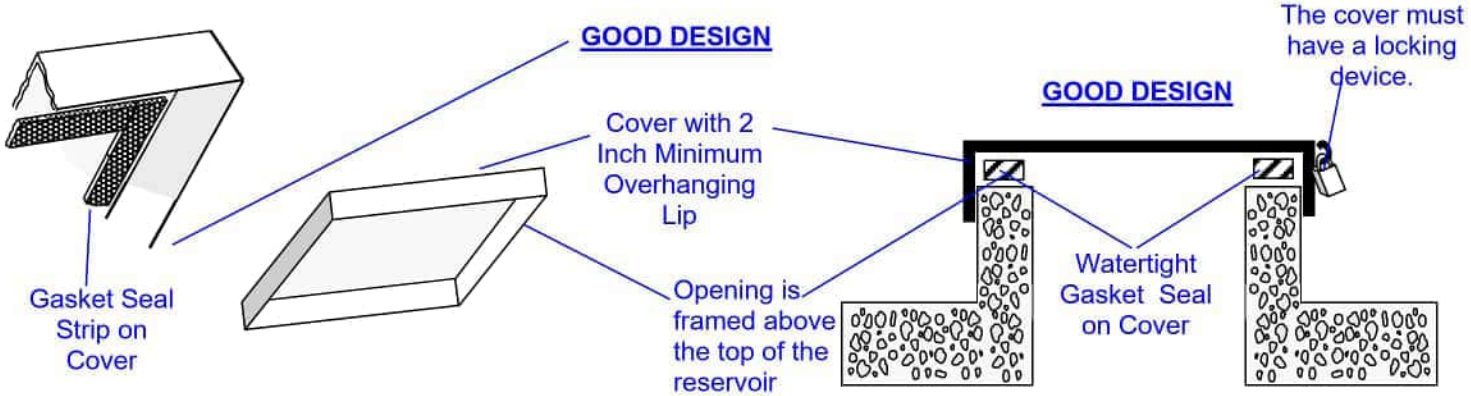
EPA Region 8 Drinking Water Unit Tech Tips
Sanitary Protection of Drinking Water Storage Tanks: Hatches

(Does not pertain to buried fiberglass tanks with dual hatches)

Access hatches must be as watertight as possible to exclude surface runoff, debris, bats, insects, birds, and other animals. You must install locks and keep them locked at all times to prevent unauthorized access. The hatch must be fitted with a solid watertight cover which extends down around the frame at least 2" and have a neoprene gasket seal on the hatch cover to prevent contamination from entering the water system.

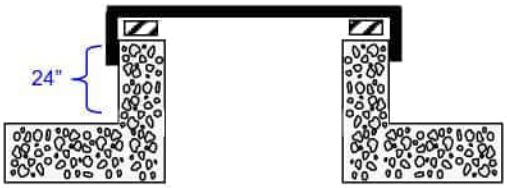
On elevated and ground level tanks, where the bottom of the hatch is greater than 4 feet above the ground level, the hatch must be framed at least 4" above the surface of the tank roof.

On below ground (buried and partially buried) structures, the hatch must be elevated a minimum of 24" above the top of the tank surface or ground surface, whichever is higher.



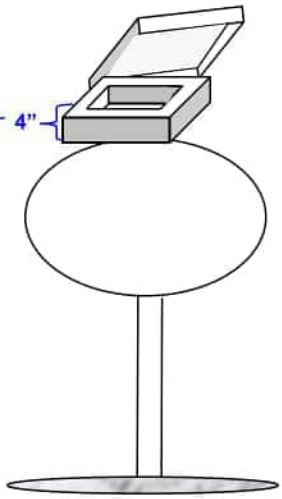
GOOD DESIGN

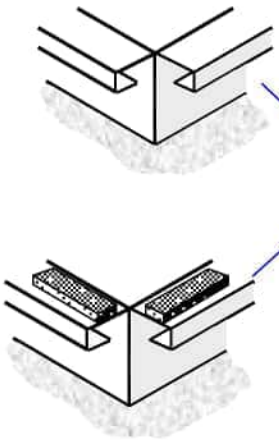
On buried and partially buried tanks, the hatch must be elevated a minimum of 24" above the top of the tank surface or ground surface, whichever is higher.



GOOD DESIGN

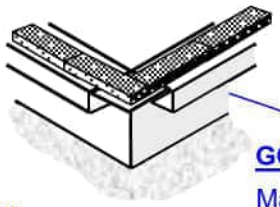
On elevated and ground level tanks, the hatch must be framed at least 4" above the top of the tank surface or ground surface, whichever is higher.





POOR DESIGNS

Insects and spiders can enter the reservoir between the framed section and cover. A seal strip can improve sanitary protection.



GOOD DESIGN

Make sure the gasket seal provides a tight connection by filling in the corner area when installing the seal. The preferred location to install the seal is on the cover.

EPA Region 8 Drinking Water Unit Tech Tips

Sanitary Protection of Drinking Water Storage Tanks: Overflows

Finished Water Storage Sanitary Protection: An overflow releases water when controls fail to shut off the incoming water at the high water mark; it is an integral component that protects the tank from damage from overfilling. The overflow allows an emergency release of water when telemetry fails, which should be a rare occurrence. Because water would only be flowing out of an overflow when another system has failed, it is important that the discharge is visible, so that the flow of water can be observed and reported. All key components of storage tanks must be protected to maintain sanitary conditions inside the tank. Also, storage tank overflows cannot serve as the only vent, and tanks must have an air vent separate from the overflow.

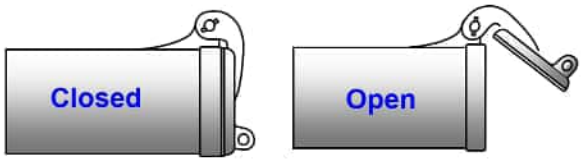
Overflow screen requirements

Not implementing one of these options will trigger a significant deficiency.

Option 1 No. 24 Mesh

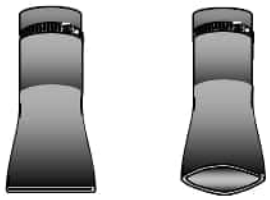
The #24 mesh screen can be used to keep contamination out. The screen should be inspected after overflow events and replaced, if necessary.

Option 2 Flapper Valves



Flapper valves with a screen meeting local minimum size requirements can also be used to keep contamination out. Each valve design can get stuck open and therefore should be fitted with a screen inside. EPA recommends a #24 mesh screen. **A flapper valve with no screen inside will trigger a significant deficiency.**

Option 3 Duckbill Valves



Duckbill Valves which seal under normal dry conditions can be used to keep contamination out. EPA recommends having a screen fitted inside.

Overflow height requirements

Protection of tank structure and water quality

An overflow inhales just like a vent but through a pipe that extends to the ground. Having the overflow opening at least 12 to 24 inches above an inlet structure, splash plate or engineered rip-rap protects against the inhalation of contamination (dried feces, leaves, dried plants, dust, etc.).

The other reasons to bring the overflow within 12 to 24 inches above a inlet structure, splash plate, or engineered rip-rap are for safety reasons and to prevent erosion that can washout the tank supports or foundation.

Not having the overflow piped to 12 to 24 inches above an inlet structure, splash plate, or engineered rip-rap will trigger a significant deficiency.

Not having access to inspect the overflow will trigger a significant deficiency.

EPA also recommends that overflows be visible so that any discharge can be observed and reported to identify possible problems.

Overflows cannot be directly connected to a sanitary sewer or storm drain

Overflows directly connected to a sanitary sewer or storm drain will trigger a significant deficiency; there must be an air gap of at least 3 pipe diameters above the sanitary sewer or storm drain.

An air gap is needed to prevent a cross connection between the sewer or storm drain and the overflow pipe. This air gap also prevents the tank from inhaling air from a sewer or storm drain when the overflow is not spilling water, which should be most of the time.

EPA Region 8 Drinking Water Unit Tech Tips
Sanitary Protection of Drinking Water Storage Tanks: Drains

Finished Water Storage Sanitary Protection: A drain allows the water in the tank to be removed for cleaning and inspection, and is an integral component of tank design. A drain is located at a designed low point in the tank such that any accumulated sediment can easily be washed out during cleaning events. At all other times the drain valve remains closed. The system should be designed such that the tank can be cleaned while continuing to maintain pressure in the distribution system. A drain valve can leak due to constant pressure from the height of water in the tank, creating a moisture rich environment that can attract rodents, snakes, insects, and any pathogens they may be carrying. All key components of a tank need to be protected against conditions that would jeopardize the sanitary conditions of a drinking water storage tank, including the tank drain.

Drain cannot be directly connected to a sanitary sewer or storm drain

Drains directly connected to a sanitary sewer or storm drain will trigger a significant deficiency; there must be an air gap of at least 3 pipe diameters above the sanitary sewer or storm drain.

An air gap is needed to prevent a cross connection between the sewer or storm drain and the drain pipe.

Drains must be accessible

Not having access to inspect the drain will trigger a significant deficiency

The area around the drain needs to be cleared of overgrowth such that it can be easily observed and inspected.

Recommendations for screen size and height for drains

The best design is to install the #24 mesh screen between two flanges.

EPA recommends that a removable #24 mesh screen be used to keep contamination brought in by insects, rodents, snakes, and birds from entering through the drain, even though it is valved off. The screen can be removed for cleaning events.

EPA recommends raising the drain 12 to 24 inches above an inlet structure, splash plate, or engineered rip-rap to minimize rodent access and prevent pooled water from entering the drain.

EPA Region 8 Drinking Water Unit Tech Tips
Sanitary Protection of Drinking Water Storage Tanks: Vents

Finished Water Storage Sanitary Protection: Vents release air and are a dynamic and integral part of tank operation. The air pressure inside of a tank is always trying to equalize with the air pressure outside as the water level rises and falls in the tank. When the tank is filling with water, displaced air has less space and puts pressure on the tanks. The air is forced out of the tank through the vent and overflow as well, if it is not overflowing with water (see Tech Tip on Overflows). When water is drawn out of the tank, the air has more space and creates a vacuum. Outside air is pulled into the tank through the vent and overflow. Thin walled metal tanks can be protected against excessive pressure and vacuum with a pressure/vacuum relief mechanism. Also, storage tank vents cannot serve as the overflow; tanks must have a vent separate from the overflow.

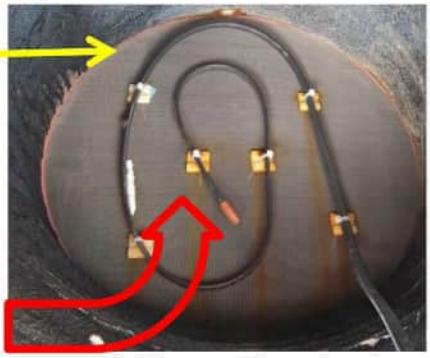
Downturned vent

Protection from contamination entering through the vent.

#24 mesh screen is needed to keep out contamination carried by insects, rodents, and birds. (See Tech Tip on #24 Mesh)

Not having a #24 mesh screen on a vent will trigger a significant deficiency

The #24 mesh screen can be installed between two flanges. The flanges allow the #24 mesh screen to set flush, which creates a better seal than wrapping the screen around the pipe and securing it with a band. Also, the flange will place the screen inside the vent to dissuade vandalism. A heating coil can be installed if freezing is a concern.



Protection from contamination being inhaled through the vent

Vents present a pathway for contamination to enter the tank. Having the vent opening at least 24 inches above the nearest horizontal surface protects against the inhalation of contamination (dried feces, dust, etc.). A bird dropping can contain thousands of salmonella.

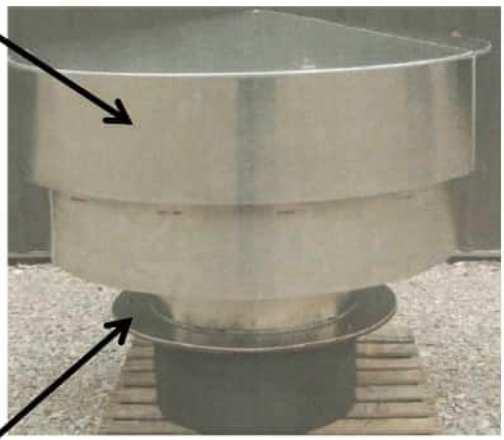
Vents less than the 24 inches above the roof will trigger a significant deficiency. Also, if vents on buried or partially buried tanks are not downturned or facing the ground, it will trigger a significant deficiency.

Non-downturned vent (Elevated or Ground Level Tanks Only)

For elevated tanks, having fewer than 8 inches from the bottom of the #24 mesh to a horizontal surface will trigger a significant deficiency

The vent must have a watertight cover that extends down to the bottom of the #24 mesh screen. The cover will prevent the entry of rain and snow as well as minimize the entry of dust.

Not having a solid cover that extends to the bottom of the #24 mesh screen will trigger a significant deficiency



Recommendation only: Having the vent opening at least 24 inches above the horizontal surface protects against the inhalation of contamination (dried feces, dust, etc.). In addition to the #24 mesh screen, the vent should also have a bird screen to prevent any birds from nesting on top of a horizontally placed screen.

Bird spikes can be added to any intermediate horizontal surfaces. In some cases, the height of the vent should be raised higher than 24 inches to address severe problems with birds or other animals.

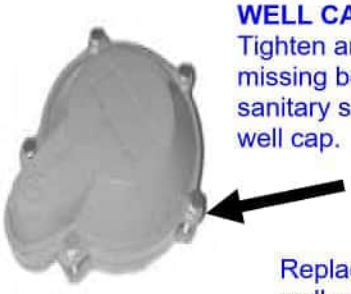
Vents not accessible for inspection can trigger a significant deficiency.

EPA Region 8 Drinking Water Unit Tech Tips

Simple Fixes for Wellheads

WELL CAP

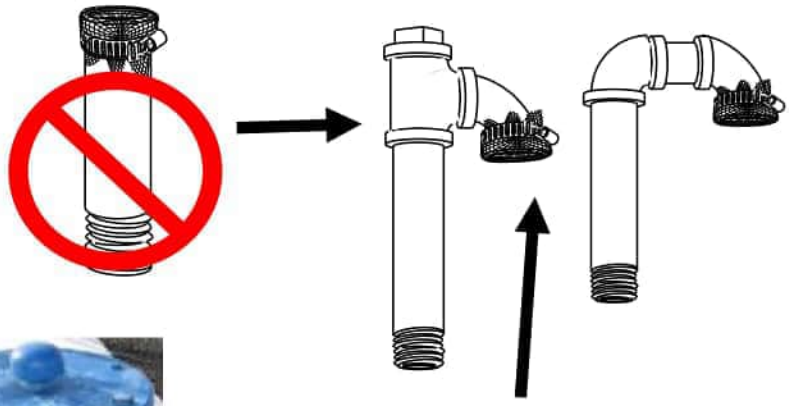
Tighten and replace any missing bolts to ensure a proper sanitary seal is created by the well cap.



Replace any damaged well cap gaskets between the top and bottom plate and/or the compression seals on the outside diameter of the well casing.

WELL VENTS

Well vents (if applicable) must be at least as high as the well casing or pitless adapter. Replace straight, open well vents with inverted screened vents such as those below. Use non-corrodible #24-mesh screen on all configurations of well vents to exclude insects, rodents and other small animals.



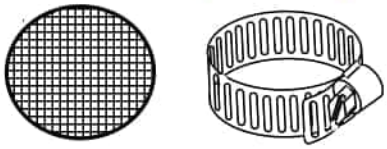
WELL HEIGHT

Permanent casing for all groundwater wells must project at least:

- 12 inches above the concrete floor; or
- 18 inches above natural ground surface.

#24-MESH SCREEN

Non-corrodible #24-mesh screen (wire diameter 0.014 inches) and a stainless steel adjustable clamp



PROPERLY DESIGNED WELL CAPS & SANITARY SEALS

Replace damaged or non-watertight well caps with vermin-proof, premium watertight wellhead caps. Vented caps must use #24-mesh screen.

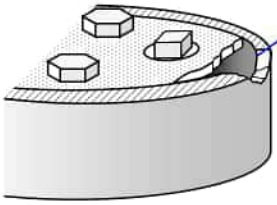
FOR WELLS INSIDE A BUILDING

Eliminate rodents from the well house and the area around the wellhead. Airborne fecal material can contaminate the well or coliform samples. To keep rodents out, seal all entry points.

NON-PREFERRED DRINKING WATER WELL CAPS

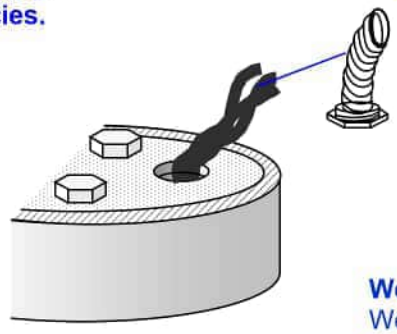
Well caps with set screws on the side of the cap may not have a sanitary seal gasket. They are not to be used on a drinking water well if a gasket is not part of the assembly.

AVOID HANTAVIRUS: Please refer to the Center for Disease Control (CDC) Website regarding how to properly clean up mice infested areas to prevent contracting the Hantavirus pulmonary syndrome: www.cdc.gov/ncidod/diseases/hanta/hps/noframes/prevent3.htm



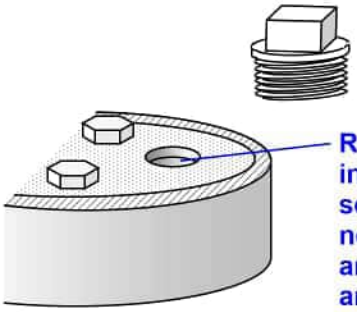
Replace damaged seal and repair well casing. Repairs must be durable and watertight. Silicone is not an acceptable permanent fix for any well opening deficiencies.

Install an appropriately sized conduit with an electrical grommet to seal the opening around the wires on a submersible pump. Silicone is not an acceptable permanent fix for any well opening deficiencies.

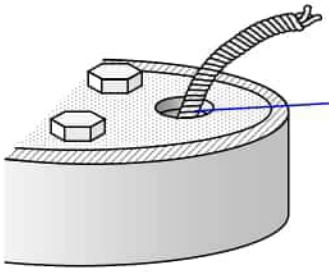


Well in a Pit or Vault

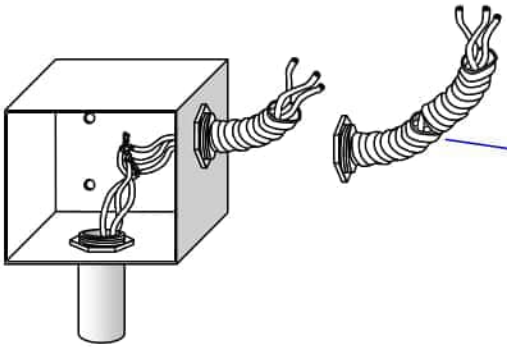
Wells in pits are not appropriate in areas prone to flooding or elevated water tables. The pit or vault should be watertight; however, when a well is located in a pit or vault that is not watertight, the pit or vault must be constructed with proper drainage or an appropriately sized permanent or portable pump shall be provided.



Replace access plug or install an inverted, screened well vent if one is not present. Silicone (or any other caulking) is not an acceptable permanent fix for any well opening deficiencies.



To seal the opening remove the rope, or attach it to an eyebolt on the sanitary seal bottom or drop pipe, and use an access plug. Silicone is not an acceptable permanent fix for any well opening deficiencies. Pump hoisting methods (rope, chain, etc.) extending through the well cap should be removed due to difficulty in providing adequate seal to prevent contaminants from entering the well through the opening. Pump removal can be accomplished per manufacturer's configuration recommendations. Afterwards, replace the opening with an access plug.



An electrical junction box shall be watertight (including at box attachment to the well casing and electrical conduits attached to the box) to prevent contaminants from entering the well. Replace damaged flexible conduit.

2021 EPA REGION 8 WY SANITARY SURVEY FORM
INVENTORY

DATE OF SURVEY: 08/26/2021	COUNTY: Lincoln	SURVEYOR NAME: Bud Spillman
PWS ID: WY5600156	SYSTEM NAME: Town of Alpine	

System representatives (including titles) present at survey: Mr. Craig Leseberg, Public Works Director

Others present: _____

Comments: _____

SYSTEM OWNER OR MUNICIPAL LEGAL REPRESENTATIVE

Addressee Name: Mr. Eric Green
Title: Mayor
Company (if Corporation, name of Corporation): Town of Alpine
Business Mailing Address: Street: 250 River Circle; PO Box 3070
City: Alpine State: WY Zip: 83128
Owner Business Phone: (307) 654.7757
Owner Cell Phone: ( ) NI Fax: ( ) NI
Email Address: mayor@alpinewy.gov

EMERGENCY CONTACT

Emergency Contact Name: Mr. Craig Leseberg
Emergency phone number: (307) 880.2869
Emergency email address: publicworks@alpinewy.gov
Title: Water Operator
Street: 250 River Circle
City: Alpine State: WY County: Lincoln Zip: 83128

PRIMARY ADMINISTRATIVE CONTACT
(to receive ALL correspondence from EPA)

Addressee: Ms. Christine Wagner
Title: Deputy Clerk/Planning & Zoning Secretary
Business Mailing Address: Street: 250 River Circle; PO Box 3070
City: Alpine State: WY County: Lincoln Zip: 83128
Administrative Contact Business Phone: (307) 654.7757
Cell: ( ) NI Fax: ( ) NI
Email Address: alpine@silverstar.com

ADDITIONAL CONTACT
(if any)

Addressee: John Burbridge
Title: Chief Counsel
Street: Wyoming Public Service Commission, 2515 Warren Ave., Suite 300
City: Cheyenne State: WY County: Laramie Zip: 82002
Contact Phone (Business): (307) 777-7427 Cell: ( )
Fax: ( )
Email Address: john.burbridge@wyo.gov Comments: _____

PUBLIC WORKS DIRECTOR,
CITY ENGINEER and/or WATER PLANT SUPERINTENDENT

Addressee: NA
Title: _____
Street: _____
City: _____ State: _____ County: _____ Zip: _____
Contact Phone (Business): ( ) Cell: ( )
Fax: ( ) Email Address: _____

DESIGNATED OPERATOR OF SYSTEM

Name: Mr. Craig Leseberg
Certified Operator? @ ☒ Yes ☐ No ☐ TNC System (not required)
Treatment Cert. Level: 1 Distribution Cert. Level: _____
Treatment Cert. Exp. Date: 12/31/23 Distribution Cert. Exp. Date: _____
Cert. Authority: WYDEQ Cert. Authority: _____
Business Phone: (307) 654.7757 Cell Phone: (307) 880.2869
Business Mailing Address: 250 River Circle; PO Box 3070; Alpine, WY 83128
Contract Operator*? ☐ Yes ☒ No Date contract ends: _____
Email Address: craig.townofalpine@gmail.com
Go to: https://opcert.wyo.gov/OperatorSearch.aspx

ALTERNATE OPERATOR

Name: Mr. Robert Ablondi
Certified Operator? ☒ Yes ☐ No ☐ Not required
Treatment Cert. Level: 4 Distribution Cert. Level: 2
Treatment Cert. Exp. Date: 12/31/23 Distribution Cert. Exp. Date: 12/31/23
Cert. Authority: WYDEQ Cert. Authority: WYDEQ
Business Phone: (307) 413-5252 Cell Phone: (307) 413-3052
Business Mailing Address: 25 S Gros Ventre St, PO Box 4858, Jackson, WY 83001
Email Address: rtablondi@aol.com
Comments: _____
Go to: https://opcert.wyo.gov/OperatorSearch.aspx

WATER SYSTEM CLASSIFICATION
for operator certification

System Treatment Classification Level: NA
System Distribution Classification Level: NA
Comments: Classification: 1 Well
Go to: https://opcert.wyo.gov/FacilitySearch.aspx

WATER SYSTEM CLASSIFICATION
from PWS Inventory

☒ C = Community
☐ NTNC = Non-Transient Non-Community
☐ NC = Transient Non-Community
Comments: _____

SYSTEM PHYSICAL ADDRESS

Street: 250 River Circle
City: Alpine State: WY Zip: 83128

PHYSICAL LOCATION

Physical Location and Directions: From the intersection of US-26 and US-89 (Alpine Junction), proceed south on US-89 for 1.2-miles to the south entrance into River Circle; turn right (west/northerly). The Town Hall parking lot driveway is on the right, approximately 135-feet into River Circle.

DEQ DISTRICT ENGINEER

Mr. Mark Baron, **District Engineer**

Phone: (307) 335.6962

Email: mark.baron@wyo.gov

COUNTY AND/OR CHS SANITARIAN

Mr. Dru Haderlie, **CHS Specialist**

Phone: (307) 279.3276

Email: dru.haderlie@wyo.gov

PERIOD OF OPERATION

☒ Year-round

☐ Part of the year: From _____ to _____

If only open part of the year, does the entire distribution system remain pressurized during the entire off period? ☐ Yes ☐ No

Comments: _____

SERVICE CONNECTIONS

Total Service Connections (Active and Inactive): 528

Service Connections Metered? ☒ Yes ☐ No 88 homes in the Tiny Home Village are served by one meter.

Number of metered service connections: 528

Comments: _____

OWNER TYPE

☐ 1 Federal Government

☐ 2 Private: Subdivision, Investor, Trust, Cooperative, Water Association, etc

Is this PWS operating with a lease on Federal land? ☐ Yes ☒ No

If Yes, enter name of the Federal land here: _____

☐ 3 State Government

☒ 4 Local Government Authority Commission, District, Municipality, City, etc.

☐ 5 Mixed Public/Private

☐ 6 Native American Indian Tribes & Reservations _____

☐ 7 Other _____

Comments: _____

POPULATION DIRECTLY SERVED
(do not include populations of consecutive PWSs)
(do not double count populations)

Residential Population (year-round residents): 1,220 (people)

Non-Residential Non-Transient Population: NI (people)
(6-12 months/year, e.g. students, employees)

Transient Population (less than 6 months/year): NI (people per day)
(Average daily number during peak 60 days of operation)
(e.g. customers, visitors)

Does the water system serve at least 25 individuals daily at least 60 days of the year (does not need to be consecutive days)? ☒ Yes ☐ No

Comments (source(s) of population info): Public Works Director (with assistance from the Town Administrator)

SERVICE CATEGORY (check all that apply)

☐ AP Airport	☐ PC Picnic Area
☐ BA Bathing/Swimming	☐ RA Rest Area
☐ BR Bar	☐ RC Recreation
☒ CG Campground	☒ RS Residential
☒ CH Church	☐ RT Restaurant
☒ DC Daycare Center	☒ RV RV Park
☐ DR Dude Ranch	☐ SC School
☒ HS Hospital	☐ SD Subdivision
☒ IB Interstate Bottler	☐ SK Ski Area
☐ IF Industrial/Agricultural	☐ SS Service Station
☐ IN Institution	☐ US Water User's Association
☐ LB Local Bottler	☒ VC Visitor Center
☒ LO Lodge	☐ VM Vending Machine
☐ MA Marina	☐ WH Water Hauler
☐ MH Mobile Home Park	☐ XX Other _____
☒ MO Motel/Hotel	

Primary Service Category Description: Residential / Municipal

Comments: _____

SOURCES (check all that apply)

☐ SW = Surface Water ☐ SWP = Surface Water Purchased

☒ GW = Groundwater ☐ GWP= Groundwater Purchased

☐ GWUDI = Ground Water Under the Direct Influence of Surface Water

If mixed, does GW receive full SW Treatment? ☐ Yes ☐ No

Is the current water source adequate in quantity?
☒ Yes ☐ No Describe: _____

Have there been any interruptions in service since the last survey?
☐ Yes ☒ No Describe: _____

Have there been reports of a water borne disease (2 or more people)?
☐ Yes ☒ No Describe: _____

Have there been any changes to the water system since the last survey?
☒ Yes ☐ No Describe: Annexed in a new Subdivision, including a new water source "Mega-well"; however, "Mega-well" not currently providing a source to the Town of Alpine system.

Are there any changes that are planned?
☒ Yes ☐ No Describe: Connect "Mega-well" to Alpine Distribution System.

SUMMARY (Describe the water system in a paragraph or two)

The Town of Alpine water system is classified as a community groundwater system. Approximately 1,220 people are served through 528 connections. Three wells provide groundwater to the system's treatment plant (TP01) where flow is chlorinated before being sent to the Lower Tank (ST03). From ST03, flow is to the main areas of the Town's Distribution System, and to Pumphouse (PF01) where it is pumped to the Upper Tank (ST02). ST02 only provides potable water to the Alpine Hillside area; yet can supply the main distribution system in an emergency, through a PRV. The North Star Tank (ST04) floats on the distribution system, serving system demand and maintaining system pressure. The system recently annexed in an area that includes a "Mega-well" and an additional 88 connections. Short-term plans are to connect and bring the "Mega-well" into the Alpine drinking water system.

The following abbreviations will be used throughout this document: NI = no information, NA = not applicable, NR = not requested, @ = potential significant deficiency.

SIGNIFICANT DEFICIENCIES

Significant deficiencies include, but are not limited to, defects in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system, that the EPA determines to be causing, or have the potential for causing, the introduction of contamination into the water delivered to consumers. Please note the instructions for responding to significant deficiencies in the attached cover letter. Failure to provide a response to the EPA could result in a violation.

1) **Gravity Tank ID: ST02 - Upper Storage Tank(250K)**
Overflow screening on finished water storage tank improvement needed*. (see photo #27)

Overflows must be fitted with non-corrodible #24-mesh screen, or a properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the pipe at a location least susceptible to vandalism. When a flapper valve is used, a screen must be placed inside the valve (EPA Region 8 recommends non-corrodible #24-mesh screen be used). In cold climates, use of a flapper or duckbill valve should be considered to minimize air movement and hence ice formation in the tank. In cold climates, provisions should be considered to prevent the flapper or duckbill from freezing shut. Correction of this deficiency will require a permit to construct from the WYDEQ and will require an evaluation by an engineering firm to ensure that no damage will occur to the existing water tank as a result of the modifications to address the significant deficiencies.

2) **Gravity Tank ID: ST02 - Upper Storage Tank (250K)**
Air vent screening on finished water storage tank improvement needed*. (see photo #30)

The vent must be fitted with a #24-mesh non corrodible screen to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the vent at a location least susceptible to vandalism.

3) **Gravity Tank ID: ST03 - Lower Storage Tank (500K)**
Overflow screening on finished water storage tank improvement needed*. (see photo #14)

Overflows must be fitted with non-corrodible #24-mesh screen, or a properly sealed flapper or duckbill valve to prevent contamination (including contamination carried by insects, rodents, and birds) from entering the water system. The screen should preferably be installed within the pipe at a location least susceptible to vandalism. When a flapper valve is used, a screen must be placed inside the valve (EPA Region 8 recommends non-corrodible #24-mesh screen be used). In cold climates, use of a flapper or duckbill valve should be considered to minimize air movement and hence ice formation in the tank. In cold climates, provisions should be considered to prevent the flapper or duckbill from freezing shut. Correction of this deficiency will require a permit to construct from the WYDEQ and will require an evaluation by an engineering firm to ensure that no damage will occur to the existing water tank as a result of the modifications to address the significant deficiencies.

4) **Gravity Tank ID: ST04 - Alpine Tank (540K)**
Unknown integrity of storage tank air vent due to the inability to inspect vent during site visit.

Hornet's nest was discovered at the ladder and access was ended.

The sanitary surveyor was unable to evaluate the tank air vent, and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Facilities to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.

In order to correct this significant deficiency you must provide the EPA with the following documentation:

- A completed copy of the Unknown Integrity Checklist.
- A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.
- The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions.

5) **Gravity Tank ID: ST04 - Alpine Tank (540K)**
Hatch on Finished Water Storage Tank does not have a locking device. (see photo #35)

The cover must have a locking device.

UNCORRECTED SIGNIFICANT DEFICIENCIES FROM PRIOR SANITARY SURVEY

No uncorrected significant deficiencies from prior sanitary survey.

RECOMMENDATIONS

No recommendations at this time.

SOURCE DATA

ACTIVE (PHYSICALLY CONNECTED) WELLS AND WELL PUMPS

(if well is GWUDI and fully treated as SW, these will be recommendations)

☐ NA

Well Name:	Well #1	Well #2	Well #3
Well owner (if different than system owner)			
Facility ID (from PWS inventory, e.g., WL01):	WL01	WL02	WL03
Well Location: (well house, well pit/pitless adapter, driveway/parking lot, combination, etc.)	Pitless Adapter	Pitless Adapter	Pitless Adapter
Does system want this well to be considered inactive? @	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Adequately protected from vehicle damage? @	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
If well is located in a pit or vault, is the pit or vault completely watertight?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
If no, is the pit or vault completed with drainage or a sump pump for permanent or portable use? @	☐ Yes ☐ No ☒ NA Type:	☐ Yes ☐ No ☒ NA Type:	☐ Yes ☐ No ☒ NA Type:
Is the pit located in a building?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
WY DEQ and/or WY SEO permit #:	P39163; 3rd Enl P189882	P77717; Enl P189883	P198240
Are there any approved WY DEQ Chapter 12 variances for this well? If yes, describe what type of variance was approved.	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Total Well Depth (ft):	275	243	267
Depth range of shallowest casing perforations (ft):	180 to NI	101 to 102	230 to 267
Current yield (gpm):	600	450	400
Pumping water level (ft below ground surface) and date measured:	NI	NI	NI
Static water level (ft below ground surface) and date measured:	NI	NI	NI
Well log or Statement of Completion on site? **(If yes, please copy or photograph and submit with report)**	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Well Construction			
Does SW runoff drain away from the wellhead (including wells in pits or vaults)? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Does well casing terminate at least 12" above the concrete floor? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Does the well casing terminate at least 18" above the natural ground surface? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
What is the actual casing height (inches)?	20.5	20.5	20
Any holes or openings observed in the well or its appurtenances? @ If yes, describe	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA
Does the well have a sanitary seal with tightly bolted cap? @ (May need operator to open well cap to verify, explain why if unable to verify)	☒ Yes ☐ No ☐ Unknown	☒ Yes ☐ No ☐ Unknown	☒ Yes ☐ No ☐ Unknown
Is a gasket visible?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Does the well cap move?	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA
Explain	Operator removed well-cap bolts for inspection.	Operator removed well-cap bolts for inspection.	Operator removed well-cap bolts for inspection.
Is well vented (vent not required)?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
What is the height from the ground level to the screen of the vent (inches)?	22.5	23	22.5
Does the vent terminate at or above the top of the casing or pitless unit? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Is vent facing downward? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Vent screened with #24 mesh? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA

Well Name:	Well #1	Well #2	Well #3
Is there a source water sample tap for GWR compliance?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Is the tap located prior to all treatment processes?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Where is the source water tap located?	Well House	Well House	Well house
If it is a combined tap What wells does the sample tap represent?	☒ NA Well #1	☒ NA Well #2	☒ NA Well #3
Is there an air release/vacuum relief valve (not required)?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Discharge Piping Termination			
- In a downward position? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
- At least 8" above the floor? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
- Screened with #24 mesh? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Comments:	____	____	____
Well Pumps	☐ NA		
Submersible Pump?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Other type of pump? (if other, describe and indicate location in the comment field below)	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Pump Make/Model/HP:	Jacuzzi Brothers, Inc./NI/50 HP	Red Jacket/NI/40 HP	Robbco/7THC, 5-Stage/75 HP
Normal operating pressure at pump house (psi):	80	80	80
Date pump last replaced:	May, 2021	NI	NI
Pump run time at time of visit (min):	10 min	NA	NA
NSF-60 lubricant used?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Operable?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Maintenance program in place?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Is the external pump subject to flooding? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Spare parts/pump available (specify in comments)?	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA
Emergency power available?	☒ Yes ☐ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA
Comments (include pump operation sounds, leakage observed, operator concerns)	____	____	____

Are there any known sources of pollution near the wells which could possibly impact water quality? @ ☐ Yes ☒ No
Examples: Septic systems, chemical storage/mixing facilities, agriculture activities, industrial activities, animal enclosures, cleaning supplies, oil/fuel, etc)

If yes, indicate impacted well(s) and provide general location and comments (please locate on aerial map and provide photos): NA

How far from the well is the source of pollution located? NA

Mice or other animals and their droppings in immediate area (well house, vault, pit, etc.)? @ ☐ Yes ☒ No ____

Are there seasonal variations in the quantity of the water? ☐ Yes ☒ No ____

Are there seasonal variations in the quality of the water? ☐ Yes ☒ No ____

How does the system handle sewage?

☒ Centralized Sewage Treatment
☐ Septic Systems with Pumped Vaults
☐ Septic Systems with Leach Fields (mark location on aerial if near well)

Comments: ____

SOURCE DATA

EMERGENCY BACKUP SOURCE WATER

Describe any backup source water possibly available during an emergency to the PWS, or indicate none: None

Is the backup water source physically disconnected from the water system? ☐ Yes ☐ No ____
(if this is a raw water source and is still physically connected to the system, then stop filling out this section and complete the applicable source data section)

RAW WATER TO TREATMENT PLANT TRANSMISSION LINE

☐ NA

Name or designation: Transmission Line

SW ☐ GW ☒ GU ☐

Point of origin: Wells

Point of termination: Lower Storage Tank (ST03)

Approximate Length: 1.25 - 1.5 miles

Material: 8" PVC

Is there asbestos pipe in the water system between the source and the treatment plant? ☐ Yes ☒ No

If yes, what are the location and estimated linear feet of the asbestos pipe in the transmission line? ____

Are there any service connections off the raw water transmission line? @ ☒ Yes ☐ No ____
(Check yes only if the water system provides treated water to the rest of the distribution system)

What does each connection serve? Operator indicated that the Wastewater Treatment Plant office area used the well water source - prior to any treatment - for "Potable purposes" found in an office setting.

If used for potable water supply, is there a legal agreement or contract in place? ☐ Yes ☐ No NA

If used for potable water supply, is the water treated at the connection and how? ☐ Yes ☐ No NI

DISTRIBUTION BOOSTER PUMP STATIONS

☐ NA

Total number of booster stations in the distribution system: 1

Are there any new booster stations since the previous survey? ☐ Yes ☒ No

Are there any booster stations the system has had problems with since the previous survey? ☐ Yes ☒ No

Are there any booster stations where chlorine is added? ☐ Yes ☒ No

Name/location of the pump station: Booster Pump Station; located at the Pumphouse (PF01) site.

How many pumps at the facility? Two

Incoming pressure (suction side) of booster station (psi): 81

Outgoing pressure (discharge side) of booster station (psi): 132

Type/Make/Model/HP of pumps: Pentair/Aurora/15 HP

Estimated run time of booster pump(s) at time of visit (min): Zero

Are booster pumps operated with Variable Frequency Drives (VFDs)? No

	Yes	No	NA	
Are the correct types of lubricants (NSF-60) used?	☒	☐	☐	____
Is the pump station subject to flooding? @	☐	☒	☐	____
Are pumps operable and in good condition?	☒	☐	☐	____
Is there a maintenance program in operation?	☒	☐	☐	____
Are spare pumps/parts available (specify)?	☒	☐	☐	____
Is emergency power available?	☒	☐	☐	____

GRAVITY TANKS

☐ NA

Complete for all tanks at ground water systems and consecutive systems Also complete for finished water tanks at surface water / GWUDI systems. (Includes indoor clearwells and contact tanks or other finished water tanks.)			
Tank Name:	**Upper Storage Tank**	**Lower Storage Tank**	**Alpine Tank**
Tank ID (from PWS inventory, e.g., ST01):	ST02	ST03	ST04
Tank owner (if different than system owner):	____	____	____
Location (indoor or outdoor):	Outdoor	Outdoor	Outdoor
Date put into service	1977	Late 1990s	2006
Tank Type: Below ground (buried or partially buried) / Ground level / Elevated (pedestal or standpipe)	☒ / ☐ / ☐	☒ / ☐ / ☐	☐ / ☒ / ☐
Tank is constructed of: Concrete / Steel / Fiberglass / Other	☒ / ☐ / ☐ / ____	☒ / ☐ / ☐ / ____	☐ / ☒ / ☐ / ____
What type of water is stored (GW systems only)?	☒ Treated ☐ Raw	☒ Treated ☐ Raw	☒ Treated ☐ Raw
Storage Volume (gallons)?	250,000	500,000	543,000
Are there any approved WY DEQ Chapter 12 variances for this tank? If yes, describe what type of variance was approved.	☐ Yes ☒ No ____	☐ Yes ☒ No ____	☐ Yes ☒ No ____
Is the site subject to flooding? @	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Can the tank be isolated from the system?	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Is the water level indicator accurate?	☒ Yes ☐ No	☒ Yes ☐ No	☒ Yes ☐ No
Does the tank have a mixer?	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Does the tank appear structurally sound? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☒ Yes ☐ No ☐ NA
Does the foundation appear structurally sound? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☒ Yes ☐ No ☐ NA
Are there unprotected openings in the tank (breaches, leaks, etc.)? @	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Inspection and cleaning history			
If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
When and how was the tank last cleaned and inspected?	2018 - Divers	2018 - Divers	2018 - NI
Who performed the cleaning and inspection?	Rubicon Applied Divers	Rubicon Applied Divers	Prior operator.
How was the tank disinfected after cleaning? (NA if diver used)	NA	NA	As per AWWA Standards
Surveyor able to view report and confirm date?	☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☒ No
If yes note major concerns and/or recommendations:	None	None	____
If Carcasses or other debris found in the tank:			
Was EPA notified immediately?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Was the entry point for the carcass or debris eliminated?	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Describe:	____	____	____
Overflow			
Does the tank have an overflow separate from the vent? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Is the overflow accessible for inspection? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen of any size inside (EPA recommends a #24 mesh screen)? @	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☒ Yes ☐ No ☐ NA
Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☒ No ☐ NA
Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Is the discharge visible?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Comments about overflow:	____	____	Height OK

Complete for all tanks at ground water systems and consecutive systems Also complete for finished water tanks at surface water / GWUDI systems. (Includes indoor clearwells and contact tanks or other finished water tanks.)

Tank Name:	Upper Storage Tank	Lower Storage Tank	Alpine Tank
Drain Line			
Combined overflow and drain pipe? (If yes, skip drain questions)	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☒ No ☐ NA
Is the drain accessible for inspection? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Is there #24 mesh screen on the drain pipe?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Does water accumulate in the drain discharge area?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Does the drain pipe terminate between 12 and 24 inches above a drainage area?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Does the drain pipe terminate above an inlet structure, splash plate, or engineered rip-rap?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
Comments about drain:	____	____	Drains through system
Air Vent			
Does the tank have a vent separate from the overflow? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Is the vent accessible for inspection? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☒ No ☐ NA
For above ground tanks (ground level or elevated/standpipe):			
Is there #24 mesh screen? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
If not #24 mesh screen, what size mesh is the screen?	____	____	NI
Does the tank have a vacuum/pressure relief valve or other mechanism to prevent tank damage?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☒ No ☐ NA
Is the screen on the inside of the vent pipe to discourage vandalism?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
Downturned vent: Is the vent at least 24" above the roof? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
For non-downturned ventsis the screen at least 8" above the roof surface? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
Below Ground Tanks (buried or partially buried)			
Is air vent covered with #24 mesh screen? @	☐ Yes ☒ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☒ NA
Is the screen on the inside of the vent pipe to discourage vandalism?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☒ NA
Does the air vent terminate downward@	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☒ NA
Is the air vent at least 24" above the roof or ground surface (whichever is higher)? @	☒ Yes ☐ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☒ NA
Comments about air vent:	Screen appears to be #16-mesh.	23 inches - height OK	Disturbance of a hornet nest prevented inspection of the vent.
Access Hatch			
Is the hatch accessible for inspection? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
For below ground tanks where the roof is completely buried, is the hatch raised at least 24" above ground level? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA
For partially buried tanks where a roof is visible, is the hatch raised at least 24" above the roof? @	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☒ NA
For above ground tanks (ground level or elevated) is the hatch raised at least 4" above the roof? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☒ Yes ☐ No ☐ NA
What is the height of the access hatch above the roof or ground surface?	14.75 in	14.5 in	4.25 in
Does the hatch have a shoe box cover? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Is the hatch cover tight and sealed with a rubber gasket? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA
Is the hatch cover locked? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☒ No ☐ NA
Comments about access hatch:	Height OK	Height OK	____
Comments:	____	____	____

WATER TREATMENT DATA
GROUNDWATER and CONSECUTIVE SYSTEMS THAT HAVE AVAILABLE TREATMENT

☐ NA

Describe the steps (as many as necessary) of the treatment process in order from the water source to distribution: 12.5% Sodium Hypochlorite Feed

Plant Output (gal/day)

Design: 800,000 gpd

Maximum: 850,000 gpd

Any changes to treatment since the last sanitary survey? ☐ Yes ☒ No

Describe: No changes since the last survey.

	Step 1	Step 2	Step 3	Step 4
Process	☒ Chemical 12.5% Sodium Hypochlorite Manufacturer Brenntag Pacific Product Name 12.5% Sodium Hypochlorite (photograph the product label) Yes No NSF 60 Certified? ☒ ☐ ☐ UV ☐ Filtration ☐ Ion exchange ☐ Softener ☐ Other: ____ Dosage: 0.6 ppm	☐ Chemical ____ Manufacturer ____ Product Name ____ (photograph the product label) Yes No NSF 60 Certified? ☐ ☐ ☐ UV ☐ Filtration ☐ Ion exchange ☐ Softener ☐ Other: ____ Dosage: ____	☐ Chemical ____ Manufacturer ____ Product Name ____ (photograph the product label) Yes No NSF 60 Certified? ☐ ☐ ☐ UV ☐ Filtration ☐ Ion exchange ☐ Softener ☐ Other: ____ Dosage: ____	☐ Chemical ____ Manufacturer ____ Product Name ____ (photograph the product label) Yes No NSF 60 Certified? ☐ ☐ ☐ UV ☐ Filtration ☐ Ion exchange ☐ Softener ☐ Other: ____ Dosage: ____
NSF 60 certification and max. allowable dose info. can be found at: http://info.nsf.org/Certified/PwsChemicals/				
Objective:	☒ Disinfection ☐ Particulate removal ☐ Hardness removal ☐ Taste & odor removal ☐ Metals removal ☐ Other: ____	☐ Disinfection ☐ Particulate removal ☐ Hardness removal ☐ Taste & odor removal ☐ Metals removal ☐ Other: ____	☐ Disinfection ☐ Particulate removal ☐ Hardness removal ☐ Taste & odor removal ☐ Metals removal ☐ Other: ____	☐ Disinfection ☐ Particulate removal ☐ Hardness removal ☐ Taste & odor removal ☐ Metals removal ☐ Other: ____
Is this process required by EPA?	☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Location of process?	☐ At Well ☒ At Treatment Plant ☐ Other: ____	☐ At Well ☐ At Treatment Plant ☐ Other: ____	☐ At Well ☐ At Treatment Plant ☐ Other: ____	☐ At Well ☐ At Treatment Plant ☐ Other: ____
Is this process adequate to meet the objective?	☒ Yes ☐ No Explain: No TC+ and measurable chlorine residual	☐ Yes ☐ No Explain: ____	☐ Yes ☐ No Explain: ____	☐ Yes ☐ No Explain: ____
Frequency of use:	☒ Permanent ☐ Seasonal ☐ Emergency ☐ Other: ____	☐ Permanent ☐ Seasonal ☐ Emergency ☐ Other: ____	☐ Permanent ☐ Seasonal ☐ Emergency ☐ Other: ____	☐ Permanent ☐ Seasonal ☐ Emergency ☐ Other: ____
Redundant Equipment?	☐ Yes ☒ No Explain: None on-site	☐ Yes ☐ No Explain: ____	☐ Yes ☐ No Explain: ____	☐ Yes ☐ No Explain: ____
Backup power?	☒ Yes ☐ No Explain: On-site Generator at Well # 1 (WL01) & Pumphouse (PF01) location.	☐ Yes ☐ No Explain: ____	☐ Yes ☐ No Explain: ____	☐ Yes ☐ No Explain: ____

WATER TREATMENT DATA (FOR ALL SYSTEMS)
CORROSION CONTROL

Does this PWS add chemicals for corrosion control (If yes, photograph the corrosion control system)? ☐ Yes ☒ No

Comments: _____

Chemical added:	NSF 60 Certified?	Dosage at Treatment Plant	Type of System	Added Continuously or Seasonally
_____	☐ Yes ☐ No	_____	☐ Flow-based ☐ Constant feed	☐ Continuously ☐ Seasonally ☐ Other (Specify in comments)
_____	☐ Yes ☐ No	_____	☐ Flow-based ☐ Constant feed	☐ Continuously ☐ Seasonally ☐ Other (Specify in comments)
_____	☐ Yes ☐ No	_____	☐ Flow-based ☐ Constant feed	☐ Continuously ☐ Seasonally ☐ Other (Specify in comments)
_____	☐ Yes ☐ No	_____	☐ Flow-based ☐ Constant feed	☐ Continuously ☐ Seasonally ☐ Other (Specify in comments)

Does this PWS monitor corrosion control treatment chemical concentrations, pH or any other water quality parameters at the entry point to the distribution system or at customer taps to evaluate the process? ☐ Yes ☐ No

If yes, what parameters are measured, where are samples taken, and how often? _____

Comments: _____

DISTRIBUTION DATA

Please provide a brief description of the distribution system, including source to use piping: 4", 6", 8" and 10" PVC Mains. 90% of service lines are poly tubing; others are galvanized or copper

Is there asbestos pipe in the distribution system? ☐ Yes ☒ No
If yes, what are the location and estimated linear feet of the asbestos pipe in the distribution system? ____

Have lines broken due to freezing? ☐ Yes ☒ No ____
Have lines broken due to traffic load? ☐ Yes ☒ No ____

Are lines properly disinfected after repairs are made? ☒ Yes ☐ No ____

According to the system representative, is there at least 35 psi pressure in the distribution system at peak flow? ☒ Yes ☐ No ____

According to the system representative, is there at least 20 psi at all points in the system at all times? @ ☒ Yes ☐ No ____

How does the water system monitor distribution pressure? Pressure gauge in Wellhouse

Pressure measurement and location (if measured at the time of the survey): Shop hydrant - 97 psi.

Distribution water loss rate (%): NI

Does the system provide fire protection (fire hydrants located in distribution)? ☒ Yes ☐ No ____

According to the system representative, total gallons produced per source:
Source #1: Wells Flow rate (gpm): NI Volume produced (MG/year): NI Peak month production (MG/month): NI

For systems that provide water storage: NA ☐

Total number of days of storage (Summer)? 1 Total number of days of storage (Winter)? 10

Is the storage capacity adequate to meet current needs? Yes ☒ No ☐ NI ☐

Is the storage capacity adequate to meet future needs? Yes ☒ No ☐ NI ☐ Comments: Depends on extent of growth currently being witnessed.

Are there any bulk water supply/fill stations attached to this system? ☐ Yes ☒ No ____

Note to surveyor: if yes, check each facility, note its condition and provide photos

Station name (if applicable)	Location	Appropriate Air Gap or RPZ?	Comments
NA	____	☐ Air Gap ☐ RPZ ☐ Neither @	____
____	____	☐ Air Gap ☐ RPZ ☐ Neither @	____
____	____	☐ Air Gap ☐ RPZ ☐ Neither @	____

Are there any air relief valves in vaults/pits located in the distribution system? ☒ Yes ☐ No ____

Note to surveyor: If yes, inspect one representative ARV, note its condition and provide photos

Are they regularly inspected and maintained? ☒ Yes ☐ No ____

Do any have leaks and/or standing water that covers the discharge point? @ ☐ Yes ☒ No ____

Location, length, number, and flushing frequency for dead ends in the system: Fire hydrants flushed twice/year.

Are distribution system ("as-built") drawings maintained (e.g., revised to show replacement or repair?) ☒ Yes ☐ No ____

For systems that add a chemical disinfectant or receive disinfected water from a wholesaler: NA ☐

Yes	No	
☒	☐	Is test equipment available for measuring the chlorine residual in the distribution system? Describe equipment: HACH Pocket Colorimeter
☒	☐	Are reagents up to date? 3/26
☒	☐	Does the operator know how to properly measure chlorine residual? ____

Measured chlorine residual distribution system location: Town Shop Time of analysis: 11:27 AM

Indicate residual value measured at this distribution system location: By Surveyor: 0.44 (mg/L) By PWS: 0.37 (mg/L)

Was free or total chlorine measured? Free It is recommended to maintain a minimum residual of 0.5 mg/L total or 0.2 mg/L free chlorine.

CROSS CONNECTION CONTROL

Yes	No	NA	
☒	☐	☐	**Does each severe hazard connection** have the appropriate reduced pressure backflow assembly installed at the meter/service connection and approved air gap (twice the size of the supply pipe diameter but always greater than one inch)? Describe each severe hazard connection and its location. @ WWTP Note: Severe hazard connections include radioactive materials processors, nuclear reactors, and sewage treatment plants/pump stations.
☒	☐	☐	**Does each high hazard connection** in the treatment plant or distribution system have the appropriate air gap or reduced pressure backflow assembly installed? Describe each high hazard connection and its location. @ _____ Note: High hazard connections include hospitals, medical/dental facilities, laboratories, mortuaries, large taxidermies, chemical suppliers/processing facilities, petroleum plants, food processing facilities, wastewater treatment plants, and docks, car washes, dry cleaners, direct connections to raw or non-potable water, and any service connection with an unapproved auxiliary supply.
☐	☐	☒	Do **trailers or mobile homes connected directly to the PWS** via a yard hydrant have a residential dual check valve at each connection? Not allowed in community
☒	☐	☐	Are any **frost-free hydrants** that drain into the soil directly connected to this PWS? _____
☐	☒	☐	Are there any leaking system components in the water system observed by the surveyor that are not previously noted? @ Explain where and what was leaking: _____
☒	☐	☐	**At Community PWS**, do all low hazard connections have the appropriate dual check valve assemblies installed at the meter or service connection? _____ Note: Low hazard connections include mobile home parks, farms/dairies, ranches, and shopping centers.
			For Non-community Systems, do the following connections have the indicated type of backflow prevention assemblies?
☐	☐	☒	- Stock tanks – approved air gap or atmospheric vacuum breaker at the tank? @ _____
☐	☐	☒	- Threaded yard hydrants – pressure vacuum breaker, atmospheric vacuum breaker or double check valve assembly? _____
			Does the water supplier have a record keeping program and management procedures to ensure:
☒	☐	☐	- The installation and certification by test or inspection (as applicable) of all backflow preventers (BFPs) at new service connections _____
☐	☒	☐	- The annual certification by a certified tester of all high-hazard BFPs at service connections. _____

SAFETY

Personnel Safety

Yes	No	NA	
☒	☐	☐	Are all personnel trained in proper handling of all utilized chemicals and materials? _____
☒	☐	☐	Are adequate masks, protective clothing, and safety equipment provided? _____
☒	☐	☐	Does the operator understand relevant Occupational Safety and Health Administration (OSHA) regulations (e.g., confined space, hazard communication, trenching/shoring, lock out/tag out)? _____

Chemical Safety NA ☐

Yes	No	NA	
☒	☐	☐	Are oxidizers, corrosives, and flammables stored in separate areas and in closed, marked containers? _____
☐	☐	☒	Are flammables stored in appropriate containers and cabinets away from combustion sources? None
☒	☐	☐	Is there adequate ventilation in the areas where solvents, aerosols, and chemical feeders are in use? _____
☒	☐	☐	Are bulk storage areas physically isolated from treatment areas to prevent spills from entering treated or untreated water? _____
☒	☐	☐	Is the fire department familiar with the facilities and their contents? _____

MANAGEMENT DATA

Yes	No	NA	
☒	☐	☐	Are there rules governing new hookups to protect the integrity of this water system? _____
☒	☐	☐	Are DEQ construction standards followed? _____
☒	☐	☐	Is the treatment plant being properly operated to prevent inadequately treated water from being sent to the distribution system? @ _____
☒	☐	☐	Does the system have arrangements in place to assure prompt supply and repair service? _____
☐	☒	☐	Does the system have a current operations and maintenance manual which describes all procedures, equipment, sampling schedules and inspection data? _____
☒	☐	☐	Is there a schedule for routine preventative maintenance for all facilities and equipment? Not formally in a document.
☒	☐	☐	Does the system (treatment plant, finished water storage) have security measures in place (fencing, locks, lighting, alarms, etc.)? Locks, neighbors.
☒	☐		Does the system have an emergency response plan (ERP) – system does not need to show the surveyor the ERP --that includes: @ _____
☒	☐		- Emergency contact phone numbers? _____
☒	☐		- Procedures to respond to a pressure loss/water outage? _____
☒	☐		- Procedures to respond to a water contamination incident? _____
☐	☒		- Is the ERP accessible to the operator on-site? _____
☒	☐		Is the system part of the state's Water and Wastewater Agency Response Network (WARN)? _____
☐	☒		Have you evaluated possible impacts to your system from extreme weather events? If yes, what was the outcome? _____
☒	☐		Are you interested in training on extreme weather events? _____
☐	☒		Have you evaluated your facilities to see if they are in the 100 and 500 year flood plains? _____ If yes, what was the outcome? _____
What percentage of the utility's power comes from your own renewable energy sources? Zero % wind: _____ % solar: _____ % hydro: _____			

FINANCIAL CAPACITY
COMMUNITY SYSTEMS

☐ NA

Yes	No	NA	
☒	☐	☐	Does the water system have an annual budget? _____
☒	☐	☐	Is the rate structure for water customers based on metered water use? _____
☒	☐	☐	Are procedures in place to handle delinquent accounts? _____
☒	☐	☐	Are purchasing procedures in place for equipment, materials, chemicals, lab analysis, etc.? _____
List rates: Minimum ($):24.00 + ($) 1.75 per 1,000 gallons thereafter Or, ($):_____(Flat Rate)			
What percentage of your customer accounts are delinquent? 0.1%			

MONITORING AND RECORDS

Revised Total Coliform Rule (RTCR) monitoring (all systems)

Yes	No	
☒	☐	Does the operator know how to collect and properly label samples for total coliform analysis? (Review operator sampling procedure at time of survey to confirm) _____
☒	☐	Does the operator know what to do in the event of a total coliform postitive result? _____ They will need to take 3 repeat samples under the RTCR utilizing the regular lab form: For an explanation go to the EPA Region 8 Drinking Water Online website (http://www.epa.gov/region8-waterops) - "click" on **Revised Total Coliform Rule (RTCR)** (under Regulations and Compliance) - "click" on **Tech Tip: TC+ Follow Up** (in green box) - Follow the 5 steps described in the Tech Tip for follow up sampling after a TC+ sample
☒	☐	Are extra bottles available in case of need for repeat total coliform sampling? _____
☒	☐	Does the system have an RTCR sampling plan on file and available for the surveyor's review (give date of plan)? 2020
☒	☐	Ask the operator - Is the system following their RTCR sampling plan? If No, explain any difficulties _____

If subject to the Ground Water Rule (GWR), does the operator know: NA ☐

Yes	No	NA	
☒	☐	☐	Within 24 hours of being notified of a *routine total coliform* positive sample result, they must collect one triggered source water sample for *every* routine total coliform positive sample at each active ground water source (e.g., three routine total coliform positive samples requires the operator to collect three source water samples from *each* ground water source)? _____
			They will need to submit:
☒	☐	☐	- Source water sample results utilizing the triggered Ground Water Source Sampling Form located on the Drinking Water Online site (http://www.epa.gov/region8-waterops)? _____
☒	☐	☐	Where to sample (if they are required to sample all of their active ground water sources)? _____
☒	☐	☐	Are extra bottles available in case of the need for GWR source sampling? _____

For Community and NTNC systems (including consecutives): NA ☐

Yes	No	NA	
☒	☐	☐	Is there a Disinfection Byproducts Rule Monitoring Plan on-site available for the surveyor's review? _____
☒	☐	☐	- Does the plan layout represent the current distribution system? _____
☐	☒	☐	In the last 5 years, has the distribution system been expanded to new service areas? - If Yes, please describe the expansion. Neighboring area has been annexed; however, no water service currently provided to area.
☒	☐	☐	Does the system have a Lead & Copper Tap Sample Site Plan on site and available for the surveyor's review? _____
☒	☐	☐	- Is it up to date? _____
☒	☐	☐	- Ask the operator - Is the system following their LCR Tap Sample Site Plan? If No, explain any difficulties _____

For All Systems:

Yes	No	NA	
☒	☐	☐	Does the operator know the location of each sample tap that represents the entry point(s) to the distribution system? (sample location for Nitrates, RADs, IOCs, SOCs and VOCs) _____ Include, in your photo document, a photo of each sample tap used by the operator to collect samples at the entry point(s) to the distribution system. Show in the photo or in the photo comments where the sample tap is located relative to other water system facilities that are identified on the system schematic.
☒	☐	☐	Does the operator know how to properly label samples taken from the entry point(s) to the distribution system? _____ Document the sample point code and sample point description for each entry point. The sample point code(s) and sample point description(s) are indicated on the system schematic with a star. This information is how compliance samples should be labeled and the lab's chain of custody completed. (e.g., Sample Point Code and Sample Point Description, such as SP01/Treatment Plant Sampling Point). _____
☒	☐	☐	Has the PWS completed the monitoring that is specified in the EPA-provided monitoring schedule so far for this calendar year? _____
☒	☐	☐	Are copies of all monitoring results filed and readily accessible? _____
☒	☐	☐	Is the operator familiar with the Drinking Water Online (http://www.epa.gov/region8-waterops) and Drinking Water Watch (https://sdwisr8.epa.gov/Region8DWWPUB/) websites created for their benefit? _____

EPA Official Photographs
PWS #: WY5600156
System Name: Town of Alpine

Document Control Number: R8FQPTemplate-1000 R2
Date: 08/26/2021
Photographer: Bud Spillman

Photo #: 1

Subject:
Well #1 (WL01)

Comments:
Looking northeasterly. Operator had removed well-cap bolts for inspection.

1

Photo #: 2

Subject:
Well #1 (WL01)

Comments:
Well cap measures 20.5" above concrete slab; and vent shroud measures 22.5" above grade.

2

Photo #: 3

Subject:
Well #1 (WL01)

Comments:
Gasket between cap & casing.

3

Photo #: 4

Subject:
Well #2 (WL02)

Comments:
Looking easterly

4

Photo #: 5

Subject:
Well #2 (WL02)

Comments:
Well cap measures 20.5" above grade.

5

Photo #: 6

Subject:
Well #2 (WL02)

Comments:
Gasket between well cap & casing pipe.

6

Photo #: 7

Subject:
Well #3 (WL03)

Comments:
Looking southwesterly.

7

Photo #: 8

Subject:
Well #3 (WL03)

Comments:
Well cap measures 20" above grade; and well vent 22.5" above grade.

8

Photo #: 9

Subject:
Well #3 (WL03)

Comments:
Gasket between well cap & casing pipe.

9

Photo #: 10

Subject:
Chlorinator (TP01)

Comments:
Well production inflow into chlorination room. Each well has its own air-vac on the inlet piping. Well inlets are numbered left to right as: Well #2 (WL02), Well #3 (WL03) and Well #1 (WL01). Chlorine solution is injected into fitting visible on the left edge of photo.

10

Photo #: 11

Subject:
Chlorinator (TP01)

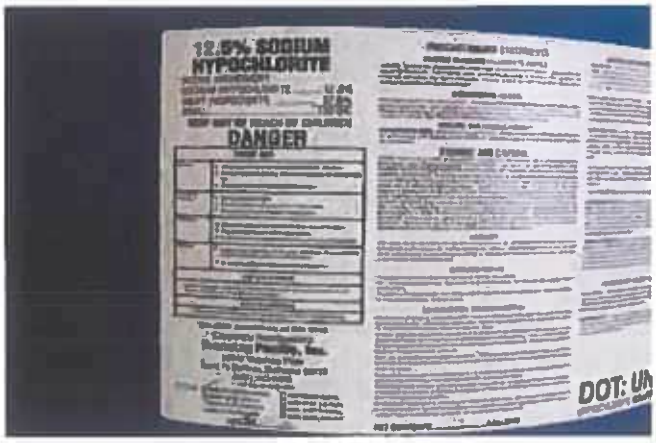
Comments:
Chlorine solution feed pump – on the right-side of shelf.

11

Photo #: 12

Subject:
Chlorinator (TP01)

Comments:
12.5% chlorine solution product used for disinfection purposes.



12

Photo #: 13

Subject:
Lower Storage Tank (500K) (ST03)

Comments:
Overflow discharges 14" above splash area.

13

Photo #: 14

Subject:
Lower Storage Tank (500K) (ST03)

Comments:
#24-mesh screen on overflow outfall is damaged, resulting in a loss of integrity.

14

Photo #: 15

Subject:
Lower Storage Tank (500K) (ST03)

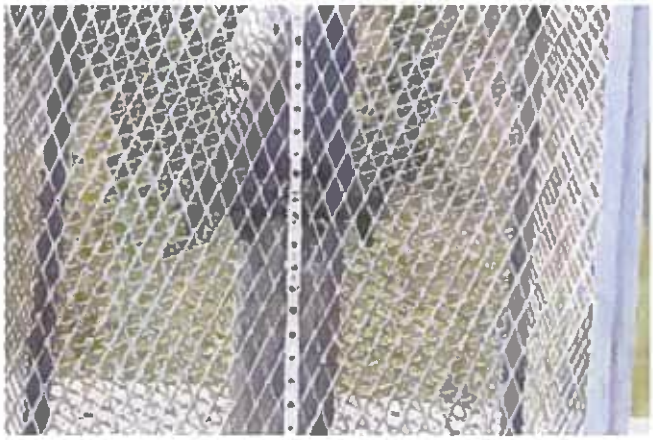
Comments:
Southerly vent structure, looking north. Vent devices were enclosed within "cages" and unavailable for close inspection. Appeared to have #24 mesh.

15

Photo #: 16

Subject:
Lower Storage Tank (500K) (ST03)

Comments:
Vent screen (between flanges) measures 23" above the tank roof.



16

Photo #: 17

Subject:
Lower Storage Tank (500K) (ST03)

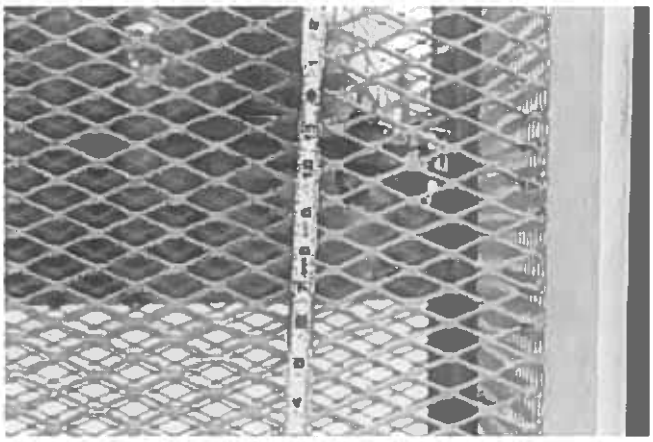
Comments:
Northwesterly vent configuration.

17

Photo #: 18

Subject:
Lower Storage Tank (500K) (ST03)

Comments:
Vent screen terminates 23.875" above roof deck.



18

Photo #: 19

Subject:
Lower Storage Tank (500K) (ST03)

Comments:
Looking northerly. Hatch is located on the circumference about 105° bearing from tank center.

19

Photo #: 20

Subject:
Lower Storage Tank (500K) (ST03)

Comments:
Looking northerly. Tank hatch locked and the hatch lid measures 14.5" above roof deck.

20

Photo #: 21

Subject:
Lower Storage Tank (500K) (ST03)

Comments:
Hatch lid equipped with rubber gasket uniformly around the perimeter of the lid.

21

Photo #: 22

Subject:
Pumphouse (PF01)

Comments:
Located within same structure as Chlorinator (TP01) – two separate rooms. These two booster pumps take suction from the Lower Storage Tank (500K) (ST03), and pump to the Upper Storage Tank (250K) (ST02) for distribution.

22

Photo #: 23

Subject:
Pumphouse (PF01)

Comments:
Suction comes in near the far wall and pumps discharge into "light blue" header, to storage.

23

Photo #: 24

Subject:
Pumphouse (PF01)

Comments:
Meter and air-vac valve on discharge piping of booster pumps.

24

Photo #: 25

Subject:
Upper Storage Tank (250K) (ST02)

Comments:
Overflow outfall over native rock structure.

25

Photo #: 26

Subject:
Upper Storage Tank (250K) (ST02)

Comments:
Overflow outfall invert measures 14" above splash area. #24 mesh screen inside of the ¼" exterior screen.

26

Photo #: 27

Subject:
Upper Storage Tank (250K) (ST02)

Comments:
Overflow #24 mesh screening lacks integrity and sealing.

27

Photo #: 28

Subject:
Upper Storage Tank (250K) (ST02)

Comments:
Vent device enclosed within cage.

28

Photo #: 29

Subject:
Upper Storage Tank (250K) (ST02)

Comments:
Vent screen measures 30" above the tank's roof deck.

29

Photo #: 30

Subject:
Upper Storage Tank (250K) (ST02)

Comments:
Vent screen appears to be #16-mesh screen.

30

Photo #: 31

Subject:
Upper Storage Tank (250K) (ST02)

Comments:
Tank hatch located in southern arc of tank.

31

Photo #: 32

Subject:
Upper Storage Tank (250K) (ST02)

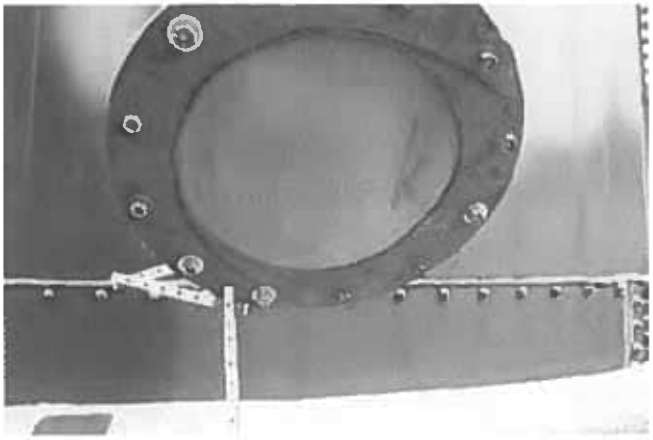
Comments:
Hatch measures 14.75" above roof deck.

32

Photo #: 33

Subject:
Alpine Tank (540K) (ST04)

Comments:
Overflow measures 35.5" above grade.



33

Photo #: 34

Subject:
Alpine Tank (540K) (ST04)

Comments:
Only photo of tank air vent. Disturbed a hornet's nest living in the handrail and the roof inspection ended.

34

Photo #: 35

Subject:
Alpine Tank (540K) (ST04)

Comments:
Tank hatch measures 4.25" above roof deck.

35

Photo #: 36

Subject:
Alpine Tank (540K) (ST04)

Comments:
Hatch lid gasket uniform around the perimeter of lid.

36

EPA Region 8 Drinking Water Unit Finished Water Storage Tank Inspection/ Cleaning Checklist Fill out one checklist per storage tank & submit labeled photos of each tank component with this form			
PWS Name: _____		PWS ID: _____	
Tank Name: _____		Tank ID: _____	
Proposed Inspection Date: _____		Actual Inspection Date: _____	
Name of Person Filling Out Form: _____		Title of Person Filling Out Form: _____	
I certify that this information is complete and accurate:		Date:	

Inspector Qualifications (answer to all questions must be "yes")	
Name and contact information of inspector (if water system personnel) or inspection company: _____	
☐ Yes ☐ No	Has the inspector completed confined space training?
☐ Yes ☐ No	Did the inspector have a confined space entry permit?

Overall Tank Condition				
Significant Deficiency		Required Correction	Proposed Completion Date	Actual Completion Date
☐ Yes ☐ No	Does the tank appear to be structurally sound?	If no, what repairs are suggested by the tank inspector? _____	_____	_____
☐ Yes ☐ No	Are there any unprotected openings in the tank (breaches, leaks, daylight coming through tank in spots, etc)	If yes, indicate type of breach and how it should be repaired. _____	_____	_____

Air Vent				
Significant Deficiency		Required Correction	Proposed Completion Date	Actual Completion Date
☐ Yes ☐ No ☐ NA	Does the tank have a vent separate from the overflow?	If no, indicate proposed correction:_____	_____	_____
Above Ground Tanks (Ground Level or Elevated) ☐ Check if NA				
☐ Yes ☐ No ☐ NA	Downturned vent: Is the vent at least 24" or 3 pipe diameters above the roof?	If no reconfigure vent to provide proper air gap.	_____	_____
☐ Yes ☐ No ☐ NA	Non-downturned vent: Is there a solid cover down to the bottom of the vent screen?	If no, indicate deficiency and proposed correction: _____	_____	_____
☐ Yes ☐ No ☐ NA	Non-downturned vent: Is the screen at least 8" above the roof surface? What is the height of the start of the screening above the tank? _____	If no, indicate deficiency and proposed correction: _____	_____	_____

☐ Yes ☐ No	Is the vent covered with #24 mesh corrosion resistant screening (some exceptions apply)? Mesh Size: _____	If no, indicate deficiency and proposed correction: _____	_____	_____
Buried or Partially Buried Tanks ☐ Check if NA				
☐ Yes ☐ No	Is the vent covered with #24 mesh corrosion resistant screening?	If no, install proper #24 mesh corrosion resistant screening.	_____	_____
☐ Yes ☐ No	Does the air vent terminate downward?	If no, re-configure the vent so that it terminates downward.	_____	_____
☐ Yes ☐ No	Is the air vent at least 24" above the tank roof or ground surface (whichever is higher)? What is the height of the vent above the roof or ground surface? _____	If no, raise air vent to provide for an appropriate air gap.	_____	_____

Access Hatch				
Significant Deficiency		**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
☐ Yes ☐ No	Is the hatch raised at least 4" above the roof (for ground level or elevated tanks) or at least 24 inches above the roof or ground, whichever is higher (for buried or partially buried tanks)? What is the height of the access hatch above the roof or ground surface? _____	If no, the hatch should be raised to the appropriate height above the tank roof or ground.	_____	_____
☐ Yes ☐ No	Does the hatch have a shoe box lid?	If no, a properly designed shoe box type lid should be installed.	_____	_____
☐ Yes ☐ No	Is the lid water tight and sealed with a rubber gasket?	If no, the reason for the lack of a seal should be investigated and repaired.	_____	_____
☐ Yes ☐ No	Is the hatch locked?	If no, the hatch should be equipped with a lock.	_____	_____

Overflow				
Significant Deficiency		Required Correction	Proposed Completion Date	Actual Completion Date
☐ Yes ☐ No ☐ NA	Does the tank have an overflow separate from the vent?	If no, indicate proposed correction:_____	_____	_____
☐ Yes ☐ No	Discharge has #24 mesh corrosion resistant screen OR a duckbill valve OR a properly sealed flapper valve with a screen inside (EPA recommends #24 mesh screen)?	If no, indicate proposed correction: _____	_____	_____
☐ Yes ☐ No	Overflow terminates between 12 and 24 inches above the ground surface? At what height does the overflow discharge? _____	If no, modify overflow to provide for an appropriate air gap.	_____	_____
☐ Yes ☐ No	Overflow discharges over an inlet structure, splash plate, or engineered rip-rap?	If no, indicate proposed correction: _____	_____	_____
☐ Yes ☐ No ☐ NA	Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewers?	If yes, indicate proposed correction: _____	_____	_____
☐ Yes ☐ No	Is there blockage in the overflow, an inadequately sized overflow, a malfunction of the level control system, or other issue that is causing the tank to overflow through the hatch or vent?	If yes, indicate what is causing the problem and how it should be repaired: _____	_____	_____
☐ Yes ☐ No	Is the overflow discharge point visible? If no, it is recommended that the discharge point be moved to a location that is visible.		Not Required	

Drain				
Significant Deficiency		Required Correction	Proposed Completion Date	Actual Completion Date
☐ Yes ☐ No	Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewers?	If no, indicate proposed correction: _____	_____	_____
☐ Yes ☐ No	Does the discharge have a #24 mesh corrosion resistant screen OR a duckbill valve OR a properly sealed flapper valve with a screen inside? If no, EPA recommends that a #24 mesh screen be installed.		Not Required	
☐ Yes ☐ No	Does the drain terminate between 12 and 24 inches above the ground surface and discharges over an inlet structure or splash plate? If no, it is recommended that the discharge point be modified to provide for the appropriate air gap.		Not Required	

Cleaning and Other Items			
Significant Deficiency	**Required Correction**	**Proposed Completion Date**	**Actual Completion Date**
Describe any other items noted by the inspector that have the potential to cause contamination of the finished drinking water: _____	What repairs are suggested to prevent or eliminate the source of contamination? _____	_____	_____
Depth of sediment found in the tank before cleaning (inches): _____ How was the storage tank cleaned? _____ How was the storage tank disinfected after cleaning? _____ List any objects found inside the tank during cleaning that may have introduced contamination into the water system (examples: debris, animals, etc): _____			
☐ Yes ☐ No ☐ NA	If animal carcasses or other animal debris were found, was EPA notified immediately?		
☐ Yes ☐ No ☐ NA	Was the entry point for the carcass or debris eliminated? Describe:_____		
Please attach tank as-built drawings (if available) or a sketch of the tank's configuration and dimensions including the location, layout and dimensions of all major components (i.e. access hatch, vent, overflow, drain)			

Preparing for your Drinking Water Sanitary Survey (Wyoming)

EPA Region 8 Contacts:	Lucien Gassie	720 987-4598	gassie.lucien@epa.gov
	Brett Van Houghton	720 825-5701	vanhoughton.brett@epa.gov
	Michael Copeland	303 312-6836	copeland.michael@epa.gov

Your public water system is due for a sanitary survey this year. Completing the checklist below prior to the sanitary survey may prevent significant deficiencies from being identified during the survey.

