CENTRAL VALLEY TOWN CULINARY WATER IMPROVEMENTS PROJECT PRELIMINARY ENGINEERING REPORT

MARCH 2018

PREPARED FOR:

CENTRAL VALLEY TOWN

PREPARED BY:

Jones & DeMille Engineering

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Project #: 1706-043

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1. INTRODUCTION

Central Valley Town is a rural community located in Central Utah. This study includes a thorough evaluation of the water system in an effort to identify existing and future deficiencies, as well as recommend needed system upgrades. This report follows the format and guidelines of a USDA Preliminary Engineering Report (PER) as part of a funding application through the USDA Water and Waste Disposal Program (Bulletin 1780-2).

The following contact are provided per PER guidelines:

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2. PROJECT PLANNING

2.1. LOCATION

Central Valley Town is located in Sevier County, Utah. The project area includes the incorporated town limits and the existing culinary water system. Figure 1 shows the project location. For complete project maps, including a 7.5-minute topographic map, see Appendix A.

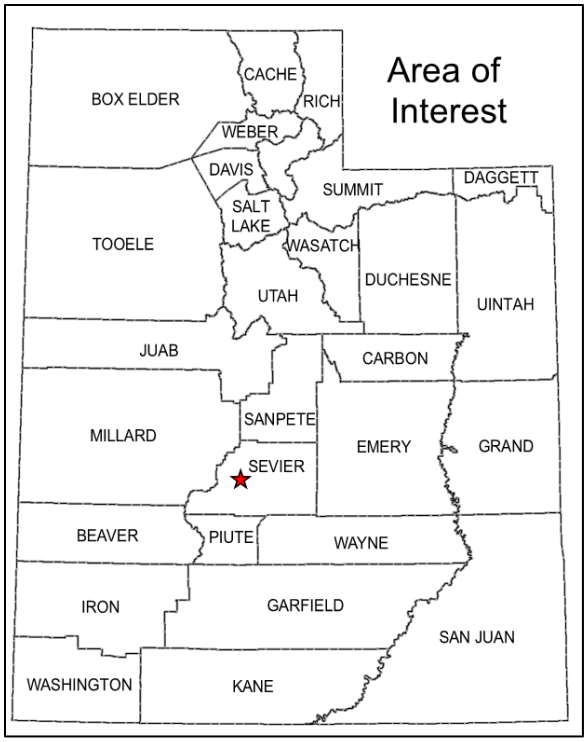


Figure 1: Project Location

2.2. ENVIRONMENTAL RESOURCES PRESENT

The proposed project area has been disturbed previously by agricultural activities and the installation and maintenance of the existing culinary system. Cultural resources are unlikely to be present due to the previous disturbance in the area. No suitable habitat for listed species occurs within or near the project area. The project is outside of known floodplains, and does not intersect any jurisdictional waters or wetlands.

An Environmental Report was prepared for this project which outlines potential environmental impacts to the project. This report is included in Appendix F.

2.3. POPULATION TRENDS

According to the U.S. Census data, the population of Central Valley Town was 528 in 2010. This is the only Census population data available for Central Valley due to the town not being incorporated until 2005. However, the Utah Governor's Office of Management and Budget (GOMB) provides population growth estimates for incorporated areas in Sevier County based on Census data. These estimates were compared to information gathered from the town regarding the number of building permits they have issued in the recent past and what they expect in the future. As shown in Table 1, the Central Valley population estimates are the most conservative growth rate; therefore, this estimate was used throughout the study.

Table 1: Population Projections

Year ->	2010	2020	2030	2040	Average Annual Growth Rate
Central Valley Town*	528	603	689	786	1.34%
Utah GOMB	3026	3256	3539	3803	0.78%

*The projections for the town were estimated based on building permits that have been issued in the recent past and what the town expects to see in the future. In discussions with the town, it was estimated that they expect to approve an average of three building permits per year.

The US Census Bureau has updated population projections from 2010 to 2016 (Table 2). The 2010 population that is used for a baseline for these projections (547) is higher than the actual 2010 census population (528). With this in mind, only the data trends were considered (average annual growth rate) as seen in Table 2.

Table 2: Annual Census Population Estimates

Year ->	2010	2011	2012	2013	2014	2015	2016	Average Annual Growth Rate
Annual Census Estimate	547	551	546	548	550	555	561	0.42%

Over the last 40 years, Sevier County population has been rising at an average rate of 1.82% per year, however, in general, the average rate of population increase has not been that strong in recent years. Table 3 shows census data from the past 50 years and the percent average annual increase from one census to the next.

Table 3: Historical Census Data

Census Year ->	1960	1970	1980	1990	2000	2010
Population (Sevier County)	10,565	10,103	14,727	15,431	18,842	20,802
Average Yearly Increase (From Previous Census)	-1.32%	-0.45%	3.84%	0.47%	2.02%	0.99%

The census data above shows that growth in Sevier County has been inconsistent at times (likely due to the mining industry being the main economic driver for the county), but it has been steadily increasing since 1970. This supports the current growth pattern seen by Central Valley Town officials and the estimated 1.34% annual population growth appears to be more reasonable than the .78% annual growth proposed by the GOMB data or even the 0.4% from the annual census estimate.

2.4. COMMUNITY ENGAGEMENT

Community leaders plan to conduct a series of public community meetings in Central Valley prior to and during the design phase to discuss project alternatives leading to the preferred alternative. Community meetings are typically advertised between one week and a month prior to the meeting depending on the purpose. Comments received from community members are to be evaluated and incorporated in the design where applicable.

3. EXISTING FACILITIES

3.1. LOCATION MAP

The existing water system includes distribution piping, two wells, three springs, and four tanks. The locations and names of these existing facilities are shown on Exhibit 1 in Appendix A. Photographs of these facilities are included in Appendix B.

3.2. HISTORY

The town water system has been developed and expanded over an extended period of time. In general, system failures and deficiencies have been addressed, with the exception of those discussed in this study. The history pertaining to each of the water system elements, namely the distribution system, sources (springs and wells), storage, and water rights, is included Section 3.3 - Condition of Existing Facilities.

3.3. CONDITION OF EXISTING FACILITIES

3.3.1. EVALUATION & DESIGN CRITERIA

The Utah Administrative Code contains minimum sizing requirements for the source, storage, and distribution of a culinary water system (Section R309-510). Additional sizing requirements for storage in regards to fire suppression are provided in Appendix B of the 2015 International Fire Code. Minimum guidelines for water rights are provided by the Utah Division of Water Rights. These guidelines indicate that water sources must have the capacity to meet or exceed the peak daily flow requirements, as well as provide the average yearly demand. The distribution system must have the capacity to handle peak instantaneous flows, peak daily flows, and a combination of peak daily and fire flow while maintaining minimum system water pressures. Table 4 summarizes the quantity, flow, and pressure requirements taken from these references for the study area in Equivalent Residential Connection (ERC) units. The outdoor usage is based on the location of the system within Utah, which is within Zone 3 as shown in the Irrigated Crop Consumptive Use Zone Map prepared by the Soil Conservation Service.

Table 4. Evaluation & Design Criteria per ERC

Water System Element	Indoor Use	Outdoor Use	Fire Flow	Pressure[1]
Water Rights[2]	400 gpd (0.45 ac-ft) per ERC (total diversion limit) 800 gpd per ERC (peak flow / peak day demand)	4.0 ac-ft per irrigated acre (total diversion limit) 3.39 gpm per irrigated acre (peak flow / peak day demand)	None	None
Water Source	800 gpd per ERC (peak day demand) 400 gpd per ERC (average day demand)	3.39 gpm per irrigated acre (peak day demand) 1.66 ac-ft per year per irrigated acre (average day demand)	None	None
Water Storage	400 gallons per ERC	2,528 gallons per irrigated acre	120,000 gallons[4] 180,000 gallons[3]	None
Distribution	$10.8*N^{0.64}$ (peak instantaneous)	6.78 gpm per irrigated acre (peak instantaneous)	1,000 gpm[4] 1,500 gpm[3]	20 psi for fire + peak day demands, 30 psi for peak instantaneous demands, 40 psi during peak day demand

(1) Minimum pressure at all points in the distribution system
(2) Per State of Utah Water Rights requirements
(3) Per International Fire Code requirements for dwellings larger than 3,600 sq-ft (1,500 gpm for 2 hour)
(4) Per Utah State requirements for dwellings smaller than 3,600 sq-ft (1,000 gpm for 2 hour)

Units - gpd = Gallons per Day; ERC = Equivalent Residential Connection; gpm = Gallons per Minute; ac-ft = Acre Feet; N = Number of ERCs; psi = pounds per square inch; sq-ft = Square Feet

The town also has several commercial and institutional connections. These include the Community Center building, the Town maintenance building, a church on the north end of town, and the church near the Community Center building. ERC equivalents for these types of connections can be found in the state rules and are shown below in Table 5.

Table 5. ERC Indoor Use Equivalents for Nonresidential Connections

Connection Type	Unit	Peak Day Demand (gpm)	ERC Equivalent
Residential	Home	800	1
Office Buildings	Persons	15	0.01875
Industrial Buildings	Persons	15	0.01875
Churches	Persons	5	0.00625

3.3.2. EVALUATION & DESIGN DEMAND ESTIMATES

Indoor and outdoor water usage demands for the various connection types were estimated based on the criteria outlined in Table 4 and Table 5. For outdoor use, it was estimated that on average 0.15 acres are irrigated per residential connection. This estimate is based on sampling a number of representative residential parcels throughout the Town and averaging the irrigated acreage. Outdoor use for nonresidential connections was estimated by delineating the irrigated acreage for each connection, which totaled approximately 4.15 acres. These nonresidential outdoor usage areas included the city

park, baseball field, and the churches. With this information, the demands for a single ERC were estimated to be 0.43 and 1.06 gpm for the average day demand and peak day demand, respectively.

The town also has one relatively large water usage agreement that is separate from the typical residential and nonresidential water usage. A large cattle feedlot known as the Hendrickson Feedlot, which consumes 3.0 to 6.3 acre-feet per year during the winter months. Because this demand occurs during the winter months when other outdoor use demands are at a minimum, this water was not considered in the ERC equivalent estimates, but was included in the annual diversion calculations.

A summary of the connections and the estimated ERCs for each type are summarized in Table 6. The selected growth rate mentioned previously (Section 2.3 - Population Trends) was used to project the anticipated growth in ERCs. This projection conservatively assumes that the ERCs of all connection types will grow at the same growth rate. This data is shown in Table 7.

Table 6. Existing Water System Connection and Equivalent ERC Summary

Connection Type	Number of Connections	Equivalent ERCs
Residential	220	220
Office, Industrial, and Church	6	14
Total	229	234

The special use related to the Hendrickson Feedlot is not used in the equivalent ERC calculation where this demand occurs only during the winter months when other outdoor usage is at a minimum. The annual diversion for the connection (water rights) was accounted for in proceeding calculations. Other special uses such as the baseball diamond, park, and splash pad that are not billed and should not be used to calculate water system revenue are also not used in the equivalent ERC calculation; however, the water usage is accounted for in terms of water rights, source, storage, and distribution capacities and requirements.

Table 7. Equivalent Residential Connection Projections

Year ->	2017	2020	2030	2040
ERCs	234	244	278	318

3.3.3. DISTRIBUTION SYSTEM

The existing distribution system consists of approximately 80,000 linear feet of PVC piping ranging from 2 to 10 inches in diameter that has been constructed over an extended period of time. The last major water system expansion/renovation occurred in 2010, when approximately 38,000 linear feet of 6 to 10 inch diameter PVC piping was installed. Some of this piping replaced existing smaller diameter piping with the aim to provide more conveyance capacity to meet state requirements.

The distribution system was evaluated in a hydraulic model built using Bentley's WaterGEMS software. The average day demand, peak day demand, peak instantaneous demand, and fire plus peak day demand scenarios were evaluated. These different scenarios were modeled under the existing system demands and the projected future system demands of 2040. The model shows that under the average

day, peak day, and peak instantaneous scenarios the system is adequate through the study period. Throughout the system 1,500 gpm of fire flow is available with the exception of a few areas where 1,200 to 1,450 gpm is available. These areas are in the northern branches of the system and primarily consisted of residential properties less than 3,600 sq-ft, therefore only 1,000 gpm is required per the design criteria. The model shows that the fire hydrant in front of the LDS church in the center of town provides just over 2,100 gpm. The peak day demand pressures for the existing and future conditions are shown on the water system maps included in Appendix A. The fire flow results for the existing and future conditions are included in tabular format in Appendix D, and reference the water system junction IDs shown in the water system maps (Appendix A).

3.3.4. SOURCES

The town currently has two wells and three springs, for a total of five sources. Mecham Spring water is not flowing into the system as it is currently being turned out due to water quality concerns. The peak capacities of these sources are listed in Table 8.

Table 8. Existing Source Capacities

Source	Capacity (gpm)
North Spring (Tunnel Springs)	8
South Spring (Tunnel Springs)	30
Mecham Springs*	30
Mecham Well	431
Downtown Well	197
Total	696

*The Mecham Springs capacity was measured by performing a series of bucket tests to measure the volume of flow discharged over time during the study. These measurements were taken because of questionable recorded flow meter data in the piping downstream of the spring.

The state guidelines indicate that the sources must have the capacity to provide a peak capacity equivalent to the peak day demand. The minimum required peak source capacity was estimated through the planning period based on the state guidelines outlined in Table 2 and the projected growth in ERCs shown in Table 7. Table 9 shows the required source capacity through the planning period. Based on comparison of the required capacities with the existing source capacity shown in Table 8, the town has sufficient source capacity through the planning period. This current source capacity can serve approximately 654 ERCs, with an excess of 379 ERCs in 2017 and an excess of 281 ERCs at the end of the planning period.

Table 9. Required Source Capacity

Year ->	2017	2020	2030	2040
Source Capacity Required (peak day demand, gpm)	293	305	348	397

Spring water is considered a valuable resource to the town due to the fact that it does not require the use of pumps and other equipment to draw the water during an emergency. This type of source water is also valuable from an energy efficiency standpoint as well because it does not require the use of

pumps or other electrical equipment. The flows from Mecham Spring have declined over time, from 60 gpm in 1986 to 30 gpm in 2017. It is recommended that the spring be rehabilitated to maintain and restore spring capacity. In addition, the collection area for Mecham Spring is an open field with little or no vegetative land cover with the exception of small areas of green vegetation. The collection lines for the spring run through the green areas, suggesting that the spring water may be close to the surface. Therefore, it is recommended that during the spring rehabilitation the spring collection system be deepened to remove the risk of surface water contamination.

The Mecham Well is one of the largest reliable sources in the system, and is responsible for producing most of the water for the Town. This well feeds the system by pumping directly into Tank 1, after which the water is pumped into the distribution system and up to Tank 3 and Tank 4. This well is still equipped with the original equipment installed during construction around 1962. This equipment is at the end of its design life and is shows signs of age and wear. It is recommended that the well building, well motor, pump, and outdated electrical components be replaced and a VFD installed. This will improve source reliability and reduce O&M and emergency repairs during life of proposed project loan repayment. Because this is a major source of water for the Town, a generator is also recommended. This would serve as an emergency backup and would allow the water system to continue to function in the event that the power companies system goes down. Where the source is essential to the Town's system, this work is included in the selected alternative.

The Downtown Well was built in 1974 and is located in the middle of the Town. This pump is only used a short time each night mainly to keep the water fresh. This pump station has aged and the reliability of the well is questionable. Some time ago there were suspicious sounds coming from the pump and/or motor. It is recommended that the pump and motor be thoroughly inspected as part of the selected alternative, and the pump motor be serviced and rewound. This pump station is not currently equipped with a soft start or VFD. Because this facility will be used significantly during construction and with a more reliable source be used more regularly, a VFD is recommended and is included in the selected alternative.

The Town has approved source protection plans for all 5 sources, but they are in need of updating. The source protection plan for the wells needed to be updated in 2016, and the plan for the springs were due at the end of 2017. The Project Engineers is working with the Town to see that these approved plans are updated.

3.3.5. STORAGE

The town currently has four water storage tanks that are in relatively good condition. The location of these tanks are shown on Exhibit 1 in Appendix A. The combined storage volume of these tanks is 775,000 gallons; however, only 525,000 gallons are readily accessible and usable without manual operation of the Tank 2 valves.

Tank 1, also known as the lower tank, is near Mecham Spring and Mecham Well. It was constructed in the 1940s and has a capacity of 75,000 gallons. This tank sits at a lower elevation than the other tanks

requiring a booster pump to feed water into the distribution system. The tank is in relatively good condition considering its age. A rudimentary inspection of the tank was completed on August 22, 2017. The walls and floor (where visible inside the tank) appeared to be in relatively good condition, however the tank lid shows signs of weathering and decay with small cracks on top and more significant concrete spalling around the lid perimeter. A more thorough inspection is recommended to confirm that the tank walls and floor are in good condition, but at a minimum it is recommended that the tank lid be replaced with the selected project alternative.

Tank 2 is known as the middle tank and has a capacity of 250,000 gallons. It is located just downstream of the North Spring and South Spring, collectively known as Tunnel Springs. This tank sits just below Tanks 3 and 4. Tunnel Springs are the only source of water for this tank. The spring water flows directly into the tank and then exits through a dedicated 4-inch PVC pipeline to a pump station vault near Tank 1. The water is then injected into the distribution system with a small 180 gpm booster pump. Tank 2 is also connected directly to the distribution system up near the tank, but due to the higher elevation of Tanks 3 and 4, Tank 2 would overfill if the valve was left open. A check-valve was installed some time ago to allow for flow from Tank 2 into the distribution system, but this valve is no longer in operation and a manual valve is used. The manual valve is kept in the closed position and isolates the storage of this tank from being readily accessible to the distribution system. Although the storage of this tank is not readily available to the distribution system except through the 180 gpm booster pump, it still provides a valuable resource to the town in terms of emergency storage. In the event of an emergency where the power grid were down and Tanks 3 and 4 drained completely, the valve at this tank could be opened to provide additional water to the town albeit at minimal pressure. Tank 2 is in relatively good condition with the exception of the hatch and access ladder. It is recommended that these items be replaced in the selected alternative. It should also be noted that if components of the tank were to fail before the end of the study, the town would need to reconfigure the piping from tunnel springs to bypass the tank and take the water directly down to Mecham spring area.

Tanks 3 and 4 are known as the Upper Tanks. Tank 3 was constructed in 1994 and has a capacity of 150,000 gallons and Tank 4 was built in 2010 and has a capacity of 300,000 gallons for a combined capacity of 450,000 gallons. These tanks are directly connected to each other at the same elevation and the distribution system, and gravity-feed water to the town. Tanks 3 and 4 are in excellent condition.

The water storage requirements were estimated based on the criteria outlined previously in Table 2. These requirements are shown in Table 10, which shows that with a total readily accessible storage capacity of 525,000 gallons, the town has enough storage capacity to last until year 2055. This current storage capacity can serve approximately 442 ERCs, with an excess of 167 ERCs in 2017 and an excess of 69 ERCs at the end of the planning period. If a new check valve is installed at the connection of Tank 2 to the distribution system, the total storage capacity will be 775,000 gallons. This storage capacity can serve a total of 763 ERCs, and meets storage capacity requirements well beyond the study planning period.

Table 10. Water Storage Requirements

Year ->	2017	2020	2030	2040
Equalization Storage (Indoor and Outdoor, gallons)	214,280	223,162	254,989	290,888
Fire Suppression Storage (gallons)*	180,000	180,000	180,000	180,000
Total Required Storage (gallons)	394,280	403,162	434,989	470,888

*The requirement for 180,000 gallons of fire suppression storage or 1,500 gpm for 2 hours is based on the need to serve structures larger than 3,600 square feet, in accordance with Appendix B of the 2015 International Fire Code.

3.3.6. WATER RIGHTS

The town has water rights with points of diversion at the Town's three springs and two wells. The locations of these sources are shown on the map included as Exhibit 1 in Appendix A. A summary of the municipal water rights owned by the Town is included as Table 11.

Table 11. Existing Municipal Water Right Summary

Water Right No.	Status	Sources	Yearly Diversion Limit
63-10, 63-233, 63-459, 63-694, 63-978, 63-1071, 63-1626	a18028 (approved)	Wells, Springs	279.55 acre-feet
63-4473	a30877 (approved)	Wells	25.00 acre-feet (Annual Depletion of 20.08 acre-feet)
63-2923	a38858 (approved)	Wells, Springs	1.2 acre-feet
63-4635	a36923 (approved)	Wells, Springs	3.0 acre-feet
63-4636	a36922 (approved)	Wells, Springs	0.12 acre-feet
63-4637	a36921 (approved)	Wells, Springs	1.356 acre-feet
		Total	310.226 acre-feet (305.306 acre-feet based on Annual Depletion)

Water rights were evaluated based on criteria outlined in Table 4. Water right requirements are evaluated based on the peak day demand (flow rate limitation), and the average daily demand (total diversion limit). However, the water rights currently owned by the Town only include a total diversion limit; therefore, only these requirements were evaluated. These calculated requirements shown in Table 12 include indoor and outdoor usage of all typical connection types, as well as the special use annual diversion volumes.

Table 12. Required Water Rights

Year ->	2017	2020	2030	2040
Residential, Office, Industrial, and Church (ac-ft)	247.0	257.2	293.9	335.3
Hendrickson Feedlot Special Use Agreement (ac-ft)	11.3	11.3	11.3	11.3
Total (ac-ft)	258.3	268.5	305.2	346.6

The depletion limit on water right 63-4473 could reduce the Town's usable water rights depending on how water usage depletes the aquifer. To be conservative, it was assumed that all of the water used from that source would be depleted and that the total usable water rights for the Town would be 305.306 acre-feet. As shown by comparing the available water rights in Table 11 and the required water rights in Table 12, the town has sufficient water rights through approximately year 2030. Underground water rights that can be used for municipal use can be difficult to come by in the project area. It is recommended that the town purchase additional water rights as they come available to sustain growth through the project planning period. It is also recommended that the town require new developers to purchase and transfer water rights to the Town if possible.

3.3.7. WATER QUALITY

In the recent past, the town's water has repeatedly tested positive in investigative testing. It is suspected that one of the sources for contamination is Mecham Spring. The collection area for Mecham Spring is an open field with little or no vegetative land cover, with the exception of small areas of healthy green vegetation. The collection lines for the spring run through the green areas, suggesting that the spring water may be close to the surface. This would also indicate that the water being collected from Mecham Spring could be under the influence of surface water, and therefore be a likely culprit as a source for contamination. In addition, the flow from Mecham Spring has decreased from 60 gpm in 1986 to 30 gpm in 2017. It is recommended that the spring be rehabilitated in an effort to restore valuable spring water source capacity. No alternatives were considered for the improvement as it is considered necessary to the Town (see Section 3.3.4 - Sources for more information).

Water quality testing has also shown elevated levels of Radionuclides; however, calculating the "adjusted gross alpha" value (subtracting the uranium value from the gross alpha value) shows that the town's water is below the maximum Radionuclide limits established by the U.S. Environmental Protection Agency (EPA). These calculations were confirmed with the local Utah Division of Environmental Quality (DEQ) representative.

The DEQ Water System IPS Report shows that the town has resorted to batch chlorination in an effort to pass investigative testing. The DEQ strongly recommends that the town incorporate a new chlorination treatment facility into their water system. Alternatives as to how this can be accomplished are discussed in Section 5 - Alternatives Considered.

3.3.8. ENERGY EFFICIENCY

The culinary water system includes a total of four pumps: two booster pumps and two well pumps. The booster pumps are set up with variable frequency drive (VFD) systems and the well pumps are not. A VFD reduces the spike in power demand that occurs when a pump is turned on by ramping up the power demand. Power companies typically have a separate charge for the maximum peak power demand that occurs over the billing period. To reduce operating costs the Town runs the Downtown Well at night during the off-peak power use hours, taking advantage of lower peaking and power charges offered as incentives by the power company. As part of the selected alternative, it is recommended that a VFD is installed at the Downtown Well as well as the Mecham Well with the new pump and motor (for more information see Section 3.3.4 - Sources).

3.3.9. SYSTEM VULNERABILITY

An Assessment (VA) was considered as part of this project per USDA PER guidelines, as the Town currently does not have a VA. To fulfill this requirement, J&DE is aiding the Town in completion of a VA and it is anticipated that it will be substantially completed prior to project bidding. The Rural Water Association of Utah has a template geared towards smaller systems which will be used. This document assess the security and vulnerability of the major components of the water system, prioritizes actions needed to better protect the system, provides emergency contact information, etc.

3.3.10. ACCESSIBILITY

Current customer service facilities are compliant with the accessibility requirements of the Uniform Federal Accessibility Standards, and the Americans with Disabilities Act Guidelines. The only customer service facility related to the water system is the town hall, which has approved handicap parking, wheel chair ramp over a 3” raised sidewalk, and standard 36”x80” double door entry and a 36”x80” door to the town clerk’s office. The water system includes water tanks, well buildings, and a meter vault. These facilities are not customer service facilities and were built following standard UDEQ guidelines and are secured by lock and key. Access doorways, hatches, ladders, stair ways, etc. were built to typical UDEQ standards and therefore serve the water system operator and those who regularly access the water system equipment well. No new customer service type buildings are proposed as part of any project alternatives, but all proposed facilities will be designed to be compliant with all applicable building codes and standards.

3.4. FINANCIAL STATUS OF ANY EXISTING FACILITIES

3.4.1. WATER RATE SCHEDULE

Currently the Town charges $30.00 a month for water for up to 30,000 gallons. Overages are charged at $.50 per 1,000 gallons over the 30,000 gallon limit. The average monthly charge per residential connection is approximately $35.00.

3.4.2. ANNUAL WATER OPERATION & MAINTENANCE COST

Average annual water department operation and maintenance (O&M) costs were approximately $66,760 over the last three years. This includes all items related to maintaining the water system such as wages, liability insurance, materials and supplies, lab fees, repairs, etc. See Appendix E for the Town's financial reports including this information.

3.4.3. OTHER CAPITAL IMPROVEMENTS PROGRAMS

The town has designated funds for the different departments of the town such as water and transportation. These funds are earmarked in each category to pay for existing debts and anticipated improvements throughout the town.

3.4.4. TABULATION OF USERS BY MONTHLY USAGE CATEGORIES

The total water usage and associated billing is broken down into usage categories are shown in Table 13. See Appendix E for the 2015 and 2016 usage summary including this information. In reviewing this data note that in 2016 the Town provided water for a road construction project. This was is water is categorized as "None" on the usage summary and was not used in the average calculations as this is a one-time use condition. Refer to Section 3.3.2 - Evaluation & Design Demand Estimates for a breakdown of connections per usage type.

Table 13. Tabulation of Average Usage and Collected Funds for 2015 to 2016

Usage Category	Usage (gallons)	Charges
Church	1,052,350	$777
Commercial & Industrial*	4,365	$0
Residential	56,201,225	$107,305
Total	57,257,940	$108,082

*Includes the Community Center, baseball fields, park, the Town maintenance building, and splash pad.

3.4.5. EXISTING DEBTS

The Town currently pays $27,000 per year towards existing water system debts with a balance of approximately $638,000 remaining. See Appendix E for the Town's financial reports including this information.

3.4.6. RESERVE ACCOUNTS

Financial report for 2017 fiscal year (June 2016 to June 2017 shows water bond and reserve as $31,220. This money is earmarked as reserves for existing debts. In addition to these reserves, the town also budgets $28,000 a year as a reserve for typical smaller and emergency type water system repairs.

3.5. WATER AUDITS

Water audits are routinely completed on the water system via the State Sanitation Surveys and other water usage audits. The information available at the time of this study is included in Appendix H. All existing water connections are metered, and there are flow meters on source water. However, the flow meters for source water have not been functional for an unknown amount of time; therefore water loss and leakage amounts are known, but it is suspected that leakage is minimal. There have not been signs of water leaks on the ground or in any of the infrastructure.

4. NEED FOR PROJECT

4.1. HEALTH, SANITATION, AND SECURITY

The water system has repeatedly tested positive in investigative testing. It does not currently meet state requirements or national EPA requirements for water quality. Refer to Section 3.3.7 - Water Quality for more information.

4.2. AGING INFRASTRUCTURE

The town's water system has infrastructure which ranges in age and condition. The piping, booster pumps, and tanks are in relatively good condition. However, as discussed previously the wells and lid of Tank 1 are approaching disrepair and are in need of replacement (for more information see Section 7 - Sources and Section 3.3.5 - Storage. Both well pumps and motors are aging. The Mecham well is at least 52 years old (well log states that it was drilled in 1962) and the Downtown well is 43 years old. Both wells still have all original equipment and are nearing the end of their design life. As discussed previously, it is recommended that the Mecham Well building, motor, and pump are replaced and that a VFD is installed. A thorough inspection of the Downtown Well is recommended and that the motor be serviced and rewound.

As the system ages the need for a new chlorination system will increase as older infrastructure can be more susceptible to contamination. In addition, with the anticipated growth the need to chlorinate drinking water becomes more critical as a larger number of people use the water.

4.3. REASONABLE GROWTH

The town has experienced steady growth over an extended period of time, and it is expected that it will continue to grow. This growth is evident when reviewing the population projection analysis included as Section 2.3 - Population Trends. A new chlorination system would serve the existing population, as well as the anticipated growth over the study planning period with little adjustment or upgrading. Therefore, no phasing of the preferred chlorine treatment alternative is recommended.

5. ALTERNATIVES CONSIDERED

5.1. DESCRIPTION

There are two viable options for construction and incorporation of a chlorine treatment facility in the town's water system, based on the water source locations and power availability. A "no-action" alternative was not considered due the requirement to install a new chlorination system to maintain clean water for the town and to meet applicable drinking water standards. Both alternatives require a chlorination system type. Options for what type of chlorination system to use were evaluated to determine the best solution in terms of cost, safety, and operation and maintenance. A life cycle present-worth cost analysis using the 20-year planning period was completed on four chlorination options as shown in Table 14. Costs were estimated based on information from equipment and material suppliers as well as on previous experience working on these types of projects.

Table 14: Chlorination Cost Comparison

Treatment Type ->	Chlorine Gas	Chlorine Liquid	Chlorine Tablets	Chlorine Generator
Capital Cost	$18,400.00	$6,900.00	$17,300.00	$90,000.00
Year 1 Chlorine Supply, Operation, and Maintenance	$6,442.50	$7,085.00	$7,132.50	$4,395.00
20 yr. Present Worth Chlorine, Operation, and Maintenance	$122,326.58	$134,525.86	$135,427.77	$83,449.71
Net Present Value	$132,399.87	$138,303.40	$144,898.97	$132,721.88

In terms of safety as well as ease in operation and maintenance, the chlorine tablet option is the most favorable. This is because the other options require greater care and training to handle the chlorine and operate the equipment. Chlorine gas and liquid have a greater potential to "off-gas" or ignite which can be very dangerous. Chlorine gas systems require operators to be certified and the water system owner is required to have special insurance due to this. Both chlorine gas and liquid also have a shorter shelf life as compared with chlorine tablets and a chlorine generator. Chlorine tablet systems are simple to operate and maintain and generally safer. In discussing treatment options with system suppliers, the chlorine tablet system was recommended for a system of the Town's size. The Town is also familiar with chlorine tablets as they have used these in the past. A chlorine tablet system is recommended and is included in each of the project alternatives considered. The final chlorine system selection will be pending based on Utah Division of Drinking Water (UDEQ) review and approval of design drawings and specs.

Both project alternatives include construction of a chlorine treatment facility at the same location. Water from four of the town's five sources collect in the Mecham Spring water storage tank. The source that is not directly conveyed to this location is the Downtown Well, which pumps directly into the distribution system. This source is currently only used for a short period of time at night (2 to 3 hours). In discussions with the local DEQ representative, it was suggested that a chlorine treatment facility be

constructed at Mecham Spring, with the assumption that no treatment will be needed at the Downtown Well. The project alternatives consider how the water will be conveyed back to the distribution system.

Project alternatives include replacement of the lid of Tank 1 as this is an important component to the water system as a whole, as discussed in Section 3.3.5 - Storage. They also include the redevelopment of Mecham Spring and replacing the Meacham Well building, pump, and motor as well as installing a new VFD as outlined in Section 3.3.4 - Sources. Both alternatives also include inspection of the Downtown Well, installation of a new VFD, and servicing of the motor.

The project alternatives also both include purchase of any available water rights up to what will be required to sustain growth through the planning period. Currently 5 ac-ft of underground water rights are available for purchase. Both alternative include purchase of these water rights.

5.1.1. ALTERNATIVE 1

Alternative 1 includes configuring the piping upstream of Tank 1 in such a way that the Mecham Spring, Mecham Well, and Tunnel Springs meet just upstream of the tank. At this location, a new chlorination building would be constructed to treat water before it enters the tank. The existing combined capacity of these sources is 499 gpm (see Table 8), which requires that a minimum storage volume of approximately 15,000 gallons is maintained at all times in order to achieve a 30-minute chlorine contact time, however additional reserved storage is recommended to ensure proper mixing. It is also recommended that the inflow piping be positioned and equipped with an elbow oriented away from the outlet to force the water to circulate in the tank. This will help with mixing and reduce the likelihood of highly chlorinated water from passing directly through the tank. A schematic of Alternative 1 is included in Appendix B.

5.1.2. ALTERNATIVE 2

Alternative 2 would include running an independent feed pipeline from the Mecham pump station vault up to the Upper Tanks (Tank 3 and Tank 4). This pipeline would be dedicated to feeding the water up to the tanks, meaning no connections could be made along the pipeline. This configuration with no intermittent connections is needed to meet the minimum chlorine contact time. Chlorine would be injected at the pump station vault before being piped to the Upper Tanks where the 30 minute contact time would be achieved. A schematic of Alternative 2 is included in Appendix B.

The approximate length of the pipeline would be 3,800 feet. The two existing pumps in the pump station have the capacity to pump water up to the existing Upper Tanks through a 6-inch-diameter pipe with a peak velocity of approximately 7 feet/second. These pumps would continue to function as they have in the past, but rather than pumping directly to the distribution system they would pump to the Upper Tanks. A valve would be installed just downstream of the pumps after the pipeline connection to stop any water from feeding directly into the distribution system. At the upper tanks, the pipeline would split with a smaller pipeline connecting to each tank.