General Information

Who should attend your sanitary survey?

At least one system representative who is an operator, owner, or administrative contact. Please prepare for questions about general operations, management, security, and specific technical questions.

Sanitary survey scheduling?

Surveys are required every 3 to 5 years. If your system is scheduled for a sanitary survey, a surveyor will contact your facility to schedule.

How long will the sanitary survey take?

The sanitary survey can take from an hour to multiple days, depending on the complexity of the water system.

Preparation Checklist

Records

- ☐ Prior sanitary survey report – ensure all deficiencies have been addressed
- ☐ System population and number of service connections
- ☐ Water use records (flow rates/volume distributed)
- ☐ Applicable monitoring plans
  - Revised Total Coliform Rule & Lead/Copper Rule sampling plans w/maps
  - Disinfection byproduct monitoring plan
- ☐ Date of most recent tank cleanings and tank cleaning/inspection reports
- ☐ Water treatment chemical information (product, dosage)
- ☐ Other paperwork as applicable based on system type (for example, O&M plan for point of use systems, SWTR records for the past 3 years for surface water and ground water under the direct influence of surface water systems)
- ☐ List of operators, certification levels and expiration dates (if applicable)
- ☐ Copies of well statements of completion (if applicable)
- ☐ Disinfection profile and benchmark (for surface water and ground water under the direct influence of surface water systems)
- ☐ Cross-connection info – identification of high hazard connections and type of backflow prevention used at those connections
- ☐ Operation and maintenance plan
- ☐ Emergency Response Plan – if you need to develop an Emergency Response Plan, templates can be found at: https://www.epa.gov/region8-waterops/reporting-forms-drinking-water-systems-wyoming-and-tribal-lands-epa-region-8#erp

General Field Checklist

- ☐ Ensure all facilities can be accessed
- ☐ If facilities in your system are owned by other entities or private property needs to be crossed to access facilities, ensure that access is arranged and any required permission is granted prior to the sanitary survey
- ☐ Facilities are safe for inspection
- ☐ Facilities are operational
- ☐ Facilities are clean

Wells

- ☐ Area around well is not graded to allow pooling of water
- ☐ Well has a gasket that is not broken or degraded
  - If gasket is not visible, be prepared with a recent (within 1-year) photo of the gasket, or appropriate tools to remove the well cap to view the gasket
- ☐ Well does not have any unprotected holes or openings
- ☐ Well vent (if well is equipped with a vent) is screened with #24-mesh

Cybersecurity? Rule revisions?

While a cybersecurity evaluation is not currently required for sanitary surveys, your surveyor can provide information on cybersecurity resources and/or rule revisions if you are interested in learning more.

Storage Tanks

- ☐ Location of overflow and drain is known
- ☐ Overflow is fitted with #24-mesh, properly sealed flapper (with any size screen behind it), or duckbill valve
- ☐ All hatches equipped with a gasket around the entire hatch perimeter
- ☐ All hatches are equipped with a locking device
- ☐ All vents have #24-mesh screen and terminate 24-inches above the roof (for downturned vents) or 8-inches above the roof (for shrouded vents on non-buried tanks)
- ☐ No leaks present
- ☐ Tanks have been cleaned and inspected within the last 10 years
  - If not, you may proactively clean the tanks prior to the survey to avoid receiving a significant deficiency. Please ensure that you have documentation of the most recent tank cleaning available for review

Other Items

- ☐ Keys to all gates, well houses/pump houses, tanks, storage tank hatches, booster stations, master meter vaults and buildings, etc.
- ☐ Chlorine analyzer (if applicable)
- ☐ Manhole hooks and bolt cutter/new locks if keys cannot be found or locks are stuck
- ☐ Other tools as needed to access system facilities

To avoid an "unknown integrity" significant deficiency:

Surveyors are not required to climb above ground or elevated storage tanks. Please check with your surveyor prior to the site visit to determine if you will need to arrange to have system staff or contractors climb your storage tanks to allow for inspection of rooftop components. If your surveyor will not be climbing storage tanks, please have recent (within 1-year) photos of rooftop components available during the survey for review. These photos must include hatch height, hatch gasket (entire perimeter of the hatch), vent height, and vent screening (with a measurement reference in the screen photo).

The surveyor will evaluate the following:

Element	Description
Water source(s)	Evaluate water sources to ensure proper source protection
Treatment facilities	Evaluate treatment processes, facilities, components, and techniques
Distribution system	Evaluate the reliability and safety of the distribution system
Finished water storage	Evaluate the reliability and integrity of finished water storage tanks
Pumps and pump facilities	Evaluate operation and maintenance of water system pumps and pumping facilities
Monitoring, reporting, and data verification	Review paperwork, monitoring plans, and regulatory compliance
System management and operation	Review paperwork and plans to demonstrate that adequate maintenance is performed, and system operational needs are being met
Operator compliance	Review operator status to ensure operator certifications are current and at the appropriate levels

EPA Region 8 Drinking Water Websites

Drinking Water Online: https://www.epa.gov/region8-waterops/
Drinking Water Watch: https://sdwisdww.epa.gov/DWWR8WY/

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 8
1595 Wynkoop Street
DENVER, CO 80202-1129
Phone 800-227-8917
http://www.epa.gov/region08

Ref: 8P-W-DW

FEB 18 2016

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

[redacted]

Re: **2015 Sanitary Survey Report**
PWS ID#: WY5601613 C

Dear [redacted]

Enclosed is a report prepared for the U. S. Environmental Protection Agency (EPA) following a sanitary survey of the above-referenced water system on June 30, 2015. Please note each significant deficiency listed at the beginning of the report. To avoid receiving a violation, you must correct **each identified significant deficiency and submit documentation of the corrective action to the EPA within 6 months** from receipt of this letter and sanitary survey report.

If you will be unable to meet this standard corrective action timeframe, you must contact EPA with a written justification and proposed completion schedule as soon as possible. Each significant deficiency for this water system is listed below:

GROUND WATER RULE SIGNIFICANT DEFICIENCIES

Significant deficiencies for ground water systems are defined as defects in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system that the EPA determines to be causing, or to have the potential for causing, the introduction of contamination into the water delivered to consumers.

1) Facility ID: TP01 – Chlorinator (Treatment Plant)
Improper construction of air release-vacuum relief valves. (see photo #1)

For pipes equipped with an air release-vacuum relief valve, the air release piping must be covered with a #24 mesh corrosion-resistant screen.

2) Gravity Tank ID: ST01 - 540K Gal
Unknown integrity of storage tank air vent and access hatch. (see photo #4)

The sanitary surveyor was unable to evaluate the tank air vent and access hatch, and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Air Vents and Hatches to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.

In order to correct this significant deficiency you must provide EPA with the following documentation:

A completed copy of the Unknown Integrity Checklist.

A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.

The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions.

3) Distribution lines are not properly disinfected after repairs.

Failure to adequately disinfect drinking water lines following repair can lead to introduction of contamination into the distribution system. Water lines must be disinfected according to accepted standards (e.g. AWWA C651) following repair.

4) No emergency response plan (ERP).

The Emergency Response Plan (ERP) must detail emergency operations procedures for possible foreseeable emergencies such as power outage, loss of water, equipment failure, development of unsafe conditions, and other emergency conditions. Templates, including instructions, for developing ERPs may be found on the USEPA Region 8 Drinking Water Online website: http://www2.epa.gov/region8-waterops/reporting-forms-and-instructions-reporting-forms. Select the "Emergency Response Plan Templates" link on the main page.

You must correct each significant deficiency and provide a completed Correction Notice with photos of each correction within 6 months from receipt of this letter and sanitary survey report. The Significant Deficiency Correction Notice is enclosed and can also be found at the following website http://www2.epa.gov/region8-waterops/reporting-forms-and-instructions-reporting-forms and by selecting the Sanitary Survey link. To avoid receiving a violation, please provide this documentation to:

Ms. Gail Franklin, Ground Water Rule Manager
EPA Region 8, 8P-W-DW
1595 Wynkoop St.
Denver, CO 80222

Email: franklin.gail@epa.gov
Phone: 1-800-227-8917, extension 312-6497

Please be advised that a permit issued by the Wyoming Department of Environmental Quality (WY DEQ) may be required prior to your making physical modifications to a public water system, in accordance with Wyoming Statute 35-11-301. Include a written response to the respective WY DEQ District Engineer if any of the aforementioned significant deficiencies are followed by an asterisk (*), which indicates that a permit may be necessary. The email and phone number for the DEQ District Engineers may be found on Page 2 of the Sanitary Survey Report.

If you will be unable to meet this standard 6 month corrective action timeframe, a written response must be submitted to the EPA as soon as possible. This response must contain the following:

1. The public water system name and number;

2. Description of why you will be unable to meet the standard 6 month timeframe;

3. Description of the corrective action(s) to be taken to address each significant deficiency; and

4. A schedule including specific proposed dates for completing each corrective action. This schedule may include both short-term interim steps and longer term completion dates.

5. Include a written response to the respective WY DEQ listed on the second page of the survey report, prior to making any improvements, if any of the aforementioned deficiencies are followed by an asterisk (*). The asterisk indicates that a WY DEQ permit may be necessary.

If you have any questions regarding a significant deficiency or your corrective action plan, contact Ms. Gail Franklin. Ms. Franklin will provide you with a confirmation email or letter after receiving your response if you proposed a different corrective action timeframe.

The sanitary surveyor also identified at least one recommendation to improve the operation of the water system and to protect public health. While not required, EPA recommends that all such items be corrected. Please see the enclosed Sanitary Survey report for any recommendations.

Please contact us if your system has a change in the treatment process, you add or remove a water source, there is a change in the number of people served or number of water connections, or different contact information becomes available for your water system. This allows us to keep you up to date on monitoring requirements and keeps our inventory current. To access the EPA's change form, use this link and send us the completed form or give us a call.
http://www2.epa.gov/region8-waterops/wyoming-public-water-system-change-form

Thank you for your cooperation during the sanitary survey. If you have any questions regarding the sanitary survey, please call Jim Gindelberger at 1-800-227-8917, ext. 312-6984. If you have questions on specific regulations, please refer to the brochure enclosed with this letter, which contains the names and phone numbers for all of the EPA drinking water staff.

Sincerely,

Lisa Kahn, Unit Chief
Drinking Water Unit A

Enclosures
cc: [redacted]

2015 EPA Region 8 WY SANITARY SURVEY FORM
INVENTORY

DATE OF SURVEY: 6/30/2015	COUNTY: Lincoln	SURVEYOR NAME: J Kahlert
PWS ID: WY5601613	SYSTEM NAME: North Star Utility	

System representatives present at survey: [redacted]

Others present: [redacted]

Comments: ____

EMERGENCY CONTACT

[redacted]

SYSTEM OWNER OR MUNICIPAL LEGAL REPRESENTATIVE

[redacted]

PRIMARY ADMINISTRATIVE CONTACT
(to receive ALL correspondence from EPA)

[redacted]

ADDITIONAL CONTACT
(if any)

[redacted]

PUBLIC WORKS DIRECTOR,
CITY ENGINEER and/or WATER PLANT SUPERINTENDENT

[redacted]

DESIGNATED OPERATOR OF SYSTEM

[redacted]

ALTERNATE OPERATOR

[redacted]

WATER SYSTEM CLASSIFICATION
for operator certification

System Treatment Classification Level: 1

System Distribution Classification Level: 1

Comments: ____

Go to: http://deq.state.wy.us/wqd/www/opcert/index.asp
Click on: Check Facility Records

WATER SYSTEM CLASSIFICATION
from PWS Inventory

☒ C = Community

☐ NTNC = Non-Transient Non-Community

☐ NC = Transient Non-Community

Comments: ____

SYSTEM PHYSICAL ADDRESS

Street: No physical address

City: Alpine State: WY Zip: 83128

PHYSICAL LOCATION

Physical Location and Directions: The subdivisions are located in the vicinity of the intersection of US-26 and US-89, at Alpine Junction, on the north side of the Snake River.

DEQ DISTRICT ENGINEER

Mark Baron, P.E., **District Engineer**

Phone: 307-335-6962

Email: mark.baron@wyo.gov

COUNTY AND/OR CHS SANITARIAN

Dru Haderlie**, CHS Sanitarian**

Phone: 307-279-3276

Email: dru.haderlie@wyo.gov

PERIOD OF OPERATION

☒ Year-round

☐ Part of the year

From _____ to _____

Is this PWS operating with a lease on Federal land? ☐ Yes ☒ No

_____

If yes, Federal land name: _____

Comments: _____

SERVICE CONNECTIONS

Total Service Connections (Active and Inactive): 29
Total Residential: 26
How many residential connections are for year-round residents: 26
Total Non-Transient (non-residential): 3
Total Transient: 0

Service Connections Metered? ☒ Yes ☐ No _____

Number of metered service connections: 29

Comments: _____

OWNER TYPE

☐ 1 Federal Government

☒ 2 Private: Subdivision, Investor, Trust, Cooperative, Water Association, etc.

☐ 3 State Government

☐ 4 Local Government Authority: Commission, District, Municipality, City, etc.

☐ 5 Mixed Public/Private

☐ 6 Native American Indian Tribes & Reservations _____

☐ 7 Other _____

Comments: _____

POPULATION DIRECTLY SERVED
(do not include populations of consecutive PWSs)

Residential Population: 150
(Number of year-round residents utilizing PWS)

Non-Transient Population: 10
(Number of the same persons utilizing PWS Daily for 6 months of the year – i.e. students, employees)

Transient Population: 0
(Average number of transient persons served by PWS **daily** during peak 60 days of operation – i.e. customers, visitors)

Does the water system serve at least 25 individuals daily at least 60 days of the year (does not need to be consecutive days)? ☒ Yes ☐ No

☐ If the population has significantly changed since the last Survey or current inventory sheet, recommend EPA send new Basic Information Form (BIF)

Comments (source(s) of population info): _____

SERVICE CATEGORY (check all that apply)

☐ AP Airport
☐ BA Bathing/Swimming
☐ BR Bar
☐ CG Campground
☐ CH Church
☐ DC Daycare Center
☐ DR Dude Ranch
☐ HS Hospital
☐ IB Interstate Bottler
☐ IF Industrial/Agricultural
☐ IN Institution
☐ LB Local Bottler
☐ LO Lodge
☐ MA Marina
☐ MH Mobile Home Park
☐ MO Motel/Hotel
☐ PC Picnic Area
☐ RA Rest Area
☐ RC Recreation
☐ RS Residential
☐ RT Restaurant
☐ RV RV Park
☐ SC School
☒ SD Subdivision
☐ SK Ski Area
☐ SS Service Station
☐ US Water User's Association
☐ VC Visitor Center
☐ VM Vending Machine
☐ WH Water Hauler
☐ XX Other _____

Primary Service Category Description: Subdivision

Comments: _____

SOURCES (check all that apply)

☐ SW = Surface Water
☐ SWP = Surface Water Purchased
☒ GW = Groundwater
☐ GWP= Groundwater Purchased
☐ GWUDI = Ground Water Under the Direct Influence of Surface Water

If mixed, does GW receive full SW Treatment? ☐ Yes ☐ No.

Is the current water source adequate in quantity?
☒ Yes ☐ No Describe: _____

Have there been any interruptions in service since the last survey?
☐ Yes ☒ No Describe: _____

Have there been reports of a water borne disease (2 or more people)?
☐ Yes ☒ No Describe: _____

Have there been any changes to the water system since the last survey?
☐ Yes ☒ No Describe: _____

Are there any changes that are planned?
☒ Yes ☐ No Describe: Add up to 56 service connections from Alpine Airpark

Comments: _____

SUMMARY (Describe the water system in a paragraph or two)

North Star Utility is classified as a community groundwater system. Water is delivered through 26 residential and 3 commercial service connections. Two wells provide the source water which is chlorinated before storage in the 540,000-gallon storage tank (ST01). The water then flows by gravity to distribution, on demand. Sale of this PWS to the Town of Alpine (WY5600156) is expected to be completed in the fall of 2015.

The following abbreviations will be used throughout this document: NI = no information, NA = not applicable, NR = not requested, @ = potential significant deficiency.

SIGNIFICANT DEFICIENCIES

Significant deficiencies include, but are not limited to, defects in the design, operation, or maintenance, or a failure or malfunction of the sources, treatment, storage, or distribution system, that EPA determines to be causing, or have the potential for causing, the introduction of contamination into the water delivered to consumers. Please note the instructions for responding to significant deficiencies in the attached cover letter. Failure to provide a response to EPA could result in a violation.

1) Facility ID: TP01 – Chlorinator (Treatment Plant)
Improper construction of air release-vacuum relief valves. (see photo #1)

   For pipes equipped with an air release-vacuum relief valve, the air release piping must be covered with a #24 mesh corrosion-resistant screen.

2) Gravity Tank ID: ST01 - 540K Gal
Unknown integrity of storage tank air vent and access hatch. (see photo #4)

   The sanitary surveyor was unable to evaluate the tank air vent and access hatch, and the water system was not able to produce documentation of the condition of these components. Each item that could not be inspected during the sanitary survey must be inspected and the structure/condition must be compared to the enclosed Tech Tips for Finished Water Storage Air Vents and Hatches to determine if corrective action is needed. Tank inspectors can be third-party professionals or appropriately trained in-house staff.

   In order to correct this significant deficiency you must provide EPA with the following documentation:

   A completed copy of the Unknown Integrity Checklist.

   A copy of the inspection report. The inspection report must describe the condition of each specified tank component and include photographs.

   The date that any corrective actions needed to address deficiencies with the tank components will be completed. EPA will review the inspection report and may require additional corrective actions.

3) Distribution lines are not properly disinfected after repairs.

   Failure to adequately disinfect drinking water lines following repair can lead to introduction of contamination into the distribution system. Water lines must be disinfected according to accepted standards (e.g. AWWA C651) following repair.

4) No emergency response plan (ERP).

   The Emergency Response Plan (ERP) must detail emergency operations procedures for possible foreseeable emergencies such as power outage, loss of water, equipment failure, development of unsafe conditions, and other emergency conditions. Templates, including instructions, for developing ERPs may be found on the USEPA Region 8 Drinking Water Online website: http://www2.epa.gov/region8-waterops/reporting-forms-and-instructions-reporting-forms. Select the "Emergency Response Plan Templates" link on the main page.

RECOMMENDATIONS

1) Regular Chlorine Residual Monitoring – Community or NTNC System

The chlorine residual in the distribution system should be checked and recorded on a routine basis. Currently the chlorine residual is checked occasionally but this should be part of a routine maintenance schedule and included in the Operations and Maintenance manual.

Either free or total chlorine residual should be tested at least three times a week at different locations in the distribution system. If chloraminated water is used, you must measure for total chlorine residual. Chlorine residual is required to be tested concurrently with the collection of a Coliform compliance sample for a system that delivers disinfected water for public use.

A chlorine residual test kit should be procured and used by the system for regular chlorine residual monitoring.

2) Operation and Maintenance (O&M) Manual

An Operation and Maintenance manual should be developed that includes manufacturers' literature and standard operating procedures (SOPs). An O&M manual promotes consistent operation of the water system from operator to operator and helps to document system operating parameters. Written procedures should cover items such as daily operations, start-up and shutdown procedures, response to equipment failure and other emergency conditions. An attempt should be made to collect any records pertaining to the water system, including water testing results, as-built drawings, distribution maps/schematics, master meter water usage, and any other records pertaining to the operations and management of the water system.
A safety plan should be part of the O & M manual. All facilities should be inspected for potential hazards. Safety equipment, procedures, and training should address any hazards likely to be encountered by the operators or public.

3) Sample Siting Plan for the Total Coliform Rule

A sample siting plan for the Total Coliform Rule (TCR) could not be provided to the surveyor for review. The Total Coliform Rule requires public water systems to sample for coliforms according to a sample siting plan, which must be made available to the primacy agency for review and approval. Having a written sample collection protocol helps ensure that all sampling is done correctly, even when there is a change in the water system's personnel. The sample siting plan specifies where in the building or in the distribution system routine samples are taken to ensure that they are "representative" of the water supplied to consumers. Please contact Bre Bockstahler for information about this requirement (1-800-227-8917 ext. 312-6034 or bockstahler.breann@epa.gov).

4) **Threaded Hose Bib** (see photo #10)

Cross-connections exist when plumbing provides a pathway for contamination to enter the drinking water system during backflow events and present a potential public health threat. The survey identified a threaded *hose bib in the building with the chlorinator* which is a potential high hazard cross connection. An approved pressure vacuum breaker, atmospheric vacuum breaker, or double check valve assembly should be installed at the *hose bibs*. The water supplier should also develop and maintain a record keeping program and management procedures for cross connections. These procedures should ensure the installation and certification by test or inspection of all backflow prevention devices, and the annual testing and certification by a certified tester of all testable backflow prevention devices.

SOURCE DATA
ACTIVE (PHYSICALLY CONNECTED) WELLS AND WELL PUMPS ☐ NA
(if well is GWUDI and fully treated as SW, these will be recommendations)

Well Name:	Flying Saddle Lodge #1 (North Star Well #1)	Flying Saddle Lodge #2 (Well #2)	____
Well owner (if different than system owner):	____	____	____
Facility ID (from PWS inventory, e.g., WL01):	WL01	WL02	____
Well Location: (well house, well pit, pitless adapter, combination, driveway/parking lot, other)	Pitless Adapter	Pitless Adapter	____
Does system want this well to be considered inactive? @	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☐ No
Adequately protected from vehicle damage? @	☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☐ No
If well is located in a pit or vault, is the pit or vault completely watertight?	☐ Yes ☐ No ☒ NA ____	☐ Yes ☐ No ☒ NA ____	☐ Yes ☐ No ☐ NA ____
If no, is the pit or vault completed with drainage or a sump pump for permanent or portable use? @ If applicable, indicate type (permanent pump, portable pump, or drainage)	☐ Yes ☐ No ☒ NA Type: ____	☐ Yes ☐ No ☒ NA Type: ____	☐ Yes ☐ No ☐ NA Type: ____
Is the pit located in a building?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
WY DEQ and/or WY SEO permit #:	101241; 178318 enl	101242; 178319 enl	____
Are there any approved WY DEQ Chapter 12 variances for this well? If yes, describe what type of variance was approved.	☐ Yes ☒ No ____	☐ Yes ☒ No ____	☐ Yes ☐ No ____
Total Well Depth (ft):	200	154	____
Depth range of shallowest casing perforations (ft):	40 to 200	94 to 154	____ to ____
Actual yield (gpm):	90	230	____
Well log or Statement of Completion on site? **(If yes, please copy or photograph and submit with report)**	☒ Yes ☐ No	☒ Yes ☐ No	☐ Yes ☐ No
Well Construction			
Does SW runoff drain away from the wellhead (including wells in pits or vaults)? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Does well casing terminate at least 12" above the concrete floor? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
Does the well casing terminate at least 18" above the natural ground surface? @	☒ Yes ☐ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA
What is the actual casing height (inches)?	18	11.5	____
Any holes or openings observed in the well or its appurtenances? @	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA
If yes, describe.	____	____	____
Does the well have a sanitary seal with tightly bolted cap? @ (May need operator to open well cap to verify; explain why if unable to verify)	☒ Yes ☐ No ☐ Unknown ____	☒ Yes ☐ No ☐ Unknown ____	☐ Yes ☐ No ☐ Unknown ____
Is well vented (vent not required)?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
What is the height from the ground level to the screen of the vent (inches)?	19.5	13	____
Does the vent terminate at or above the top of the casing or pitless unit? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is vent facing downward? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Vent screened with #24 mesh? @	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is there a source water sample tap for GWR compliance?	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA
Is there an air release/vacuum relief valve (not required)?	☒ Yes ☐ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA
Discharge Piping Termination			
- In a downward position? @	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
- At least 8" above the floor? @	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
- Screened with #24 mesh? @	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA

SOURCE DATA
ACTIVE (PHYSICALLY CONNECTED) WELLS AND WELL PUMPS ☐ NA
(if well is GWUDI and fully treated as SW, these will be recommendations)

Well Name:	Flying Saddle Lodge #1 (North Star Well #1)	Flying Saddle Lodge #2 (Well #2)	____
Comments:	____	Well casing height OK	____
Well Pumps			
Submersible Pump?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Other type of pump? (if other, describe and indicate location in the comment field below)	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA
NSF-60 lubricant used?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
Operable and in good condition?	☒ Yes ☐ No ☐ NA	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Maintenance program in place?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
Is the external pump subject to flooding? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA
Spare parts available?	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA
Emergency power available?	☐ Yes ☒ No ☐ NA	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA
Comments	____	____	____

Are there any sources of pollution near the wells which could impact water quality? @ ☐ Yes ☒ No

If yes, indicate impacted well(s) and provide general location and comments: ____

(Examples: Septic systems, chemical storage/mixing facilities, agriculture activities, industrial activities, cleaning supplies, oil/fuel, etc) (please locate on aerial map if possible)

Mice or other animals and their droppings in immediate area @ ☐ Yes ☒ No ____

Are there seasonal variations in the quantity of the water? ☒ Yes ☐ No ____

Are there seasonal variations in the quality of the water? ☐ Yes ☒ No ____

Comments: ____

SOURCE DATA
EMERGENCY BACKUP SOURCE WATER

Describe any backup source water possibly available during an emergency to the PWS, or indicate none: None

Is the backup water source physically disconnected from the water system? ☐ Yes ☐ No _____
(if this is a raw water source and is still physically connected to the system, then complete the applicable source data section)

Backup source name: _____

Facility ID (from PWS Inventory, e.g., IN01, WL01, etc.): _____

WY DEQ permit number: _____

WY SEO permit number: _____

Please copy or photograph any available construction diagrams or "as-builts" and submit with the sanitary survey report

Are there any sources of pollution near the water source (e.g., agriculture/industrial activities, cleaning supplies, oil/fuel, etc.) which could impact water quality? @ ☐ Yes ☐ No

If yes, provide general location and comments: _____

Are there seasonal variations in the quantity of the water? ☐ Yes ☐ No _____

Are there seasonal variations in the quality of the water? ☐ Yes ☐ No _____

RAW WATER TO TREATMENT PLANT TRANSMISSION LINE ☐ NA

Name or designation: No designation

SW ☐ GW ☒

Point of origin: WL01 & WL02

Point of termination: Chlorinator (TP01)

Material: PVC

Are there any service connections off the raw water transmission line? @ ☐ Yes ☒ No _____
(Check yes only if the water system provides treatment)

What does each connection serve? _____

GRAVITY TANKS ☐ NA

(Instructions to Surveyor, delete before submitting to EPA) Complete for all tanks at ground water systems and consecutive systems. Also complete for finished water tanks at surface water / GWUDI systems. (Includes indoor clearwells or other finished water tanks.)

Tank Name:	**540K Gal Tank**	____	____
Tank ID (from PWS inventory, e.g., ST01):	ST01	____	____
Tank owner (if different than system owner):	____	____	____
Location (indoor or outdoor), Description: ____	Outdoor	____	____
Date put into service	2006	____	____
Tank Type — Below ground (buried or partially buried) / Ground level / Elevated (pedestal or standpipe)	☐ / ☒ / ☐	☐ / ☐ / ☐	☐ / ☐ / ☐
Tank is constructed of: — Concrete / Steel / Fiberglass / Other	☐ / ☒ / ☐ / ____	☐ / ☐ / ☐ / ____	☐ / ☐ / ☐ / ____
What type of water is stored (GW systems only)?	☒ Treated ☐ Raw	☐ Treated ☐ Raw	☐ Treated ☐ Raw
Storage Volume (gallons)?	540,000	____	____
Are there any approved WY DEQ Chapter 12 variances for this tank? If yes, describe what type of variance was approved.	☐ Yes ☒ No ____	☐ Yes ☐ No ____	☐ Yes ☐ No ____
Is the site subject to flooding? @	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No
Can the tank be isolated from the system?	☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Is the water level indicator accurate?	☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Does the tank appear structurally sound? @	☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Does the foundation appear structurally sound? @	☒ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Are there any unprotected openings in the tank (breaches, leaks, etc)? @	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No
If the tank is more than 10 years old, was it cleaned and inspected within the last 10 years? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
When and how was the tank last cleaned and inspected?	NA	____	____
Who performed the cleaning and inspection?	NA	____	____
How was the tank disinfected after cleaning?	NA	____	____
Surveyor able to view report and confirm date?	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No
Overflow			
Is the overflow accessible for inspection? @	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Overflow has a #24 mesh screen OR a duckbill valve OR a properly sealed flapper valve with screen inside (EPA recommends a #24 mesh screen)? @	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Does the overflow line terminate no less than 12 inches but no more than 24 inches above the ground surface? @	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Does the overflow discharge over an inlet structure, splash plate, or engineered rip-rap? @	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is the discharge visible?	☒ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Does the overflow have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Comments about overflow:	Overflow discharges approximatly 31 inches above rip-rap. Height OK	____	____
Drain Line			
Combined overflow and drain pipe? (If yes, skip drain questions)	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is the drain accessible for inspection? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is there #24 mesh screen on the drain pipe?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Does water accumulate in the drain discharge area?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA

GRAVITY TANKS ☐ NA

(Instructions to Surveyor, delete before submitting to EPA) Complete for all tanks at ground water systems and consecutive systems. Also complete for finished water tanks at surface water / GWUDI systems. (Includes indoor clearwells or other finished water tanks.)

Tank Name:	**540K Gal Tank**	____	____
Does the drain pipe have an air gap of 3 or more pipe diameters above the entrance to any storm or sanitary sewer? @	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Does the drain pipe terminate between 12 and 24 inches above a drainage area?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Does the drain pipe terminate above an inlet structure, splash plate, or engineered rip-rap?	☐ Yes ☐ No ☒ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Comments about drain:	Drains through distribution.	____	____
Air Vent			
Is the vent accessible for inspection? @	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
For above ground tanks (ground level or elevated/standpipe):			
Is there #24 mesh screen? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
If not #24 mesh screen, what size mesh is the screen?	____	____	____
Does the tank have a vacuum/pressure relief valve or other mechanism to prevent tank damage?	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is the screen on the inside of the vent pipe to discourage vandalism?	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Downturned vent: Is the vent at least 24" or 3 pipe diameters above the roof? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
For non-downturned vents: Is there a solid cover down to the bottom of the vent screen? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
For non-downturned vents: Is the screen at least 8" above the roof surface? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Below Ground Tanks (buried or partially buried)			
Is air vent covered with #24 mesh screen? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is the screen on the inside of the vent pipe to discourage vandalism?	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Does the air vent terminate downward? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is the air vent at least 24" above the roof or ground surface (whichever is higher)? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Comments about air vent:	Unknown integrity	____	____
Access Hatch			
Is the hatch accessible for inspection? @	☐ Yes ☒ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is the hatch raised at least 24" above the roof or ground (whichever is higher) on below ground tanks (buried or partially buried) or 4" above the roof for above ground tanks (ground level or elevated)? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
What is the height of the access hatch above the roof or ground surface?	____ in	____ in	____ in
Does the hatch have a shoe box lid? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is the lid tight and sealed with a rubber gasket? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Is the hatch locked? @	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA	☐ Yes ☐ No ☐ NA
Comments about access hatch:	Unknown integrity	____	____
Comments:	____	____	____

WATER TREATMENT DATA
GROUNDWATER and CONSECUTIVE SYSTEMS THAT HAVE AVAILABLE TREATMENT

☐ NA

Describe the steps (as many as necessary) of the treatment process in order from the water source to distribution: Water is treated with sodium hypochlorite solution injection. No other treatment is provided.

Plant Output (gal/day)

Design: NI

Maximum: NI

	Step 1	**Step 2**	**Step 3**	**Step 4**
Process	☒ Chemical Type: Sodium Hypochlorite ☐ NSF 60 Certified? ☐ UV ☐ Filtration ☐ Ion exchange ☐ Softener ☐ Other: ____	☐ Chemical Type: ____ ☐ NSF 60 Certified? ☐ UV ☐ Filtration ☐ Ion exchange ☐ Softener ☐ Other: ____	☐ Chemical Type: ____ ☐ NSF 60 Certified? ☐ UV ☐ Filtration ☐ Ion exchange ☐ Softener ☐ Other: ____	☐ Chemical Type: ____ ☐ NSF 60 Certified? ☐ UV ☐ Filtration ☐ Ion exchange ☐ Softener ☐ Other: ____
Objective:	☒ Treatment of bacteria, viruses ☐ Turbidity removal ☐ Hardness removal ☐ Taste & odor removal ☐ Metals removal ☐ Other: ____	☐ Treatment of bacteria, viruses ☐ Turbidity removal ☐ Hardness removal ☐ Taste & odor removal ☐ Metals removal ☐ Other: ____	☐ Treatment of bacteria, viruses ☐ Turbidity removal ☐ Hardness removal ☐ Taste & odor removal ☐ Metals removal ☐ Other: ____	☐ Treatment of bacteria, viruses ☐ Turbidity removal ☐ Hardness removal ☐ Taste & odor removal ☐ Metals removal ☐ Other: ____
Is this process required by EPA?	☐ Yes ☒ No	☐ Yes ☐ No	☐ Yes ☐ No	☐ Yes ☐ No
Location of process?	☐ At Well ☒ At Treatment Plant ☐ Other: ____	☐ At Well ☐ At Treatment Plant ☐ Other: ____	☐ At Well ☐ At Treatment Plant ☐ Other: ____	☐ At Well ☐ At Treatment Plant ☐ Other: ____
Is this process adequate to meet the objective?	☒ Yes ☐ No Explain: No TCR positives	☐ Yes ☐ No Explain: ____	☐ Yes ☐ No Explain: ____	☐ Yes ☐ No Explain: ____
Frequency of use:	☒ Permanent ☐ Seasonal ☐ Emergency ☐ Other: ____	☐ Permanent ☐ Seasonal ☐ Emergency ☐ Other: ____	☐ Permanent ☐ Seasonal ☐ Emergency ☐ Other: ____	☐ Permanent ☐ Seasonal ☐ Emergency ☐ Other: ____

Groundwater and Consecutive Systems
Chemical Disinfection

Type: Sodium Hypochlorite 12% Dosage: 0.5 to 0.8 ppm (lb / day or ppm) NSF 60 Certified? ☒ Yes ☐ No

Point of application: Treatment Plant

Yes	**No**	
☐	☒	Is there redundant disinfection equipment?
☐	☒	Is there emergency power for the disinfection equipment?

DISTRIBUTION DATA

Please provide a brief description of the distribution system, including source to use piping: Approximately 4 miles of 8-inch PVC.

What are the location and estimated linear feet of asbestos pipe in the distribution system? None

Have lines broken due to freezing? ☐ Yes ☒ No _____

Have lines broken due to traffic load? ☐ Yes ☒ No _____

Are lines properly disinfected after repairs are made? @ ☐ Yes ☒ No Rely on system chlorinator (TP01).

Is there at least 35 psi pressure in the distribution system at peak normal flow? ☒ Yes ☐ No 75 to 90 psi

Is there at least 20 psi at all points in the system at all times? @ ☒ Yes ☐ No _____

Total number of days of storage (Summer)? NI

Total number of days of storage (Winter)? NI

	Yes	No	NA
Is the storage capacity adequate to meet current needs?	☒	☐	☐
Is the storage capacity adequate to meet future needs?	☒	☐	☐

Comments: _____

Location, length, number, and flushing frequency for dead ends in the system: None

Are distribution system ("as-built") drawings maintained (e.g., revised to show replacement or repair?) ☒ Yes ☐ No _____

For systems that add a chemical disinfectant or receive disinfected water from a wholesaler: NA ☐

Yes	No	
☒	☐	Is test equipment available for measuring the chlorine residual in the distribution system? Describe equipment: Test tube for HACH meter.
☒	☐	Are reagents up to date? _____
☐	☒	Does the operator know how to properly measure chlorine residual? Possibly, but not demonstrated.

Measured chlorine residual distribution system location: Between treatment plant and storage tank.

Indicate residual value measured at this distribution system location: By Surveyor: 0.28 (mg/L) By PWS: Positive (pink water in test tube) (mg/L)

Indicate if free or total chlorine was measured: Total

It is recommended that a minimum residual of 0.5 mg/L total chlorine or 0.2 mg/L free chlorine be maintained.

CROSS CONNECTION CONTROL

	Yes	No	NA	
Does each severe hazard connection have the appropriate reduced pressure backflow assembly installed at the meter/service connection and approved air gap (twice the size of the supply pipe diameter but always greater than one inch)? If no, describe each severe hazard connection and its location. @	☐	☐	☒	____
Severe hazard connections include radioactive materials processors, nuclear reactors, and sewage treatment plants/pump stations.				
Does each high hazard connection in the treatment plant or distribution system have the appropriate air gap or reduced pressure backflow assembly installed? If no, describe each high hazard connection and its location. @	☐	☐	☒	____
High hazard connections include hospitals, medical/dental facilities, laboratories, mortuaries, large taxidermies, chemical suppliers/processing facilities, petroleum plants, food processing facilities, wastewater treatment plants, water fill points/loading stations, piers and docks, car washes, dry cleaners, direct connections to raw or non-potable water, and any service connection with an unapproved auxiliary supply.				
Do **trailers or mobile homes connected directly to the PWS** via a yard hydrant have a double check valve assembly at each connection?	☒	☐	☐	____
Are any **frost-free hydrants** that drain into the soil directly connected to this PWS?	☐	☒	☐	____
Are there any leaking system components in the water system not previously noted (e.g., air-release/vacuum relief valves)? @	☐	☒	☐	
Explain where and what was leaking: ____				
At Community PWS, do all low hazard connections have the appropriate double check valve assemblies installed at the meter or service connection?	☒	☐	☐	____
Low hazard connections include mobile home parks, farms/dairies, ranches, and shopping centers.				
For Non-community Systems, do the following connections have the indicated type of backflow prevention assemblies?				
Stock tanks – approved air gap or atmospheric vacuum breaker at the tank? @	☐	☐	☒	____
Threaded yard hydrants – pressure vacuum breaker, atmospheric vacuum breaker or double check valve assembly.	☐	☐	☒	____
Does the water supplier have a record keeping program and management procedures to ensure:				
The installation and certification by test or inspection of all backflow preventers (BFPs) at new service connections	☐	☒	☐	____
The annual passing test certification by a certified tester of all high-hazard BFPs at service connections.	☐	☒	☐	____

SAFETY

	Yes	No	NA	
Personnel Safety				
Are all personnel trained in proper handling of all utilized chemicals and materials?	☒	☐	☐	____
Are adequate masks, protective clothing, and safety equipment provided?	☒	☐	☐	____
Does the operator understand relevant Occupational Safety and Health Administration (OSHA) regulations (e.g., confined space, hazard communication, trenching/shoring, lock out/tag out)?	☒	☐	☐	____
Chlorine Gas Safety			☒	
Are there chlorine warnings posted on the outside of chlorine room doors?	☐	☐	☐	____
Do the doors open outward?	☐	☐	☐	____
Do they open to the exterior of the building?	☐	☐	☐	____
Are chlorine room doors equipped with crash bars?	☐	☐	☐	____
Are chlorine room doors equipped with viewports?	☐	☐	☐	____
Is there a leak detector in the chlorine room with an audible alarm?	☐	☐	☐	____
Are chlorine feed and storage areas isolated from other facilities?	☐	☐	☐	____
Are chlorine areas adequately ventilated?	☐	☐	☐	____
Are all chlorine cylinders adequately restrained?	☐	☐	☐	____
Are self-contained breathing apparatus available for use in chlorine emergencies?	☐	☐	☐	____
Where are they stored?				____
Are they in good working condition?	☐	☐	☐	____
Are water system personnel adequately trained in the use and maintenance of the self-contained breathing apparatus?	☐	☐	☐	____
Are chlorine leak kits available and are all personnel trained in their proper use?	☐	☐	☐	____
Chemical Safety			☐	
Are oxidizers, corrosives, and flammables stored in separate areas and in closed, marked containers?	☒	☐	☐	____
Are flammables stored in appropriate containers and cabinets away from combustion sources?	☒	☐	☐	____
Is there adequate ventilation in the areas where solvents, aerosols, and chemical feeders are in use?	☒	☐	☐	____
Are bulk storage areas physically isolated from treatment areas to prevent spills from entering treated or untreated water?	☒	☐	☐	____
Is the fire department familiar with the facilities and their contents?	☒	☐	☐	____

MANAGEMENT DATA

	Yes	No	NA	
Are there rules governing new hookups to protect the integrity of this water system?	☒	☐	☐	____
Are DEQ construction specifications followed?	☒	☐	☐	____
Is the treatment plant being properly operated to prevent inadequately treated water from being sent to the distribution system? @	☒	☐	☐	____
Does the system have arrangements in place to assure prompt supply and repair service?	☒	☐	☐	____
Does the system have a current operations and maintenance manual which describes all procedures, equipment, sampling schedules and inspection data?	☐	☒	☐	____
Is there a schedule for routine preventative maintenance for all facilities and equipment?	☐	☒	☐	____
Does the system (treatment plant, finished water storage) have security measures in place (fencing, locks, lighting, alarms, etc.)?	☒	☐	☐	____
Does the system have an emergency response plan (ERP) – system does not need to show the surveyor the ERP --that includes: @	☐	☒	☐	____
- Emergency contact phone numbers?	☐	☐	☒	____
- Procedures to respond to a pressure loss/water outage?	☐	☐	☒	____
- Procedures to respond to a water contamination incident?	☐	☐	☒	____
Is the ERP accessible to the operator on-site?	☐	☐	☒	____
Is the system part of the state's WARN network?	☐	☒	☐	____
Have you evaluated possible impacts to your system from extreme weather events?	☐	☒	☐	____
If yes, what was the outcome? ____				
Are you interested in training on extreme weather events?	☐	☒		
Have you evaluated your facilities to see if they are in the 100 and 500 year flood plains?	☐	☒	☐	____
If yes, what was the outcome? ____				
What percentage of the utility's power comes from your own renewable energy sources? Zero % wind: ____ % solar: ____ % hydro: ____				

MONITORING AND RECORDS

Total Coliform Rule (TCR) monitoring (all systems)	Yes	No	NA	
Does the operator know how to collect samples for total coliform analysis? (Review operator sampling procedure at time of survey to confirm)	☒	☐	☐	____
Does the operator know what to do in the event of a total coliform "unsafe" result? (Consult the "TCR/E-coli Positives" link on the Drinking Water Online site: http://www2.epa.gov/region8-waterops)	☒	☐	☐	____
Are extra bottles available in case of need for repeat Total Coliform Rule (TCR) sampling?	☒	☐	☐	____
Does the system have a TCR sampling plan on file and available for the surveyor's review?	☐	☒	☐	____
Is it up to date?	☐	☐	☒	____
If subject to the Ground Water Rule (GWR), does the operator know:			☐	____
Within 24 hours of being notified of a *routine* TCR positive sample result, they must collect one triggered source water sample for *every* routine TCR positive sample at each active ground water source (e.g., three routine TCR positive samples requires the operator to collect three source water samples from *each* ground water source)?	☒	☐	☐	____
They will need to submit both:				
• Repeat samples under the TCR (utilizing their regular lab form)?	☒	☐	☐	____
• Source water samples utilizing the Ground Water Rule Sample Collection Form located on the Drinking Water Online site (http://www2.epa.gov/region8-waterops)?	☒	☐	☐	____
Where to sample if they are required to sample all of their active ground water sources?	☒	☐	☐	____
Are extra bottles available in case of the need for GWR source sampling?	☒	☐	☐	____
For Community and NTNC systems (including consecutives):			☐	____
Is there a Disinfection Byproducts Rule Monitoring Plan on-site available for the surveyor's review?	☒	☐	☐	____
- Is it up-to-date reflecting the current distribution system?	☒	☐	☐	____
- What types of maximum residual disinfectant levels (MRDLs) are measured (free, total or combined chlorine)?	☐	☐	☐	Total
Does the system have a Lead & Copper sample siting plan on file and available for the surveyor's review?	☒	☐	☐	____
- Is it up to date?	☒	☐	☐	Incomplete
Does the operator know the location of each entry point to the distribution system?	☒	☐	☐	____
Does the operator know how to properly label samples taken from the entry points?	☒	☐	☐	____
Has the PWS completed the monitoring that is specified in the EPA-provided monitoring schedule so far for this calendar year?	☒	☐	☐	____
Are copies of all monitoring results filed and readily accessible?	☒	☐	☐	____
Is the operator familiar with the Drinking Water Online (http://www2.epa.gov/region8-waterops) and Drinking Water Watch (https://sdwisr8.epa.gov/Region8DWW/JSP/loginForm.jsp) websites created for their benefit?	☒	☐	☐	____

EPA Official Photographs
PWS #: WY5601613
System Name: North Star Utility
County: Lincoln
Date: 06/30/2015
Photographer: Jason Kahlert, PG

Photo#: 1

Subject: Air Release/Vacuum Relief Valve in Chlorinator (TP01) Building

Comments: There is no 24-mesh screen on this air release vacuum relief discharge pipe.

Photo#: 2

Subject: Enl. Flying Saddle Lodge #2 (Well #2)

Comments: East view. Well is 11.5 inches above grade.

EPA Official Photographs
PWS #: WY5601613
System Name: North Star Utility
County: Lincoln
Date: 06/30/2015
Photographer: Jason Kahlert, PG

Photo#: 3

Subject: 540 K Gal (ST01) Storage Tank Overflow Outfall

Comments: The overflow outfall is more than 24 inches above the engineered rip rap.

Photo#: 4

Subject: 540 K Gal (ST01) Storage Tank Vent and Hatch

Comments: Northwest view. Unable to inspect the storage tank vent or hatch.

EPA Official Photographs
PWS #: WY5601613
System Name: North Star Utility
County: Lincoln
Date: 06/30/2015
Photographer: Jason Kahlert, PG

Photo#: 5

Subject: Enl. Flying Saddle Lodge #1 (North Star Well #1 [WL01])

Comments: Northwest view. The Snake River is visible behind the bushes. The top of the well casing is 18 inches above grade as measured from the southeast side (far side) of the well.

Photo#: 6

Subject: Enl. Flying Saddle Lodge #2 (Well #2 [WL02])

Comments: West view. WL01 is located next to the building in the background.

EPA Official Photographs
PWS #: WY5601613
System Name: North Star Utility
County: Lincoln
Date: 06/30/2015
Photographer: Jason Kahlert, PG

Photo#: 7

Subject: 540 K Gal (ST01) Storage Tank

Comments: West view

Photo#: 8

Subject: Chlorinator (TP01)

Comments: The air release/vacuum relief valve is visible on the top left.

EPA Official Photographs
PWS #: WY5601613
System Name: North Star Utility
County: Lincoln
Date: 06/30/2015
Photographer: Jason Kahlert, PG

Photo#: 9

Subject: Chlorinator (TP01) Building

Comments: North view.

Photo#: 10

Subject: Chlorinator (TP01) Building Piping

Comments: No backflow prevention device is on the hose bib on the right with the hose attached.

EPA Official Photographs
PWS #: WY5601613
System Name: North Star Utility
County: Lincoln
Date: 06/30/2015
Photographer: Jason Kahlert, PG

Photo#: 11

Subject: Chlorinator (TP01) Building Piping

Comments: Chlorinator and air release/vacuum relief valve are visible in the center of the photo.

APPENDIX C

Operations & Maintenance Information

SUGGESTED CHECKLIST FOR PUBLIC WATER SUPPLY SYSTEM OPERATION & MAINTENANCE MANUAL

- Map of all source/intakes and raw water transmission lines to plant(s)
- Map of current finished water distribution system
- Inventory List of property, service lines, equipment, tools and instruments; include manufacturer, model, serial number, and condition
- Locations of spare parts (including pumps and backup power source) and vendor contact information or repair service used
- O&M technical manuals for equipment and water system facilities (e.g. treatment plant, distribution system)
- Lists of daily, weekly, monthly, quarterly, and/or annual maintenance tasks to be performed. Log sheets for recording maintenance performed.
- Location of first-aid instructions and supplies.
- Contact names, telephone/fax numbers and email addresses for:
    - System operators, including contract support;
    - System owners or local government officials;
    - EPA Region 8;
    - WY DEQ District Office/Tribal Environmental Director;
    - State/County Public Health or Indian Health Service/Bureau of Reclamation;
    - Certified laboratories used, with identification for each type of sample analyzed; and
    - Local responders (law enforcement, fire, hazmat)
    - Experienced operators at nearby systems who can serve as backup or provide help in an emergency.
- Monitoring Plan: Current Year EPA monitoring requirements, location of sampling or monitoring sites, sampling/reporting forms, and instructions for reporting and recordkeeping.
- Location of sampling and monitoring records
- Location of other formal communications from/to EPA Region 8 and others on the contact list above
- Locations of spare sample bottles, sampling technique information; monitoring plans
- Instructions when notified by lab of RTCR/fecal positive sample
- Location of public notice forms and instructions
- Instructions for pressure loss in system (flow chart)
- Instructions for flushing and shock chlorinating tanks, wells, distribution system mains, etc.
- Location of secured instructions for maintaining security in your system.
- Take-Away Emergency Response Plan: (1) Flow charts for operators to handle specific problems (main breaks, chlorine leaks, chemical spills); (2) Names and phone/fax numbers of state and local responders (police, fire, hazmat, county, etc.) (3) Names/numbers of county and state agencies to call if waterborne disease outbreak or other health emergency.

Examples of Operation & Maintenance Tasks

Listed below are examples of tasks that might be included in your Operations and Maintenance Manual and instructions to persons involved in servicing your public water supply system. Use these lists only as examples for creating your own lists appropriate to your system.

Examples of **Daily Tasks:**

- Check water meter readings and record water production.
- Check chemical solution tanks and record amounts used.
- Check and record water levels in storage tanks.
- Inspect chemical feed pumps.
- Check and record chlorine residual at the point of application.
- Check and record chlorine residual in the distribution system.
- Inspect booster pump stations.
- Check and record fluoride concentration in the distribution system.
- Record well pump running times and pump cycle starts.
- Check instrumentation for proper signal input/output.
  Investigate customer complaints. Record threats or suspicious activity.
- Complete a daily security check.
- Inspect heater operation during winter months.
- Inspect well pumps, motors, and controls.

Examples of **Weekly** Tasks:

- Inspect chlorine and fluoride testing equipment.
- Clean pump house and grounds. Make sure fire hydrants (if any) are accessible.
- Record pumping rate for each well or source water pump.
- Conduct weekly security check.

Examples of **Monthly** Tasks:

- Read electric meter at pump house and record.
- Take appropriate monthly water quality samples.
- Check and record static and pumping levels of each well.
- Read all customer meters and compare against total water produced for the month.
- Inspect well heads.
- Lubricate locks.
- Check on-site readings against lab results.
- Confirm submittal of monthly reports.

Examples of **Annual** Tasks:

Possible time-of-year for each task is provided in parentheses.

- Overhaul chemical feed pumps, such as O-rings, check valves, and diaphragms. (first Monday in January)
- Inspect and clean chemical feed lines and solution tanks. (first Monday in January)
- Calibrate chemical feed pumps after overhaul. (first Monday in January)
- Begin Safety Equipment Repair Log. Maintain log continuously throughout the year. (first Monday in January)
- Operate all valves inside the treatment plant and pump house. Maintain log continuously throughout the year. (first Monday in January)
- Review emergency response plans. (first Monday in January)
- Inspect chemical safety equipment and repair or replace as needed. (first Monday in February)
- Operate all valves inside the treatment plant and pump house. (first Monday in February)
- Inspect, clean, and repair control panels in pump house and treatment plant. (first Monday in March)
- Exercise half of all mainline valves. (first Monday in March)
- Inspect and clean chemical feed lines and solution tanks. (first Monday in April)
- Calibrate chemical feed pumps. (first Monday in April)
- Inspect storage tanks for defects and sanitary deficiencies. (first Monday in May)
- Clean storage tanks if necessary. (first Monday in May)
- Flush the distribution system and exercise/check all fire hydrant valves. (first Monday in June)
- Perform preventive maintenance on treatment plant and pump house buildings. (first Monday in June)
- Inspect and clean chemical feed lines and solution tanks. (first Monday in July)
- Calibrate chemical feed pumps. (first Monday in July)
- Prepare a demand forecast. Identify and evaluate energy conservation measures (for your utility). Identify and evaluate distribution system leaks. Establish/update water loss mitigation program. Establish/update customer incentive program for water-efficient home devices. (first Monday in July)
- Operate all valves inside the treatment plant and pump house. (first Monday in August)
- Exercise mainline valves that were not exercised in March. (first Monday in September)
- Prepare system for winter operation. This task may be postponed until October or November, depending on local conditions. (first Monday in September)
- Make sure unnecessary equipment is properly decommissioned. (first Monday in September)
- Inspect and clean chemical feed lines and solution tanks. (first Monday in October)
- Calibrate chemical feed pumps. (first Monday in October)
- Prepare system for winter operation if not completed in September or October. (first Monday in November)
- Contact an electrician to check running amps on well pumps. (first Monday in December)

Coteau-du-Lac, Québec Tel.: (450) 455-0961
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INSTALLATION INSTRUCTION #44E

ELECTRONIC THERMOSTAT

Model No. UTC-2030-(program code #)
and
Model No. UTC-2230-(program code #)
(with 2-pole circuit breaker)
and
Contactor version

These electronic thermostats are designed to control one or more heating cables having a total current draw that does not exceed 30 A for the relay version and up to 60 A for the contactor version. They can be fitted with up to three temperature sensors as required by the application. Because separate temperature sensors are used, they may be installed on the pipe during the initial installation phase while the controller itself may only be installed at a later date.

Features include:

- Universal power supply allowing operation at 120 to 240 Vac without wiring modifications.
- Internal ground fault detection circuitry eliminating the need for an external ground fault device. Alarm only or alarm and trip is activated when ground fault condition is present.
- Three temperature sensor inputs: TS1 for pipe temperature control, TS2 (when enabled) for pipe temperature control at another location on the piping system and TS3 (when enabled) to serve as a high temperature limit for plastic piping protection. An alarm is activated when an enabled "open" or "shorted" sensor is detected.
- Low temperature alarm on both controlling sensors TS1 and TS2. Alarm level is factory set at a dedicated level for each sensor.
- On-off control with a 1°C *(1.8 °F)* temperature differential for accurate control of piping systems. This close tolerance control can save thousands of kilowatt-hours of power consumption and is ideal to control electric tracing systems in locations where power is costly.
- Override input (factory programmable): timed between 1-48 hours or non-timed.
- Auto-cycle function (when enabled) momentarily turns on heating cable at 24 hours interval to monitor ground fault condition of the load.
- One three-color LED indicator lamp mounted on the door of the controller operates as follows:
  - Green: When illuminated, the power supply to the controller is 'on' and the pipe temperature at the sensor is above the setpoint. When extinguished, the power supply is 'off'.
  - Amber: When illuminated, the temperature controller is calling for heat.
  - Red: When illuminated, this indicates that one of the alarms has been triggered. Controller is not calling for heat.
  - Amber and Red (alternating): This indicates that one of the alarms has been triggered. Controller is calling for heat.
- Non-volatile memory retains all programmed parameters in the event of a power outage.

Conducted and radiated emissions FCC/DOC statement of compliance

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular

installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This Class B digital apparatus complies with Canadian ICES-003.

Installation:

- Be sure that the personnel involved in the installation and servicing is qualified and familiar with electrical equipment, their ratings and applicable codes.
- The wide ambient operating temperature range of the temperature controller allows installation in any convenient location. Considerations should include exposure to weather elements and accessibility for maintenance and testing.
- Mounting hole positions are shown on the drawings in annexes A, B and C.
- Backplate should be removed from the enclosure before any holes are drilled or cut to prevent damage due to flying debris.
- Conduit/cable entries should be made on the bottom of the enclosure to reduce the possibility of water entry. Avoid having holes drilled on the sides adjacent to the electronic components.
- The user may choose to drill 3 mm *(1/8 in)* drain holes on the bottom of the enclosure on both the left and right sides (note that drilling holes in the enclosure compromises the Nema 4 rating).
- Use connector bushings suitable for the enclosure type and install such that the completed installation remains waterproof.

Wiring:

- Always verify wiring connections before applying power to the controller. To avoid injury or equipment damage, do not install or remove wiring while controller is powered.
- To minimize chances of loose connections, lever-operated spring-loaded terminals are used for signal wiring.
- Use shielded, twisted, three-conductor wire for the extension of the RTD leads.
- Use shielded, twisted, two-conductor wire for the extension of the thermistor leads.
- Shields on the temperature sensor wiring should be grounded only at the controller end using the appropriate terminals provided (# 4, 8 and 15).

  Note: Some sensor constructions may have continuity between the drain wire and the metal housing at the tip; in this case, the drain wire should not be connected to ground. Drain wire continuity should be verified with a digital multi-meter.
- To minimize the risk of damages to the controller due to a cable fault, the integrity of the heating cable should be verified by:
  - ✤ Performing a high voltage insulation test.
  - ✤ Measuring the load resistance with an ohmmeter.
  - ✤ In both cases, the results should be recorded for future reference.

Sensor type:

This temperature controller can be factory programmed to operate with one of two different types of temperature sensor. By default, the controller is programmed for 100 ohms @ 0 °C *(32 °F)* Platinum RTD sensor(s). It can also be programmed for 2 252 ohms @ 25 °C *(77 °F)* thermistor(s) on special request. The last two digits of the controller's catalog number indicate the programming code. Control program codes from 01 to 49 are for use with RTDs and codes from 51 to 99 are for thermistors. Ensure that the proper type of temperature sensor is used with the controller. Program codes are listed in annex E and is identified by a label on the electronics.

Sensor location:

- Install the temperature sensor(s) with aluminum foil tape to enhance heat transfer.
- The controlling sensor is to be taped directly to the pipe wall, 180° away from the heating cable.
- The controlling sensor(s) TS1 and TS2 (when feature enabled) should be located at the expected coldest point(s) of the piping system.
- If controlling a pipe entering a heated building, the sensor(s) must be located at least 3 m *(10 ft)* away from the outside wall to avoid inaccurate temperature sensing.
- The high cable temperature sensor (TS3) is to be taped to an active heating zone of the heating cable (not to the cold lead), within the heat trace channel.

Note: The accurate identification and positioning of the sensor(s) are essential for an efficient and safe operation of the system.

Troubleshooting :

Temperature sensor failure :

This alarm will indicate that one of the sensors is not operating properly. The temperature sensor may fail due to an "open" or "shorted" condition. Ensure that you are using the correct type of sensor i.e. : 3-wire RTD or 2-wire thermistor (refer to program code table in annex E), and that it is wired correctly.

Probable causes of alarm :

- Incorrect or damaged field wiring, “open” leads or excess resistance due to broken or damaged wires or loose connections.
- Damaged or inoperative temperature sensor.
- Wrong type of sensor used.

When using RTDs :

- Ensure that the RTD is a 3-wire 100 ohms @ 0 °C *(32 °F)* Platinum type.
- Disconnect the RTD wiring from the input terminals.
- Measure the resistance between the source (white) and sense (black) leads at the controller. It should not exceed 40 ohms. Excessive lead resistance will cause a sensor failure alarm and must be corrected. Look for loose terminals, excessive lead length or insufficient wire gauge and correct as necessary.
- Measure the resistance between the source (white) or sense (black) lead and the common (red) lead of the RTD at the controller. It should be between 84 and 178 ohms depending on the probe temperature and lead resistance. Refer to the resistance table in annex F.
- Verify that the RTD is wired correctly. Refer to the wiring diagram in annex D.
- Ensure that the RTD extension wire (when used) is grounded at one end only, normally at the controller terminal.

When using thermistors :

- Ensure that the thermistor is a 2-wire 2 252 ohms @ 25 °C *(77 °F)* NTC thermistor.
- Disconnect the thermistor wiring from the input terminals.
- Measure the resistance between both leads of the thermistor at the controller. It should be between 75,593 and 152 ohms depending on the probe temperature and lead resistance. Refer to the resistance table in annex F.
- Verify that the thermistor is wired correctly. Refer to the wiring diagram in annex D.
- Ensure that the thermistor extension wire (when used) is grounded at one end only, normally at the controller terminal.

Low temperature alarm (when enabled) :

This alarm will appear when the temperature at the sensor decreases below the low temperature setpoint.

Probable causes of alarm :

- Alarm setpoint too close to maintain temperature setpoint.
- Flow of cold liquid.
- Empty pipe venting out in the atmosphere.
- Damaged or missing thermal insulation.
- Heating cable not sized properly for the application.
- Damaged heating cable.
- Recent power outage allowing pipe to cool under setpoint.

Seemingly incorrect temperature :

Disconnect the temperature sensor from the input terminals at the controller.

When using RTDs :

- To evaluate the temperature at an RTD, measure the resistance from source or sense lead wire to the common lead wire and substract the resistance measured between source and sense lead wires. The resulting value can be cross-referenced to the table in annex F.

When using thermistors :

- To evaluate the temperature at a thermistor, measure the resistance between both leads. The resulting value can be cross-referenced to the table in annex F.

In both cases, you can usually determine if the temperature obtained from the list is representative of the conditions on the pipe. If you have more than one sensor installed, you can compare the readings. Note that when comparing values of a sensor on the pipe with a sensor on the heating cable, you should ensure that the heating cable has been de-energized for a substantial period of time to allow for both sensors to be in similar temperature environments.

GFI alarm :

This alarm is caused by a ground fault leakage current in excess of the setting.

Probable causes of alarm :

- Alarm level set too close to normal leakage current.
- Damaged cable insulation or moisture presence.
- Poor cable splice or termination.
- Moisture in enclosure that provides a conductive ground path sufficient to trigger the alarm.

UTC-2030 SPECIFICATIONS:

Alarm output : 1 A max, 240 Vac max., 50/60 Hz, SPDT (form C) relay output configured for "fail-safe" operation.

Approvals : CSA "C" - "US" for ordinary locations.

Enclosure: Nema 4, gray painted steel with ¼ turn latch.

Indicator light: Nema 4 multi-function three color LED.

Input voltage range : 120-240 Vac, 50/60 Hz.

Monitoring and alarming : The electronics monitor low temperature, ground fault current and open / shorted temperature sensor(s).

Operating ambient temp.: -40 to +40 °C *(-40 to +104 °F).*

Power output : 2-pole relay output rated 30 A - 240 Vac.

Terminal blocks:

Power terminals for #22 to #8 AWG

Power in:	L1, N or L2.
Heater out:	H1, N or H2

Signal terminals for #28 to #12 AWG

Sensors:	TS1:	#1-2-3-4.
	TS2:	#5-6-7-8.
	TS3:	#12-13-14-15.
	Alarm relay:	#9-10-11.
	Alarm reset:	#16-17.
	Override input:	#18-19.

Valid temperature range: -40 to +100 °C *(-40 to +212 °F).*

FACTORY PROGRAMMABLE:

Auto-cycle : When the temperature controller is energized, and then at 24 hours intervals, the controller performs an auto-cycle test by turning on the load to measure the ground fault leakage current. If the measured ground fault current is above the set level, the ground fault current alarm is activated.

Ground fault detection : Factory adjustable to trip or alarm only. Setting @ 30 or 100 ma.

Remote override : The user may force the unit on/off via a remote dry contact. Factory adjustable to operate in timed (1-48 hours) or non-timed mode.

Temperature control : three 3-wire 100 Ω @ 0 °C *(32 °F)* Platinum RTD (alpha=0,00385 Ω/Ω/°C), lead compensated to 20 Ω per lead.
or
three 2-wire 2 252 Ω @ 25 °C *(77 °F)* NTC Thermistor.

Deadband : 1 to 5 °C *(1.8 to 9 °F)* see ANNEX E.

Control temperature setpoint range: -5 to 75 °C *(23 to 167 °F)* see ANNEX E.

Low temperature alarm : Feature can be enabled to provide low temperature alarm on TS1 and TS2.

Low temperature setpoint range: -10 to 75 °C *(14 to 167 °F)* see ANNEX E.

High cable temperature: The third temperature sensor (referred to as TS3) is used as a high cable temperature limit for plastic piping system protection. When TS3 is enabled, the high limit feature will override demand for heat and shut off the load when a high cable temperature condition is reached.

High temperature set point range: 25 to 100 °C *(77 to 212 °F)* see ANNEX E.

UTC-2230 SPECIFICATIONS :

Same specifications as the UTC-2030, with the addition of :

Circuit breaker : 2-pole, 30 A, 240 Vac, pre-wired to the temperature control board.

Terminal blocks: Incoming power lugs at the circuit breaker for: #14 to #4 AWG

CONTACTOR VERSION SPECIFICATIONS :

Same specifications as the UTC-2030, except for the following :

Sequence of number is : UTC-VPAA-xx

'V' in the catalog number denotes the operating voltage, i.e. : 2 for 208, 4 for 480 or 6 for 600 .

'P' in the catalog number denotes the number of poles on the circuit breaker, i.e. : 2 or 3.

'AA' in the catalog number denotes the amperage of the circuit breaker, i.e. : 15, 20, 25, 30, 35, 40, 45, 50 or 60.

'xx' in the catalog number denotes the control program code (see annex E).

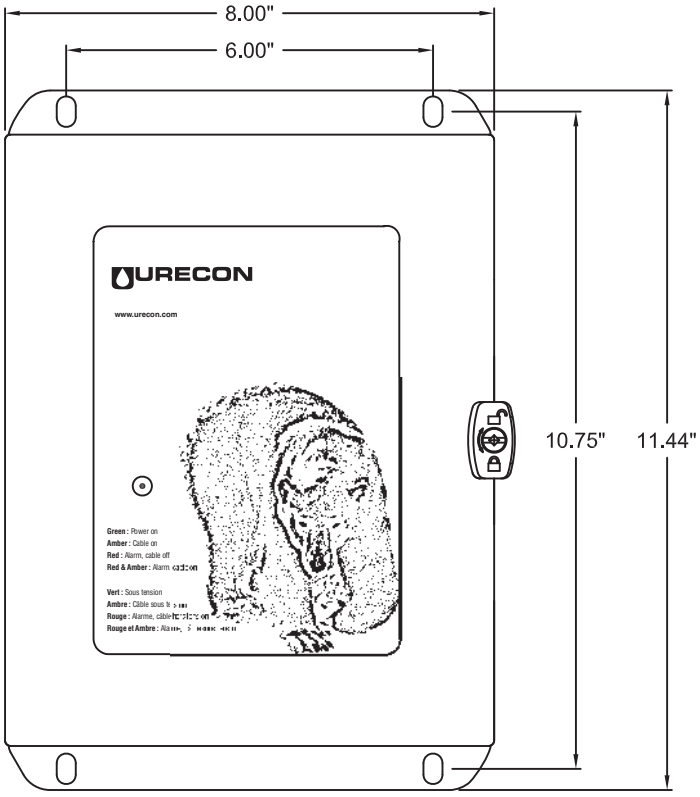
Input voltage : 208, 480 or 600 Vac, 50/60 Hz, 3-phase / 4-wire.

Power output : 3-pole contactor output rated 60 A - 600 V ac.