5.1.3. ALTERNATIVE 3

This alternative is a “no-action” option – that is for the Town to continue functioning the system as they have in the past with no system upgrades. The existing water system has continued water quality issues which have been noted by the state as discussed previously which are noted in the current DEQ Water System IPS Report. The DEQ has highly recommended that the Town install some type of disinfection system to protect health and safety. Following these recommendations from the state will also ensure compliance with state code.

5.2. DESIGN CRITERIA

Each of the project alternatives described previously meet applicable state requirements as outlined in Section 3.3.1 - Evaluation & Design Criteria as well as water treatment requirements. Beyond meeting this criteria, each alternative was compared based on environmental impacts, land requirements, potential construction problems, sustainability, and cost in the following report sections.

5.3. MAP

See Appendix A for maps of the existing water system showing the location of Mecham Springs and Tank 1, which is where the new chlorination system is to be constructed. Appendix B includes schematics of the project alternatives.

5.4. ENVIRONMENTAL IMPACTS

No adverse environmental impacts are anticipated with implementation of all alternatives considered. Alternatives would result in temporary impacts during construction, but are unlikely to result in permanent impacts as the pipelines would buried, and the chlorination system would be housed in a small building. An Environmental Report was prepared for this project which outlines potential environmental impacts to the project in more detail. This report is included in Appendix F. The Environmental Report also includes a map showing the land ownership and impacted land as a result of the proposed project. No wetlands will be manipulated as part of the proposed project and therefore the project will comply with Section 363 of the CONACT. Also see report Section 2.2 - Environmental Resources Present for more information.

5.5. LAND REQUIREMENTS

The town owns the land where the improvements under each alternative would be constructed. This includes the project area immediately surrounding the Mecham Spring area, as well as the pipeline from the Mecham Springs area up to Tank 3 and Tank 4 as part of Alternative 2.

5.6. POTENTIAL CONSTRUCTION PROBLEMS

Both alternatives include the redevelopment of Mecham Springs. As with any spring redevelopment there are some unknowns as far as how long the redevelopment will take, how much it will cost, and how much additional water can be recovered. To mitigate negative impacts due to these unknowns this part of the project will be closely monitored by the engineer.

During construction of the new lid of Tank 1 and the Mecham Springs piping modifications included in both alternatives, the only source water will be Tunnel Springs and the Downtown Well. This will require that the modifications of the Tunnel Springs piping be delayed until other construction is completed. Tunnel Springs and the Downstream Well have a combined capacity of 235 gpm, with a peak capacity of 377 gpm with the use of Tank 2 and the 180 gpm booster pump. This capacity is sufficient to meet the current system demands as shown in Table 9; however additional measures can be taken to help mitigate the risk of running out of source water. These include scheduling construction around the peak demands of summer and accelerating the construction schedule. There has also been concern with the Downtown Well condition due to its age and some suspicious sounds which have been heard during operation. A thorough inspection of the system as well as servicing of the pump motor are included with the project. It is recommended that this inspection be completed at the beginning of the project to ensure the integrity of the well through construction.

Both project alternatives include reconstruction of the Tank 1 lid. This work will include demolition of the existing tank lid in such a way as to preserve the existing tank floor and walls. Caution must be taken by the contractor to ensure that during the lid demolition and construction of the new lid the existing tank floor and walls are not damaged. Methods for how to accomplish this should be considered during the design of the new tank lid and in preparing the construction documents.

Alternative 2 includes construction of a pipeline on city owned land. There are not a lot of utilities or other potential conflicts along the pipeline alignment. No construction problems are foreseen for this pipeline.

It should also be noted that to meet USDA Rural Development RUS-funded project guidelines, the 2013/2014 Engineers Joint Contract Documents Committee (EJCDC) contract documents must be used in conjunction with RUS Bulletin 1780-26 documents. The implementation of these types of contract documents helps ensure compliance with USDA guidelines. These contract documents also help maintain quality in construction and void potential construction problems.

5.7. SUSTAINABILITY CONSIDERATIONS

Both alternatives provide similar sustainable solutions to the existing system deficiencies in terms of chlorine treatment, spring redevelopment, and water conveyance. The same chlorination equipment will be required for each alternative. A tablet type chlorination system is recommended and desired by the Town for ease of maintenance and operation as well as from a safety standpoint as described in Section 5.1 - Description.

The redevelopment of Mecham Spring which is included with each alternative and will provide a sustainable - energy efficient source water. As was discussed previously, spring water is considered a valuable resource to the town due to the fact that it does not require the use of pumps and other equipment to draw the water during an emergency. This type of source water is also valuable from an energy efficiency standpoint, as it does not require the use of pumps or other equipment. See Section 3.3.4 - Sources for more information.

Required piping reconfigurations and new piping will allow the system to function in a similar way to how it has operated in the past with no additional costs due to system pumping. The difference between Alternative 1 and Alternative 2 is that the later alternative incudes a pipeline from Mecham Springs area to the Upper Tanks. However, because no valves are needed to operate this pipeline and because the pumps will operate the same with the pipeline in place, differences in operation and maintenance as well as costs associated with each alternative are negligible.

Both alternatives also include installation of a new VFD at each of the pump stations. This will reduce power costs by reducing peak power demand charges from the power company.

5.8. COST ESTIMATES

Capital and annual costs were estimated for each alternative, and include engineering, construction, and other services. They are provided to compare costs between alternatives and are not intended to serve as the basis of quotes or bids on the actual work. Actual costs will vary based on several factors including final design, competitive bidding, and market factors. As discussed in Section 5.7 - Sustainability Considerations, O&M costs between the alternatives are the same as function between the alternatives is very similar. Table 15 contains estimated O&M costs for both alternatives, which primarily come from the chlorination treatment equipment.

Table 15: Annual O&M Costs for Alternative 1 and Alternative 2

Item	Cost
Chlorine Supplies	$3,100
Personnel (Salary)	$3,000
Testing Supplies/Testing	$780
Miscellaneous	$250
Total	$7,130

A detailed Opinion of Probable Construction Costs (OPCC) for each alternative is presented in Appendix E. A summary of the OPCC for each alternative including preconstruction engineering, environmental, and related professional services, are shown below in Table 16.

Table 16: Initial Cost Comparison for Alternative 1 and Alternative 2

Category	Alternative 1	Alternative 2
Construction Costs	$ 531,000	$ 638,000
Non-Construction Costs	$ 162,000	$ 131,000
Annual O&M Costs	$7,130	$7,130
Total Estimated Cost	$ 700,130	$ 826,130

6. SELECTION OF AN ALTERNATIVE

6.1. LIFE CYCLE COST ANALYSIS

The planning period for this project is 20 years, and the assumed lifespan of both alternatives is 40 years. A life cycle present-worth cost analysis was used to compare the alternative costs over the planning period. As shown in Table 17, Alternative 1 has a monetary advantage due to all of the improvements being in the Mecham area, where as Alternative 2 includes 3,800 feet of new pipeline needed to convey water up to the Upper Tanks.

Table 17: Alternatives Lifetime Cost Comparison

Alternative	Study Period	Projected Lifespan	Present Worth Cumulative Capital Cost	Present Worth Annual O&M	Present Worth Salvage Value	Net Present Value of Facility
1	20 yrs.	40 yrs.	$693,000.00	$1,730,370.98	$313,604.30	$2,109,766.68
2	20 yrs.	40 yrs.	$819,000.00	$1,730,370.98	$370,623.26	$2,178,747.72

Straight line depreciation was applied to the capital costs of each alternative over the projected lifespan. The salvage value for any given year is calculated by subtracting the total depreciation to date for the alternative and subtracting it from the capital cost. For this PER, the study period is 20 years while the projected lifespan is 40 years, therefore the annual salvage value is 50% of the original capital cost at the end of the study period, with the present worth salvage value being calculated from that as seen in Table 17. For more details on equations used, see Appendix E for present worth analysis calculation summary.

6.2. ALTERNATIVE COMPARISON (MONETARY & NON-MONETARY)

Each alternative is compared in the decision matrix table (Table 18) based on the Design Criteria included in Section 5.2. In this way cost as well as non-monetary factors can be easily compared. Only notable differences between each alternative are included in the table – so shared requirements or concerns are not included. For a full description of each item see the respective report section.

Table 18. Decision Matrix Table

Project Alternative	Environmental Impacts	Land Requirements	Potential Construction Problems	Sustainability	Capital Cost	Total Present Worth Cost	Alternative Score
Weighting	5%	5%	5%	5%	NA	80%	NA
Alternative 1 Description / Cost	3.29 acres of ground disturbance	Equivalent between alternatives	Equivalent between alternatives	Equivalent between alternatives	$693,000	$4,425,709	NA
Alternative 1 Rating	5.0	5.0	5.0	5.0	NA	5.0	5.0
Alternative 2 Description / Cost	5.91 acres of ground disturbance	Equivalent between alternatives with the exception of the pipeline from the Mecham Springs area to Tank 3 and Tank 4, however this pipeline is on city owned property eliminating the need for easements, etc.	Equivalent between alternatives with the exception of the pipeline from the Mecham Springs area to Tank 3 and Tank 4, however no construction problems are foreseen at this time.	Equivalent between alternatives	$819,000	$4,543,709	NA
Alternative 2 Rating	2.8	4.0	3.5	5.0	NA	4.9	4.7

As shown in the decision matrix table shown in Table 18, Alternative 1 results in a higher project score relative to Alternative 2. This is because of the reduction in cost and the fact that Alternative 1 would result in an equivalent or reduction in non-monetary considerations including project requirements, concerns, etc. Therefore, Alternative 1 was selected as the recommended alternative.

7. PROPOSED PROJECT (RECOMMENDED ALTERNATIVE)

7.1. PRELIMINARY PROJECT DESIGN

The recommended project (Alternative 1) is outlined in the sections below. Refer to the Selected Alternative Map in Appendix B for a detailed overview of the project.

7.1.1. TREATMENT

A tablet chlorination system is to be installed based on given evaluation criteria, but also because this is the preference of the Town. A new chlorination building is proposed as well as reconfiguration of piping from the Mecham Well, Mecham Spring, and Tunnel Springs in such a way that these main sources will all be treated. The source piping from Mecham Spring and Tunnel Springs will be brought into a junction box where an open channel flow measurement device will be located. Water will then be conveyed to Tank 1 where it will continue to mix with the chlorine and achieve the minimum 30 minute contact time.

The location of these facilities is shown on the Selected Alternative Map included in Appendix B. Also see Section 5.1 - Description for more detailed information.

7.1.2. SOURCE

The Mecham Spring is to be redeveloped as part of the project. This will include replacement of the existing collection piping, and installation of new collection piping in the ground. Some exploratory excavation is required in an effort to restore and/or increase the spring capacity. The downstream piping from Tunnel Springs will be reconfigured to enter a junction box before entering the proposed chlorination building. The Tunnel Springs piping reconfiguration is to be completed after the other work on Tank 1, Mecham Springs, and the Mecham Well to preserve the access to this water source during construction.

The existing Mecham Well motor and pump is to be replaced, and a new VFD installed. The existing pump station building is just south of the Tank 1, as shown on the Selected Alternative Map included in Appendix B. A new generator is included in the project, which will be located just outside the pump station. The Downtown Well pump and motor are to be thoroughly inspected at the beginning of construction to ensure its integrity and determine if any additional repairs are needed to make sure it will be a reliable source through construction and beyond. The pump motor is to be serviced and rewound to ensure it is in good working condition. A new VFD is also to be installed at the Downtown well to reduce pump and motor strain as well as reduce power costs during and after construction. See Section 3.3.4 - Sources for more detailed information.

7.1.3. STORAGE

The lid of Tank 1 will be replaced and the piping into the tank will be reconfigured from Mecham Well and Mecham Spring to route through the proposed chlorination building before entering the tank. This piping reconfiguration is shown on the Selected Alternative Map included in Appendix B. The inlet piping within the tank will include an elbow placed in such a way to promote water circulation and chlorine mixing. Caution must be taken when demolishing the lid and construction of the new lid to avoid damaging the existing tank. See Section 3.3.5 - Storage for more information. In addition, the Tank 2 hatch and ladder are to be replaced.

7.1.4. WATER RIGHTS

There is currently 5 ac-ft. of underground water rights which can be used for municipal use available for purchase. The project includes purchase of these water rights.

7.2. PRELIMINARY SCHEDULE

A preliminary schedule was estimated for the recommended alternative. This schedule follows the recommended breakdown of events to mitigate construction problems noted in Section 5.6 - Potential Construction Problems, as is shown below in Figure 2.

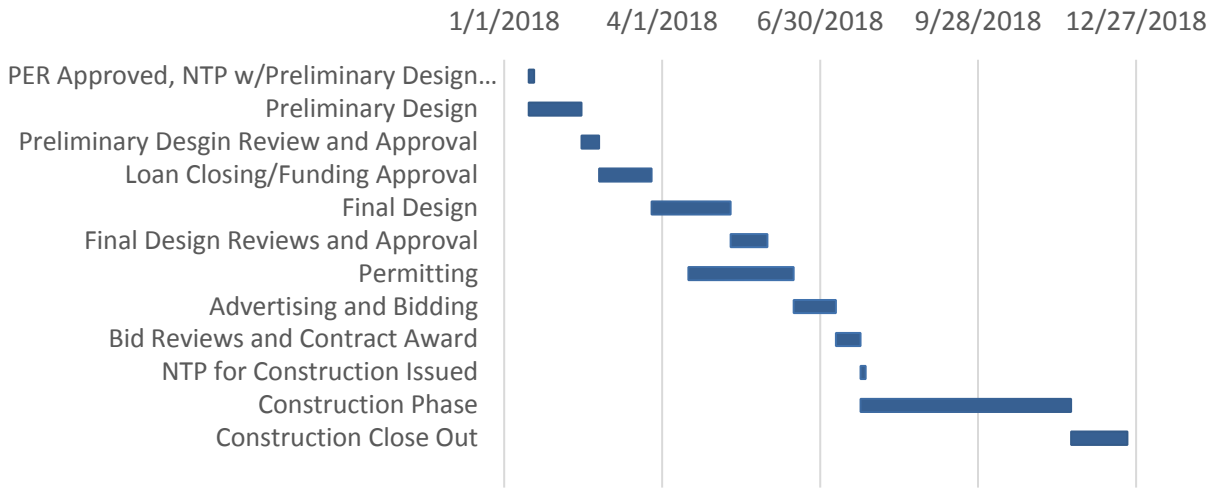


Figure 2. Selected Alternative Preliminary Project Schedule

7.3. PERMIT REQUIREMENTS

No permits have been identified as required for the proposed work of the selected alternative.

7.4. SUSTAINABILITY CONSIDERATIONS

Sustainability considerations for the selected alternative are discussed in Section 5.7 - Sustainability Considerations. Key points related to sustainability for the selected alternative include rehabilitation of Mecham Springs and selection of the Chlorination Equipment. Mecham Springs is source of water which does not require pumping in order to collect water. This reduces electrical costs on a day-to-day basis and is also a valuable source of water in an electrical emergency situation. The tablet chlorination equipment was selected based on cost, safety, and ease of use. Tablet systems don't require special training or licensing to operate and the town is familiar with these types of systems. The tablets have a longer shelf life and are simple to transport, store, and use. And lastly, installation of a VFD at the Mecham Well and Downtown Well will reduce electrical costs by eliminating peak power demand charges.

7.5. TOTAL PROJECT COST ESTIMATE

Table 19 contains a summary of the estimate project costs for the selected alternative. See Appendix E for an itemized breakdown of these costs.

Table 19: Total Project Construction Cost Estimate Breakdown

Item	Cost
Engineering and Environmental Professional Services	$ 64,000
Construction Administration	$ 48,000
Water Rights Purchase	$50,000
Construction	$ 451,000
Construction Contingency	$80,000
Total Estimated Cost	$ 693,000

7.6. ANNUAL OPERATING BUDGET

7.6.1. INCOME

The water department generates revenue primarily through water usage, hookup fees, and impact fees. Hookup and impact fees are charged to new system connections - interest and penalty charges provide additional income. The average annual income over the last three fiscal years is shown in Table 20. All financial reports and billing data can be found in Appendix E. Where this information is based on actual data and because the selected alternative will not directly result in additional revenue, it is recommended that this be conservatively used to estimate income over the life of any loans, etc.

Table 20: Water System Income Breakdown

Source	Income
Water Service	$ 89,047
Hookup Fees	$4,500
Impact Fees	$10,667
Subdivision Water Purchase Fund	$ 3,000
Interest and Penalty Earnings	$ 1,397
Miscellaneous	$1,682
Total	$ 110,293

7.6.2. ANNUAL O&M COSTS

The financial reports included in Appendix E include budgetary numbers for O&M of the Town's water system. These values were used to estimate future O&M budget estimates. The additional O&M required for the selected project alternative were added to these estimates. This breakdown is included in Table 21.

Table 21: O&M Budget for the Proposed System

Category	Cost
Salaries and Wages	$ 23,000
Employee Benefits	$ 2,000
Travel and Training	$ 4,000
General Materials and Supplies	$ 16,000
Chlorination Supplies*	$ 4,200
Utilities	$ 28,000
Lab Fees	$ 7,000
Insurance	$ 2,000
Attorney	$ 1,000
Water System Improvements	$ 28,000
Water Purchase	$ 5,000
Accounting and Audit	$ 1,000
Existing Loans Repayment	$27,000
Total	$ 148,200

*Additional O&M budget required for the selected project alternative.

When budgeted expenses exceed income, the difference is made up with money from the general fund. The town is also considering if a rate increase would be justified to help cover increasing operation costs.

7.6.3. DEBT REPAYMENT

Existing debts for the water system require an annual total of $27,000 as outlined in Section 3.4.5-Existing Debts. If there are ever shortages in the water department budget due to things like operation and maintenance or loan repayment costs, the town uses the general fund to cover the expenses.

Proposed debt repayment structure/plans will consist of the Town budgeting annually for the required payment necessary to retire the debt in accordance with the terms of the loan. Conservatively debt repayment ability will not be subject to new service connection fees, developer fees, or other future income. Note that the proposed water system upgrades of the selected alternative will not directly result in additional water system connections or usage. Also, depending on the funding options available for the project, and adjustment to the water rate structure may be needed. This will be determined during the final design of the project.

7.6.4. RESERVES

7.6.4.1. DEBT SERVICE RESERVE

As shown on the financial reports included in Appendix E, the town currently has a debt reserve of $31,187 earmarked for a current loan. The town currently does not have any additional funds available to serve as a debt service for future loans; however, if a new loan were to be required to complete the project the Town would make plans to cover this requirement.

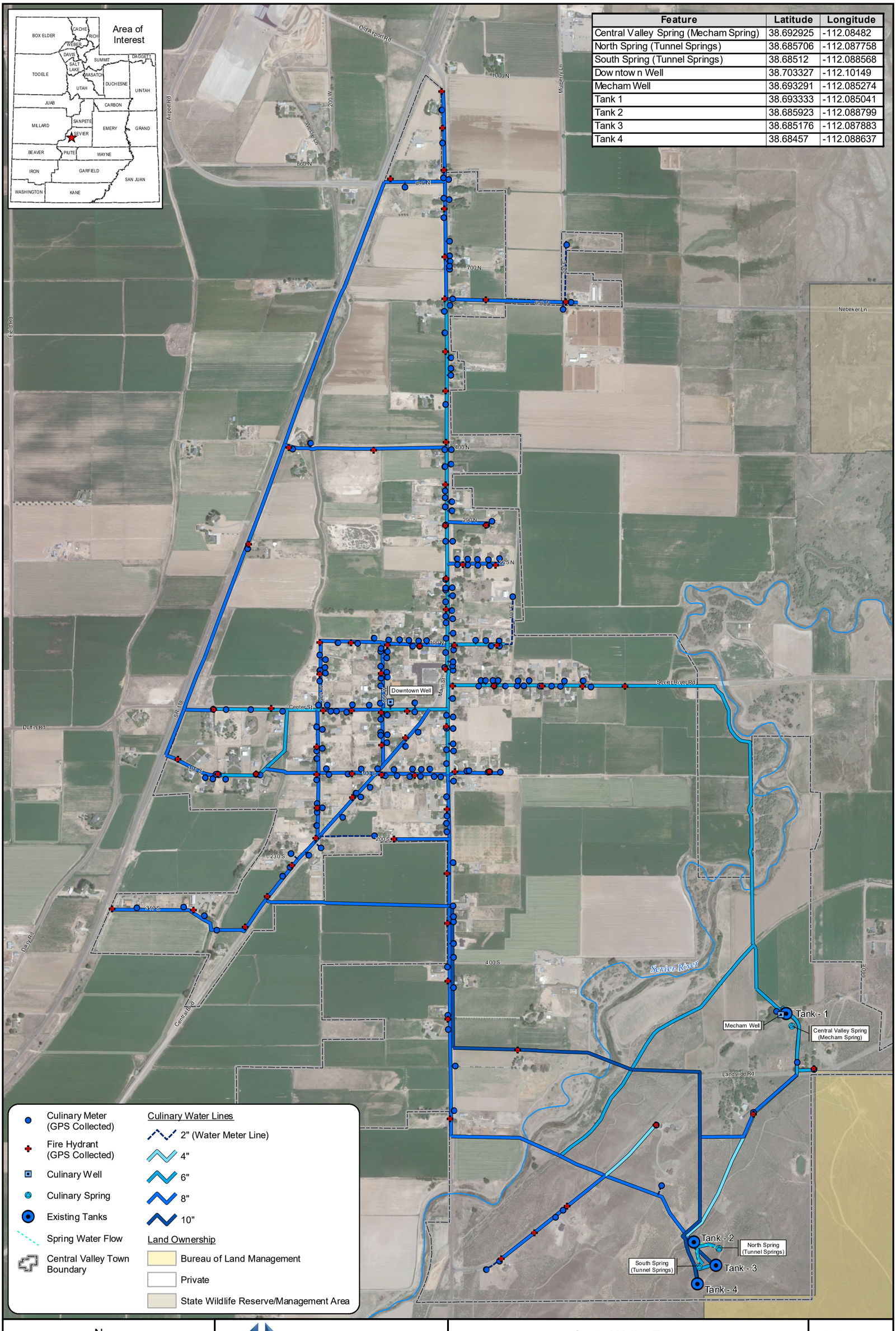
7.6.4.2. SHORT-LIVED ASSET RESERVE

Short-lived assets consist of probable water system repairs which will be paid for directly by the Town (no grants or loans). The town currently budgets $28,000 annually to cover these items (see Table 21 – item Water System Improvements). A list of typical short-lived assets the meet the Town's needs with an anticipated replacement schedule and associated cost is included in Appendix I. This corresponds directly with the recommended items included in the PER guidelines. The total yearly cost of these items was estimated to be approximately $11,300. The difference between this total and the annual budget covers unpredictable emergency repairs and upgrades.

8. CONCLUSIONS AND RECOMMENDATIONS

The recommended alternative is needed to bring the water system of Central Valley Town into compliance with drinking water standards and sustain future growth. The implementation of this project is urgent, as the system currently does not meet drinking water standards in regards to water quality which is an immediate health and safety concern. It is recommended that the Town move forward with this project in a timely manner to allow for construction this as soon as possible. Ideally construction could occur in the spring when demands spring water demands are low. This schedule is also dependent on the loan closing/funding that must be in place before the final design of the project.

APPENDIX A. PROJECT MAPS



Feature	Latitude	Longitude
Central Valley Spring (Mecham Spring)	38.692925	-112.08482
North Spring (Tunnel Springs)	38.685706	-112.087758
South Spring (Tunnel Springs)	38.68512	-112.088568
Downtown Well	38.703327	-112.10149
Mecham Well	38.693291	-112.085274
Tank 1	38.693333	-112.085041
Tank 2	38.685923	-112.088799
Tank 3	38.685176	-112.087883
Tank 4	38.68457	-112.088637

N

0 500 1,000 Feet

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Central Valley Town

Central Valley Water Study
Existing System Overview Map

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Existing System Overview\Central_Valley_Town_Culinary_Water_Existing_System_Overview_Map.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 02/19/2018

Sevier County

Scale: 1 " = 1,000 '

1

Proposed Tank 1 concrete tank lid replacement.

Proposed tank inlet piping.

Proposed chorination building.

Proposed spring junction box with flow measurement.

Tunnel Springs piping reconfiguration.

Replace Mecham Well building, pump, motor, and install new VFD.

Proposed piping reconfiguration from the Mecham Well.

Tunnel Spring Pipeline

Approximate spring collection piping layout

Note:
Selected alternative includes a new Downtown well VFD and servicing the Downtown well motor, as well as a new hatch and ladder at Tank 2.

Proposed Piping Reconfiguration

Proposed Spring Collection Piping

Existing Culinary Lines

Mechan Springs General Collection Rehabilitation Area

Proposed Concrete Tank Lid Replacement

N

0 25 50 Feet

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Central Valley Town

Central Valley Water Study
Preferred Alternative Improvements at Mechan Spring

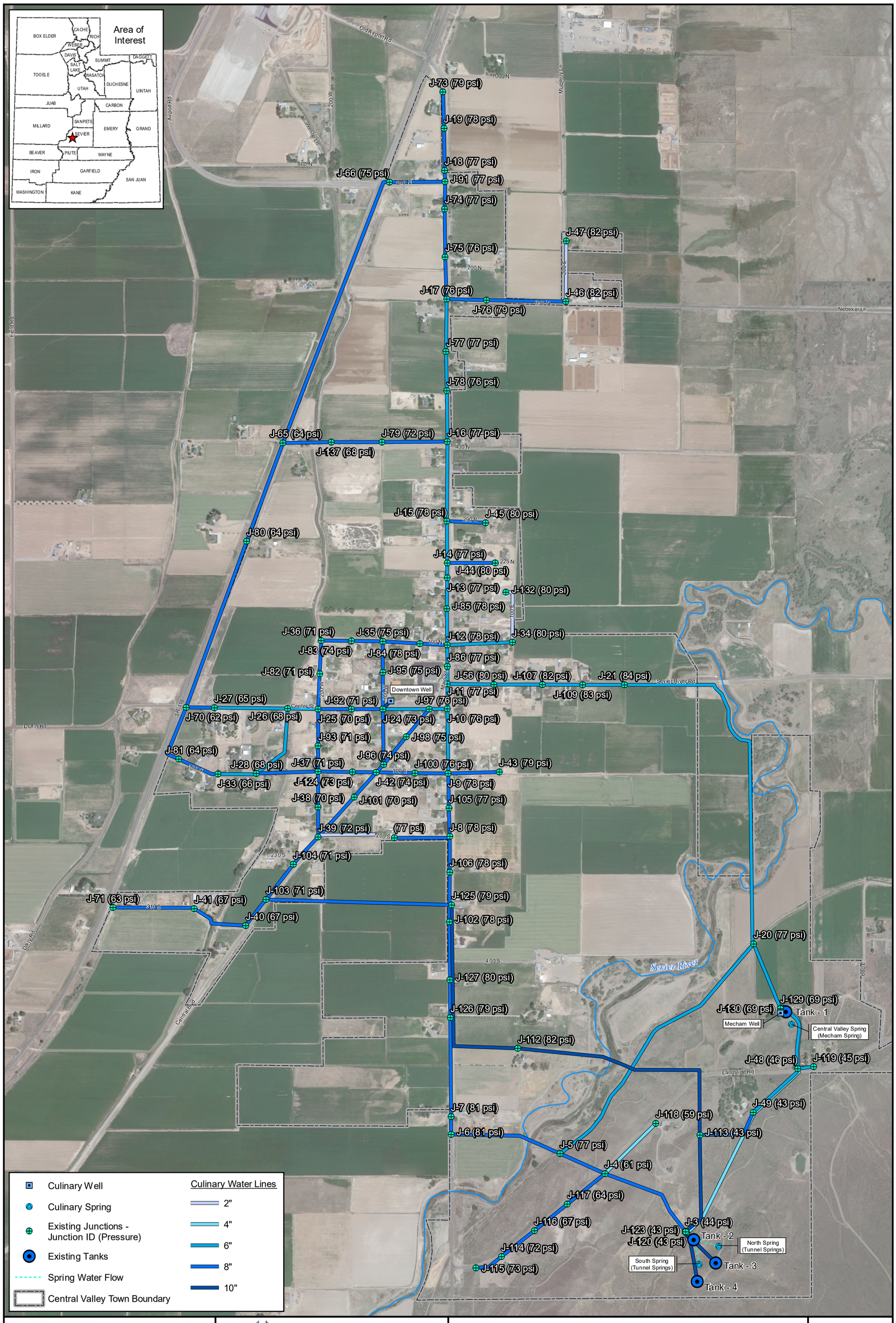
Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Central_Valley_Water_Study_Mechan_Spring_Reconfiguration.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/15/2017

Sevier County

Scale: 1 " = 50 '

1


Area of Interest
BOX ELDER
CACHE
RICH
WEBER
DAVIS
SALT LAKE
SUMMIT
TOOELE
TOOELE
WASATCH
DUCHESNE
UINTAH
UTAH
DAGGETT
JUAB
CARBON
MILLARD
SANPETE
SEVIER
EMERY
GRAND
BEAVER
PIUTE
WAYNE
IRON
GARFIELD
SAN JUAN
WASHINGTON
KANE
Old Airport Rd
Airport Rd
Field Rd
Duffin Rd
Dairy Rd
Central Rd
Nebeker Ln
Landslide Rd
South Valley Rd
SR-28
Center St
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J-107 (82 psi)
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Downtown Well
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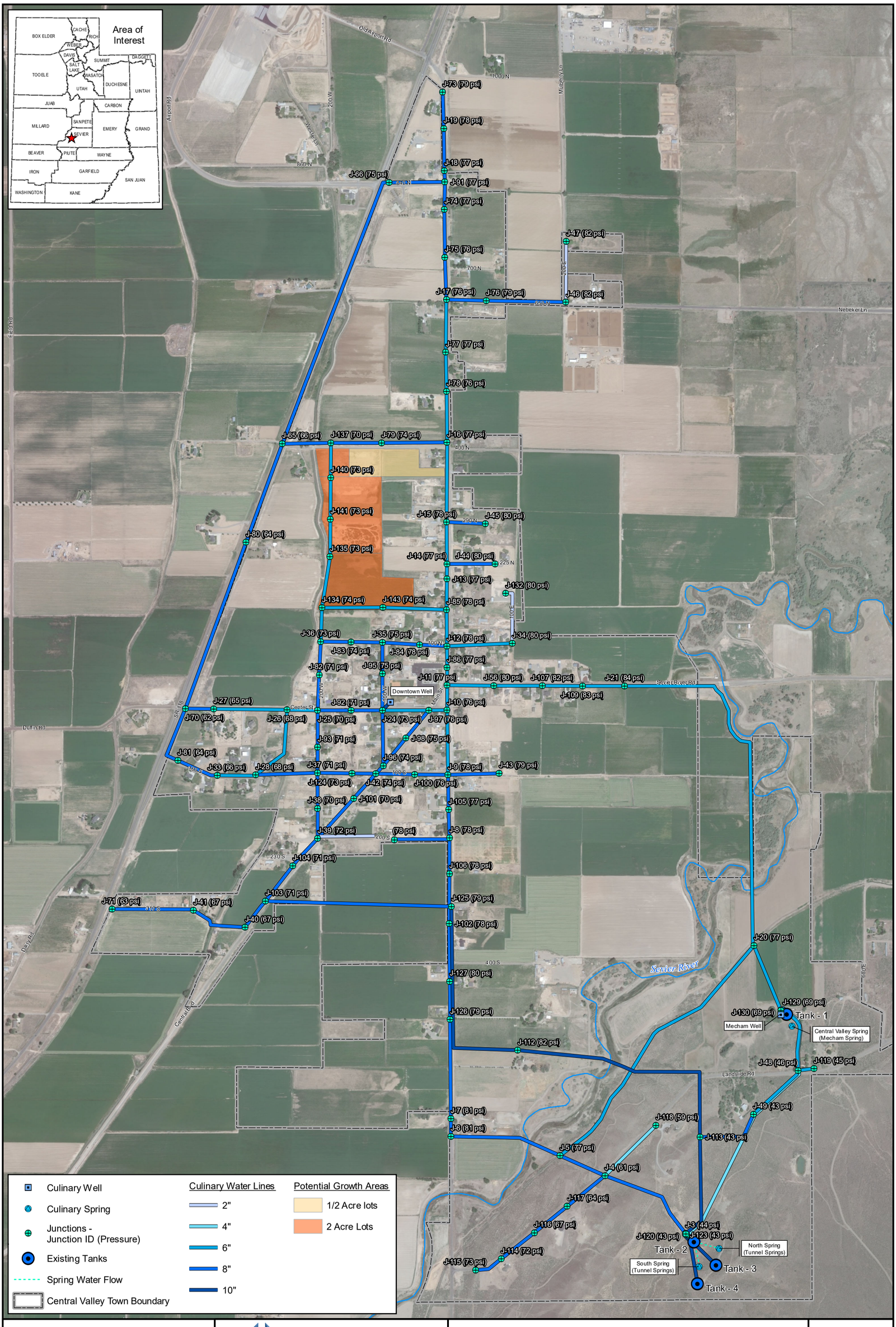
J-96 (74 psi)
J-28 (68 psi)
J-37 (71 psi)
J-100 (76 psi)
J-43 (79 psi)
J-33 (66 psi)
J-124 (73 psi)
J-42 (74 psi)
J-9 (78 psi)
J-38 (70 psi)
J-101 (70 psi)
J-105 (77 psi)
J-39 (72 psi)
(77 psi)
J-8 (78 psi)
J-104 (71 psi)
J-106 (78 psi)
J-71 (63 psi)
J-41 (67 psi)
J-103 (71 psi)
J-125 (79 psi)
J-40 (67 psi)
J-102 (78 psi)
J-20 (77 psi)
Sevier River
J-127 (80 psi)
J-129 (69 psi)
J-130 (69 psi)
Tank - 1
Mecham Well
Central Valley Spring (Mecham Spring)
J-126 (79 psi)
J-112 (82 psi)
J-48 (46 psi)
J-119 (45 psi)
J-49 (43 psi)
J-7 (81 psi)
J-118 (59 psi)
J-6 (81 psi)
J-113 (43 psi)
J-5 (77 psi)
J-4 (61 psi)
J-117 (64 psi)
J-116 (67 psi)
J-3 (44 psi)
J-123 (43 psi)
Tank - 2
J-120 (43 psi)
North Spring (Tunnel Springs)
J-114 (72 psi)
South Spring (Tunnel Springs)
J-115 (73 psi)
Tank - 3
Tank - 4
Culinary Well
Culinary Spring
Existing Junctions - Junction ID (Pressure)
Existing Tanks
Spring Water Flow
Central Valley Town Boundary
Culinary Water Lines
2"
4"
6"
8"
10"
N
Feet
0
500
1,000
Jones & DeMille Engineering
- Shaping the Quality of Life -
800.748.5275
www.jonesanddemille.com
Central Valley Town
Sevier County
Central Valley Water Study
Existing Conditions Model: Peak Daily Demand System Pressures
Scale: 1 " = 1,000 '
Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Central_Valley_Water_Study_Existing_Conditions_Overview.mxd
Project Number: 1706-043
Drawn by: JEM 10-17
Last Edit: 12/20/2017
1