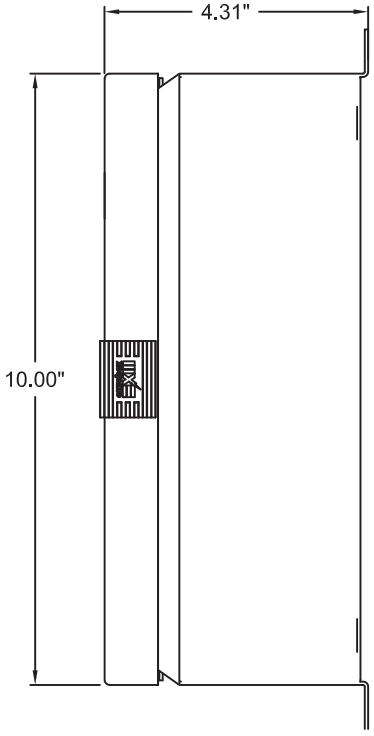
Terminal blocks:	Power in terminals;	L1, L2 and L3:	#14 to # 4 AWG
	Heater terminals;	H1, H2 and H3:	#14 to # 3 AWG
	Neutral terminals:		#14 to # 6 AWG

ANNEXE / ANNEX **A**

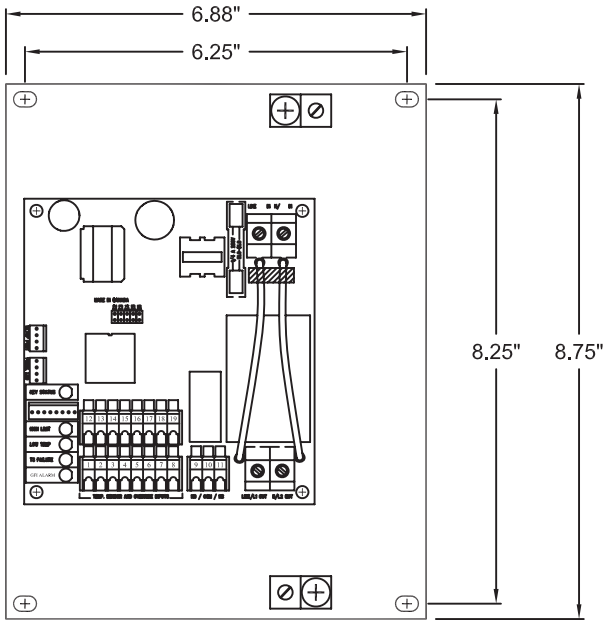
UTC-2030
Thermostat électronique / Electronic thermostat



ÉLÉVATION / FRONT VIEW



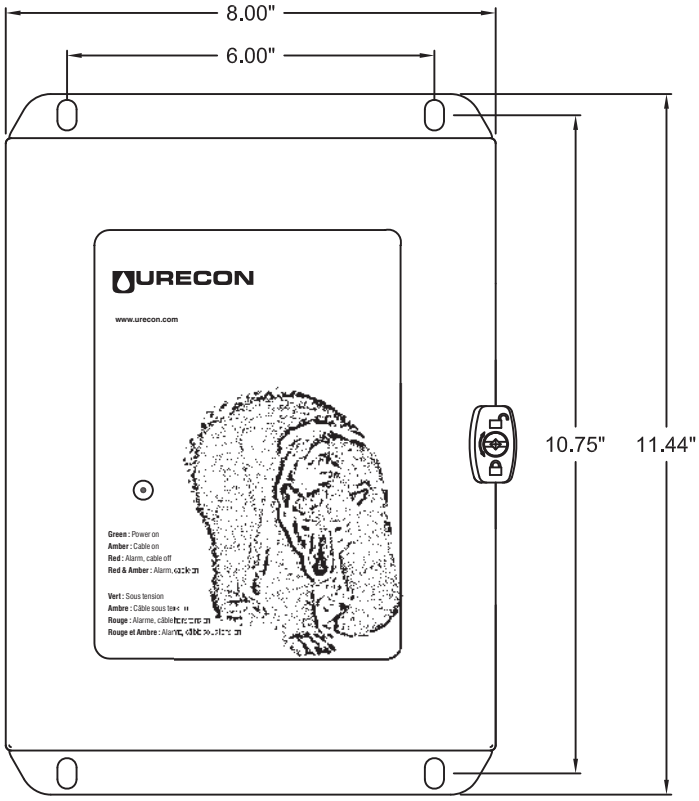
PROFIL / LEFT SIDE VIEW



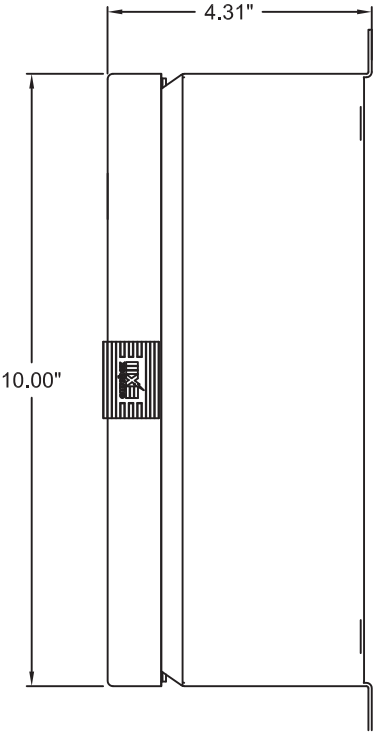
PLAQUE DE FOND / BACKPLATE

ANNEXE / ANNEX **B**

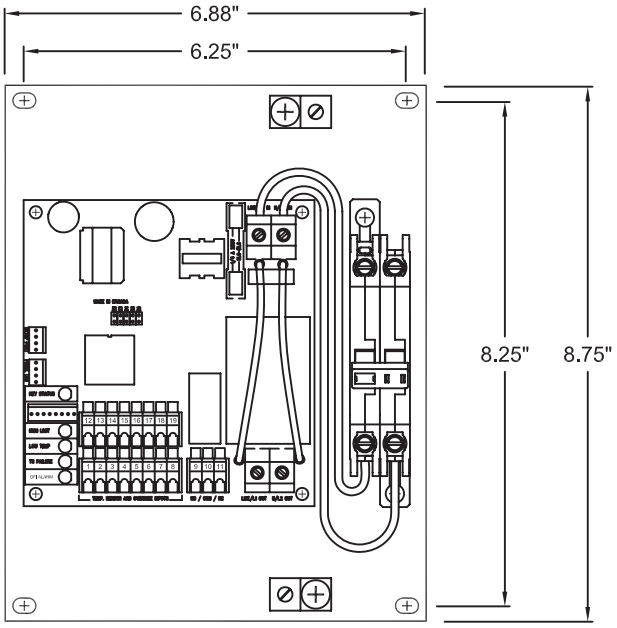
UTC-2230
Thermostat électronique / Electronic thermostat



ÉLÉVATION / FRONT VIEW



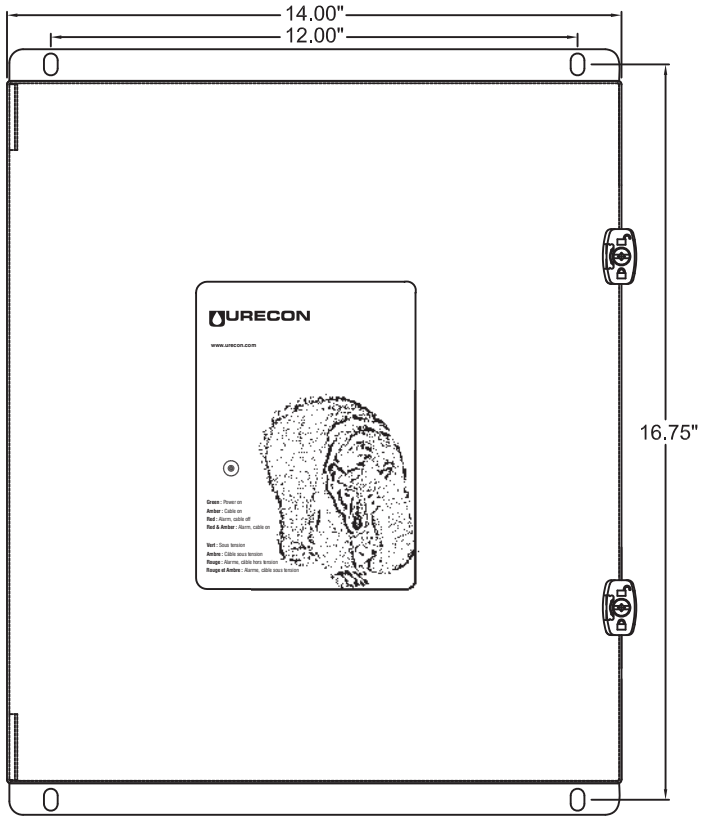
PROFIL / LEFT SIDE VIEW



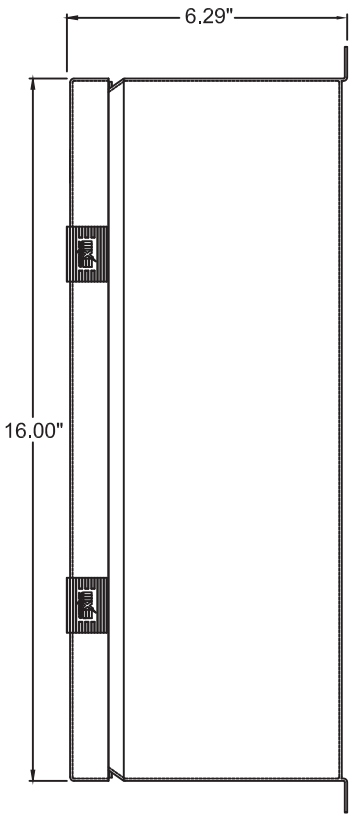
PLAQUE DE FOND / BACKPLATE

ANNEXE / ANNEX **C**

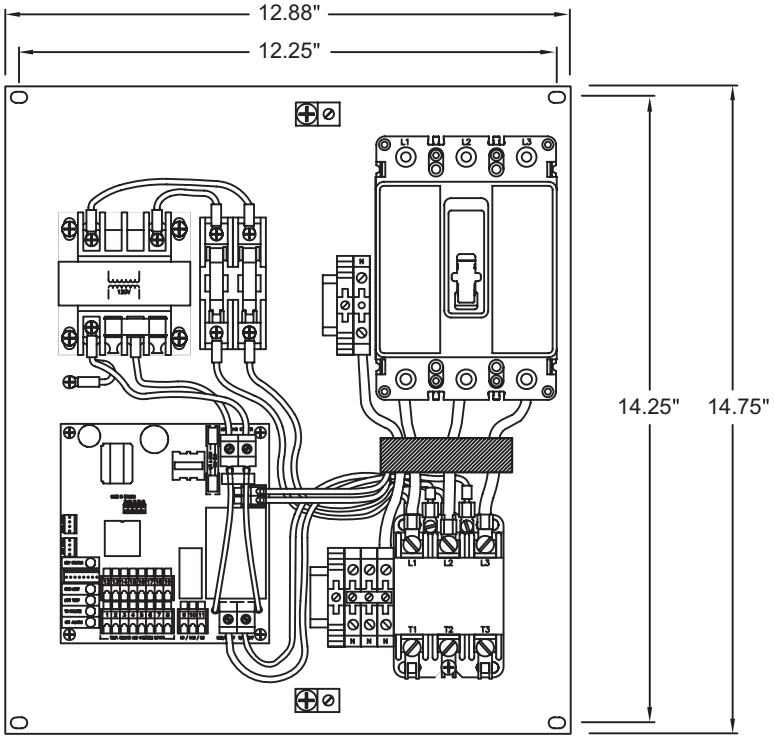
Thermostat électronique à contacteur / Contactor version electronic thermostat



ÉLÉVATION / FRONT VIEW

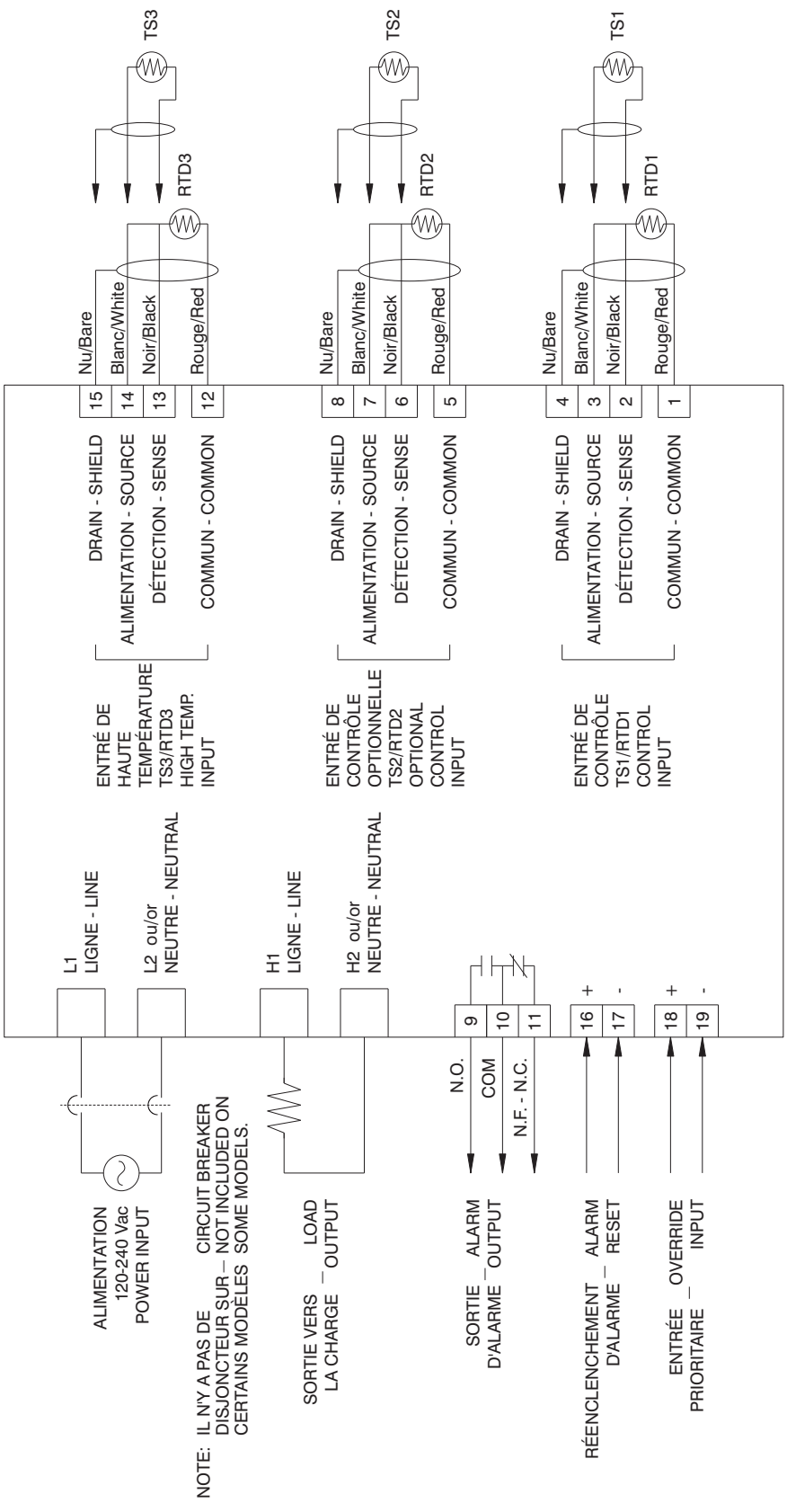


PROFIL / LEFT SIDE VIEW



PLAQUE DE FOND / BACKPLATE

Schéma de câblage / Wiring Diagram



ANNEXE / ANNEX **E**

UTC-2030-xx, UTC-2230-xx, UTC-VPAA-xx

xx doit être remplacé par le code de programmation approprié

xx is to be replaced by the appropriate program code number

code de programmation pour RTD RTD program code		Capteur de contrôle TS1 (alarme en indice) Température Controlling sensor TS1 (alarm in subscript)	Capteur de contrôle TS2 (alarme en indice) Température Controlling sensor TS2 (alarm in subscript)	Capteur de haute température TS3 Température High temperature sensor TS3	code de programmation pour thermistance Thermistor program code	
POUR TUYAU DE PLASTIQUE FOR PLASTIC PIPE	01	3 °C *(37.4 °F)*	–	65 °C *(149 °F)*	51	POUR TUYAU DE PLASTIQUE FOR PLASTIC PIPE
	02	3_{1} °C *(37.4$_{33.8}$ °F)*	–	65 °C *(149 °F)*	52	
	03	5 °C *(41 °F)*	–	65 °C *(149 °F)*	53	
	04	5_{3} °C *(41$_{37.4}$ °F)*	–	65 °C *(149 °F)*	54	
	05	10 °C *(50 °F)*	–	65 °C *(149 °F)*	55	
	06	10_{5} °C *(50$_{41}$ °F)*	–	65 °C *(149 °F)*	56	
	07	15 °C *(59 °F)*	–	65 °C *(149 °F)*	57	
	08	15_{10} °C *(59$_{50}$ °F)*	–	65 °C *(149 °F)*	58	
	11	3 °C *(37.4 °F)*	3 °C *(37.4 °F)*	65 °C *(149 °F)*	61	
	12	3_{1} °C *(37.4$_{33.8}$ °F)*	3_{1} °C *(37.4$_{33.8}$ °F)*	65 °C *(149 °F)*	62	
	13	5 °C *(41 °F)*	5 °C *(41 °F)*	65 °C *(149 °F)*	63	
	14	5_{3} °C *(41$_{37.4}$ °F)*	5_{3} °C *(41$_{37.4}$ °F)*	65 °C *(149 °F)*	64	
	15	10 °C *(50 °F)*	10 °C *(50 °F)*	65 °C *(149 °F)*	65	
	16	10_{5} °C *(50$_{41}$ °F)*	10_{5} °C *(50$_{41}$ °F)*	65 °C *(149 °F)*	66	
	17	15 °C *(59 °F)*	15 °C *(59 °F)*	65 °C *(149 °F)*	67	
	18	15_{10} °C *(59$_{50}$ °F)*	15_{10} °C *(59$_{50}$ °F)*	65 °C *(149 °F)*	68	
POUR TUYAU DE MÉTAL FOR METAL PIPE	21	3 °C *(37.4 °F)*	–	–	71	POUR TUYAU DE MÉTAL FOR METAL PIPE
	22	3_{1} °C *(37.4$_{33.8}$ °F)*	–	–	72	
	23	5 °C *(41 °F)*	–	–	73	
	24	5_{3} °C *(41$_{37.4}$ °F)*	–	–	74	
	25	10 °C *(50 °F)*	–	–	75	
	26	10_{5} °C *(50$_{41}$ °F)*	–	–	76	
	27	15 °C *(59 °F)*	–	–	77	
	28	15_{10} °C *(59$_{50}$ °F)*	–	–	78	
	31	3 °C *(37.4 °F)*	3 °C *(37.4 °F)*	–	81	
	32	3_{1} °C *(37.4$_{33.8}$ °F)*	3_{1} °C *(37.4$_{33.8}$ °F)*	–	82	
	33	5 °C *(41 °F)*	5 °C *(41 °F)*	–	83	
	34	5_{3} °C *(41$_{37.4}$ °F)*	5_{3} °C *(41$_{37.4}$ °F)*	–	84	
	35	10 °C *(50 °F)*	10 °C *(50 °F)*	–	85	
	36	10_{5} °C *(50$_{41}$ °F)*	10_{5} °C *(50$_{41}$ °F)*	–	86	
	37	15 °C *(59 °F)*	15 °C *(59 °F)*	–	87	
	38	15_{10} °C *(59$_{50}$ °F)*	15_{10} °C *(59$_{50}$ °F)*	–	88	

ANNEXE / ANNEX **F**

Capteurs de température utilisés avec les thermostats électroniques de la série UTC.

Temperature sensors used with the UTC line of electronic thermostats.

Thermistance / Thermistor (Modèle précedent / Previous model) **de / of 2 252 ohms @ 25 °C *(77 °F)***	
Température Temperature	**Résistance Resistance**
-40 °C *(-40 °F)*	75 593 Ω
-35 °C *(-31 °F)*	54 542 Ω
-30 °C *(-22 °F)*	39 789 Ω
-25 °C *(-13 °F)*	29 331 Ω
-20 °C *(-4 °F)*	21 839 Ω
-15 °C *(5 °F)*	16 416 Ω
-10 °C *(14 °F)*	12 453 Ω
-5 °C *(23 °F)*	9 529,2 Ω
0 °C *(32 °F)*	7 353,0 Ω
5 °C *(41 °F)*	5 719,1 Ω
10 °C *(50 °F)*	4 482,3 Ω
15 °C *(59 °F)*	3 538,8 Ω
20 °C *(68 °F)*	2 813,6 Ω
25 °C *(77 °F)*	2 252,0 Ω
30 °C *(86 °F)*	1 814,2 Ω
35 °C *(95 °F)*	1 470,6 Ω
40 °C *(104 °F)*	1 192,2 Ω
45 °C *(113 °F)*	983,4 Ω
50 °C *(122 °F)*	810,9 Ω
55 °C *(131 °F)*	672,2 Ω
60 °C *(140 °F)*	560,1 Ω
65 °C *(149 °F)*	468,9 Ω
70 °C *(158 °F)*	394,5 Ω
75 °C *(167 °F)*	333,3 Ω
80 °C *(176 °F)*	282,9 Ω
85 °C *(185 °F)*	241,1 Ω
90 °C *(194 °F)*	206,3 Ω
95 °C *(203 °F)*	177,2 Ω
100 °C *(212 °F)*	152,8 Ω

RTD de Platine / Platinum RTD (Modèle courant / Current model) **de / of 100 ohms @ 0 °C *(32 °F)***	
Température Temperature	**Résistance Resistance**
-40 °C *(-40 °F)*	84,27 Ω
-35 °C *(-31 °F)*	86,25 Ω
-30 °C *(-22 °F)*	88,22 Ω
-25 °C *(-13 °F)*	90,19 Ω
-20 °C *(-4 °F)*	92,16 Ω
-15 °C *(5 °F)*	94,12 Ω
-10 °C *(14 °F)*	96,09 Ω
-5 °C *(23 °F)*	98,04 Ω
0 °C *(32 °F)*	100,00 Ω
5 °C *(41 °F)*	101,95 Ω
10 °C *(50 °F)*	103,90 Ω
15 °C *(59 °F)*	105,85 Ω
20 °C *(68 °F)*	107,79 Ω
25 °C *(77 °F)*	109,73 Ω
30 °C *(86 °F)*	111,67 Ω
35 °C *(95 °F)*	113,61 Ω
40 °C *(104 °F)*	115,54 Ω
45 °C *(113 °F)*	117,47 Ω
50 °C *(122 °F)*	119,40 Ω
55 °C *(131 °F)*	121,32 Ω
60 °C *(140 °F)*	123,24 Ω
65 °C *(149 °F)*	125,16 Ω
70 °C *(158 °F)*	127,07 Ω
75 °C *(167 °F)*	128,98 Ω
80 °C *(176 °F)*	130,89 Ω
85 °C *(185 °F)*	132,80 Ω
90 °C *(194 °F)*	134,70 Ω
95 °C *(203 °F)*	136,60 Ω
100 °C *(212 °F)*	138,50 Ω

APPENDIX D

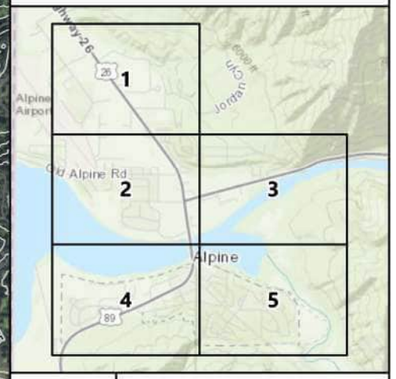
Water Model Results

Legend

- Major Contour per USGS LiDAR (25' Interval)
- Minor Contour per USGS LiDAR (5' Interval)
- Water Hydrants
- Water Meter
- Tank
- Reservoir

Diameter

- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



0 125 250 500
Feet
SCALE: 1" = 450'

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AFTON, WYOMING 83110
TEL 307.885.8500 · FAX 307.885.8501
www.sunrise-eng.com

Figure 1
Existing System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Existing Layout, 6/2/2025 1:05 PM, cody.peck

MATCH 1

MATCH 3

MATCH 4

J348
Elev: 5647 ft
99 psi

J344
Elev: 5650 ft
97 psi

N-J260
Elev: 5651 ft
97 psi

J502
Elev: 5642 ft
101 psi

N-J256
Elev: 5655 ft
95 psi

N-J242
Elev: 5652 ft
96 psi

N-J226
Elev: 5650 ft
97 psi

N-J246
Elev: 5655 ft
95 psi

N-J232
Elev: 5648 ft
98 psi

N-J224
Elev: 5649 ft
98 psi

N-J230
Elev: 5652 ft
96 psi

J272
Elev: 5657 ft
94 psi

N-J236
Elev: 5654 ft
95 psi

N-J234
Elev: 5654 ft
96 psi

N-J240
Elev: 5653 ft
96 psi

N-J244
Elev: 5653 ft
96 psi

J254
Elev: 5656 ft
95 psi

N-J228
Elev: 5660 ft
93 psi

N-J216
Elev: 5663 ft
91 psi

N-J220
Elev: 5663 ft
92 psi

N-J212
Elev: 5666 ft
90 psi

J264
Elev: 5661 ft
92 psi

N-J218
Elev: 5662 ft
92 psi

N-J222
Elev: 5660 ft
93 psi

J268
Elev: 5660 ft
93 psi

J250
Elev: 5649 ft
98 psi

J248
Elev: 5653 ft
96 psi

J252
Elev: 5654 ft
95 psi

N-J238
Elev: 5659 ft
93 psi

J256
Elev: 5649 ft
98 psi

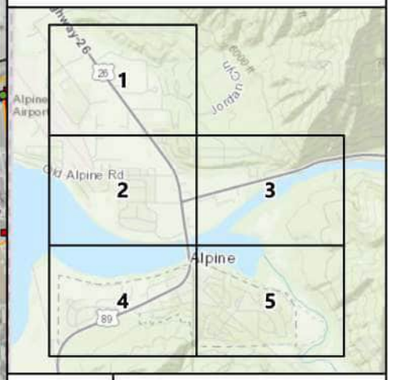
BLUE LAKE CIR
AIRPORT DR
RUNWAY
ALPINE VILLAGE CIR
1ST ST
FIRST AVE
OLD ALPINE AKA CO RD 100
NATLFOREST DEVELOP ROAD 004 RD
CO RD 100
NFS RD 004
BUCK RAIL
BUCK LN
KELLY LN
BUCK RAIL LN
LARKSPUR CIR
LUPINE CIR
LARKSPUR CT
OLD ALPINE RD
ASTER LOOP
ARNICA TRL
SWEETGRASS TRL
WINTERGREEN DR
COLUMBINE ST
OATGRASS ST
FOXTAIL ST
E COTTAGE LN
W COTTAGE LN
COTTAGE DR
LONG LEAF RD
WOOD ROSE RD
HONEY SUCKLE RD
LANCE LEAF RD
MEADOW RIDGE RD
ASPEN RIDGE TRL
PINE ST
LUCY CIR
US-HWY-26
US-HWY-89
ALPINE BOAT LNDG
SNAKE RIVER
5650
5625
5700
5675
5725
5750
5775
5800

Legend

- Major Contour per USGS LiDAR (25' Interval)
- Minor Contour per USGS LiDAR (5' Interval)
- Water Hydrants
- Water Meter
- Tank
- Reservoir

Diameter

- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



0 125 250 500
Feet
SCALE: 1" = 450'

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Figure 2
Existing System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Existing Layout, 6/2/2025 1:12 PM, cody.peck

NSU
Elev: 5855 ft
9 psi

J192
Elev: 5669 ft
89 psi

N-J204
Elev: 5666 ft
90 psi

N-J186
Elev: 5662 ft
92 psi

N-J188
Elev: 5661 ft
93 psi

N-J210
Elev: 5669 ft
89 psi

N-J208
Elev: 5668 ft
90 psi

N-J214
Elev: 5667 ft
90 psi

J200
Elev: 5662 ft
92 psi

N-J202
Elev: 5668 ft
90 psi

N-J190
Elev: 5661 ft
93 psi

N-J194
Elev: 5661 ft
93 psi

N-J198
Elev: 5664 ft
91 psi

J264
Elev: 5661 ft
92 psi

J262
Elev: 5662 ft
92 psi

J274
Elev: 5660 ft
93 psi

J270
Elev: 5661 ft
93 psi

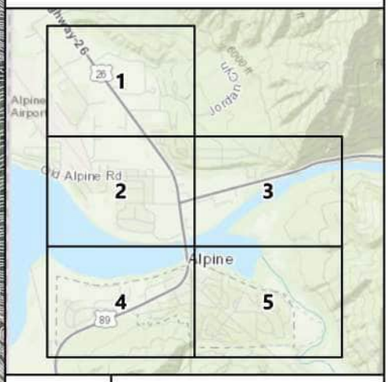
N-J238
Elev: 5659 ft
93 psi

N-J196
Elev: 5661 ft
93 psi

SPRUCE ST
FOREST DR
PINE ST
REESE'S SUBDIVISION
COLONIAL LN
US HWY 26
US HWY 89
SNAKE RIVER
BLUE WING LN
GREYS RIVER
MATCH 2
MATCH 5

Legend
- Major Contour per USGS LiDAR (25' Interval)
- Minor Contour per USGS LiDAR (5' Interval)
- Water Hydrants
- Water Meter
- Tank
- Reservoir

Diameter
- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



NORTH

0 125 250 500
Feet
SCALE: 1" = 450'

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Figure 3
Existing System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan (S10389)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Existing Layout, 6/2/2025 1:15 PM, cody.peck

MATCH 2

MATCH 5

J396
Elev: 5635 ft
104 psi

J398
Elev: 5633 ft
105 psi

J400
Elev: 5639 ft
102 psi

J402
Elev: 5644 ft
100 psi

J50
Elev: 5651 ft
97 psi

J46
Elev: 5651 ft
97 psi

J48
Elev: 5649 ft
98 psi

J42
Elev: 5652 ft
96 psi

J38
Elev: 5656 ft
95 psi

J30
Elev: 5657 ft
94 psi

J44
Elev: 5654 ft
96 psi

J36
Elev: 5654 ft
95 psi

J28
Elev: 5655 ft
95 psi

J52
Elev: 5652 ft
96 psi

J32
Elev: 5653 ft
96 psi

J34
Elev: 5651 ft
97 psi

J26
Elev: 5655 ft
95 psi

J40
Elev: 5650 ft
97 psi

J54
Elev: 5653 ft
96 psi

J90
Elev: 5657 ft
94 psi

J88
Elev: 5668 ft
89 psi

J94
Elev: 5660 ft
93 psi

J56
Elev: 5661 ft
92 psi

J60
Elev: 5662 ft
92 psi

J62
Elev: 5663 ft
92 psi

J64
Elev: 5661 ft
93 psi

J144
Elev: 5663 ft
91 psi

J96
Elev: 5662 ft
92 psi

J146
Elev: 5663 ft
91 psi

J58
Elev: 5661 ft
92 psi

J106
Elev: 5665 ft
91 psi

J74
Elev: 5665 ft
91 psi

J100
Elev: 5660 ft
93 psi

J326
Elev: 5659 ft
93 psi

J104
Elev: 5660 ft
93 psi

J70
Elev: 5663 ft
91 psi

J68
Elev: 5666 ft
90 psi

J98
Elev: 5658 ft
94 psi

J86
Elev: 5663 ft
91 psi

J84
Elev: 5665 ft
90 psi

J80
Elev: 5663 ft
91 psi

J72
Elev: 5665 ft
91 psi

J82
Elev: 5705 ft
73 psi

J184
Elev: 5734 ft
101 psi

J182
Elev: 5742 ft
97 psi

J186
Elev: 5755 ft
91 psi

250K
Elev: 5950 ft
6 psi

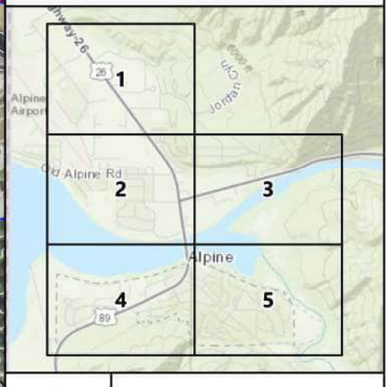
SNAKE RIVER
BUFFALO DR
ELK RUN
MORNING STAR DR
PARK CIR
US-HWY-89
RIVER CIR
TRAIL DR
STOOR DR
STOOR ST
GRAND VIEW DR
PALISADES LN
RIVER VIEW DR
SNAKE RIVER DR
DEER LN
PALISADES RESERVOIR CO RD 101
MOUNTAIN DR

Legend

- Major Contour per USGS LiDAR (25' Interval)
- Minor Contour per USGS LiDAR (5' Interval)
- Water Hydrants
- Water Meter
- Tank
- Reservoir

Diameter

- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



North

0 125 250 500
Feet
SCALE: 1" = 450'

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www.sunrise-eng.com

Figure 4
Existing System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Existing Layout, 6/2/2025 1:18 PM, cody.peck

MATCH 3

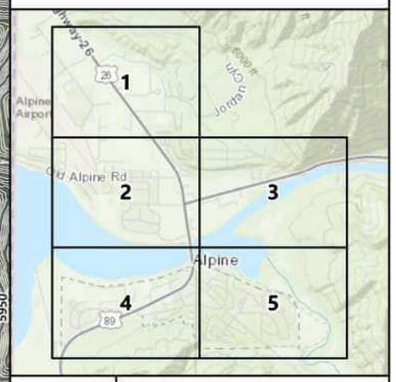
MATCH 4

J206 Elev: 5661 ft 93 psi
J146 Elev: 5663 ft 91 psi
J154 Elev: 5665 ft 91 psi
J138 Elev: 5663 ft 92 psi
J16 Elev: 5661 ft 93 psi
J136 Elev: 5670 ft 89 psi
J134 Elev: 5670 ft 88 psi
J14 Elev: 5662 ft 92 psi
J12 Elev: 5666 ft 90 psi
J204 Elev: 5668 ft 90 psi
J150 Elev: 5668 ft 90 psi
J210 Elev: 5671 ft 88 psi
J10 Elev: 5676 ft 86 psi
J228 Elev: 5651 ft 97 psi
J230 Elev: 5654 ft 96 psi
J132 Elev: 5670 ft 88 psi
J72 Elev: 5665 ft 91 psi
J130 Elev: 5673 ft 87 psi
J110 Elev: 5673 ft 87 psi
J18 Elev: 5668 ft 89 psi
J20 Elev: 5653 ft 96 psi
J238 Elev: 5656 ft 95 psi
J240 Elev: 5636 ft 103 psi
J628 Elev: 5724 ft 105 psi
J178 Elev: 5741 ft 97 psi
J108 Elev: 5673 ft 87 psi
J140 Elev: 5674 ft 87 psi
J216 Elev: 5678 ft 85 psi
J212 Elev: 5682 ft 83 psi
J232 Elev: 5664 ft 91 psi
J234 Elev: 5656 ft 95 psi
J242 Elev: 5647 ft 99 psi
J182 Elev: 5742 ft 97 psi
J176 Elev: 5754 ft 92 psi
J246 Elev: 5701 ft 75 psi
J112 Elev: 5676 ft 86 psi
J142 Elev: 5675 ft 86 psi
J218 Elev: 5682 ft 83 psi
J220 Elev: 5686 ft 82 psi
J114 Elev: 5689 ft 81 psi
J116 Elev: 5689 ft 80 psi
J222 Elev: 5684 ft 83 psi
J236 Elev: 5658 ft 94 psi
J186 Elev: 5755 ft 91 psi
J156 Elev: 5774 ft 83 psi
J118 Elev: 5690 ft 80 psi
J172 Elev: 5734 ft 101 psi
J202 Elev: 5683 ft 83 psi
J224 Elev: 5686 ft 82 psi
J158 Elev: 5765 ft 87 psi
J188 Elev: 5811 ft 67 psi
J152 Elev: 5694 ft 78 psi
J244 Elev: 5664 ft 91 psi
J162 Elev: 5797 ft 73 psi
J160 Elev: 5803 ft 71 psi
J166 Elev: 5755 ft 92 psi
J168 Elev: 5788 ft 77 psi
J120 Elev: 5693 ft 79 psi
J190 Elev: 5833 ft 57 psi
J164 Elev: 5809 ft 68 psi
J22 Elev: 5693 ft 79 psi
J194 Elev: 5827 ft 63 psi
J170 Elev: 5783 ft 80 psi
J126 Elev: 5692 ft 80 psi
J380 Elev: 5695 ft 78 psi
Well1 Pump Elev: 5503 ft
Well2 Pump Elev: 5552 ft
500K Elev: 5862 ft 6 psi
J404 Elev: 5694 ft 78 psi
J372 Elev: 5694 ft 129 psi
J488 Elev: 5830 ft 66 psi
Well3 Pump Elev: 5494 ft
250K Elev: 5950 ft 6 psi

GREYS RIVER RD
PARKWAY DR
TRAIL DRIVE RD
W MILL CIR
W LOOP RD
SAWMILL RD
FORREST CIRCLE DR
PINE CREST CIR
TERRACE DR
E MILL RD
LODGE LN
MEADOWS DR
THREE RIVERS DR
FIELD RD
SUNSET DR
GREYS RIVER
FS 10138

Legend
- Major Contour per USGS LiDAR (25' Interval)
- Minor Contour per USGS LiDAR (5' Interval)
- Water Hydrants
- Water Meter
- Tank
- Reservoir

Diameter
- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



N

0 125 250 500
Feet
SCALE: 1" = 450'

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www.sunrise-eng.com

Figure 5
Existing System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan\S10388\GIS\Exhibits\Alpine Exhibits.aprx, Existing layout, 6/2/2025 1:21 PM, cody.peck

J596
Elev: 5638 ft
116 psi

J602
Elev: 5642 ft
114 psi

J604
Elev: 5640 ft
115 psi

J600
Elev: 5642 ft
114 psi

J626
Elev: 5641 ft
114 psi

J606
Elev: 5643 ft
113 psi

J622
Elev: 5644 ft
113 psi

J610
Elev: 5644 ft
113 psi

J592
Elev: 5645 ft
113 psi

J588
Elev: 5641 ft
115 psi

J620
Elev: 5643 ft
113 psi

J612
Elev: 5645 ft
112 psi

Megawell
Pump Elev:
5642 ft

J590
Elev: 5637 ft
116 psi

J594
Elev: 5641 ft
114 psi

J614
Elev: 5645 ft
112 psi

J574
Elev: 5650 ft
109 psi

J582
Elev: 5654 ft
107 psi

J570
Elev: 5651 ft
108 psi

J580
Elev: 5653 ft
107 psi

J578
Elev: 5652 ft
108 psi

N-J264
Elev: 5646 ft
110 psi

J258
Elev: 5652 ft
108 psi

J586
Elev: 5653 ft
107 psi

J346
Elev: 5646 ft
109 psi

N-J262
Elev: 5649 ft
108 psi

J260
Elev: 5651 ft
107 psi

J584
Elev: 5655 ft
107 psi

J576
Elev: 5654 ft
107 psi

J352
Elev: 5647 ft
109 psi

J348
Elev: 5647 ft
109 psi

MATCH 2

US-HWY-26
ELKHORN DR
HALFMOON DR
HALFMOON CT
PALISADE DR
PALISADES DR
COURT
ALPINE VILLAGE LOOP
ALPINE VILLAGE LN
ALPINE VILLAGE CIR
CHALET DR
JORDAN CANYON RD
VALLEY VIEW BLVD
FOOTHILL BLVD
LOOP DR
LAUREL TRL
BURNING BUSH RD
PHLOX RD
WOOD ROSE RD
LANCE LEAF RD
LONG LEAF RD
RUTH RD
JANGLE LN
RUNWAY

Legend
- Fire Hydrants
- Water Meter
- Tanks
- Reservoirs

Pipes

Diameter
- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch

1 2 3 4 5
Alpine
Alpine Airport
Old Alpine Rd
Jordan R
US-89
US-26

NORTH

0 125 250 500
Feet
SCALE: 1" = 450'

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www.sunrise-eng.com

Figure 1
Future System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Future Layout, 6/2/2025 1:54 PM, cody.peck

MATCH 1

MATCH 3

MATCH 4

J348
Elev: 5647 ft
109 psi

J344
Elev: 5650 ft
107 psi

N-J260
Elev: 5651 ft
107 psi

J502
Elev: 5642 ft
110 psi

N-J256
Elev: 5655 ft
102 psi

N-J242
Elev: 5652 ft
102 psi

N-J226
Elev: 5650 ft
102 psi

N-J246
Elev: 5655 ft
98 psi

N-J232
Elev: 5648 ft
103 psi

N-J224
Elev: 5649 ft
102 psi

N-J230
Elev: 5652 ft
101 psi

J272
Elev: 5657 ft
97 psi

N-J236
Elev: 5654 ft
100 psi

N-J234
Elev: 5654 ft
100 psi

N-J240
Elev: 5653 ft
100 psi

N-J244
Elev: 5653 ft
100 psi

J254
Elev: 5656 ft
98 psi

N-J228
Elev: 5660 ft
96 psi

N-J216
Elev: 5663 ft
94 psi

N-J220
Elev: 5663 ft
93 psi

N-J212
Elev: 5666 ft
92 psi

J264
Elev: 5661 ft
94 psi

N-J218
Elev: 5662 ft
95 psi

J636
Elev: 5664 ft
93 psi

N-J222
Elev: 5660 ft
95 psi

J268
Elev: 5660 ft
95 psi

J250
Elev: 5649 ft
101 psi

J248
Elev: 5653 ft
100 psi

J252
Elev: 5654 ft
99 psi

J638
Elev: 5659 ft
95 psi

J640
Elev: 5662 ft
93 psi

N-J238
Elev: 5659 ft
95 psi

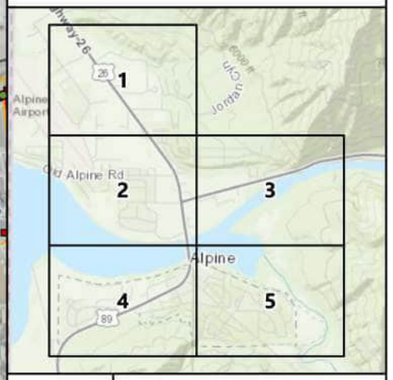
J256
Elev: 5649 ft
101 psi

BLUE LAKE CIR
AIRPORT DR
RUNWAY
ALPINE VILLAGE CIR
1ST ST
FIRST AVE
OLD ALPINE AKA CO RD 100
NATLFOREST DEVELOP ROAD 004 RD
CO RD 100
NFS RD 004
BUCK LN
KELLY LN
BUCK RAIL
BUCK RAIL LN
LUPINE CIR
LARKSPUR CIR
LARKSPUR CT
OLD ALPINE RD
ASTER LOOP
E COTTAGE LN
COTTAGE DR
W COTTAGE LN
COLUMBINE ST
OATGRASS ST
FOXTAIL ST
ARNICA TRL
WINTERGREEN DR
SWEETGRASS TRL
ALPINE BOAT LNDG
SNAKE RIVER
LONG LEAF RD
WOOD ROSE RD
HONEY SUCKLE RD
LANCE LEAF RD
MEADOW RIDGE RD
ASPEN RIDGE TRL
PINE ST
LUCY CIR
US HWY 26
US HWY 89
5650
5625
5700
5675
5725
5750
5775
5800

Legend
- Fire Hydrants
- Water Meter
- Tanks
- Reservoirs

Pipes

Diameter
- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



0 125 250 500
Feet
SCALE: 1" = 450'

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Figure 2
Future System
Alpine, Wyoming

Date: 6/2/2025

P:\WYDOC\Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Future Layout, 6/2/2025 2:01 PM, cody.peck

NSU
Elev: 5855 ft
9 psi

J192
Elev: 5669 ft
90 psi

N-J204
Elev: 5666 ft
92 psi

N-J186
Elev: 5662 ft
93 psi

N-J188
Elev: 5661 ft
94 psi

N-J208
Elev: 5668 ft
91 psi

N-J202
Elev: 5668 ft
91 psi

J200
Elev: 5662 ft
93 psi

N-J190
Elev: 5661 ft
94 psi

N-J194
Elev: 5661 ft
94 psi

N-J214
Elev: 5667 ft
92 psi

N-J198
Elev: 5664 ft
92 psi

J262
Elev: 5662 ft
94 psi

J274
Elev: 5660 ft
94 psi

J264
Elev: 5661 ft
94 psi

J270
Elev: 5661 ft
94 psi

N-J238
Elev: 5659 ft
95 psi

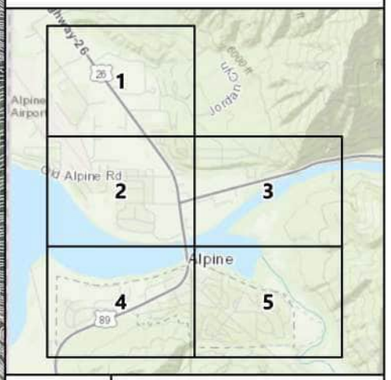
N-J196
Elev: 5661 ft
94 psi

SPRUCE ST
PINE ST
FOREST DR
REESE'S SUBDIVISION
COLONIAL LN
US HWY 26
US HWY 89
SNAKE RIVER
GREYS RIVER
MATCH 2
MATCH 5

Legend
- Fire Hydrants
- Water Meter
- Tanks
- Reservoirs

Pipes

Diameter
- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



North

0 125 250 500
Feet
SCALE: 1" = 450'

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AFTON, WYOMING 83110
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Figure 3
Future System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan (S10389)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Future Layout, 6/2/2025 2:05 PM, cody.peck

MATCH 2

J396
Elev: 5635 ft
104 psi

J398
Elev: 5633 ft
105 psi

J400
Elev: 5639 ft
102 psi

J402
Elev: 5644 ft
100 psi

J50
Elev: 5651 ft
97 psi

J46
Elev: 5651 ft
97 psi

J42
Elev: 5652 ft
97 psi

J38
Elev: 5656 ft
95 psi

J48
Elev: 5649 ft
98 psi

J44
Elev: 5654 ft
96 psi

J36
Elev: 5654 ft
96 psi

J30
Elev: 5657 ft
94 psi

J28
Elev: 5655 ft
95 psi

J52
Elev: 5652 ft
97 psi

J32
Elev: 5653 ft
97 psi

J34
Elev: 5651 ft
97 psi

J26
Elev: 5655 ft
96 psi

J40
Elev: 5650 ft
98 psi

J54
Elev: 5653 ft
96 psi

J90
Elev: 5657 ft
95 psi

J88
Elev: 5668 ft
90 psi

J94
Elev: 5660 ft
93 psi

J98
Elev: 5658 ft
94 psi

J84
Elev: 5665 ft
91 psi

J56
Elev: 5661 ft
93 psi

J60
Elev: 5662 ft
93 psi

J62
Elev: 5663 ft
92 psi

J64
Elev: 5661 ft
94 psi

J144
Elev: 5663 ft
92 psi

J96
Elev: 5662 ft
93 psi

J146
Elev: 5663 ft
92 psi

J58
Elev: 5661 ft
93 psi

J106
Elev: 5665 ft
91 psi

J100
Elev: 5660 ft
93 psi

J326
Elev: 5659 ft
94 psi

J104
Elev: 5660 ft
93 psi

J74
Elev: 5665 ft
91 psi

J70
Elev: 5663 ft
92 psi

J68
Elev: 5666 ft
91 psi

J80
Elev: 5663 ft
92 psi

J86
Elev: 5663 ft
92 psi

J72
Elev: 5665 ft
91 psi

J82
Elev: 5705 ft
74 psi

J184
Elev: 5734 ft
101 psi

V8000_NU
Elev: 5723 ft
105 psi

J182
Elev: 5742 ft
97 psi

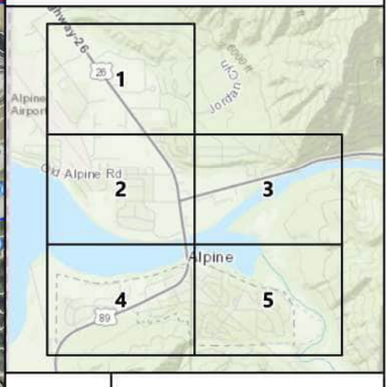
J186
Elev: 5755 ft
91 psi

250K
Elev: 5950 ft
6 psi

SNAKE RIVER
BUFFALO DR
ELK RUN
MORNING STAR DR
PARK CIR
US-HWY-89
RIVER CIR
TRAIL DR
STOOR DR
STOOR ST
PALISADES LN
RIVER VIEW DR
SNAKE RIVER DR
DEER LN
PALISADES RESERVOIR CO RD 101
CO RD 101
MATCH 5

Legend
- Fire Hydrants
- Water Meter
- Tanks
- Reservoirs

Pipes
Diameter
- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



North

0 125 250 500
Feet
SCALE: 1" = 450'

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Figure 4
Future System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Future Layout, 6/2/2025 2:08 PM, cody.peck

MATCH 3

MATCH 4

Legend

- Fire Hydrants
- Water Meter
- Tanks
- Reservoirs

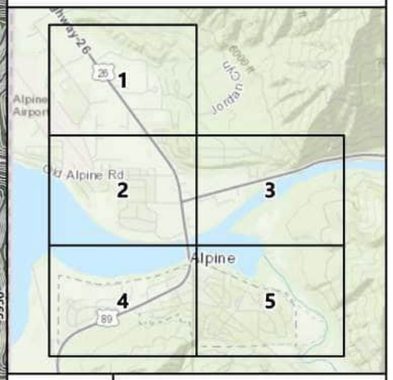
Pipes

Diameter

- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch

J206 Elev: 5661 ft 93 psi
J146 Elev: 5663 ft 92 psi
J154 Elev: 5665 ft 92 psi
J138 Elev: 5663 ft 92 psi
J16 Elev: 5661 ft 93 psi
J136 Elev: 5670 ft 89 psi
J134 Elev: 5670 ft 89 psi
J14 Elev: 5662 ft 93 psi
J204 Elev: 5668 ft 90 psi
J12 Elev: 5666 ft 91 psi
J150 Elev: 5668 ft 90 psi
J210 Elev: 5671 ft 89 psi
J228 Elev: 5651 ft 97 psi
J10 Elev: 5676 ft 87 psi
J132 Elev: 5670 ft 89 psi
J72 Elev: 5665 ft 91 psi
J130 Elev: 5673 ft 88 psi
J110 Elev: 5673 ft 88 psi
J18 Elev: 5668 ft 90 psi
J20 Elev: 5653 ft 96 psi
J238 Elev: 5656 ft 95 psi
J240 Elev: 5636 ft 104 psi
J226 Elev: 5658 ft 94 psi
J108 Elev: 5673 ft 88 psi
J140 Elev: 5674 ft 87 psi
J216 Elev: 5678 ft 86 psi
J212 Elev: 5682 ft 84 psi
J232 Elev: 5664 ft 92 psi
J234 Elev: 5656 ft 95 psi
J242 Elev: 5647 ft 99 psi
V8000_NU Elev: 5723 ft 105 psi
J178 Elev: 5741 ft 97 psi
J246 Elev: 5701 ft 76 psi
J112 Elev: 5676 ft 87 psi
J142 Elev: 5675 ft 87 psi
J218 Elev: 5682 ft 84 psi
J220 Elev: 5686 ft 82 psi
J182 Elev: 5742 ft 97 psi
J176 Elev: 5754 ft 92 psi
J222 Elev: 5684 ft 83 psi
J236 Elev: 5658 ft 94 psi
J114 Elev: 5689 ft 81 psi
J116 Elev: 5689 ft 81 psi
J186 Elev: 5755 ft 91 psi
J156 Elev: 5774 ft 83 psi
J118 Elev: 5690 ft 80 psi
J172 Elev: 5734 ft 101 psi
J202 Elev: 5683 ft 84 psi
J224 Elev: 5686 ft 82 psi
J158 Elev: 5765 ft 87 psi
J188 Elev: 5811 ft 67 psi
J166 Elev: 5755 ft 92 psi
J244 Elev: 5664 ft 91 psi
J162 Elev: 5797 ft 73 psi
J160 Elev: 5803 ft 71 psi
J152 Elev: 5694 ft 79 psi
J120 Elev: 5693 ft 79 psi
J190 Elev: 5833 ft 57 psi
J164 Elev: 5809 ft 68 psi
J194 Elev: 5827 ft 61 psi
J170 Elev: 5783 ft 80 psi
J24 Elev: 5716 ft 69 psi
J126 Elev: 5692 ft 80 psi
J196 Elev: 5694 ft 121 psi
J488 Elev: 5830 ft 61 psi
J372 Elev: 5694 ft 120 psi
J354_UN Elev: 5694 ft 0 psi
J362_UN Elev: 5695 ft 0 psi
500K Elev: 5862 ft 6 psi
J364_UN Elev: 5700 ft 0 psi
J364_DN Elev: 5699 ft 77 psi
250K Elev: 5950 ft 6 psi

GREYS RIVER RD
PARKWAY DR
TRAIL DRIVE RD
W MILL CIR
W LOOP RD
SAWMILL RD
FORREST CIRCLE DR
E MILL RD
PINE CREST CIR
TERRACE DR
LODGE LN
MEADOWS DR
THREE RIVERS DR
TERRACE LN
NELSON LN
FIELD RD
SUNSET DR
GREYS RIVER



N

0 125 250 500
Feet
SCALE: 1" = 450'

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Figure 5
Future System
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan\S10388\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Future Layout, 6/2/2025 2:10 PM, cody.peck

N-J264
FF: 1626
gpm

J346
FF: 1626
gpm

J352
FF: 1618
gpm

N-J262
FF: 1595
gpm

J258
FF: 1535
gpm

J260
FF: 1646
gpm

J348
FF: 1625
gpm

MATCH 2

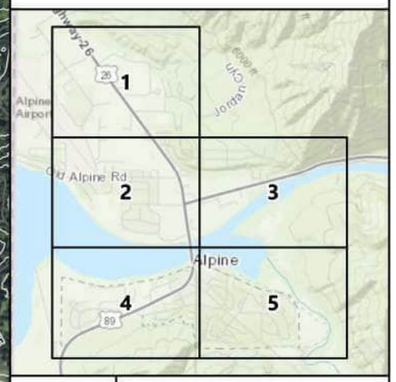
Legend

- Water_Hydrants
- Reservoir
- Tank

Pipe

Diameter

- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



North

0 125 250 500
Feet
SCALE: 1" = 450'

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Figure 1
Fire Flow Existing
Alpine, Wyoming

Date: 6/2/2025

P:\IWWDC Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Fire Flow, 6/2/2025 2:17 PM, cody.peck

MATCH 1

MATCH 3

MATCH 4

J348 FF: 1625 gpm

J344 FF: 1615 gpm

N-J260 FF: 1606 gpm

J502 FF: 1693 gpm

N-J256 FF: 1803 gpm

N-J242 FF: 2429 gpm

N-J246 FF: 2129 gpm

N-J226 FF: 2543 gpm

N-J232 FF: 2440 gpm

N-J224 FF: 2586 gpm

N-J230 FF: 2580 gpm

J272 FF: 1784 gpm

N-J236 FF: 2156 gpm

N-J234 FF: 2270 gpm

N-J240 FF: 2599 gpm

N-J244 FF: 2617 gpm

J254 FF: 2627 gpm

N-J228 FF: 2702 gpm

N-J218 FF: 3094 gpm

N-J216 FF: 4109 gpm

N-J220 FF: 7128 gpm

N-J212 FF: 7148 gpm

J264 FF: 6402 gpm

J266 FF: 6022 gpm

J268 FF: 6728 gpm

N-J222 FF: 3604 gpm

N-J238 FF: 6317 gpm

J250 FF: 2539 gpm

J248 FF: 2398 gpm

J252 FF: 2507 gpm

J256 FF: 2424 gpm

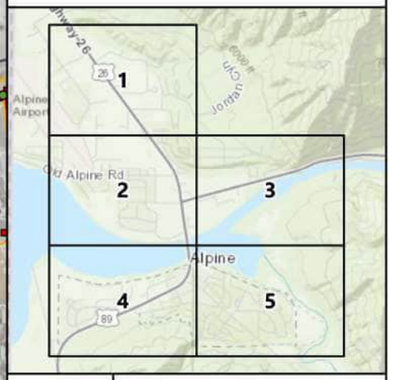
Legend

- Water_Hydrants
- Reservoir
- Tank

Pipe

Diameter

- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



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Feet

SCALE: 1" = 450'

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Figure 2
Fire Flow Existing
Alpine, Wyoming

Date: 6/2/2025

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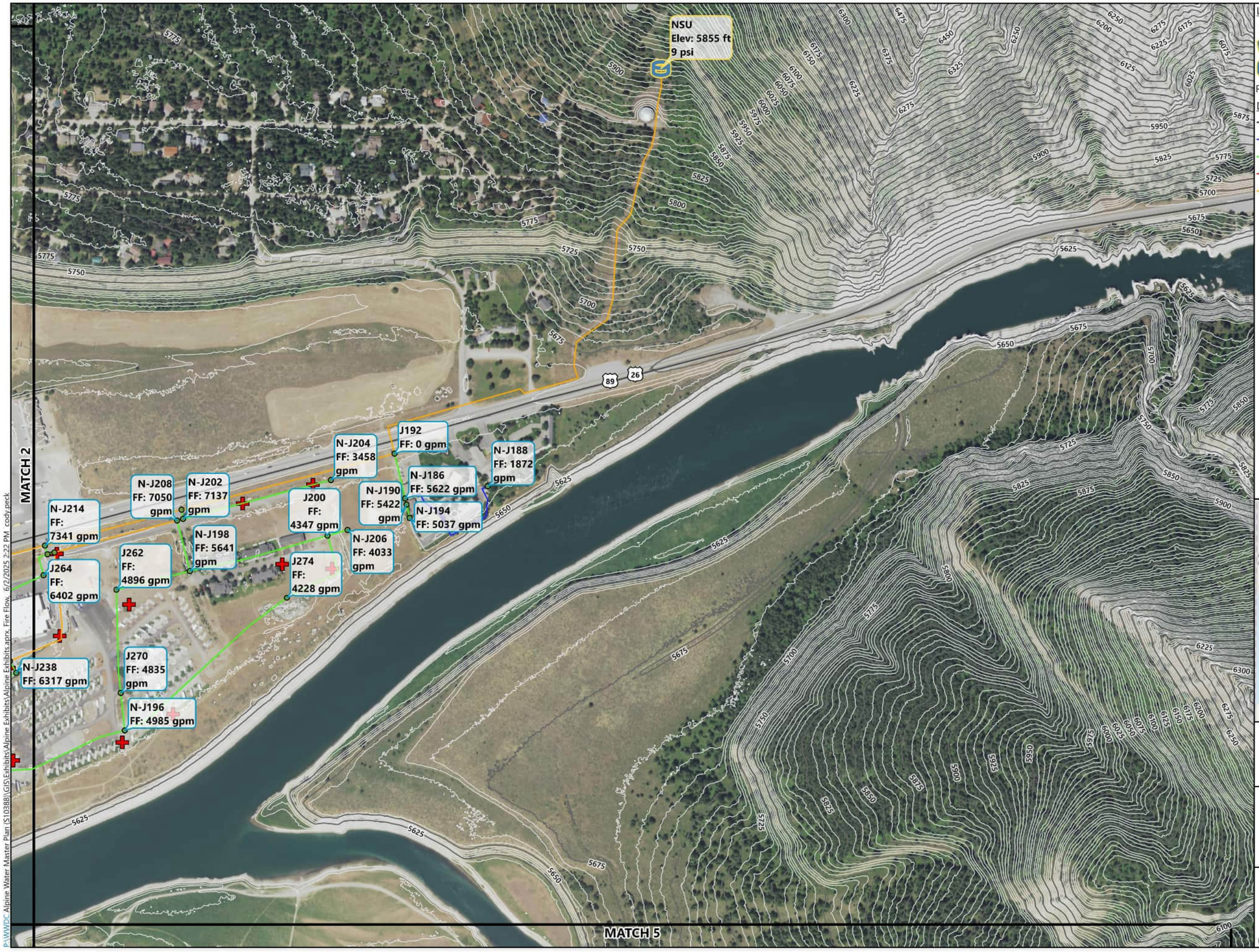


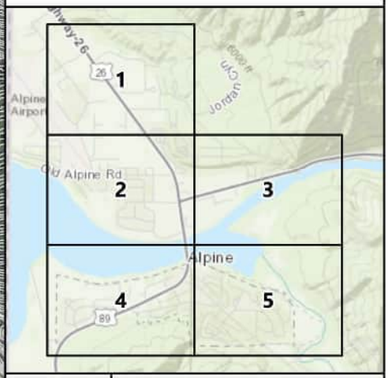
Legend

- Water_Hydrants
- Reservoir
- Tank

Pipe

Diameter

- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



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Feet

SCALE: 1" = 450'

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Figure 3
Fire Flow Existing
Alpine, Wyoming

Date: 6/2/2025

P:\WWDC Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Fire Flow, 6/2/2025 2:22 PM, cody.peck

MATCH 2

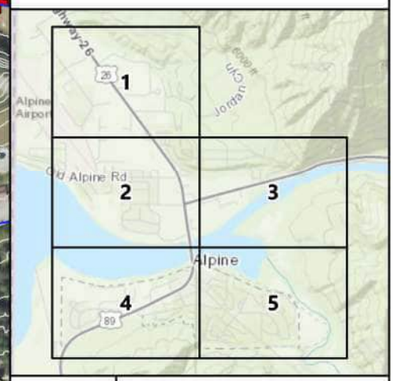
MATCH 5

J396 FF: 1307 gpm
J398 FF: 1399 gpm
J400 FF: 1605 gpm
J402 FF: 1767 gpm
J50 FF: 1796 gpm
J46 FF: 1866 gpm
J42 FF: 1818 gpm
J48 FF: 1910 gpm
J44 FF: 1936 gpm
J36 FF: 2026 gpm
J38 FF: 1835 gpm
J30 FF: 1876 gpm
J28 FF: 2162 gpm
J26 FF: 2268 gpm
J52 FF: 1931 gpm
J32 FF: 1886 gpm
J34 FF: 1634 gpm
J40 FF: 2046 gpm
J54 FF: 2033 gpm
J90 FF: 3027 gpm
J88 FF: 2947 gpm
J94 FF: 2594 gpm
J92 FF: 3167 gpm
J98 FF: 2922 gpm
J84 FF: 2684 gpm
J82 FF: 1892 gpm
J86 FF: 2358 gpm
J56 FF: 2826 gpm
J58 FF: 3208 gpm
J100 FF: 2577 gpm
J102 FF: 1213 gpm
J326 FF: 2519 gpm
J60 FF: 1536 gpm
J62 FF: 1564 gpm
J64 FF: 6738 gpm
J96 FF: 4866 gpm
J104 FF: 2631 gpm
J144 FF: 6454 gpm
J146 FF: 5793 gpm
J106 FF: 4811 gpm
J148 FF: 5616 gpm
J70 FF: 3191 gpm
J74 FF: 3757 gpm
J68 FF: 3128 gpm
J80 FF: 2765 gpm
J72 FF: 3210 gpm
J630 FF: 1508 gpm
J184 FF: 894 gpm
J182 FF: 1861 gpm
J186 FF: 1984 gpm
250K Elev: 5950 ft 6 psi

Legend
- Water_Hydrants
- Reservoir
- Tank

Pipe

Diameter
- 4-Inch
- 6-Inch
- 8-Inch
- 10-Inch
- 12-Inch



NORTH

0 125 250 500
Feet
SCALE: 1" = 450'

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Figure 4
Fire Flow Existing
Alpine, Wyoming

Date: 6/2/2025

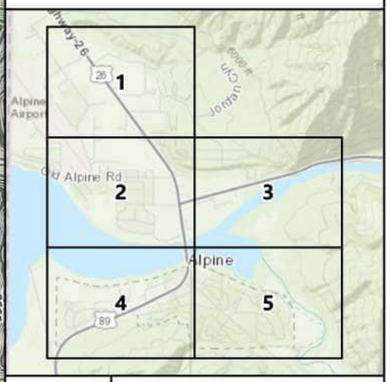
P:\WWDC Alpine Water Master Plan (S10388)\GIS\Exhibits\Alpine Exhibits\Alpine Exhibits.aprx, Fire Flow, 6/2/2025 2:25 PM, cody.peck

MATCH 3

MATCH 4

J206 FF: 3568 gpm
J146 FF: 5793 gpm
J154 FF: 4808 gpm
J208 FF: 2215 gpm
J138 FF: 3464 gpm
J16 FF: 1569 gpm
J204 FF: 5014 gpm
J136 FF: 4082 gpm
J134 FF: 4285 gpm
J14 FF: 2083 gpm
J12 FF: 2929 gpm
J150 FF: 5641 gpm
J210 FF: 3658 gpm
J10 FF: 3290 gpm
J228 FF: 2746 gpm
J230 FF: 2668 gpm
J18 FF: 2737 gpm
J132 FF: 4736 gpm
J214 FF: 725 gpm
J20 FF: 3106 gpm
J238 FF: 2067 gpm
J240 FF: 2028 gpm
J128 FF: 5086 gpm
J72 FF: 3210 gpm
J130 FF: 6329 gpm
J110 FF: 6477 gpm
J226 FF: 3325 gpm
J108 FF: 6434 gpm
J140 FF: 1601 gpm
J216 FF: 1381 gpm
J212 FF: 3660 gpm
J232 FF: 3301 gpm
J234 FF: 2624 gpm
J242 FF: 2073 gpm
J628 FF: 1730 gpm
J178 FF: 1106 gpm
J246 FF: 1429 gpm
J218 FF: 3449 gpm
J112 FF: 5163 gpm
J142 FF: 5260 gpm
J220 FF: 2701 gpm
J182 FF: 1861 gpm
J176 FF: 2054 gpm
J222 FF: 981 gpm
J236 FF: 2500 gpm
J156 FF: 2265 gpm
J180 FF: 2210 gpm
J114 FF: 2358 gpm
J174 FF: 2004 gpm
J202 FF: 4749 gpm
J186 FF: 1984 gpm
J116 FF: 3122 gpm
J118 FF: 4907 gpm
J224 FF: 2985 gpm
J188 FF: 2978 gpm
J160 FF: 2167 gpm
J158 FF: 2536 gpm
J166 FF: 1859 gpm
J172 FF: 1758 gpm
J244 FF: 2517 gpm
J162 FF: 2825 gpm
J152 FF: 6351 gpm
J190 FF: 0 gpm
J120 FF: 5977 gpm
J24 FF: 915 gpm
J168 FF: 1345 gpm
J164 FF: 2902 gpm
J194 FF: 1878 gpm
J196 FF: 3541 gpm
Well1 Pump Elev: 5503 ft
J370 FF: 2481 gpm
J170 FF: 958 gpm
J374 FF: 0 gpm
Well2 Pump Elev: 5552 ft
500K Elev: 5862 ft 6 psi
J126 FF: 0 gpm
J372 FF: 2522 gpm
J488 FF: 1491 gpm
Well3 Pump Elev: 5494 ft
250K Elev: 5950 ft 6 psi

Legend
Water_Hydrants
Reservoir
Tank
Pipe
Diameter
4-Inch
6-Inch
8-Inch
10-Inch
12-Inch



0 125 250 500
Feet
SCALE: 1" = 450'

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Figure 5
Fire Flow Existing
Alpine, Wyoming

Date: 6/2/2025

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SUNRISE ENGINEERING

Alpine Fire Hydrant Test

Location: South Alpine

Date: 5/5/2025

Purpose: Calibrate Model

Hydrant Condition: Good working order

Device Used:

USA Bluebook Stock Number 22484

Test is performed on the small outlet of hydrant

Theoretical Flow Calculations

Outlet Type	Smooth and Rounded	
Diameter of Outlet	2.5	Inches
Pitot Pressure	40	psi
Discharge Coefficient	0.9	
Theoretical Flow	**1061.22**	gpm

Available Flow at Theoretical Residual Pressure

Static Pressure	94	psi
Desired Residual (Typ. 20 psi)	20	psi
Recorded Residual During Test	68	psi
Theoretical Flow From Above	**1061.22**	gpm
Flow at Desired Residual	**1866.83**	gpm

Image with location of Flow and Residual Hydrant:

Methodology

Theoretical Fow Equation

c = Nozzle Coefficient

d = inside diameter of nozzle (in)

P = Pitot Pressure (psi)

Q = Discharge (gpm)

$$Q = 29.83cd^2\sqrt{P}$$

Available Flow at Theoretical Residual Pressure Equation

Q_r = Flow Available at Desired Residual Pressure (psi)

Q_h = Flow Available at Desired Residual Pressure (psi)

h_r = Pressure drop to Desired Residual Pressure

h_f = Pressure Drop During Test

$$Q_R = Q_F * \left(\frac{h_r^{0.54}}{h_f^{0.54}}\right)$$

Discharge Coefficients

Smooth and Rounded	0.9
Outlet Square and Sharp	0.8
Outlet Square and Projecting into barrel	0.7

SUNRISE ENGINEERING

Alpine Fire Hydrant Test

Location: Alpine South Upper Pressure Zone

Date: 5/5/2025

Purpose: Calibrate Model

Hydrant Condition: Good Working Order

Device Used:

USA Bluebook Stock Number 22484

Test is performed on the small outlet of hydrant

Theoretical Flow Calculations

Outlet Type	Smooth and Rounded	
Diameter of Outlet	2.5	Inches
Pitot Pressure	40	psi
Discharge Coefficient	0.9	
Theoretical Flow	**1061.22**	gpm

Available Flow at Theoretical Residual Pressure

Static Pressure	98	psi
Desired Residual (Typ. 20 psi)	20	psi
Recorded Residual During Test	70	psi
Theoretical Flow From Above	**1061.22**	gpm
Flow at Desired Residual	**1845.32**	gpm

Image with location of Flow and Residual Hydrant:

Methodology

Theoretical Fow Equation

c = Nozzle Coefficient

d = inside diameter of nozzle (in)

P = Pitot Pressure (psi)

Q = Discharge (gpm)

$$Q = 29.83cd^2\sqrt{P}$$

Available Flow at Theoretical Residual Pressure Equation

Q_r = Flow Available at Desired Residual Pressure (psi)

Q_h = Flow Available at Desired Residual Pressure (psi)

h_r = Pressure drop to Desired Residual Pressure

h_f = Pressure Drop During Test

$$Q_R = Q_F * \left(\frac{h_r^{0.54}}{h_f^{0.54}}\right)$$

Discharge Coefficients

Smooth and Rounded	0.9
Outlet Square and Sharp	0.8
Outlet Square and Projecting into barrel	0.7

SUNRISE ENGINEERING

Alpine Fire Hydrant Test

Location: North Alpine

Date: 5/5/2025

Purpose: Calibrate Model

Hydrant Condition: Did not fully close

Device Used:

USA Bluebook Stock Number 22484

Test is performed on the small outlet of hydrant

Theoretical Flow Calculations

Outlet Type	Smooth and Rounded	
Diameter of Outlet	2.5	Inches
Pitot Pressure	52	psi
Discharge Coefficient	0.9	
Theoretical Flow	**1209.98**	gpm

Available Flow at Theoretical Residual Pressure

Static Pressure	98	psi
Desired Residual (Typ. 20 psi)	20	psi
Recorded Residual During Test	56	psi
Theoretical Flow From Above	**1209.98**	gpm
Flow at Desired Residual	**1690.26**	gpm

Notes:

Observed that hydrant tested for flow did not fully close after test. Observed that hydrant was a Clow 305097 dated 2020.

Image with location of Flow and Residual Hydrant:

Methodology

Theoretical Fow Equation

c = Nozzle Coefficient

d = inside diameter of nozzle (in)

P = Pitot Pressure (psi)

Q = Discharge (gpm)

$$Q = 29.83cd^2\sqrt{P}$$

Available Flow at Theoretical Residual Pressure Equation

Q_r = Flow Available at Desired Residual Pressure (psi)

Q_h = Flow Available at Desired Residual Pressure (psi)

h_r = Pressure drop to Desired Residual Pressure

h_f = Pressure Drop During Test

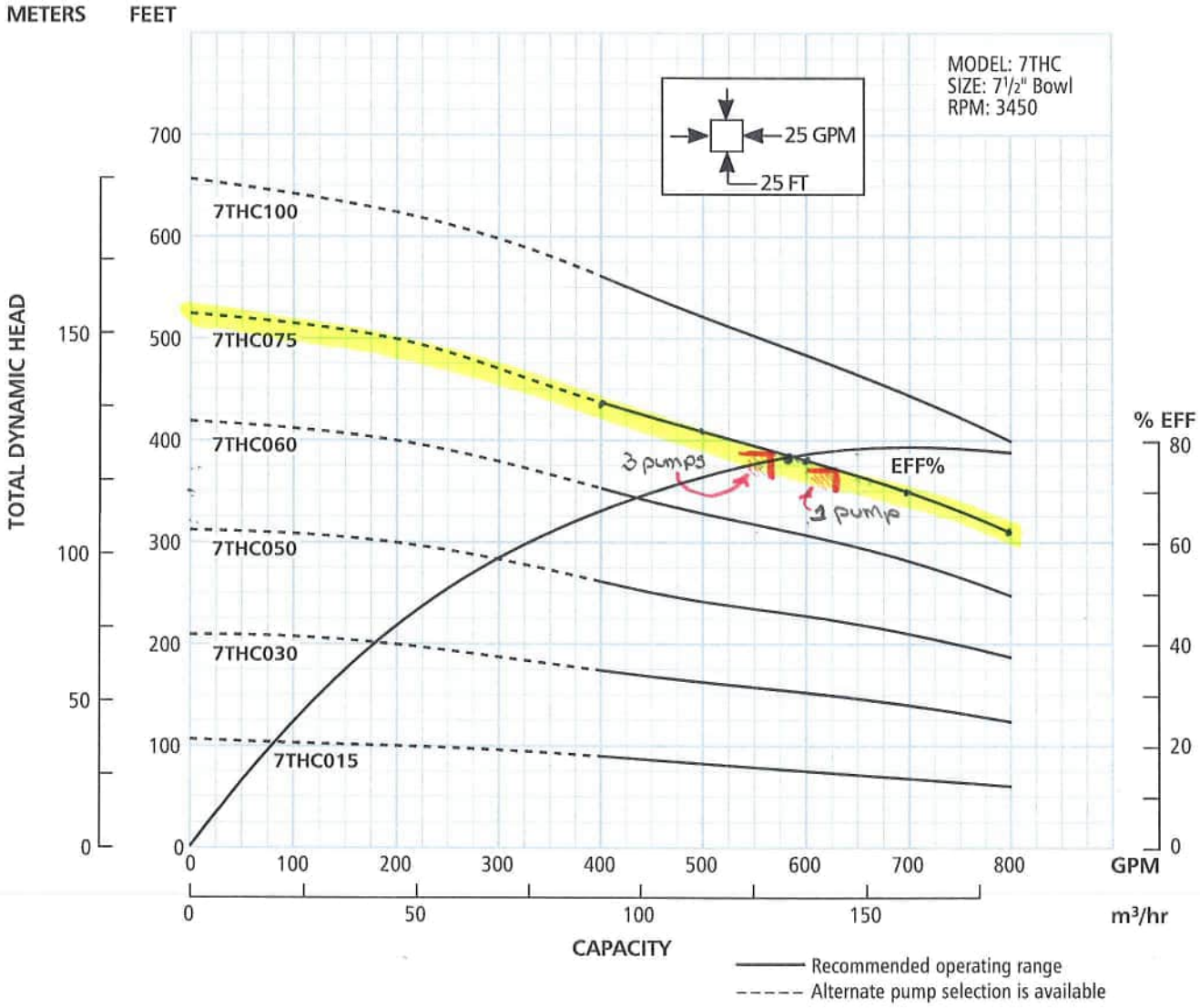
$$Q_R = Q_F * \left(\frac{h_r^{0.54}}{h_f^{0.54}}\right)$$

Discharge Coefficients

Smooth and Rounded	0.9
Outlet Square and Sharp	0.8
Outlet Square and Projecting into barrel	0.7

Model 7THC 700 GPM

GOULDS PUMPS



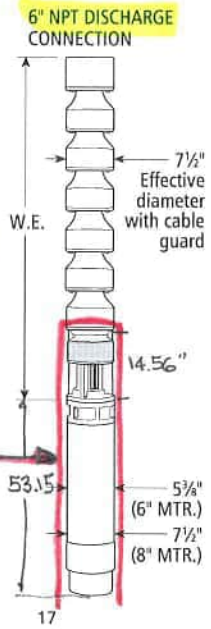
DIMENSIONS AND WEIGHTS

HP	Stages	W.E. Order Number	W.E. Length	W.E. Wt. (lbs.)
15	1	07THC01566BTS	23.6	78
30	2	07THC03066BTS	30.7	109
50	3	07THC05066BTS	37.8	140
60	4	07THC06066BTS	44.7	171
75	5	07THC07586BTS	53.6	214
100	6	07THC10086BTS	60.7	245

(All dimensions in inches and weights in lbs. Do not use for construction purposes.)

PLEASE NOTE:
- Order motors separately.
- For intermediate horsepower pumps consult factory.
- Solid line is recommended operating range. The dotted line (– – – –) signifies an alternate pump selection is available.
- Please specify all options changes in W.E. order number.

9" PVC SLEEVE x 70 1/2
(9.375" O.D.)
(9.0" I.D)
(5'10")

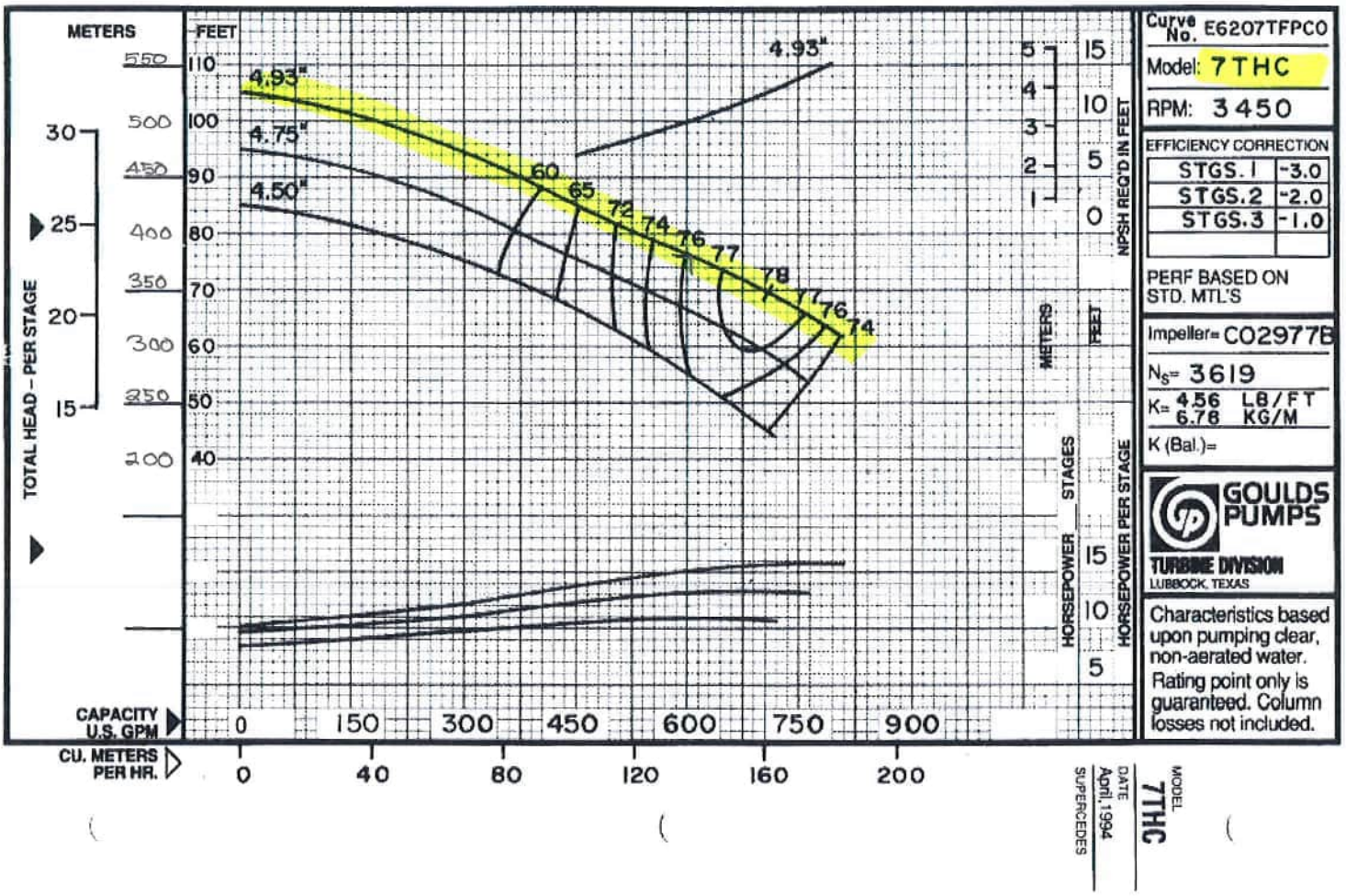


MATERIALS OF CONSTRUCTION

Part Name	Material
Shaft	ASTM A582 TYPE 416
Coupling	ASTM A582 S41600 CD
Suction Adapter	Ductile Iron ASTM A536
Discharge Bowl	ASTM A48 CL 30B
Rubber Bearings	RUBBER
Optional Bronze Bearings	ASTM B584
Discharge Bowl Bearing	ASTM B584
Taperlocks	ASTM A108 GR 101B
Bowl	ASTM A48 CL 30B
Upthrust Collar	Polyethylene
Impeller	ASTM B584
Fasteners	SAEJ429 GR 8
Cable Guard	ASTM A240 S 30400
Suction Strainer	ASTM A240 S 30400

5-STAGE

4.93" Impeller 1 5 STAGE



Curve No. E6207TFPCO

Model: 7THC

RPM: 3450

EFFICIENCY CORRECTION

STGS. 1	-3.0
STGS. 2	-2.0
STGS. 3	-1.0

PERF BASED ON STD. MTL'S

Impeller= C02977B

N_S= 3619

K= 4.56 LB/FT
6.78 KG/M

K (Bal.)=

GOULDS PUMPS
TURBINE DIVISION
LUBBOCK, TEXAS

Characteristics based upon pumping clear, non-aerated water. Rating point only is guaranteed. Column losses not included.