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Central Valley Town

Sevier County

Central Valley Water Study
Future Conditions Model: Peak Daily Demand System Pressues

Scale: 1 " = 1,000 '

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Central_Valley_Water_Study_Future_Conditions_Overview.mxd

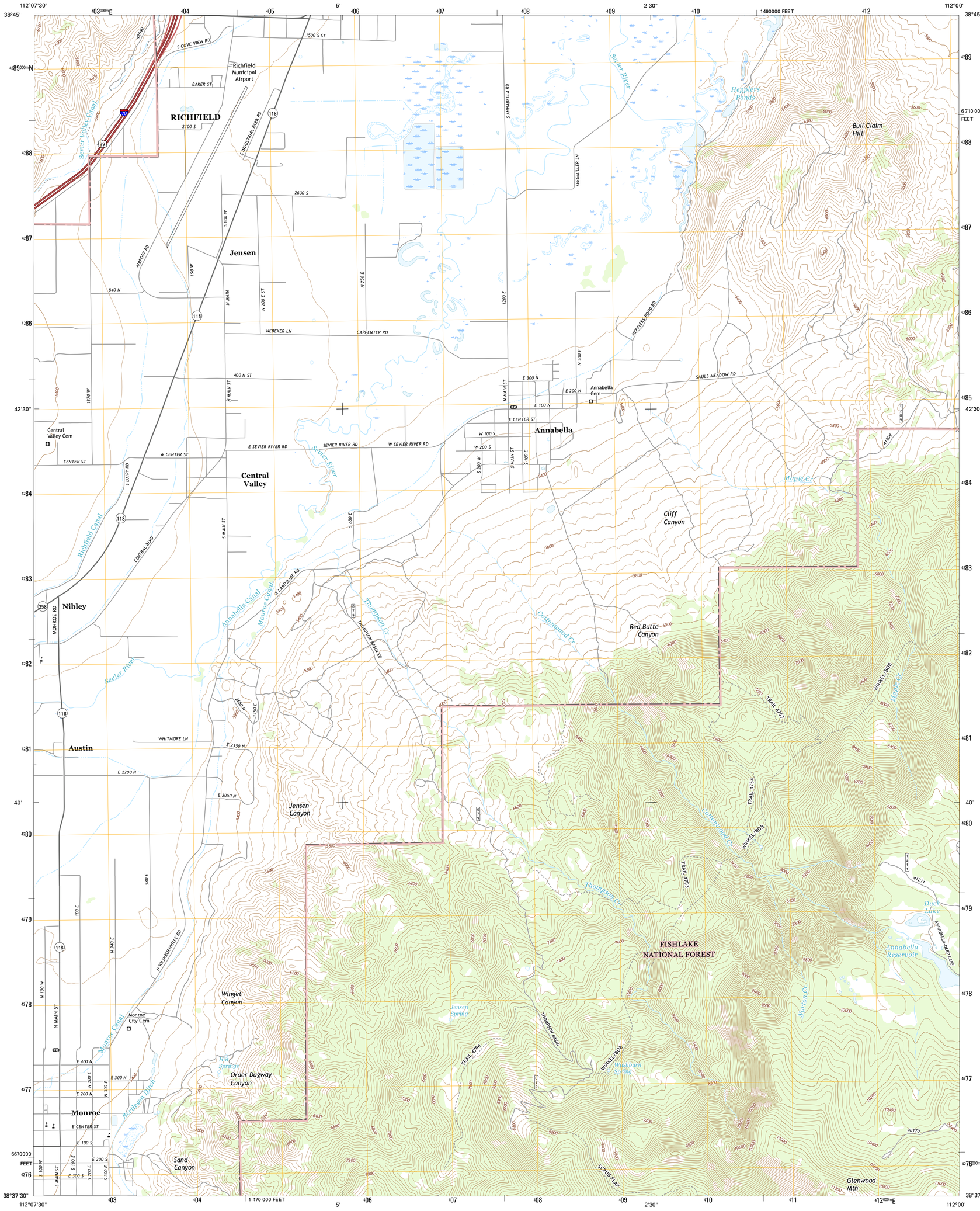
Project Number: 1706-043 | Drawn by: JEM 10-17 | Last Edit: 12/20/2017

1

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

ANNABELLA QUADRANGLE
UTAH-SEVIER CO.
7.5-MINUTE SERIES



Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 12S
10 000-foot ticks: Utah Coordinate System of 1983 (central zone)

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, October 2014
Roads.....U.S. Census Bureau, 2015 - 2016
Roads within US Forest Service Lands.....FSTopo Data with limited Forest Service updates, 2012 - 2016
Names.....GNIS, 2016
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2000
Boundaries.....Multiple sources; see metadata file 1972 - 2016
Public Land Survey System.....BLM, 2016
Wetlands.....FWS National Wetlands Inventory 1977 - 2014

UTM GRID AND 2017 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
VH
Grid Zone Designation
12S

SCALE 1:24 000

1 0.5 0 KILOMETERS 1 2
1000 500 0 METERS 1000 2000
1 0.5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

UTAH
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 White Pine Peak
2 Richfield
3 Sigurd
4 Elsinore
5 Water Creek Canyon
6 Antelope Range
7 Monroe Peak
8 Koosharem

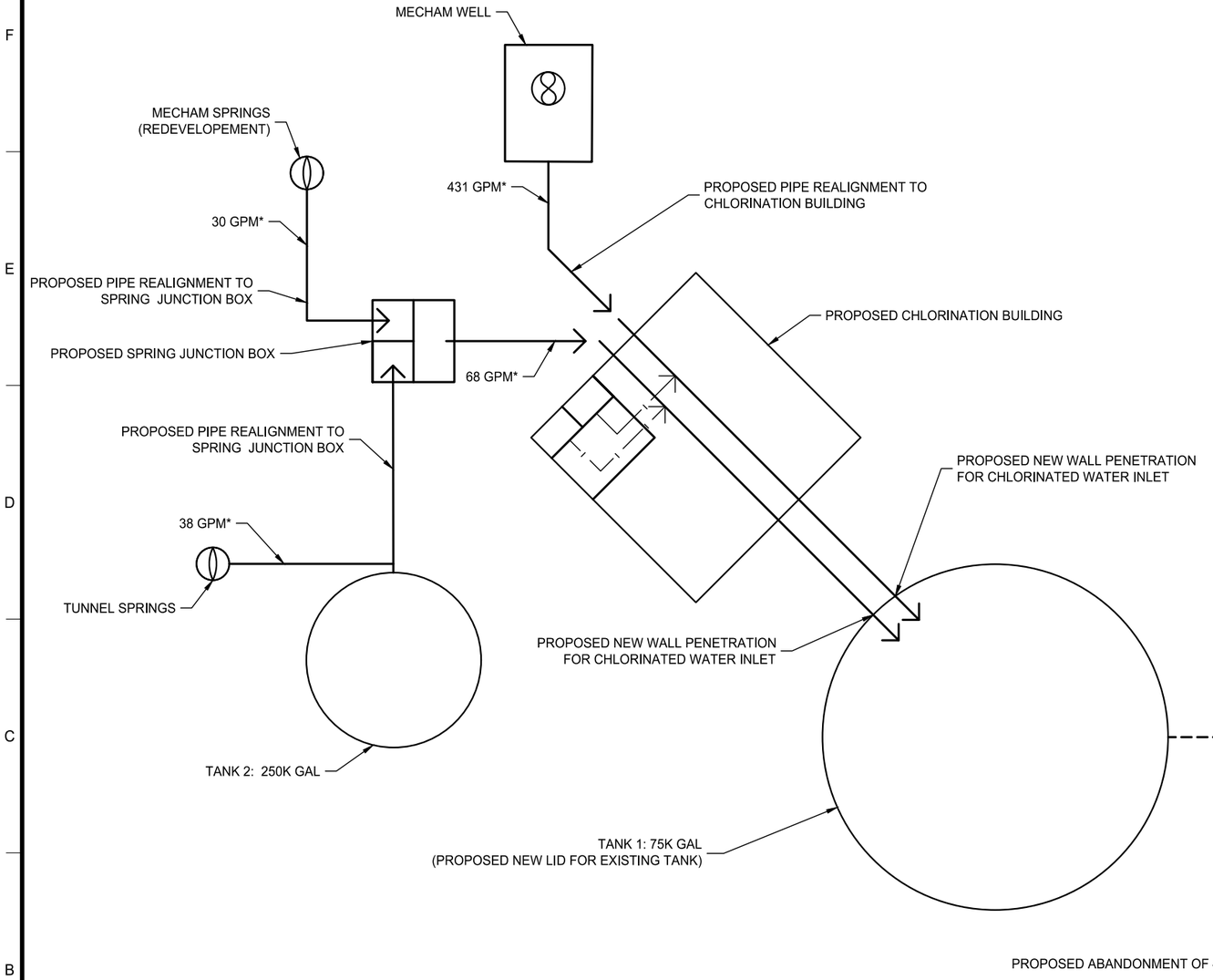
ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route
FS Primary Route
FS Passenger Route
FS High Clearance Route

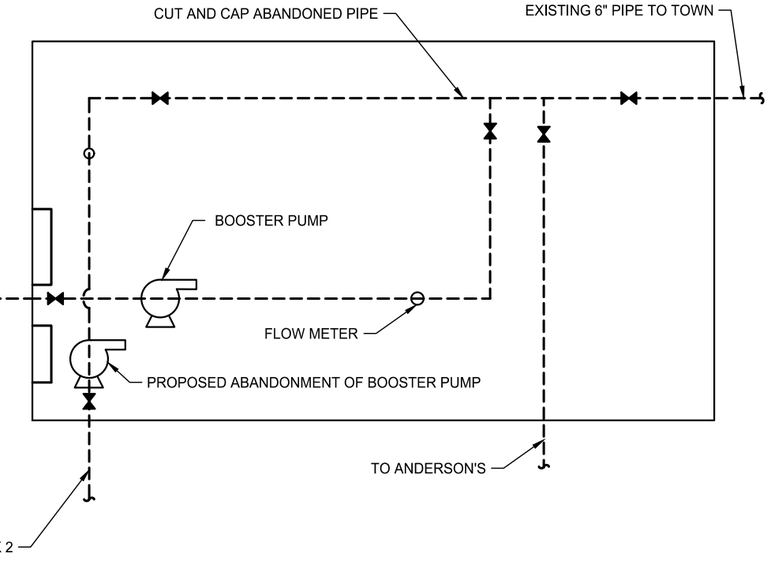
Check with local Forest Service unit for current travel conditions and restrictions.

ANNABELLA, UT
2017

USGS 24K1069
NSN 7643012169069
NGA REF NO. USGS24K1069

APPENDIX B. PROJECT ALTERNATIVE SCHEMATICS





ALTERNATIVE 1

* FLOWS ARE APPROXIMATE AS OF TIME OF STUDY

EXISTING PIPES

PROPOSED PIPES

REVISIONS

NO.	DATE	REMARKS

UPDATED: 10/11/2017

DWG NAME:

SCALE:

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GIS - ENVIRONMENTAL
1.800.748.5275 www.jonesanddemille.com

APPROVAL RECOMM.

PROJECT DESIGN ENGINEER

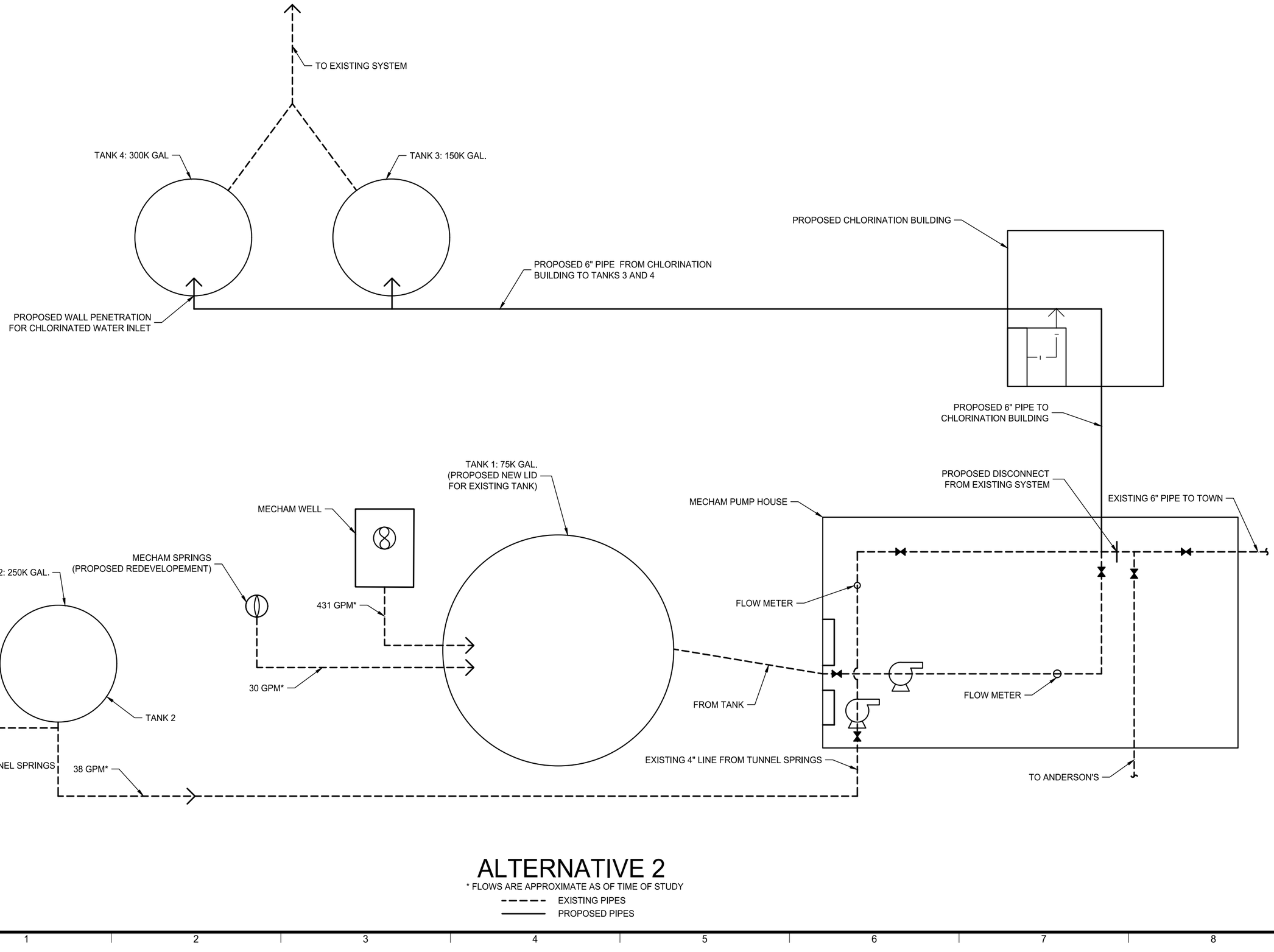
APPROVED

DATE

CENTRAL VALLEY
WATER STUDY
ALTERNATIVE 1

SEVIER
COUNTY

SHEET NO. EX-0



ALTERNATIVE 2

* FLOWS ARE APPROXIMATE AS OF TIME OF STUDY

EXISTING PIPES

PROPOSED PIPES

NO.	DATE	REMARKS
		REVISIONS

UPDATED: 10/11/2017

SCALE: ■WR: NA/MF

Jones & DeMille Engineering, Inc.
CIVIL ENGINEERING - SURVEYING - TESTING
GIS - ENVIRONMENTAL
1.800.748.5275 www.jonesanddemille.com

APPROVAL RECOMM: PROJECT DESIGN ENGINEER APPROVED DATE

CENTRAL VALLEY
WATER STUDY
ALTERNATIVE 2

SEVIER COUNTY

SHEET NO. EX-0

APPENDIX C. PHOTOGRAPHS

Photos of Central Valley Town's Water System

Figure 1: Mecham Springs area with Mecham Well House in background.

Figure 2: Mecham Springs- Spring Collection Area

Figure 3: Mecham Booster Pump Vault

Figure 4: Mecham Well Motor.

Figure 5: Tank 1 Lid

Figure 6: Downtown Well Motor.