MODEL 7THC

DATE April, 1994

SUPERCEDES

GOULDS WATER TECHNOLOGY
a xylem brand

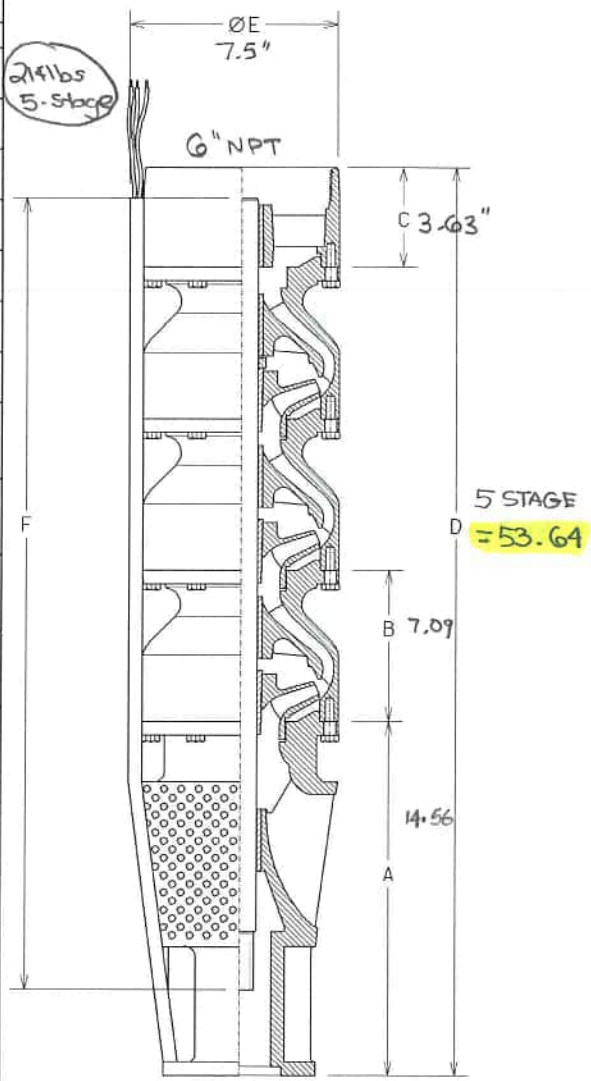
ENGINEERING DATA
D200D01

Submersible Turbine Pumps Data

200.D.01 *(Effective April, 2013)*

MODEL	Motor Size	"A"	"B"	"C"	One Stage "D"	"E"	One Stage Shaft Length	Disch. Sizes	First Stage Weight	Add'l Stage Weight
5C	4	8.25	4.63	3.31	16.19	5.64	12.88	3,4	44	13
	6	10.56			18.50		13.63		49	
5T	4	8.25	4.81		16.38		13.06		44	
	6	10.56			18.69		13.81		49	
5RWA	4	8.38	4.00		15.69		13.25		44	
	6	10.56			17.88		13.75		49	
6C	4	8.44	5.13	3.75	17.31	6.28	13.63	3,4,5	50	17
	6	10.56			19.44		14.25		55	
	8	12.50			21.38		15.38		60	
6DH	4	4.94	5.50		14.19	5.88	10.63		41	16
	6	9.75			19.00		13.75		53	
6RA	6	10.56	3.75		18.06	5.94	12.88	3,4	90	20
7C	6	12.88	6.38	3.63	22.88	7.50	18.50	5,6	75	28
	8	14.56			24.56		19.25		87	
7RA	6	8.44	4.50		16.56	7.90	11.50	3,4	105	28
7T	6	12.88	7.09		23.59	7.50	19.06	5,6	78	31
7THC	8	14.56			25.28		19.94		90	
7WA	6	12.88	5.50		22.00		17.75		68	30
	8	14.56			23.69		18.50		80	
8FD	6	12.88	8.25		24.75	7.90	20.50		125	34
	8	14.56			26.43		21.37		137	
8I	6	12.88	6.38		22.88		18.13		90	33
	8	14.56			24.56		18.88		102	
8RA	6	12.88	5.00		21.50		17.25	4,5,6	165	36
	8	14.56			23.19		18.13		177	
8RJ	6	12.88	6.50		23.00		17.50	5,6	90	34
	8	14.56			24.69		18.88		102	
9RA	6	12.88	5.50		22.00		17.50	4,5,6	185	46
	8	14.56			23.69		18.50		197	
9RC	6	15.13	8.50	4.50	28.13	9.81	24.25	5,6,8	194	64
	8	13.25			26.25		21.50		206	
	10	13.25			26.25		20.50		206	
9T	6	15.13	9.25		28.88		25.00		200	70
	8	13.25			27.00		22.25		212	
	10	13.25			27.00		21.25		212	
9WA	6	15.13	6.63		26.25		22.38		158	58
	8	13.25			24.38		19.63		170	
	10	13.25			24.38		18.63		170	
10DH	8	13.25	9.25		27.00	10.00	22.00	6,8	185	65
	10	13.25			27.00		22.00		190	
	12	13.25			27.00		21.00		190	
10RA	6	15.13	6.63		26.25		22.38	4,6,8	280	76
	8	13.25			24.38		19.63		285	
	10	13.25			24.38		18.63		285	
10RJ	6	15.13	8.40		28.03		23.38	6,8	187	60
	8	13.25			26.15		20.75		192	
	10	13.25			26.15		19.75		192	
10WA	6	15.13	7.63		27.25		23.38	4,6,8	183	56
	8	13.25			25.38		20.63		188	
	10	13.25			25.38		19.63		188	
11C	8	13.25	9.88	5.13	28.25	11.50	23.75	6,8,10	285	97
	10	13.25			28.25		23.75			
	12	13.25			28.25		22.75			
11RA	6	14.44	8.00	5.88	28.31	12.10	24.25		415	103
	8	13.25			27.13		22.25			
	10	13.25			27.13		21.25			

All dimensions are in inches and weights in lbs.



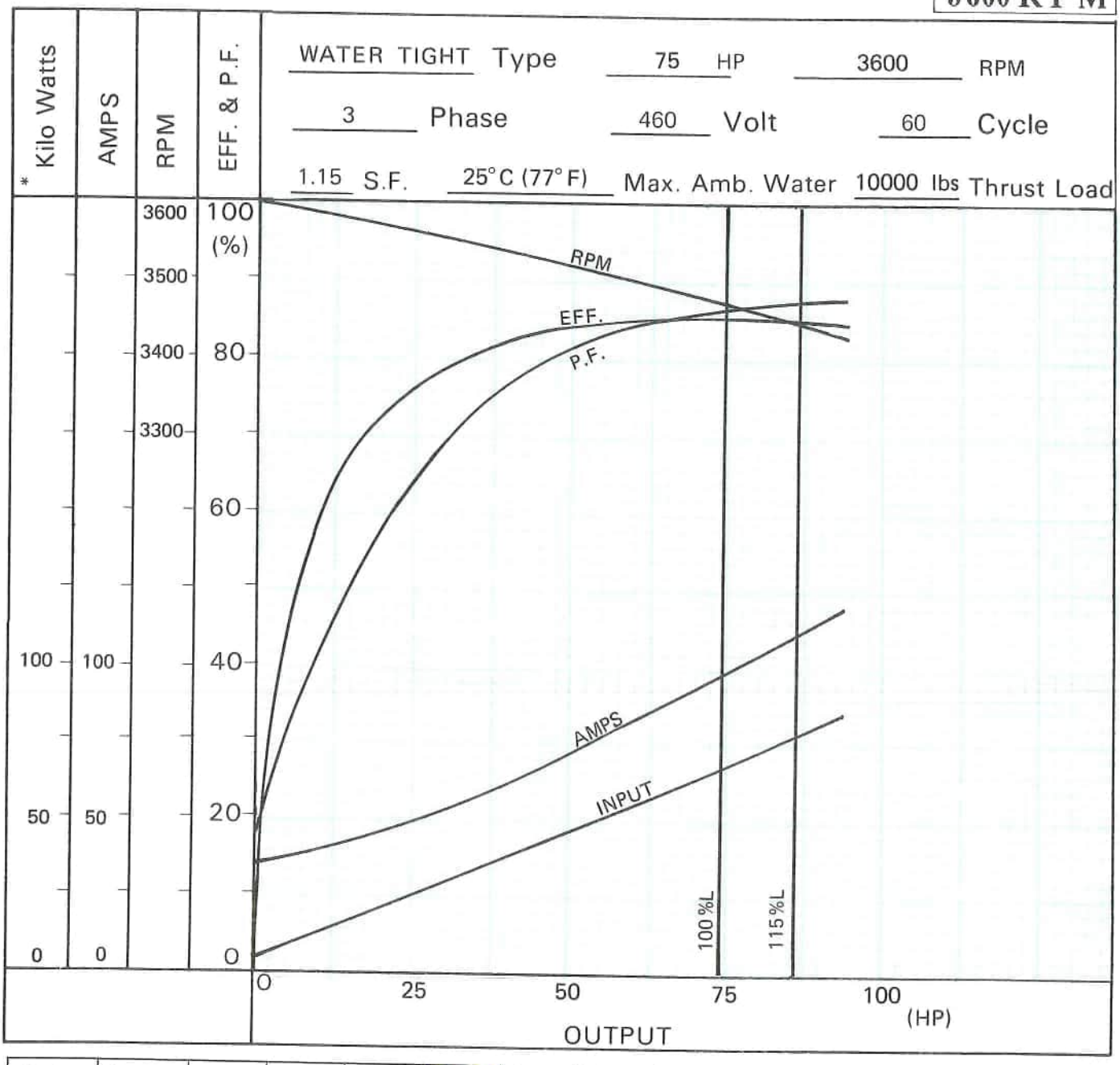
HITACHI

D 18

Date : 9/1/91
Supersedes : 12/1/82

8″ SUBMERSIBLE MOTOR
PERFORMANCE CHARACTERISTICS

75 HP
3600 RPM



LOAD (HP)	No load (—)	25% (18.75)	50% (37.5)	75% (56.25)	100% (75)	115% (86.25)	125% (93.75)
AMPS	37.2	44.7	58.5	76.1	96.3	110	119
EFF.	0	71.0	81.2	84.2	84.9	84.6	84.3
P.F.	18.5	55.3	73.9	82.2	85.9	87.0	87.4
RPM	3600	3571	3540	3506	3468	3443	3426
* WATTS	5480	19700	34450	49840	65900	76100	82960

Full Load Torque 114 Foot Pounds
Break Down Torque 337 Foot Pounds
Locked Rotor Torque 226 Foot Pounds
Locked Rotor Current 650 Amperes
KVA Code H

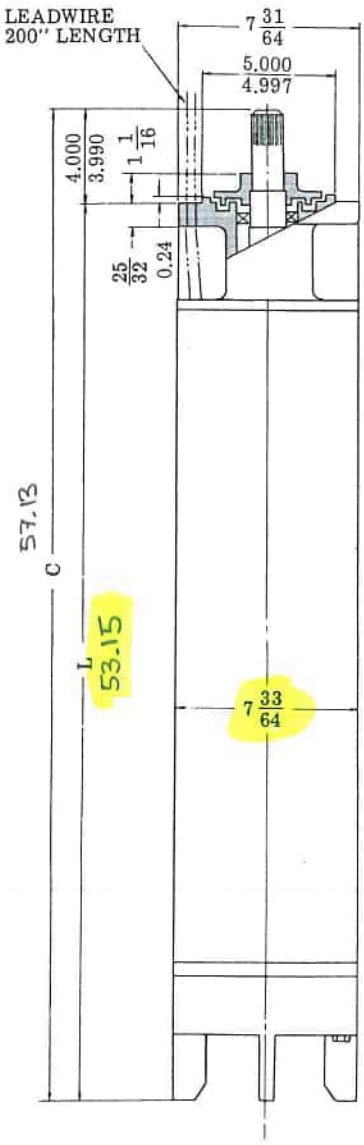
* Additional input watts due to thrust load — see page C5.
Quick trip O.L. + short circuit protection required in each phase.

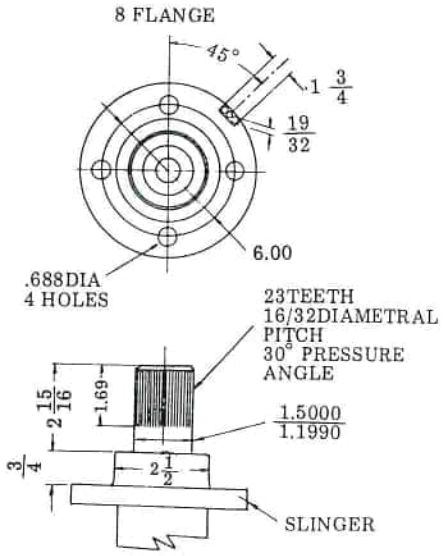
Power factor correction capacitor — see page C7.

2 POLE HITACHI SUBMERSIBLE MOTORS

Date : 4/1/92
Supersedes : 4/1/85

8″ MOTOR
8″ FLANGE



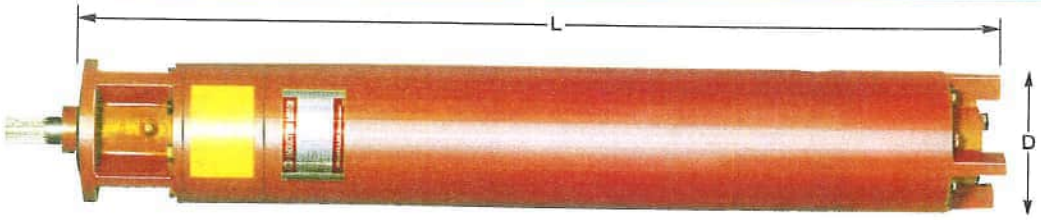


Dimensions in inches

HP	PHASE	VOLT	Hz	THRUST (LBS)	C	L
40	3	460	60	10000	48.07	44.09
50	3	460	60	10000	50.44	46.44
60	3	460	60	10000	53.19	49.19
75	3	460	60	10000	57.13	53.15
100	3	460	60	10000	62.24	58.27
125	3	460	60	10000	62.24	58.27
150	3	460	60	10000	70.12	66.14

HITACHI

Size and Weight 2POLE 3600 r/min 60Hz. 3000 r/min 50Hz. and 4POLE 1800 r/min 60Hz.



2POLE

Motor Size	OUTPUT		D inch (mm)	L		*Net Weight	
	HP	kW		inch	mm	lbs	kg
8"	40	30	7.52 (191)	44.09 (42.91)	1120 (1090)	331 (320)	150 (145)
	50	37		46.44 (45.28)	1180 (1150)	353 (342)	160 (155)
	60	45		49.19 (48.03)	1250 (1220)	375 (364)	170 (165)
	75	55		53.15	1350	397	180
	100	75		58.27	1480	441	200
	125	90		58.27	1480	450	204
	150	110		66.14	1680	518	235
10"	175	132	8.52 (216.5)	63.78	1620	728	330
	200	150		69.68	1770	816	370
	250	185		79.53	2020	970	440
12"	300	225	10.53 (267.5)	78.75	2000	1477	670

( )6 inch Flange *Gross Weight: See page 15.

4POLE

Motor Size	OUTPUT		D inch (mm)	L		*Net Weight	
	HP	kW		inch	mm	lbs	kg
8"	7.5	5.5	7.52 (191)	37.40 (36.22)	950 (920)	287 (276)	130 (125)
	10	7.5		37.40 (36.22)	950 (920)	293 (282)	133 (128)
	15	11		41.34 (40.16)	1050 (1020)	326 (315)	148 (143)
	20	15		41.34 (40.16)	1050 (1020)	333 (322)	151 (146)
	25	18.5		44.09 (42.91)	1120 (1090)	355 (344)	161 (156)
	30	22		44.09 (42.91)	1120 (1090)	362 (351)	164 (159)
10"	40	30	8.52 (216.5)	49.21	1250	496	225
	50	37		49.21	1250	507	230
	60	45		59.84	1520	573	260
	75	55		59.84	1520	584	265
	100	75		69.68	1770	728	330
	125	90		69.68	1770	743	337
12"	150	110	10.53 (267.5)	56.30	1430	882	400
	175	132		61.02	1550	992	450
	200	150		68.11	1730	1146	520
14"	250	185	12.60 (320.0)	68.31	1735	1720	780
	300	225		76.18	1935	1962	890

( ) 6 inch Flange *Gross Weight: See page 15.

Cable Size and Type

2POLE 200 inch (5m) Lead Wire Standard Length (Round 1 Stranded Conductor)

Motor Size	OUTPUT		460V 415V 400V 380V			
	HP	kW	Lead Wire Size		Cable Dia	
			mm^2	AWG	inch	mm
8"	40–75	30–55	8	#8	0.362	9.2
	100–125	75–90	14	#6	0.433	11.0
	150	110	22	#4	0.531	13.5
10"	175–250	132–185	30	#2	0.591	15.0
12"	300	225	60	#2/0	0.768	19.5

TYPE OF LEAD WIRE – 600V CLASS
Ethylenepropylene rubber insulated chloroprene cabtyre cable.

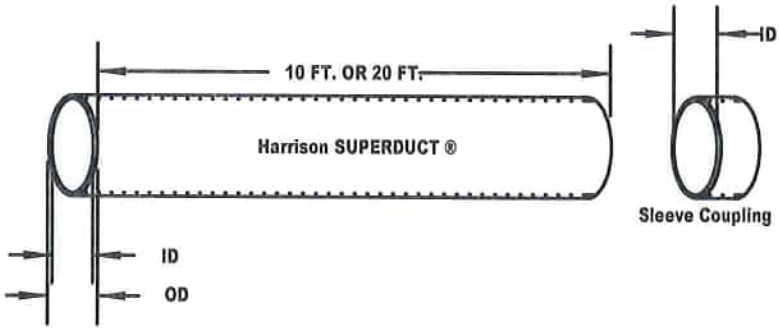
4POLE 200 inch (5m) Lead Wire Standard Length (Round 1 Stranded Conductor)

Motor Size	OUTPUT		460V			
	HP	kW	Lead Wire Size		Cable Dia	
			mm^2	AWG	inch	mm
8"	7.5–30	5.5–22	8	#8	0.362	9.2
10"	40–50	30–37	8	#8	0.362	9.2
	60–75	45–55	14	#6	0.433	11.0
	100–125	75–90	30	#2	0.591	15.0
12"	150–200	110–150	30	#2	0.591	15.0
14"	250–300	185–200	60	#2/0	0.768	19.5

PVC DUCT PIPE
ASTM D1784

COMMERCIAL INDUSTRIAL SUPPLY

Get a Quote or Place an Order: **866-777-8001**
Commercial-Industrial-Supply.com



SUPERDUCT® Pipe						
Part No.	Size	(O.D.)	(I.D.)	Wall	Wt/Ft.	Standard Length
	Extruded					
1033-PP-02	2"	2.375"	2.047"	0.154"	0.720	10 ft. or 20 ft.
1033-PP-03	3"	3.500"	3.042"	0.216"	1.488	10 ft. or 20 ft.
1033-PP-04	4"	4.500"	3.998"	0.237"	2.118	10 ft. or 20 ft.
1033-PP-05	5"	5.563"	5.016"	0.258"	2.874	10 ft. or 20 ft.
1033-PP-06	6"	6.625"	6.250"	0.187"	2.340	10 ft. or 20 ft.
1033-PP-07	7"	7.375"	7.000"	0.187"	2.534	10 ft. or 20 ft.
1033-PP-08	8"	8.625"	8.250"	0.187"	3.060	10 ft. or 20 ft.
1033-PP-09	9"	9.375"	9.000"	0.187"	3.239	10 ft. or 20 ft.
1033-PP-10	10"	10.750"	10.380"	0.187"	3.830	10 ft. or 20 ft.
1033-PP-11	11"	11.375"	11.000"	0.187"	3.944	10 ft. or 20 ft.
1033-PP-12	12"	12.750"	12.380"	0.187"	4.560	10 ft. or 20 ft.
1033-PP-14	14"	14.000"	13.630"	0.187"	5.010	10 ft. or 20 ft.
1033-PP-16	16"	16.000"	15.630"	0.187"	5.740	10 ft. or 20 ft.
1033-PP-18	18"	18.000"	17.630"	0.187"	6.460	10 ft. or 20 ft.
1033-PP-20	20"	20.000"	19.500"	0.219"	9.580	10 ft. or 20 ft.
1033-PP-24	24"	24.000"	23.500"	0.250"	11.520	10 ft. or 20 ft.
	Rolled					
1033-PP-22	22"	22.000"	21.626"	0.187"	8.550	4 ft. w/ Coupling
1033-PP-26	26"	26.000"	25.626"	0.187"	10.070	4 ft. w/ Coupling
1033-PP-28	28"	28.000"	27.626"	0.187"	10.850	4 ft. w/ Coupling
1033-PP-30	30"	30.000"	29.626"	0.187"	11.640	4 ft. w/ Coupling
Duct diameter thru 60" available. Contact factory for details.						

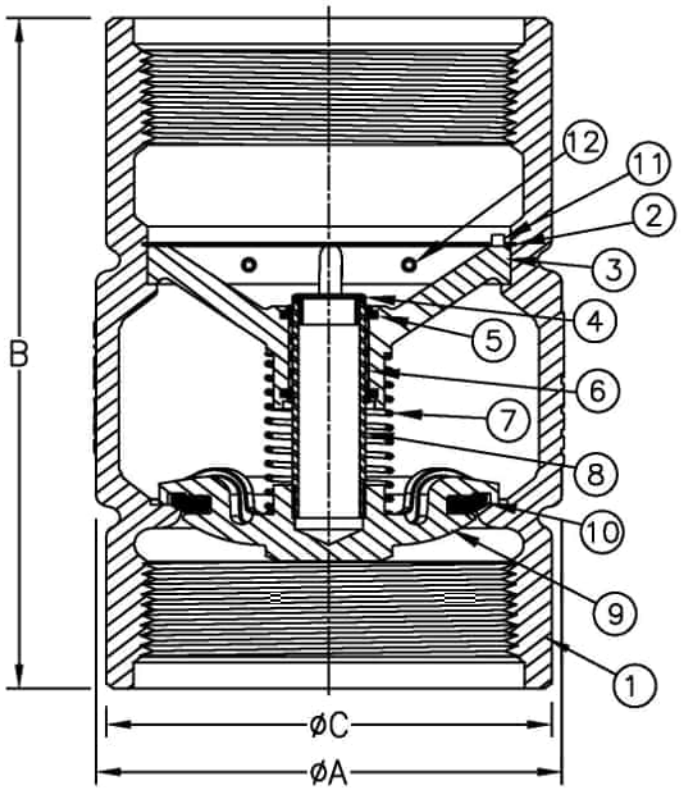
Ductile Iron Check Valve — Model 80DI-VFD

Sizes 6" thru 10" / 150 mm Thru 250 mm

FLOMATIC®
Flomatic Corporation

LEAD FREE
NSF/ANSI 61

Materials



Max Temp 180°F (82°C)
Max Pressure 600psi (42bar)

Item #	Qty	Description	Material	ASTM
1	1	Body (Epoxy Coated)	Ductile Iron	65-45-12
2	1	Retaining Ring	Stainless Steel	302
3	1	Stem Guide	Ductile Iron	65-45-12
4	1	Stem Cap (Epoxy Coated)	Engineered Composite	Polyethelyne
5	2	Wiper	Engineered Composite	Molythane
6	1	Bushing	Engineered Composite	-------
7	1	Spring	Stainless Steel	302
8	1	Stem	Stainless Steel	316
9	1	Disc	Buna-N	N-5007*
10	1	Poppet (Epoxy Coated)	Ductile Iron	65-45-12
11	1	SHCS	Stainless Steel	316
12	4	SHSS	Stainless Steel	316

*6" uses N-6010, 8" uses N-7039
Patent # 9,032,992

Dimensions (FNPT x FNPT)

ANSI B1.20.1
Optional Female 8 Round Threads
API Specification 5B
Line Pipe Threads are not API certified

Size		Part #	ØA		B		ØC		Weight	
inch	mm		inch	mm	inch	mm	inch	mm	lbs	kg
6	150	4089VFD	8	203	15-6/64	385	7-21/32	194	58	26
8	200	4090VFD	9-11/16	246	15-27/32	402	9-11/16	246	84	38
10	250	4091VFD	12-1/8	308	17-1/2	435	17-1/2	435	142	65

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FLOMATIC® VALVES

April 4, 2018
Dwg No: S4091VFD Rev: 0

FLOMATIC CORPORATION
GLENS FALLS, N.Y. 12801
PHONE (518) 761-9797
FAX (518) 761-9798

Pump Data Sheet -

Company:
Name:
Date: 06/05/2021

Customer:

4.75 inch impeller

GOULDS WATER TECHNOLOGY
a xylem brand

Pump:

Size:	7THC (stages: 5)	Dimensions:	
Type:	Submersible	Suction:	---
Synch Speed:	3600 rpm	Discharge:	---
Dia:	4.75 in	Vertical Turbine:	
Curve:	E6207TFPC2	Eye Area:	
		Bowl Size:	7.13 in
		Max Lateral:	0.38 in
		Thrust K Factor:	4.56 lb/ft

Search Criteria:

Flow:	596 US gpm	Near Miss:	---
Head:	361 ft	Static Head:	0 ft

Pump Selection Warnings:

None

Fluid:

Name:	Water		
SG:	1	Vapor Pressure:	0.256 psi a
Density:	62.4 lb/ft³	Atm Pressure:	14.7 psi a
Viscosity:	1.1 cP		
Temperature:	60 °F	Margin Ratio:	1

Pump Limits:

Temperature:	---	Sphere Size:	0.63 in
Wkg Pressure:	---		

Motor:

Standard:	NEMA	Size:	75 hp
Enclosure:	SUB	Speed:	3600 rpm
Frame:	8 inch		
Sizing Criteria:	Max Power on Design Curve		

--- Duty Point ---

Flow:	603 US gpm
Head:	370 ft
Eff:	78.6%
Power:	71.6 hp
NPSHr:	16.3 ft
Speed:	3468 rpm

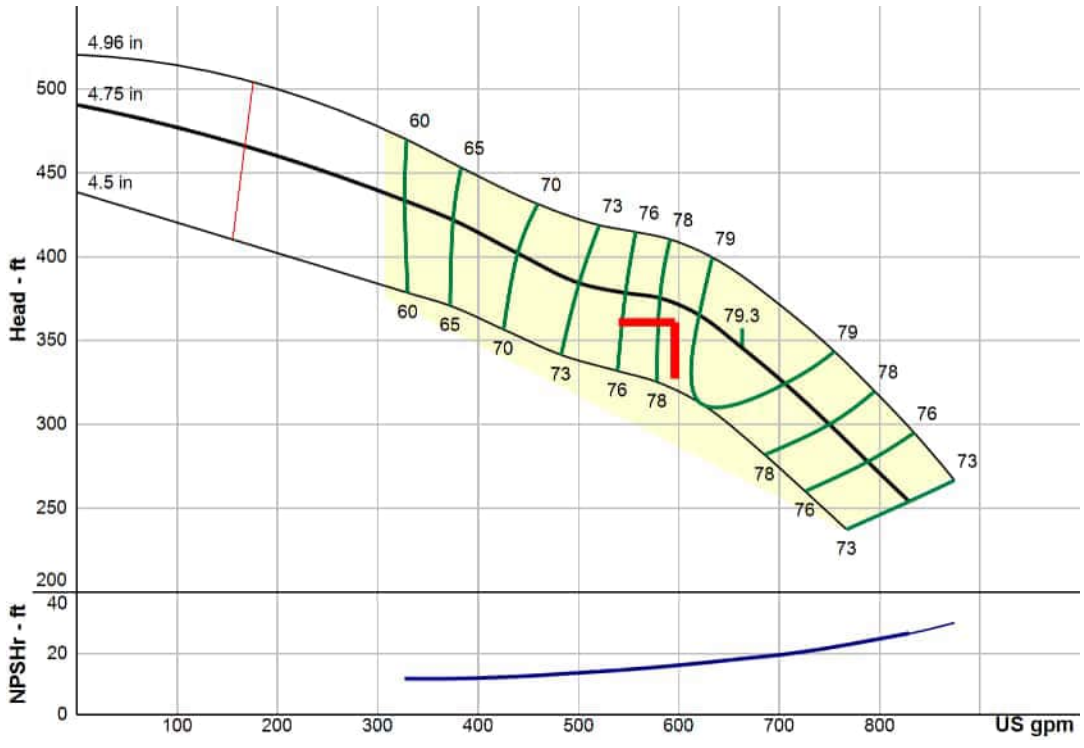
--- Design Curve ---

Shutoff Head:	491 ft
Shutoff dP:	212 psi
Min Flow:	166 US gpm

BEP: 79.3% @ 663 US gpm
NOL Power:
73.2 hp @ 706 US gpm

--- Max Curve ---

Max Power:
82.9 hp @ 755 US gpm



Performance Evaluation:

Flow	Speed	Head	Efficiency	Power	NPSHr
US gpm	rpm	ft	%	hp	ft
715	3468	319	78.8	73.1	20.2
596	3468	372	78.4	71.3	16.1
477	3468	391	71.8	65.5	13.2
358	3468	426	63.2	60.8	11.8
238	3468	449	50.8	56.3	11.8

SUNRISE ENGINEERING

Prepared By: CWP
Checked By:
Date: 6/2/2025

Meter Calculations

Summary:
This shows the meter calculations for the North Star (North side of bridge) and Alpine South (South side of the bridge). It was needed to have separate calcualtions as the meter data is recorded differently for each side of the system.

Meter Demand Calculations

Demand Summary

Recorded Meters

Alpine South

Residential	504
Commercial	4
Institutional	0
Total	508

North Star

Residential	113
Commercial	17
Institutional	0
Total	130

Total Meters	638
Unused Meters	36
	602

Usage Year to Year

	Alpine South	North Star	Combined	Gal/Con/Year	Gal/Day/Con
2019	68,181,808		68,181,808	113,259	310
2020	63,146,271	14,064,864	77,211,135	128,258	351
2021	64,932,231	17,345,356	82,277,587	136,674	374
2022	69,759,207	14,810,688	84,569,894	140,482	385
2023	72,203,034	13,733,400	85,936,434	142,752	391
2024	66,107,698	19,853,519	85,961,217	142,793	391
Average	67,388,375	15,961,565	80,689,679	134,036	367

Abbriviations

Con	Connections
Gal	*Gallons*
HR	*Hour*

1	Input
2	Output
3	Calculation

Estimated Average Calcualtaion for Month to Month for Whole System Based on North Star

North Star

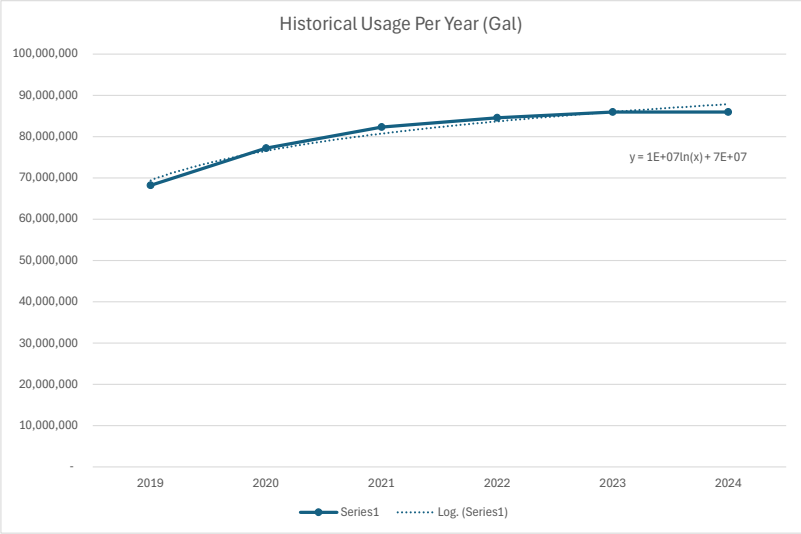
	January	February	March	April	May	June	July	August	September	October	November	December	Total
5-Year Avg. (Gal)	586,293	500,518	955,094	1,027,652	1,949,067	2,566,763	2,966,963	1,957,921	1,221,385	929,398	665,045	635,466	**15,961,565**
Usage % Based on Total Usage	3.67%	3.14%	5.98%	6.44%	12.21%	16.08%	18.59%	12.27%	7.65%	5.82%	4.17%	3.98%	

Alpine South

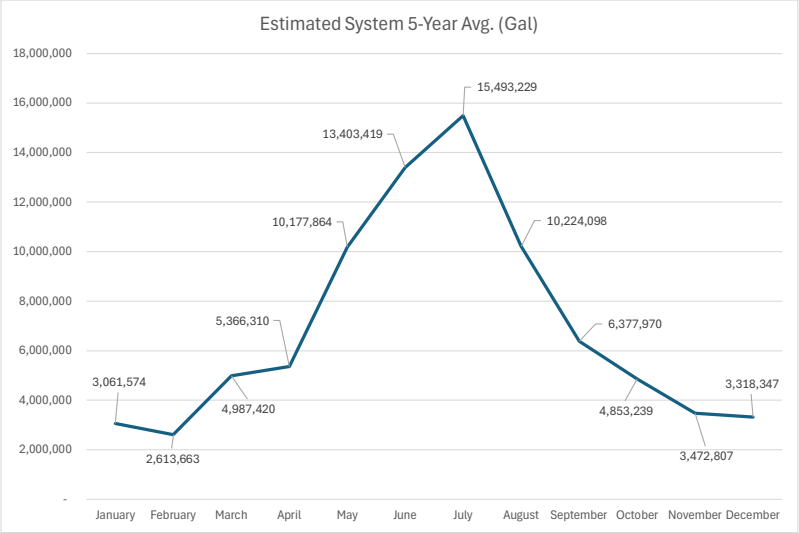
	January	February	March	April	May	June	July	August	September	October	November	December	Total
Monthly Usage (Gal)	2,475,281	2,113,145	4,032,326	4,338,658	8,228,796	10,836,656	12,526,266	8,266,177	5,156,585	3,923,841	2,807,762	2,682,881	**67,388,375**

Combined System Estimated 5-Year Average Month-to-Month

	January	February	March	April	May	June	July	August	September	October	November	December
5-Year Avg. (Gal)	**3,061,574**	**2,613,663**	**4,987,420**	**5,366,310**	**10,177,864**	**13,403,419**	**15,493,229**	**10,224,098**	**6,377,970**	**4,853,239**	**3,472,807**	**3,318,347**



This graph suggests that the trend of water usage is on the rise.



This graph shows the estimated system water consumption over the past 5 years. With the peak being in July at 15,493,229 gallons in a month.

Calculations

Model calculations are shown below. These calculations are used in the model to reflect the actual system demands.

Used the year with most water usage 2024 to determine the following:

ADD	235,510	Gal/Day	
MDD	942,040.73	Gal/Day	$MDD = 4 * ADD$
MHD	58,877.55	Gal/HR	$MHD = 6 * ADD$

Per Connection Calculations:

ADD	391.21	Gal/Day/Connection
MDD	1,564.85	Gal/Day/Connection
MHD	97.80	Gal/Hr/Connection

ADD	**Total annual water use divided by the number of days the system was operating**
MDD	**Demand of water exerted on the system over a period of 24 consecutive hours, for the period during which such demand is greatest**
MHD	**Highest single-hour demand exerted on the system. May not accure on max day.**

Alpine South

Alpine Sounth consists of everything south of the Snake River. This area did not have month to month data only year to year which is shown below.

Recorded Meters	
Residential	504
Commercial	4
Institutional	0
	508

Year to Year Water Usage (Gallons)

Year	2019	2020	2021	2022	2023	2024
Residential	67,506,360	62,200,373	63,770,703	68,096,309	71,770,839	63,554,001
Commercial	675,448	945,897	1,161,528	1,662,897	432,195	2,553,697
Total	68,181,808	63,146,271	64,932,231	69,759,207	72,203,034	66,107,698
	11,162	10,284	10,544	11,259	11,867	10,508

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Recorded Meters	
Residential	113
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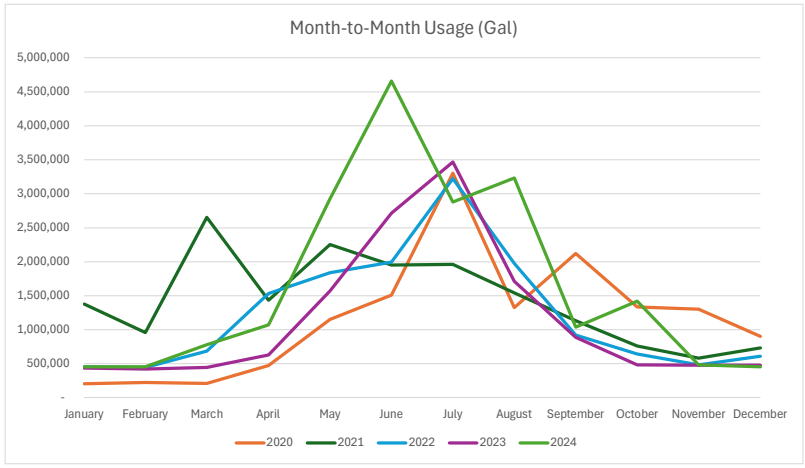
Month to Month Water Usage (Gallons)

	January	February	March	April	May	June	July	August	September	October	November	December
2020	203,432	223,743	211,703	472,946	1,152,270	1,509,270	3,302,000	1,327,000	2,122,390	1,337,110	1,302,500	900,500
2021	1,378,000	960,000	2,653,150	1,432,110	2,252,500	1,954,000	1,962,000	1,541,000	1,135,000	762,500	581,000	734,096
2022	457,454	442,170	685,180	1,532,455	1,840,679	1,996,064	3,222,674	1,977,518	920,155	643,569	482,088	610,682
2023	438,531	421,628	447,013	629,139	1,572,745	2,716,715	3,467,749	1,710,325	890,205	484,000	478,300	477,050
2024	454,050	455,050	778,424	1,071,608	2,927,142	4,657,766	2,880,392	3,233,763	1,039,177	1,419,813	481,335	455,000
2025	199,000											
Average Month Usage	387,259	439,616	636,872	1,077,734	2,113,522	3,123,515	3,190,272	2,307,202	949,846	849,127	480,574	514,244
Jsage per Connection per mont	2,979	3,382	4,899	8,290	16,258	24,027	24,541	17,748	7,307	6,532	3,697	3,956
Days in a Month	31	28	31	30	31	30	31	31	30	31	30	31
Usage per day per connection	96.09	120.77	158.03	276.34	524.45	800.90	791.63	572.51	243.55	210.70	123.22	127.60
Per minute per connection	0.07	0.08	0.11	0.19	0.36	0.56	0.55	0.40	0.17	0.15	0.09	0.09



SUNRISE ENGINEERING

Prepared By: CWP
Checked By:
Date: 6/2/2025

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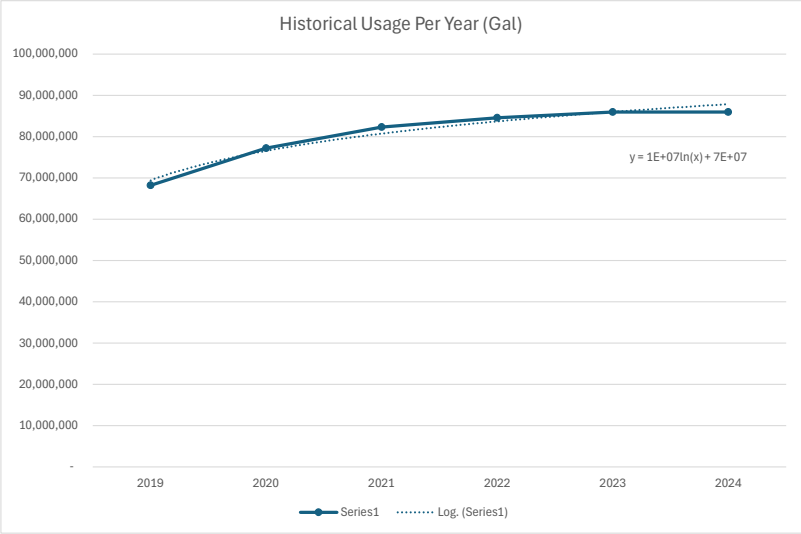

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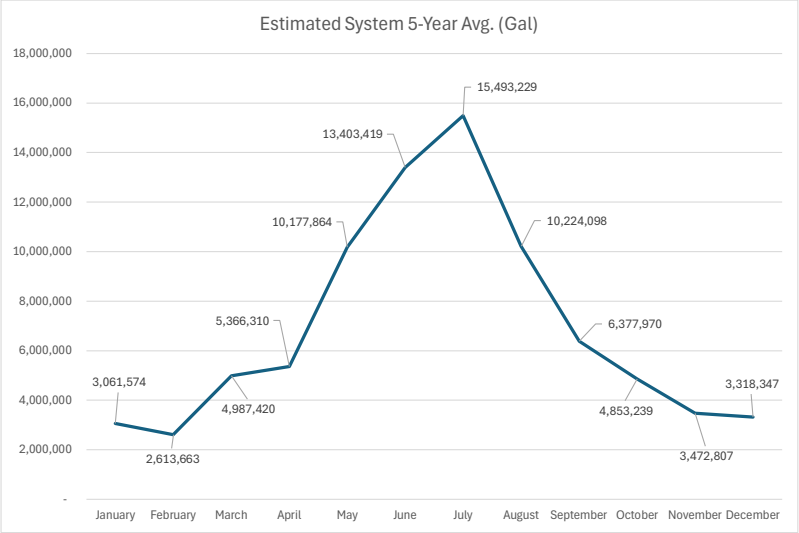

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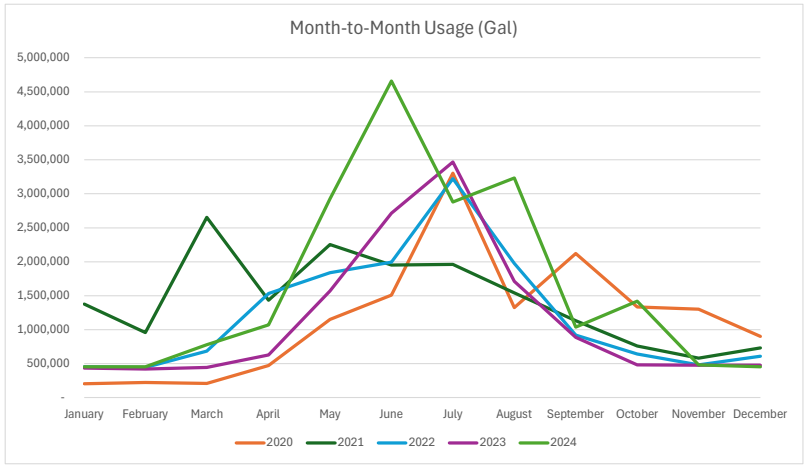


SUNRISE ENGINEERING

Prepared By: CWP
Checked By:
Date: 6/2/2025

Model Input Summary

Summary:
These are a summary of the model inputs for the existing and future model.

Model Inputs

Demand Existing

Recorded Meters

Alpine South	
Residential	504
Commercial	4
Institutional	0
Total	508

North Star	
Residential	113
Commercial	17
Institutional	0
Total	130

Total Meters	638

Meter Calculated Demand (Not Used)

Demand	Value	Unit	
ADD	235,510	Gal/Day	
MDD	942,041	Gal/Day	4xADD
MHD	58,878	Gal/HR	6XADD

Pump Runtime Usage

Demand	Value	Unit	
ADD	759,000	Gal/Day	
MDD	1,800,000	Gal/Day	2.372ADD
MHD	126,500	Gal/HR	4xADD

						Per Connection Calculation (gpm/Connection)		
			ADD	MDD	MHD	ADD	MDD	MHD
Residential	617	97%	227,758	911,033	56,940	0.26	1.03	1.54
Commercial	21	3%	7,752	31,008	1,938	0.26	1.03	1.54
Institutional	0	0%	-	-	-	-	-	-
Industiral	0	0%	-	-	-	-	-	-
Total	638							

						Per Connection Calculation (gpm/Connection)		
			ADD	MDD	MHD	ADD	MDD	MHD
Residential	617	97%	734,017	1,740,752	122,336	0.83	1.96	3.30
Commercial	21	3%	24,983	59,248	4,164	0.83	1.96	3.30
Institutional	0	0%	-	-	-	-	-	-
Industiral	0	0%	-	-	-	-	-	-
Total	638							

Demand Future

Recorded Meters

Alpine South	
Residential	663
Commercial	5
Institutional	0
Total	668

North Star	
Residential	123
Commercial	17
Institutional	0
Total	140

Total Meters	808

Pump Runtime Usage Future

Demand	Value	Unit	
ADD	973,000	Gal/Day	
MDD	2,308,000	Gal/Day	2.372xADD
MHD	162,200	Gal/HR	

						Per Connection Calculation (gpm/Connection)		
			ADD	MDD	MHD	ADD	MDD	MHD
Residential	786	97%	946,507	2,245,158	157,784	0.84	1.98	3.35
Commercial	22	3%	26,493	62,842	4,416	0.84	1.98	3.35
Institutional	0	0%	-	-	-	-	-	-
Industiral	0	0%	-	-	-	-	-	-

Tanks

Survey Data for Tanks

	Lower 500k Tank per CRDs	Lower 500k Tank per survey	NSU Tank per survey
Top of Roof =	5,872	5878.69	5878.7
Overflow =	5,870	5,877	5875.86
Floor =	5,855	5,862	5854.86

Existing Tanks

Tank	Diameter (ft)	Floor Elevation (ft)	Initial Level (ft)	Max Level (ft)	Mixing Model
North Star	60	5,855	21	22	Lifo
250K	53.75	5,950	14.0	15.0	Lifo
500K	77	5,862	14.0	15.0	Lifo

Future Tank

Tank	Diameter (ft)	Floor Elevation (ft)	Initial Level (ft)	Max Level (ft)	Mixing Model
N500K	77	5,862	14	15	Lifo

Pumps

Well Input Data and Modeling Criteria

Wells	Ground Elevation (ft)	Pump Set Depth (ft)	Pump Elevation (ft)	HP	Current Flow (gpm)	Future Flow (gpm)	Controlling Tank	Turn On @ Tank Level (ft)	Turn Off @ Tank Level (ft)
Well1	5695	192	5503	75	455	700	500K	13	14
Well2	5696	143.5	5552.5	75	445	700	500K	12.5	14
Well3	5700	206.5	5493.5	75	361	650	500K	12	14
Flying Saddle Well	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
Flying Saddle Well	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used	Not used
Excel Development Well #1	Not used	Not used	Not used	100	Not used	1200	NSU	14	21

Model Input Pump Controls

LINK Well1 OPEN IF NODE 500K BELOW 13
LINK Well1 CLOSED IF NODE 500K ABOVE 14
LINK Well2 OPEN IF NODE 500K BELOW 12.5
LINK Well2 CLOSED IF NODE 500K ABOVE 14
LINK Well3 OPEN IF NODE 500K BELOW 12
LINK Well3 CLOSED IF NODE 500K ABOVE 14
LINK Booster OPEN IF NODE 250K BELOW 11.5
LINK Booster CLOSED IF NODE 250K BELOW 13

Booster Pump Input Data and Modeling Criteria

Booster Pump	Ground Elevation (ft)	Pump Elevation (ft)	HP	Current Flow (gpm)	Future Flow (gpm)	Controlling Tank	Turn On @ Tank Level (ft)	Turn Off @ Tank Level (ft)
Booster	5694	5694	15	350	450	500K	11.5	13

Well Control

Wells	Turn On @ Tank Level (ft)	Turn Off @ Tank Level (ft)
Well1	13	14
Well2	12.5	14
Well3	12	14
Megawell	14	21

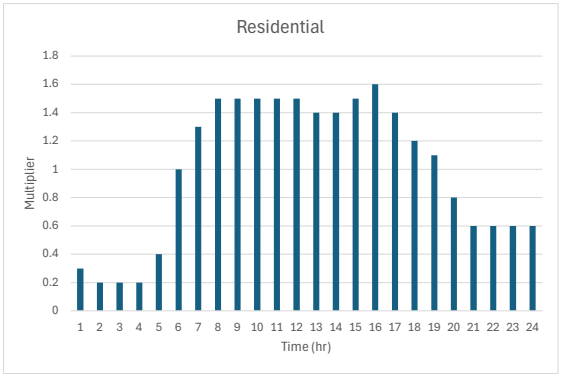
Hydrant ID	Location	Static Model Pr	Model Flow (gp	Static Actual Pr	Actual Flow (gpm)
J52	Riverview Dr	96	1931	94	1867
J346	Refuge	99	1626	98	1690
J630	Grand View Dr.	107	1508	98	1845

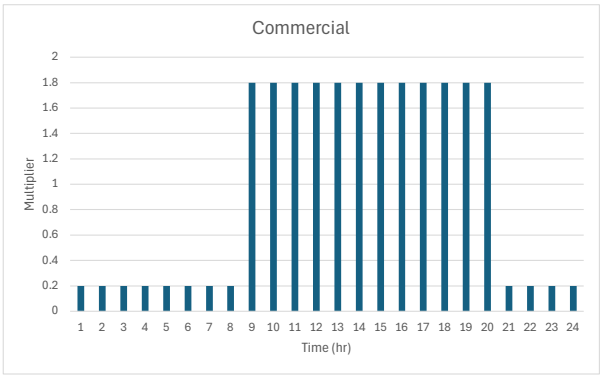
Patterns

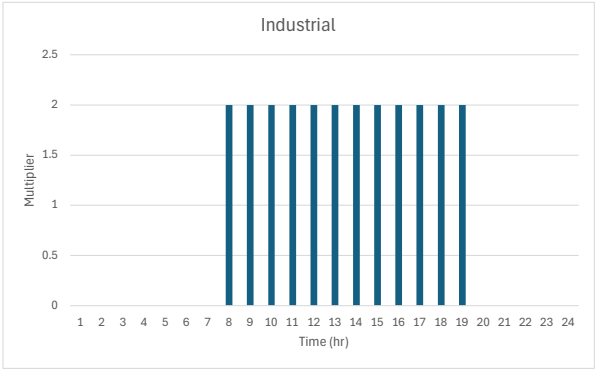
Residential	
Time (hr)	Multiplier
1	0.3
2	0.2
3	0.2
4	0.2
5	0.4
6	1
7	1.3
8	1.5
9	1.5
10	1.5
11	1.5
12	1.5
13	1.4
14	1.4
15	1.5
16	1.6
17	1.4
18	1.2
19	1.1
20	0.8
21	0.6
22	0.6
23	0.6
24	0.6

Commercial	
Time (hr)	Multiplier
1	0.2
2	0.2
3	0.2
4	0.2
5	0.2
6	0.2
7	0.2
8	0.2
9	1.8
10	1.8
11	1.8
12	1.8
13	1.8
14	1.8
15	1.8
16	1.8
17	1.8
18	1.8
19	1.8
20	1.8
21	0.2
22	0.2
23	0.2
24	0.2

Industrial	
Time (hr)	Multiplier
1	0
2	0
3	0
4	0
5	0
6	0
7	0
8	2
9	2
10	2
11	2
12	2
13	2
14	2
15	2
16	2
17	2
18	2
19	2
20	0
21	0
22	0
23	0
24	0







SUNRISE ENGINEERING	Prepared By: CWP Checked By: Date: 6/2/2025	Existing Network Summary

Summary:

These are the combined calculation, inouts and results from the models.

Model Inputs for Existing System

Pipes

	Existing	
4	8,485	ft
6	53,875	ft
8	42,459	ft
10	2,035	ft
12	11,644	ft
Total	118,499	ft
	22.44	Miles

Hydrants and Hydrant Valves

Existing	56

Water Control Vales

Existing	112

GIS Data

Control Valves

OBJECTID	OBJECTID	OBJECTID
2	58	114
3	59	115
4	60	116
5	61	117
6	62	118
7	63	119
8	64	120
9	65	121
10	66	122
11	67	123
12	68	124
13	69	125
14	70	126
15	71	127
16	72	128
17	73	129
18	74	130
19	75	131
20	76	132
21	77	133
22	78	134
23	79	135
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53	109	165
54	110	166
55	111	
56	112	
57	113	

Fire Hydrants

FID	FID	FID
0	56	112
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3	59	115
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44	100	
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49	105	
50	106	
51	107	
52	108	
53	109	
54	110	
55	111	

Existing Model MDD Outputs

Junction Output

AssetID	Elevation	BaseDemand	FireflowDmd	AvailableFireflow	FireResPressure	MaxFFlow	Head	Pressure	MinDemand	MaxDemand	AvgDemand	MinHead	MaxHead	AvgHead	MinPressure	MaxPressure	AvgPressure	MinQuality	MaxQuality	AvgQuality
J10	5676	23	1000	3288	78	1421	5874	86	5	37	23	5847	5874	5862	74	86	81	0	6	5
J100	5660	7	1000	2574	79	942	5874	93	1	11	7	5841	5874	5860	78	93	86	0	7	5
J102	5661	2	1000	1212	41	274	5874	92	0	3	2	5841	5874	5860	78	92	86	0	10	6
J104	5660	13	1000	2628	79	994	5874	93	3	22	13	5841	5874	5860	78	93	87	0	6	5
J106	5665	6	1000	4809	86	1581	5874	91	1	10	6	5843	5874	5861	77	91	85	0	6	5
J108	5673	16	1000	6433	84	1974	5874	87	3	25	16	5845	5874	5862	75	87	82	0	6	4
J110	5673	0	1000	6479	84	2126	5874	87	0	0	0	5845	5874	5862	75	87	82	0	6	4
J112	5676	6	1000	5166	82	1978	5874	86	1	10	6	5848	5874	5863	75	86	81	0	5	4
J114	5689	5	1000	2357	67	619	5874	81	1	8	5	5848	5874	5863	69	81	76	0	6	5
J116	5689	13	1000	3121	72	1013	5874	80	3	21	13	5848	5874	5863	69	80	75	0	6	4
J118	5690	11	1000	4908	76	1952	5874	80	2	17	11	5850	5874	5864	69	80	75	0	5	4
J12	5666	7	1000	2926	80	979	5874	90	1	11	7	5847	5874	5862	78	90	85	0	8	5
J120	5693	4	1000	5980	76	1940	5874	79	1	7	4	5853	5874	5865	69	79	75	0	5	4
J126	5692	0	0	0	0	0	5876	80	0	0	0	5875	5902	5896	79	91	88	0	2	0
J128	5670	13	1000	5084	84	1025	5874	89	3	21	13	5845	5874	5862	76	89	83	0	6	5
J130	5673	4	1000	6327	84	1819	5874	87	1	6	4	5845	5874	5862	75	87	82	0	6	4
J132	5670	24	1000	4733	84	1243	5874	88	5	39	24	5845	5874	5862	76	88	83	0	6	5
J134	5670	10	1000	4284	83	1643	5874	88	2	16	10	5845	5874	5862	76	88	83	0	7	5
J136	5670	6	1000	4083	83	1003	5874	89	1	9	6	5845	5874	5862	76	89	83	0	8	5
J138	5663	8	1000	3464	83	1013	5874	92	2	13	8	5844	5874	5862	79	92	86	0	9	5
J14	5662	2	1000	2082	73	617	5874	92	0	4	2	5847	5874	5862	80	92	87	0	9	6
J140	5674	12	1000	1600	58	413	5874	87	2	20	12	5848	5874	5863	75	87	82	0	7	5
J142	5675	6	1000	5260	82	2051	5874	86	1	9	6	5848	5874	5863	75	86	81	0	5	4
J144	5663	5	1000	6450	88	2666	5874	91	1	10	5	5843	5874	5861	78	91	86	0	10	5
J146	5663	4	1000	5788	88	1593	5874	91	1	7	4	5843	5874	5861	78	91	86	0	9	6
J148	5667	3	1000	5612	86	2219	5874	90	1	6	3	5843	5874	5862	76	90	84	0	9	5
J150	5668	5	1000	5640	86	2464	5874	90	1	9	5	5844	5874	5862	76	90	84	0	8	5
J152	5694	7	1000	6356	76	1850	5875	78	1	11	7	5854	5875	5865	70	78	74	0	5	4
J154	5665	1	1000	4806	86	1439	5874	91	0	2	1	5844	5874	5862	78	91	85	0	9	6
J156	5774	10	1000	2256	70	1109	5967	83	2	16	10	5965	5967	5966	83	84	83	0	7	5
J158	5765	10	1000	2528	76	889	5967	87	2	15	10	5965	5967	5966	86	87	87	0	6	5
J16	5661	4	1000	1568	60	621	5874	93	1	6	4	5847	5874	5862	81	93	87	0	12	8
J160	5803	7	1000	2158	60	919	5967	71	1	12	7	5965	5967	5966	70	71	71	0	6	5
J162	5797	5	1000	2812	67	1095	5967	73	1	8	5	5965	5967	5966	73	74	73	0	5	4
J164	5809	8	1000	2890	63	1484	5967	68	2	12	8	5965	5967	5966	68	68	68	0	5	4
J166	5755	8	1000	1853	70	613	5967	92	2	13	8	5965	5967	5966	91	92	91	0	7	5
J168	5788	8	1000	1342	44	615	5967	77	2	13	8	5965	5967	5966	76	77	77	0	8	6
J170	5783	6	1000	956	14	276	5967	80	1	9	5	5965	5967	5966	79	80	79	0	8	6
J172	5734	2	1000	1753	73	613	5967	101	0	4	2	5965	5967	5966	100	101	100	0	10	7
J174	5703	0	1000	2002	59	617	5874	74	0	0	0	5848	5874	5863	63	74	69	0	24	12
J176	5754	3	1000	2049	74	624	5966	92	1	5	3	5964	5966	5965	91	92	92	0	6	5
J178	5741	4	1000	1105	33	275	5966	97	1	7	4	5964	5966	5965	97	98	97	0	7	6
J18	5668	6	1000	2736	78	1218	5874	89	1	10	6	5847	5874	5862	78	89	84	0	7	5
J180	5765	4	1000	2204	72	777	5966	87	1	6	4	5964	5966	5965	87	87	87	0	6	5
J182	5742	6	1000	1858	73	623	5966	97	1	9	6	5964	5966	5965	96	97	97	0	7	5
J184	5734	8	1000	893	1	274	5966	101	2	12	8	5964	5966	5965	100	101	100	0	8	6
J186	5755	9	1000	1980	72	848	5966	91	2	15	9	5964	5966	5965	91	91	91	0	6	5
J188	5811	10	1000	2967	62	1092	5966	67	2	17	10	5965	5966	5965	66	67	67	0	6	5
J190	5833	5	0	0	0	0	5966	57	1	7	5	5965	5966	5965	57	58	57	0	5	4
J192	5669	0	0	0	0	0	5875	89	0	0	0	5842	5875	5862	75	89	84	0	20	10
J194	5827	4	1000	1860	50	1047	5972	63	1	7	4	5970	5972	5971	62	63	62	0	5	4
J196	5694	0	1000	3525	103	1622	6002	133	0	0	0	5995	6002	5998	130	133	132	0	5	4
J20	5653	5	1000	3105	86	1294	5874	96	1	8	5	5847	5874	5863	84	96	91	0	6	5
J200	5662	12	1000	4338	87	1545	5875	92	2	19	12	5842	5875	5861	78	92	86	0	24	12
J202	5683	13	1000	4750	79	1555	5874	83	3	21	13	5852	5874	5864	73	83	79	0	5	4
J204	5668	14	1000	5011	85	1588	5874	90	3	22	14	5844	5874	5862	76	90	84	0	8	5
J206	5661	10	1000	3566	85	973	5874	93	2	16	10	5844	5874	5862	79	93	87	0	11	6
J208	5667	3	1000	2213	73	395	5874	90	1	5	3	5844	5874	5862	77	90	84	0	11	6
J210	5671	22	1000	3654	81	1155	5874	88	4	35	22	5845	5874	5862	76	88	83	0	8	5
J212	5682	12	1000	3659	76	1705	5874	83	2	19	12	5848	5874	5863	72	83	78	0	5	4
J214	5673	6	1000	724	-35	275	5874	87	1	9	6	5848	5874	5863	76	87	82	0	8	5
J216	5678	9	1000	1379	49	522	5874	85	2	15	9	5848	5874	5863	74	85	80	0	12	5
J218	5682	7	1000	3448	76	1146	5874	83	1	12	7	5848	5874	5863	72	83	78	0	6	5
J22	5693	1	1000	5461	75	1578	5874	79	0	2	1	5852	5874	5864	69	79	74	0	5	4
J220	5686	12	1000	2698	71	1134	5874	82	2	19	12	5848	5874	5863	70	82	77	0	6	5

J222	5684	4	1000	980	17	274	5874	83	1	6	4	5848	5874	5863	71	83	78	0	6	5
J224	5686	13	1000	2984	72	1294	5874	82	3	20	13	5849	5874	5863	70	82	77	0	5	4
J226	5658	6	1000	3324	85	1146	5874	94	1	9	6	5848	5874	5863	82	94	89	0	6	5
J228	5651	10	1000	2745	84	981	5874	97	2	15	10	5848	5874	5863	85	97	92	0	8	5
J230	5654	13	1000	2668	82	1035	5874	96	3	21	13	5848	5874	5863	84	96	90	0	6	5
J232	5664	4	1000	3301	82	1131	5874	91	1	7	4	5848	5874	5863	80	91	86	0	6	5
J234	5656	16	1000	2623	81	996	5874	95	3	26	16	5848	5874	5863	83	95	90	0	7	5
J236	5658	16	1000	2500	79	1126	5874	94	3	25	16	5848	5874	5863	82	94	89	0	6	5
J238	5656	12	1000	2066	74	909	5874	95	2	20	12	5848	5874	5863	83	95	89	0	10	7
J24	5716	1	1000	914	11	274	5874	69	0	2	1	5852	5874	5864	59	69	64	0	8	6
J240	5636	6	1000	2026	80	1053	5874	103	1	9	6	5848	5874	5863	92	103	98	0	8	6
J242	5647	3	1000	2073	77	958	5874	99	1	5	3	5848	5874	5863	87	99	94	0	7	5
J244	5664	11	1000	2516	77	1027	5874	91	2	18	11	5848	5874	5863	80	91	86	0	6	5
J246	5701	6	1000	1428	46	626	5874	75	1	9	6	5848	5874	5863	64	75	70	0	9	6
J248	5653	9	1000	2394	80	1059	5874	96	2	14	9	5840	5874	5860	81	96	90	0	18	10
J250	5649	12	1000	2535	83	1059	5874	98	2	19	12	5840	5874	5860	83	98	92	0	21	12
J252	5654	8	1000	2505	81	1059	5874	95	2	13	8	5840	5874	5860	81	95	89	0	18	9
J254	5656	4	1000	2624	81	1056	5874	95	1	6	4	5840	5874	5860	80	95	89	0	17	8
J256	5649	6	1000	2420	81	1058	5874	98	1	10	6	5840	5874	5860	83	98	91	0	22	11
J258	5652	1	1500	1535	23	1393	5874	96	0	2	1	5840	5874	5860	82	96	90	0	24	12
J26	5655	8	1000	2266	77	1050	5874	95	2	13	8	5839	5874	5859	80	95	88	0	9	6
J260	5651	10	1500	1646	32	1494	5874	97	2	16	10	5840	5874	5860	82	97	91	0	24	12
J262	5662	0	1000	4886	88	1555	5875	92	0	0	0	5842	5875	5861	78	92	86	0	24	12
J264	5661	0	1000	6394	90	1573	5875	92	0	0	0	5842	5875	5861	78	92	87	0	18	9
J266	5660	4	1000	6015	90	1974	5875	93	1	6	4	5842	5875	5861	79	93	87	0	19	9
J268	5660	2	1000	6718	90	2051	5875	93	0	3	2	5842	5875	5861	79	93	87	0	20	10
J270	5661	0	1000	4827	88	1709	5875	93	0	0	0	5842	5875	5861	78	93	87	0	24	12
J272	5657	0	1000	1781	68	1063	5874	94	0	0	0	5841	5874	5861	79	94	88	0	24	12
J274	5660	0	1000	4221	87	1591	5875	93	0	0	0	5842	5875	5861	78	93	87	0	24	12
J28	5655	17	1000	2161	75	1053	5874	95	3	27	17	5839	5874	5859	80	95	88	0	9	7
J30	5657	9	1000	1874	69	914	5874	94	2	15	9	5839	5874	5859	79	94	87	0	9	7
J32	5653	12	1000	1884	71	980	5874	96	2	19	12	5839	5874	5859	81	96	89	0	11	8
J326	5659	11	1000	2517	79	1219	5874	93	2	18	11	5841	5874	5860	79	93	87	0	6	5
J34	5651	5	1000	1633	64	624	5874	97	1	9	5	5839	5874	5859	81	97	90	0	13	9
J36	5654	20	1000	2024	73	1054	5874	95	4	33	20	5839	5874	5859	80	95	89	0	10	7
J38	5656	22	1000	1833	69	1023	5874	95	4	35	22	5839	5874	5859	79	95	88	0	9	7
J40	5650	25	1000	2044	75	1056	5874	97	5	40	25	5839	5874	5859	82	97	90	0	10	7
J42	5652	9	1000	1816	69	1052	5874	96	2	14	9	5839	5874	5859	81	96	89	0	11	8
J44	5654	8	1000	1934	72	1052	5874	96	2	14	8	5839	5874	5859	80	96	89	0	10	7
J46	5651	3	1000	1864	71	1051	5874	97	0	4	2	5839	5874	5859	81	97	90	0	13	9
J48	5649	10	1000	1910	73	1053	5874	98	2	17	10	5839	5874	5859	82	98	91	0	12	8
J50	5651	7	1000	1794	69	1052	5874	97	1	11	7	5839	5874	5859	81	97	90	0	15	10
J52	5652	11	1000	1930	72	1052	5874	96	2	18	11	5839	5874	5859	81	96	90	0	11	8
J54	5653	7	1000	2032	74	1050	5874	96	1	11	7	5839	5874	5859	80	96	89	0	10	7
J56	5661	13	1000	2825	81	1187	5874	92	3	20	12	5841	5874	5860	78	92	86	0	10	6
J58	5661	14	1000	3206	83	1243	5874	92	3	22	14	5841	5874	5860	78	92	86	0	10	6
J60	5662	5	1000	1535	59	488	5874	92	1	8	5	5841	5874	5860	78	92	86	0	10	6
J62	5663	3	1000	1564	60	455	5874	92	1	5	3	5842	5874	5861	77	92	86	0	10	6
J64	5661	4	1000	6733	90	2425	5874	93	1	6	4	5843	5874	5861	79	93	87	0	10	6
J68	5666	3	1000	3126	81	1233	5874	90	1	5	3	5842	5874	5860	76	90	84	0	6	5
J70	5663	5	1000	3188	82	1051	5874	91	1	9	5	5842	5874	5860	77	91	85	0	6	5
J72	5665	12	1000	3208	81	1382	5874	91	2	18	11	5842	5874	5861	77	91	85	0	6	5
J74	5665	6	1000	3755	84	945	5874	91	1	9	6	5842	5874	5861	77	91	85	0	6	5
J78	5665	3	1000	3161	81	1137	5874	91	1	5	3	5842	5874	5861	77	91	85	0	6	5
J80	5663	20	1000	2764	79	1041	5874	91	4	32	20	5841	5874	5860	77	91	85	0	6	5
J82	5705	17	1000	1890	56	1143	5874	73	3	27	17	5841	5874	5860	59	73	67	0	6	5
J84	5665	13	1000	2682	78	1184	5874	90	3	20	13	5841	5874	5860	76	90	84	0	7	5
J86	5663	17	1000	2358	76	1143	5874	91	3	28	17	5841	5874	5860	77	91	85	0	6	5
J88	5668	2	1000	2944	78	1766	5874	89	0	4	2	5840	5874	5860	75	89	83	0	7	6
J90	5657	12	1000	3027	83	1712	5874	94	2	19	12	5840	5874	5859	79	94	88	0	9	6
J92	5659	12	1000	3165	83	1420	5874	93	2	20	12	5841	5874	5860	79	93	87	0	10	7
J94	5660	13	1000	2593	79	1091	5874	93	3	21	13	5841	5874	5860	78	93	87	0	10	7
J96	5662	5	1000	4863	87	1325	5874	92	1	8	5	5843	5874	5861	78	92	86	0	10	6
J98	5658	4	1000	2920	82	788	5874	94	1	6	4	5841	5874	5860	79	94	88	0	7	5
N-J186	5662	0	1000	5614	89	1099	5875	92	0	0	0	5842	5875	5862	78	92	87	0	22	11
N-J188	5661	0	1000	1869	70	617	5875	93	0	0	0	5842	5875	5862	78	93	87	0	24	12
N-J190	5661	0	1000	5411	89	1128	5875	93	0	0	0	5842	5875	5862	78	93	87	0	24	12
N-J194	5661	0	1000	5027	89	1100	5875	93	0	0	0	5842	5875	5862	78	93	87	0	24	12
N-J196	5661	3	1000	4975	88	1789	5875	93	1	4	3	5842	5875	5861	78	93	87	0	24	12
N-J198	5664	19	1000	5635	88	1466	5875	91	4	30	18	5842	5875	5861	77	91	85	0	24	12
N-J202	5668	0	1000	7127	87	1672	5875	90	0	0	0	5842	5875	5861	75	90	84	0	20	9
N-J204	5666	0	1000	3451	83	1097	5875	90	0	0	0	5842	5875	5861	76	90	85	0	24	12
N-J206	5662	0	1000	4026	86	1112	5875	92	0	0	0	5842	5875	5861	78	92	87	0	24	12
N-J208	5668	3	1000	7040	87	1955	5875	90	1	4	3	5842	5875	5861	75	90	84	0	20	9
N-J210	5669	2	1000	7411	87	3617	5875	89	0	3	2	5842	5875	5861	75	89	83	0	19	9
N-J212	5666	0	1000	7138	88	1849	5875	90	0	0	0	5842	5875	5861	76	90	85	0	17	8

N-J214	5667	30	1000	7332	88	3690	5875	90	6	54	30	5842	5875	5861	76	90	84	0	17	8
N-J216	5663	1	1000	4102	85	1051	5874	91	0	2	1	5841	5874	5861	77	91	86	0	17	8
N-J218	5662	0	1000	3089	82	1053	5874	92	0	0	0	5841	5874	5861	77	92	86	0	17	8
N-J220	5663	8	1000	7117	89	3020	5874	92	2	12	8	5842	5874	5861	78	92	86	0	17	8
N-J222	5660	0	1000	3598	85	1051	5874	93	0	0	0	5841	5874	5861	78	93	87	0	24	12
N-J224	5649	5	1000	2582	83	1057	5874	98	1	8	5	5840	5874	5860	83	98	92	0	18	9
N-J226	5650	10	1000	2539	82	1058	5874	97	2	16	10	5840	5874	5860	82	97	91	0	19	10
N-J228	5660	6	1000	2698	80	1056	5874	93	1	10	6	5840	5874	5860	78	93	87	0	17	8
N-J230	5652	10	1000	2577	82	1058	5874	96	2	16	10	5840	5874	5860	82	96	90	0	17	8
N-J232	5648	13	1000	2437	82	1060	5874	98	3	21	13	5840	5874	5860	83	98	92	0	19	10
N-J234	5654	6	1000	2268	78	1064	5874	96	1	10	6	5840	5874	5860	81	96	89	0	18	9
N-J236	5654	0	1000	2153	76	640	5874	95	0	0	0	5840	5874	5860	81	95	89	0	24	12
N-J238	5659	5	1000	6308	90	1359	5875	93	1	8	5	5842	5875	5861	79	93	88	0	20	10
N-J240	5653	5	1000	2595	82	1056	5874	96	1	9	5	5840	5874	5860	81	96	90	0	18	9
N-J242	5652	8	1000	2425	80	1058	5874	96	2	13	8	5840	5874	5860	81	96	90	0	19	10
N-J244	5653	4	1000	2613	82	1057	5874	96	1	6	4	5840	5874	5860	81	96	90	0	17	9
N-J246	5655	2	1000	2126	76	1059	5874	95	0	3	2	5841	5874	5861	80	95	89	0	24	12
N-J256	5655	15	1500	1803	41	1063	5874	95	3	24	15	5840	5874	5860	80	95	89	0	20	10
N-J260	5651	7	1500	1606	29	1458	5874	97	1	12	7	5840	5874	5860	82	97	91	0	24	12
N-J262	5649	6	1500	1595	28	1450	5874	98	1	10	6	5840	5874	5860	83	98	92	0	24	12
N-J264	5646	0	1500	1626	31	1480	5874	99	0	0	0	5840	5874	5860	84	99	93	0	24	12
J122	5665	1	1000	7094	88	2038	5875	91	0	2	1	5842	5875	5861	76	91	85	0	17	8
J344	5650	4	1500	1615	30	1467	5874	97	1	7	4	5840	5874	5860	82	97	91	0	24	12
J346	5646	0	1500	1626	31	1480	5874	99	0	0	0	5840	5874	5860	84	99	93	0	24	12
J348	5647	0	1500	1625	31	1479	5874	99	0	0	0	5840	5874	5860	84	99	92	0	24	12
J352	5647	1	1500	1618	30	1473	5874	98	0	2	1	5840	5874	5860	84	98	92	0	24	12
J370	5694	0	1000	2469	100	2466	5991	129	0	0	0	5986	5991	5988	126	129	127	0	5	4
J372	5694	0	1000	2509	100	2508	5992	129	0	0	0	5987	5992	5990	127	129	128	0	5	4
J378	5695	0	1000	3126	71	1097	5876	78	0	0	0	5875	5904	5897	78	90	88	0	2	0
J380	5695	0	1000	3121	71	1097	5876	78	0	0	0	5875	5904	5897	78	90	87	0	2	0
J386	5694	0	1000	2245	60	266	5871	77	0	0	0	5854	5871	5863	69	77	73	0	5	4
J388	5694	0	1000	7664	76	2083	5875	78	0	0	0	5856	5875	5866	70	78	74	0	5	4
J392	5693	3	1000	7874	76	1790	5875	78	1	4	3	5857	5875	5866	71	78	75	0	5	4
J396	5635	0	1000	1306	52	1039	5874	104	0	0	0	5839	5874	5859	88	104	97	0	24	12
J398	5633	0	1000	1397	58	1036	5874	105	0	0	0	5839	5874	5859	89	105	98	0	24	12
J400	5639	0	1000	1604	66	1024	5874	102	0	0	0	5839	5874	5859	86	102	95	0	24	12
J402	5644	0	1000	1765	70	1019	5874	100	0	1	0	5839	5874	5859	84	100	93	0	24	12
J404	5694	0	0	0	0	0	5875	78	0	0	0	5857	5875	5866	71	78	75	0	5	4
J488	5830	0	1000	1471	42	1183	5983	66	0	0	0	5979	5983	5981	65	66	65	0	5	4
J502	5642	4	1500	1693	36	1545	5874	101	1	6	4	5840	5874	5860	86	101	94	0	24	12
J628	5724	2	1000	1727	74	624	5966	105	0	4	2	5964	5966	5965	104	105	104	0	9	6
J630	5718	2	1000	1506	67	631	5966	107	0	3	2	5964	5966	5965	107	107	107	0	14	8

Pipe Output

AssetID	Length	Diameter	Roughness	Flow	Pressure	Status	MinFlow	MaxFlow	AvgFlow	MinVelocity	MaxVelocity	AvgVelocity	MinPressure	MaxPressure	AvgPressure	MaxQuality	AvgQuality	Shape_Length
N-P101	31	8	140	0	92	3	0	0	0	0	0	0	78	92	87	24	12	30.633008
N-P103	225	8	140	0	91	3	0	0	0	0	0	0	76	91	85	24	12	224.505195
N-P105	68	8	140	0	93	3	0	0	0	0	0	0	78	93	87	24	12	67.544505
N-P107	505	8	140	5	92	3	1	22	11	0	0	0	78	92	87	24	12	505.436465
N-P109	1030	8	140	2	93	3	0	11	4	0	0	0	78	93	87	24	12	1029.756139
N-P111	748	8	140	0	90	3	0	0	0	0	0	0	76	90	84	24	12	747.878681
N-P113	102	8	140	0	92	3	0	0	0	0	0	0	78	92	86	24	12	101.689334
N-P115	696	8	140	6	92	3	0	25	12	0	0	0	77	92	86	24	12	695.715801
N-P117	254	8	140	17	90	3	0	75	38	0	0	0	76	90	85	24	11	254.206414
N-P121	35	8	140	46	91	3	9	185	98	0	1	1	76	91	85	17	8	35.088237
N-P123	689	12	140	94	90	3	18	386	195	0	1	1	75	90	84	17	9	688.628714
N-P125	1077	12	140	163	89	3	0	675	332	0	2	1	75	89	83	19	9	1076.904415
N-P127	506	8	140	47	92	3	31	251	156	0	2	1	77	92	86	17	8	506.294079
N-P129	462	8	140	47	92	3	32	252	157	0	2	1	77	92	86	17	8	462.015003
N-P131	220	8	140	0	92	3	0	0	0	0	0	0	78	92	86	24	12	220.111399
N-P133	293	8	140	9	97	3	6	47	29	0	0	0	83	97	91	18	10	293.416494
N-P135	618	8	140	17	95	3	11	89	55	0	1	0	80	95	89	17	8	617.906726
N-P137	351	6	140	3	98	3	2	15	9	0	0	0	83	98	92	18	10	350.813987
N-P139	56	6	140	0	96	3	0	0	0	0	0	0	81	96	89	24	12	56.196959
N-P141	542	6	140	3	97	3	2	16	10	0	0	0	82	97	91	18	10	541.976981
N-P143	588	6	140	2	98	3	1	9	6	0	0	0	83	98	92	19	11	588.216371
N-P145	317	8	140	9	93	3	2	38	19	0	0	0	79	93	87	19	10	317.190143
N-P153	924	8	140	9	97	3	6	50	31	0	0	0	82	97	91	17	9	923.649634
N-P155	352	6	140	5	96	3	3	25	16	0	0	0	81	96	90	18	9	351.586449
N-P157	144	8	140	17	97	3	11	90	56	0	1	0	82	97	90	19	10	144.291492
N-P159	548	8	140	9	97	3	6	48	30	0	0	0	82	97	91	18	9	547.810273
N-P161	74	8	140	15	96	3	10	81	51	0	1	0	81	96	90	17	9	73.921093
N-P165	726	6	140	3	97	3	2	15	9	0	0	0	82	97	91	19	11	725.835723
N-P167	776	6	140	2	96	3	2	13	8	0	0	0	81	96	90	18	10	776.065652
N-P169	616	6	140	3	95	3	2	16	10	0	0	0	81	95	89	17	9	615.780191
N-P171	363	8	140	13	95	3	9	72	45	0	0	0	81	95	89	17	8	363.003459
N-P173	332	8	140	18	94	3	12	94	59	0	1	0	79	94	88	17	8	331.574285
N-P175	787	8	140	3	97	3	2	15	10	0	0	0	82	97	91	23	12	787.476674
N-P177	981	8	140	4	98	3	2	19	12	0	0	0	83	98	92	22	12	980.701593
N-P179	1066	8	140	5	96	3	4	29	18	0	0	0	82	96	90	18	10	1065.598547
N-P181	972	8	140	10	94	3	7	55	34	0	0	0	79	94	88	17	8	972.057691
N-P183	374	8	140	46	93	3	31	248	154	0	2	1	78	93	86	17	8	374.272858
N-P185	742	12	140	142	91	3	27	593	299	0	2	1	77	91	85	17	8	741.97918
N-P187	2754	12	140	163	49	3	0	675	332	0	2	1	38	49	44	20	10	2753.73743
N-P189	46	8	140	68	89	3	1	288	141	0	2	1	75	89	84	20	9	45.920643
N-P191	30	8	140	68	90	3	1	288	141	0	2	1	75	90	84	20	9	30.052945
N-P99	703	6	140	0	93	3	0	0	0	0	0	0	78	93	87	24	12	703.195994
P101	732	6	140	18	93	3	0	91	54	0	1	1	78	93	86	10	7	731.71054
P103	485	6	140	14	93	3	0	70	41	0	1	0	79	93	87	11	7	485.455557
P105	895	6	140	20	93	3	5	107	63	0	1	1	78	93	87	10	6	895.45741
P107	690	6	140	35	92	3	23	185	113	0	2	1	78	92	86	10	6	690.249677
P109	79	4	140	1	94	3	0	20	10	0	1	0	79	94	87	7	5	79.433332
P11	270	6	140	7	88	3	0	71	28	0	1	0	76	88	83	7	5	270.169442
P111	641	6	140	12	92	3	7	60	37	0	1	0	77	92	85	7	6	641.392285
P113	378	6	140	14	93	3	9	76	50	0	1	1	79	93	87	7	5	377.764588
P115	185	4	140	0	93	3	0	3	2	0	0	0	78	93	86	9	6	184.769016
P117	318	6	140	20	93	3	13	109	70	0	1	1	79	93	87	6	5	318.378347
P119	443	6	140	24	92	3	16	130	83	0	1	1	78	92	86	6	5	443.381326
P121	312	6	140	30	91	3	19	157	96	0	2	1	77	91	85	6	5	311.518478
P123	213	6	140	37	91	3	17	188	111	0	2	1	77	91	85	6	5	212.753404
P125	313	6	140	41	92	3	0	188	101	0	2	1	79	92	87	10	6	312.876579
P127	431	8	140	5	91	3	0	160	56	0	1	0	78	91	86	10	5	431.20252
P129	1384	8	140	33	89	3	11	315	168	0	2	1	76	89	83	6	5	1384.106152
P13	457	6	140	1	92	3	1	6	4	0	0	0	80	92	87	10	7	457.410203
P131	987	6	140	29	89	3	17	191	117	0	2	1	76	89	83	6	5	987.12928
P133	37	8	140	30	87	3	7	125	55	0	1	0	75	87	82	6	4	36.539727
P135	598	8	140	37	87	3	4	481	246	0	3	2	75	87	81	6	4	598.035329
P137	175	6	140	3	80	3	2	18	11	0	0	0	69	80	75	6	5	175.348625
P139	897	6	140	14	80	3	3	150	80	0	2	1	69	80	75	5	4	897.416664
P141	847	8	140	32	83	3	7	374	196	0	2	1	72	83	78	5	4	847.202131
P143	430	8	140	49	79	3	12	540	287	0	3	2	69	79	75	5	4	429.577238
P145	142	8	140	50	79	3	13	543	289	0	3	2	69	79	74	5	4	142.169114

Tank Output

AssetID	Elevation	Diameter	InitLevel	Flow	Head	Pressure
NSU	5855	60	20	-163	5875	9
500K	5862	77	14	-520	5876	6
250K	5950	531	14	327	5964	6

P147	1452	8	140	7	93	3	0	26	14	0	0	0	79	93	87	20	11	1451.86282
P149	44	8	140	54	90	3	10	217	115	0	1	1	76	90	84	17	8	44.352865
P15	310	6	140	2	91	3	1	10	6	0	0	0	79	91	86	8	6	309.620126
P151	694	6	140	4	97	3	3	23	14	0	0	0	82	97	91	17	9	693.788494
P153	122	6	140	15	88	3	3	161	83	0	2	1	75	88	83	6	4	121.614678
P155	128	6	140	8	89	3	0	156	70	0	2	1	76	89	83	6	5	127.81958
P157	419	6	140	7	88	3	2	28	15	0	0	0	76	88	83	6	5	419.193177
P159	62	6	140	5	89	3	0	138	52	0	2	1	76	89	83	8	5	62.403587
P161	255	6	140	4	90	3	0	96	36	0	1	0	77	90	85	8	5	254.592044
P163	270	4	140	9	87	3	0	44	23	0	1	1	75	87	82	6	5	269.583146
P165	222	10	140	37	92	3	0	420	162	0	2	1	78	92	86	10	5	222.276293
P167	164	8	140	18	91	3	0	199	77	0	1	0	78	91	86	10	6	163.714155
P169	404	8	140	18	91	3	0	231	89	0	1	1	77	91	85	9	5	403.935426
P17	431	6	140	3	90	3	0	89	35	0	1	0	78	90	85	7	5	431.023996
P171	446	8	140	20	90	3	0	279	108	0	2	1	76	90	84	8	5	445.879452
P173	874	8	140	9	89	3	0	275	111	0	2	1	76	88	83	7	5	873.983657
P175	62	8	140	7	87	3	0	441	195	0	3	1	75	87	82	6	4	61.817965
P177	619	8	140	37	87	3	4	489	248	0	3	2	75	87	82	5	4	618.736562
P179	1309	8	140	47	82	3	12	516	275	0	3	2	72	82	78	5	4	1308.555763
P181	356	6	140	15	91	3	0	164	65	0	2	1	78	91	86	10	6	356.407836
P183	235	4	140	3	91	3	0	41	16	0	1	0	77	91	85	9	5	235.400736
P185	547	6	140	1	85	3	1	6	4	0	0	0	85	85	85	9	6	547.021517
P187	427	6	140	4	77	3	3	22	14	0	0	0	76	77	77	6	5	427.045103
P189	340	6	140	6	72	3	4	34	21	0	0	0	71	72	72	6	5	340.252181
P19	392	6	140	1	93	3	0	98	40	0	1	0	81	93	88	6	5	391.503006
P193	299	6	140	9	80	3	6	47	29	0	1	0	80	80	80	6	5	299.362263
P195	393	6	140	7	90	3	5	38	24	0	0	0	89	90	89	6	5	392.985011
P197	159	4	140	2	79	3	1	9	5	0	0	0	78	79	78	8	6	159.07749
P199	384	6	140	4	85	3	3	21	13	0	0	0	84	85	84	7	5	383.620334
P201	203	6	140	1	96	3	0	4	2	0	0	0	96	96	96	8	6	203.287341
P203	91	6	140	0	77	3	0	0	0	0	0	0	66	77	73	24	12	90.99903
P205	389	6	140	7	83	3	0	115	56	0	1	1	72	83	78	6	4	388.542904
P207	563	6	140	2	78	3	1	9	6	0	0	0	67	78	73	7	6	562.785487
P209	228	4	140	1	95	3	1	7	4	0	0	0	94	95	94	7	5	227.788566
P21	268	4	140	0	74	3	0	2	1	0	0	0	64	74	69	6	5	268.011144
P211	127	6	140	2	90	3	2	12	8	0	0	0	89	90	89	6	5	127.431691
P213	375	4	140	2	99	3	2	12	8	0	0	0	98	99	98	7	6	374.927808
P217	155	6	140	5	94	3	3	27	17	0	0	0	94	94	94	7	5	155.415299
P219	748	4	140	3	79	3	2	15	9	0	0	0	79	79	79	6	5	748.290366
P221	391	6	140	5	89	3	3	27	17	0	0	0	89	89	89	6	5	391.208637
P223	521	6	140	9	77	3	6	46	28	0	1	0	77	77	77	6	5	521.1679
P227	996	8	140	327	29	3	152	338	231	1	2	1	28	29	29	6	4	995.736606
P229	446	8	140	343	63	3	236	348	283	2	2	2	62	63	63	5	4	445.961603
P23	328	8	140	29	95	3	20	157	98	0	1	1	80	95	88	9	6	328.186825
P231	531	6	140	362	66	3	330	362	346	4	4	4	65	66	65	5	4	531.049753
P233	948	6	140	363	131	3	336	363	350	4	4	4	129	131	130	5	4	947.632485
P243	419	6	140	32	81	3	15	287	161	0	3	2	71	81	77	5	4	418.571679
P247	182	6	140	5	90	3	0	96	37	0	1	0	77	90	85	8	5	182.144813
P249	293	6	140	9	92	3	0	70	30	0	1	0	78	92	86	9	6	293.070441
P25	367	6	140	13	94	3	8	68	42	0	1	0	79	94	88	9	7	366.688629
P251	613	6	140	6	92	3	0	85	32	0	1	0	79	92	87	10	6	613.36284
P253	269	6	140	9	90	3	2	45	21	0	1	0	76	90	84	8	5	269.467113
P255	123	4	140	4	90	3	0	30	12	0	1	0	77	90	84	9	6	122.582624
P257	574	4	140	3	89	3	0	34	13	0	1	0	76	89	84	9	6	574.136104
P259	849	6	140	6	89	3	0	98	37	0	1	0	76	89	84	9	5	849.066537
P261	998	4	140	3	88	3	0	14	8	0	0	0	76	88	83	6	5	997.687963
P263	305	6	140	9	88	3	0	130	51	0	1	1	76	88	83	7	5	305.178561
P265	612	6	140	5	87	3	0	174	68	0	2	1	75	87	82	7	5	612.017023
P267	944	6	140	9	85	3	0	135	67	0	2	1	73	85	79	6	4	944.166343
P269	463	4	140	2	87	3	1	9	6	0	0	0	76	87	82	6	5	462.55284
P27	253	6	140	2	96	3	1	9	5	0	0	0	81	96	90	12	8	252.871015
P271	383	4	140	3	86	3	1	19	11	0	0	0	75	86	81	8	5	383.447937
P273	525	4	140	1	84	3	0	22	7	0	1	0	73	84	79	10	5	525.078931
P275	149	6	140	15	83	3	10	90	53	0	1	1	72	83	78	5	4	149.110011
P277	678	6	140	26	83	3	12	248	137	0	3	2	73	83	78	5	4	678.366291
P279	269	4	140	1	82	3	1	6	4	0	0	0	71	82	77	6	5	268.656995
P281	543	6	140	9	82	3	3	96	51	0	1	1	70	82	77	5	4	543.404976
P283	443	6	140	4	83	3	0	74	36	0	1	0	71	83	78	6	5	442.751496
P285	317	6	140	3	95	3	0	83	39	0	1	0	83	95	90	6	5	317.435253
P287	259	6	140	3	96	3	0	22	9	0	0	0	85	96	91	8	6	259.494241
P289	551	6	140	0	96	3	0	36	15	0	0	0	85	96	91	7	5	551.2986
P29	706	6	140	12	95	3	8	62	39	0	1	0	80	95	88	9	7	705.744047
P291	400	6	140	4	95	3	2	54	28	0	1	0	83	95	90	6	5	399.607462
P293	66	8	140	9	93	3	3	146	73	0	1	0	81	93	87	6	5	65.699724
P295	234	6	140	17	87	3	9	139	81	0	2	1	76	87	82	6	5	233.972184
P297	492	6	140	7	93	3	1	29	14	0	0	0	82	93	88	7	5	491.607917

P299	504	6	140	2	94	3	0	41	19	0	0	0	83	94	89	6	5	504.478466
P301	523	6	140	3	95	3	0	16	8	0	0	0	83	95	90	12	6	523.302861
P303	1079	6	140	0	99	3	0	13	5	0	0	0	87	99	94	10	7	1078.935923
P305	482	6	140	2	101	3	1	21	11	0	0	0	89	101	96	7	6	482.315309
P307	613	6	140	3	96	3	2	25	14	0	0	0	85	96	91	6	5	612.837786
P309	580	6	140	9	92	3	5	89	49	0	1	1	81	92	87	6	5	580.234795
P31	1199	6	140	3	95	3	2	18	11	0	0	0	80	95	88	10	8	1198.661445
P311	553	6	140	13	86	3	7	105	60	0	1	1	75	86	81	5	4	553.462273
P313	699	6	140	25	82	3	13	219	124	0	2	1	72	82	78	5	4	698.753997
P319	978	8	140	0	43	3	0	1388	1134	0	9	7	42	48	47	2	0	978.23229
P321	228	6	140	1	101	3	1	6	4	0	0	0	100	101	101	8	6	227.789269
P323	292	4	140	0	78	3	0	1	1	0	0	0	64	78	72	8	6	292.105248
P329	464	6	140	24	81	3	13	199	114	0	2	1	71	81	77	5	4	463.784491
P33	194	6	140	10	94	3	7	54	33	0	1	0	79	94	88	9	7	193.729097
P331	922	10	140	520	42	3	416	1901	1203	2	8	5	38	42	40	5	4	921.761126
P335	2841	12	140	93	92	3	0	471	225	0	1	1	78	92	86	16	7	2840.63514
P337	1002	8	140	15	96	3	10	78	48	0	0	0	81	96	90	19	10	1002.280856
P343	765	8	140	1	97	3	0	3	2	0	0	0	82	97	91	24	12	765.374537
P345	270	8	140	1	98	3	1	7	4	0	0	0	83	98	92	24	12	270.254111
P347	1208	6	140	1	98	3	1	7	4	0	0	0	83	98	91	24	12	1208.044959
P349	548	6	140	2	97	3	1	9	6	0	0	0	82	97	91	24	12	547.545185
P35	898	6	140	2	97	3	2	12	8	0	0	0	81	97	90	11	8	897.49912
P351	1336	8	140	5	96	3	3	25	15	0	0	0	81	96	90	20	12	1335.970562
P353	370	8	140	5	92	3	1	22	11	0	0	0	77	92	86	24	12	369.530362
P355	136	8	140	8	91	3	1	32	17	0	0	0	77	91	86	17	8	135.989965
P357	294	8	140	8	93	3	1	32	17	0	0	0	78	93	87	18	9	294.233319
P361	65	8	140	5	93	3	0	27	12	0	0	0	79	93	88	20	10	64.814778
P365	184	8	140	5	93	3	1	22	11	0	0	0	78	93	87	24	12	184.104676
P367	974	8	140	0	95	3	0	0	0	0	0	0	80	95	89	24	12	973.840263
P369	471	8	140	2	92	3	0	11	4	0	0	0	78	92	87	24	12	471.451598
P37	285	6	140	3	96	3	2	15	9	0	0	0	80	96	89	10	7	284.860372
P39	364	6	140	3	96	3	2	14	9	0	0	0	81	96	89	11	8	363.842023
P41	436	6	140	0	96	3	0	0	0	0	0	0	81	96	90	22	12	436.086286
P423	541	6	140	17	93	3	11	91	59	0	1	1	79	93	87	6	5	541.210996
P43	170	6	140	1	97	3	1	8	5	0	0	0	82	97	90	12	9	169.780109
P45	300	6	140	1	97	3	0	4	2	0	0	0	81	97	90	15	10	300.113143
P47	330	6	140	1	97	3	1	7	4	0	0	0	82	97	90	13	9	330.370965
P49	361	6	140	2	97	3	1	12	7	0	0	0	82	97	90	12	8	361.271585
P51	537	6	140	5	97	3	3	26	16	0	0	0	81	97	90	10	7	536.842681
P53	484	6	140	1	96	3	1	4	3	0	0	0	81	96	89	12	8	483.678164
P55	255	6	140	6	95	3	4	32	20	0	0	0	80	95	89	10	7	255.061251
P57	1048	6	140	4	97	3	2	19	12	0	0	0	82	97	91	11	8	1048.241738
P59	278	8	140	18	96	3	12	97	60	0	1	0	81	96	90	10	7	278.379199
P61	1424	8	140	20	95	3	13	108	67	0	1	0	80	95	89	9	7	1424.063814
P63	404	6	140	10	92	3	6	57	36	0	1	0	78	92	86	10	6	403.711664
P65	363	4	140	11	92	3	0	54	31	0	1	1	78	92	86	10	6	362.991132
P67	336	4	140	13	92	3	0	62	36	0	2	1	78	92	86	10	6	336.298689
P69	371	4	140	14	92	3	0	67	39	0	2	1	78	92	86	10	6	371.296038
P73	434	4	140	4	91	3	0	20	11	0	1	0	77	91	85	8	5	434.185652
P75	807	4	140	5	91	3	0	25	13	0	1	0	77	91	85	7	5	807.067599
P79	70	6	140	31	91	3	19	179	115	0	2	1	77	91	85	6	5	70.422651
P81	105	6	140	30	91	3	18	174	111	0	2	1	77	91	85	6	5	105.183326
P83	361	6	140	33	91	3	21	179	115	0	2	1	77	91	85	6	5	360.551773
P85	769	6	140	7	82	3	4	42	27	0	0	0	67	82	76	6	5	768.610179
P87	862	6	140	12	82	3	8	68	44	0	1	0	68	82	76	6	5	861.944909
P89	640	6	140	14	91	3	9	79	51	0	1	1	77	91	85	6	5	640.329659
P91	561	6	140	9	91	3	6	52	34	0	1	0	76	91	85	6	5	561.057796
P93	448	6	140	13	90	3	8	75	49	0	1	1	75	90	84	7	5	447.75149
P95	465	8	140	24	92	3	15	129	83	0	1	1	77	92	85	7	6	464.724808
P97	934	8	140	52	95	3	35	278	173	0	2	1	80	95	88	9	6	933.906968
P99	666	8	140	32	94	3	10	167	101	0	1	1	79	94	87	10	7	665.967381
P100	618	12	140	51	90	3	8	209	106	0	1	0	76	90	84	17	9	618.243128
P102	699	12	140	4	92	3	1	23	13	0	0	0	78	92	86	17	11	698.867599
P134	335	12	140	3	97	3	2	15	9	0	0	0	82	97	91	24	12	334.904295
P136	569	12	140	0	98	3	0	2	1	0	0	0	83	98	92	24	12	568.520026
P138	555	12	140	0	99	3	0	2	1	0	0	0	84	99	93	24	12	554.816765
P140	500	12	140	0	99	3	0	2	1	0	0	0	84	99	93	24	12	499.86321
P144	267	12	140	2	99	3	1	9	5	0	0	0	84	99	92	24	12	266.872686
P148	6	8	140	0	-41	3	0	460	390	0	3	2	-41	-41	-41	2	0	6.391497
P154	28	8	140	0	-31	3	0	526	444	0	3	3	-31	-31	-31	2	0	28.394552
P158	16	8	140	0	-45	3	0	434	300	0	3	2	-45	-45	-45	7	1	16.114375
P162	1129	6	140	363	65	3	336	363	350	4	4	4	63	65	64	5	4	1129.487472
P164	175	6	140	363	129	3	336	363	350	4	4	4	127	129	128	5	4	175.286211
P166	576	8	140	0	78	3	0	434	300	0	3	2	77	90	87	1	0	575.56813
P168	147	8	140	0	78	3	0	526	444	0	3	3	78	91	88	1	0	147.477412
P170	10	10	140	0	79	3	0	460	390	0	2	2	78	91	88	2	0	9.691534

P172	10	10	140	0	79	3	0	526	444	0	2	2	78	91	88	2	0	9.782691
P174	26	10	140	0	78	3	0	1388	1134	0	6	5	78	91	88	2	0	26.453195
P176	14	10	140	0	78	3	0	890	727	0	4	3	78	90	88	2	0	14.105937
P180	328	8	140	0	79	3	0	498	407	0	3	3	78	91	88	2	0	328.011131
P186	4	6	140	363	133	3	336	363	350	4	4	4	130	133	132	5	4	4.086981
P190	386	8	140	75	79	3	26	748	407	0	5	3	70	79	75	5	4	386.369422
P194	4	6	140	363	77	3	336	363	350	4	4	4	69	77	73	5	4	4.095699
P198	475	8	140	0	97	3	0	1	0	0	0	0	82	97	90	22	11	474.931
P200	884	8	140	0	101	3	0	0	0	0	0	0	85	101	94	24	12	883.699278
P202	1622	8	140	0	103	3	0	0	0	0	0	0	88	103	96	24	12	1621.521163
P204	774	8	140	0	104	3	0	0	0	0	0	0	89	104	97	24	12	774.134232
P206	16	10	140	157	78	3	55	1565	853	0	6	3	71	78	75	5	4	16.44072
P208	351	6	140	363	78	3	336	363	350	4	4	4	70	78	74	5	4	350.63327
P210	318	10	140	0	79	3	0	890	727	0	4	3	78	91	88	2	0	318.217538
P306	552	6	120	363	97	3	336	363	350	4	4	4	95	98	96	5	4	551.753241
P308	468	10	120	81	78	3	29	813	443	0	3	2	70	78	74	5	4	468.435652
P316	531	8	140	4	99	3	3	23	14	0	0	0	84	99	93	24	12	530.901423
P324	28	10	120	81	78	3	29	813	443	0	3	2	71	78	75	5	4	28.058753
P326	1031	8	120	1	93	3	0	3	2	0	0	0	79	93	87	21	12	1030.571133
P328	953	8	120	6	98	3	4	29	18	0	0	0	83	98	92	20	11	952.595048
P470	9	6	140	0	105	3	0	0	0	0	0	0	104	105	105	24	12	9.056732
P472	273	6	120	0	106	3	0	3	2	0	0	0	105	106	106	12	7	273.420228
P480	143	8	120	14	62	3	10	77	48	0	0	0	62	62	62	6	4	143.159305
P482	119	8	120	17	71	3	11	89	55	0	1	0	70	71	70	5	4	118.729757

SUNRISE ENGINEERING	Prepared By: CWP Checked By: Date: 6/2/2025	Future Network Summary

Summary:

These are the combined calculation, inouts and results from the models.

Model Inputs for Existing System

Pipes

	Existing	
4	10,358	ft
6	51,432	ft
8	46,395	ft
10	6,206	ft
12	17,505	ft
Total	131,896	ft
	24.98	Miles

Hydrants and Hydrant Valves

Existing	127

Water Control Vales

Existing	165

GIS Data

Control Valves

OBJECTID	OBJECTID	OBJECTID
2	58	114
3	59	115
4	60	116
5	61	117
6	62	118
7	63	119
8	64	120
9	65	121
10	66	122
11	67	123
12	68	124
13	69	125
14	70	126
15	71	127
16	72	128
17	73	129
18	74	130
19	75	131
20	76	132
21	77	133
22	78	134
23	79	135
24	80	136
25	81	137
26	82	138
27	83	139
28	84	140
29	85	141
30	86	142
31	87	143
32	88	144
33	89	145
34	90	146
35	91	147
36	92	148
37	93	149
38	94	150
39	95	151
40	96	152
41	97	153
42	98	154
43	99	155
44	100	156
45	101	157
46	102	158
47	103	159
48	104	160
49	105	161
50	106	162
51	107	163
52	108	164
53	109	165
54	110	166
55	111	
56	112	
57	113	

Fire Hydrants

FID	FID	FID
0	56	112
1	57	113
2	58	114
3	59	115
4	60	116
5	61	117
6	62	118
7	63	119
8	64	120
9	65	121
10	66	122
11	67	123
12	68	124
13	69	125
14	70	126
15	71	
16	72	
17	73	
18	74	
19	75	
20	76	
21	77	
22	78	
23	79	
24	80	
25	81	
26	82	
27	83	
28	84	
29	85	
30	86	
31	87	
32	88	
33	89	
34	90	
35	91	
36	92	
37	93	
38	94	
39	95	
40	96	
41	97	
42	98	
43	99	
44	100	
45	101	
46	102	
47	103	
48	104	
49	105	
50	106	
51	107	
52	108	
53	109	
54	110	
55	111	

Future Model Outputs

Junction Output

AssetID	Elevation	BaseDemand	FireflowDmd	AvailableFireflow	FireResPressure	FireSaftyRating	Demand	Head	MinDe	MaxDemand	AvgDemand	MinHead	MaxHead	AvgHead	MinPressu	MaxPressure	AvgPressure	MinQuality	MaxQuality	AvgQuality
J10	5676	31	1000	2791	76	Excellent	9	5876	6	50	30	5865	5879	5872	82	88	85	0	28	11
J100	5660	13	1000	2328	77	Excellent	4	5876	3	20	12	5858	5881	5869	86	96	91	0	32	15
J102	5661	4	1000	1180	39	Excellent	4	5876	4	4	4	5858	5881	5869	85	96	90	0	33	16
J104	5660	21	1000	2372	77	Excellent	6	5876	4	33	20	5860	5881	5870	86	96	91	0	32	15
J106	5665	12	1000	3638	84	Excellent	12	5876	12	12	12	5864	5882	5872	86	94	89	0	32	14
J108	5673	22	1000	4164	82	Excellent	7	5876	4	36	22	5866	5881	5873	83	90	86	0	35	16
J110	5673	0	1000	4178	82	Excellent	0	5876	0	0	0	5866	5881	5873	83	90	86	0	35	15
J112	5676	8	1000	3730	80	Excellent	2	5876	2	13	8	5866	5880	5873	83	88	85	0	38	19
J114	5689	7	1000	2139	66	Excellent	2	5876	1	12	7	5866	5880	5873	77	83	80	0	38	20
J116	5689	18	1000	2661	70	Excellent	5	5876	4	29	17	5866	5880	5873	77	83	80	0	38	19
J118	5690	15	1000	3545	74	Excellent	4	5876	3	23	14	5867	5879	5873	77	82	79	0	37	20
J12	5666	9	1000	2578	78	Excellent	3	5876	2	15	9	5865	5879	5872	86	92	89	0	29	12
J120	5693	6	1000	3885	74	Excellent	2	5875	1	9	5	5868	5878	5873	76	80	78	0	37	20
J128	5670	18	1000	3741	83	Excellent	5	5876	4	29	17	5866	5881	5873	85	92	88	0	20	6
J130	5673	6	1000	4142	82	Excellent	2	5876	1	9	5	5866	5881	5873	84	90	87	0	20	5
J132	5670	33	1000	3589	82	Excellent	10	5876	7	53	32	5866	5881	5873	85	91	88	0	17	5
J134	5670	14	1000	3378	81	Excellent	4	5876	3	22	13	5865	5881	5873	85	91	88	0	15	5
J136	5670	7	1000	3280	81	Excellent	2	5876	2	12	7	5865	5881	5873	85	92	88	0	13	5
J138	5663	11	1000	2950	82	Excellent	3	5876	2	18	11	5865	5882	5873	88	95	91	0	13	5
J14	5662	3	1000	1948	71	Excellent	1	5876	1	5	3	5865	5879	5872	88	94	91	0	30	14
J140	5674	17	1000	1530	56	Excellent	5	5876	3	27	16	5866	5879	5872	83	89	86	0	38	19
J142	5675	8	1000	3771	80	Excellent	2	5876	2	13	8	5866	5880	5873	83	89	86	0	38	19
J144	5663	12	1000	4293	87	Excellent	12	5876	12	12	12	5866	5884	5874	88	96	91	0	13	4
J146	5663	8	1000	4071	86	Excellent	8	5876	8	8	8	5866	5884	5874	88	96	91	0	13	4
J148	5667	8	1000	3980	85	Excellent	8	5876	8	8	8	5866	5883	5874	86	94	90	0	13	4
J150	5668	7	1000	3977	84	Excellent	2	5876	1	12	7	5866	5882	5873	86	93	89	0	13	4
J152	5694	9	1000	3984	74	Excellent	3	5875	2	15	9	5869	5878	5873	76	80	78	0	37	20
J154	5665	2	1000	3660	84	Excellent	1	5876	0	3	2	5866	5882	5873	87	94	90	0	13	4
J156	5774	13	1000	2390	71	Excellent	4	5967	3	21	13	5967	7674	6478	83	823	305	0	39	25
J158	5765	13	1000	2712	77	Excellent	4	5967	3	21	13	5967	7674	6478	87	827	309	0	39	25
J16	5661	5	1000	1508	58	Excellent	2	5876	1	8	5	5865	5879	5872	89	95	92	0	34	19
J160	5803	11	1000	2305	60	Excellent	3	5967	2	18	11	5967	7674	6478	71	811	293	0	39	25
J162	5797	8	1000	3155	67	Excellent	2	5967	2	13	8	5967	7674	6478	73	813	295	0	38	24
J164	5809	10	1000	3315	63	Excellent	3	5967	2	16	10	5967	7674	6478	68	808	290	0	38	24
J166	5755	11	1000	1914	70	Excellent	3	5967	2	18	11	5967	7674	6478	92	831	313	0	39	25
J168	5788	11	1000	1361	45	Excellent	3	5967	2	17	10	5967	7674	6478	77	817	299	0	39	26
J170	5783	7	1000	957	15	Excellent	2	5967	1	12	7	5967	7674	6478	80	819	301	0	39	26
J172	5734	3	1000	1797	73	Excellent	1	5967	1	5	3	5967	7674	6478	101	840	322	0	40	27
J174	5703	0	1000	1851	57	Excellent	0	5876	0	0	0	5866	5880	5873	71	77	74	0	100	50
J176	5754	4	1000	2054	73	Excellent	1	5966	1	7	4	5966	7674	6478	92	832	314	0	39	25
J178	5741	6	1000	1099	32	Excellent	2	5966	1	9	6	5966	7674	6478	97	837	319	0	39	26
J18	5668	8	1000	2441	76	Excellent	3	5875	2	14	8	5865	5879	5872	85	91	88	0	30	12
J180	5765	5	1000	2217	72	Excellent	2	5966	1	8	5	5966	7674	6478	87	827	309	0	39	25
J182	5742	8	1000	1859	72	Excellent	2	5966	2	12	7	5966	7674	6478	97	837	319	0	39	25
J184	5734	10	1000	888	0	Good	3	5966	2	17	10	5966	7674	6478	101	841	323	0	40	26
J186	5755	13	1000	1984	71	Excellent	4	5966	3	20	12	5966	7674	6478	91	831	313	0	39	25
J188	5811	14	1000	3030	61	Excellent	4	5966	3	22	14	5966	7674	6478	67	807	289	0	39	25
J194	5827	6	1000	2879	55	Excellent	2	5968	1	9	5	5968	7674	6479	61	800	282	0	38	24
J196	5694	0	1000	4760	112	Excellent	0	5974	0	0	0	5974	7674	6479	121	858	340	0	37	21
J20	5653	6	1000	2723	84	Excellent	2	5875	1	10	6	5865	5879	5872	92	98	95	0	33	15
J200	5662	16	1000	3542	86	Excellent	5	5878	3	25	15	5870	5889	5877	90	98	93	0	70	28
J202	5683	18	1000	3521	77	Excellent	5	5875	4	29	18	5867	5878	5873	80	85	82	0	37	21
J204	5668	18	1000	3733	84	Excellent	6	5876	4	30	18	5866	5882	5873	86	93	89	0	13	4

J206	5661	14	1000	3023	83 Excellent	4	5876	3	22	13	5866	5882	5873	89	96	92	0	13	4
J208	5667	4	1000	2062	71 Excellent	1	5876	1	7	4	5866	5882	5873	86	93	89	0	13	4
J210	5671	29	1000	3033	79 Excellent	9	5876	6	47	28	5865	5881	5872	84	91	87	0	16	6
J212	5682	16	1000	2989	74 Excellent	5	5875	3	25	15	5865	5879	5872	79	85	82	0	38	19
J216	5678	12	1000	1333	47 Excellent	4	5876	2	20	12	5865	5879	5872	81	87	84	0	38	19
J218	5682	10	1000	2871	74 Excellent	3	5875	2	16	10	5865	5879	5872	80	85	82	0	38	20
J22	5693	2	1000	3724	73 Excellent	1	5876	0	3	2	5868	5878	5873	76	80	78	0	37	20
J220	5686	16	1000	2383	69 Excellent	5	5875	3	26	15	5865	5879	5872	78	84	81	0	38	20
J222	5684	5	1000	963	15 Excellent	1	5875	1	8	5	5865	5879	5872	79	84	82	0	38	23
J224	5686	17	1000	2574	70 Excellent	5	5875	3	28	17	5866	5879	5872	78	83	80	0	38	21
J226	5658	8	1000	2857	83 Excellent	2	5875	2	13	8	5865	5879	5872	90	96	93	0	38	20
J228	5651	13	1000	2469	82 Excellent	4	5875	3	21	13	5865	5879	5872	93	99	96	0	34	15
J230	5654	18	1000	2409	80 Excellent	5	5875	4	28	17	5865	5879	5872	91	97	94	0	42	20
J232	5664	6	1000	2828	80 Excellent	2	5875	1	10	6	5865	5879	5872	87	93	90	0	38	20
J234	5656	22	1000	2370	79 Excellent	7	5875	4	36	22	5865	5879	5872	91	97	94	0	38	20
J236	5658	22	1000	2276	77 Excellent	6	5875	4	34	21	5865	5879	5872	90	96	93	0	38	22
J238	5656	17	1000	1933	72 Excellent	5	5875	3	27	16	5865	5879	5872	90	96	93	0	37	21
J24	5716	2	1000	900	9 Excellent	1	5876	0	3	2	5868	5878	5873	66	70	68	0	38	24
J240	5636	8	1000	1914	78 Excellent	2	5875	2	12	7	5865	5879	5872	99	105	102	0	83	27
J242	5647	4	1000	1948	75 Excellent	1	5875	1	6	4	5865	5879	5872	95	101	98	0	56	27
J244	5664	15	1000	2283	75 Excellent	5	5875	3	25	15	5865	5879	5872	87	93	90	0	38	22
J246	5701	8	1000	1370	44 Excellent	2	5876	2	13	8	5866	5880	5873	72	77	74	0	39	25
J248	5653	12	1000	3393	90 Excellent	4	5882	2	19	11	5872	5893	5880	95	104	99	0	2	2
J250	5649	16	1000	3732	93 Excellent	5	5883	3	25	15	5873	5894	5881	97	106	100	0	1	1
J252	5654	11	1000	3681	91 Excellent	3	5882	2	17	10	5872	5893	5880	94	103	98	0	2	2
J254	5656	5	1000	4088	91 Excellent	2	5882	1	9	5	5873	5893	5880	94	103	97	0	1	1
J256	5649	9	1000	3427	92 Excellent	3	5882	2	14	8	5872	5894	5880	97	106	100	0	2	2
J258	5652	2	1000	3719	94 Excellent	1	5900	0	3	2	5888	5911	5896	102	112	106	0	0	0
J26	5655	13	1000	2086	74 Excellent	4	5875	3	21	13	5854	5881	5867	86	98	92	0	23	11
J260	5651	13	1000	3549	94 Excellent	4	5897	3	21	13	5885	5908	5893	101	111	105	0	0	0
J262	5662	0	1000	3824	87 Excellent	0	5878	0	0	0	5870	5889	5877	90	98	93	0	66	22
J264	5661	0	1000	4357	89 Excellent	0	5878	0	0	0	5870	5889	5877	91	99	94	0	25	4
J266	5660	5	1000	4252	89 Excellent	2	5878	1	9	5	5870	5889	5877	91	99	94	0	25	5
J268	5660	2	1000	4529	90 Excellent	1	5878	0	4	2	5870	5889	5877	91	99	94	0	30	6
J270	5661	0	1000	3826	88 Excellent	0	5878	0	0	0	5870	5889	5877	91	99	94	0	66	20
J272	5657	0	1000	2018	75 Excellent	0	5881	0	0	0	5872	5892	5879	93	102	96	0	100	50
J274	5660	0	1000	3492	87 Excellent	0	5878	0	0	0	5870	5889	5877	91	99	94	0	71	26
J28	5655	23	1000	1999	73 Excellent	7	5875	5	36	22	5854	5881	5867	86	98	92	0	23	11
J30	5657	12	1000	1762	67 Excellent	4	5875	2	20	12	5854	5881	5867	85	97	91	0	23	11
J32	5653	16	1000	1773	68 Excellent	5	5875	3	25	15	5854	5881	5867	87	99	93	0	24	14
J326	5659	17	1000	2289	77 Excellent	5	5876	3	28	17	5859	5881	5870	87	96	91	0	32	15
J34	5651	7	1000	1559	62 Excellent	2	5875	1	12	7	5854	5881	5867	88	100	94	0	24	16
J36	5654	28	1000	1887	71 Excellent	8	5875	6	44	27	5854	5881	5867	86	98	92	0	23	12
J38	5656	29	1000	1726	66 Excellent	9	5875	6	46	28	5854	5881	5867	86	98	92	0	23	11
J40	5650	35	1000	1905	72 Excellent	11	5875	7	57	34	5854	5881	5867	88	100	94	0	24	13
J42	5652	12	1000	1716	67 Excellent	4	5875	2	19	11	5854	5881	5867	87	99	93	0	24	14
J44	5654	11	1000	1815	69 Excellent	3	5875	2	18	11	5854	5881	5867	87	99	93	0	23	13
J46	5651	3	1000	1760	69 Excellent	1	5875	1	5	3	5854	5881	5867	88	100	94	0	26	17
J48	5649	14	1000	1796	70 Excellent	4	5875	3	22	14	5854	5881	5867	89	101	95	0	25	15
J50	5651	9	1000	1699	67 Excellent	3	5875	2	15	9	5854	5881	5867	88	100	94	0	28	18
J52	5652	16	1000	1812	70 Excellent	5	5875	3	25	15	5854	5881	5867	88	100	93	0	24	14
J54	5653	10	1000	1897	71 Excellent	3	5875	2	16	10	5854	5881	5867	87	99	93	0	24	12
J56	5661	21	1000	2511	79 Excellent	6	5876	4	34	21	5859	5882	5870	86	96	91	0	13	4
J58	5661	28	1000	2770	81 Excellent	8	5876	6	45	27	5860	5882	5870	86	96	90	0	13	4
J60	5662	9	1000	1482	57 Excellent	3	5876	2	14	9	5861	5883	5871	87	96	91	0	13	4
J62	5663	4	1000	1511	58 Excellent	1	5876	1	7	4	5864	5884	5872	87	95	91	0	13	4
J64	5661	5	1000	4406	88 Excellent	2	5877	1	8	5	5867	5884	5874	89	97	92	0	13	4
J68	5666	5	1000	2715	79 Excellent	1	5876	1	7	4	5861	5881	5870	85	93	89	0	34	17
J70	5663	9	1000	2762	80 Excellent	3	5876	2	14	8	5861	5882	5871	86	95	90	0	32	14
J72	5665	17	1000	2769	79 Excellent	5	5876	3	27	17	5861	5881	5871	85	94	89	0	35	17
J74	5665	9	1000	3110	82 Excellent	3	5876	2	14	8	5862	5882	5871	86	94	90	0	32	14

J78	5665	4	1000	2741	79 Excellent	1	5876	1	6	4	5861	5881	5871	85	94	89	0	35	17
J80	5663	27	1000	2463	77 Excellent	8	5876	5	43	26	5859	5881	5870	85	94	89	0	34	17
J82	5705	23	1000	1749	54 Excellent	7	5876	5	37	22	5858	5881	5869	66	76	71	0	35	18
J84	5665	19	1000	2399	76 Excellent	6	5876	4	30	18	5858	5881	5869	83	94	88	0	35	18
J86	5663	23	1000	2159	73 Excellent	7	5876	5	38	23	5858	5881	5869	84	94	89	0	34	17
J88	5668	4	1000	2576	76 Excellent	1	5876	1	7	4	5857	5881	5869	82	92	87	0	34	17
J90	5657	23	1000	2649	81 Excellent	7	5876	5	37	22	5857	5881	5869	87	97	92	0	23	10
J92	5659	24	1000	2740	81 Excellent	7	5876	5	39	23	5858	5882	5869	86	96	91	0	14	5
J94	5660	22	1000	2342	77 Excellent	7	5876	4	35	21	5858	5882	5869	86	96	91	0	13	4
J96	5662	9	1000	3683	85 Excellent	3	5876	2	15	9	5864	5882	5872	88	95	91	0	13	4
J98	5658	5	1000	2579	80 Excellent	1	5876	1	8	5	5858	5881	5869	87	97	92	0	32	15
N-J186	5662	0	1000	3970	88 Excellent	0	5877	0	0	0	5871	5889	5877	91	99	93	0	84	26
N-J188	5661	0	1000	1781	68 Excellent	0	5877	0	0	0	5871	5889	5877	91	99	94	0	100	50
N-J190	5661	0	1000	3899	88 Excellent	0	5877	0	0	0	5871	5889	5877	91	99	94	0	95	37
N-J194	5661	0	1000	3750	87 Excellent	0	5877	0	0	0	5871	5889	5877	91	99	94	0	100	50
N-J196	5661	3	1000	3914	88 Excellent	1	5878	1	6	3	5870	5889	5877	91	99	94	0	65	20
N-J198	5664	25	1000	4111	87 Excellent	8	5878	5	40	24	5870	5889	5877	89	97	92	0	66	22
N-J202	5668	0	1000	4491	86 Excellent	0	5878	0	0	0	5870	5889	5877	88	96	91	0	63	16
N-J204	5666	0	1000	2984	82 Excellent	0	5878	0	0	0	5870	5889	5877	89	97	92	0	100	50
N-J206	5662	0	1000	3373	86 Excellent	0	5878	0	0	0	5870	5889	5877	90	99	93	0	100	50
N-J208	5668	3	1000	4482	86 Excellent	1	5878	1	6	3	5870	5889	5877	88	96	91	0	63	17
N-J210	5669	3	1000	4529	86 Excellent	3	5878	3	3	3	5870	5889	5877	87	95	90	0	63	16
N-J212	5666	0	1000	4521	87 Excellent	0	5878	0	0	0	5870	5889	5877	89	97	92	0	25	4
N-J214	5667	42	1000	4541	87 Excellent	42	5878	42	42	42	5870	5889	5877	88	97	91	0	25	4
N-J216	5663	1	1000	4458	89 Excellent	0	5880	0	2	1	5871	5891	5878	90	99	93	0	1	1
N-J218	5662	0	1000	4364	89 Excellent	0	5881	0	0	0	5872	5892	5879	91	99	94	0	1	1
N-J220	5663	1	1000	4585	89 Excellent	0	5878	0	2	1	5870	5890	5877	90	98	93	0	1	1
N-J222	5660	0	1000	3871	88 Excellent	0	5880	0	0	0	5871	5891	5878	91	100	94	0	100	50
N-J224	5649	7	1000	4123	95 Excellent	2	5885	1	11	7	5874	5896	5883	98	107	101	0	1	1
N-J226	5650	14	1000	4135	94 Excellent	4	5887	3	22	13	5876	5898	5884	98	107	101	0	1	1
N-J228	5660	8	1000	4327	90 Excellent	2	5882	2	13	8	5872	5893	5880	92	101	95	0	1	1
N-J230	5652	14	1000	4016	93 Excellent	4	5884	3	22	13	5874	5895	5882	96	106	100	0	1	1
N-J232	5648	18	1000	3630	94 Excellent	5	5885	4	29	17	5874	5896	5883	98	108	102	0	1	1
N-J234	5654	8	1000	3208	89 Excellent	2	5884	2	13	8	5874	5895	5882	95	105	99	0	1	1
N-J236	5654	0	1000	2947	88 Excellent	0	5884	0	0	0	5874	5895	5882	95	104	99	0	100	50
N-J238	5659	7	1000	4482	90 Excellent	2	5878	1	11	7	5870	5889	5877	92	100	95	0	30	6
N-J240	5653	7	1000	4072	93 Excellent	2	5884	1	12	7	5873	5895	5881	95	105	99	0	1	1
N-J242	5652	11	1000	4096	93 Excellent	3	5887	2	17	10	5876	5898	5884	97	106	100	0	1	1
N-J244	5653	5	1000	4094	93 Excellent	1	5883	1	8	5	5873	5894	5881	95	105	99	0	1	1
N-J246	5655	2	1000	2503	83 Excellent	1	5881	0	4	2	5872	5892	5879	94	103	97	0	21	16
N-J256	5655	23	1000	3975	92 Excellent	7	5890	5	36	22	5878	5900	5886	97	106	100	0	1	1
N-J260	5651	10	1000	3419	93 Excellent	3	5898	2	16	10	5885	5908	5894	102	112	105	0	1	1
N-J262	5649	8	1000	3332	94 Excellent	3	5899	2	13	8	5886	5909	5895	103	113	107	0	0	0
N-J264	5646	0	1000	3602	96 Excellent	0	5900	0	0	0	5887	5910	5896	104	114	108	0	0	0
J122	5665	2	1000	4529	88 Excellent	0	5878	0	3	2	5870	5889	5877	89	97	92	0	32	6
J344	5650	6	1000	3447	94 Excellent	2	5898	1	9	6	5885	5908	5894	102	112	106	0	1	1
J346	5646	0	1000	3320	95 Excellent	0	5899	0	0	0	5886	5909	5895	104	114	108	0	0	0
J348	5647	0	1000	3299	94 Excellent	0	5898	0	0	0	5886	5909	5895	103	113	107	0	1	1
J352	5647	2	1000	3421	95 Excellent	0	5899	0	2	1	5886	5910	5895	104	114	108	0	0	0
J370	5694	0	1000	4547	112 Excellent	0	5972	0	0	0	5972	7674	6479	120	858	340	0	38	23
J372	5694	0	1000	4559	112 Excellent	0	5972	0	0	0	5972	7674	6479	120	858	340	0	38	22
J378	5695	0	1000	4005	74 Excellent	0	5876	0	0	0	5875	5886	5878	78	83	79	0	57	4
J380	5695	0	1000	4000	74 Excellent	0	5876	0	0	0	5875	5887	5878	78	83	79	0	75	7
J386	5694	0	1000	3822	72 Excellent	0	5875	0	0	0	5870	5877	5874	76	79	78	0	37	21
J388	5694	0	1000	4272	74 Excellent	0	5875	0	0	0	5870	5877	5874	76	79	78	0	37	20
J392	5693	3	1000	4321	74 Excellent	1	5875	1	6	3	5870	5877	5874	77	80	78	0	37	20
J396	5635	0	1000	1270	49 Excellent	0	5875	0	0	0	5854	5881	5867	95	107	101	0	100	50
J398	5633	0	1000	1356	56 Excellent	0	5875	0	0	0	5854	5881	5867	96	108	102	0	100	50
J400	5639	0	1000	1540	64 Excellent	0	5875	0	0	0	5854	5881	5867	93	105	99	0	100	50
J402	5644	0	1000	1680	68 Excellent	0	5875	0	0	0	5854	5881	5867	91	103	97	0	63	40
J488	5830	0	1000	2653	54 Excellent	0	5970	0	0	0	5970	7674	6479	61	799	281	0	38	23

J502	5642	8	1000	3483	97 Excellent	2	5895	2	13	8	5883	5906	5892	104	114	108	0	1	1
J586	5653	4	1000	2361	84 Excellent	1	5901	1	7	4	5888	5911	5897	102	112	106	0	4	2
J584	5655	3	1000	2065	78 Excellent	1	5901	1	6	3	5888	5911	5897	101	111	105	0	5	2
J580	5653	12	1000	1899	75 Excellent	4	5901	2	19	12	5888	5911	5897	102	112	105	0	6	2
J628	5724	3	1000	1728	74 Excellent	1	5966	1	5	3	5966	7674	6478	105	845	327	0	40	27
J630	5718	2	1000	1503	66 Excellent	1	5966	0	3	2	5966	7674	6478	107	847	329	0	45	29
J570	5651	0	1000	3712	94 Excellent	0	5901	0	0	0	5888	5911	5897	102	112	106	0	0	0
J574	5650	0	1000	3725	95 Excellent	0	5901	0	0	0	5888	5911	5897	103	113	107	0	0	0
J576	5654	1	1000	2535	85 Excellent	1	5901	1	1	1	5888	5911	5897	101	111	105	0	3	1
J582	5654	34	1000	1846	74 Excellent	10	5901	7	55	33	5888	5911	5897	102	112	105	0	6	3
J578	5652	0	1000	1780	72 Excellent	0	5901	0	0	0	5888	5911	5897	102	112	106	0	100	50
J592	5645	0	1000	3837	97 Excellent	0	5904	0	0	0	5892	5914	5901	107	117	111	0	0	0
J590	5637	0	1000	3989	101 Excellent	0	5905	0	0	0	5893	5915	5902	111	121	115	0	0	0
J594	5641	0	1000	3903	99 Excellent	0	5905	0	0	0	5892	5915	5901	109	119	113	0	0	0
J596	5638	0	1000	2562	92 Excellent	0	5905	0	0	0	5892	5915	5901	110	120	114	0	100	50
J598	5643	0	1000	3174	95 Excellent	0	5904	0	0	0	5892	5914	5901	108	117	111	0	0	0
J616	5644	0	1000	2042	82 Excellent	0	5904	0	0	0	5892	5914	5901	108	117	111	0	2	1
J614	5645	0	1000	1505	64 Excellent	0	5904	0	0	0	5892	5914	5901	107	117	111	0	4	3
J612	5645	0	1000	1516	64 Excellent	0	5904	0	0	0	5892	5914	5901	107	117	111	0	12	10
J610	5644	1	1000	2352	87 Excellent	0	5904	0	2	1	5892	5914	5901	107	117	111	0	22	15
J608	5644	0	1000	2326	86 Excellent	0	5904	0	0	0	5892	5914	5901	107	117	111	0	96	38
J606	5643	0	1000	2394	88 Excellent	0	5904	0	0	0	5892	5914	5901	108	117	111	0	48	23
J604	5640	0	1000	1466	63 Excellent	0	5904	0	0	0	5892	5914	5901	109	119	113	0	14	12
J602	5642	0	1000	2510	89 Excellent	0	5904	0	0	0	5892	5914	5901	108	118	112	0	9	7
J600	5642	0	1000	2512	90 Excellent	0	5904	0	0	0	5892	5914	5901	108	118	112	0	6	5
J622	5644	3	1000	2735	91 Excellent	3	5904	3	3	3	5892	5914	5901	108	117	111	0	5	4
J620	5643	0	1000	2545	90 Excellent	0	5904	0	0	0	5892	5914	5901	108	117	111	0	8	5
J618	5644	1	1000	2422	88 Excellent	0	5904	0	2	1	5892	5914	5901	107	117	111	0	10	7
J624	5643	3	1000	2447	89 Excellent	3	5904	3	3	3	5892	5914	5901	108	118	112	0	23	12
J626	5641	0	1000	2031	82 Excellent	0	5904	0	0	0	5892	5914	5901	109	118	112	0	100	50
J636	5664	19	1000	4560	88 Excellent	6	5878	4	30	18	5870	5890	5877	90	98	93	0	2	1
J638	5659	0	1000	4592	90 Excellent	0	5878	0	0	0	5870	5889	5877	91	100	94	0	38	9
J640	5662	0	1000	4594	89 Excellent	0	5878	0	0	0	5870	5889	5877	90	98	93	0	12	4

Pipe Output

AssetID	Length	Diameter	Roughness	Flow	Velocity	Headloss	UnitHeadloss	Pressure	Min Flow	Max Flow	Avg Flow	Min Velocity	Max Velocity	Avg Velocity	MinUnit Headloss	MaxUnit Headloss	AvgUnit Headloss	Min Pressure	Max Pressure	Avg Pressure	Min Quality	Max Quality	Avg Quality	Shape_Length
N-P101	31	8	140	0	0	0	0	94	0	0	0	0	0	0	0	0	0	91	99	94	0	98	49	30.633008
N-P103	225	8	140	0	0	0	0	92	0	0	0	0	0	0	0	0	0	89	97	92	0	100	50	224.505195
N-P105	68	8	140	0	0	0	0	94	0	0	0	0	0	0	0	0	0	91	99	94	0	100	50	67.544505
N-P107	505	8	140	20	0	0	0	94	0	57	40	0	0	0	0	0	0	90	99	93	0	66	21	505.436465
N-P109	1030	8	140	15	0	0	0	94	0	35	23	0	0	0	0	0	0	91	99	94	0	65	22	1029.756139
N-P111	748	8	140	0	0	0	0	91	0	0	0	0	0	0	0	0	0	88	96	91	0	100	50	747.878681
N-P113	102	8	140	0	0	0	0	94	0	0	0	0	0	0	0	0	0	90	99	93	0	100	50	101.689334
N-P115	696	8	140	10	0	0	0	93	0	53	34	0	0	0	0	0	0	90	98	93	0	68	26	695.715801
N-P117	254	8	140	23	0	0	0	92	0	147	92	0	1	1	0	0	0	88	97	91	0	66	22	254.206414
N-P121	35	8	140	133	1	0	0	92	108	145	123	1	1	1	0	0	0	89	97	92	0	25	4	35.088237
N-P123	689	12	140	276	1	0	0	91	0	289	118	0	1	0	0	0	0	88	96	91	0	62	14	688.628714
N-P125	1077	12	140	461	1	1	1	90	0	495	190	0	1	1	0	1	0	87	96	90	0	63	17	1076.904415
N-P127	506	12	140	1030	3	1	2	94	729	1051	866	2	3	2	1	2	2	90	99	94	0	1	1	506.294079
N-P129	462	12	140	1030	3	1	2	94	727	1051	864	2	3	2	1	2	2	90	98	93	0	1	1	462.015003
N-P131	220	8	140	0	0	0	0	94	0	0	0	0	0	0	0	0	0	91	99	94	0	100	50	220.111399
N-P133	293	8	140	523	3	1	5	102	457	526	485	3	3	3	4	5	4	98	107	101	0	1	1	293.416494
N-P135	618	8	140	501	3	3	4	99	395	508	441	3	3	3	3	5	4	94	103	98	0	1	1	617.906726
N-P137	351	6	140	15	0	0	0	103	0	16	8	0	0	0	0	0	0	98	107	102	0	3	2	350.813987
N-P139	56	6	140	0	0	0	0	100	0	0	0	0	0	0	0	0	0	95	105	99	0	97	49	56.196959
N-P141	542	6	140	148	2	1	2	101	127	149	136	1	2	2	1	2	2	97	106	100	0	1	1	541.976981
N-P143	588	6	140	168	2	1	2	103	147	169	156	2	2	2	2	2	2	98	107	102	0	1	1	588.216371
N-P145	317	8	140	22	0	0	0	94	4	55	41	0	0	0	0	0	0	91	99	94	0	25	5	317.190143
N-P153	924	8	140	376	2	2	3	102	315	380	342	2	2	2	2	3	2	97	106	100	0	1	1	923.649634
N-P155	352	6	140	145	2	1	2	100	114	148	128	1	2	1	1	2	1	95	105	99	0	1	1	351.586449
N-P157	144	12	140	1071	3	0	3	102	939	1078	997	3	3	3	2	3	2	97	107	101	0	1	1	144.291492
N-P159	548	8	140	407	3	2	3	101	339	411	369	2	3	2	2	3	3	97	106	100	0	1	1	547.810273
N-P161	74	8	140	550	4	0	5	100	443	557	490	3	4	3	4	5	4	95	105	99	0	1	1	73.921093
N-P165	726	6	140	67	1	0	0	100	45	69	55	1	1	1	0	0	0	96	105	100	0	1	1	725.835723
N-P167	776	6	140	58	1	0	0	99	45	59	51	1	1	1	0	0	0	95	104	98	0	2	2	776.065652
N-P169	616	6	140	6	0	0	0	99	0	18	10	0	0	0	0	0	0	95	104	98	0	6	2	615.780191
N-P171	363	8	140	362	2	1	2	99	277	368	315	2	2	2	1	2	2	95	104	98	0	1	1	363.003459
N-P173	332	8	140	366	2	1	2	97	250	374	303	2	2	2	1	3	2	93	102	96	0	1	1	331.574285
N-P175	787	8	140	187	1	1	1	101	157	188	170	1	1	1	1	1	1	96	105	100	0	1	1	787.476674
N-P177	981	8	140	115	1	0	0	101	88	116	100	1	1	1	0	0	0	97	106	100	0	1	1	980.701593
N-P179	1066	8	140	112	1	0	0	100	74	115	91	0	1	1	0	0	0	96	105	99	0	2	2	1065.598547
N-P181	972	8	140	167	1	1	1	97	101	172	132	1	1	1	0	1	0	93	102	97	0	3	2	972.057691
N-P183	374	12	140	1031	3	1	2	95	733	1052	868	2	3	2	1	2	2	91	100	95	0	1	1	374.272858
N-P185	570	12	140	474	1	0	1	92	118	483	286	0	1	1	0	1	0	89	97	92	0	2	2	570.152669
N-P187	2754	12	140	461	1	1	1	50	0	495	190	0	1	1	0	1	0	47	53	49	0	63	20	2753.73743
N-P189	46	8	140	188	1	0	1	91	0	209	137	0	1	1	0	1	0	88	96	90	0	63	16	45.920643
N-P191	30	8	140	188	1	0	1	91	0	209	137	0	1	1	0	1	0	88	96	91	0	63	16	30.052945
N-P99	703	6	140	0	0	0	0	94	0	0	0	0	0	0	0	0	0	91	99	94	0	100	50	703.195994
P101	732	6	140	34	0	0	0	93	31	136	90	0	2	1	0	2	1	86	96	91	0	13	4	731.71054
P103	485	6	140	27	0	0	0	94	26	101	69	0	1	1	0	1	0	86	96	91	0	13	4	485.455557
P105	895	6	140	38	0	0	0	93	35	156	103	0	2	1	0	2	1	86	96	91	0	13	4	895.45741
P107	690	6	140	55	1	0	0	93	45	281	175	1	3	2	0	6	3	87	95	91	0	13	4	690.249677
P109	79	4	140	8	0	0	0	94	0	28	14	0	1	0	0	1	0	86	97	91	0	32	15	79.433332
P11	270	6	140	26	0	0	0	89	23	74	51	0	1	1	0	1	0	84	90	87	0	29	12	270.169442
P111	641	6	140	19	0	0	0	92	17	84	54	0	1	1	0	1	0	84	95	89	0	32	15	641.392285
P113	378	6	140	12	0	0	0	94	0	108	61	0	1	1	0	1	0	86	96	91	0	32	16	377.764588
P115	185	4	140	4	0	0	0	93	4	4	4	0	0	0	0	0	0	86	96	90	0	32	16	184.769016
P117	318	6	140	25	0	0	0	94	7	160	94	0	2	1	0	2	1	86	96	91	0	32	15	318.378347
P119	443	6	140	32	0	0	0	93	11	193	114	0	2	1	0	3	1	86	95	90	0	32	14	443.381326

P121	312	6	140	44	0	0	0	92	33	238	146	0	3	2	0	5	2	86	94	90	0	32	14	311.518478
P123	213	6	140	56	1	0	0	91	47	291	182	1	3	2	0	7	3	86	94	89	0	32	14	212.753404
P125	313	6	140	167	2	1	2	93	143	345	279	2	4	3	2	9	6	88	96	92	0	13	4	312.876579
P127	431	8	140	110	1	0	0	92	19	244	94	0	2	1	0	1	0	87	95	90	0	13	4	431.20252
P129	1384	8	140	41	0	0	0	89	1	257	170	0	2	1	0	1	1	85	92	88	0	35	17	1384.106152
P13	457	6	140	2	0	0	0	93	1	8	5	0	0	0	0	0	0	88	94	91	0	31	16	457.410203
P131	987	6	140	28	0	0	0	89	0	228	138	0	3	2	0	4	2	84	92	88	0	35	17	987.12928
P133	37	8	140	78	0	0	0	88	55	266	175	0	2	1	0	1	1	83	90	86	0	35	15	36.539727
P135	598	8	140	84	1	0	0	87	0	295	188	0	2	1	0	2	1	83	89	86	0	38	19	598.035329
P137	175	6	140	5	0	0	0	81	3	24	15	0	0	0	0	0	0	77	83	80	0	38	20	175.348625
P139	897	6	140	17	0	0	0	81	0	97	65	0	1	1	0	1	0	77	82	79	0	38	19	897.416664
P141	847	8	140	55	0	0	0	84	1	224	156	0	1	1	0	1	1	80	85	82	0	38	19	847.202131
P143	430	8	140	68	0	0	0	80	0	344	233	0	2	1	0	2	1	76	81	79	0	37	20	429.577238
P145	142	8	140	67	0	0	0	79	0	350	236	0	2	2	0	2	1	76	80	78	0	37	20	142.169114
P147	1146	8	140	36	0	0	0	94	0	87	61	0	1	0	0	0	0	91	99	94	0	64	18	1145.879879
P149	44	8	140	156	1	0	1	92	127	188	169	1	1	1	0	1	1	88	97	91	0	25	4	44.352865
P15	310	6	140	2	0	0	0	92	2	13	8	0	0	0	0	0	0	87	93	90	0	29	13	309.620126
P151	694	6	140	128	1	1	1	102	100	130	113	1	1	1	1	1	1	97	106	100	0	1	1	693.788494
P153	122	6	140	34	0	0	0	89	0	92	64	0	1	1	0	1	0	84	91	87	0	20	6	121.614678
P155	128	6	140	47	1	0	0	89	0	108	46	0	1	1	0	1	0	85	91	88	0	20	6	127.81958
P157	419	6	140	2	0	0	0	89	0	48	27	0	1	0	0	0	0	85	91	88	0	17	6	419.193177
P159	62	6	140	62	1	0	0	89	17	143	68	0	2	1	0	2	1	85	91	88	0	13	5	62.403587
P161	255	6	140	45	1	0	0	91	14	102	50	0	1	1	0	1	0	86	93	89	0	13	5	254.592044
P163	270	4	140	18	0	0	0	87	18	64	46	0	2	1	0	3	2	83	89	86	0	38	19	269.583146
P165	222	10	140	294	1	0	1	93	159	587	371	1	2	2	0	2	1	89	96	92	0	13	4	222.276293
P167	164	8	140	136	1	0	0	92	75	275	175	0	2	1	0	1	1	88	96	91	0	13	4	163.714155
P169	404	8	140	146	1	0	0	92	73	301	184	0	2	1	0	2	1	87	95	90	0	13	4	403.935426
P17	431	6	140	20	0	0	0	90	8	70	34	0	1	0	0	0	0	86	92	89	0	29	12	431.023996
P171	446	8	140	163	1	0	1	91	76	344	207	0	2	1	0	2	1	86	93	89	0	13	4	445.879452
P173	874	8	140	131	1	0	0	89	38	285	147	0	2	1	0	2	1	85	92	88	0	13	4	873.983657
P175	62	8	140	163	1	0	1	88	0	366	122	0	2	1	0	2	1	83	90	86	0	34	7	61.817965
P177	619	8	140	85	1	0	0	87	1	305	189	0	2	1	0	2	1	83	89	86	0	38	19	618.736562
P179	1309	8	140	65	0	0	0	83	1	330	222	0	2	1	0	2	1	79	84	82	0	37	19	1308.555763
P181	356	6	140	103	1	0	1	92	55	215	136	1	2	2	0	4	2	88	95	91	0	13	4	356.407836
P183	235	4	140	25	1	0	0	92	12	52	31	0	1	1	0	2	1	87	95	90	0	13	4	235.400736
P185	547	6	140	2	0	0	0	85	1	8	5	0	0	0	0	0	0	85	825	307	0	40	26	547.021517
P187	427	6	140	6	0	0	0	77	4	29	18	0	0	0	0	0	0	77	817	299	0	39	25	427.045103
P189	340	6	140	9	0	0	0	72	6	47	28	0	1	0	0	0	0	72	812	294	0	38	25	340.252181
P19	392	6	140	18	0	0	0	93	0	68	26	0	1	0	0	0	0	89	95	92	0	30	12	391.503006
P193	299	6	140	12	0	0	0	80	8	65	39	0	1	0	0	0	0	80	820	302	0	38	24	299.362263
P195	393	6	140	10	0	0	0	89	6	52	31	0	1	0	0	0	0	89	829	311	0	39	25	392.985011
P197	159	4	140	2	0	0	0	78	1	12	7	0	0	0	0	0	0	78	818	300	0	39	26	159.07749
P199	384	6	140	5	0	0	0	84	4	29	18	0	0	0	0	0	0	84	824	306	0	39	25	383.620334
P201	203	6	140	1	0	0	0	96	1	5	3	0	0	0	0	0	0	96	836	318	0	39	26	203.287341
P203	91	6	140	0	0	0	0	78	0	0	0	0	0	0	0	0	0	74	80	77	0	99	50	90.99903
P205	389	6	140	27	0	0	0	84	0	83	39	0	1	0	0	1	0	80	85	82	0	38	19	388.542904
P207	563	6	140	2	0	0	0	78	2	13	8	0	0	0	0	0	0	74	80	77	0	38	23	562.785487
P209	228	4	140	2	0	0	0	95	1	9	6	0	0	0	0	0	0	95	835	317	0	39	25	227.788566
P21	268	4	140	1	0	0	0	74	0	3	2	0	0	0	0	0	0	71	75	73	0	38	23	268.011144
P211	127	6	140	3	0	0	0	90	2	16	10	0	0	0	0	0	0	90	830	312	0	39	25	127.431691
P213	375	4	140	3	0	0	0	99	2	17	10	0	0	0	0	0	0	99	839	321	0	39	26	374.927808
P217	155	6	140	7	0	0	0	94	5	37	22	0	0	0	0	0	0	94	834	316	0	39	25	155.415299
P219	748	4	140	4	0	0	0	79	3	20	12	0	1	0	0	0	0	79	819	301	0	39	25	748.290366
P221	391	6	140	7	0	0	0	89	5	37	22	0	0	0	0	0	0	89	829	311	0	39	25	391.208637
P223	521	6	140	12	0	0	0	77	8	62	37	0	1	0	0	0	0	77	817	299	0	39	25	521.1679
P227	996	10	140	549	2	2	2	29	0	552	3	0	2	0	0	2	0	29	399	140	0	100	50	995.736606
P229	446	10	140	570	2	1	2	63	14	570	72	0	2	0	0	2	0	63	803	285	0	38	25	445.961603
P23	328	8	140	40	0	0	0	96	27	214	129	0	1	1	0	1	0	86	98	92	0	23	11	328.186825
P231	531	10	140	597	2	1	2	65	32	597	157	0	2	1	0	2	0	65	804	286	0	38	24	531.049753
P233	948	10	140	598	2	2	2	121	33	598	162	0	2	1	0	2	0	121	858	340	0	38	21	947.632485
P243	419	6	140	8	0	0	0	81	0	225	138	0	3	2	0	4	2	78	82	80	0	37	21	418.571679

P247	182	6	140	51	1	0	0	91	20	108	60	0	1	1	0	1	0	87	94	90	0	13	4	182.144813
P249	293	6	140	52	1	0	0	92	33	107	74	0	1	1	0	1	1	88	95	91	0	13	4	293.070441
P25	367	6	140	18	0	0	0	95	12	92	56	0	1	1	0	1	0	86	98	91	0	23	11	366.688629
P251	613	6	140	48	1	0	0	93	23	104	61	0	1	1	0	1	0	88	95	91	0	13	4	613.36284
P253	269	6	140	30	0	0	0	90	26	66	53	0	1	1	0	0	0	86	93	89	0	13	4	269.467113
P255	123	4	140	21	1	0	0	90	13	44	29	0	1	1	0	1	1	86	93	89	0	13	4	122.582624
P257	574	4	140	20	0	0	0	90	10	43	25	0	1	1	0	1	1	85	92	88	0	13	5	574.136104
P259	849	6	140	55	1	0	0	90	22	119	66	0	1	1	0	1	0	85	92	88	0	13	5	849.066537
P261	998	4	140	8	0	0	0	89	8	23	16	0	1	0	0	0	0	85	91	88	0	20	6	997.687963
P263	305	6	140	55	1	0	0	89	29	144	82	0	2	1	0	2	1	84	91	87	0	15	5	305.178561
P265	612	6	140	55	1	0	0	88	12	161	70	0	2	1	0	2	1	83	90	86	0	17	6	612.017023
P267	944	6	140	20	0	0	0	85	0	81	45	0	1	1	0	1	0	81	87	84	0	38	19	944.166343
P269	463	4	140	2	0	0	0	88	2	12	7	0	0	0	0	0	0	83	89	86	0	38	20	462.55284
P27	253	6	140	2	0	0	0	97	1	12	7	0	0	0	0	0	0	87	99	93	0	24	15	252.871015
P271	383	4	140	11	0	0	0	86	10	33	22	0	1	1	0	1	0	82	88	85	0	38	19	383.447937
P273	525	4	140	7	0	0	0	85	2	31	10	0	1	0	0	1	0	80	86	83	0	38	19	525.078931
P275	149	6	140	25	0	0	0	84	19	106	68	0	1	1	0	1	1	79	85	82	0	38	19	149.110011
P277	678	6	140	3	0	0	0	84	0	185	114	0	2	1	0	3	1	80	85	82	0	37	20	678.366291
P279	269	4	140	1	0	0	0	83	1	8	5	0	0	0	0	0	0	78	84	81	0	38	21	268.656995
P281	543	6	140	3	0	0	0	82	0	61	39	0	1	0	0	0	0	78	83	81	0	38	20	543.404976
P283	443	6	140	9	0	0	0	83	0	44	22	0	0	0	0	0	0	79	84	82	0	38	20	442.751496
P285	317	6	140	8	0	0	0	95	0	43	17	0	0	0	0	0	0	91	97	94	0	38	19	317.435253
P287	259	6	140	7	0	0	0	97	7	24	19	0	0	0	0	0	0	92	98	95	0	33	15	259.494241
P289	551	6	140	4	0	0	0	97	0	21	6	0	0	0	0	0	0	92	98	95	0	38	17	551.2986
P29	706	6	140	16	0	0	0	96	11	85	51	0	1	1	0	1	0	86	98	92	0	23	11	705.744047
P291	400	6	140	2	0	0	0	95	0	26	17	0	0	0	0	0	0	91	97	94	0	38	20	399.607462
P293	66	8	140	4	0	0	0	93	0	59	40	0	0	0	0	0	0	89	94	91	0	38	20	65.699724
P295	234	6	140	12	0	0	0	88	0	118	67	0	1	1	0	1	1	83	89	86	0	38	20	233.972184
P297	492	6	140	15	0	0	0	94	15	52	39	0	1	0	0	0	0	89	95	92	0	38	20	491.607917
P299	504	6	140	3	0	0	0	95	0	23	9	0	0	0	0	0	0	90	96	93	0	39	20	504.478466
P301	523	6	140	5	0	0	0	95	5	25	17	0	0	0	0	0	0	91	97	94	0	38	21	523.302861
P303	1079	6	140	0	0	0	0	99	0	9	3	0	0	0	0	0	0	95	101	98	0	47	24	1078.935923
P305	482	6	140	2	0	0	0	101	0	14	9	0	0	0	0	0	0	97	103	100	0	53	27	482.315309
P307	613	6	140	4	0	0	0	97	0	21	13	0	0	0	0	0	0	92	98	95	0	50	25	612.837786
P309	580	6	140	7	0	0	0	93	0	65	40	0	1	0	0	0	0	88	94	91	0	38	22	580.234795
P31	1199	6	140	5	0	0	0	96	3	26	15	0	0	0	0	0	0	86	98	92	0	24	13	1198.661445
P311	553	6	140	12	0	0	0	87	0	89	53	0	1	1	0	1	0	82	88	85	0	38	22	553.462273
P313	699	6	140	14	0	0	0	83	0	178	106	0	2	1	0	3	1	79	84	81	0	37	21	698.753997
P319	978	12	140	0	0	0	0	43	0	1996	613	0	6	2	0	8	2	42	44	43	0	14	4	978.23229
P321	228	6	140	2	0	0	0	101	1	8	5	0	0	0	0	0	0	101	841	323	0	40	26	227.789269
P323	292	4	140	0	0	0	0	79	0	2	1	0	0	0	0	0	0	73	81	77	0	36	20	292.105248
P329	464	6	140	14	0	0	0	81	0	167	98	0	2	1	0	2	1	78	83	80	0	37	21	463.784491
P33	194	6	140	14	0	0	0	95	9	73	44	0	1	0	0	0	0	85	97	91	0	23	11	193.729097
P331	922	12	140	494	1	1	1	42	4	1365	846	0	4	2	0	4	2	41	43	42	0	37	20	921.761126
P335	2234	12	140	499	1	1	1	93	366	958	733	1	3	2	0	2	1	90	98	93	0	12	4	2233.859218
P337	1002	12	140	1074	3	3	3	102	955	1081	1007	3	3	3	2	3	2	97	106	100	0	1	1	1002.280856
P343	765	8	140	269	2	1	1	108	258	270	263	2	2	2	1	1	1	102	112	106	0	1	1	765.374537
P345	270	8	140	272	2	0	1	109	263	276	271	2	2	2	1	1	1	103	113	107	0	0	0	270.254111
P347	1208	8	140	167	1	1	1	109	157	167	161	1	1	1	1	1	1	103	113	107	0	1	1	1208.044959
P349	548	8	140	578	4	3	6	107	548	579	560	4	4	4	5	6	5	102	112	106	0	0	0	547.545185
P35	898	6	140	3	0	0	0	97	2	15	9	0	0	0	0	0	0	88	100	93	0	24	14	897.49912
P351	1336	8	140	574	4	8	6	104	528	576	548	3	4	4	5	6	5	99	109	103	0	0	0	1335.970562
P353	370	8	140	20	0	0	0	93	0	57	40	0	0	0	0	0	0	90	98	93	0	66	22	369.530362
P355	136	8	140	23	0	0	0	93	8	63	46	0	0	0	0	0	0	90	98	93	0	25	4	135.989965
P357	294	8	140	23	0	0	0	94	8	63	46	0	0	0	0	0	0	91	99	94	0	25	4	294.233319
P361	65	8	140	13	0	0	0	95	0	213	145	0	1	1	0	1	1	91	100	94	0	30	6	64.814778
P365	184	8	140	20	0	0	0	94	0	57	40	0	0	0	0	0	0	91	99	94	0	65	20	184.104676
P367	974	8	140	0	0	0	0	97	0	0	0	0	0	0	0	0	0	93	102	97	0	81	44	973.840263
P369	471	8	140	15	0	0	0	94	0	35	23	0	0	0	0	0	0	90	99	94	0	70	27	471.451598
P37	285	6	140	4	0	0	0	96	3	22	13	0	0	0	0	0	0	87	99	93	0	23	13	284.860372
P39	364	6	140	3	0	0	0	96	2	20	12	0	0	0	0	0	0	87	99	93	0	23	14	363.842023