APPENDIX D. TABLUAR FORM MODEL RESULTS

Existing System Fire Flow Results

Label	Zone	Fire Flow (Available) (gpm)	Flow (Total Available) (gpm)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J46	140: Distribution	1202.76	1204.9	20	28.2	53: J-17
J-73	140: Distribution	1220.39	1221.46	20	23.6	57: J-19
J-19	140: Distribution	1262.44	1263.51	20	20.7	270: J-73
J-75	140: Distribution	1305.5	1310.85	20	21.8	53: J-17
J-17	140: Distribution	1307.79	1311	20	21.2	275: J-75
J-18	140: Distribution	1314.55	1315.62	20	21.1	57: J-19
J-66	140: Distribution	1326.8	1327.87	20	23.2	55: J-18
J-74	140: Distribution	1324.99	1328.2	20	20.5	275: J-75
J-91	140: Distribution	1333.18	1335.32	20.5	20	55: J-18
J-77	140: Distribution	1334.28	1337.49	20	24.9	53: J-17
J-78	140: Distribution	1378.35	1379.42	20	23.9	211: J-65
J-34	140: Distribution	1395.33	1400.68	20	43.3	127: J-49
J-119	140: Distribution	1406.68	1407.75	20	31.3	125: J-48
J-71	140: Distribution	1412.26	1413.33	20	37.5	107: J-41
J-65	140: Distribution	1414.18	1416.32	20	28.2	291: J-80
J-79	140: Distribution	1443.33	1444.4	23.4	20	211: J-65
J-16	140: Distribution	1468.08	1472.36	28.1	20	211: J-65
J-80	140: Distribution	1498.86	1499.93	20	22.1	211: J-65
J-45	140: Distribution	1526.14	1528.38	20	24.5	49: J-15
J-21	140: Distribution	1551.41	1551.41	20	30.5	395: J-109
J-44	140: Distribution	1562.81	1568.16	20	26.9	47: J-14
J-15	140: Distribution	1591.3	1599.86	20	22.6	119: J-45
J-109	140: Distribution	1610.22	1612.36	20	26.6	64: J-21
J-20	140: Distribution	1652.13	1652.13	20	43.2	127: J-49
J-14	140: Distribution	1670.61	1677.03	20	22.2	117: J-44
J-41	140: Distribution	1686.02	1688.16	24.8	20	249: J-71
J-107	140: Distribution	1714.5	1721.99	20	27.1	395: J-109
J-13	140: Distribution	1721.78	1726.06	20	21.7	47: J-14
J-48	140: Distribution	1732.17	1733.24	21.4	20	420: J-119
J-70	140: Distribution	1750.63	1753.84	20	24.5	78: J-27
J-81	140: Distribution	1766.19	1767.26	20	22.8	245: J-70
J-27	140: Distribution	1779.6	1781.94	21	20	245: J-70
J-33	140: Distribution	1827.01	1832.36	20	20.3	294: J-81
J-85	140: Distribution	1895.11	1901.53	20	22.4	45: J-13
J-56	140: Distribution	1914.79	1923.35	20	27.3	388: J-107
J-115	140: Distribution	1927.94	1929.01	20	26.9	406: J-114
J-40	140: Distribution	2005.82	2006.89	24.5	20	249: J-71
J-114	140: Distribution	2075.18	2076.25	20	21.2	408: J-115
J-26	140: Distribution	2087.95	2089.02	20	20	245: J-70
J-28	140: Distribution	2102.46	2103.53	22.5	20	245: J-70
J-43	140: Distribution	2208.26	2211.47	20	25.8	245: J-70
J-12	140: Distribution	2226.23	2230.51	28.1	20	211: J-65
J-82	140: Distribution	2239.83	2243.04	22.7	20	245: J-70
J-36	140: Distribution	2242.13	2244.27	20.6	20	245: J-70
J-25	140: Distribution	2237.97	2244.39	25.8	20	245: J-70
J-93	140: Distribution	2243.58	2246.79	26	20	245: J-70
J-83	140: Distribution	2247.07	2249.21	23.9	20	245: J-70
J-37	140: Distribution	2247.64	2250.85	28	20	245: J-70
J-84	140: Distribution	2245.91	2251.26	27.3	20	211: J-65
J-92	140: Distribution	2250.67	2253.88	25.4	20	245: J-70
J-116	140: Distribution	2257.23	2258.3	20	24.6	406: J-114
J-35	140: Distribution	2252.01	2259.5	27.9	20	245: J-70
J-24	140: Distribution	2262.78	2271.34	29.4	20	245: J-70
J-124	140: Distribution	2277.4	2279.54	27.8	20	245: J-70
J-95	140: Distribution	2252.39	2280.21	27.6	20	245: J-70
J-103	140: Distribution	2285.11	2286.18	28.4	20	249: J-71
J-96	140: Distribution	2289.67	2290.74	30.1	20	245: J-70
J-38	140: Distribution	2288.59	2291.8	25.2	20	245: J-70
J-98	140: Distribution	2290.62	2292.76	26.7	20	245: J-70
J-97	140: Distribution	2293.38	2295.52	27.5	20	245: J-70
J-42	140: Distribution	2299.36	2301.5	30.8	20	245: J-70
J-101	140: Distribution	2311.27	2314.48	23.9	20	245: J-70
J-86	140: Distribution	2289.62	2316.37	20.7	20	211: J-65
J-10	140: Distribution	2312.28	2319.77	26.5	20	245: J-70
J-11	140: Distribution	2330.19	2331.26	22	20	245: J-70
J-39	140: Distribution	2333.95	2338.23	27.7	20	245: J-70
J-100	140: Distribution	2333.59	2338.94	29.3	20	245: J-70
J-49	140: Distribution	2379.66	2380.73	20	30.4	420: J-119
J-9	140: Distribution	2373.87	2381.36	30.5	20	245: J-70
J-104	140: Distribution	2411.36	2415.64	22.8	20	249: J-71
J-105	140: Distribution	2449.05	2451.19	24.3	20	245: J-70
J-8	140: Distribution	2511.26	2512.33	21.4	20	245: J-70
J-106	140: Distribution	2515.97	2517.04	20	22.5	245: J-70
J-102	140: Distribution	2515.3	2518.51	20	25.7	385: J-106
J-127	140: Distribution	2572	2575.21	20	24.6	372: J-102
J-126	140: Distribution	2583.58	2585.72	20	24.8	497: J-127
J-117	140: Distribution	2598.86	2599.93	20	23	410: J-116
J-7	140: Distribution	2815.89	2816.96	20	24.5	31: J-6
J-6	140: Distribution	2874.99	2874.99	20	21.2	33: J-7
J-125	140: Distribution	3103.82	3104.89	20	20	249: J-71
J-4	140: Distribution	3341.78	3342.85	20	23.3	413: J-117
J-5	140: Distribution	3480.83	3480.83	20	22	27: J-4
J-3	139: Tank	3500	3500	42.1	41.6	404: J-113
J-113	139: Tank	3500	3500	24.3	36.5	482: J-123
J-120	139: Tank	3500	3500	41.9	41.7	404: J-113
J-112	140: Distribution	3500	3501.07	27	25.6	249: J-71

2040 Build-Out Fire Flow Results

Label	Zone	Fire Flow Iterations	Flow (Total Available) (gpm)	Pressure (Calculated Residual) (psi)	Pressure (Calculated Zone Lower Limit) (psi)	Junction w/ Minimum Pressure (Zone)
J46	140: Distribution	12	1317.35	20	27.9	278: J-76
J-71	140: Distribution	12	1346.43	20	37.6	107: J-41
J-73	140: Distribution	12	1347.81	20	24.5	57: J-19
J-34	140: Distribution	12	1366.02	20	43	127: J-49
J-119	140: Distribution	4	1391.11	20	31.1	125: J-48
J-19	140: Distribution	12	1406.92	20.1	20.8	270: J-73
J-76	140: Distribution	12	1421.39	20.1	23	121: J46
J-17	140: Distribution	13	1477.48	20	21.7	275: J-75
J-75	140: Distribution	13	1479.55	20	22.2	53: J-17
J-18	140: Distribution	3	1484.89	20	21.1	57: J-19
J-74	140: Distribution	3	1502.94	20	20.8	275: J-75
J-77	140: Distribution	3	1507.64	20	26.7	53: J-17
J-66	140: Distribution	3	1510.46	20	23.5	55: J-18
J-91	140: Distribution	20	1513.36	20.5	20	55: J-18
J-21	140: Distribution	3	1517.99	20	29.9	395: J-109
J-78	140: Distribution	3	1567.38	20	25	281: J-77
J-109	140: Distribution	10	1574.76	20	26.5	64: J-21
J-41	140: Distribution	15	1599.83	26	20	249: J-71
J-45	140: Distribution	3	1616.47	20	25.2	49: J-15
J-20	140: Distribution	5	1627.8	20	42.9	127: J-49
J-44	140: Distribution	3	1647.35	20	27.8	47: J-14
J-80	140: Distribution	3	1663.72	20	26.8	211: J-65
J-107	140: Distribution	4	1676.75	20	27	395: J-109
J-48	140: Distribution	6	1709.25	21.4	20	420: J-119
J-15	140: Distribution	3	1709.4	20	22.6	119: J-45
J-65	140: Distribution	4	1716.2	20	24.8	291: J-80
J-81	140: Distribution	3	1730.91	20	23.3	245: J-70
J-70	140: Distribution	3	1742.94	20	24.3	78: J-27
J-27	140: Distribution	5	1768.79	20.6	20	245: J-70
J-14	140: Distribution	3	1783.41	20	22.2	117: J-44
J-137	140: Distribution	6	1783.51	22.8	20	211: J-65
J-33	140: Distribution	3	1784.72	20	20.6	294: J-81
J-79	140: Distribution	6	1792.55	21.8	20	211: J-65
J-16	140: Distribution	6	1813.17	23.9	20	211: J-65
J-140	140: Distribution	6	1831.44	24.1	20	211: J-65
J-13	140: Distribution	4	1849.92	20	21.7	47: J-14
J-56	140: Distribution	4	1861.23	20	27.1	388: J-107
J-141	140: Distribution	6	1881.8	23.3	20	211: J-65
J-40	140: Distribution	5	1890.33	25.7	20	249: J-71
J-115	140: Distribution	12	1909.44	20	26.8	406: J-114
J-135	140: Distribution	6	1943.32	22.7	20	211: J-65
J-26	140: Distribution	4	1992.8	20	20.2	245: J-70
J-28	140: Distribution	6	2009.07	22.1	20	245: J-70
J-143	140: Distribution	6	2022.5	20.6	20	211: J-65
J-134	140: Distribution	26	2024.68	25.5	20	211: J-65
J-85	140: Distribution	21	2035.21	26.1	20	211: J-65
J-114	140: Distribution	12	2053.53	20	21.2	408: J-115
J-36	140: Distribution	22	2075.1	25	20	211: J-65
J-82	140: Distribution	22	2091.22	24.9	20	245: J-70
J-83	140: Distribution	22	2092.44	26.2	20	211: J-65
J-25	140: Distribution	22	2096.47	26.5	20	245: J-70
J-92	140: Distribution	22	2107.6	26.2	20	245: J-70
J-93	140: Distribution	22	2109.83	26.4	20	245: J-70
J-12	140: Distribution	6	2110.77	29.7	20	211: J-65
J-84	140: Distribution	6	2111.02	28.8	20	211: J-65
J-35	140: Distribution	40	2113.02	28.7	20	245: J-70
J-37	140: Distribution	22	2115.96	28.1	20	245: J-70
J-43	140: Distribution	4	2120.53	20	23.7	245: J-70
J-24	140: Distribution	6	2128.89	29.8	20	245: J-70
J-124	140: Distribution	6	2140.43	28.2	20	245: J-70
J-95	140: Distribution	22	2142.13	28.3	20	245: J-70
J-103	140: Distribution	6	2142.67	29.5	20	249: J-71
J-96	140: Distribution	6	2146.74	30.4	20	245: J-70
J-98	140: Distribution	6	2149.34	27.5	20	245: J-70
J-38	140: Distribution	22	2151.56	25.6	20	245: J-70
J-97	140: Distribution	6	2152.21	28.3	20	245: J-70
J-42	140: Distribution	6	2157.93	31	20	245: J-70
J-101	140: Distribution	6	2173.08	24.5	20	245: J-70
J-10	140: Distribution	6	2175.39	27.5	20	245: J-70
J-86	140: Distribution	22	2180.81	22.9	20	245: J-70
J-11	140: Distribution	5	2181.9	24	20	245: J-70
J-100	140: Distribution	6	2192.26	30	20	245: J-70
J-39	140: Distribution	22	2192.73	28.2	20	245: J-70
J-116	140: Distribution	13	2230.24	20	24.6	406: J-114
J-9	140: Distribution	6	2230.5	31.5	20	245: J-70
J-104	140: Distribution	6	2261.1	24.1	20	249: J-71
J-105	140: Distribution	6	2290.62	26.2	20	245: J-70
J-49	140: Distribution	4	2331.67	20	29.9	420: J-119
J-8	140: Distribution	6	2345.03	24	20	245: J-70
J-106	140: Distribution	4	2415.27	20	20.1	245: J-70
J-102	140: Distribution	4	2424.74	20	23.3	245: J-70
J-127	140: Distribution	4	2487.85	20	23.9	372: J-102
J-126	140: Distribution	4	2501.37	20	24.4	497: J-127
J-117	140: Distribution	4	2551.5	20	23	410: J-116
J-7	140: Distribution	4	2736.69	20	24.5	31: J-6
J-6	140: Distribution	4	2794.45	20	21.1	33: J-7
J-125	140: Distribution	6	2895.36	24.5	20	249: J-71
J-4	140: Distribution	4	3257.03	20	23.3	413: J-117
J-5	140: Distribution	4	3385.52	20	21.9	27: J-4
J-112	140: Distribution	20	3498.66	24.4	20	249: J-71

APPENDIX E. COST ESTIMATES AND OTHER FINANCIAL INFORMATION

Central Valley Town
Alternative 1 - Chlorinate Upstream of Mecham Tank
February 9, 2018
Darin Robinson, PE

Jones & DeMille Engineering
1-800-748-5275
www.jonesanddemille.com

PRELIMINARY OPINION OF PROBABLE COST

	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
1	Mobilization	1	L.S.	$ 28,000.00	$ 28,000.00
2	New Tank Lid (Tank 1/Mecham Tank)	1	L.S.	$ 66,000.00	$ 66,000.00
3	Spring Junction Box with Flow Measurement (Combined Mecham & Tunnel Springs	1	L.S.	$ 16,000.00	$ 16,000.00
4	Tank 2 Upgrades (New Hatch and Ladder)	1	L.S.	$ 2,500.00	$ 2,500.00
5	Mecham Well Casing Video Inspection	1	L.S.	$ 3,000.00	$ 3,000.00
6	Mecham Well Pump and Motor	1	L.S.	$ 30,000.00	$ 30,000.00
7	Mecham Well VFD	1	L.S.	$ 10,000.00	$ 10,000.00
8	Mecham Well Building	1	L.S.	$ 80,000.00	$ 80,000.00
9	Downtown Well VFD & Motor	1	L.S.	$ 20,000.00	$ 20,000.00
10	Downtown Well Inspection	1	L.S.	$ 2,500.00	$ 2,500.00
11	Generator and Associated Electrical	1	L.S.	$ 15,000.00	$ 15,000.00
12	Chlorination Building	1	L.S.	$ 60,000.00	$ 60,000.00
13	Chlorination Equipment (Tablet System)	1	L.S.	$ 18,000.00	$ 18,000.00
14	SCADA Controls & Adjustments	1	L.S.	$ 10,000.00	$ 10,000.00
15	PVC Water Pipe	150	L.F.	$ 40.00	$ 6,000.00
16	Gate Valve	2	Each	$ 2,000.00	$ 4,000.00
17	Mecham Springs Redevelopment (Includes New Spring Collection Area Fencing	1	L.S.	$ 60,000.00	$ 60,000.00
18	Mecham Pump Vault Modifications (Remove Tunnel Spring piping, flow meter, misc. clean-up	1	L.S.	$ 10,000.00	$ 10,000.00
19	Misc. Chlorination Bldg. Electrical & Mechanical	1	L.S.	$ 10,000.00	$ 10,000.00
20	Construction Contingency	1	Lump	$ 79,650.00	$ 80,000.00
				TOTAL PROBABLE CONSTRUCTION COST	**$ 531,000.00**
	LAND & WATER RIGHTS				
1	Right-of-way Procurement		L.S.		$ -
2	Water Rights Purchase	5	Acre-FT	$ 10,000.00	$ 50,000
				Land & Water Rights Subtotal	**$ 50,000**
	ENGINEERING AND LEGAL PROFESSIONAL SERVICES				
1	Preconstruction Engineering	1	L.S.	$ 63,720.00	$ 63,720.00
2	Permitting	1	L.S.		$ -
3	Geotechnical Evaluation	1	L.S.		$ -
4	Construction Administration	1	L.S.	$ 47,790.00	$ 47,790.00
5	Legal & Town Admin.	1	L.S.		$ -
				Engineering and Legal Professional Services Subtotal	**$ 111,510.00**

TOTAL NON-CONSTRUCTION PROJECT COST $ 162,000.00

TOTAL PROBABLE PROJECT COST $ 693,000.00

Central Valley Town
Alternative 2 - Chlorinate Downstream of Mecham Tank
December 20, 2017
Darin Robinson, PE

Jones & DeMille Engineering
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PRELIMINARY OPINION OF PROBABLE COST