P41	436	6	140	0	0	0	0	97	0	1	1	0	0	0	0	0	0	88	100	93	0	33	21	436.086286
P423	541	6	140	20	0	0	0	94	4	132	77	0	2	1	0	2	1	86	96	91	0	32	15	541.210996
P43	170	6	140	2	0	0	0	98	1	10	6	0	0	0	0	0	0	88	100	94	0	25	16	169.780109
P45	300	6	140	1	0	0	0	97	1	6	3	0	0	0	0	0	0	88	100	94	0	27	18	300.113143
P47	330	6	140	2	0	0	0	98	1	9	5	0	0	0	0	0	0	88	100	94	0	26	16	330.370965
P49	361	6	140	3	0	0	0	98	2	16	10	0	0	0	0	0	0	88	100	94	0	24	15	361.271585
P51	537	6	140	6	0	0	0	97	4	34	20	0	0	0	0	0	0	88	100	94	0	24	13	536.842681
P53	484	6	140	2	0	0	0	97	1	7	4	0	0	0	0	0	0	87	99	93	0	24	15	483.678164
P55	255	6	140	8	0	0	0	96	6	45	27	0	1	0	0	0	0	87	99	92	0	23	13	255.061251
P57	1048	6	140	5	0	0	0	98	3	26	16	0	0	0	0	0	0	88	100	94	0	24	14	1048.241738
P59	278	8	140	25	0	0	0	97	17	132	80	0	1	1	0	0	0	88	100	93	0	24	12	278.379199
P61	1424	8	140	28	0	0	0	96	19	148	89	0	1	1	0	0	0	87	99	92	0	23	11	1424.063814
P63	404	6	140	9	0	0	0	93	0	80	45	0	1	1	0	1	0	86	96	90	0	13	4	403.711664
P65	363	4	140	32	1	0	1	93	31	90	66	1	2	2	1	5	3	86	96	91	0	13	4	362.991132
P67	336	4	140	34	1	0	1	93	33	104	74	1	3	2	1	7	4	87	96	91	0	13	4	336.298689
P69	371	4	140	36	1	0	1	93	34	111	78	1	3	2	1	8	4	88	96	92	0	13	4	371.296038
P73	434	4	140	9	0	0	0	92	9	31	24	0	1	1	0	1	0	85	94	89	0	32	14	434.185652
P75	807	4	140	10	0	0	0	91	10	40	28	0	1	1	0	1	1	85	94	89	0	32	14	807.067599
P79	70	6	140	33	0	0	0	91	0	240	143	0	3	2	0	5	2	85	94	89	0	35	17	70.422651
P81	105	6	140	31	0	0	0	91	0	232	138	0	3	2	0	4	2	85	94	89	0	35	17	105.183326
P83	361	6	140	39	0	0	0	91	0	255	149	0	3	2	0	5	2	85	94	89	0	34	17	360.551773
P85	769	6	140	8	0	0	0	82	0	62	38	0	1	0	0	0	0	75	85	80	0	35	18	768.610179
P87	862	6	140	14	0	0	0	83	0	98	58	0	1	1	0	1	0	76	85	80	0	34	18	861.944909
P89	640	6	140	17	0	0	0	92	0	114	67	0	1	1	0	1	1	85	94	89	0	34	17	640.329659
P91	561	6	140	10	0	0	0	91	0	76	46	0	1	1	0	1	0	84	94	89	0	35	17	561.057796
P93	448	6	140	12	0	0	0	90	0	108	68	0	1	1	0	1	1	83	93	88	0	35	18	447.75149
P95	465	8	140	29	0	0	0	92	0	185	108	0	1	1	0	1	0	84	95	89	0	34	17	464.724808
P97	934	8	140	72	0	0	0	95	48	383	231	0	2	1	0	3	1	87	98	92	0	23	10	933.906968
P99	666	8	140	50	0	0	0	94	45	235	151	0	2	1	0	1	1	86	97	91	0	14	5	665.967381
P100	618	12	140	166	0	0	0	92	0	184	52	0	1	0	0	0	0	88	97	91	0	62	16	618.243128
P102	699	12	140	34	0	0	0	93	0	162	110	0	0	0	0	0	0	90	98	93	0	32	6	698.867599
P134	335	12	140	267	1	0	0	107	244	267	253	1	1	1	0	0	0	102	112	106	0	1	1	334.904295
P136	569	8	140	245	2	1	1	108	237	245	241	2	2	2	1	1	1	103	113	107	0	1	1	568.520026
P138	555	8	140	245	2	1	1	110	237	245	241	2	2	2	1	1	1	104	114	108	0	0	0	554.816765
P140	500	8	140	245	2	1	1	109	237	245	241	2	2	2	1	1	1	104	114	108	0	1	1	499.86321
P144	267	8	140	272	2	0	1	110	263	278	273	2	2	2	1	1	1	104	114	108	0	0	0	266.872686
P148	6	100	140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	100	50	6.391497
P150	8	8	140	0	0	0	0	79	0	0	0	0	0	0	0	0	0	67	155	113	0	100	26	7.625011
P154	28	100	140	0	0	0	0	0	0	1019	423	0	0	0	0	0	0	0	0	0	0	14	4	28.394552
P158	16	100	140	0	0	0	0	0	0	996	189	0	0	0	0	0	0	0	0	0	0	19	7	16.114375
P162	1129	10	140	598	2	2	2	61	33	598	162	0	2	1	0	2	0	61	800	282	0	38	24	1129.487472
P164	175	10	140	598	2	0	2	120	33	598	162	0	2	1	0	2	0	120	858	340	0	38	23	175.286211
P166	576	8	140	0	0	0	0	78	0	996	189	0	6	1	0	16	3	-93	84	79	0	19	0	575.56813
P168	147	8	140	0	0	0	0	78	0	1019	423	0	6	3	0	16	7	-92	84	80	0	14	0	147.477412
P170	10	10	140	0	0	0	0	79	0	0	0	0	0	0	0	0	0	-92	83	80	0	89	46	9.691534
P172	10	10	140	0	0	0	0	79	0	1019	423	0	4	2	0	6	2	-92	83	80	0	14	4	9.782691
P174	26	12	140	0	0	0	0	78	0	1996	613	0	6	2	0	8	2	-7	83	79	0	74	9	26.453195
P176	14	10	140	0	0	0	0	78	0	1280	393	0	5	2	0	8	2	78	83	79	0	14	4	14.105937
P180	328	8	140	0	0	0	0	79	0	717	220	0	5	1	0	9	2	78	83	80	0	14	4	328.011131
P186	4	10	140	598	2	0	2	121	33	598	162	0	2	1	0	2	0	121	858	340	0	37	21	4.086981
P190	386	8	140	51	0	0	0	79	3	526	337	0	3	2	0	5	2	76	80	78	0	37	20	386.369422
P194	4	10	140	598	2	0	2	78	33	598	162	0	2	1	0	2	0	76	79	78	0	37	21	4.095699
P198	475	8	140	0	0	0	0	98	0	0	0	0	0	0	0	0	0	88	100	94	0	38	28	474.931
P200	884	8	140	0	0	0	0	101	0	0	0	0	0	0	0	0	0	92	104	98	0	100	50	883.699278
P202	1622	8	140	0	0	0	0	104	0	0	0	0	0	0	0	0	0	94	106	100	0	100	50	1621.521163
P204	774	8	140	0	0	0	0	105	0	0	0	0	0	0	0	0	0	95	107	101	0	100	50	774.134232
P206	16	12	140	104	0	0	0	79	6	1101	706	0	3	2	0	3	1	77	80	78	0	37	20	16.44072
P208	351	10	140	598	2	1	2	79	33	598	162	0	2	1	0	2	0	76	80	78	0	37	20	350.63327
P210	318	10	140	0	0	0	0	79	0	1280	393	0	5	2	0	8	2	78	83	80	0	14	4	318.217538
P306	552	10	120	598	2	2	3	90	33	598	162	0	2	1	0	3	0	90	828	311	0	38	23	551.753241
P308	468	10	120	55	0	0	0	79	2	570	366	0	2	2	0	3	1	76	80	78	0	37	20	468.435652

P316	531	8	140	509	3	2	5	109	473	511	489	3	3	3	4	5	4	103	113	107	0	1	1	530.901423
P324	28	10	120	55	0	0	0	79	2	570	366	0	2	2	0	3	1	76	80	78	0	37	20	28.058753
P326	1031	8	120	1	0	0	0	96	1	4	2	0	0	0	0	0	0	92	101	96	0	14	9	1030.571133
P328	953	8	120	507	3	6	6	106	461	509	481	3	3	3	5	6	5	100	110	104	0	1	1	952.595048
P396	227	12	120	746	2	0	2	108	707	746	723	2	2	2	2	2	2	102	112	106	0	0	0	227.206732
P406	191	12	120	746	2	0	2	108	707	746	723	2	2	2	2	2	2	103	113	107	0	0	0	191.120354
P410	786	8	120	17	0	0	0	108	12	87	53	0	1	0	0	0	0	102	112	106	0	2	1	785.982431
P412	237	8	120	16	0	0	0	107	11	86	52	0	1	0	0	0	0	101	112	105	0	3	1	237.469611
P414	499	8	120	15	0	0	0	107	10	79	48	0	1	0	0	0	0	101	112	105	0	4	2	499.483145
P416	403	8	120	14	0	0	0	107	9	74	44	0	0	0	0	0	0	101	111	105	0	5	2	403.490572
P418	146	8	120	10	0	0	0	107	7	55	33	0	0	0	0	0	0	102	112	105	0	6	3	145.635088
P420	370	8	120	0	0	0	0	108	0	0	0	0	0	0	0	0	0	102	112	106	0	100	50	370.014508
P422	1878	12	120	763	2	3	2	111	735	804	776	2	2	2	2	2	2	105	115	109	0	0	0	1878.014655
P424	305	12	120	1120	3	1	4	116	1080	1175	1137	3	3	3	3	4	4	110	120	114	0	0	0	305.137294
P426	299	12	120	770	2	1	2	115	742	814	785	2	2	2	2	2	2	110	120	114	0	0	0	298.737963
P428	226	12	120	770	2	0	2	113	742	814	785	2	2	2	2	2	2	108	118	112	0	0	0	225.52869
P430	917	8	120	0	0	0	0	115	0	0	0	0	0	0	0	0	0	110	119	113	0	100	50	916.973438
P432	79	6	120	7	0	0	0	113	7	10	9	0	0	0	0	0	0	107	117	111	0	0	0	78.63131
P434	73	4	120	1	0	0	0	113	1	1	1	0	0	0	0	0	0	108	117	111	0	1	1	73.423583
P436	174	4	120	1	0	0	0	113	1	1	1	0	0	0	0	0	0	107	117	111	0	3	2	173.761214
P438	572	4	120	1	0	0	0	112	1	1	1	0	0	0	0	0	0	107	117	111	0	9	7	571.886657
P440	201	4	120	1	0	0	0	113	1	1	1	0	0	0	0	0	0	107	117	111	0	13	11	200.877307
P442	106	6	120	1	0	0	0	113	0	1	0	0	0	0	0	0	0	107	117	111	0	84	30	106.309718
P444	300	6	120	1	0	0	0	113	0	1	0	0	0	0	0	0	0	108	117	111	0	55	31	300.458562
P446	548	4	120	0	0	0	0	114	0	1	1	0	0	0	0	0	0	108	118	112	0	19	16	547.644313
P448	305	4	120	0	0	0	0	114	0	1	1	0	0	0	0	0	0	109	118	112	0	11	9	304.836777
P450	202	6	120	1	0	0	0	114	1	3	2	0	0	0	0	0	0	108	118	112	0	7	6	202.304744
P452	464	6	120	1	0	0	0	113	1	3	2	0	0	0	0	0	0	108	118	112	0	3	3	463.895519
P454	197	6	120	5	0	0	0	113	4	7	6	0	0	0	0	0	0	108	117	111	0	1	1	196.948726
P456	95	6	120	1	0	0	0	113	1	3	2	0	0	0	0	0	0	108	117	111	0	6	5	94.531247
P458	120	6	120	1	0	0	0	113	1	3	2	0	0	0	0	0	0	108	117	111	0	9	6	119.71703
P460	386	6	120	1	0	0	0	113	0	1	1	0	0	0	0	0	0	107	117	111	0	16	13	386.036971
P462	220	6	120	2	0	0	0	113	2	3	2	0	0	0	0	0	0	108	118	112	0	6	5	220.389043
P464	172	6	120	1	0	0	0	113	0	1	1	0	0	0	0	0	0	108	118	112	0	36	26	172.313451
P466	192	6	120	0	0	0	0	114	0	0	0	0	0	0	0	0	0	108	118	112	0	99	50	191.959758
P468	473	6	120	2	0	0	0	113	1	2	2	0	0	0	0	0	0	108	118	112	0	12	10	472.615136
P470	9	6	140	0	0	0	0	105	0	0	0	0	0	0	0	0	0	105	845	327	0	73	43	9.056732
P472	273	6	120	1	0	0	0	106	0	3	2	0	0	0	0	0	0	106	846	328	0	42	28	273.420228
P480	143	8	120	20	0	0	0	62	13	104	63	0	1	0	0	0	0	62	802	284	0	39	25	143.159305
P482	119	8	120	23	0	0	0	71	16	125	75	0	1	0	0	0	0	71	810	293	0	38	24	118.729757
P484	172	12	140	480	1	0	1	93	146	487	304	0	1	1	0	1	0	90	98	93	0	1	1	171.826511
P488	306	8	140	15	0	0	0	95	0	203	140	0	1	1	0	1	0	91	100	94	0	30	6	305.982941
P490	607	12	140	550	2	0	1	93	461	676	559	1	2	2	1	1	1	90	98	93	0	1	1	606.775922
P492	194	12	120	51	0	0	0	94	0	284	197	0	1	1	0	0	0	91	99	94	0	38	9	193.500491
P494	1884	8	120	350	2	6	3	113	338	361	352	2	2	2	3	3	3	108	117	111	0	0	0	1883.783754

Tank Output

AssetID	Elevation	Diameter	InitLevel	Flow	Head	Pressure	Quality
NSU	5855	60	21	461	5876	9	0
500K	5862	154	14	-494	5876	6	0
250K	5950	54	14	549	5964	6	0

APPENDIX E

Water Quality Data

2023 Annual Water Quality Report
Town of Alpine
PWS WY5600156

Spanish (Espanol)

Este informe contiene informacion muy importante sobre la calidad de su agua beber. Traduscalo o hable con alguien que lo entienda bien.

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Our water source consists of three ground water wells.

Source water assessment and its availability

Information can be obtained at the Alpine Town Hall Office, the Town of Alpine website page, and the Alpine Public Library.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water

Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

If you want to learn more, please attend any of our regularly scheduled town council meetings. They are held the 3rd Tuesday of every month at the town council chambers located at 250 River Circle, Alpine, Wyoming. Material is available at the Town Hall Office Building, on the Town of Alpine website.

Description of Water Treatment Process

Your water is treated by disinfection. Disinfection involves the addition of chlorine or other disinfectant to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5-minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.

- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Cross Connection Control Survey

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection control regulations and ensuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below, please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler/ Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to

River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Monitoring and reporting of compliance data violations

Monitoring Chlorine
Violation Period: 10/01/2023 to 12/31/2023

We failed to complete all the required tests of our drinking water for this contaminant and period indicated.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Town of Alpine, WY is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Additional Information for Arsenic

While your drinking water meets EPA's standard for arsenic, it does contain low levels of arsenic. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of

drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfection By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Chlorine (as Cl2) (ppm)	4	4	0.57	ND	0.57	2023	No	Water additive used to control microbes
Haloacetic Acids (HAA5) (ppb)	NA	60	4.7	0.68	4.7	2023	No	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	8.6	3.2	8.6	2023	No	By-product of drinking water disinfection
Inorganic Contaminants								
Barium (ppm)	2	2	0.1	NA	NA	2021	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	0.3	NA	NA	2021	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen] (ppm)	10	10	0.45	NA	NA	2023	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (optional) (ppm)	NA		3	NA	NA	2021	No	Erosion of natural deposits; Leaching
Radioactive Contaminants								
Alpha emitters (pCi/L)	0	15	4	NA	NA	2019	No	Erosion of natural deposits
Radium (combined 226/228) (pCi/L)	0	5	0.8	NA	NA	2019	No	Erosion of natural deposits
Uranium (ug/L)	0	30	0.6	NA	NA	2019	No	Erosion of natural deposits

Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	0.188	2023	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead - action level at consumer taps (ppb)	0	15	2	2023	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Undetected Contaminants

The following contaminants were monitored for, but not detected, in your water.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Violation	Typical Source
1,1,1-Trichloroethane (ppb)	200	200	ND	No	Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane (ppb)	3	5	ND	No	Discharge from industrial chemical factories
1,1-Dichloroethylene (ppb)	7	7	ND	No	Discharge from industrial chemical factories
1,2,4-Trichlorobenzene (ppb)	70	70	ND	No	Discharge from textile-finishing factories
1,2-Dichloroethane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
1,2-Dichloropropane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
2,4,5-TP (Silvex) (ppb)	50	50	ND	No	Residue of banned herbicide
2,4-D (ppb)	70	70	ND	No	Runoff from herbicide used on row crops
Antimony (ppb)	6	6	ND	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder; test addition.
Arsenic (ppb)	0	10	ND	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Atrazine (ppb)	3	3	ND	No	Runoff from herbicide used on row crops
Benzene (ppb)	0	5	ND	No	Discharge from factories; Leaching from gas storage tanks and landfills
Benzo(a)pyrene (ppt)	0	200	ND	No	Leaching from linings of water storage tanks and distribution lines

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Violation	Typical Source
Beryllium (ppb)	4	4	ND	No	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	5	5	ND	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints
Carbofuran (ppb)	40	40	ND	No	Leaching of soil fumigant used on rice and alfalfa
Carbon Tetrachloride (ppb)	0	5	ND	No	Discharge from chemical plants and other industrial activities
Chlordane (ppb)	0	2	ND	No	Residue of banned termiticide
Chlorobenzene (monochlorobenzene) (ppb)	100	100	ND	No	Discharge from chemical and agricultural chemical factories
Chromium (ppb)	100	100	ND	No	Discharge from steel and pulp mills; Erosion of natural deposits
Cyanide (ppb)	200	200	ND	No	Discharge from plastic and fertilizer factories; Discharge from steel/metal factories
Dalapon (ppb)	200	200	ND	No	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate (ppb)	400	400	ND	No	Discharge from chemical factories
Di (2-ethylhexyl) phthalate (ppb)	0	6	ND	No	Discharge from rubber and chemical factories
Dibromochloropropane (DBCP) (ppt)	0	200	ND	No	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dichloromethane (ppb)	0	5	ND	No	Discharge from pharmaceutical and chemical factories
Dinoseb (ppb)	7	7	ND	No	Runoff from herbicide used on soybeans and vegetables
Dioxin (2,3,7,8-TCDD) (ppq)	0	30	ND	No	Emissions from waste incineration and other combustion; Discharge from chemical factories
Diquat (ppb)	20	20	ND	No	Runoff from herbicide use
Endothall (ppb)	100	100	ND	No	Runoff from herbicide use
Endrin (ppb)	2	2	ND	No	Residue of banned insecticide
Ethylbenzene (ppb)	700	700	ND	No	Discharge from petroleum refineries
Ethylene dibromide (ppt)	0	50	ND	No	Discharge from petroleum refineries
Glyphosate (ppb)	700	700	ND	No	Runoff from herbicide use
Heptachlor (ppt)	0	400	ND	No	Residue of banned pesticide
Heptachlor epoxide (ppt)	0	200	ND	No	Breakdown of heptachlor

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Violation	Typical Source
Hexachlorobenzene (ppb)	0	1	ND	No	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclopentadiene (ppb)	50	50	ND	No	Discharge from chemical factories
Mercury [Inorganic] (ppb)	2	2	ND	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Methoxychlor (ppb)	40	40	ND	No	Runoff/leaching from insecticide used on fruits, vegetables, alfalfa, livestock
Oxamyl [Vydate] (ppb)	200	200	ND	No	Runoff/leaching from insecticide used on apples, potatoes and tomatoes
PCBs [Polychlorinated biphenyls] (ppt)	0	500	ND	No	Runoff from landfills; Discharge of waste chemicals
Pentachlorophenol (ppb)	0	1	ND	No	Discharge from wood preserving factories
Picloram (ppb)	500	500	ND	No	Herbicide runoff
Radium (combined 226/228) (pCi/L)	0	5	ND	No	Erosion of natural deposits
Selenium (ppb)	50	50	ND	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Simazine (ppb)	4	4	ND	No	Herbicide runoff
Styrene (ppb)	100	100	ND	No	Discharge from rubber and plastic factories; Leaching from landfills
Tetrachloroethylene (ppb)	0	5	ND	No	Discharge from factories and dry cleaners
Thallium (ppb)	.5	2	ND	No	Discharge from electronics, glass, and Leaching from ore-processing sites; drug factories
Toluene (ppm)	1	1	ND	No	Discharge from petroleum factories
Toxaphene (ppb)	0	3	ND	No	Runoff/leaching from insecticide used on cotton and cattle
Trichloroethylene (ppb)	0	5	ND	No	Discharge from metal degreasing sites and other factories
Uranium (ug/L)	0	30	ND	No	Erosion of natural deposits
Vinyl Chloride (ppb)	0	2	ND	No	Leaching from PVC piping; Discharge from plastics factories
Xylenes (ppm)	10	10	ND	No	Discharge from petroleum factories; Discharge from chemical factories
cis-1,2-Dichloroethylene (ppb)	70	70	ND	No	Discharge from industrial chemical factories
o-Dichlorobenzene (ppb)	600	600	ND	No	Discharge from industrial chemical factories

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Violation	Typical Source
p-Dichlorobenzene (ppb)	75	75	ND	No	Discharge from industrial chemical factories
trans-1,2-Dichloroethylene (ppb)	100	100	ND	No	Discharge from industrial chemical factories

Unit Descriptions	
Term	**Definition**
ug/L	ug/L : Number of micrograms of substance in one liter of water
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
ppt	ppt: parts per trillion, or nanograms per liter
ppq	ppq: parts per quadrillion, or picograms per liter
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
% positive samples/month	% positive samples/month: Percent of samples taken monthly that were positive
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required but recommended.

Important Drinking Water Definitions	
Term	**Definition**
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

For more information please contact:

Contact Name: Craig Leseberg, Water Operator
Address: 250 River Circle / P.O. Box 3070
Alpine, WY 83128
Phone: 307-654-7757

LABORATORY ANALYTICAL REPORT

Prepared by Casper, WY Branch

Client: Sunrise Engineering Inc
Project: Alpine Lakes
Lab ID: C18110490-001
Client Sample ID: Alpine Lakes Well #1 Hydrant East of Wellhouse

Revised Date: 01/28/19
Report Date: 12/06/18
Collection Date: 11/14/18 13:20
DateReceived: 11/15/18
Matrix: Drinking Water

Analyses	Result	Units	Qualifiers	RL	MCL/ QCL	Method	Analysis Date / By
MAJOR IONS							
Alkalinity, Total as CaCO3	233	mg/L		5		A2320 B	11/19/18 10:36 / ljl
Chloride	2	mg/L		1		E300.0	11/18/18 01:32 / ljl
Fluoride	ND	mg/L		0.1		A4500-F C	11/16/18 16:45 / ljl
Sulfate	3	mg/L		1		E300.0	11/18/18 01:32 / ljl
INORGANICS							
Cyanide, Total	ND	mg/L		0.003	0.2	E335.4	11/20/18 12:42 / eli-b
PHYSICAL PROPERTIES							
Conductivity @ 25 C	430	umhos/cm		5		A2510 B	11/16/18 14:16 / kjp
Hardness as CaCO3	239	mg/L		4		A2340 B	11/26/18 14:17 / mav
pH	7.60	s.u.	H	0.01		A4500-H B	11/16/18 14:16 / kjp
pH Measurement Temp	15	°C				A4500-H B	11/16/18 14:16 / kjp
Solids, Total Dissolved TDS @ 180 C	240	mg/L	D	10		A2540 C	11/19/18 09:14 / kjp
NUTRIENTS							
Nitrogen, Nitrate+Nitrite as N	0.46	mg/L		0.01		E353.2	11/19/18 11:49 / dmb
METALS, TOTAL							
Antimony	ND	mg/L		0.001	0.006	E200.8	11/27/18 15:03 / eli-b
Arsenic	ND	mg/L		0.001	0.01	E200.8	11/27/18 15:03 / eli-b
Barium	ND	mg/L		0.05	2	E200.7	11/26/18 14:17 / eli-b
Beryllium	ND	mg/L		0.001	0.004	E200.7	11/26/18 14:17 / eli-b
Cadmium	ND	mg/L		0.001	0.005	E200.8	11/27/18 15:03 / eli-b
Calcium	61	mg/L		1		E200.7	11/26/18 14:17 / eli-b
Chromium	ND	mg/L		0.005	0.1	E200.8	11/27/18 15:03 / eli-b
Copper	ND	mg/L		0.01	1.3	E200.8	12/03/18 14:49 / jcg
Lead	ND	mg/L		0.001	0.015	E200.8	12/03/18 14:49 / jcg
Magnesium	21	mg/L		1		E200.7	11/26/18 14:17 / eli-b
Mercury	ND	mg/L	H	0.0001	0.002	E245.1	01/24/19 13:03 / eli-b
Nickel	ND	mg/L		0.01		E200.7	11/27/18 12:38 / eli-b
Potassium	ND	mg/L		1		E200.7	11/27/18 12:38 / eli-b
Selenium	ND	mg/L		0.001	0.05	E200.8	11/27/18 15:03 / eli-b
Sodium	2	mg/L		1		E200.7	11/26/18 14:17 / eli-b
Thallium	ND	mg/L		0.0005	0.002	E200.8	11/27/18 15:03 / eli-b
RADIONUCLIDES, TOTAL							
Gross Alpha	-0.8	pCi/L	U			E900.0	11/27/18 15:36 / trs
Gross Alpha precision (±)	1.3	pCi/L				E900.0	11/27/18 15:36 / trs
Gross Alpha MDC	1.4	pCi/L				E900.0	11/27/18 15:36 / trs

Report Definitions:

RL - Analyte reporting limit.
QCL - Quality control limit.
MDC - Minimum detectable concentration
H - Analysis performed past recommended holding time.
MCL - Maximum contaminant level.
ND - Not detected at the reporting limit.
D - RL increased due to sample matrix.
U - Not detected at minimum detectable concentration

№ 10924

BACTERIOLOGICAL WATER ANALYSIS

Lincoln Water Quality Lab

P.O. Box 310 Afton, WY 83110 (307) 885-0566 or (307) 885-9698

TYPE SUPPLY ☐ PUBLIC ☐ SWIMMING POOL ☐ PARK SERVICE ☐ FOOD EST
☒ PRIVATE ☐ FOREST SERVICE ☐ SCHOOL ☐ MISC.

TYPE SUPPLY ☐ REGULAR ☐ REPEAT ☐ OTHER THIOSULFATE USED ☐ YES ☒ NO

SAMPLE LOCATION Alpine Lakes (Hydrant on 12" Line) #2

COLLECTED BY Jake Clark TIME 3:10pm DATE 12-19-18
(SAMPLES MORE THAN 48 HOURS OLD WILL NOT BE TESTED)

RELINQUISHED BY Jake Clark TIME 4:09 DATE 12-19-18

SEND REPORT TO Kilroy LLC

STREET OR POST OFFICE BOX [redacted] P.O. Box 709

CITY Afton STATE WY ZIP 83110

PHONE 307-886-0600

EPA PWS No. _____ C

SAMPLE No. 58

FOR LABORATORY USE ONLY

SAMPLE CONDITION ☒ GOOD ☐ DAMAGED ☐ INSUFFICIENT ☐ OLD

SAMPLE ID# _____ DATE RECEIVED 12/19/18 TIME 1605

RESAMPLE REF.# _____ ANALYSIS DATE START 12/19/18 TIME 1612

ANALYSIS DATE FINISH 12/20/18 TIME 1705

☐ MPA ☒ FECAL ☒ TOTAL Coliscire ☐ SPC ☐ OTHER _____

LTB 24 HR _____ 48 HR _____ BGLB 24 HR _____ 48 HR _____

EC 24 HR _____

FINAL ANALYSIS ☒ SAFE ☐ UNSAFE ☐ NOT TESTED ☐ RESAMPLE

REMARKS _____ RJB ANALYST

Original - Lab Pink Copy - Vendor Yellow copy - EPA Gold Copy - Include with sample FEE $ 37.00

№ 10923

BACTERIOLOGICAL WATER ANALYSIS

Lincoln Water Quality Lab

P.O. Box 310 Afton, WY 83110 (307) 885-0566 or (307) 885-9698

TYPE SUPPLY ☐ PUBLIC ☐ SWIMMING POOL ☐ PARK SERVICE ☐ FOOD EST
☒ PRIVATE ☐ FOREST SERVICE ☐ SCHOOL ☐ MISC.

TYPE SUPPLY ☐ REGULAR ☐ REPEAT ☐ OTHER THIOSULFATE USED ☐ YES ☒ NO

SAMPLE LOCATION Alpine Lake (Northern Most Fish Hut)

COLLECTED BY Jake Clark TIME 3:01pm DATE 12-19-18
(SAMPLES MORE THAN 48 HOURS OLD WILL NOT BE TESTED)

RELINQUISHED BY Jake Clark TIME 4:09 DATE 12-19-18

SEND REPORT TO Kelly LLC

STREET OR POST OFFICE BOX P.O. Box 779

CITY Afton STATE WY ZIP 83110

PHONE 307-886-0600

EPA PWS No. _____ C

SAMPLE No. 57

FOR LABORATORY USE ONLY

SAMPLE CONDITION ☒ GOOD ☐ DAMAGED ☐ INSUFFICIENT ☐ OLD

SAMPLE ID# _____ DATE RECEIVED 12/19/18 TIME 1605

RESAMPLE REF.# _____ ANALYSIS DATE START 12/19/18 TIME 1612

ANALYSIS DATE FINISH 12/20/18 TIME 1705

☐ MPA ☒ FECAL ☒ TOTAL Colisure ☐ SPC ☐ OTHER _____

LTB 24 HR _____ 48 HR _____ BGLB 24 HR _____ 48 HR _____

EC 24 HR _____

FINAL ANALYSIS ☒ SAFE ☐ UNSAFE ☐ NOT TESTED ☐ RESAMPLE

REMARKS _____ RJB ANALYST

Original - Lab Pink Copy - Vendor Yellow copy - EPA Gold Copy - Include with sample FEE $ 37.00

№ 10930

BACTERIOLOGICAL WATER ANALYSIS

Lincoln Water Quality Lab
P.O. Box 310 Afton, WY 83110 (307) 885-0566 or (307) 885-9698

TYPE SUPPLY ☐ PUBLIC ☐ SWIMMING POOL ☐ PARK SERVICE ☐ FOOD EST
☒ PRIVATE ☐ FOREST SERVICE ☐ SCHOOL ☐ MISC.

TYPE SUPPLY ☐ REGULAR ☐ REPEAT ☐ OTHER THIOSULFATE USED ☐ YES ☑ NO

SAMPLE LOCATION Alpine Lakes (4" Line)

COLLECTED BY Jake Clark TIME 3:45 DATE 1-3-19
(SAMPLES MORE THAN 48 HOURS OLD WILL NOT BE TESTED)

RELINQUISHED BY Jake Clark TIME 3:57 DATE 1-3-19

SEND REPORT TO Kluy LLC

STREET OR POST OFFICE BOX P.O. Box 789

CITY Afton STATE WY ZIP 83110

PHONE 307-886-0600

EPA PWS No. _____ C

SAMPLE No. 1

FOR LABORATORY USE ONLY

SAMPLE CONDITION ☒ GOOD ☐ DAMAGED ☐ INSUFFICIENT ☐ OLD

SAMPLE ID# _____ DATE RECEIVED 1/3/19 TIME 1910

RESAMPLE REF.# _____ ANALYSIS DATE START 1/3/19 TIME 1912

ANALYSIS DATE FINISH 1/04/19 TIME 1919

☐ MPA ☒ FECAL ☒ TOTAL Coliscure ☐ SPC ☐ OTHER _____

LTB 24 HR _____ 48 HR _____ BGLB 24 HR _____ 48 HR _____

EC 24 HR _____

FINAL ANALYSIS ☒ SAFE ☐ UNSAFE ☐ NOT TESTED ☐ RESAMPLE

REMARKS _____ RBB
ANALYST

Original - Lab Pink Copy - Vendor Yellow copy - EPA Gold Copy - Include with sample FEE $ 37.00

(2)

№ 10857

BACTERIOLOGICAL WATER ANALYSIS

Lincoln Water Quality Lab
P.O. Box 310 Afton, WY 83110 (307) 885-0566 or (307) 885-9698

TYPE SUPPLY ☐ PUBLIC ☐ SWIMMING POOL ☐ PARK SERVICE ☐ FOOD EST
☒ PRIVATE ☐ FOREST SERVICE ☐ SCHOOL ☐ MISC.
TYPE SUPPLY ☐ REGULAR ☐ REPEAT ☐ OTHER THIOSULFATE USED ☐ YES ☒ NO

SAMPLE LOCATION Alpine Lakes (Well House 2nd Test)
COLLECTED BY Jake Clark TIME 9:45 am DATE 12-17-18
(SAMPLES MORE THAN 48 HOURS OLD WILL NOT BE TESTED)
RELINQUISHED BY Jake Clark TIME 3:33 DATE 12-17-18
SEND REPORT TO Kilroy LLC
STREET OR POST OFFICE BOX P.O. Box 729
CITY Afton STATE WY ZIP 83110
PHONE 307-886-0600

EPA PWS No. _____ C
SAMPLE No. 48

FOR LABORATORY USE ONLY

SAMPLE CONDITION ☒ GOOD ☐ DAMAGED ☐ INSUFFICIENT ☐ OLD
SAMPLE ID# _____ DATE RECEIVED 12/17/18 TIME 1558
RESAMPLE REF.# _____ ANALYSIS DATE START 12/17/18 TIME 1600
ANALYSIS DATE FINISH 12/18/18 TIME 1600

☐ MPA ☐ FECAL ☐ TOTAL Chlorine
☐ SPC ☐ OTHER

LTB 24 HR _____ 48 HR _____ BGLB 24 HR _____ 48 HR _____
EC 24 HR _____

FINAL ANALYSIS ☒ SAFE ☐ UNSAFE ☐ NOT TESTED ☐ RESAMPLE

REMARKS _____ RBB ANALYST

Original - Lab Pink Copy - Vendor Yellow copy - EPA Gold Copy - Include with sample FEE $ 37.00

(1)

№ 10856

BACTERIOLOGICAL WATER ANALYSIS

Lincoln Water Quality Lab
P.O. Box 310 Afton, WY 83110 (307) 885-0566 or (307) 885-9698

TYPE SUPPLY ☐ PUBLIC ☐ SWIMMING POOL ☐ PARK SERVICE ☐ FOOD EST
☒ PRIVATE ☐ FOREST SERVICE ☐ SCHOOL ☐ MISC.
TYPE SUPPLY ☐ REGULAR ☐ REPEAT ☐ OTHER THIOSULFATE USED ☐ YES ☒ NO

SAMPLE LOCATION Alpine Lakes (WC.1 House 1st Test)
COLLECTED BY Jake Clark TIME 8:45 DATE 12-17-18
(SAMPLES MORE THAN 48 HOURS OLD WILL NOT BE TESTED)
RELINQUISHED BY Jake Clark TIME 3:32 DATE 12-17-18
SEND REPORT TO Kroy LLC
STREET OR POST OFFICE BOX [redacted] P.O. Box 729
CITY Afton STATE WY ZIP 83110
PHONE 307-886-0600

EPA PWS No. _____ C
SAMPLE No. 47

FOR LABORATORY USE ONLY

SAMPLE CONDITION ☒ GOOD ☐ DAMAGED ☐ INSUFFICIENT ☐ OLD
SAMPLE ID# _____ DATE RECEIVED 12/17/18 TIME 1558
RESAMPLE REF.# _____ ANALYSIS DATE START 12/17/18 TIME 1600
ANALYSIS DATE FINISH 12/18/18 TIME 1600

☐ MPA ☒ FECAL ☒ TOTAL Colisure ☐ SPC ☐ OTHER

LTB 24 HR _____ 48 HR _____ BGLB 24 HR _____ 48 HR _____
EC 24 HR _____

FINAL ANALYSIS ☒ SAFE ☐ UNSAFE ☐ NOT TESTED ☐ RESAMPLE

REMARKS _____ RJB
ANALYST

Original - Lab Pink Copy - Vendor Yellow copy - EPA Gold Copy - Include with sample FEE $ 37.00

2015 Annual Water Quality Report

North Star Utility

Is my water safe?

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Where does my water come from?

Our water source consists of three ground water wells.

Source water assessment and its availability

We did not participate in the voluntary Source Water Assessment program.

Why are there contaminants in my drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity:
microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming; pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

How can I get involved?

Public Town Council meetings are held on the 3rd Tuesday of each month at the Town Council Chambers located at 250 River Circle in Alpine, Wyoming. Material is always available at the Town Hall, Town of Alpine website, or the Alpine Public Library.

Description of Water Treatment Process

Your water is treated by disinfection. Disinfection involves the addition of chlorine or other disinfectant to kill dangerous bacteria and microorganisms that may be in the water. Disinfection is considered to be one of the major public health advances of the 20th century.

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Cross Connection Control Survey

The purpose of this survey is to determine whether a cross-connection may exist at your home or business. A cross connection is an unprotected or improper connection to a public water distribution system that may cause contamination or pollution to enter the system. We are responsible for enforcing cross-connection control regulations and insuring that no contaminants can, under any flow conditions, enter the distribution system. If you have any of the devices listed below please contact us so that we can discuss the issue, and if needed, survey your connection and assist you in isolating it if that is necessary.

- Boiler/ Radiant heater (water heaters not included)
- Underground lawn sprinkler system
- Pool or hot tub (whirlpool tubs not included)
- Additional source(s) of water on the property
- Decorative pond
- Watering trough

Source Water Protection Tips

Protection of drinking water is everyone's responsibility. You can help protect your community's drinking water source in several ways:

- Eliminate excess use of lawn and garden fertilizers and pesticides - they contain hazardous chemicals that can reach your drinking water source.
- Pick up after your pets.
- If you have your own septic system, properly maintain your system to reduce leaching to water sources or consider connecting to a public water system.
- Dispose of chemicals properly; take used motor oil to a recycling center.
- Volunteer in your community. Find a watershed or wellhead protection organization in your community and volunteer to help. If there are no active groups, consider starting one. Use EPA's Adopt Your Watershed to locate groups in your community, or visit the Watershed Information Network's How to Start a Watershed Team.
- Organize a storm drain stenciling project with your local government or water supplier. Stencil a message next to the street drain reminding people "Dump No Waste - Drains to River" or "Protect Your Water." Produce and distribute a flyer for households to remind residents that storm drains dump directly into your local water body.

Additional Information for Lead

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. North Star Utility is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at http://www.epa.gov/safewater/lead.

Water Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Disinfectants & Disinfection By-Products								
(There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants)								
Haloacetic Acids (HAA5) (ppb)	NA	60	.9	NA		2015	No	By-product of drinking water chlorination
TTHMs [Total Trihalomethanes] (ppb)	NA	80	4.08	NA		2015	No	By-product of drinking water disinfection
Inorganic Contaminants								
Barium (ppm)	2	2	.3	NA		2011	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Fluoride (ppm)	4	4	.3	NA		2011	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate [measured as Nitrogen] (ppm)	10	10	1.3	NA		2015	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Sodium (optional) (ppm)	NA		7.4	NA		2011	No	Erosion of natural deposits; Leaching

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Microbiological Contaminants								
Total Coliform (positive samples/month)	0	1	0	NA		2015	No	Naturally present in the environment
Radioactive Contaminants								
Radium (combined 226/228) (pCi/L)	0	5	.5	NA		2015	No	Erosion of natural deposits

Contaminants	MCLG	AA	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source
Inorganic Contaminants							
Copper - action level at consumer taps (ppm)	1.3	1.3	.2	2014	0	No	Corrosion of household plumbing systems; Erosion of natural deposits
Inorganic Contaminants							
Lead - action level at consumer taps (ppb)	0	15	10	2014	0	No	Corrosion of household plumbing systems; Erosion of natural deposits

Unit Descriptions	
Term	**Definition**
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter (a measure of radioactivity)
positive samples/month	positive samples/month: Number of samples taken monthly that were found to be positive
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.

Important Drinking Water Definitions	
Term	**Definition**
MCLG	MCLG: Maximum Contaminant Level Goal: The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
MCL	MCL: Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Important Drinking Water Definitions	
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection level goal. The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.
MRDL	MRDL: Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

For more information please contact:

Contact Name: Val Jensen
Address: 250 River Circle
Alpine, WY 83128
Phone: (307) 880-2868

Table 7 - Groundwater Quality Data					
Analyte	Existing System[1]	Well #3		EPA Drinking Water Standards	
		Midway	Final[2]		
CollectionDate	8/30/2004	7/1/2008	7/2/2008	Primary	Secondary
MICROBIOLOGICAL (CFU/ml and P/A)					
Bacteria, Iron Related		<1	2300		
Bacteria, Total Coliform		absent	absent		
MAJOR IONS (mg/L)					
Acidity, Total as CaCO3			<1		
Alkalinity, Total as CaCO3		250	254		
Bicarbonate as HCO3		305	282		
Carbonate as CO3		<1	14		
Calcium		74	73		
Chloride		6	6		250
Fluoride	0.3		0.3	4	2
Magnesium		21	22		
Nitrogen, Nitrate+Nitrite as N	0.2		0.1	10	
Nitrogen, Nitrite as N	<0.10		<0.10	1	
Potassium		<1	0.8		
Silica			4.6		
Sodium	2.1	2	1.7		
Sulfate	10	9	10		250
NON-METALS (mg/L)					
Cyanide	<0.005		<0.005	0.2	
PHYSICAL PROPERTIES					
Color (c.u.)			<5.0		15
Conductivity (umhos/cm)		475	489		
Corrosivity (unitless)			0.57		non-corrosive
Hardness as CaCO3			272		
Odor (T.O.N.)			NOO		3
pH (s.u.)		7.60	7.71		6.5 - 8.5
Total Dissolved Solids, TDS @ 180 C (mg/L)		267	244		500
Turbidity (NTU)			4.1		
METALS - TOTAL (mg/L)					
Aluminum			<0.1		0.05 - 0.2
Antimony	<0.001		<0.001	0.006	
Arsenic	<0.005		0.002	0.01	
Barium	0.2		0.2	2	
Beryllium	<0.0005		<0.001	0.004	
Boron			<0.1		
Cadmium	<0.0005		<0.001	0.005	
Chromium	<0.05		<0.05	0.1	
Copper	0.01		<0.01	1.3	1
Iron			<0.03	0.3	0.3
Lead	<0.001		<0.001	0.015	
Manganese			<0.01		0.05
Mercury	<0.0005		<0.001	0.002	
Nickel	<0.02		<0.05	0.1	
Selenium	<0.005		<0.001	0.05	
Silver			<0.01		0.1
Thallium	<0.0004		<0.0004	0.002	
Uranium		0.0008	0.0007	0.03	
Zinc			<0.01		5
RADIONUCLIDES - TOTAL (pCi/L)					
Gross Alpha		0.2	5.3	15	
Gross Beta		-9	0.2	50	
Radium 226		0.15	0.3		
Radium 228		3.0	0.5		
Radium 226 + Radium 228		3.1	0.8	5	

[1]All VOCs and SOCs tested for the existing system in 2004 resulted in "non-detects," with the exception of two VOCs: Chlorodibromomethane (0.67 ug/L) and Total Trihalomethanes (0.67 ug/L), neither of which were tested in Well #3 for the Final Test.

[2]All VOCs and SOCs tested resulted in "non-detects."

Table 4 - Groundwater Quality Analyses (mg/l)
Rees Subdivision Vicinity, Alpine, Wyoming

	EPA Drinking Water Standard		A	B	C	D	*E	F
Date			7/20/95	7/20/95	7/20/95	7/20/95	7/1/00	9/16/02
Total Solids	500	s	286	233	220	347	770	310
hardness			279	202	228	282	230	312
calcium			80	43	56	69	49.7	67
magnesium			22	23	20	27	26.9	35
sodium	250	s	2.7	7.4	1.1	17	23	4.0
potassium			1.4	2.2	.74	2.1	5.3	1.0
bicarbonate			340	260	283	332	242	330
sulfate	250	s	6	16	<5	24	54	33
chloride	250	s	10	<2	9	25	4.9	5.3
nitrate	10	p	.34	.65	.13	2.3	<2.0	0.9
arsenic	.05	p	<0.005					.001
copper	1.3	g	<.05					0.12
fluoride	1.4	p	0.19	0.19	<0.1	0.49	1.0	0.3
iron	0.3	s	.11	.02	.61	.02		.041
manganese	.05	s	<.02	<.02	<.02	<.02		<.001
zinc			.061					.145
radioactivity (pCi/l)	15	p						1.8

Notes: A - Town of Alpine (Well No. 17). Additional analytes: barium (.15), cadmium (<.001), chromium (<.007), mercury (<.0002), nickel (<.01), selenium (<.002), silver (<.002); all are well within drinking water standards.
B - Alpine Water Users (Well No. 9)
C - Woodworth (Well No. 12)
D - Reinhart (Well No. 4)
*E - Coletti (a second nitrate analysis reported <0.5). These data are taken from two groundwater analyses provided by the well owner. The two analyses are quite different (the more reasonable values are listed here), however, so the listed results should be considered with caution.
F - Clinger No. 2

APPENDIX F

Well & Water Rights Data

Alpine Water Master Plan
Review of Well (Source) Capacities & Demands

2050 Projected Demands (per report)

ADD =	973,000	gpd	1090	Ac-ft per year
	40,542	gph		
	676	gpm		
MDD =	2,308,000	gpd		
	96,167	gph		
	1,603	gpm		

Well	Permitted Capacity (gpm)	Current Operating Capacity (gpm)	Permitted Annual (AF/yr)	Current Operating Annual (AF/yr)	Possible Operating Annual (AF-yr)
Alpine Well #1	700	455		734	1,129
Alpine Well #2	700	445		718	1,129
Alpine Well #3	650	361	400	582	1,049
Flying Saddle Well #1	100	100	114	161	161
Flying Saddle Well #2	50	40	114	65	81
MegaWell	500	450	370	726	807
Total =	2,700	1,851	997	2,986	4,355

Findings:

1. Current permitted capacity (gpm) is greater than future MDD (2,050 > 1,603) assuming three Alpine wells.
2. Current permitted capacity (gpm) is greater than future MDD (2,700 > 1,603) assuming all wells are contributing to system.
3. Current operating capacity (gpm) is less than future MDD (1,261 < 1,603) assuming three Alpine wells.
4. Current operating capacity (gpm) is more than future MDD (1,711 > 1,603) assuming three Alpine wells + MegaWell.
5. Current operating capacity (gpm) is more than future MDD (1,851 > 1,603) assuming all wells are contributing to system.
6. Current permitted capacity (AF/yr) is less than future annual demand (400 < 1,090), assuming three Alpine wells.
7. Current permitted capacity (AF/yr) is less than future annual demand (997 < 1,090) assuming all wells are contributing to system.
8. Current operating capacity (AF/yr) is more than future annual demand (2,034 > 1,090) assuming three Alpine wells.
9. Current operating capacity (AF/yr) is more than future annual demand (2.986 > 1,090) assuming all wells are contributing to system.

SCANNED OCT 27 2020

FORM U.W.6
Rev. 1/07

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E
CHEYENNE, WYOMING 82002

(307) 777-6163

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL OR SPRING

NOTE: Do not fold this form. Use typewriter or print neatly with black pen.

PERMIT NO. U.W. 211583 NAME OF WELL/SPRING Alpine Lakes #1 Per UWS DC

1. NAME OF OWNER ~~Alpine Lakes #1~~ Excel Development LLC
2. ADDRESS P.O. Box 3309
   Please check if address has changed from that shown on permit
   City Alpine State Wyoming Zip Code 83128 Phone No. 701 367 6161
3. USE OF WATER ☐ Domestic ☐ Stock Watering ☐ Irrigation ☐ Municipal ☐ Industrial ☒ Miscellaneous ☐ Monitor or Test ☐ Coal Bed Methane Explain proposed use (Example: One single family dwelling) _____
4. LOCATION OF WELL/SPRING NW 1/4 NE 1/4 of Section 19 T. 32 (N.) R. 118 (W.) of the 6th P.M. (or W.R.M.)
   Subdivision Name Alpine Vlg Lot 29 Block _____
   Resurvey Location Tract _____ or Lot _____ Datum ☐ NAD27 ☐ NAD83 _____
   Geographic Coordinates: Latitude 43° 11' 10.1" N Longitude 111° 01' 58.6" W (degrees, minutes, seconds)
   UTM: Zone _____ Northing _____ Easting _____ (meters)
   State Plane Coordinates: Zone _____ Northing _____ Easting _____ (feet)
   Land surface elevation (ft. above mean sea level) _____ Datum ☐ NAVD29 ☐ NAVD88
   Source ☒ GPS ☐ Map ☐ Survey ☐ Unkown ☐ Other ☐ Altimeter (for elevation only)
5. TYPE OF CONSTRUCTION ☒ Drilled Air Rotary ☐ Dug ☐ Driven ☐ Other
   Describe _____
6. CONSTRUCTION Total depth of well/spring 81 ft.
   Depth of static water level 34' ft. (below land surface) Casing height +2 ft. above ground
   a. Diameter of borehole (bit size) 8" inches
   b. Casing schedule ☒ New ☐ Used Joint type ☐ Threaded ☐ Glued ☒ Welded
   8 diameter from +2 ft. to 45 ft. Material Steel Gage .250
   _____ diameter from _____ ft. to _____ ft. Material _____ Gage _____
   c. Cemented/grouted interval, from 0 ft. to 28' ft.
   Amount of cement/grout used 28 (example: 10 sacks) type Bentonite chips (example: bentonite pellets)
   d. Type of completion ☐ Customized perforations ☐ Open hole ☒ Factory screen
   Type of perforator used _____
   Size of perforations _____ inches by _____ inches.
   Number of perforations and depths where perforated
   _____ perforations from _____ ft. to _____ ft.
   _____ perforations from _____ ft. to _____ ft.
   Open hole from _____ ft. to _____ ft.
   Well screen details
   Diameter 8" telo slot size .034 set from 40 ft. to 81 ft.
   Diameter _____ slot size _____ set from _____ ft. to _____ ft.
   e. Well development method Air How long was well developed? 6 hrs
   f. Was a filter/gravel pack installed? ☐ Yes ☒ No Size of sand/gravel _____
   Filter/gravel pack installed from _____ ft. to _____ ft.
   g. Was surface casing used? ☒ Yes ☐ No Was it cemented in place? ☐ Yes ☒ No
   Surface casing installed from +2 ft. to 28 ft.

RECEIVED
SEP - 4 2020
State Engineers
Cheyenne
Wyoming

7. NAME AND ADDRESS OF DRILLING COMPANY 4068 N Haroldsen Dr. Idaho Falls, ID 83401 Vollmer Well Drilling. 208-552-0236
8. DATE OF COMPLETION OF WELL (including pump installation) OR SPRING (first used) 6-29-2020
9. PUMP INFORMATION Manufacturer _____ Type _____ Per phone call w/driller 9-21-20 DC
   Source of power _____ Horsepower _____ Depth of pump setting or intake _____ ft.
   Amount of water being pumped _____ gal./min.* (For springs or flowing wells, see item 10)
   Total volumetric quantity used per calendar year.* _____
   *If these amounts exceed permitted amount an enlargement is required.
10. FLOWING WELL OR SPRING (Owner is responsible for control of flowing well) N/A
    If artesian flow or spring, yield is _____ gal./min. *Surface pressure is _____ lb./sq.inch, or _____ feet of water.
    The flow is controlled by ☐ Valve ☐ Cap ☐ Plug
    Does well leak around casing? ☐ Yes ☐ No

Permit No. U.W. 211583 Book No. 1516 Page No. 33

SEE REVERSE SIDE

11. IF SPRING, HOW WAS IT CONSTRUCTED? (Some method of artificial diversion, i.e., spring box, cribbing, etc., is necessary to qualify for a water right)_____

12. PUMP TEST Was a pump test conducted? ☐ Yes ☒ No
If so, by whom_____
Yield _____ gal./min. with _____ ft. drawdown after _____ hours
Yield _____ gal./min. with _____ ft. drawdown after _____ hours

13. LOG OF WELL Total depth drilled _____ ft.
Depth of completed well _____ ft. Diameter of well _____ inches
Depth to first water bearing formation _____ ft.
Depth to principal water bearing formation Top _____ ft. to Bottom _____ ft.

DRILL CUTTINGS DESCRIPTION

From Feet	To Feet	Rock Type or Description	Formation	Water Bearing? (Yes or no)
Surface				
0	1	Soil		no
1	28	Sand Gravel	Unconsolidated	no
28	33	Sand Gravel	" "	no
33	81	Sand Gravel	" "	Water

14. DOES A GEOPHYSICAL LOG ACCOMPANY THIS FORM? ☐ Yes ☒ No

15. QUALITY OF WATER INFORMATION
Does a chemical and/or bacteriological water quality analysis accompany this form? ☐ Yes ☐ No
It is recommended that chemical and bacteriologic water quality analyses be performed and that the report(s) be filed with the records of this well (contact Department of Agriculture, Analytical Lab Services, Laramie, 742-2984).
If not, do you consider the water as ☒ Good ☐ Acceptable ☐ Poor ☐ Unusable

REMARKS Cold Clear

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, correct, and complete.

Signature of Owner or Authorized Agent

6-29 ,20 20
Date

FOR STATE ENGINEER'S USE ONLY

Permit No. U.W. 211583

Date of Receipt SEP - 4 2020 ,20____

Date of Priority October 24 ,20 19

Date of Approval _____ ,20____

for State Engineer

$ 25.00 MDP 9:30

FORM U.W. 5
Rev. 5-79
FILING FEE SCHEDULE
ON REVERSE SIDE

STATE OF WYOMING
OFFICE OF THE STATE ENGINEER
HERSCHLER BUILDING
CHEYENNE, WYOMING 82002

MICRO FILMED NOV 18 '88

APPLICATION FOR PERMIT TO APPROPRIATE GROUND WATER

FOR OFFICE USE ONLY

PERMIT NO. U.W. 77717

WATER DIVISION NO. 4 DISTRICT 8

U.W. DISTRICT Lincoln Co.

Temporary Filing No. U.W. 20-8-43

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.
ALL ITEMS MUST BE COMPLETED BEFORE APPLICATION IS ACCEPTABLE.

NAME AND NUMBER OF WELL ~~ALPINE WATER & SEWER DISTRICT~~ WELL #2

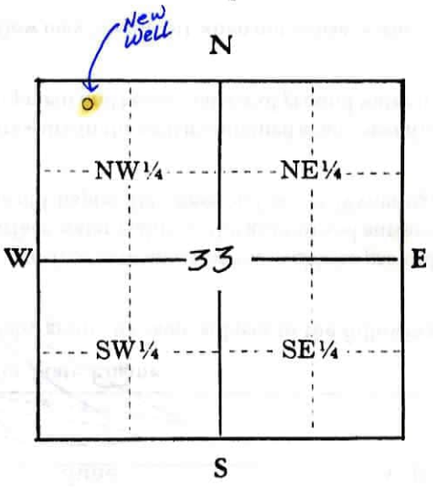
1. Name of applicant(s) ~~ALPINE WATER & SEWER DISTRICT~~ Town of Alpine (per assignment recd. 11-1-89) m.a. Phone: 654-7591

2. Address of applicant(s) P.O. Box ~~101~~ 239 ALPINE, WYOMING Zip: 83128

3. Name & address of agent to receive correspondence and notices Monty H. Nelson(or) Donn H. Wooden
Same address.

4. Use to which the water will be applied: Domestic [ ] Stock Watering [ ] Irrigation [ ] Municipal [X] Industrial [ ] Miscellaneous [ ] (Describe completely and accurately) Alpine Water & Sewer District has serious need for a second well for back up and additional demand for patrons

5. Location of the well: (NOTE: Quarter-quarter (40-acre subdivision) MUST be shown. EXAMPLE: SE¼NW¼ of Sec. 12, Township 14 North, Range 68 West.) LINCOLN County, NW ¼ NW ¼ of Sec. 33, T. 37 N., R. 118 W. of the 6th P.M. (or W.R.M.), Wyoming. If located in a platted subdivision, **also** provide Lot n/a, Block _____ of the _____ Subdivision (or Add'n) of _____.



Scale: 2" = 1 mile

Above diagram represents one full section. Locate well accurately in small square representing 40 ac.

6. Mark the well location on the section grid to the right. LOCATION SHOWN IN ITEM 5 MUST AGREE WITH GRID. If the proposed well is for irrigation use, sketch and label all irrigation ditches and canals, stream, reservoirs and other wells. Indicate the point of use or lands to be irrigated from other sources.

7. Estimated depth of the well is 360 feet.

8. MAXIMUM quantity of water to be developed and beneficially used: ~~300~~ ~~400~~ 375 gallons per minute. NOTE: If for domestic or stock use, this application will be processed for a maximum of 25 gallons per minute. SPRINGS: Only springs flowing 25 gallons per minute or less, where the proposed use is domestic or stockwatering, will be considered as ground water appropriations. After approval of this application, some type of artificial diversion must be constructed to qualify for a water right.

(Adj. Amt.)

9. If use is not irrigation, mark the point(s) or area(s) of use in the tabulation below.

10. If for irrigation use:
a. Describe MAXIMUM acreage to be irrigated in each 40 acre subdivision in the tabulation below.
b. [ ] Land will be irrigated from this well only.
c. [ ] Land is irrigated from existing water right(s) with water from this well to be additional supply. Describe existing water right(s) under REMARKS.

Township	Range	Sec.	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
~~37~~	~~118~~	~~28~~			Lot 7					Lot 6		X	X						
~~37~~	~~118~~	~~29~~			X					X	X	X	X	X	X	X	X	X	

See Attachment

The water from this well will be commingled with water from the Alpine Water and Sewer Dist. Pipeline, Permit No. 24104, 1st Enl. Alpine Water & Sewer Dist. Pipeline, U 9106 E, Alpine Water Dist. No. 1 Well, Permit No. UW 39163, and 1st Enl. Alpine Water Dist. No. 1 W (UW 18069), to serve 136 single family homes and 29 commercial lots in the Town of Alpine. See attached sheets for a list of the points of use.

11. If for irrigation use, describe method of irrigation, i.e. center pivot sprinkler, flood, etc. _____

SEE REVERSE SIDE

Permit No. U.W. 77717 Book No. 558 Page No. 18

12. The well is to be constructed on lands owned by U.S. NATIONAL FOREST- Bridger-Teton
(The granting of a permit does not constitute the granting of right of way. If any easement or right of way is necessary in connection with this application, it should be understood that the responsibility is the applicant's. A copy of the agreement should accompany this application, if the land is privately owned and the owner is not a co-applicant.)

13. The water is to be used on lands owned by patrons of ALPINE WATER & SEWER DISTRICT
(If landowner is not the applicant, a copy of the agreement relating to usage of appropriated water on the land should be submitted to this office. If the landowner is included as a co-applicant on the application, this procedure need not be followed.)

REMARKS: WELL # 2- is applied for to supplement water appropriated under Permit # 24104 and Alpine Water District Well#1 (Permit #39163).

Under penalties of perjury, I declare that I have examined this application and to the best of my knowledge and belief it is true, correct and complete.

ALPINE WATER & SEWER DISTRICT

Monty H. Nelson — Monty H. Nelson Pres. — JUNE 9, 88

Signature of Applicant or Authorized Agent — Date

THE LEGALLY REQUIRED FILING FEE MUST ACCOMPANY THIS APPLICATION

DOMESTIC AND/OR STOCK WATERING USES (Domestic use is defined as a single-family dwelling and the watering of lawns and gardens not exceeding one (1) acre)	$10.00
IRRIGATION, MUNICIPAL, INDUSTRIAL, MISCELLANEOUS	$25.00
MONITOR (For water level measurements or chemical quality sampling)	NO FEE

IF WELL WILL SERVE MULTIPLE USES, SUBMIT ONLY ONE (THE HIGHER) FILING FEE.

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

THE STATE OF WYOMING)
) ss.
STATE ENGINEER'S OFFICE)

This instrument was received and filed for record on the 23rd day of June, A. D. 19 88, at 9:30 o'clock A M.

Permit No. U.W. 77717

for State Engineer

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This application is approved subject to the condition that the proposed use shall not interfere with any existing rights to ground water from the same source of supply and is subject to regulation and correlation with surface water rights, if the ground and surface waters are interconnected. The use of water hereunder is subject to the further provisions of Chapter 169, Session Laws of Wyoming, 1957, and any subsequent amendments thereto.

Granting of a permit does not guarantee the right to have the water level or artesian pressure in the well maintained at any specific level. The well should be constructed to a depth adequate to allow for the maximum development and beneficial use of ground water in the source of supply.

If the well is a flowing artesian well, it shall be so constructed and equipped that the flow may be shut off when not in use, without loss of water into surface formations or at the surface.

FOR ADDITIONAL CONDITIONS AND LIMITATIONS SEE ATTACHED STATUS SHEET

Approval of this application may be considered as authorization to proceed with construction of the proposed well.

Construction of well will begin within one (1) year from date of approval. A Statement of Completion will be filed within thirty (30) days of completion of construction, including pump installation.

Completion of construction and completion of the beneficial use of water for the purposes specified in Item 4 of this application will be made by December 31, 19 89.

The amount of appropriation shall be limited to the quantity to which permittee is entitled as determined at time of proof of application of water to beneficial use.

Witness my hand this 14th day of August, A.D. 19 88.

Gordon W. Fassett

Gordon W. Fassett State Engineer

APR. 28 1988 NOTICE OF EXPIRATION OF TIME OF COMMENCEMENT MAILED

MICRO FILMED APR 20 '89

SEE: PERMIT STATUS SHEET.

U.W. 77717

ATTACHMENT SHEET For Alpine Water and Sewer District Well No. 2, Permit No. U.W. 77717

"ADDITIONAL CONDITIONS AND LIMITATIONS"

This appropriation in combination with water from the Alpine Water District No. 1 Well, Permit No. U.W. 39163(Enlarged by Permit No. U.W, 78067, and Permit No. U.W. 98662), will allow the Town of Alpine to pump a total combined quantity of 225 acre-feet of ground water on an average annual basis and a combined total of no more than 300 acre-feet of ground water in any one calendar year from its municipal well field. Such average annual pumping shall be computed on the basis of ten (10) consecutive years commencing with the calendar year 1995. The Town of Alpine shall pump no more than 2,250 acre-feet of ground water in any one ten (10) year period from its municipal well field provided, however, that the State Engineer may, pursuant to application, permit the Town of Alpine to withdraw additional quantities of ground water.

Twp.	Range	Sec.	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
			Water is used for Municipal Purposes for the Town of																
			Alpine, Wyoming with the Corporate Limits being located																
			within the following described Area:																
37N	118	28										X	X						
					L-7				L-5	L-6		L-5							
37N	118	29			X				X	X	X	X	X	X	X	X	X	X	
37N	118	33						X											
			NOTE: Lot 5 of Sec. 29 being a river border lot																
			located within the described 40 acre quarter-quarters.																

MICRO FILMED NOV 18 '88

U.W. 77717

Attachment sheets for the Alpine Water & Sewer District Well #2 TF No. NW20-8-43

Township	Range	Sec.	NE¼ NE¼	NE¼ NW¼	NE¼ SW¼	NE¼ SE¼	NW¼ NE¼	NW¼ NW¼	NW¼ SW¼	NW¼ SE¼	SW¼ NE¼	SW¼ NW¼	SW¼ SW¼	SW¼ SE¼	SE¼ NE¼	SE¼ NW¼	SE¼ SW¼	SE¼ SE¼	Totals
37	118	29								X	(Lot 6)								4
			Lakeview Tract F (Tract 3) 2 homes																
			Metes & Bounds Tracts																
			Hal Taylor 1 home																
			A.K. Jerkan 1 home																
37	118	29			X (Lot 7)														1
			Palos Park Subdivision																
			Palisport Campground										Co...						
37	118	29										X (Lot 5)							4
			Lakeview Estates Subdivision C																
			Lot 611 Hoffman & Assoc., Realtors office																
			Lot 614 Vernon Sorenson 2 Homes																
			Lot 615 Freeda Warren 1 Home																
37	118	29									X								23
			Lakeview Estates Subdivision #3																
			Lot 328 Jean Larson 1 home																
			Lakeview Estates Subdivision C																
			Lot 608 Alpine Mercantile 2 stores																
			Lot 610 Lambrauch Fritz 2 stores																
			Lot 616 Clarence Holden 1 home																
			Lot 619 Jeep Molnar 1 home																
			Lot 622 George Telford 1 home																
			Lot 630 Alex Garbrecht 1 home																
			Lot 631 Ron Abarnathy 1 home																
			Lot 635 Robert Fritz 1 home																
			Lot 601 Sophia Molnar 1 home																
			Lot 607 Alpine Fire Brigade & Civic Center																
			Palos Park Subdivision																
			Palisport Motel																
			Palisport Gas Station																
			Palisport A-Frame home 1 home																
			George Dupont 1 home																
			Metes & Bounds Tracts																
			Beulah Jorgensen Rumbaugh 1 home																
			Sheldon Bickstead 1 home																
			Don Warden Post Office																
			Hal Taylor 1 home																
			Richard Jenkins 1 home																
			Palisades Heights Subdivision																
			Lot 11 Jorgensen Brothers Development Co.																

94X

MICRO FILMED NOV 18 '88

U.W. 77717

Township	Range	Sec	NE ¼				NW ¼				SW ¼				SE ¼				Totals
			NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼	NE ¼	NW ¼	SW ¼	SE ¼	
37	113	29														X			11
			Lakeview Estates Subdivision C																
				Lot 635	Car Center and									1 home					
				Lot 637	Alpine Automotive & Glen West home														
				Lot 639	Alpine Tire & Alignment store														
				Lot 641	Alpine Yacht Club														
				Lot 644	Lois Taylor Council & Dave Taylor									2 homes					
				Lot 645	Irwin Perkins									1 home					
				Lot 647	Duane Swallwood									1 home					
			Metes & Bounds Tracts																
				Jeanne Western Broadcasting										1 home					
37	118	29													X				10
			Metes & Bounds Tracts																
				Greys River Lumber Co Mill and Shop															
				Greys River Lumber Co housing										4 homes					
				Kilroy & Co Shops															
				Kilroy & Co.										1 home					
				D. Glady Miller										1 home					
				Carl Ball										1 home					
37	118	29										X							1
			Metes & Bounds Tracts																
				Robert Truchot										1 home					
37	118	29												X					10
			Lakeview Estates Subdivision #2																
				Lot 301	Norman Caudel									1 home					
				Lot 306	Harold Abernathy									1 home					
				Lot 314	June E. Anderson									1 home					
				Lot 320	Marshall Batemen									1 home					
			Alpine Pines Subdivision																
				Lot 1	Bessie Moss									1 home					
				Lot 4	Richard Reilly									1 home					
				Lot 7	Cal Rose									1 home					
				Lot 9	Jerry Eichelts									1 home					
				Lot 16	Bill Ballough									1 home					
			Metes & Bounds Tracts																
				Sid Johnson										1 home					

OUT

MICRO FILMED NOV 13 '88

U.W. 77717

Township	Range	Sec.	NE¼ NE¼	NE¼ NW¼	NE¼ SW¼	NE¼ SE¼	NW¼ NE¼	NW¼ NW¼	NW¼ SW¼	NW¼ SE¼	SW¼ NE¼	SW¼ NW¼	SW¼ SW¼	SW¼ SE¼	SE¼ NE¼	SE¼ NW¼	SE¼ SW¼	SE¼ SE¼	Totals
37	118	29															X		27
			Lakeview Estates Subdivision								A								
				Lot 201			Dan Pagoran								1 home				
				Lot 223			Don J Stephens								1 home				
				Lot 227			Isadore Sazegen								1 home				
				Lot 228			Creighton Hartman								1 home				
				Lot 242			Keith Johnson								1 home				
				Lot 247			F.C. Bentsen								1 home				
				Lot 248			Ellwood Sparks								1 home				
				Lot 253			Elma Moss								1 home				
				Lot 255			Bruce Feece								1 home				
				Lot 256			A.J. Bentsen								1 home				
				Lot 263			Cliff Fendray								1 home				
				Lot 266			Glen Jacobsen								1 home				
				Lot 267			Glen Norris								1 home				
				Lot 271			Robert Jensen								1 home				
				Lot 273			Robert Norris								1 home				
			Grandview Subdivision																
				Lot 1			Joe Dorowetz								1 home				
				Lot 2			Billy B Lovelace								1 home				
				Lot 4			Grant Rasmussen								1 home				
				Lot 5			Jake Eckert								1 home				
				Lot 18			George Hatley								1 home				
				Lot 23			William Turner								1 home				
				Lot 24			Harry Nightswonger								1 home				
				Lot 25			Barry Petersen								1 home				
			Metes & Bounds Tracts																
				Harry Poe											1 home				
				Joseph Ozzatt											1 home				
				Brian Parks											2 homes				
37	118	29																X	24
			Lakeview Estates Subdivision								P								
				Lot 203			R. Woodmansey								1 home				
				Lot 206			Harry Cope								1 home				
				Lot 222			Jay Seadle								1 home				
				Lot 234			Lawrence Fey								1 home				
				Lot 236			Neal Auston								1 home				
			Bridge Homes Subdivision																
				Lot 1			Paul Nemetz								1 home				
				Lot 6			Trey Lyon								1 home				
			Metes & Bounds Tracts																
				Jorgensen			Warehouse												
				Jorgensen			Apartment								1 home				
				Jorgensen			Duplex								2 homes				
				Alpine			Wendt												

94

MICRO FILMED NOV 18 '88

U.W. 77717

Township	Range	Sec	NE¼ NE¼	NE¼ NW¼	NE¼ SW¼	NE¼ SE¼	NW¼ NE¼	NW¼ NW¼	NW¼ SW¼	NW¼ SE¼	SW¼ NE¼	SW¼ NW¼	SW¼ SW¼	SW¼ SE¼	SE¼ NE¼	SE¼ NW¼	SE¼ SW¼	SE¼ SE¼	Totals
37	118	29												Continued				X	
			Greys River Valley Subdivision																
			Lot 3				Bruce Jorgensen							1 home					
			Lot 4				Grey River Apartments							4 apartments					
			Lot 10				Valerie Wooden							1 home					
			Lot 12				James McCollum							1 home					
			Lot 17				Donald Napoles							1 home					
			Lot 18				Steve Kelley							1 home					
			Lot 19				Ridge Gardenson							1 home					
			Lot 21				Billy McClain							1 home					
			Lot 22				Lee Turner							1 home					
37	118	28											X						12
			Three Meadows Subdivision																
			Lot 3				Alton Jorgensen							1 home					
			Lot 52				Gus Tebbetson							1 home					
			Lot 53				Tom Zbornik							1 home					
			Lot 57				Elmer Stevenson							1 home					
			Lot 58				Richard Gerkens							1 home					
			Lot 59				Phil Thompson							1 home					
			Lot 60				Michael Schmidt							1 home					
			Lot 61				Dennis Howland							1 home					
			Lot 62				Rick Gardenson							1 home					
			Lot 65				Martin Nelson							1 home					
			Lot 68				Ethel Jensen							1 home					
			Metes & Bounds Tracts																
			Monty Nelson											1 home					
37	118	33						X											1
			Greys Cattle Association corral (USES Permitted)																

There is a total of 107 homes and 21 commercial points of use to receive water under this enlargement. There will be a total of 167 points of use under the original Permit No. 39163 and this enlargement.

Ok

FORM UW:C&L.C1
Rev:10-28-8(

MICRO FILMED NOV 18 '88

PERMIT NO. U.W. 77717
T.F. No. U.W. 20-8-43

PERMIT STATUS

Priority Date June 23, 1988 Approval Date August 14, 1988

ADDITIONAL CONDITIONS AND LIMITATIONS:

1. A meter acceptable to the State Engineer is required to accurately measure the total quantity of water produced from this well.

2. An annual report shall be submitted to the State Engineer no later than February 15 of each year stating the total amount of water produced from this well each month during the previous January 1 to December 31, twelve (12) month period.

3. The report shall identify the well by name, location, permit number and shall identify the type of meter used for the measurement.

4. The report shall contain at least two (2) semi-annual measurements of the pumping water level in the well as measured after a minimum of twenty-four (24) consecutive hours of pumping. The dates the measurements were obtained and period of time the well was pumped prior to obtaining the measurements must be specified.

5. The report shall contain at least two (2) semi-annual measurements of the static water level in the well as measured twenty-four (24) consecutive hours after pumping has ceased. The dates the measurements were obtained and the period of time the well was "shut-in" prior to obtaining the measurements must be specified.

6. The State Engineer may, upon written request, waive all or any portion of these conditions and limitations.

August 14, 1988
DATE OF APPROVAL

Gordon W. Fassett
Gordon W. Fassett, State Engineer

NOTICE OF COMMENCEMENT WAIVED - Statement of Completion received prior to expiration date for commencement.

June 12, 1989 - Statement of Completion on December 1, 1988 received.

June 5, 1989 - Beneficial Use on May 2, 1989 received.

June 5, 1989 - Linen map received. (TM 2356-B)

MICRO FILMED JUL 13 '89

November 1, 1989--Assignment of all right, title and interest in and to this permit assigned from Alpine Water and Sewer District to the Town of Alpine per letters received. See letters filed in Miscellaneous Notices under Permit No. U.W. 39163.

11-21-89
Date

Richard G. Stockdale
Richard G. Stockdale, Administrator
Ground Water Division

MICRO FILMED MAR 26 '90

The Alpine Water and Sewer District was incorporated as the Town of Alpine, Wyoming on February 8, 1989. Town of Alpine, WY Resolution No. 2-09-20-94 states the Town's desires to pursue their Ground Water Permits of record under a Municipal Use not Miscellaneous Use. Pursuant to the Town of Alpine's request and because the use of water has not changed, designated use of water under this appropriation is hereby changed from Miscellaneous Use to Municipal Use. See Resolution No. 2-09-20-94 filed in "Miscellaneous Notices" under Permit No. U.W. 39163.

3/31/95
DATE

Richard G. Stockdale
RICHARD G. STOCKDALE, Administrator
Ground Water Division

PERMIT NO. U.W. 77717

PERMIT STATUS

Priority Date June 23, 1988 Approval Date August 14, 1988

CERT. REC. U.W. 9, P. 460
PROOF NO. U.W. 3657, AC. 0
G.P.M. 375 IRR. ___ STK. ___ DOM. ___ ~~MISC.~~ MUN ✓
MAP NO. 297-E (3 sheets) AND 922-B

MICRO FILMED MAR 14 1990

October 23, 2008 - This permit has been enlarged by Permit No. U.W.189883 for additional yield and volumetric quantity only.
There is no physical enlargement of this well.

SCANNED MAY 30 2013

Form U.W. 6
Rev. 2-83

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER

MICRO FILMED MAR 14 1990
MICRO FILMED MAR 26 '90
MICRO FILMED JUL 13 '89

IF WELL IS TO BE ABANDONED, SEE ITEM 15, PAGE 4

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

PERMIT NO. U.W. 77717 NAME OF WELL Alpine Water & Sewer District Well #2

1. NAME OF OWNER ~~ALPINE WATER & SEWER DISTRICT~~ Town of Alpine

2. ADDRESS P.O. Box ~~101~~ 239 Alpine, Wyo Zip Code 83128

3. USE OF WATER: Domestic ☐ Stock Watering ☐ Irrigation ☐ Municipal ☒ Industrial ☐ Miscellaneous ☐

4. LOCATION OF WELL: NW¼ NW¼ of Section 33, T. 37 N., R. 118 W., of the 6th P.M. (or ~~W.R.M.~~), Wyoming, being specifically South 80° 26' 56" EAST 769.5' (Bearing and Distance)
or ____ ft. ~~North~~ ~~South~~ and ____ ft. ~~East~~ ~~West~~ from the NW corner of Section 33, T. 37 N., R. 118 W.
(Strike out words not needed).