	ITEM	QUANTITY	UNIT	UNIT PRICE	COST
1	Mobilization	1	L.S.	$ 28,695.00	$ 28,700.00
2	New Tank Lid (Mecham Tank)	1	L.S.	$ 66,000.00	$ 66,000.00
3	Tank 2 Upgrades (New Hatch and Ladder)	1	L.S.	$ 2,500.00	$ 2,500.00
4	Spring Junction Box with Flow Measurement (Combined Mecham & Tunnel Springs)	1	L.S.	$ 16,000.00	$ 16,000.00
5	Mecham Well Casing Video Inspection	1	L.S.	$ 3,000.00	$ 3,000.00
6	Mecham Well Pump and Motor	1	L.S.	$ 30,000.00	$ 30,000.00
7	Mecham Well Building	1	L.S.	$ 80,000.00	$ 80,000.00
8	Mecham Well VFD	1	L.S.	$ 7,500.00	$ 7,500.00
9	Downtown Well VFD & Motor	1	L.S.	$ 15,000.00	$ 15,000.00
10	Downtown Well Inspection	1	L.S.	$ 2,500.00	$ 2,500.00
11	Generator and Associated Electrical	1	L.S.	$ 15,000.00	$ 15,000.00
12	Chlorination Building	1	L.S.	$ 60,000.00	$ 60,000.00
13	Chlorination Equipment (Tablet System)	1	L.S.	$ 18,000.00	$ 18,000.00
14	SCADA Controls & Adjustments	1	L.S.	$ 10,000.00	$ 10,000.00
15	PVC Water Pipe	4,500	L.F.	$ 22.00	$ 99,000.00
16	Gate Valve	4	Each	$ 1,950.00	$ 7,800.00
17	Mecham Springs Vault Reconfiguration	1	L.S.	$ 5,000.00	$ 5,000.00
18	Mecham Springs Redevelopment (Includes New Spring Collection Area Fencing)	1	L.S.	$ 60,000.00	$ 60,000.00
19	Upper Tanks Inlets, manifold, etc.	1	L.S.	$ 6,000.00	$ 6,000.00
20	Misc. Chlorination Bldg. Electrical & Mechanical	1	L.S.	$ 10,000.00	$ 10,000.00
21	Construction Contingency	1	Lump	$ 95,700.00	$ 96,000.00
	TOTAL PROBABLE CONSTRUCTION COST				**$ 638,000.00**
	LAND & WATER RIGHTS				
1	Right-of-way Procurement		L.S.		$ -
2	Water Rights Purchase	5	Acre-FT	$ 10,000.00	$ 50,000
				Land Subtotal	**$ 50,000**
AL PROFESSIONAL SERVICES					
1	Preconstruction Engineering	1	L.S.	$ 70,000.00	$ 70,000.00
2	Surveys	1	L.S.	$ 4,000.00	$ 4,000.00
3	Geotechnical Evaluation	1	L.S.		$ -
4	Construction Administration	1	L.S.	$ 51,000.00	$ 51,000.00
5	Legal & Town Admin.	1	L.S.	$ 6,000.00	$ 6,000.00
				Engineering and Legal Professional Services Subtotal	**$ 131,000.00**

TOTAL NON-CONSTRUCTION PROJECT COST $ 181,000.00

TOTAL PROBABLE PROJECT COST $ 819,000.00

Jones & DeMille Engineering

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Rural Development Present Worth Analysis

Project:	**Central Valley Town**
Project Number:	**1706-043**
Date:	**February 9, 2018**
PM:	**Darin Robinson, PE**

Alternative 1 - Chlorinate Upstream of Mecham Tank

Summary

Study Period	Present Worth Cumulative Capital Cost	Present Worth Annual O&M	Present Worth Salvage Value	Net Present Value of Facility
20	$ 693,000.00	$ 1,730,370.98	$ 313,604.30	$ 2,109,766.68

Capital Cost	$ 693,000	(From Probable Cost Total)
Study Period	20	Years
Annual O&M Cost	$ 91,133	(See CellsP12:Q28)
Real Interest Rate	0.5%	(From Circular A-94 Appendix C) https://www.whitehouse.gov/omb/circulars/

***Please only change the values in the blue boxes**

Assumptions: 1. Salvage Value will be $0 at end of projected lifespan
2. Annual budget for O&M does not change.

	Capital Cost					O & M		Salvage Value				NPV
Year	Capital Cost	Projected Lifespan	Cumulative Capital Cost	Present Worth Capital Cost	Present Worth Cumulative Capital Cost	Uniform Annual O&M ($/yr.)	Present Worth Annual O&M	Straight Line Depreciation per year per Capital Cost	Cumulative Depreciation per Year	Annual Salvage Value	Present Worth Salvage Value	Net Present Value of Facility
			(Adds current and any new capital costs)	=-pv(Real Interest Rate, Year,Capital Cost)	(Adds current and any new present worth capital costs)	(Annual O&M budget remains the same)	=-pv(Real Interest Rate, Year,Annual O&M)	=sln(Capital Cost, Salvage Value at end of lifespan, Projected Lifespan)	(Adds current and any new depreciation)	=Cumulative Capital Cost - Cumulative Depreciation Per Year	=-pv(Real Interest Rate, Year,Annual Salvage Value)	=Cumulative Capital Cost +Present Worth Annual O&M - Present Worth Salvage Value
0	$ 693,000	40	$ 693,000	$ 693,000	$ 693,000	$ 91,133	$ -	$ 17,325	$ -	$ 693,000.00	$ 693,000	$ -
1	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 90,679	$ -	$ 17,325	$ 675,675.00	$ 672,313	$ 111,366
2	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 180,907	$ -	$ 17,325	$ 658,350.00	$ 651,816	$ 222,092
3	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 270,686	$ -	$ 17,325	$ 641,025.00	$ 631,505	$ 332,181
4	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 360,019	$ -	$ 17,325	$ 623,700.00	$ 611,380	$ 441,638
5	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 448,907	$ -	$ 17,325	$ 606,375.00	$ 591,440	$ 550,466
6	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 537,352	$ -	$ 17,325	$ 589,050.00	$ 571,684	$ 658,669
7	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 625,358	$ -	$ 17,325	$ 571,725.00	$ 552,109	$ 766,249
8	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 712,926	$ -	$ 17,325	$ 554,400.00	$ 532,715	$ 873,211
9	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 800,058	$ -	$ 17,325	$ 537,075.00	$ 513,500	$ 979,558
10	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 886,757	$ -	$ 17,325	$ 519,750.00	$ 494,463	$ 1,085,294
11	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 973,024	$ -	$ 17,325	$ 502,425.00	$ 475,603	$ 1,190,421
12	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,058,862	$ -	$ 17,325	$ 485,100.00	$ 456,918	$ 1,294,944
13	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,144,273	$ -	$ 17,325	$ 467,775.00	$ 438,408	$ 1,398,866
14	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,229,260	$ -	$ 17,325	$ 450,450.00	$ 420,070	$ 1,502,190
15	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,313,823	$ -	$ 17,325	$ 433,125.00	$ 401,904	$ 1,604,919
16	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,397,966	$ -	$ 17,325	$ 415,800.00	$ 383,908	$ 1,707,057
17	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,481,690	$ -	$ 17,325	$ 398,475.00	$ 366,082	$ 1,808,608
18	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,564,997	$ -	$ 17,325	$ 381,150.00	$ 348,423	$ 1,909,574
19	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,647,890	$ -	$ 17,325	$ 363,825.00	$ 330,931	$ 2,009,959
20	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,730,371	$ -	$ 17,325	$ 346,500.00	$ 313,604	$ 2,109,767
21	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,812,441	$ -	$ 17,325	$ 329,175.00	$ 296,442	$ 2,208,999
22	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,894,103	$ -	$ 17,325	$ 311,850.00	$ 279,442	$ 2,307,661
23	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 1,975,359	$ -	$ 17,325	$ 294,525.00	$ 262,605	$ 2,405,754
24	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,056,210	$ -	$ 17,325	$ 277,200.00	$ 245,928	$ 2,503,283
25	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,136,660	$ -	$ 17,325	$ 259,875.00	$ 229,410	$ 2,600,249
26	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,216,709	$ -	$ 17,325	$ 242,550.00	$ 213,051	$ 2,696,658
27	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,296,359	$ -	$ 17,325	$ 225,225.00	$ 196,849	$ 2,792,510
28	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,375,614	$ -	$ 17,325	$ 207,900.00	$ 180,803	$ 2,887,811
29	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,454,474	$ -	$ 17,325	$ 190,575.00	$ 164,911	$ 2,982,563
30	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,532,942	$ -	$ 17,325	$ 173,250.00	$ 149,173	$ 3,076,768
31	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,611,019	$ -	$ 17,325	$ 155,925.00	$ 133,588	$ 3,170,431
32	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,688,708	$ -	$ 17,325	$ 138,600.00	$ 118,154	$ 3,263,554
33	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,766,010	$ -	$ 17,325	$ 121,275.00	$ 102,871	$ 3,356,140
34	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,842,928	$ -	$ 17,325	$ 103,950.00	$ 87,736	$ 3,448,192
35	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,919,463	$ -	$ 17,325	$ 86,625.00	$ 72,750	$ 3,539,714
36	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 2,995,618	$ -	$ 17,325	$ 69,300.00	$ 57,910	$ 3,630,708
37	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,071,393	$ -	$ 17,325	$ 51,975.00	$ 43,217	$ 3,721,177
38	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,146,792	$ -	$ 17,325	$ 34,650.00	$ 28,668	$ 3,811,124
39	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,221,815	$ -	$ 17,325	$ 17,325.00	$ 14,263	$ 3,900,553
40	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,296,466	$ -	$ 17,325	$ -	$ -	$ 3,989,466
41	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,370,744	$ -	$ 17,325	$ (17,325.00)	$ (14,121)	$ 4,077,865
42	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,444,654	$ -	$ 17,325	$ (34,650.00)	$ (28,101)	$ 4,165,755
43	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,518,195	$ -	$ 17,325	$ (51,975.00)	$ (41,942)	$ 4,253,138
44	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,591,371	$ -	$ 17,325	$ (69,300.00)	$ (55,645)	$ 4,340,016
45	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,664,182	$ -	$ 17,325	$ (86,625.00)	$ (69,210)	$ 4,426,393
46	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,736,632	$ -	$ 17,325	$ (103,950.00)	$ (82,639)	$ 4,512,271
47	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,808,721	$ -	$ 17,325	$ (121,275.00)	$ (95,933)	$ 4,597,653
48	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,880,451	$ -	$ 17,325	$ (138,600.00)	$ (109,092)	$ 4,682,543
49	$ -		$ 693,000	$ -	$ 693,000	$ 91,133	$ 3,951,824	$ -	$ 17,325	$ (155,925.00)	$ (122,118)	$ 4,766,942

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Rural Development Present Worth Analysis

Project: Central Valley Town
Project Number: 1706-043
Date: February 9, 2018
PM: Darin Robinson, PE

Alternative 2 - Chlorinate Downstream of Mecham Tank

Summary

Study Period	Present Worth Cumulative Capital Cost	Present Worth Annual O&M	Present Worth Salvage Value	Net Present Value of Facility
20	$ 819,000.00	$ 1,730,370.98	$ 370,623.26	$ 2,178,747.72

Capital Cost	$ 819,000	(From Probable Cost Total)
Study Period	20	Years
Annual O&M Cost	$ 91,133	(See CellsP12:Q28)
Real Interest Rate	0.5%	(From Circular A-94 Appendix C) https://www.whitehouse.gov/omb/circulars/

***Please only change the values in the blue boxes**

Assumptions: 1. Salvage Value will be $0 at end of projected lifespan
2. Annual budget for O&M does not change.

	Capital Cost					O & M		Salvage Value				NPV
Year	Capital Cost	Projected Lifespan	Cumulative Capital Cost (Adds current and any new capital costs)	Present Worth Capital Cost =-pv(Real Interest Rate, Year,Capital Cost)	Present Worth Cumulative Capital Cost (Adds current and any new present worth capital costs)	Uniform Annual O&M ($/yr.) (Annual O&M budget remains the same)	Present Worth Annual O&M =-pv(Real Interest Rate, Year,Annual O&M)	Straight Line Depreciation per year per Capital Cost =(Capital Cost, Salvage Value at end of lifespan, Projected Lifespan)	Cumulative Depreciation per Year (Adds current and any new depreciation)	Annual Salvage Value =Cumulative Capital Cost - Cumulative Depreciation Per Year	Present Worth Salvage Value =-pv(Real Interest Rate, Year,Annual Salvage Value)	Net Present Value of Facility =Cumulative Capital Cost +Present Worth Annual O&M - Present Worth Salvage Value
0	$ 819,000	40	$ 819,000	$ 819,000	$ 819,000	$ 91,133	$ -	$ 20,475	$ -	$ 819,000.00	$ 819,000	$ -
1	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 90,679	$ -	$ 20,475	$ 798,525.00	$ 794,552	$ 115,127
2	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 180,907	$ -	$ 20,475	$ 778,050.00	$ 770,327	$ 229,580
3	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 270,686	$ -	$ 20,475	$ 757,575.00	$ 746,324	$ 343,362
4	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 360,019	$ -	$ 20,475	$ 737,100.00	$ 722,540	$ 456,478
5	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 448,907	$ -	$ 20,475	$ 716,625.00	$ 698,975	$ 568,932
6	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 537,352	$ -	$ 20,475	$ 696,150.00	$ 675,626	$ 680,726
7	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 625,358	$ -	$ 20,475	$ 675,675.00	$ 652,492	$ 791,866
8	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 712,926	$ -	$ 20,475	$ 655,200.00	$ 629,572	$ 902,354
9	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 800,058	$ -	$ 20,475	$ 634,725.00	$ 606,864	$ 1,012,194
10	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 886,757	$ -	$ 20,475	$ 614,250.00	$ 584,365	$ 1,121,391
11	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 973,024	$ -	$ 20,475	$ 593,775.00	$ 562,076	$ 1,229,948
12	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,058,862	$ -	$ 20,475	$ 573,300.00	$ 539,994	$ 1,337,868
13	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,144,273	$ -	$ 20,475	$ 552,825.00	$ 518,116	$ 1,445,155
14	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,229,260	$ -	$ 20,475	$ 532,350.00	$ 496,446	$ 1,551,813
15	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,313,823	$ -	$ 20,475	$ 511,875.00	$ 474,977	$ 1,657,846
16	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,397,966	$ -	$ 20,475	$ 491,400.00	$ 453,710	$ 1,763,256
17	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,481,690	$ -	$ 20,475	$ 470,925.00	$ 432,642	$ 1,868,048
18	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,564,997	$ -	$ 20,475	$ 450,450.00	$ 411,773	$ 1,972,225
19	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,647,890	$ -	$ 20,475	$ 429,975.00	$ 391,100	$ 2,075,790
20	**$ -**		**$ 819,000**	**$ -**	**$ 819,000**	**$ 91,133**	**$ 1,730,371**	**$ -**	**$ 20,475**	**$ 409,500.00**	**$ 370,623**	**$ 2,178,748**
21	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,812,441	$ -	$ 20,475	$ 389,025.00	$ 350,340	$ 2,281,101
22	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,894,103	$ -	$ 20,475	$ 368,550.00	$ 330,250	$ 2,382,853
23	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 1,975,359	$ -	$ 20,475	$ 348,075.00	$ 310,351	$ 2,484,008
24	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,056,210	$ -	$ 20,475	$ 327,600.00	$ 290,642	$ 2,584,568
25	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,136,660	$ -	$ 20,475	$ 307,125.00	$ 271,121	$ 2,684,538
26	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,216,709	$ -	$ 20,475	$ 286,650.00	$ 251,788	$ 2,783,921
27	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,296,359	$ -	$ 20,475	$ 266,175.00	$ 232,640	$ 2,882,720
28	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,375,614	$ -	$ 20,475	$ 245,700.00	$ 213,676	$ 2,980,938
29	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,454,474	$ -	$ 20,475	$ 225,225.00	$ 194,895	$ 3,078,579
30	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,532,942	$ -	$ 20,475	$ 204,750.00	$ 176,296	$ 3,175,646
31	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,611,019	$ -	$ 20,475	$ 184,275.00	$ 157,877	$ 3,272,142
32	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,688,708	$ -	$ 20,475	$ 163,800.00	$ 139,637	$ 3,368,071
33	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,766,010	$ -	$ 20,475	$ 143,325.00	$ 121,574	$ 3,463,436
34	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,842,928	$ -	$ 20,475	$ 122,850.00	$ 103,688	$ 3,558,240
35	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,919,463	$ -	$ 20,475	$ 102,375.00	$ 85,977	$ 3,652,487
36	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 2,995,618	$ -	$ 20,475	$ 81,900.00	$ 68,439	$ 3,746,179
37	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,071,393	$ -	$ 20,475	$ 61,425.00	$ 51,074	$ 3,839,319
38	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,146,792	$ -	$ 20,475	$ 40,950.00	$ 33,880	$ 3,931,912
39	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,221,815	$ -	$ 20,475	$ 20,475.00	$ 16,856	$ 4,023,960
40	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,296,466	$ -	$ 20,475	$ -	$ -	$ 4,115,466
41	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,370,744	$ -	$ 20,475	$ (20,475.00)	$ (16,688)	$ 4,206,433
42	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,444,654	$ -	$ 20,475	$ (40,950.00)	$ (33,211)	$ 4,296,864
43	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,518,195	$ -	$ 20,475	$ (61,425.00)	$ (49,568)	$ 4,386,763
44	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,591,371	$ -	$ 20,475	$ (81,900.00)	$ (65,762)	$ 4,476,133
45	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,664,182	$ -	$ 20,475	$ (102,375.00)	$ (81,794)	$ 4,564,976
46	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,736,632	$ -	$ 20,475	$ (122,850.00)	$ (97,664)	$ 4,653,296
47	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,808,721	$ -	$ 20,475	$ (143,325.00)	$ (113,375)	$ 4,741,095
48	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,880,451	$ -	$ 20,475	$ (163,800.00)	$ (128,927)	$ 4,828,378
49	$ -		$ 819,000	$ -	$ 819,000	$ 91,133	$ 3,951,824	$ -	$ 20,475	$ (184,275.00)	$ (144,321)	$ 4,915,145

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Rural Development Present Worth Analysis

Project:	**Central Valley Town**
Project Number:	**1706-043**
Date:	**February 12, 2018**
PM:	**Darin Robinson, PE**

Chlorine Treatment - Gas

Summary

Study Period	Present Worth Cumulative Capital Cost	Present Worth Annual O&M	Present Worth Salvage Value	Net Present Value of Facility
20	$ 18,400.00	$ 122,326.45	$ 8,326.58	$ 132,399.87

Capital Cost	$ 18,400	(From Probable Cost Total)
Study Period	20	Years
Annual O&M Cost	$ 6,443	(See CellsP12:Q28)
Real Interest Rate	0.5%	(From Circular A-94 Appendix C) https://www.whitehouse.gov/omb/circulars/

***Please only change the values in the blue boxes**

Assumptions: 1. Salvage Value will be $0 at end of projected lifespan
2. Annual budget for O&M does not change.