5. TYPE OF CONSTRUCTION: Drilled ☐ CABLE TOOL (Type of Rig) Dug ☐ Driven ☒ Jetted ☐
Other ____

6. CONSTRUCTION: Total Depth of Well 243 ft. Depth to Static Water Level 85'6" ft.

a. Casing Schedule New ☒ Used ☐ * Pitless Adapter From ground level to 7' Depth.

12 3/4" diameter from 9' ft. to 42' ft. Material STEEL Gage .250

10 3/4" diameter from 7' ft. to 147' ft. Material STEEL Gage .366

____ diameter from ____ ft. to ____ ft. Material ____ Gage ____

RECEIVED JUN 12 1989 STATE ENGINEER Cheyenne, Wyo.

b. Perforations: Type of perforator used Knife - Mills-

Size of perforations 3/8" inches by 1½" inches.

Number of perforations and depths where perforated:

* 8 ea perforations from 101 ft. to 102 feet, 106, 108, 110, 136, 138, 140, 142, 144, end.

____ perforations from ____ ft. to ____ feet.

* 8 perforation at each of Above Levels.

c. Was well screen installed? Yes ☒ No ☐

Diameter: ____ slot size: ____ set from ____ feet to ____ feet.

Diameter: ____ slot size: ____ set from ____ feet to ____ feet.

d. Was well gravel packed? Yes ☐ No ☒ Size of gravel ____

e. Was surface casing used? Yes ☒ No ☐ Was it cemented in place? Yes ☒ No ☐ Pitless Adapter

7. NAME & ADDRESS OF DRILLER WEBER Drilling - 1240 - Gregory Lane Jackson, Wy 83001

8. DATE OF COMPLETION OF WELL (including pump installation) 12-1-88

9. PUMP INFORMATION: Manufacturer Red Jacket. Type Submersible

Source of power 460 Volt 3 phase Horsepower 40 HP. Depth of Pump Setting 156'

Amount of Water Being Pumped ~~330~~ 375 Gpm. Gallons Per Minute. (For springs or flowing wells, see item 11.)
(Adj. Amt.)

Permit No. U.W. 77717 Book No. 558 Page No. 13

ww. 77717

10. PUMP TEST: Was a pump test made? Yes ☒ No ☐

If so, by whom WEBER Drilling - (Torman) Address 1240 Gregory Lane Jackson. Wy 83001

Yield: 330 gal./min. with 14' foot drawdown after 5 hours.

Yield: 412 gal./min. with 31' foot drawdown after 3 hours.

11. FLOWING WELL (Owner is responsible for control of flowing well). N/A.

If well yields artesian flow, yield is — gal./min. Surface pressure is — lb./sq. inch, or — feet of water.

The flow is controlled by: valve ☐ cap ☐ plug ☐

Does well leak around casing? Yes ☐ No ☐

12. LOG OF WELL: Total depth drilled 243' feet.

Depth of completed well 243' feet. Diameter of well 12 3/4 - to 10 3/4 to 42' 42' to 147' — open hole to 243' inches.

Depth to first water bearing formation 88'-95' feet.

Depth to principal water bearing formation. Top 147' feet to Bottom 243' feet.

Ground Elevation, if known 5700' Approx elevation

From Feet	To Feet	Material Type, Texture, Color	REMARKS (Cementing, Shutoff, Packing, etc.)	Indicate Water Bearing Formation	Indicate Perforated Casing Location
		"	See Attached Information " -		

QUALITY OF WATER INFORMATION:

Was a chemical analysis made? Yes ☐ No ☐

If so, please include a copy of the analysis with this form.

If not, do you consider the water as: Good ☒ Acceptable ☐ Poor ☐ Unusable ☐

Weber Drilling

1240 GREGORY LANE · JACKSON, WYOMING 83001 · (307) 733-3343

WELL LOG

U.W. 77717

NAME OF OWNER Alpine Water & Sewer District

ADDRESS Alpine, Wyo ZIP CODE

LOCATION OF WELL: ____ ¼ ____ ¼ of section ____, T. ____, N., R. ____ W.,

Water Well # 2 Start 10-7-88 Driller-Torman

TYPE OF CONSTRUCTION: Drilled X cable tool
(Type of Rig)

CONSTRUCTION: Total Depth 243 ft. Depth to Water Level 85'6" ft.

a. Casing Schedule New X Used

12 3/4 Diameter from 9 ft. to 42 ft. Material steel Gage .250

10 3/4 Diameter from 7 ft. to 147 ft. Material steel Gage .366

Monitor 6PS10 12 W B V E0 Ø T 6 E Pitless #1 to 7 Ft.

b. Perforations Type of perforator used Mills 101,102,106,108,110,136,138,140,142,144
8 Perf. Ea. 3/8 x 1½"

DATE OF COMPLETION OF WELL (including pump installation) 12-1-88

PUMP INFORMATION: Manufacturer Red Jacket Type Sub. 6C3309AN
Pump Ser.# 111188B Motor Hatachi Ser.# G89166E

Source of power Elect. 460 V 3Ph. Horsepower 40 Depth of pump setting 156
Lenth of Air line 156'

Amount of water being pumped 330 Gallons Per Minute.

PUMP TEST: Was a pump test made? Yes X No

If so, by whom Driller Address

Yield: 412 gal./min. with 31 foot drawdown after 3 hours

Yield: 330 gal./min. with 14 foot drawdown after 5 hours

From Feet	To Feet	Material Type, Texture, Color	Indicate Water Bearing Formation
0	27	Quartzite, sandstone, limestone boulders	
27	41	red clay, limestone chips	
41	95	hard Blk. limestone, clay layers	some water 88-95
95	147	broken limestone, caving	water
147	165	hard limestone	water
165	194	limestone, layers of Brn. clay	
194	203	hard limestone	
203	215	hard limestone, clay layers	
215	243	very hard limestone	

Signature J H Weber

u.w. 77717

13. TABULATION

a. If for irrigation, the land proposed to be irrigated should be described in the following tabulation. Describe in the "Remarks" section, under Item 14, the means of conveying the water to the lands and the method of irrigation.

(Give irrigable acreage in each legal subdivision. If proposed use is for additional supply for lands with a right from another source, indicate in the tabulation the priority or permit number, the source of supply and the name of the ditch or other well.)

b. If not used for irrigation, show the area and point(s) of use and location of well in the tabulation below. Also describe the method of conveyance in the "Remarks" section under Item 14.

Town-Ship	Range	Sec.	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

TOTAL NUMBER OF ACRES TO BE IRRIGATED_____

Original Supply _____ acres

Additional Supply _____ acres

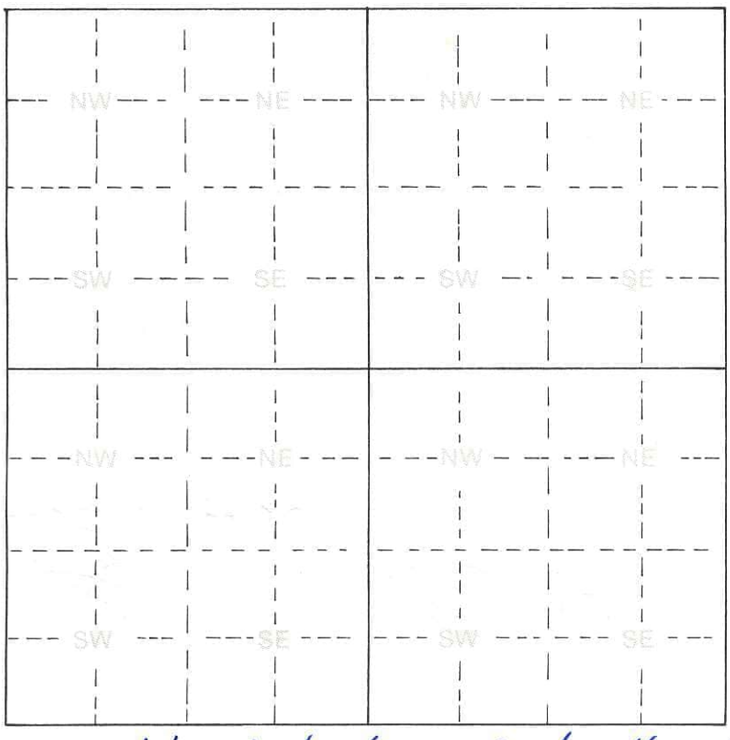
14. PLAT

a. If the well is to be used for irrigation, industrial, miscellaneous or municipal use, show the location of the well on the plat below. For such uses, a plat certified by a licensed engineer or land surveyor is required to be submitted at the time the Proof of Appropriation and Beneficial Use of Ground Water is submitted.

b. For other uses, accurately show the well location, point of use or uses and describe method of conveyance of water to points of use on plat and in "Remarks" section below. Make certain location on plat agrees with written description.

c. A separate map may be submitted if the information required cannot be shown on this plat. See ATTACHED MAP-

R._____W. R._____W.



Scale: 2" = 1 Mile

T._____N.

T._____N.

REMARKS: WELL is to be USED together with Points of USE under permits UW 39163 AND 24104

15. IF WELL IS TO BE ABANDONED, complete Items 1 through 8, Item 12 (Log of Well) and state reason for abandonment and details of the plugging below.

It is the responsibility of the owner to properly plug or fill in the well in order to prevent contamination of ground water and to cover or cap the well at ground level.

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, correct and complete.

Alpine Water & Sewer District

x Donna Hubbard

Signature of Owner or Authorized Agent

x June 2, 1989

Date

W.W. 77717

Date of Receipt JUN 12 1989, 19

Date of Priority JUNE 23, 1988

Date of Approval JUNE 28, 1989

D. Gilmer

for State Engineer

R-1.

EMERGENCY REQUEST

Form U.W. 5

FILING FEE $2.00

MICRO-FILMED AUG 10'77

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER

APPLICATION FOR PERMIT TO APPROPRIATE GROUND WATER

FOR OFFICE USE ONLY

PERMIT NO. U.W. 39163

WATER DIVISION NO. 9 DISTRICT 8

U.W. DISTRICT LINCOLN CO.

Temporary Filing No. U.W. 11-9-398

NAME AND NUMBER OF WELL

ALPINE WATER DISTRICT NO. 1 (per assignment rec'd 11-1-89) M.A.

1. Name of applicant(s) ~~Town of Alpine~~ ALPINE WATER & SEWER DISTRICT Phone: ~~654-2292~~ 654-7591 (307)

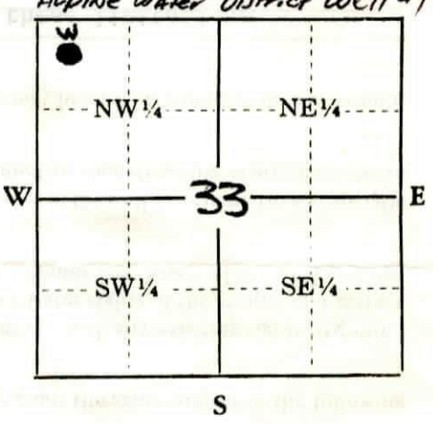
2. Address of applicant(s) ~~P.O. Box 3~~ P.O. Box 239 ALPINE, WYOMING Zip: 83128

3. Name & address of agent to receive correspondence and notices DONN H. WOODEN Secretary ~~P.O. Box 3 Alpine, Wyo 83128~~

4. Use to which the water will be applied: Irrigation [ ] Municipal [X] Industrial [ ] Stock Watering [ ] Domestic [ ] Miscellaneous [ ] (Describe completely and accurately) A WATER DISTRICT SERVING COMMERCIAL AND RESIDENTIAL DWELLINGS, 109 TOTAL CONNECTIONS -

5. Location of the well: LINCOLN County, NW ¼ NW ¼ of Sec. 33, T. 37 N., R. 118 W. of the 6th P.M. (or W.R.M.), Wyoming. If located in a platted subdivision, also provide Lot _____, block _____ of the U.S. forest Property Subdivision (or Add'n) of _____
NOTE: Quarter-quarter (40-acre subdivision) **must** be shown. EXAMPLE: SE¼NW¼ of Sec. 12, Township 14 North, Range 68 West.)

Alpine Water District Well #1



Scale: 2" = 1 mile

Above diagram represents one full section. Locate well accurately in small square representing 40 ac.

6. Mark the well location on the section grid to the right. If the proposed well is for irrigation use, sketch and label all irrigation ditches and canals, streams, reservoirs and other wells. Indicate the point of use or lands to be irrigated from this well. Also indicate lands irrigated from other sources.

7. Estimated depth of the well is 200 feet.

8. MAXIMUM quantity of water to be developed and beneficially used: 200 gallons per minute. NOTE: If for domestic or stock use, this application will be processed for a maximum of 25 gallons per minute. SPRINGS: Only springs flowing 25 gallons per minute or less, where the proposed use is domestic or stockwatering, will be considered as ground water appropriations. After approval of this application, some type of artificial diversion must be constructed to qualify for a water right.

9. If for irrigation use,
[ ] Land will be irrigated from this well only.
[ ] Land is irrigated from existing water right(s) with water from this well to be additional supply. Describe existing water right(s) under REMARKS.

10. a. If for irrigation use, describe MAXIMUM acreage to be irrigated. The number of acres to be irrigated in each 40-acre subdivision MUST be shown in the tabulation below.

(b.) If the water is to be utilized for some purpose other than irrigation, the area(s) or point(s) of use MUST be shown in the tabulation below. A MAP OF DISTRICT BOUNDARYS IS ON file WITH ENGINEERS OFFICE

Township	Range	Sec.	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
37	118W	28			LOT 4				LOT 1										LOTS ARE
37	118W	29			X				X			X	X	X	X	X	X	X	RIVER BORDER LOTS PER G.L.O. MAP

~~See Attachment~~

~~THE ABOVE POINTS OF USE PER PLAT OF ALPINE, WYO (AN UNINCORPORATED MUNICIPALITY) MAP~~
PER PHONE CONVERSATION ON JULY 27, 1977 WITH MR WOODEN
(1) A COPY OF BY-LAWS AND FORMALIZATION OF ALPINE WATER & SEWER DISTRICT WILL BE FORWARDED TO THIS OFFICE
(2) A COPY OF SPECIAL USE AGREEMENT WITH U.S. FOREST SERVICE CONCERNING LANDS IN ETON NO 2 IS TO BE FORWARDED.
(3) WATER FROM THIS WELL IS TO BE COMMINGLED WITH SURFACE PERMIT 29104

11. If for irrigation use, describe method of irrigation, i.e. center pivot sprinkler, flood, etc. (SEE PLATS FILED IN MISC. PLAT DRAWER UNDER U.W. 11-9-398.

SEE REVERSE SIDE

Permit No. U.W. 39163 Book No. 206 Page No. 50

12. The well is to be constructed on lands owned by U.S. Forest Service. U.S.D.A.
(The granting of a permit does not constitute the granting of right of way. If any easement or right of way is necessary in connection with this application, it should be understood that the responsibility is the applicant's. A copy of the agreement should accompany this application, if the land is privately owned and the owner is not a co-applicant.)

13. The water is to be used on lands owned by ~~Private Individual(s)~~ MEMBERS OF ALPINE WATER & SEWER DIST per call 11/23/77
(If landowner is not the applicant, a copy of the agreement relating to usage of appropriated water on the land should be submitted to this office. If the landowner is included as a co-applicant on the application, this procedure need not be followed.)

REMARKS: Special use Application is in Effect for Our present water System which Begins on U.S. forest Land. An Emergency Special use Application to drill the well to Subsidize the Spring is on file At this Time with the Bridger-Teton forest office At Jackson, Wyo. Special use is pending State Engineers Permit for the well

THE LEGALLY REQUIRED FILING FEE MUST ACCOMPANY THIS APPLICATION

Under penalties of perjury, I declare that I have examined this application and to the best of my knowledge and belief it is true, correct and complete.

Donald H Worden — Signature of Applicant or Authorized Agent

7-18-77, 19__ — Date

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

THE STATE OF WYOMING)
) ss.
STATE ENGINEER'S OFFICE)

This instrument was received and filed for record on the 20th day of July, A. D. 19 77, at 8:30 o'clock A. M.

Permit No. U.W. 39163

Leroy L. Porter
for State Engineer

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This application is approved subject to the condition that the proposed use shall not interfere with any exisiting rights to ground water from the same source of supply and is subject to regulation and correlation with surface water rights, if the ground and surface waters are interconnected. The use of water hereunder is subject to the further provisions of Chapter 169, Session Laws of Wyoming, 1957, and any subsequent amendments thereto.

Granting of a permit does not guarantee the right to have the water level or artesian pressure in the well maintained at any specific level. The well should be constructed to a depth adequate to allow for the maximum development and beneficial use of ground water in the source of supply.

If the well is a flowing artesian well, it shall be so constructed and equipped that the flow may be shut off when not in use, without loss of water into surface formations or at the surface.

Special attention is called to paragraph one (1) of these limitations and conditions as outlined above relating to the interconnection of ground water and surface sources.

Approval of this application may be considered as authorization to proceed with construction of the proposed well.

Construction of well will begin within one (1) year from date of approval. A Statement of Completion will be filed within thirty (30) days of completion of construction, including pump installation.

Completion of construction and completion of the beneficial use of water for the purposes specified in Item 4 of this application will be made by December 31, 19 78.

The amount of appropriation shall be limited to the quantity to which permittee is entitled as determined at time of proof of application of water to beneficial use.

Witness my hand this 29th day of July, A.D. 19 77.

George L. Christopulos
GEORGE L. CHRISTOPULOS, State Engineer

MAR 31 1978 NOTICE OF EXPIRATION OF TIME FOR COMMENCEMENT MAILED

MICRO-FILMED MAR 22 '78

May 1, 1978 - Notice of Commencement on March 6, 1978 received.

MICRO-FILMED JUN 7 '78

SEP 28 1978 NOTICE OF EXPIRATION OF TIME FOR COMPLETION & COMPLETION OF BENEFICIAL USE MAILED

MICRO-FILMED SEP 30 '78

MICRO FILMED MAR 14 1996

U.W. 39163

ATTACHMENT SHEET For Alpine Water District No. 1, Permit No. U.W.39163

"ADDITIONAL CONDITIONS AND LIMITATIONS"

This appropriation, enlarged by Permit No. U.W. 78067 and Permit No. U.W. 98662, in combination with water from the Alpine Water and Sewer District No. 2 Well, Permit No. U.W. 77717, will allow the Town of Alpine to pump a total combined quantity of 225 acre-feet of ground water on an average annual basis and a combined total of no more than 300 acre-feet of ground water in any one calendar year from its municipal well field. Such average annual pumping shall be computed on the basis of ten (10) consecutive years commencing with the calendar year 1995. The Town of Alpine shall pump no more than 2,250 acre-feet of ground water in any one ten (10) year period from its municipal well field provided, however, that the State Engineer may, pursuant to application, permit the Town of Alpine to withdraw additional quantities of ground water.

Twp.	Range	Sec.	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
			Water is used for Municipal Purposes for the Town of Alpine, Wyoming with the Corporate Limits being located within the following described Area:																
37N	118	28										X	X						
37N	118	29			L-7 X				L-5 X	L-6 X		L-5 X							
37N	118	33						X			X	X	X	X	X	X	X	X	
			NOTE: Lot 5 of Sec. 29 being a river border lot located within the described 40 acre quarter-quarters.																

PERMIT NO. U.W. 39163

PERMIT STATUS

Priority Date July 20, 1977 Approval Date July 29, 1977

February 7, 1979 - Statement of Completion on December 4, 1978 received, in affidavit form.
February 7, 1979 - Proof of Beneficial use on December 11, 1978 received in affidavit form.
June 19, 1979 - Linen Map received. (TM #1328D) MICRO. FILMED JUL 11 '79
February 7, 1979 - Certificate of Ownership received. Origianal Filed in certificate file under ALPINE WATER AND SEWER DISTRICT on November 15, 1979.

MICRO. FILMED JAN 9 '80

PROOF PREPARED, ADJUDICATION IN PROCESS
~~CERT. REC. U.W. _____, P. _____~~
PROOF NO. U.W. _____ AC. _____
~~G.P.M. _____ IRR. ___ STK. ___ DOM. ___ MISC. ___~~

November 10, 1988 - This permit has been enlarged vy Permit No. U.W. 78067 fpr additional yield and points of use. There is no physical enlargement of this well. MICRO FILMED NOV 22 '88

November 1, 1989--Assignment of all right, title and interest in and to this permit assigned from Alpine Water and Sewer District to the Town of Alpine per letters received. See letters filed in Miscellaneous Notices under Permit No. U.W. 39163.

11/21/89 Richard G. Stockdale
Date Richard G. Stockdale, Administrator
Ground Water Division

MICRO FILMED MAR 26 '90

The Alpine Water and Sewer District was incorporated as the Town of Alpine, Wyoming on February 8, 1989. Town of Alpine, WY Resolution No. 2-09-20-94 states the Town's desires to pursue their Ground Water Permits of record under a Municipal Use not Miscellaneous Use. Pursuant to the Town of Alpine's request and because the use of water has not changed, designated use of water under this appropriation is hereby changed from Miscellaneous Use to Municipal Use. See Resolution No. 2-09-20-94 filed in "Miscellaneous Notices" under Permit No. U.W. 39163.

3/31/95 Richard G. Stockdale
DATE RICHARD G. STOCKDALE, Administrator
Ground Water Division

March 27, 1995 - This permit has been enlarged by Permit No. U.W. 98662 for additional yield only. There is no physical enlargement of this well.

CERT. REC. U.W. 9, P. 458
PROOF NO. U.W. 3655, AC. 0
G.P.M. 200 IRR. ___ STK. ___ DOM. ___ ~~MISC.~~ MUN ✓
MAP NO. 297-E (3 sheets)

MICRO FILMED MAR 14 1996

SCANNED JUN 11 2012

U.W.39163

PERMIT STATUS

Priority Date: July 20, 1977 Approval: July 29, 1977

October 23,, 2008– This permit has been enlarged by Permit No. U.W. 189882 for additional yield and volumetric quantity only. There is no physical enlargement of this well

SCANNED JUN 11 2012

RECEIVED JAN 10 1979 STATE ENGINEER Cheyenne, Wyo.
RECEIVED FEB 7 1979 STATE ENGINEER Cheyenne, Wyo.
MICRO FILMED MAR 14 1996
MICRO FILMED MAR 26 '90
MICRO-FILMED JUL 11 '79

Form U.W. 6

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

IF WELL IS TO BE ABANDONED, SEE ITEM 15, PAGE 4

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER

SCANNED JUN 11 2012

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL

PERMIT NO. U.W. 39163 NAME OF WELL Alpine Water District #1

1. NAME OF OWNER ~~Alpine Water and Sewer District~~ Town of Alpine
2. ADDRESS ~~PO Box 3~~ P.O. Box 239 Alpine, Wyoming Zip Code 83128
3. USE OF WATER: Domestic ☐ Stock Watering ☐ Irrigation ☐ Municipal ☒ Industrial ☐ Miscellaneous ☐
   A water district serving commercial and residential dwellings
4. LOCATION OF WELL: NW ¼ NW ¼ of Section 33, T. 37 N., R. 118 W., of the 6th P.M. (or W.R.M.), Wyoming, being specifically
   (Bearing and Distance)
   or 80 ft. ~~North~~ South and 450 ft. East ~~West~~ from the NW corner of Section 33, T. 37 N., R. 118 W.
   (Strike out words not needed).
5. TYPE OF CONSTRUCTION: Drilled ☒ Rotary (Type of Rig) Dug ☐ Driven ☐ Jetted ☐
   Other
6. CONSTRUCTION: Total Depth 275 ft. Depth to Water Level 60 ft.
   a. Casing Schedule New ☒ Used ☐
   10.136" Inside diameter from 0 ft. to 270 ft. Material steel Gage .307"
   ____ diameter from ____ ft. to ____ ft. Material ____ Gage ____
   ____ diameter from ____ ft. to ____ ft. Material ____ Gage ____
   b. Perforations: Type of perforator used Acetylene Torch
   Size of perforations ½ inches by 6 inches.
   Number of perforations and depths where perforated:
   3 sets perforations from 180 ft. to 275 feet.
   ____ perforations from ____ ft. to ____ feet.
   c. Was well screen installed? Yes ☐ No ☒
   Diameter: ____ slot size: ____ set from ____ feet to ____ feet.
   Diameter: ____ slot size: ____ set from ____ feet to ____ feet.
   d. Was well gravel packed? Yes ☒ No ☐ Size of gravel ¼" minimum to ½" maximum
   e. Was surface casing used Yes ☒ No ☐ Was it cemented in place? Yes ☐ No ☒
7. NAME & ADDRESS OF DRILLER MCO Drilling Co., Inc. PO Box 13, Alpine, Wyoming 83128
8. DATE OF COMPLETION OF WELL (including pump installation) December 4, 1978
9. PUMP INFORMATION: Manufacturer Jacuzzi Brothers, Inc. Type Submersible
   Source of power 480 volt - 3 phase supplied by Lower Valley Power & Light Horsepower 50 Depth of Pump Setting 175'
   Amount of Water Being Pumped ~~300~~ 200 Gallons Per Minute.
   MGP

Permit No. U.W. 39163 Book No. 206 Page No. 50

U.W. 39163

10. **PUMP TEST:** Was a pump test made? Yes ☒ No ☐

If so, by whom MCO Drilling Co., Inc. Address PO Box 13, Alpine, Wyoming 83128

Yield: 300 gal./min. with 25' foot drawdown after 24 hours.

Yield: _____ gal./min. with _____ foot drawdown after _____ hours.

11. **FLOWING WELL** (Owner is responsible for control of flowing well).

If well yields artesian flow, yield is _____ gal./min. Surface pressure is _____ lb./sq. inch, or _____ feet of water.

The flow is controlled by: valve ☐ cap ☐ plug ☐

Does well leak around casing? Yes ☐ No ☐

12. **LOG OF WELL:** Total depth drilled 275 feet.

Depth of completed well 275 feet. Diameter of well 10 inches.

Depth to first water bearing formation 42 feet.

Depth to principal water bearing formation Top 180 feet to Bottom 265 feet.

Ground Elevation, if known 5660

From Feet	To Feet	Material Type, Texture, Color	REMARKS (Cementing, Shutoff, Packing, etc.)	Indicate Water Bearing Formation	Indicate Perforated Casing Location
0	52	Well-graded gravel with cobbles		5 GPM @ 42'	
52	57	Grey clay			
57	60	Sand			
60	88	Well-graded gravel with cobbles			
88	89	Grey clay			
89	135	Well-graded gravel with cobbles			
135	136	Clay			
136	138	White sand			
138	139	Grey clay			
139	142	Well-graded gravel with cobbles			
142	155	Grey sand			
155	162	Grey sand and shale			
162	180	Grey shale		10 GPM	
180	203	Well-graded gravel		20 GPM	Perforations
203	225	Fractured limestone		30 GPM	180' - 275'
225	265	Well-graded gravel		40 GPM	
265	275	Grey clay & fractured limestone		50 GPM	

QUALITY OF WATER INFORMATION:

Was a chemical analysis made? Yes ☒ No ☐

If so, please include a copy of the analysis with this form.

If not, do you consider the water as: Good ☒ Acceptable ☐ Poor ☐ Unusable ☐

4039/63

13. TABULATION

a. If for irrigation, the land proposed to be irrigated should be described in the following tabulation. Describe in the "Remarks" section, under Item 14, the means of conveying the water to the lands and the method of irrigation.

(Give irrigable acreage in each legal subdivision. If proposed use is for supplemental supply for lands with a right from another source, indicate in the tabulation the priority or permit number, the source of supply and the name of the ditch or other well.)

b. If not used for irrigation, show the area and point(s) of use and location of well in the tabulation below. Also describe the method of conveyance in the "Remarks" section under Item 14.

Township	Range	Sec.	NE¼				NW¼				SW¼				SE¼				TOTALS
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	

TOTAL NUMBER OF ACRES TO BE IRRIGATED_____

Original Supply_____acres

Supplemental Supply_____acres

14. PLAT

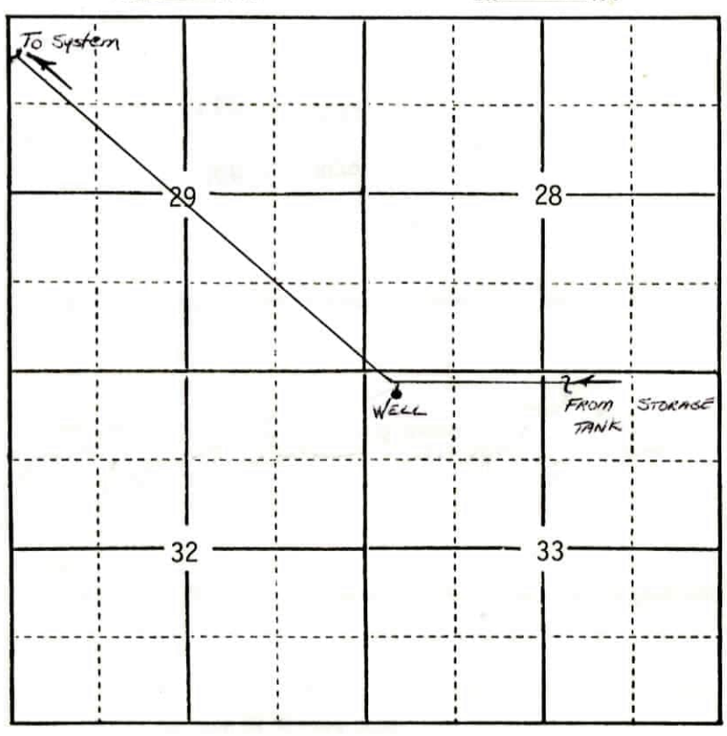
a. If the well is to be used for irrigation, industrial, miscellaneous or municipal use, show the location of the well on the plat below. For such uses, a plat certified by a licensed engineer or land surveyor is required to be submitted at the time the Proof of Appropriation and Beneficial Use of Ground Water is submitted.

b. For other uses, accurately show the well location, point of use or uses and describe method of conveyance of water to points of use on plat and in "Remarks" section below. Make certain location on plat agrees with written description.

c. A separate map may be submitted if the information required cannot be shown on this plat.

R. 118 W. R. 118 W.

Scale: 2" = 1 Mile



REMARKS: The Alpine Well #1 is connected to the existing water distribution system serving Alpine, Wyoming. This system includes a 40,000 gallon storage tank which supplies water through gravity flow.

U.W. 39163

15. **IF WELL IS TO BE ABANDONED, complete Items 1 through 8, Item 12 (Log of Well) and state reason for abandonment below.**

It is the responsibility of the owner to properly plug or fill in the well in order to prevent contamination of ground water and to cover or cap the well at ground level.

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, correct and complete.

Peter M. Jorgensen Consulting Engineer Agent — **Signature of Owner or Authorized Agent**

January 9 — **Date**, 1979

Date of Receipt ~~JAN 10 1979~~ FEB 7 1979 DW, 19____.

Date of Priority July 20, 19 77

Date of Approval June 28, 19 79

Richard L. Stockdale — **for State Engineer**

State of Wyoming)
ss
County of Teton)

I , Peter M. Jorgensen, hereby certify that Alpine Water District No. 1 well was completed and the pump installed December 4, 1978.

Peter M. Jorgensen, Agent for Alpine Water and Sewer District

The foregoing instrument was acknowledged before me by Peter M. Jorgensen this 31st day of January, 1979.

Witness my hand and official seal.

Mary S. Shoup
Notary Public

My commission expires: March 31, 1980

1-3-12
~~12-27-11~~ RCVD 0938
2569 $50.00 OH
2570 $25.00 PJ

FORM U.W. 5
Rev. 6/07
FILING FEE SCHEDULE
ON REVERSE SIDE

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E CHEYENNE, WYOMING 82002
(307) 777-6163

APPLICATION FOR PERMIT TO APPROPRIATE GROUND WATER

APPLICATION FOR WELLS AND SPRINGS

Note: Only springs flowing 25 gallons per minute or less, where the proposed use is domestic and /or stock watering, will be considered as ground water appropriations.

FOR OFFICE USE ONLY

Temporary Filing No. U.W. 42-5-518

PERMIT NO. U.W. 198240
WATER DIVISION NO. 4 DISTRICT 12
U.W. DISTRICT Lincoln County

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.
ALL ITEMS MUST BE COMPLETED BEFORE APPLICATION IS ACCEPTABLE

NAME AND NUMBER OF WELL or SPRING ALPINE WELL NO.3

1. Name of applicant(s) TOWN OF ALPINE Phone: 307-654-7754

2. Address of applicant(s) P.O. Box 3070 Alpine WY 83128
(MAILING ADDRESS) (CITY) (STATE) (ZIP)

3. Name & address of agent to receive correspondence and notices Robert Ablondi; Rendezvous Engineering
P.O. Box 4858 Jackson WY 83001 Phone: 307-733-5252
(MAILING ADDRESS) (CITY) (STATE) (ZIP)

4. Use to which the water will be applied:

☐ Domestic: Use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totaling one acre or less. Number of houses served?____.

☐ Stock Watering: Normal livestock use at four tanks or less within one mile of well or spring. Stockwatering pipelines and commercial feedlots are a miscellaneous use. Number of stock tanks?____.

☐ Irrigation: Watering of any lands for agricultural purposes not covered by the definition of domestic use (large-scale lawn watering of golf courses, cemeteries, recreation areas, etc., is miscellaneous use).

☒ Municipal: Use of water in incorporated Towns and Cities. Note 1: use of water in unincorporated towns, subdivisions, improvement districts, mobile home parks, etc. is classified as miscellaneous use. Note 2: a permit may be required by the Wyoming Department of Environmental Quality (WDEQ) if the well will be classified as a public water supply under the WDEQ's rules and regulations.

☐ Industrial: Long term use of water for the manufacture of a product or production of oil/gas or other minerals (oil field water flood operations, power plant water supply, etc.). (Describe in REMARKS)

☐ Miscellaneous: Any use of water not defined under previous definitions such as stock water pipelines, subdivisions, mine dewatering, mineral/oil exploration drilling, potable supplies in office, etc. (Describe in Remarks). Note: a permit may be required by the WDEQ if the well will be classified as a public water supply under the WDEQ's rules and regulations.

☐ Coalbed Methane Water produced in the production of coal bed methane gas. Note: wells used in the production of coal bed methane gas will require a permit from the Wyoming Oil and Gas Conservation Commission.

☐ Monitor, Observation Note: a WDEQ permit may be required ☐ Test Well: (Describe in REMARKS)

5. Location of the well or spring: (NOTE: Quarter-quarter (40 acre subdivision) MUST be shown. EXAMPLE: SE 1/ 4 NW 1/ 4 of Sec. 12, Township 14 North, Range 68 West.)
Lincoln County, NW 1/4 NW 1/4 of Sec. 33, T. 37 N., R. 118 W. of the 6th P.M. (W.R.M.), Wyoming. If located in a platted subdivision, also provide Lot/Tract ____ Block ____ of the ____ Subdivision (or Add'n) of ____. Resurvey Location: Tract ____, (or Lot) ____.
Dep. Resurveyed per GLO

6. Estimated depth of the well or spring is 267 feet. Estimated production interval is 215 ft. to 267 ft.

7. (a) MAXIMUM instantaneous flow of water to be developed and beneficially used: ~~700~~ 450 Adj. Amt. gallons per minute. NOTE: if for domestic and / or stock use, this application will be processed for a maximum of 25 gallons per minute. For a spring, after approval of this application, some type of artificial diversion or improvement must be constructed to qualify for a water right.

(b) MAXIMUM volumetric quantity of water to be developed and beneficially used per calendar year: 300 acre feet. Circle appropriate units: (Gallons) (Acre Feet) A four person family utilizes approximately one (1) acre-foot of water per year or 325,000 gallons.

8. Mark the point(s) or area(s) of use in the tabulation box below. Note: Upper row refers to the quarter of the section. Next row refers to the quarter of the quarter section.

TABULATION BOX See Attachment Sheet

TWP	RNG	SEC	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
37N	118W	28								OUT		x	x						
37N	118W	29			x (LOT 7)				(LOT 6) x		x	x (LOT 5)	x	x	x	x	x	x	
37N	118W	30									x			x	x (LOT 8)	x	x	x	

Dep. Resurveyed per GLO

SEE REVERSE SIDE

Permit No. U.W. 198240 Book No. 1427 Page No. 40

9. If for irrigation use:
   a. Describe MAXIMUM acreage to be irrigated in each 40 acre subdivision in the tabulation box above.
   b. ☐ Land will be irrigated from this well only.
   c. ☐ Land is irrigated from existing water right(s) with water from this well to be additional supply. Describe existing water right(s) under REMARKS.

10. If for irrigation use, describe method of irrigation, i.e. center pivot sprinkler, flood, etc.: _____

11. The well or spring is to be constructed on lands owned by United States Department of Agriculture
(The granting of a permit does not constitute the granting of a right-of-way. If any easement or right-of-way is necessary in connection with this application, it should be understood that the responsibility is the applicant's. A copy of the agreement should accompany this application, if the land is privately owned and the owner is not the co-applicant.)

12. The water is to be used on lands owned by Town of Alpine
(If the landowner is not the applicant, a copy of the agreement relating to the usage of the appropriated water on the land should be submitted to this office. If the landowner is included as co-applicant on the application, this procedure need not be followed.) NOTE: Water rights attach to the area(s) and/or point(s) of use.

REMARKS: This application seeks a refiling of test well drilled as UW184354. Water from this appropriation shall be co-mingled with permit 39163 (enl. 78067, 98662, and 189882) and also with permit 77717 (enl.189883).

Under penalties of perjury, I declare that I have examined this application and to the best of my knowledge and belief it is true, correct and complete.

_____ 12/23 , 20 11
Signature of Applicant or Authorized Agent — Date

THE LEGALLY REQUIRED FILING FEE MUST ACCOMPANY THIS APPLICATION

DOMESTIC AND/OR STOCK WATERING USES (Domestic use is defined as use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totalling one acre or less.)	$25.00
IRRIGATION, MUNICIPAL, INDUSTRIAL, MISCELLANEOUS, COAL BED METHANE	$50.00
MONITOR (For water level measurements or chemical quality sampling) or TEST WELL	No Fee

IF WELL WILL SERVE MULTIPLE USES, SUBMIT ONLY ONE (THE HIGHER) FILING FEE.

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

THE STATE OF WYOMING)
) ss.
STATE ENGINEER'S OFFICE)

This instrument was received and filed for record on the 3 day of January, A.D. 20 12, at 9:38 o'clock A. M.

Permit No. U.W. 198240

_____
for State Engineer

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This application is approved subject to the condition that the proposed use shall not interfere with any existing rights to ground water from the same source of supply and is subject to regulation and correlation with surface water rights, if the ground and surface waters are interconnected. The use of water hereunder is subject to the further provisions of Chapter 169, Session Laws of Wyoming, 1957, and any subsequent amendments thereto.

Granting of a permit does not guarantee the right to have the water level or artesian pressure in the well maintained at any specific level. The well should be constructed to a depth adequate to allow for the maximum development and beneficial use of ground water in the source of supply.

If the well is a flowing artesian well, it shall be so constructed and equipped that the flow may be shut off when not in use without loss of water into sub-surface formations or at the land surface.

Coal Bed Methane wells have Additional Conditions and Limitations on attachment sheet.

FOR ADDITIONAL CONDITIONS AND LIMITATIONS SEE ATTACHED STATUS SHEET.

This permit and accompanying notices serve to register an existing well and establish a valid water right for the same. Time limit for Completion of Construction and Completion of Beneficial Use is waived.

~~Approval of this application may be considered as authorization to proceed with construction of the proposed well or spring. A Statement of Completion will be filed within thirty (30) days of completion of construction, including pump installation.~~

~~Completion of construction and completion of the beneficial use of water for the purposes specified in Item 4 of this application will be made by December 31, 20____.~~

The amount of appropriation shall be limited to the quantity to which permittee is entitled as determined at time of proof of application of water to beneficial use.

Witness my hand this 26TH day of June, A.D. 20 12.

_____
PATRICK T. TYRRELL, State Engineer

ATTACHMENT SHEET FOR Alpine Well No. 3, PERMIT # U.W. 198240

TWN	RGE	SEC	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
			Water from this well will be used for municipal purposes, within the Town of Alpine's Service area as described below. The water from this well will be commingled with water from: 1. Alpine Water District No. 1 Well, Permit No. U.W. 39163, 2. First Enlargement of Alpine Water District No. 1 Well, Permit No. U.W. 78067, 3. 2nd Enlargement Alpine Water District No. 1 Well, Permit No. U.W. 98662, 4. 3rd Enlargement Alpine Water District No. 1 Well, Permit No. U.W. 189882, 5. Alpine Water & Sewer District Well #2, Permit No. U.W. 77717, 6. First Enlargement Alpine Water & Sewer District Well #2, Permit No. U.W. 189883, 7. Original supply from Mill Creek Spring Area, tributary Mill Creek, tributary Pine Creek, tributary Grey's or John Day's River, tributary Snake River through the Alpine Water and Sewer District Pipeline under Permit No. 24104D, priority July 9, 1973, and 8. Supplemental supply Mill Creek Spring Area, tributary Mill Creek, tributary Pine Creek, tributary Grey's or John Day's River, tributary Snake River through the Enlargement Alpine Water and Sewer District Pipeline under Permit No. 6910E, priority December 27, 1985.															
Dep. Resurvey																			
37	118	28									X	X	X	X					
37	118	29			X Lot 7					X Lot 6	X	X Lot 5	X	X	X	X	X	X	
37	118	30									X			X	X Lot 7	X Lot 8	X	X	

per proof kc

PERMIT NO. U.W. 198240
T.F. No. 42-5-518

PERMIT STATUS

Priority Date: January 3, 2012 **Approval Date:** JUN 26 2012

The water appropriated under this groundwater permit and the waters of the **Greys River** and its tributaries have been determined to constitute one source of supply and the provisions of Section 41-3-916, Wyoming Statutes, shall apply as follows:

> "41-3-916. Priority of rights when 1 source of supply. Where underground waters in different aquifers are so interconnected as to constitute in fact one source of supply, or where underground waters and the waters of surface streams are so interconnected as to constitute in fact one source of supply, priorities of rights to the use of such interconnected waters shall be correlated and such single schedule of priorities shall relate to the whole common water supply. The state engineer may by order adopt any of the corrective controls specified in section 17 of this act [41-3-915]. Source: Laws 1957, ch. 169, 18;W.S. 1957, 41-133."

As such, any required regulation of the water rights of the **Greys River** and its tributaries in the future shall consider this permit under the priority date shown, together with all other rights to use water from the **Greys River** and its tributaries.

ADDITIONAL CONDITIONS AND LIMITATIONS:

1. A meter acceptable to the State Engineer is required to accurately measure the total quantity of water produced from this well.

2. An annual report shall be submitted to the State Engineer no later than February 15 of each year stating the total amount of water produced from this well and other wells used to supply water to the Alpine Water & Sewer District each month during the previous January 1 to December 31, twelve (12) month period.

3. The report shall identify the well(s) by name(s), location(s), permit number(s) and shall identify the type of meter(s) used for the measurement(s).

4. The report shall contain at least two (2) semi-annual measurements of the pumping water level in this well and the other wells used to supply water to the Alpine Water & Sewer District, as measured after a minimum of twenty-four (24) consecutive hour of pumping. The dates the measurements were obtained and the period of time the well was pumped prior to obtaining the measurements must be specified.

5. The report shall contain at least two (2) semi-annual measurements of the static water level in this well and the other wells used to supply water to the Alpine Water & Sewer District, as measured twenty-four (24) consecutive hours after pumping has ceased. The dates the measurements were obtained and the period of time the well and the other wells were "shut-in" prior to obtaining the measurements must be specified.

6. Water produced from Alpine Water District No. 1 Well, Permit No. U.W. 39163, First Enlargement of Alpine Water District No. 1 Well, Permit No. U.W. 78067, 2nd Enlargement Alpine Water District No. 1 Well, Permit No. U.W. 98662, 3rd Enlargement Alpine Water District No. 1 Well, Permit No. U.W.

189882, Alpine Water & Sewer District Well #2, Permit No. U.W. 77717, First Enlargement Alpine Water & Sewer District Well #2, Permit No. U.W. 189883, and Alpine Well No. 3, T.F. No. 42-5-518 shall not exceed:

a. an annual average combined total of 400 acre-feet.
b. a combined total of 500 acre-feet in any one given year.
c. a total of 4,000 acre-feet in any consecutive 10-year period.

7. The State Engineer may, upon written request, waive or modify all or any portion of these conditions and limitations.

June 26, 2012
Date of Approval

Lisa Lindemann, Administrator
Ground Water Division

COPY OF THIS PERMIT MAILED TO:
JADE HENDERSON – SUPERINTENDENT
WATER DIVISION IV
PO BOX 277
COKEVILLE, WY 83114

December 27, 2011 - Statement of Completion on September 1, 2011 received.

December 27, 2011 - Proof of Beneficial Use on September 1, 2011 received.

Cert. Rec. U.W. 20 Page 283
Proof No. U.W. 6818 Acres
G.P.M. 650 Irr. Sto. Dom.
Misc. Mun. X Ind.
Map No. 1644E

SCANNED FEB 04 2015

FORM U.W.6
Rev. 1/07

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E
CHEYENNE, WYOMING 82002

(307) 777-6163

RECEIVED
DEC 27 2011
STATE ENGINEERS
CHEYENNE, WYOMING

SCANNED FEB 04 2015

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL OR SPRING

NOTE: Do not fold this form. Use typewriter or print neatly with black pen.

PERMIT NO. U.W. 198240 NAME OF WELL/SPRING ALPINE WELL No.3

1. NAME OF OWNER Town of Alpine

2 ADDRESS P.O. Box 3070
☐ Please check if address has changed from that shown on permit
City Alpine State WY Zip Code 83128 Phone No. 307-654-7754

3. USE OF WATER ☐ Domestic ☐ Stock Watering ☐ Irrigation ☒ Municipal ☐ Industrial ☐ Miscellaneous
☐ Monitor or Test ☐ Coal Bed Methane Explain proposed use (Example: One single family dwelling)
Supplement the existing municipal supply wells for Town of Alpine

4. LOCATION OF WELL/SPRING NW 1/4 NW 1/4 of Section 33 T, 37 N.,R. 118 W., of the 6th P.M. (or W.R.M.) Vok
Subdivision Name _____ Lot _____ Block _____
Resurvey Location Tract _____ or Lot _____ Datum ☐ NAD27 ☐ NAD83 _____
Geographic Coordinates: Latitude 43d 09'20.48" N Longitude 111d 00'15.05" W (degrees, minutes, seconds)
UTM: Zone _____ Northing _____ Easting _____ (meters)
State Plane Coordinates: Zone _____ Northing _____ Easting _____ (feet)
Land surface elevation (ft. above mean sea level) 5700 Datum ☐ NAVD29 ☐ NAVD88
Source ☐ GPS ☒ Map ☐ Survey ☐ Unkown ☐ Other ☐ Altimeter (for elevation only)

5. TYPE OF CONSTRUCTION ☒ Drilled Dual Air Rotary ☐ Dug ☐ Driven ☐ Other
Describe Foremost DR24

6. CONSTRUCTION Total depth of well/spring 267 ft.
Depth of static water level 75 ft. (below land surface) Casing height 1.5 ft. above ground
a. Diameter of borehole (bit size) 10.75 inches
b. Casing schedule ☒ New ☐ Used Joint type ☐ Threaded ☐ Glued ☒ Welded
10" diameter from 1.5 ft. to -230 ft. Material Steel Gage _____
_____ diameter from _____ ft. to _____ ft. Material _____ Gage _____
c. Cemented/grouted interval, from _____ ft. to _____ ft.
Amount of cement/grout used _____ (example: 10 sacks) type _____ (example: bentonite pellets)
d. Type of completion ☐ Customized perforations ☐ Open hole ☒ Factory screen
Type of perforator used _____
Size of perforations _____ inches by _____ inches.
Number of perforations and depths where perforated
_____ perforations from _____ ft. to _____ ft.
_____ perforations from _____ ft. to _____ ft.
Open hole from _____ ft. to _____ ft.
Well screen details
Diameter 10" Telescope slot size .125" set from 230 ft. to 267 ft.
Diameter _____ slot size _____ set from _____ ft. to _____ ft.
e. Well development method Rig air & test pump How long was well developed? 15hr
f. Was a filter/gravel pack installed? ☐ Yes ☒ No Size of sand/gravel _____
Filter/gravel pack installed from _____ ft. to _____ ft.
g. Was surface casing used? ☒ Yes ☐ No Was it cemented in place? ☐ Yes ☒ No Well was drilled prior to 2010 K
Surface casing installed from 2 ft. to -30 ft.

7. NAME AND ADDRESS OF DRILLING COMPANY Weber Drilling, 1305 Gregory Ln, Jackson WY

8. DATE OF COMPLETION OF WELL (including pump installation) OR SPRING (first used) September 1, 2011 Rec'd 12-27-11 PT

9. PUMP INFORMATION Manufacturer Robbco Type 7THC, 5-stage submersible
Source of power Utility Horsepower 75 Depth of pump setting or intake 209 ft.
Amount of water being pumped ~~700~~ 650 Adj. Amt. gal./min.* (For springs or flowing wells, see item 10)
Total volumetric quantity used per calendar year.* Applicaiton for 300 ac.ft.
*If these amounts exceed permitted amount an enlargement is required.

10. FLOWING WELL OR SPRING (Owner is responsible for control of flowing well)
If artesian flow or spring, yield is _____ gal./min. *Surface pressure is _____ lb./sq.inch, or _____ feet of water.
The flow is controlled by ☐ Valve ☐ Cap ☐ Plug
Does well leak around casing? ☐ Yes ☐ No

Permit No. U.W. 198240 Book No. 1427 Page No. 40

SEE REVERSE SIDE

11. IF SPRING, HOW WAS IT CONSTRUCTED? (Some method of artificial diversion, i.e., spring box, cribbing, etc., is necessary to qualify for a water right) _____

12. PUMP TEST Was a pump test conducted? ☒ Yes ☐ No
If so, by whom Weber Drilling, monitored by Rendezvous Engineering
Yield 600 gal./min. with 67 ft. drawdown after 1 hours
Yield 500 gal./min. with 122 ft. drawdown after 18 hours

13. LOG OF WELL Total depth drilled _____ ft.
Depth of completed well 267 ft. Diameter of well 10 inches
Depth to first water bearing formation 115 ft.
Depth to principal water bearing formation Top 230 ft. to Bottom 265 ft.

DRILL CUTTINGS DESCRIPTION

From Feet	To Feet	Rock Type or Description	Formation	Water Bearing? (Yes or no)
Surface	45	Sandy Clays, brown	Salt Lake	no
45	115	Gravel & sand	Salt Lake	no
115	195	Frac. Limestone, black	Madison	no
195	215	Brown Clay	Madison	no
215	267	Frac. Limestone, grey	Madison	Yes

14. DOES A GEOPHYSICAL LOG ACCOMPANY THIS FORM? ☐ Yes ☒ No

15. QUALITY OF WATER INFORMATION

Does a chemical and/or bacteriological water quality analysis accompany this form? ☒ Yes ☐ No
It is recommended that chemical and bacteriologic water quality analyses be performed and that the report(s) be filed with the records of this well (contact Department of Agriculture, Analytical Lab Services, Laramie, 742-2984).
If not, do you consider the water as ☐ Good ☐ Acceptable ☐ Poor ☐ Unusable

REMARKS This well was originally filed as a test well for the WWDC under UW 184354. Application for municipal supply accompanies this form. Water from this well will be comingled with Well No.1 (Permit 39163, 78067 enl, 98662 enl, 189882 enl) and Well No. 2 (Permit 77717, 189883 enl)

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, correct, and complete.

Signature of Owner or Authorized Agent — Date 12/23, 20 11

FOR STATE ENGINEER'S USE ONLY

Permit No. U.W. 198240

Date of Receipt DEC 27 2011, 20____ Date of Approval 6/21/12, 20____

Date of Priorty _____, 20____ for State Engineer

DEC 31 2011

FORM U.W. 5
Rev. 3-95
FILING FEE SCHEDULE
ON REVERSE SIDE

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E CHEYENNE, WYOMING 82002

MICROFILMED FEB 20 1996

9:00
10:35
12/12

APPLICATION FOR PERMIT TO APPROPRIATE GROUND WATER

APPLICATION FOR WELLS AND SPRINGS

Note: Only springs flowing 25 gallons per minute or less, where the proposed use is domestic and/or stock watering, will be considered as ground water appropriations.

FOR OFFICE USE ONLY

PERMIT NO. U.W. 101242
WATER DIVISION NO. 4 DISTRICT 12
U.W. DISTRICT Lincoln Co.

Temporary Filing No. U.W. 24-8-258

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

ALL ITEMS MUST BE COMPLETED BEFORE APPLICATION IS ACCEPTABLE

NAME AND NUMBER OF WELL or SPRING Flying Saddle Lodge #2

1. Name of applicant(s) Bordean W. Clinger (Flying Saddle Lodge) Phone: 307-654-7561

2. Address of applicant(s) P. O. Box 227, Alpine, WY 83128
(MAILING ADDRESS) (CITY) (STATE) (ZIP)

3. Name & address of agent to receive correspondence and notices Same as above

Phone:
(MAILING ADDRESS) (CITY) (STATE) (ZIP)

4. Use to which the water will be applied:

☐ Domestic: Use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totalling one acre or less. Number of houses served? _____ .

☐ Stock Watering: Normal livestock use at four tanks or less within one mile of well or spring. Stockwatering pipelines and commercial feedlots are a miscellaneous use. Number of stock tanks? _____ .

☐ Irrigation: Watering of commercially grown crops (large-scale lawn watering of golf courses, cemeteries, recreation areas, etc., is miscellaneous use).

☐ Municipal: Use of water in incorporated Towns and Cities (use of water in unincorporated towns, subdivisions, improvement districts, mobile home parks, etc. are classified as miscellaneous use).

☐ Industrial: Long term use of water for the manufacture of a product or production of oil/gas or other minerals (oil field water flood operations, power plant water supply, etc.). (Describe in REMARKS)

☒ Miscellaneous: Any use of water not defined under previous definitions such as stockwater pipelines, subdivisions, mine dewatering, mineral / oil exploration drilling, reclamation purposes, potable and sanitary supplies in offices or light manufacturing, animal waste management, etc. Describe miscellaneous use completely: 26 UNIT MOTEL

☐ Monitor, Observation or ☒ Test Well: (Describe in REMARKS)

5. Location of the well or spring: (NOTE: Quarter-quarter (40 acre subdivision) MUST be shown. EXAMPLE: SE 1/4 NW 1/4 of Sec. 12, Township 14 North, Range 68 West.)
Lincoln County, SW 1/4 NW 1/4 of Sec. 20, T. 37 N., R. 118 W. of the 6th P.M. (or W.R.M.), Wyoming. If located in a platted subdivision, also provide Lot ____ Block ____ of the _____ Subdivision (or Add'n) of _____. Resurvey Location: Tract _____, (or Lot) _____.

6. Estimated depth of the well or spring is 160 feet.

7. (a) MAXIMUM instantaneous flow of water to be developed and beneficially used: 600 GPM gallons per minute. NOTE: If for domestic and / or stock use, this application will be processed for a maximum of 25 gallons per minute. For a spring, after approval of this application, some type of artificial diversion or improvement must be constructed to qualify for a water right.

(b) MAXIMUM volumetric quantity of water to be developed and beneficially used per calendar year: 500,000 g/yr. Circle appropriate units: (Gallons) (Acre Feet) A four person family utilizes approximately one (1) acre-foot of water per year or 325,000 gallons. * 26 motel units, double occupancy, 4 months per yr.

8. Mark the point(s) or area(s) of use in the tabulation box below.

TABULATION BOX

			NE 1/4				NW 1/4				SW 1/4				SE 1/4				TOTAL
TWP	RNG	SEC	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
37	118	20							X										
							Motel and lawn												

9. If for irrigation use:
a. Describe MAXIMUM acreage to be irrigated in each 40 acre subdivision in the tabulation box above.
b. ☐ Land will be irrigated from this well only.
c. ☐ Land is irrigated from existing water right(s) with water from this well to be additional supply. Describe existing water right(s) under REMARKS.

10. If for irrigation use, describe method of irrigation, i.e. center pivot sprinkler, flood, etc.: _____

SEE REVERSE SIDE

Permit No. U.W. 101242 Book No. 781 Page No. 43

11. The well or spring is to be constructed on lands owned by Bordean N Clinger Flying Saddle Lodge
(The granting of a permit does not constitute the granting of right-of-way. If any easement or right-of-way is necessary in connection with this application, it should be understood that the responsibility is the applicant's. A copy of the agreement should accompany this application, if the land is privately owned and the owner is not the co-applicant.)

12. The water is to be used on lands owned by Bordean W. & Carolyn Clinger
(If the landowner is not the applicant, a copy of the agreement relating to the usage of appropriated water on the land should be submitted to this office. If the landowner is included as co-applicant on the application, this procedure need not be followed.)
NOTE: Water rights attach to the area(s) and/or point(s) of use.

REMARKS: _____

Under penalties of perjury, I declare that I have examined this application and to the best of my knowledge and belief it is true, correct and complete.

Bordean N Clinger — Signature of Applicant or Authorized Agent

27 Sept — Date, 19 95

THE LEGALLY REQUIRED FILING FEE MUST ACCOMPANY THIS APPLICATION

DOMESTIC AND/OR STOCK WATERING USES (Domestic use is defined as use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totalling one acre or less.)	$25.00
IRRIGATION, MUNICIPAL, INDUSTRIAL, MISCELLANEOUS	$50.00
MONITOR (For water level measurements or chemical quality sampling) or TEST WELL	NO FEE

IF WELL WILL SERVE MULTIPLE USES, SUBMIT ONLY ONE (THE HIGHER) FILING FEE.

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

THE STATE OF WYOMING)
) ss.
STATE ENGINEER'S OFFICE)

This instrument was received and filed for record on the 12th day of December, A.D. 19 95, at 10:35 o'clock A.M.

Permit No. U.W. 101242

for State Engineer

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This application is approved subject to the condition that the proposed use shall not interfere with any existing rights to ground water from the same source of supply and is subject to regulation and correlation with surface water rights, if the ground and surface waters are interconnected. The use of water hereunder is subject to the further provisions of Chapter 169, Session Laws of Wyoming, 1957, and any subsequent amendments thereto.

Granting of a permit does not guarantee the right to have the water level or artesian pressure in the well maintained at any specific level. The well should be constructed to a depth adequate to allow for the maximum development and beneficial use of ground water in the source of supply.

If the well is a flowing artesian well, it shall be so constructed and equipped that the flow may be shut off when not in use without loss of water into sub-surface formations or at the land surface.

This permit and accompanying notices serve to register an existing well and establish a valid water right for the same. Time limit for Completion of Construction and Completion of Beneficial Use is waived.

~~Approval of this application may be considered as authorization to proceed with construction of the proposed well or spring. A Statement of Completion will be filed within thirty (30) days of completion of construction, including pump installation.~~

~~Completion of construction and completion of the beneficial use of water for the purposes specified in Item 4 of this application will be made by December 31, 19____.~~

The amount of appropriation shall be limited to the quantity to which permittee is entitled as determined at time of proof of application of water to beneficial use.

Witness my hand this 16th day of JANUARY, A.D. 1996.

Gordon W. Fassett

Gordon W. Fassett, State Engineer

December 11, 1995 - Statement of Completion in 1949 received.
January 05, 1996 - Proof of Beneficial Use in 1985 received.

MICRO FILMED FEB 20 1996

PERMIT NO. U.W. 101242

PERMIT STATUS

Priority Date: December 12, 1995 Approval Date: January 16, 1996

September 12, 2006 - This permit has been enlarged by Permit No. U.W. 178319 for additional yield, volumetric quantity and points of use only. There is no physical enlargement of this well.

June 12, 2007 - This permit has been enlarged by Permit No. U.W. 182140 for additional yield, points of use and volumetric quantity of water only. There is no physical enlargement of this well.

SCANNED NOV 22 2013

FORM U.W.6
REV. 5-93

MICRO FILMED FEB 20 1996

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BUILDING
CHEYENNE, WYOMING 82002
(307) 777-5959

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL OR SPRING

SCANNED NOV 22 2013

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

PERMIT NO. U.W. 101241 NAME OF WELL (SPRING) _____

1. NAME OF OWNER Bordean W. Clinger (Flying Saddle Lodge) #1

2. ADDRESS P. O. Box 227 Alpine, WY 83128
Please check if address has changed from that shown on permit. ☐
City Alpine State WY Zip Code 83128 Phone No. 307-654-7561

3. USE OF WATER: Domestic ☐ Stock Watering ☐ Irrigation ☐ Municipal ☐ Industrial ☐ Miscellaneous ☒
Explain proposed use (Example: One single family dwelling) Commercial
26 unit motel complex sprinkler system

4. LOCATION OF WELL (SPRING): SW ¼ NW ¼ of Section 20, T. 37 N., R. 118 W., of the 6th P.M. (or W.R.M.),
SE SE OS (LOT 1 R.S.) BOC DOCKET NO. IV-4-2011-3-1
Subdivision Name _____ Lot _____ Block _____
If surveyed, bearing, distance and reference point: _____

5. TYPE OF CONSTRUCTION: Drilled ☐ _____ Dug ☐ Driven ☐ Other ☐
(Type of Rig)
Describe: _____

6. CONSTRUCTION: Total Depth of Well/Spring 162.9 ft. Depth to Static Water Level 40 ft.
a. Diameter of borehole (Bit size) 6" inches. (Below land surface)

b. Casing Schedule New ☒ Used ☐
6" diameter from 0 ft. to ~~160~~ 162.9 ft. Material Steel Gage .250
_____ diameter from _____ ft. to _____ ft. Material _____ Gage _____

c. Was casing cemented: Yes ☒ No ☐ Cemented Interval, From _____ feet to _____ feet.

d. Number of sacks of cement used _____ type of cement _____

e. Perforations: Type of perforator used Cutting torch.
Size of perforations 1/4" inches by 6" inches.
Number of perforations and depths where perforated:
370 perforations from 80 ft. to 160 feet.
_____ perforations from _____ ft. to _____ feet.

f. Was well screen installed? Yes ☒ No ☐
Diameter: _____ slot size: _____ set from _____ feet to _____
Diameter: _____ slot size: _____ set from _____ feet to _____

g. Was well gravel packed? Yes ☐ No ☒ Size of gravel _____

h. Was surface casing used: Yes ☒ No ☐ Was it cemented in place? Yes ☐ No ☐

RECEIVED DEC 11 1995 STATE ENGINEER Cheyenne, Wyo.

RECEIVED OCT 06 1995 STATE ENGINEER Cheyenne, Wyo.

7. NAME & ADDRESS OF DRILLING COMPANY Thomas drilling Afton Wy

8. DATE OF COMPLETION OF WELL (including pump installation) OR SPRING (first used) ~~10~~ 5/5/82

9. PUMP INFORMATION: Manufacturer ~~Peerless~~ Red Jacket Type submerable
Source of power elect Horsepower 5 Depth of Pump Setting or intake ~~80~~ 90 ft.
Amount of Water Being Pumped 30 Gallons Per Minute. (For Springs or flowing wells, see item 10)
Total Volumetric Gallons Used Per Calendar Year. ~~Unk~~ Period of 4 months ea yr.
~~50,000~~ gal/year per NWS 9/96

10. FLOWING WELL (Owner is responsible for control of flowing well).
If well yields artesian flow, yield is _____ gal./min. Surface pressure is _____ lb./sq. inch, or _____ feet of water.
The flow is controlled by: valve ☐ cap ☐ plug ☐
Does well leak around casing? Yes ☐ No ☒

Permit No. U.W. 101241 Book No. 781 Page No. 42

UW 10/241

11. If spring, how was it constructed? (Some method of artificial diversion, i.e., spring box, cribbing, etc., is necessary to qualify for a water right.) _____

12. PUMP TEST: Was a pump test made? Yes ☒ No ☐
If so, by whom Vaughn Thomas Address Afton, Wy
Yield: 80 gal./min. with 6 foot drawdown after 1 hours.
Yield: _____ gal./min. with _____ foot drawdown after _____ hours.

13. LOG OF WELL: Total depth drilled 120 feet.
Depth of completed well 120 feet. Diameter of well 6 inches.
Depth to first water bearing formation 30 feet.
Depth to principal water bearing formation. Top 40 feet to Bottom 120 feet.

Ground Elevation, if known 49158

✓ **DRILL CUTTINGS DESCRIPTION:**

From Feet	To Feet	Material Type, Texture Color	Remarks (Cementing, Shutoff)	Indicate Water Bearing Formation & Name	Indicate Perforated Casing Location
0	2	Top Soil			
2	20	Clay & Gravel			
20	40	" " "			
40	60	GRAVEL		water at 80 ft	
60	80	GRAVEL & SAND			
80	100	" " "			
100	120	" " "			
120	140	" " "			
140	155	" " "			
155	162.9	GRAVEL & CLAY			

14. QUALITY OF WATER INFORMATION:
Does a chemical and/or bacteriological water quality analysis accompany this form? Yes ☐ No ☐
It is recommended that chemical and bacteriologic water quality analyses be performed and that the report(s) be filed with the records of this well. (Contact Department of Agriculture, Analytical Lab Services, Laramie, 742-2984.)
If not, do you consider the water as: Good ☒ Acceptable ☐ Poor ☐ Unusable ☐

REMARKS: Document reviewed and accepted 4/10/2013, location correctly on petition and UW 178318 and UW 182134. gpm
This was an existing well.

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, correct and complete.

Bordeau N Clevenger
Signature of Owner or Authorized Agent

12 Sept, 19 95
Date

FOR STATE ENGINEER'S USE ONLY

Date of Receipt DEC 11 1995 ~~OCT 06 1995~~, 19 _____

Date of Priority DEC 11 1995, 19 _____

Date of Approval 4/10, ~~19~~ 2013

James T Morley
for State Engineer

FORM U.W.6
REV. 5-93

MICRO FILMED FEB 20 1996

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BUILDING
CHEYENNE, WYOMING 82002
(307) 777-5959

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL OR SPRING

SCANNED NOV 22 2013

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

PERMIT NO. U.W. 101242 NAME OF WELL (SPRING) _____

1. NAME OF OWNER Bordean W. Clinger (Flying Saddle Lodge) # 2

2. ADDRESS P. O. Box 227
Please check if address has changed from that shown on permit. ☐
City Alpine State WY Zip Code 83128 Phone No. 307-654-7561

3. USE OF WATER: Domestic ☐ Stock Watering ☐ Irrigation ☐ Municipal ☐ Industrial ☐ Miscellaneous ☒
Explain proposed use (Example: One single family dwelling) 26 motel units 4 month/yr.

4. LOCATION OF WELL (SPRING): ___ ¼ ___ ¼ of Section 20, T. 37 N., R. 118 W., of the 6th P.M. (or W.R.M.),
Subdivision Name _____ Lot _____ Block _____
If surveyed, bearing, distance and reference point: _____

5. TYPE OF CONSTRUCTION: Drilled ☒ X _____ Dug ☐ Driven ☐ Other ☐
(Type of Rig)
Describe: _____

6. CONSTRUCTION: Total Depth of Well/Spring ~~700~~ 120 ft. Depth to Static Water Level 60 ft.
a. Diameter of borehole (Bit size) 6" inches. (Below land surface)

b. Casing Schedule New ☒ Used ☐
8" diameter from 0 ft. to ~~120~~ 30 ft. Material _____ Gage _____
6" diameter from 30 ft. to 120 ft. Material _____ Gage _____

c. Was casing cemented: Yes ☐ No ☐ Cemented Interval, From _____ feet to _____ feet.

d. Number of sacks of cement used _____ type of cement _____

e. Perforations: Type of perforator used _____
Size of perforations _____ inches by _____ inches.
Number of perforations and depths where perforated:
_____ perforations from _____ ft. to _____ feet.
_____ perforations from _____ ft. to _____ feet.

f. Was well screen installed? Yes ☐ No ☒
Diameter: _____ slot size: _____ set from _____ feet to _____.
Diameter: _____ slot size: _____ set from _____ feet to _____.

g. Was well gravel packed? Yes ☐ No ☒ Size of gravel _____

h. Was surface casing used: Yes ☒ No ☐ Was it cemented in place? Yes ☒ No ☐

RECEIVED DEC 11 1995 STATE ENGINEER Cheyenne, Wyo.

RECEIVED OCT 06 1995 STATE ENGINEER Cheyenne, Wyo.

7. NAME & ADDRESS OF DRILLING COMPANY ~~Mell Drilling Co.~~ Bureau of Reclamation, USGov.

8. DATE OF COMPLETION OF WELL (including pump installation) OR SPRING (first used) 1949 ~~50~~

9. PUMP INFORMATION: Manufacturer Myers Type Submergible
Source of power Elect. Horsepower 5 Depth of Pump Setting or intake 180 ft.
Amount of Water Being Pumped 50 Gallons Per Minute. (For Springs or flowing wells, see item 10.)
Total Volumetric Gallons Used Per Calendar Year. _____

10. FLOWING WELL (Owner is responsible for control of flowing well).
If well yields artesian flow, yield is _____ gal./min. Surface pressure is _____ lb./sq. inch, or _____ feet of water.
The flow is controlled by: valve ☐ cap ☐ plug ☐
Does well leak around casing? Yes ☐ No ☐

Permit No. U.W. 101242 Book No. 781 Page No. 43

UW 101242

11. If spring, how was it constructed? (Some method of artificial diversion, i.e., spring box, cribbing, etc., is necessary to qualify for a water right.) _____

12. PUMP TEST: Was a pump test made? Yes ☒ No ☐
If so, by whom [redacted] US Govermt Address [redacted] Boise, Idaho.
Yield: 60 gal./min. with _____ foot drawdown after _____ hours.
Yield: _____ gal./min. with _____ foot drawdown after _____ hours.

13. LOG OF WELL: Total depth drilled _____ feet.
Depth of completed well 120 feet. Diameter of well 6" inches.
Depth to first water bearing formation 60 feet.
Depth to principal water bearing formation. Top _____ feet to Bottom _____ feet.

Ground Elevation, if known 4900 ft

DRILL CUTTINGS DESCRIPTION:

From Feet	To Feet	Material Type, Texture Color	Remarks (Cementing, Shutoff)	Indicate Water Bearing Formation & Name	Indicate Perforated Casing Location
		Not available - Estimated			
0	2	Top soil			
2	20	Clay & Gravel			
20	40	" "			
60	80	Gravel & sand			
80	100	" "			
100	120	" "			

14. QUALITY OF WATER INFORMATION:
Does a chemical and/or bacteriological water quality analysis accompany this form? Yes ☐ No ☐
It is recommended that chemical and bacteriologic water quality analyses be performed and that the report(s) be filed with the records of this well. (Contact Department of Agriculture, Analytical Lab Services, Laramie, 742-2984.)
If not, do you consider the water as: Good ☒ Acceptable ☐ Poor ☐ Unusable ☐

REMARKS: [redacted] Driller Not known - completed & drilled by US Gov Bureau of Reclamation.

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, correct and complete.

Brian N Clinger
Signature of Owner or Authorized Agent

22 Sept, 1995
Date

DEC 11 1995

FOR STATE ENGINEER'S USE ONLY

Date of Receipt ~~OCT 06 1995~~, 19 _____ Date of Approval _____, 19 _____

Date of Priority _____, 19 _____

for State Engineer

* not. This well was drilled & permitted by the Bureau of reclamation year 1949-50. Logs, permits etc were lost in a fire of The main Lodge in 1977. I talked with mr Perry and he said to estimate as best I could - which I have - as above BNC

FORM U.W. 5
Rev. 3-95
FILING FEE SCHEDULE
ON REVERSE SIDE

MICRO FILMED FEB 20 1996

9:00
12980
10:35 12/12

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E CHEYENNE, WYOMING 82002

APPLICATION FOR PERMIT TO APPROPRIATE GROUND WATER

APPLICATION FOR WELLS AND SPRINGS

Note: Only springs flowing 25 gallons per minute or less, where the proposed use is domestic and/or stock watering, will be considered as ground water appropriations.

FOR OFFICE USE ONLY
PERMIT NO. U.W. 101241
WATER DIVISION NO. 4 DISTRICT 12
U.W. DISTRICT Lincoln Co.

Temporary Filing No. U.W. 24-7-258

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.
ALL ITEMS MUST BE COMPLETED BEFORE APPLICATION IS ACCEPTABLE

NAME AND NUMBER OF WELL or SPRING FLYING SADDLE LODGE #1

1. Name of applicant(s) Bordean W. Clinger (Flying Saddle Lodge) Phone: 307-654-7561
2. Address of applicant(s) P. O. Box 227 (MAILING ADDRESS) Alpine, (CITY) WY (STATE) 83128 (ZIP)
3. Name & address of agent to receive correspondence and notices Same As Above
(MAILING ADDRESS) (CITY) (STATE) (ZIP) Phone:
4. Use to which the water will be applied:

- [X] Domestic: Use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totalling one acre or less. Number of houses served? NONE
- [ ] Stock Watering: Normal livestock use at four tanks or less within one mile of well or spring. Stockwatering pipelines and commercial feedlots are a miscellaneous use. Number of stock tanks? _____.
- [ ] Irrigation: Watering of commercially grown crops (large-scale lawn watering of golf courses, cemeteries, recreation areas, etc., is miscellaneous use).
- [ ] Municipal: Use of water in incorporated Towns and Cities (use of water in unincorporated towns, subdivisions, improvement districts, mobile home parks, etc. are classified as miscellaneous use).
- [ ] Industrial: Long term use of water for the manufacture of a product or production of oil/gas or other minerals (oil field water flood operations, power plant water supply, etc.). (Describe in REMARKS)
- [X] Miscellaneous: Any use of water not defined under previous definitions such as stockwater pipelines, subdivisions, mine dewatering, mineral / oil exploration drilling, reclamation purposes, potable and sanitary supplies in offices or light manufacturing, animal waste management, etc. Describe miscellaneous use completely: ~~26 motel units~~ Sprinkler system for 26 motel units
- [ ] Monitor, Observation or [ ] Test Well: (Describe in REMARKS)

5. Location of the well or spring: (NOTE: Quarter-quarter (40 acre subdivision) MUST be shown. EXAMPLE: SE 1/4 NW 1/4 of Sec. 12, Township 14 North, Range 68 West.) SESE Original Survey Per BOC Docket No. IV-U-2011-3-1 SRC
Lincoln County, SW 1/4 NW 1/4 of Sec. 20, T. 37 N., R. 118 W. of the 6th P.M. (or W.R.M.), Wyoming. If located in a platted subdivision, also provide Lot ____ Block ____ of the _____ Subdivision (or Add'n) of _____. Resurvey Location: Tract _____, (or Lot) 1.
6. Estimated depth of the well or spring is 180 feet.
7. (a) MAXIMUM instantaneous flow of water to be developed and beneficially used: 55 GPM gallons per minute. NOTE: If for domestic and / or stock use, this application will be processed for a maximum of 25 gallons per minute. For a spring, after approval of this application, some type of artificial diversion or improvement must be constructed to qualify for a water right.

(b) MAXIMUM volumetric quantity of water to be developed and beneficially used per calendar year: 500,000 g/yr.
Circle appropriate units: (Gallons) (Acre Feet) A four person family utilizes approximately one (1) acre-foot of water per year or 325,000 gallons.
* Sprinkler system covers approx. 4 acres and is used 4 months each year ie JUNE - OCT.

8. Mark the point(s) or area(s) of use in the tabulation box below.

TABULATION BOX

TWP	RNG	SEC	NE 1/4				NW 1/4				SW 1/4				SE 1/4				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
37	118	20							X									X	BOC Docket NO. IV-U-2011-3-1 SRC

9. If for irrigation use:
   a. Describe MAXIMUM acreage to be irrigated in each 40 acre subdivision in the tabulation box above.
   b. [ ] Land will be irrigated from this well only.
   c. [ ] Land is irrigated from existing water right(s) with water from this well to be additional supply. Describe existing water right(s) under REMARKS.
10. If for irrigation use, describe method of irrigation, i.e. center pivot sprinkler, flood, etc.: Sprinkler

SEE REVERSE SIDE

Permit No. U.W. 101241 Book No. 781 Page No. 42

11. The well or spring is to be constructed on lands owned by BORDEAN W CLINGER (Flying Saddle Lodge)
(The granting of a permit does not constitute the granting of right-of-way. If any easement or right-of-way is necessary in connection with this application, it should be understood that the responsibility is the applicant's. A copy of the agreement should accompany this application, if the land is privately owned and the owner is not the co-applicant.)

12. The water is to be used on lands owned by Bordean W. & Carolyn Clinger
(If the landowner is not the applicant, a copy of the agreement relating to the usage of appropriated water on the land should be submitted to this office. If the landowner is included as co-applicant on the application, this procedure need not be followed.)
NOTE: Water rights attach to the area(s) and/or point(s) of use.

REMARKS: _____

Under penalties of perjury, I declare that I have examined this application and to the best of my knowledge and belief it is true, correct and complete.

Bordean W Clinger — Signature of Applicant or Authorized Agent

22 Sept, 19 95 — Date

THE LEGALLY REQUIRED FILING FEE MUST ACCOMPANY THIS APPLICATION

DOMESTIC AND/OR STOCK WATERING USES (Domestic use is defined as use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totalling one acre or less.)	$25.00
IRRIGATION, MUNICIPAL, INDUSTRIAL, MISCELLANEOUS	$50.00
MONITOR (For water level measurements or chemical quality sampling) or TEST WELL	NO FEE

IF WELL WILL SERVE MULTIPLE USES, SUBMIT ONLY ONE (THE HIGHER) FILING FEE.

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

THE STATE OF WYOMING)
) ss.
STATE ENGINEER'S OFFICE)

This instrument was received and filed for record on the 12th day of December, A.D. 19 95, at 10:35 o'clock A. M.

Permit No. U.W. 101241

for State Engineer

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This application is approved subject to the condition that the proposed use shall not interfere with any existing rights to ground water from the same source of supply and is subject to regulation and correlation with surface water rights, if the ground and surface waters are interconnected. The use of water hereunder is subject to the further provisions of Chapter 169, Session Laws of Wyoming, 1957, and any subsequent amendments thereto.

Granting of a permit does not guarantee the right to have the water level or artesian pressure in the well maintained at any specific level. The well should be constructed to a depth adequate to allow for the maximum development and beneficial use of ground water in the source of supply.

If the well is a flowing artesian well, it shall be so constructed and equipped that the flow may be shut off when not in use without loss of water into sub-surface formations or at the land surface.

This permit and accompanying notices serve to register an existing well and establish a valid water right for the same. Time limit for Completion of Construction and Completion of Beneficial Use is waived.

~~Approval of this application may be considered as authorization to proceed with construction of the proposed well or spring. A Statement of Completion will be filed within thirty (30) days of completion of construction, including pump installation.~~

~~Completion of construction and completion of the beneficial use of water for the purposes specified in Item 4 of this application will be made by December 31, 19____.~~

The amount of appropriation shall be limited to the quantity to which permittee is entitled as determined at time of proof of application of water to beneficial use.

Witness my hand this 16th day of JANUARY, A.D. 19 96.

Gordon W. Fassett

Gordon W. Fassett, State Engineer

December 11, 1995 - Statement of Completion on May 05, 1982 received.
January 05, 1996 - Proof of Beneficial Use in 1982 received.

MICRO FILMED FEB 20 1996

PERMIT NO. U.W. 101241

PERMIT STATUS

Priority Date: December 12, 1995 Approval Date: January 16, 1996

September 12, 2006 - This permit has been enlarged by Permit No. U.W. 178318 for additional yield, volumetric quantity and points of use only. There is no physical enlargement of this well.

June 12, 2007 - This permit has been enlarged by Permit No. U.W. 182139 for additional yield, volumetric quantity of water and points of use only. There is no physical enlargement of this well.

August 17, 2011 - BOARD OF CONTROL PETITION DOCKET IV-U-2011-3-2 GRANTED for Change in Location of the Flying Saddle Lodge #1 Well, Permit No. U.W. 101241 from its erroneously described location in the SW¼NW¼ of Section 20, Township 37 North, Range 118 West, to its present location in Lot 1 of Section 20 (Latitude 43° 10′ 24.57″, Longitude 111° 0′ 29.07″), a distance of 49.0 feet from its present location.

BOC Petition Docket IV-U-2011-3-2 filed in Board of Control's "Petitions Granted" file under "North Star Utility Company" See Order Record 81Page 187.

SCANNED NOV 22 2013

FORM UW5-24614
Rev. 6/07
FILING FEE SCHEDULE ON REVERSE SIDE
E22373

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E CHEYENNE, WYOMING 82002
(307) 777-6163

APPLICATION FOR PERMIT TO APPROPRIATE GROUND WATER

09/16/16

APPLICATION FOR WELLS AND SPRINGS

Note: Only springs flowing 25 gallons per minute or less, where the proposed use is domestic and /or stock watering, will be considered as ground water appropriations.

FOR OFFICE USE ONLY

PERMIT NO. U.W. 206257
WATER DIVISION NO. 4 DISTRICT 16
U.W. DISTRICT Lincoln County

Temporary Filing No. U.W. 44-5-225W

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.
ALL ITEMS MUST BE COMPLETED BEFORE APPLICATION IS ACCEPTABLE

NAME AND NUMBER OF WELL or SPRING: EXCEL DEVELOPMENT WELL NO. 1

1. Name of applicant(s): EXCEL DEVELOPMENT LLC Phone: 000-000-0000
2. Address of applicant(s): PO BOX 3309 (MAILING ADDRESS) ALPINE (CITY) Wyoming (STATE) 83128 (ZIP)
3. Name & address of agent to receive correspondence and notices: SURVEYOR SCHERBEL LTD
   PO BOX 725 (MAILING ADDRESS) AFTON (CITY) Wyoming (STATE) 83110 (ZIP) Phone: 307-885-9319
4. Use to which the water will be applied:

☐	Domestic:	Use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totaling one acre or less. Number of houses served?____.
☐	Stock Watering:	Normal livestock use at four tanks or less within one mile of well or spring. Stockwatering pipelines and commercial feedlots are a miscellaneous use. Number of stock tanks?___ .
☐	Irrigation:	Watering of any lands for agricultural purposes not covered by the definition of domestic use (large-scale lawn watering of golf courses, cemeteries, recreation areas, etc., is miscellaneous use).
☐	Municipal:	Use of water in incorporated Towns and Cities. Note 1: use of water in unincorporated towns, subdivisions, improvement districts, mobile home parks, etc. is classified as miscellaneous use. Note 2: a permit may be required by the Wyoming Department of Environmental Quality (WDEQ) if the well will be classified as a public water supply under the WDEQ's rules and regulations.
☐	Industrial:	Long term use of water for the manufacture of a product or production of oil/gas or other minerals (oil field water flood operations, power plant water supply, etc.). (Describe in REMARKS)
☒	Miscellaneous:	Any use of water not defined under previous definitions such as stock water pipelines, subdivisions, mine dewatering, mineral/oil exploration drilling, potable supplies in office, etc. (Describe in Remarks). Note: a permit may be required by the WDEQ if the well will be classified as a public water supply under the WDEQ's rules and regulations.
☐	Coalbed Methane	Water produced in the production of coal bed methane gas. Note: wells used in the production of coal bed methane gas will require a permit from the Wyoming Oil and Gas Conservation Commission.
☐	Monitor, Observation	Note: a WDEQ permit may be required ☐ Test Well: (Describe in REMARKS)

5. Location of the well or spring: (NOTE: Quarter-quarter (40 acre subdivision) MUST be shown. EXAMPLE: SE 1/ 4 NW 1/ 4 of Sec. 12, Township 14 North, Range 68 West.)
   Lincoln County, NW 1/4 NE 1/4 of Sec. 19, T. 037N, R. 118W of the 6th P.M. (W.R.M.), Wyoming. If located in a platted subdivision, also provide Lot/Tract ___ Block ___ of the Subdivision (or Add'n) of ___ . Resurvey Location: Tract ___ , (or Lot) ___ .
6. Estimated depth of the well or spring is 100 feet. Estimated production interval is ___ ft. to ___ ft.
7. (a) MAXIMUM instantaneous flow of water to be developed and beneficially used: 500 gallons per minute. NOTE: if for domestic and / or stock use, this application will be processed for a maximum of 25 gallons per minute. For a spring, after approval of this application, some type of artificial diversion or improvement must be constructed to qualify for a water right.

   (b) MAXIMUM volumetric quantity of water to be developed and beneficially used per calendar year: 350 acre-feet . Circle appropriate units: (Gallons) (Acre Feet) A four person family utilizes approximately one (1) acre-foot of water per year or 325,000 gallons.
8. Mark the point(s) or area(s) of use in the tabulation box below. Note: Upper row refers to the quarter of the section. Next row refers to the quarter of the quarter section.

TABULATION BOX

TWP	RNG	SEC	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
								(See Attachment Sheet.)											

SEE REVERSE SIDE

Permit No. U.W. 206257 Book No. 1480 Page No. 107

9. If for irrigation use:
   a. Describe MAXIMUM acreage to be irrigated in each 40 acre subdivision in the tabulation box above.
   b. ☐ Land will be irrigated from this well only.
   c. ☐ Land is irrigated from existing water right(s) with water from this well to be additional supply. Describe existing water right(s) under REMARKS.

10. If for irrigation use, describe method of irrigation, i.e. center pivot sprinkler, flood, etc.: _____

11. The well or spring is to be constructed on lands owned by EXCEL DEVELOPMENT LLC
(The granting of a permit does not constitute the granting of a right-of-way. If any easement or right-of-way is necessary in connection with this application, it should be understood that the responsibility is the applicant's. A copy of the agreement should accompany this application, if the land is privately owned and the owner is not the co-applicant.)

12. The water is to be used on lands owned by EXCEL DEVELOPMENT LLC
(If the landowner is not the applicant, a copy of the agreement relating to the usage of the appropriated water on the land should be submitted to this office. If the landowner is included as co-applicant on the application, this procedure need not be followed.) NOTE: Water rights attach to the area(s) and/or point(s) of use.

REMARKS: The water from the proposed well site will be used for a central water system to be constructed in accordance to WYDEQ requirements for a subdivision water system. The water system will serve approximately 300 home sites. It is our understanding that once the system serves 25 or more people that a certified operator (See Continuation Sheet for remaining remarks.)

Under penalties of perjury, I declare that I have examined this application and to the best of my knowledge and belief it is true, correct and complete.

SURVEYOR SCHERBEL LTD
Signature of Applicant or Authorized Agent

September 16, 2016
Date

THE LEGALLY REQUIRED FILING FEE MUST ACCOMPANY THIS APPLICATION

DOMESTIC AND/OR STOCK WATERING USES (Domestic use is defined as use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totalling one acre or less.)	$50.00
COAL BED METHANE USE	$50.00
IRRIGATION, MUNICIPAL, INDUSTRIAL, MISCELLANEOUS USES	$75.00
MONITOR(For water level measurements or chemical quality sampling) or TEST WELL USES	No Fee

IF WELL WILL SERVE MULTIPLE USES, SUBMIT ONLY ONE (THE HIGHER) FILING FEE.

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

THE STATE OF WYOMING)
) ss.
STATE ENGINEER'S OFFICE)

This instrument was received and filed for record on the 16 day of September, A.D. 20 16, at 11:27 o'clock A M.

Permit No. U.W. **206257**

MARKUS MALESSA For State Engineer

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This application is approved subject to the condition that the proposed use shall not interfere with any existing rights to ground water from the same source of supply and is subject to regulation and correlation with surface water rights, if the ground and surface waters are interconnected. The use of water hereunder is subject to the further provisions of Chapter 169, Session Laws of Wyoming, 1957, and any subsequent amendments thereto.

Granting of a permit does not guarantee the right to have the water level or artesian pressure in the well maintained at any specific level. The well should be constructed to a depth adequate to allow for the maximum development and beneficial use of ground water in the source of supply.

If the well is a flowing artesian well, it shall be so constructed and equipped that the flow may be shut off when not in use without loss of water into sub-surface formations or at the land surface.

Coal Bed Methane wells have Additional Conditions and Limitations on attachment sheet.

September 30, 2017 – Notice of Expiration of Time for Completion and/or Completion of Beneficial Use mailed.

FOR ADDITIONAL CONDITIONS AND LIMITATIONS SEE ATTACHED STATUS SHEET.

May 23, 2018 - This permit has been enlarged by Permit No. U.W. 209144 for additional use, points of use, and volumetric quantity

(See attached Status Sheet.)

Approval of this application may be considered as authorization to proceed with construction of the proposed well or spring. A Statement of Completion will be filed within thirty (30) days of completion of construction, including pump installation.

Completion of construction and completion of the beneficial use of water for the purposes specified in Item 4 of this application will be made by December 31, 2017.

The amount of appropriation shall be limited to the quantity to which permittee is entitled as determined at time of proof of application of water to beneficial use.

Witness my hand this 28 day of September, A.D. 20 16 .

LISA LINDEMANN For State Engineer

PERMIT NO. 206257

PERMIT STATUS

Priority Date September 16, 2016 Approval Date September 28, 2016

ADDITIONAL CONDITIONS AND LIMITATIONS:

October 9, 2017 - Request for extension of time for completion of beneficial use extended until December 31, 2020. See scanned image in e-permit documents. Applicant notified of extension by letter on November 14, 2017 .

.....

October 9, 2017 - Statement of Completion on September 2, 2017 received.

.....

May 23, 2018 - This permit has been enlarged by Permit No. U.W. 209144 for additional use, points of use, and volumetric quantity only. There is no physical enlargement of this well.

.....

December 24, 2020 - Request for extension of time for completion of beneficial use approved through December 31, 2023. Applicant notified of extension by email/letter on December 31, 2020 .

.....

1. A meter acceptable to the State Engineer is required to accurately measure the total quantity of water produced from this well.

2. An annual report shall be submitted to the State Engineer no later than February 15 of each year stating the total amount of water produced from this well each month during the previous January 1 to December 31, twelve (12) month period.

3. The report shall identify the well by name, location, permit number and shall identify the type of meter used for the measurement.

4. The State Engineer may, upon written request, waive all or any portion of these conditions and limitations.

September 28, 2016
Date of Approval

For GREG LANNING, State Engineer

.....

Attachment Sheet for Permit No. P206257.0W

TWN	RGE	SEC	NE1/4				NW1/4				SW1/4				SE1/4				TOTAL
			NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	
Dependent Resurvey			Water from this well will be used for domestic/subdivision supply at up to two hundred (200) home sites, lawn/landscape watering at common areas, and fire protection at the following described locations:																
037N	118W	18																A X	
Dependent Resurvey			Water from this well will be used for domestic supply at up to one hundred (100) mobile/modular home sites, lawn/landscape watering at common areas, and fire protection at the following described location:																
037N	118W	18																A X	
Dependent Resurvey			Water from this well will be used for domestic/subdivision supply at up to two hundred (200) home sites, lawn/landscape watering at common areas, and fire protection at the following described locations:																
037N	118W	18															A X		
Dependent Resurvey			Water from this well will be used for domestic/subdivision supply at up to two hundred (200) home sites, lawn/landscape watering at common areas, and fire protection at the following described locations:																
037N	118W	19	A X																
Dependent Resurvey			Water from this well will be used for domestic/subdivision supply at up to two hundred (200) home sites, lawn/landscape watering at common areas, and fire protection at the following described locations:																
037N	118W	19		A X															
																		Total Acreage	0.00

REMARKS CONTINUATION SHEET 1

T.F. No. 44-5-225W

will be required. It is anticipated by the applicant that the system will be connected to the Town of Alpine water system in the future.

SCANNED OCT 18 2017

SCANNED MAY 18 2018

FORM U.W.6
Rev. 1/07

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E
CHEYENNE, WYOMING 82002

(307) 777-6163

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL OR SPRING

NOTE: Do not fold this form. Use typewriter or print neatly with black pen.

PERMIT NO. U.W. 206257 NAME OF WELL/SPRING Excel Development No. 1

1. NAME OF OWNER Excel Development
2. ADDRESS PO Box 3309
   ☐ Please check if address has changed from that shown on permit
   City Alpine State Wyoming Zip Code 83128 Phone No. _____
3. USE OF WATER ☐ Domestic ☐ Stock Watering ☐ Irrigation ☐ Municipal ☐ Industrial ☒ Miscellaneous
   ☐ Monitor or Test ☐ Coal Bed Methane Explain proposed use (Example: One single family dwelling) _____
4. LOCATION OF WELL/SPRING NW 1/4 NE 1/4 of Section 19 T. 37 N.,R. 119 W., of the 6th P.M. (or W.R.M.) per GPS mm 1/16/18
   Subdivision Name Alpine Lakes Subdivision Lot 1 Block _____
   Resurvey Location Tract _____ or Lot _____ Datum ☐ NAD27 ☐ NAD83 _____
   Geographic Coordinates: Latitude 43° 11' 09.3058 N Longitude 111° 01' 56.3977 W (degrees, minutes, seconds) ✓
   UTM: Zone _____ Northing _____ Easting _____ (meters)
   State Plane Coordinates: Zone _____ Northing _____ Easting _____ (feet)
   Land surface elevation (ft. above mean sea level) _____ Datum ☐ NAVD29 ☐ NAVD88
   Source ☐ GPS ☐ Map ☐ Survey ☐ Unkown ☐ Other ☐ Altimeter (for elevation only)
5. TYPE OF CONSTRUCTION ☒ Drilled Soap / water ☐ Dug ☐ Driven ☐ Other
   Describe _____
6. CONSTRUCTION Total depth of well/spring 142 ft.
   Depth of static water level 26 ft. (below land surface) Casing height 1.5 ft. above ground
   a. Diameter of borehole (bit size) 24 inches
   b. Casing schedule ☒ New ☐ Used Joint type ☐ Threaded ☐ Glued ☒ Welded
   16" diameter from 18" ft. to 42 ft. Material Steel Gage .375
   16" diameter from 102 ft. to 142 ft. Material Steel Gage .375
   c. Cemented/grouted interval, from 0 ft. to 40 ft.
   Amount of cement/grout used 5000 lbs (example: 10 sacks) type bentonite (example: bentonite pellets)
   d. Type of completion ☐ Customized perforations ☐ Open hole ☒ Factory screen
   Type of perforator used _____
   Size of perforations _____ inches by _____ inches.
   Number of perforations and depths where perforated
   _____ perforations from _____ ft. to _____ ft.
   _____ perforations from _____ ft. to _____ ft.
   Open hole from _____ ft. to _____ ft.
   Well screen details
   Diameter 16" HDD slot size .100 set from 42 ft. to 102 ft.
   Diameter _____ slot size _____ set from _____ ft. to _____ ft.
   e. Well development method Air How long was well developed? 8 hrs
   f. Was a filter/gravel pack installed? ☒ Yes ☐ No Size of sand/gravel 1/2 -
   Filter/gravel pack installed from 40 ft. to 142 ft.
   g. Was surface casing used? ☒ Yes ☐ No Was it cemented in place? ☐ Yes ☒ No
   Surface casing installed from 6 ft. to 40 ft.
7. NAME AND ADDRESS OF DRILLING COMPANY WDD 4068 N. Haroldsen Dr. IDAHO FALLS ID
8. DATE OF COMPLETION OF WELL (including pump installation) OR SPRING (first used) 9-2-17 8340' per phone call 10-10-17 w/driller ke
9. PUMP INFORMATION Manufacturer _____ Type _____
   Source of power _____ Horsepower _____ Depth of pump setting or intake _____ ft.
   Amount of water being pumped _____ gal./min.* (For springs or flowing wells, see item 10)
   Total volumetric quantity used per calendar year.* _____
   *If these amounts exceed permitted amount an enlargement is required.
10. FLOWING WELL OR SPRING (Owner is responsible for control of flowing well)
    If artesian flow or spring, yield is _____ gal./min. *Surface pressure is _____ lb./sq.inch, or _____ feet of water.
    The flow is controlled by ☐ Valve ☐ Cap ☐ Plug
    Does well leak around casing? ☐ Yes ☐ No

RECEIVED
OCT - 9 2017
STATE ENGINEERS
CHEYENNE, WYOMING

Permit No. U.W. 206257 Book No. 1480 Page No. 107

SEE REVERSE SIDE

11. IF SPRING, HOW WAS IT CONSTRUCTED? (Some method of artificial diversion, i.e., spring box, cribbing, etc., is necessary to qualify for a water right) _____

12. PUMP TEST Was a pump test conducted? ☒ Yes ☐ No
If so, by whom Pump Doctor
Yield 2500 gal./min. with 2 ft. drawdown after 8 hours
Yield _____ gal./min. with _____ ft. drawdown after _____ hours

13. LOG OF WELL Total depth drilled 142 ft.
Depth of completed well 142 ft. Diameter of well 14" inches
Depth to first water bearing formation 26 ft.
Depth to principal water bearing formation Top 24 ft. to Bottom 142 ft.

DRILL CUTTINGS DESCRIPTION

From Feet	To Feet	Rock Type or Description	Formation	Water Bearing? (Yes or no)
Surface	6	Soil	Unconsolidated	No
6	18	Sand + Gravel	Unconsolidated	no
18	40	Sand + Gravel	"	Yes
40	100	Sand + Gravel	"	Yes
100	142	Cemented Gravel	Consolidated	Yes

14. DOES A GEOPHYSICAL LOG ACCOMPANY THIS FORM? ☐ Yes ☒ No

15. QUALITY OF WATER INFORMATION

Does a chemical and/or bacteriological water quality analysis accompany this form? ☐ Yes ☒ No
It is recommended that chemical and bacteriologic water quality analyses be performed and that the report(s) be filed with the records of this well (contact Department of Agriculture, Analytical Lab Services, Laramie, 742-2984).
If not, do you consider the water as ☒ Good ☐ Acceptable ☐ Poor ☐ Unusable

REMARKS _____

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, correct, and complete.

Signature of Owner or Authorized Agent — 10-5- Date, 20____

FOR STATE ENGINEER'S USE ONLY

Permit No. U.W. 206257

Date of Receipt OCT 09 2017, 20____

Date of Priorty Sept. 16, 20 16

Date of Approval January 16, 20 18

for State Engineer

SCANNED

FORM U.W.6
Rev. 6/00

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BUILDING
CHEYENNE, WYOMING 82002
(307) 777-6163

SCANNED MAR 31 2014
MICRO FILMED MAR 31 2003

STATEMENT OF COMPLETION AND DESCRIPTION OF WELL OR SPRING

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.

PERMIT NO. U.W. 135668 NAME OF WELL (SPRING) SENDER 1

1. NAME OF OWNER JOE SENDER
2. ADDRESS Box of 3263 ~~Alpine~~
   Please check if address has changed from that shown on permit
   City Alpine State Wyo Zip Code _____ Phone No. 83128
3. USE OF WATER: Domestic ~~X~~ out Stock Watering ☐ for front of Irrigation ☐ Municipal ☐ Industrial ☐ Miscellaneous ☒
   Monitor or Test ☐ Coal Bed Methane ☐ Explain proposed use (Example: One single family dwelling) _____
4. LOCATION OF WELL (SPRING): SE ¼ SE ¼ of Section 18, T. 37 N., R 118 W., of the 6th P.M. (or W.R.M.),
   Subdivision Name _____ Lot _____ Block _____
   If surveyed, bearing, distance and reference point: _____
5. TYPE OF CONSTRUCTION: Drilled ☒ Bondy (Type of Rig) Dug ☐ Driven ☑ Other ☐
   Describe: _____
6. CONSTRUCTION: Total Depth of Well/Spring 89 ft.
   Depth to Static Water Level 70 ft. (Below land surface)
   a. Diameter of borehole (Bit size) 8 inches.
   b. Casing Schedule New ~~X~~ Used ☐
   8 diameter from 0 ft. to 89 ft. Material Metal Gage 250
   _____ diameter from _____ ft. to _____ ft. Material _____ Gage _____
   c. Was casing cemented: Yes ☐ No ☐ Cemented Interval, From _____ feet to _____ feet.
   d. Number of sacks of cement used _____ type of cement _____
   e. Perforations: Type of perforator used Mill Knife
   Size of perforations ¼ inches by 1 inches.
   Number of perforations and depths where perforated:
   100 perforations from 70 ft. to 89 feet.
   _____ perforations from _____ ft. to _____ feet.
   f. Was well screen installed? Yes ☐ No ☒
   Diameter: _____ slot size: _____ set from _____ feet to _____.
   Diameter: _____ slot size: _____ set from _____ feet to _____
   g. Was well gravel packed? Yes ☐ No ☒ Size of gravel _____
   h. Was surface casing used: Yes ☐ No ☒ Was it cemented in place? Yes ☐ No ☐
7. NAME & ADDRESS OF DRILLING COMPANY Nelson Freedom Wyo 83120
8. DATE OF COMPLETION OF WELL (including pump installation) OR SPRING (first used) Oct 1 01
9. PUMP INFORMATION: Manufacturer Goulds Type Sub
   Source of power ~~Electric~~ Horsepower 5 Depth of Pump Setting or intake 85
   Amount of Water Being Pumped 20 Gallons Per Minute. (For Springs or flowing wells, see item 10.)
   Total Volumetric Gallons Used Per Calendar Year: Stock. A mt.
10. FLOWING WELL OR SPRING (Owner is responsible for control of flowing well).
    If well yields artesian flow or if spring, yield is _____ gal./min. Surface pressure is _____ lb./sq. inch, or _____ feet of water.
    The flow is controlled by: valve ☐ cap ☐ plug ☐
    Does well leak around casing? Yes ☐ No ☐

RECEIVED MAR 7 2002 STATE ENGINEER CHEYENNE, WYO

Permit No. U.W. 135668 Book No. 1011 Page No. 94

SEE REVERSE SIDE

11. If spring, how was it constructed? (Some method of artificial diversion, i.e., spring box, cribbing, etc., is necessary to qualify for a water right.) _____

12. PUMP TEST: Was a pump test made? Yes ☐ No ☒
If so, by whom _____ Address _____
Yield: _____ gal./min. with _____ foot drawdown after _____ hours.
Yield: _____ gal./min. with _____ foot drawdown after _____ hours.

13. LOG OF WELL: Total depth drilled 80 feet.
Depth of completed well 80 feet. Diameter of well 8 inches.
Depth to first water bearing formation 70 feet.
Depth to principal water bearing formation. Top 70 feet to Bottom 89 feet.

Ground Elevation, if known _____

DRILL CUTTINGS DESCRIPTION:

From Feet	To Feet	Material Type, Texture Color	Remarks (Cementing, Shutoff)	Indicate Water Bearing Formation & Name	Indicate Perforated Casing Location
0	3	Top Soil			
3	89	Gravel		✓	

14. QUALITY OF WATER INFORMATION:
Does a chemical and/or bacteriological water quality analysis accompany this form? Yes ☐ No ☐
It is recommended that chemical and bacteriologic water quality analyses be performed and that the report(s) be filed with the records of this well. (Contact Department of Agriculture, Analytical Lab Services, Laramie, 742-2984.)
If not, do you consider the water as: Good ☐ Acceptable ☐ Poor ☐ Unusable ☐

REMARKS: _____

Under penalties of perjury, I declare that I have examined this form and to the best of my knowledge and belief it is true, correct and complete.

Gordon Nelson
Signature of Owner or Authorized Agent

3-5, 20 02
Date

FOR STATE ENGINEER'S USE ONLY

Date of Receipt MAR 07 2002, 20 _____

Date of Priority 6/18/2001, 20 _____

Date of Approval October 9, 20 02

Karen Vanlin
for State Engineer

FORM UW5-42550
Rev. 6/07
FILING FEE SCHEDULE
ON REVERSE SIDE

STATE OF WYOMING

OFFICE OF THE STATE ENGINEER
HERSCHLER BLDG., 4-E CHEYENNE, WYOMING 82002
(307) 777-6163

APPLICATION FOR PERMIT TO APPROPRIATE GROUND WATER

APPLICATION FOR WELLS AND SPRINGS

Note: Only springs flowing 25 gallons per minute or less, where the proposed use is domestic and /or stock watering, will be considered as ground water appropriations.

FOR OFFICE USE ONLY

Temporary Filing No. U.W. 47-3-001W

PERMIT NO. U.W. _____
WATER DIVISION NO. 4 DISTRICT 16
U.W. DISTRICT Lincoln County

NOTE: Do not fold this form. Use typewriter or print neatly with black ink.
ALL ITEMS MUST BE COMPLETED BEFORE APPLICATION IS ACCEPTABLE

NAME AND NUMBER OF WELL or SPRING: ALPINE WATER DISTRICT NO. 4 WELL

1. Name of applicant(s) TOWN OF ALPINE Phone: _____

2. Address of applicant(s) PO BOX 3070 (MAILING ADDRESS) ALPINE (CITY) Wyoming (STATE) 83128 (ZIP)

3. Name & address of agent to receive correspondence and notices JORGENSEN ASSOCIATES INC
PO BOX 9550 (MAILING ADDRESS) JACKSON (CITY) Wyoming (STATE) 83002 (ZIP) Phone: 307-367-6548

4. Use to which the water will be applied:

☐ Domestic: Use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totaling one acre or less. Number of houses served?_____.

☐ Stock Watering: Normal livestock use at four tanks or less within one mile of well or spring. Stockwatering pipelines and commercial feedlots are a miscellaneous use. Number of stock tanks?____ .

☐ Irrigation: Watering of any lands for agricultural purposes not covered by the definition of domestic use (large-scale lawn watering of golf courses, cemeteries, recreation areas, etc., is miscellaneous use).

☒ Municipal: Use of water in incorporated Towns and Cities. Note 1: use of water in unincorporated towns, subdivisions, improvement districts, mobile home parks, etc. is classified as miscellaneous use. Note 2: a permit may be required by the Wyoming Department of Environmental Quality (WDEQ) if the well will be classified as a public water supply under the WDEQ's rules and regulations.

☐ Industrial: Long term use of water for the manufacture of a product or production of oil/gas or other minerals (oil field water flood operations, power plant water supply, etc.). (Describe in REMARKS)

☐ Miscellaneous: Any use of water not defined under previous definitions such as stock water pipelines, subdivisions, mine dewatering, mineral/oil exploration drilling, potable supplies in office, etc. (Describe in Remarks). Note: a permit may be required by the WDEQ if the well will be classified as a public water supply under the WDEQ's rules and regulations.

☐ Coalbed Methane: Water produced in the production of coal bed methane gas. Note: wells used in the production of coal bed methane gas will require a permit from the Wyoming Oil and Gas Conservation Commission.

☐ Monitor, Observation: Note: a WDEQ permit may be required ☐ Test Well: (Describe in REMARKS)

5. Location of the well or spring: (NOTE: Quarter-quarter (40 acre subdivision) MUST be shown. EXAMPLE: SE 1/ 4 NW 1/ 4 of Sec. 12, Township 14 North, Range 68 West.)
Lincoln County, NW 1/4 NE 1/4 of Sec. 19, T. 037N, R. 118W of the 6th P.M. (W.R.M.), Wyoming. If located in a platted subdivision, also provide Lot/Tract 1 Block ____ of the Alpine Lakes Subdivision Subdivision (or Add'n) of Lincoln County . Resurvey Location: Tract _____ , (or Lot) _____ .

6. Estimated depth of the well or spring is 142 feet. Estimated production interval is 26 ft. to 102 ft.

7. (a) MAXIMUM instantaneous flow of water to be developed and beneficially used: 2500 gallons per minute. NOTE: if for domestic and / or stock use, this application will be processed for a maximum of 25 gallons per minute. For a spring, after approval of this application, some type of artificial diversion or improvement must be constructed to qualify for a water right.

(b) MAXIMUM volumetric quantity of water to be developed and beneficially used per calendar year: 1800 acre-feet .
Circle appropriate units: (Gallons) (Acre Feet) A four person family utilizes approximately one (1) acre-foot of water per year or 325,000 gallons.

8. Mark the point(s) or area(s) of use in the tabulation box below. Note: Upper row refers to the quarter of the section. Next row refers to the quarter of the quarter section.

TABULATION BOX

TWP	RNG	SEC	NE¼				NW¼				SW¼				SE¼				TOTAL
			NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	NE¼	NW¼	SW¼	SE¼	
								(See Attachment Sheet.)											

SEE REVERSE SIDE

Permit No. U.W. _____ **Book No.** _____ **Page No.** _____

9. If for irrigation use:
   a. Describe MAXIMUM acreage to be irrigated in each 40 acre subdivision in the tabulation box above.
   b. ☐ Land will be irrigated from this well only.
   c. ☐ Land is irrigated from existing water right(s) with water from this well to be additional supply. Describe existing water right(s) under REMARKS.

10. If for irrigation use, describe method of irrigation, i.e. center pivot sprinkler, flood, etc.: _____

11. The well or spring is to be constructed on lands owned by ALPINE LAKES COMMERCIAL CENTER LLC
(The granting of a permit does not constitute the granting of a right-of-way. If any easement or right-of-way is necessary in connection with this application, it should be understood that the responsibility is the applicant's. A copy of the agreement should accompany this application, if the land is privately owned and the owner is not the co-applicant.)

12. The water is to be used on lands owned by N/A
(If the landowner is not the applicant, a copy of the agreement relating to the usage of the appropriated water on the land should be submitted to this office. If the landowner is included as co-applicant on the application, this procedure need not be followed.) NOTE: Water rights attach to the area(s) and/or point(s) of use.

REMARKS: _____

Under penalties of perjury, I declare that I have examined this application and to the best of my knowledge and belief it is true, correct and complete.

JORGENSEN ASSOCIATES INC
Signature of Applicant or Authorized Agent

February 25 , 20 25
Date

THE LEGALLY REQUIRED FILING FEE MUST ACCOMPANY THIS APPLICATION

DOMESTIC AND/OR STOCK WATERING USES (Domestic use is defined as use of water in 3 single family dwellings or less, noncommercial watering of lawns and gardens totalling one acre or less.)	$50.00
COAL BED METHANE USE	$50.00
IRRIGATION, MUNICIPAL, INDUSTRIAL, MISCELLANEOUS USES	$75.00
MONITOR(For water level measurements or chemical quality sampling) or TEST WELL USES	No Fee

IF WELL WILL SERVE MULTIPLE USES, SUBMIT ONLY ONE (THE HIGHER) FILING FEE.

THIS SECTION IS NOT TO BE FILLED IN BY APPLICANT

THE STATE OF WYOMING)
) ss.
STATE ENGINEER'S OFFICE)

This instrument was received and filed for record on the 25 day of February , A.D. 20 25 , at 11:44 o'clock A M.

Permit No. U.W. _____

_____
for State Engineer

THIS IS TO CERTIFY that I have examined the foregoing application and do hereby grant the same subject to the following limitations and conditions:

This application is approved subject to the condition that the proposed use shall not interfere with any existing rights to ground water from the same source of supply and is subject to regulation and correlation with surface water rights, if the ground and surface waters are interconnected. The use of water hereunder is subject to the further provisions of Chapter 169, Session Laws of Wyoming, 1957, and any subsequent amendments thereto.
Granting of a permit does not guarantee the right to have the water level or artesian pressure in the well maintained at any specific level. The well should be constructed to a depth adequate to allow for the maximum development and beneficial use of ground water in the source of supply.
If the well is a flowing artesian well, it shall be so constructed and equipped that the flow may be shut off when not in use without loss of water into sub-surface formations or at the land surface.
Coal Bed Methane wells have Additional Conditions and Limitations on attachment sheet.

Approval of this application may be considered as authorization to proceed with construction of the proposed well or spring. A Statement of Completion will be filed within thirty (30) days of completion of construction, including pump installation.

Completion of construction and completion of the beneficial use of water for the purposes specified in Item 4 of this application will be made by

The amount of appropriation shall be limited to the quantity to which permittee is entitled as determined at time of proof of application of water to beneficial use.

Witness my hand this _____ day of _____ , A.D. 20 _____ .

_____
Brandon Gebhart, State Engineer

Attachment Sheet for Permit No.

TWN	RGE	SEC	NE1/4				NW1/4				SW1/4				SE1/4				TOTAL
			NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	NE1/4	NW1/4	SW1/4	SE1/4	
Unknown																			
037N	118W	17								R ALL									
Unknown																			
037N	118W	18								R ALL									
Unknown																			
037N	118W	19								R ALL									
Unknown																			
037N	118W	20								R ALL									
Unknown																			
037N	118W	21								R ALL									
Unknown																			
037N	118W	28								R ALL									
Unknown																			
037N	118W	29								R ALL									
Unknown																			
037N	118W	30								R ALL									
Unknown																			
037N	118W	31								R ALL									
Principal Meridian 08 Unknown																			
003S	046E	03																R X	
																		Total Acreage	0.00

APPENDIX G

Population & System Growth Data

Town of Alpine Water System
Growth Projections

Growth Rate = 1.0%

Year	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036
Connections	663	670	676	683	690	697	704	711	718	725	732	740
Population	1532	1547	1563	1578	1594	1610	1626	1643	1659	1676	1692	1709
Avg Day Demand (gal)	759,000	766,590	774,256	781,998	789,818	797,717	805,694	813,751	821,888	830,107	838,408	846,792
Max Day Demand (gal)	1,800,000	1,818,000	1,836,180	1,854,542	1,873,087	1,891,818	1,910,736	1,929,844	1,949,142	1,968,633	1,988,320	2,008,203

** Population assumes 2.31 persons/connection*

2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	2049	2050
747	755	762	770	777	785	793	801	809	817	825	833	842	850
1726	1744	1761	1779	1796	1814	1832	1851	1869	1888	1907	1926	1945	1965
855,260	863,813	872,451	881,175	889,987	898,887	907,876	916,955	926,124	935,385	944,739	954,187	963,729	973,366
2,028,285	2,048,568	2,069,054	2,089,744	2,110,642	2,131,748	2,153,065	2,174,596	2,196,342	2,218,305	2,240,489	2,262,893	2,285,522	2,308,378

Town of Alpine Water System
Population Growth - Alpine vs. Lower Star Valley Locations

Location	Population 2020	Population 2010	% Change (2010-20)	% Change (avg. annual)
Alpine Town	1220	828	47.3%	3.95%
Alpine Northeast CDP	246	196	25.5%	2.30%
Alpine Northwest CDP	305	244	25.0%	2.26%
Alpine Total	1771	1268	39.7%	3.40%
Lower Star Valley Areas				
Bedford CDP	465	201	131.3%	8.75%
Etna CDP	185	164	12.8%	1.21%
Freedom CDP	247	214	15.4%	1.44%
Nordic CDP	628	602	4.3%	0.42%
Star Valley Ranch Town	1866	1503	24.2%	2.19%
Thayne Town	380	366	3.8%	0.38%
Turnerville CDP	222	192	15.6%	1.46%
Lower Valley Total	3993	3242	23.2%	2.11%

# of Service Connections	2024	2009		
Town of Alpine (south)	516	413	24.9%	1.50%

Town of Alpine Water System
Average Household Size

Area	Total Households	Avg. Household Size
Alpine Town	406	2.41
Alpine Northwest CDP	95	2.91
Alpine Northeast CDP	189	1.81
Total =	690	

Area Household Size = 2.31 *weighted average of three Alpine areas*

Population: 2020 to 2050
Town of Alpine, Lincoln County
Wyoming Dept. of A&I, Econ Analysis Div., February 2025

Year	Population	Annual % Change	5-year % Change	10-year % Change
2020	1220			
2021	1263	3.52%		
2022	1310	3.72%		
2023	1332	1.68%		
2024	1336	0.30%		
2025	1349	0.97%	10.57%	
2026	1362	0.96%		
2027	1374	0.88%		
2028	1386	0.87%		
2029	1396	0.72%		
2030	1405	0.64%	4.15%	15.16%
2031	1415	0.71%		
2032	1424	0.64%		
2033	1434	0.70%		
2034	1441	0.49%		
2035	1448	0.49%	3.06%	
2036	1455	0.48%		
2037	1462	0.48%		
2038	1469	0.48%		
2039	1477	0.54%		
2040	1484	0.47%	2.49%	5.62%
2041	1492	0.54%		
2042	1500	0.54%		
2043	1506	0.40%		
2044	1514	0.53%		
2045	1522	0.53%	2.56%	
2046	1528	0.39%		
2047	1534	0.39%		
2048	1541	0.46%		
2049	1547	0.39%		
2050	1553	0.39%	2.04%	4.65%

% Change: 2020 - 2050 =	27.30%
Avg. Annual Change: 2020-2050 =	0.81%

APPENDIX H

Opinions of Probable Costs

Alpine Water Supply Level I Master Plan
Connection to Megawell Water System

Engineer's Opinion of Probable Construction Costs

Print Date 5/29/2025

Project Name: Alpine Water Supply Level I Master Plan
Notes:

Description: Connect existing Town system located at The Refuge to the nearby Megawell system. Connection will require crossing US Highway 26. Use 12-inch piping in accordance with anticipated future well flows.

CONSTRUCTION COSTS

Item #	Description	Quantity	Unit	Unit Cost	Total Cost
1	Mobilization	1	L.S.	$ 15,000.00	$ 15,000
2	Imported Pipe Bedding (12" Pipe)	400	L.F.	$ 25.00	$ 10,000
3	12" Water Pipe	500	L.F.	$ 120.00	$ 60,000
4	12" Gate Valve	2	Each	$ 7,500.00	$ 15,000
5	Boring & Jacking (18" Casing)	100	L.F.	$ 1,500.00	$ 150,000
6	Connect to Existing Pipeline	2	Each	$ 5,000.00	$ 10,000
7	Remove & Replace Improvements	1	L.S.	$ 20,000.00	$ 20,000
8	Traffic Control	1	L.S.	$ 7,000.00	$ 7,000
		Cost of Project Components TOTAL			$287,000 (subtotal #1)

Construction Engineering (subtotal #1 x 10%)	$28,700	
Components + Construction Engineering Costs	$315,700	(subtotal #2)
Contingency (subtotal #2 x 15%)	$47,355	
Construction Total Cost	$364,000	(sub #3, rounded)

PRE-CONSTRUCTION COSTS

Preparation of Final Designs and Specifications (subtotal #1 x 10%)	$28,700	
Permitting and Mitigation	$10,000	
Legal Fees (1% of subtotal #3)	$3,700	
Acquisition of Access and Rights of Way	$8,500	
Pre-Construction Costs Total	$51,000	(sub #4, rounded)

TOTAL WWDC Eligible PROJECT COST

Total WWDC Eligible Project Cost	$415,000	(subtotal #5)

Alpine Water Supply Level I Master Plan
Increase Megawell Production

Engineer's Opinion of Probable Construction Costs

Print Date 5/30/2025

Project Name: Alpine Water Supply Level I Master Plan
Notes:

Description: Increase water produced by Megawell by installing a larger well pump. Piping will be upsized in various bottleneck areas. Backup generator added to the wellhouse.

CONSTRUCTION COSTS

Item #	Description	Quantity	Unit	Unit Cost	Total Cost
1	Mobilization	1	L.S.	$ 70,000.00	$ 70,000
2	Imported Pipe Bedding (12" Pipe)	2,600	L.F.	$ 25.00	$ 65,000
3	Imported Pipe Bedding (8" Pipe)	2,400	L.F.	$ 20.00	$ 48,000
4	12" Water Pipe	2,600	L.F.	$ 120.00	$ 312,000
5	8" Water Pipe	2,400	L.F.	$ 80.00	$ 192,000
6	12" Gate Valve	2	Each	$ 7,500.00	$ 15,000
7	8" Gate Valve	4	Each	$ 5,000.00	$ 20,000
8	Boring & Jacking (18" Casing)	150	L.F.	$ 1,500.00	$ 225,000
9	Connect to Existing Pipeline	10	Each	$ 5,000.00	$ 50,000
10	Remove & Replace Improvements	1	L.S.	$ 50,000.00	$ 50,000
11	Traffic Control	1	L.S.	$ 25,000.00	$ 25,000
12	Replace Well Pump (1200 gpm)	1	L.S.	$ 50,000.00	$ 50,000
13	Backup Generator (100 kW)	1	L.S.	$ 200,000.00	$ 200,000
		Cost of Project Components TOTAL			$1,322,000 (subtotal #1)

Construction Engineering (subtotal #1 x 10%)	$132,200
Components + Construction Engineering Costs	$1,454,200 (subtotal #2)
Contingency (subtotal #2 x 15%)	$218,130
Construction Total Cost	$1,673,000 (sub #3, rounded)

PRE-CONSTRUCTION COSTS

Preparation of Final Designs and Specifications (subtotal #1 x 10%)	$132,200
Permitting and Mitigation	$30,000
Legal Fees (1% of subtotal #3)	$16,800
Acquisition of Access and Rights of Way	$7,500
Pre-Construction Costs Total	$187,000 (sub #4, rounded)

TOTAL WWDC Eligible PROJECT COST

Total WWDC Eligible Project Cost	$1,860,000 (subtotal #5)

Alpine Water Supply Level I Master Plan
500,000 Gallon Storage Tank

Engineer's Opinion of Probable Construction Costs

Print Date 5/30/2025

Project Name: Alpine Water Supply Level I Master Plan
Notes:

Description: Addition of storage to the Alpine water system. 500K concrete storage tank to be added adjacent to existing 500K (lower) tank on USFS lands.

CONSTRUCTION COSTS

Item #	Description	Quantity	Unit	Unit Cost	Total Cost
1	Mobilization	1	L.S.	$ 75,000.00	$ 75,000
2	Imported Pipe Bedding (12" Pipe)	100	L.F.	$ 25.00	$ 2,500
3	12" Water Pipe	100	L.F.	$ 120.00	$ 12,000
4	12" Gate Valve	2	Each	$ 7,500.00	$ 15,000
5	500,000 Gal. Concrete Water Tank	1	L.S.	$ 750,000.00	$ 750,000
6	Earthwork - 500,000 Gal. Concrete Tank	1	L.S.	$ 150,000.00	$ 150,000
7	Tank Structural Fill	200	C.Y	$ 100.00	$ 20,000
8	Graded Tank Base Material	150	C.Y	$ 100.00	$ 15,000
9	Materials Sampling & Testing	1	L.S.	$ 30,000.00	$ 30,000
10	Electrical Appurtenances	1	L.S.	$ 35,000.00	$ 35,000
11	Chain Link Fencing	500	L.F.	$ 60.00	$ 30,000
12	Access Road	1	L.S.	$ 10,000.00	$ 10,000
13	Reseeding	0.75	Acre	$ 2,000.00	$ 1,500
		Cost of Project Components TOTAL			$1,146,000 (subtotal #1)

Construction Engineering (subtotal #1 x 10%)	$114,600	
Components + Construction Engineering Costs	$1,260,600	(subtotal #2)
Contingency (subtotal #2 x 15%)	$189,090	
Construction Total Cost	$1,450,000	(sub #3, rounded)

PRE-CONSTRUCTION COSTS

Preparation of Final Designs and Specifications (subtotal #1 x 10%)	$114,600	
Permitting and Mitigation	$55,000	
Legal Fees (1% of subtotal #3)	$14,500	
Acquisition of Access and Rights of Way	$15,000	
Pre-Construction Costs Total	$200,000	(sub #4, rounded)

TOTAL WWDC Eligible PROJECT COST

Total WWDC EligibleProject Cost	$1,650,000	(subtotal #5)

Alpine Water Supply Level I Master Plan
Alpine Wellhouse Improvements

Engineer's Opinion of Probable Construction Costs

Print Date 5/29/2025

Project Name: Alpine Water Supply Level I Master Plan
Notes:

Description: Perform various improvments needed at the Alpine Wellhouse. This includes repair/replace Well #3, upgrade electrical to operate at 100% capacity, purchase replacement chlorinator, and add water level measurement capability to all wells.

CONSTRUCTION COSTS

Item #	Description	Quantity	Unit	Unit Cost	Total Cost
1	Mobilization	1	L.S.	$ 10,000.00	$ 10,000
2	Repair/Replace Well #3 Pump	1	L.S.	$ 50,000.00	$ 50,000
3	Electrical Upgrades	1	L.S.	$ 75,000.00	$ 75,000
4	Replacement Chlorinator	1	Each	$ 5,000.00	$ 5,000
5	Add Water Level Measurement to Well	4	Each	$ 10,000.00	$ 40,000
		Cost of Project Components TOTAL			$180,000 (subtotal #1)

Construction Engineering (subtotal #1 x 10%)	$18,000	
Components + Construction Engineering Costs	$198,000	(subtotal #2)
Contingency (subtotal #2 x 15%)	$29,700	
Construction Total Cost	$228,000	(sub #3, rounded)

PRE-CONSTRUCTION COSTS

Preparation of Final Designs and Specifications (subtotal #1 x 10%)	$18,000	
Permitting and Mitigation	$12,000	
Legal Fees (1% of subtotal #3)	$2,300	
Acquisition of Access and Rights of Way	$4,000	
Pre-Construction Costs Total	$37,000	(sub #4, rounded)

TOTAL WWDC Eligible PROJECT COST

Total WWDC Eligible Project Cost	$265,000	(subtotal #5)

Alpine Water Supply Level I Master Plan
Upgrade Pipe to Lower Tank

Engineer's Opinion of Probable Construction Costs

Print Date 5/31/2025

Project Name: Alpine Water Supply Level I Master Plan
Notes:

Description: Upsize pipe from Alpine Wellhouse to Lower Tank to increase capacity, lower friction losses. Needed when well production is increased to water right capacities.

CONSTRUCTION COSTS

Item #	Description	Quantity	Unit	Unit Cost	Total Cost
1	Mobilization	1	L.S.	$ 10,000.00	$ 10,000
2	Imported Pipe Bedding (12" Pipe)	950	L.F.	$ 25.00	$ 23,750
3	12" Water Pipe	950	L.F.	$ 120.00	$ 114,000
4	12" Gate Valve	1	Each	$ 7,500.00	$ 7,500
5	Connect to Existing Pipeline	2	Each	$ 5,000.00	$ 10,000
13	Reseeding	1.00	Acre	$ 2,000.00	$ 2,000
		Cost of Project Components TOTAL			$167,250 (subtotal #1)

Construction Engineering (subtotal #1 x 10%)	$16,725	
Components + Construction Engineering Costs	$183,975	(subtotal #2)
Contingency (subtotal #2 x 15%)	$27,596	
Construction Total Cost	$212,000	(sub #3, rounded)

PRE-CONSTRUCTION COSTS

Preparation of Final Designs and Specifications (subtotal #1 x 10%)	$16,725	
Permitting and Mitigation	$15,000	
Legal Fees (1% of subtotal #3)	$2,200	
Acquisition of Access and Rights of Way	$4,000	
Pre-Construction Costs Total	$38,000	(sub #4, rounded)

TOTAL WWDC Eligible PROJECT COST

Total WWDC EligibleProject Cost	$250,000	(subtotal #5)

APPENDIX I

Financial Data

Town of Alpine-Water Dept.
Profit & Loss
July 2019 through June 2020

		Jul '19 - Jun 20
Ordinary Income/Expense		
Income		
4620 · Connections		
4660 · Transfers	2,670.00	
4620 · Connections - Other	42,100.75	
Total 4620 · Connections		44,770.75
4631 · Usage Sale		403,007.56
Total Income		447,778.31
Gross Profit		447,778.31
Expense		
Administration		
6901 · Office & Misc	17,790.73	
6907 · O/S Professional	21,249.99	
6915 · Travel & Education	1,392.37	
Total Administration		40,433.09
EXPENSE R&M		
Repair & Maint.		
6924 · Fuel, R & M Vehicle Expenses	3,651.45	
6925 · Supplies/Tools	30,064.39	
6927 · Valve/Line Repair	3,229.93	
Total Repair & Maint.	36,945.77	
Total EXPENSE R&M		36,945.77
6930 · Salary		
6931 · Salaries & Benefits	160,717.82	
Total 6930 · Salary		160,717.82
6950 · Operations		
6951 · Utilities	22,065.88	
6952 · Testing	1,895.00	
6956 · CHLORINE	3,669.46	
Total 6950 · Operations		27,630.34
6960 · Debt Service		
6961 · Interest Expense	7,054.44	
6962 · Principal Repayments	0.00	
Total 6960 · Debt Service		7,054.44
Total Expense		272,781.46
Net Ordinary Income		174,996.85
Other Income/Expense		
Other Income		
7200 · Interest Income		1,101.78
7301 · Grant Revenue		0.00
Total Other Income		1,101.78
Other Expense		
6000 · Depreciation Expense		176,000.00
7000 · Capital Outlay / Grants		0.00
Total Other Expense		176,000.00
Net Other Income		-174,898.22
Net Income		98.63

Town of Alpine-Water Dept.
Profit & Loss
July 2020 through June 2021

	Jul '20 - Jun 21	
Ordinary Income/Expense		
Income		
4620 · Connections		
4625 · Connect/Disconnect	210.00	
4660 · Transfers	7,120.00	
4620 · Connections - Other	86,832.00	
Total 4620 · Connections		94,162.00
4631 · Usage Sale		427,957.70
4641 · North Star Utility Operat. Fee		6,447.00
Total Income		528,566.70
Gross Profit		528,566.70
Expense		
Administration		
6901 · Office & Misc	19,688.93	
6907 · O/S Professional	34,809.51	
6912 · Rent Expense	29,000.00	
6915 · Travel & Education	453.48	
Total Administration		83,951.92
EXPENSE R&M		
Repair & Maint.		
6924 · Fuel, R & M Vehicle Expenses	953.20	
6925 · Supplies/Tools	85,087.81	
Total Repair & Maint.	86,041.01	
Total EXPENSE R&M		86,041.01
6200 · N. Alpine Operational Expenses		
6213 · Professional Services	6,447.00	
Total 6200 · N. Alpine Operational Expenses		6,447.00
6930 · Salary		
6931 · Salaries & Benefits	85,266.15	
Total 6930 · Salary		85,266.15
6950 · Operations		
6951 · Utilities	29,634.95	
6952 · Testing	3,183.00	
6954 · New Service		
6953 · New / Other	850.00	
Total 6954 · New Service	850.00	
6956 · CHLORINE	7,844.18	
Total 6950 · Operations		41,512.13
6960 · Debt Service		
6961 · Interest Expense	6,411.02	
6962 · Principal Repayments	0.00	
Total 6960 · Debt Service		6,411.02
Total Expense		309,629.23
Net Ordinary Income		218,937.47

Town of Alpine-Water Dept.
Profit & Loss
July 2020 through June 2021

	Jul '20 - Jun 21
Other Income/Expense	
Other Income	
7200 · Interest Income	597.18
Total Other Income	597.18
Other Expense	
6000 · Depreciation Expense	219,000.00
7000 · Capital Outlay / Grants	0.00
Total Other Expense	219,000.00
Net Other Income	-218,402.82
Net Income	534.65

Town of Alpine-Water Dept.
Profit & Loss
July 2021 through June 2022

		Jul '21 - Jun 22
Ordinary Income/Expense		
Income		
4620 · Connections		
4625 · Connect/Disconnect		30.00
4660 · Transfers		25,038.00
4620 · Connections - Other		122,120.00
Total 4620 · Connections		147,188.00
4631 · Usage Sale		470,597.87
Total Income		617,785.87
Gross Profit		617,785.87
Expense		
Administration		
6901 · Office & Misc		28,832.97
6907 · O/S Professional		53,718.19
6912 · Rent Expense		29,000.00
6915 · Travel & Education		595.00
Total Administration		112,146.16
EXPENSE R&M		
Repair & Maint.		
6924 · Fuel, R & M Vehicle Expenses	3,961.39	
6925 · Supplies/Tools	108,702.41	
6927 · Valve/Line Repair	39,566.87	
Total Repair & Maint.		152,230.67
Total EXPENSE R&M		152,230.67
6930 · Salary		
6931 · Salaries & Benefits		141,633.89
Total 6930 · Salary		141,633.89
6950 · Operations		
6951 · Utilities		37,639.30
6952 · Testing		3,413.00
6954 · New Service		
6953 · New / Other	11,982.68	
Total 6954 · New Service		11,982.68
6956 · CHLORINE		12,986.69
Total 6950 · Operations		66,021.67
6960 · Debt Service		
6961 · Interest Expense		5,804.12
6962 · Principal Repayments		0.00
Total 6960 · Debt Service		5,804.12
Total Expense		477,836.51
Net Ordinary Income		139,949.36
Other Income/Expense		
Other Income		
7200 · Interest Income		1,287.91
7301 · Grant Revenue		0.00
Total Other Income		1,287.91

Town of Alpine-Water Dept.
Profit & Loss
July 2021 through June 2022

	Jul '21 - Jun 22
Other Expense	
Cash over/short	0.00
6000 · Depreciation Expense	140,000.00
7000 · Capital Outlay / Grants	0.00
Total Other Expense	140,000.00
Net Other Income	-138,712.09
Net Income	**1,237.27**

Town of Alpine-Water Dept.
Profit & Loss
July 2022 through June 2023

	Jul '22 - Jun 23	
Ordinary Income/Expense		
Income		
4620 · Connections		
4660 · Transfers	2,250.00	
4620 · Connections - Other	92,795.00	
Total 4620 · Connections		95,045.00
4631 · Usage Sale		507,810.60
Total Income		602,855.60
Gross Profit		602,855.60
Expense		
Administration		
6901 · Office & Misc		
Bank Charges	-181.07	
6910 · Accounting Software	301.33	
6901 · Office & Misc - Other	35,684.40	
Total 6901 · Office & Misc	35,804.66	
6907 · O/S Professional	20,979.00	
6912 · Rent Expense	29,000.00	
6915 · Travel & Education	2,386.59	
Administration - Other	0.00	
Total Administration		88,170.25
EXPENSE R&M		
Repair & Maint.		
6922 · Hydrant Repair	1,450.00	
6924 · Fuel, R & M Vehicle Expenses	8,151.02	
6925 · Supplies/Tools	140,442.95	
6927 · Valve/Line Repair	13,764.12	
6928 · Water Meter Repairs	7,196.78	
Repair & Maint. - Other	4,106.89	
Total Repair & Maint.	175,111.76	
Total EXPENSE R&M		175,111.76
6930 · Salary		
6931 · Salaries & Benefits	187,466.84	
Total 6930 · Salary		187,466.84
6950 · Operations		
6951 · Utilities	34,859.26	
6952 · Testing	1,036.00	
6954 · New Service	6,625.03	
6956 · CHLORINE	12,823.60	
Total 6950 · Operations		55,343.89
6960 · Debt Service		
6961 · Interest Expense	5,139.97	
6962 · Principal Repayments	23,257.69	
Total 6960 · Debt Service		28,397.66
Total Expense		534,490.40
Net Ordinary Income		68,365.20

Town of Alpine-Water Dept.
Profit & Loss
July 2022 through June 2023

	Jul '22 - Jun 23
Other Income/Expense	
Other Income	
7100 · Misc. Income	15.00
7200 · Interest Income	16,218.46
7203 · Prior Year Fund Balance	60,000.00
7301 · Grant Revenue	182,392.95
Total Other Income	258,626.41
Other Expense	
Cash over/short	0.00
6000 · Depreciation Expense	90,000.00
7000 · Capital Outlay / Grants	380,335.48
Total Other Expense	470,335.48
Net Other Income	-211,709.07
Net Income	**-143,343.87**

TOWN OF ALPINE
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2024

WATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	OPERATING REVENUE					
51-33-100	WATER USAGE FEES	.00	512,617.28	500,000.00	(12,617.28)	102.5
51-33-110	BULK WATER SALES	.00	204.00	100.00	(104.00)	204.0
51-33-120	TRANSFER FEES	.00	2,975.39	1,700.00	(1,275.39)	175.0
51-33-200	DISCONNECT/RECONNECT FEES	.00	5,010.71	.00	(5,010.71)	.0
51-33-400	CONNECTION FEES	.00	85,310.00	70,000.00	(15,310.00)	121.9
	TOTAL OPERATING REVENUE	.00	606,117.38	571,800.00	(34,317.38)	106.0
	GRANT INCOME					
51-34-100	GRANT REVENUE	.00	18,535.00	20,000.00	1,465.00	92.7
	TOTAL GRANT INCOME	.00	18,535.00	20,000.00	1,465.00	92.7
	OTHER INCOME					
51-38-300	MISC. INCOME	.00	(8,071.39)	.00	8,071.39	.0
51-38-310	INTEREST INCOME	.00	33,734.54	34,000.00	265.46	99.2
	TOTAL OTHER INCOME	.00	25,663.15	34,000.00	8,336.85	75.5
	TOTAL FUND REVENUE	.00	650,315.53	625,800.00	(24,515.53)	103.9

TOWN OF ALPINE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2024

WATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	ADMINISTRATION					
51-42-110	ADMIN SALARIES & WAGES	.00	5,185.70	7,500.00	2,314.30	69.1
51-42-210	ADMIN PAYROLL TAXES	.00	391.11	500.00	108.89	78.2
51-42-220	ADMIN MEDICAL BENEFITS	.00	518.12	1,200.00	681.88	43.2
51-42-230	ADMIN RETIREMENT	.00	840.59	1,000.00	159.41	84.1
51-42-315	ADMIN PROFESSIONAL SERVICES	.00	38,302.24	35,000.00	(3,302.24)	109.4
51-42-370	BANK CHARGES	.00	1,864.95	2,500.00	635.05	74.6
51-42-380	INSURANCE	.00	9,812.38	10,000.00	187.62	98.1
51-42-395	TRAVEL	.00	1,375.82	2,000.00	624.18	68.8
51-42-405	POSTAGE	.00	1,587.50	2,500.00	912.50	63.5
51-42-410	OFFICE & MISCELLANEOUS	.00	6,746.73	8,000.00	1,253.27	84.3
	TOTAL ADMINISTRATION	.00	66,625.14	70,200.00	3,574.86	94.9
	FIELD OPS					
51-80-110	FO SALARIES & WAGES	.00	177,732.12	185,000.00	7,267.88	96.1
51-80-210	FO PAYROLL TAXES	.00	4,778.92	6,000.00	1,221.08	79.7
51-80-220	FO MEDICAL BENEFITS	.00	7,814.64	10,000.00	2,185.36	78.2
51-80-230	FO RETIREMENT	.00	9,366.23	12,000.00	2,633.77	78.1
51-80-315	PROFESSIONAL SERVICES	.00	16,982.50	18,000.00	1,017.50	94.4
51-80-320	TESTING	.00	3,409.78	4,000.00	590.22	85.2
51-80-325	RENT	.00	30,332.81	31,000.00	667.19	97.9
51-80-332	REPAIRS & MAINTENACE	.00	26,528.35	25,000.00	(1,528.35)	106.1
51-80-335	SOFTWARE AND IT	.00	6,261.92	7,000.00	738.08	89.5
51-80-395	TRAVEL & EDUCATION	.00	1,465.71	1,700.00	234.29	86.2
51-80-400	TOOLS & EQUIPMENT	.00	2,512.82	500.00	(2,012.82)	502.6
51-80-420	OPERATION PARTS & SUPPLIES	.00	87,911.22	90,000.00	2,088.78	97.7
51-80-430	CHEMICALS	.00	2,475.00	2,500.00	25.00	99.0
51-80-452	UTILITIES (DISTRIBUTION)	.00	26,989.28	35,000.00	8,010.72	77.1
51-80-453	UTILITIES WELLS (GENERATION)	.00	6,056.93	6,000.00	(56.93)	101.0
51-80-454	FUEL	.00	5,090.55	6,000.00	909.45	84.8
51-80-800	DEPRECIATION EXPENSE	.00	42,000.00	120,000.00	78,000.00	35.0
	TOTAL FIELD OPS	.00	457,708.78	559,700.00	101,991.22	81.8
	CAPITAL OUTLAY					
51-90-540	CAPITAL OUTLAY	.00	30,680.57	40,000.00	9,319.43	76.7
51-90-545	RADIO READ PROJECT	.00	33,957.50	35,000.00	1,042.50	97.0
	TOTAL CAPITAL OUTLAY	.00	64,638.07	75,000.00	10,361.93	86.2

TOWN OF ALPINE
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2024

WATER FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	DEBT SERVICE					
51-95-620	DEBT SERVICES	.00	23,429.68	29,000.00	5,570.32	80.8
51-95-630	INTEREST EXPENSE	.00	.00	5,000.00	5,000.00	.0
	TOTAL DEBT SERVICE	.00	23,429.68	34,000.00	10,570.32	68.9
	TOTAL FUND EXPENDITURES	.00	612,401.67	738,900.00	126,498.33	82.9
	NET REVENUE OVER EXPENDITURES	.00	37,913.86	(113,100.00)	(151,013.86)	33.5

Ryan Erickson

From: Monica Chenault <clerk@alpinewy.gov>
Sent: Thursday, May 22, 2025 3:49 PM
To: Ryan Erickson
Subject: Water
Attachments: 05222025_Town of Alpine-Water Dept. Profit &Loss July 2019 throu.pdf; 05222025_512,617.28 204.00 2.975.39 5.010.71 85.310.00.pdf; 05222025_21,521.66) 60.03 36,925.45 65,022.00 4,333,005.59 114,6.pdf

$ 120,000.00	DWSRF-117	4/1/2011	20 years	$ 6,547.60	8/15	2.50%	4/1/2031	DWSRF Loan 117		$ 46,910.56	7/18/2024
$ 115,500.00	DWSRF-64		20 years	$ 7,408.99	8/1	2.50%	12/7/2031	DWSRF Loan 64		$ 53,174.99	7/15/2024
$ 122,000.00	3910167000076	11/1/2016	10 years	$ 14,441.07	10/31	3.19%	11/1/2026	First Bank		$ 27,537.87	10/23/2024
								Paid off WIP - FED #5			

DWSRF 117 – FMHA#1 Water System

DWSRF 64 – Well Rehab

The other I don't know.

Thank you,

Monica L Chenault

Clerk & Treasurer
Town Of Alpine
P.O. Box 3070
Alpine, WY 83128
(307) 654-7757
Website: www.alpinewy.gov

E-mail to and from me in connection with the transaction of public business is subject to the Wyoming Public Records Act and may be disclosed to third parties.

ORDINANCE NO. 2025-009
TOWN OF ALPINE
AMENDED BUDGET FOR FISCAL YEAR 2025

AN ORDINANCE FOR THE TOWN OF ALPINE, COUNTY OF LINCOLN, STATE OF WYOMING, AMENDING AND APPROVING THE ANNUAL BUDGET AND APPROPRIATIONS FOR FISCAL YEAR 2025, BEGINNING ON JULY 1, 2024, AND ENDING ON JUNE 30, 2025, PURSUANT TO WYOMING STATUTE 16-4-101.

NOW THEREFORE, BE IT ORDAINED by the Governing Body of the Town of Alpine that the Town of Alpine, Amended Budget and Appropriations for Fiscal year 2025 is hereby adopted, approved, and shall be transmitted to the Wyoming Authorities as required by statute. This Ordinance shall be in full force and effect from and after the passage on three reading and published as required by law.

GENERAL FUND REVENUE

Tax Revenue	$1,770,500.00
Licenses and Permits	$166,900.00
Charges for Services	$273,500.00
Intergovernmental Revenue	$148,000.00
Fine & Penalties	$1,000.00
Other Revenue	$623,740.00
TOTAL GENERAL FUND REVENUE	**$2,983,640.00**

GENERAL FUND EXPENDITURES

Mayor & Council	$60,500.00
Administration	$584,700.00
Court	$20,200.00
Travel & Tourism	$173,250.00
Planning & Zoning	$267,300.00
Information Center	$64,600.00
Streets	$460,000.00
Law Enforcement	$178,100.00
Facilities	$249,550.00
Parks	$159,250.00
Events	$80,825.00
Business & Community Development	$95,000.00
Capital Outlay	$110,000.00
Debt Service	$410,000.00
TOTAL GENERAL FUND EXPENDITURES	**$2,913,275.00**

WATER FUND REVENUE

Operating Revenue	$673,120.00
Grant Income	$50,000.00
Other Income	$49,500.00
Prior Year Fund Balance	$75,000.00

1st Reading

TOTAL WATER FUND REVENUE	**$847,620.00**
WATER FUND EXPENDITURES	
Administration	$104,700.00
Field Operations	$509,500.00
Capital Outlay	$200,000.00
Debt Service	$30,000.00
TOTAL WATER FUND EXPENDITURES	**$844,200.00**
WASTER WATER FUND	
Operating Revenue	$755,000.00
Grant Income	$0.00
Other Income	$45,000.00
Prior Year Fund Balance	$1,700,000.00
TOTAL WASTEWATER FUND REVENUE	**$2,500,000.00**
WASTEWATER FUND EXPENDITURES	
Administration	$79,600.00
Collections	$267,200.00
Pre-treatment	$32,500.00
Wastewater Treatment Plant	$546,100.00
Capital Outlay	$1,290,000.00
Debt Service	$265,000.00
TOTAL WATER FUND EXPENDITURES	**$2,480,400.00**

1st Reading

Passed First Reading on the 20th day of May 2025.

VOTE: ____YES, ____ NO, ____ ABSTAIN, ____ ABSENT

Passed Second Reading on the 3rd day of June 2025.

VOTE: ____YES, ____ NO, ____ ABSTAIN, ____ ABSENT

Passed on Third and Final Reading 17th day of June 2025.

VOTE: ____YES, ____ NO, ____ ABSTAIN, ____ ABSENT

TOWN OF ALPINE

CAPACITY DEVELOPMENT

Additional Financial Worksheets for DWSRF Loan Recipients and New Community Water Systems (CWS)
and New Non-Transient Non-Community Water Systems

SUMMARY

Five Year Projections	Last Year Actual	Current Year Budget	Year 2 Projected	Year 3 Projected	Year 4 Projected	Year 5 Projected
Beginning Cash on Hand	$1,168,976	$1,206,889	$1,167,889	$1,246,736	$1,342,432	$1,440,011
Add:						
Cash Receipts (worksheet 1, 5T)	$650,316	$847,620	$642,521	$653,444	$664,553	$675,850
Less:						
Operating Expenditures (worksheet 2, 8T)	$482,334	$614,200	$490,534	$498,873	$507,354	$515,979
Debt Service (worksheet 3, 9T)	$23,430	$30,000	$30,000	$15,000	$15,000	$15,000
Capital Improvements (worksheet 4, 10T)	$64,639	$200,000	$0	$0	$0	$0
Deposits to Reserves (worksheet 5, 11T)	$42,000	$42,420	$43,141	$43,875	$44,620	$45,379
Ending Cash on Hand	$1,206,889	$1,167,889	$1,246,736	$1,342,432	$1,440,011	$1,539,504

Number of Customer Accounts	663	663	674	686	697	709
Average Annual User Charge per account	$773	1015.263952	773.6684154	773.0571497	773.7913876	773.6265886
Coverage Ratio ((3T-8T)/9T)	6.38	3.61	5.07	10.30	10.48	10.66
Operating Ratio (1T/8T)	1.06	1.10	1.06	1.06	1.06	1.06

Applicant: Town of Alpine
Completed by: Ryan Erickson (Sunrise Engineering)
Date: May 30, 2025

WORKSHEET 1 - RECEIPTS

Five Year Projections	Last Year Actual	Current Year Budget	Year 2 Projected	Year 3 Projected	Year 4 Projected	Year 5 Projected
1. Cash Receipts From Water Revenues:						
a. Unmetered Water Revenue	$0	$0	$0	$0	$0	$0
b. Metered Water Revenue	$512,736	$673,120	$521,453	$530,317	$539,333	$548,501
c. Other Water Revenue	$0	$0	$0	$0	$0	$0
1T. Total Water Revenues (1a thru 1c)	$512,736	$673,120	$521,453	$530,317	$539,333	$548,501
2. Cash Receipts From Other Income						
a. Connection Fees	$85,310	$0	$86,760	$88,235	$89,735	$91,261
b. Interest and Dividend Income	$33,735	$0	$34,308	$34,892	$35,485	$36,088
c. Other	$0	$49,500	$0	$0	$0	$0
2T. Total Other Income (2a thru 2c)	$119,045	$49,500	$121,069	$123,127	$125,220	$127,349
3T. Total Cash Revenues (1T + 2T)	$631,781	$722,620	$642,521	$653,444	$664,553	$675,850
4. Other Cash Receipts						
a. Transfers in	$0	$75,000	$0	$0	$0	$0
b. Loans, Grants or other Cash Received	$18,535	$50,000	$0	$0	$0	$0
(please specify)	$0	$0	$0	$0	$0	$0
4T. Total Other Cash Receipts (4a + 4b)	$18,535	$125,000	$0	$0	$0	$0
5T. Total Cash Receipts (3T + 4T)	$650,316	$847,620	$642,521	$653,444	$664,553	$675,850

WORKSHEET 2 - OPERATING EXPENDITURES

Five Year Projections	Last Year Actual	Current Year Budget	Year 2 Projected	Year 3 Projected	Year 4 Projected	Year 5 Projected
6. Operating Expenses						
a. Salaries and wages	$188,088	$104,700	$191,285	$194,537	$197,844	$201,208
b. Employee Pensions and Benefits	$18,540		$18,855	$19,176	$19,502	$19,833
c. Purchased Water	$0		$0	$0	$0	$0
d. Purchased Power	$33,046		$33,608	$34,179	$34,760	$35,351
e. Fuel for Power Production	$5,091		$5,178	$5,266	$5,355	$5,446
f. Chemicals	$2,475		$2,517	$2,560	$2,603	$2,648
g. Materials and Supplies	$116,952	$509,500	$118,940	$120,962	$123,019	$125,110
h. Contractual Services - Engineering	$55,285		$56,225	$57,181	$58,153	$59,141
i. Contractual Services - Other	$0		$0	$0	$0	$0
j. Rental of Equipment/Real Property	$30,323		$30,838	$31,363	$31,896	$32,438
k. Transportation Expenses	$2,842		$2,890	$2,939	$2,989	$3,040
l. Laboratory	$3,410		$3,468	$3,527	$3,587	$3,648
m. Insurance	$9,812		$9,979	$10,148	$10,321	$10,496
n. Regulatory Commission Expenses	$0		$0	$0	$0	$0
o. Advertising	$0		$0	$0	$0	$0
p. Miscellaneous	$16,470		$16,750	$17,035	$17,324	$17,619
q. other	$0		$0	$0	$0	$0
6T. Total Operating Expenses (6a thru 6p)	$482,334	$614,200	$490,534	$498,873	$507,354	$515,979

7. Replacements:						
a. Replacement Expenditures						
b. Other						
(please specify)						
7T. Total Replacement Expenditures	$0	$0	$0	$0	$0	$0

8T. Total OM&R Expenditures (6T+ 7T)	$482,334	$614,200	$490,534	$498,873	$507,354	$515,979

WORKSHEET 3 - DEBT SERVICE

Five Year Projections	Last Year Actual	Current Year Budget	Year 2 Projected	Year 3 Projected	Year 4 Projected	Year 5 Projected
9. Debt Service						
a. Capital Lease Payments						
(name, number, or description for each)						
b. Loan Principal Repayments						
DWSRF 117	$6,548	$7,000	$7,000	$7,000	$7,000	$7,000
DWSRF 64	$7,409	$8,000	$8,000	$8,000	$8,000	$8,000
Bank 3910167000076	$14,441	$15,000	$15,000	$0	$0	$0
c. Loan Interest Payments						
(namer, number, or description for each)						
d. Transfers Out	-$4,968	$0	$0	$0	$0	$0
9T. Total Debt Service/Transfers Out	$23,430	$30,000	$30,000	$15,000	$15,000	$15,000

WORKSHEET 4 - CAPITAL IMPROVEMENTS

Five Year Projections	Last Year Actual	Current Year Budget	Year 2 Projected	Year 3 Projected	Year 4 Projected	Year 5 Projected
10. Capital Improvements (briefly describe each project)						
Capital Outlay	$30,681	$200,000				
Radio Read Project	$33,958					
10T. Total Capital Improvements	$64,639	$200,000	$0	$0	$0	$0

WORKSHEET 5 - DEPOSITS TO RESERVES

Five Year Projections	Last Year Actual	Current Year Budget	Year 2 Projected	Year 3 Projected	Year 4 Projected	Year 5 Projected
11. Deposits to Reserves:						
a. Debt Service Reserve						
b. Bond Retirement Reserve						
c. Capital Improvement Reserve	$42,000	$42,420	$43,141	$43,875	$44,620	$45,379
d. Replacement Reserve						
e. Other						
11T. Total Deposits to Reserves (11a thru 11e)	$42,000	$42,420	$43,141	$43,875	$44,620	$45,379