	Capital Cost					O & M		Salvage Value				NPV
Year	Capital Cost	Projected Lifespan	Cumulative Capital Cost	Present Worth Capital Cost	Present Worth Cumulative Capital Cost	Uniform Annual O&M ($/yr.)	Present Worth Annual O&M	Straight Line Depreciation per year per Capital Cost	Cumulative Depreciation per Year	Annual Salvage Value	Present Worth Salvage Value	Net Present Value of Facility
			(Adds current and any new capital costs)	=-pv(Real Interest Rate, Year,Capital Cost)	(Adds current and any new present worth capital costs)	(Annual O&M budget remains the same)	=-pv(Real Interest Rate, Year,Annual O&M)	=sln((Capital Cost, Salvage Value at end of lifespan, Projected Lifespan)	(Adds current and any new depreciation)	=Cumulative Capital Cost - Cumulative Depreciation Per Year	=-pv(Real Interest Rate, Year,Annual Salvage Value)	=Cumulative Capital Cost +Present Worth Annual O&M - Present Worth Salvage Value
0	$ 18,400	40	$ 18,400	$ 18,400	$ 18,400	$ 6,443	$ -	$ 460	$ -	$ 18,400.00	$ 18,400	$ -
1	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 6,410	$ -	$ 460	$ 17,940.00	$ 17,851	$ 6,960
2	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 12,789	$ -	$ 460	$ 17,480.00	$ 17,307	$ 13,883
3	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 19,136	$ -	$ 460	$ 17,020.00	$ 16,767	$ 20,769
4	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 25,451	$ -	$ 460	$ 16,560.00	$ 16,233	$ 27,618
5	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 31,735	$ -	$ 460	$ 16,100.00	$ 15,703	$ 34,431
6	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 37,987	$ -	$ 460	$ 15,640.00	$ 15,179	$ 41,209
7	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 44,209	$ -	$ 460	$ 15,180.00	$ 14,659	$ 47,950
8	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 50,399	$ -	$ 460	$ 14,720.00	$ 14,144	$ 54,655
9	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 56,559	$ -	$ 460	$ 14,260.00	$ 13,634	$ 61,325
10	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 62,688	$ -	$ 460	$ 13,800.00	$ 13,129	$ 67,960
11	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 68,787	$ -	$ 460	$ 13,340.00	$ 12,628	$ 74,559
12	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 74,855	$ -	$ 460	$ 12,880.00	$ 12,132	$ 81,123
13	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 80,893	$ -	$ 460	$ 12,420.00	$ 11,640	$ 87,653
14	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 86,901	$ -	$ 460	$ 11,960.00	$ 11,153	$ 94,148
15	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 92,879	$ -	$ 460	$ 11,500.00	$ 10,671	$ 100,608
16	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 98,827	$ -	$ 460	$ 11,040.00	$ 10,193	$ 107,034
17	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 104,746	$ -	$ 460	$ 10,580.00	$ 9,720	$ 113,426
18	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 110,636	$ -	$ 460	$ 10,120.00	$ 9,251	$ 119,785
19	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 116,496	$ -	$ 460	$ 9,660.00	$ 8,787	$ 126,109
20	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 122,326	$ -	$ 460	$ 9,200.00	$ 8,327	$ 132,400
21	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 128,128	$ -	$ 460	$ 8,740.00	$ 7,871	$ 138,657
22	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 133,901	$ -	$ 460	$ 8,280.00	$ 7,420	$ 144,882
23	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 139,646	$ -	$ 460	$ 7,820.00	$ 6,972	$ 151,073
24	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 145,361	$ -	$ 460	$ 7,360.00	$ 6,530	$ 157,232
25	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 151,049	$ -	$ 460	$ 6,900.00	$ 6,091	$ 163,357
26	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 156,707	$ -	$ 460	$ 6,440.00	$ 5,657	$ 169,451
27	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 162,338	$ -	$ 460	$ 5,980.00	$ 5,227	$ 175,512
28	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 167,941	$ -	$ 460	$ 5,520.00	$ 4,801	$ 181,541
29	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 173,516	$ -	$ 460	$ 5,060.00	$ 4,379	$ 187,537
30	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 179,063	$ -	$ 460	$ 4,600.00	$ 3,961	$ 193,502
31	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 184,583	$ -	$ 460	$ 4,140.00	$ 3,547	$ 199,436
32	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 190,075	$ -	$ 460	$ 3,680.00	$ 3,137	$ 205,338
33	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 195,540	$ -	$ 460	$ 3,220.00	$ 2,731	$ 211,208
34	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 200,977	$ -	$ 460	$ 2,760.00	$ 2,330	$ 217,048
35	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 206,388	$ -	$ 460	$ 2,300.00	$ 1,932	$ 222,856
36	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 211,772	$ -	$ 460	$ 1,840.00	$ 1,538	$ 228,634
37	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 217,128	$ -	$ 460	$ 1,380.00	$ 1,147	$ 234,381
38	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 222,459	$ -	$ 460	$ 920.00	$ 761	$ 240,097
39	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 227,762	$ -	$ 460	$ 460.00	$ 379	$ 245,784
40	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 233,040	$ -	$ 460	$ -	$ -	$ 251,440
41	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 238,291	$ -	$ 460	$ (460.00)	$ (375)	$ 257,066
42	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 243,516	$ -	$ 460	$ (920.00)	$ (746)	$ 262,662
43	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 248,714	$ -	$ 460	$ (1,380.00)	$ (1,114)	$ 268,228
44	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 253,888	$ -	$ 460	$ (1,840.00)	$ (1,477)	$ 273,765
45	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 259,035	$ -	$ 460	$ (2,300.00)	$ (1,838)	$ 279,272
46	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 264,157	$ -	$ 460	$ (2,760.00)	$ (2,194)	$ 284,751
47	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 269,253	$ -	$ 460	$ (3,220.00)	$ (2,547)	$ 290,200
48	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 274,324	$ -	$ 460	$ (3,680.00)	$ (2,897)	$ 295,620
49	$ -		$ 18,400	$ -	$ 18,400	$ 6,443	$ 279,369	$ -	$ 460	$ (4,140.00)	$ (3,242)	$ 301,012

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Rural Development Present Worth Analysis

Project:	**Central Valley Town**
Project Number:	**1706-043**
Date:	**February 9, 2018**
PM:	**Darin Robinson, PE**

Chlorine Treatment - Liquid

Summary

Study Period	Present Worth Cumulative Capital Cost	Present Worth Annual O&M	Present Worth Salvage Value	Net Present Value of Facility
20	$ 6,900.00	$ 134,525.86	$ 3,122.47	$ 138,303.40

Capital Cost	$ 6,900	(From Probable Cost Total)
Study Period	20	Years
Annual O&M Cost	$ 7,085	(See CellsP12:Q28)
Real Interest Rate	0.5%	(From Circular A-94 Appendix C) https://www.whitehouse.gov/omb/circulars/

***Please only change the values in the blue boxes**

Assumptions: 1. Salvage Value will be $0 at end of projected lifespan
2. Annual budget for O&M does not change.

	Capital Cost					O & M		Salvage Value				NPV
Year	Capital Cost	Projected Lifespan	Cumulative Capital Cost	Present Worth Capital Cost	Present Worth Cumulative Capital Cost	Uniform Annual O&M ($/yr.)	Present Worth Annual O&M	Straight Line Depreciation per year per Capital Cost	Cumulative Depreciation per Year	Annual Salvage Value	Present Worth Salvage Value	Net Present Value of Facility
			(Adds current and any new capital costs)	=-pv(Real Interest Rate, Year,Capital Cost)	(Adds current and any new present worth capital costs)	(Annual O&M budget remains the same)	=-pv(Real Interest Rate, Year,Annual O&M)	=sln((Capital Cost, Salvage Value at end of lifespan, Projected Lifespan)	(Adds current and any new depreciation)	=Cumulative Capital Cost - Cumulative Depreciation Per Year	=-pv(Real Interest Rate, Year,Annual Salvage Value)	=Cumulative Capital Cost +Present Worth Annual O&M - Present Worth Salvage Value
0	$ 6,900	40	$ 6,900	$ 6,900	$ 6,900	$ 7,085	$ -	$ 173	$ -	$ 6,900.00	$ 6,900	$ -
1	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 7,050	$ -	$ 173	$ 6,727.50	$ 6,694	$ 7,256
2	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 14,064	$ -	$ 173	$ 6,555.00	$ 6,490	$ 14,474
3	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 21,044	$ -	$ 173	$ 6,382.50	$ 6,288	$ 21,656
4	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 27,989	$ -	$ 173	$ 6,210.00	$ 6,087	$ 28,802
5	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 34,900	$ -	$ 173	$ 6,037.50	$ 5,889	$ 35,911
6	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 41,776	$ -	$ 173	$ 5,865.00	$ 5,692	$ 42,984
7	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 48,618	$ -	$ 173	$ 5,692.50	$ 5,497	$ 50,021
8	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 55,426	$ -	$ 173	$ 5,520.00	$ 5,304	$ 57,022
9	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 62,200	$ -	$ 173	$ 5,347.50	$ 5,113	$ 63,987
10	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 68,940	$ -	$ 173	$ 5,175.00	$ 4,923	$ 70,917
11	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 75,647	$ -	$ 173	$ 5,002.50	$ 4,735	$ 77,811
12	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 82,320	$ -	$ 173	$ 4,830.00	$ 4,549	$ 84,671
13	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 88,960	$ -	$ 173	$ 4,657.50	$ 4,365	$ 91,495
14	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 95,567	$ -	$ 173	$ 4,485.00	$ 4,183	$ 98,285
15	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 102,142	$ -	$ 173	$ 4,312.50	$ 4,002	$ 105,040
16	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 108,683	$ -	$ 173	$ 4,140.00	$ 3,822	$ 111,761
17	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 115,192	$ -	$ 173	$ 3,967.50	$ 3,645	$ 118,447
18	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 121,669	$ -	$ 173	$ 3,795.00	$ 3,469	$ 125,100
19	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 128,113	$ -	$ 173	$ 3,622.50	$ 3,295	$ 131,719
20	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 134,528	$ -	$ 173	$ 3,450.00	$ 3,122	$ 138,303
21	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 140,906	$ -	$ 173	$ 3,277.50	$ 2,952	$ 144,855
22	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 147,255	$ -	$ 173	$ 3,105.00	$ 2,782	$ 151,373
23	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 153,572	$ -	$ 173	$ 2,932.50	$ 2,615	$ 157,858
24	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 159,858	$ -	$ 173	$ 2,760.00	$ 2,449	$ 164,309
25	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 166,112	$ -	$ 173	$ 2,587.50	$ 2,284	$ 170,728
26	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 172,336	$ -	$ 173	$ 2,415.00	$ 2,121	$ 177,114
27	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 178,528	$ -	$ 173	$ 2,242.50	$ 1,960	$ 183,468
28	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 184,690	$ -	$ 173	$ 2,070.00	$ 1,800	$ 189,789
29	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 190,820	$ -	$ 173	$ 1,897.50	$ 1,642	$ 196,079
30	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 196,921	$ -	$ 173	$ 1,725.00	$ 1,485	$ 202,336
31	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 202,991	$ -	$ 173	$ 1,552.50	$ 1,330	$ 208,561
32	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 209,031	$ -	$ 173	$ 1,380.00	$ 1,176	$ 214,754
33	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 215,041	$ -	$ 173	$ 1,207.50	$ 1,024	$ 220,916
34	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 221,020	$ -	$ 173	$ 1,035.00	$ 874	$ 227,047
35	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 226,971	$ -	$ 173	$ 862.50	$ 724	$ 233,146
36	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 232,891	$ -	$ 173	$ 690.00	$ 577	$ 239,215
37	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 238,782	$ -	$ 173	$ 517.50	$ 430	$ 245,252
38	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 244,644	$ -	$ 173	$ 345.00	$ 285	$ 251,259
39	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 250,477	$ -	$ 173	$ 172.50	$ 142	$ 257,235
40	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 256,280	$ -	$ 173	$ (0.00)	$ (0)	$ 263,180
41	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 262,055	$ -	$ 173	$ (172.50)	$ (141)	$ 269,096
42	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 267,801	$ -	$ 173	$ (345.00)	$ (280)	$ 274,981
43	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 273,518	$ -	$ 173	$ (517.50)	$ (418)	$ 280,836
44	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 279,207	$ -	$ 173	$ (690.00)	$ (554)	$ 286,661
45	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 284,868	$ -	$ 173	$ (862.50)	$ (689)	$ 292,457
46	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 290,500	$ -	$ 173	$ (1,035.00)	$ (823)	$ 298,223
47	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 296,105	$ -	$ 173	$ (1,207.50)	$ (955)	$ 303,960
48	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 301,682	$ -	$ 173	$ (1,380.00)	$ (1,086)	$ 309,668
49	$ -		$ 6,900	$ -	$ 6,900	$ 7,085	$ 307,230	$ -	$ 173	$ (1,552.50)	$ (1,216)	$ 315,346

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Rural Development Present Worth Analysis

Project:	**Central Valley Town**
Project Number:	**1706-043**
Date:	**February 9, 2018**
PM:	**Darin Robinson, PE**

Chlorine Treatment - Tablets

Summary

Study Period	Present Worth Cumulative Capital Cost	Present Worth Annual O&M	Present Worth Salvage Value	Net Present Value of Facility
20	$ 17,300.00	$ 135,427.77	$ 7,828.79	$ 144,898.97

Capital Cost	$ 17,300	(From Probable Cost Total)
Study Period	20	Years
Annual O&M Cost	$ 7,133	(See CellsP12:Q28)
Real Interest Rate	0.5%	(From Circular A-94 Appendix C) https://www.whitehouse.gov/omb/circulars/

***Please only change the values in the blue boxes**

Assumptions: 1. Salvage Value will be $0 at end of projected lifespan
2. Annual budget for O&M does not change.

	Capital Cost					O & M		Salvage Value				NPV
Year	Capital Cost	Projected Lifespan	Cumulative Capital Cost	Present Worth Capital Cost	Present Worth Cumulative Capital Cost	Uniform Annual O&M ($/yr.)	Present Worth Annual O&M	Straight Line Depreciation per year per Capital Cost	Cumulative Depreciation per Year	Annual Salvage Value	Present Worth Salvage Value	Net Present Value of Facility
			(Adds current and any new capital costs)	=-pv(Real Interest Rate, Year,Capital Cost)	(Adds current and any new present worth capital costs)	(Annual O&M budget remains the same)	=-pv(Real Interest Rate, Year,Annual O&M)	=sln((Capital Cost, Salvage Value at end of lifespan, Projected Lifespan)	(Adds current and any new depreciation)	=Cumulative Capital Cost - Cumulative Depreciation Per Year	=-pv(Real Interest Rate, Year,Annual Salvage Value)	=Cumulative Capital Cost +Present Worth Annual O&M - Present Worth Salvage Value
0	$ 17,300	40	$ 17,300	$ 17,300	$ 17,300	$ 7,133	$ -	$ 433	$ -	$ 17,300.00	$ 17,300	$ -
1	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 7,097	$ -	$ 433	$ 16,867.50	$ 16,784	$ 7,613
2	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 14,159	$ -	$ 433	$ 16,435.00	$ 16,272	$ 15,187
3	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 21,185	$ -	$ 433	$ 16,002.50	$ 15,765	$ 22,720
4	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 28,177	$ -	$ 433	$ 15,570.00	$ 15,262	$ 30,214
5	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 35,134	$ -	$ 433	$ 15,137.50	$ 14,765	$ 37,669
6	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 42,056	$ -	$ 433	$ 14,705.00	$ 14,271	$ 45,084
7	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 48,944	$ -	$ 433	$ 14,272.50	$ 13,783	$ 52,461
8	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 55,797	$ -	$ 433	$ 13,840.00	$ 13,299	$ 59,799
9	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 62,617	$ -	$ 433	$ 13,407.50	$ 12,819	$ 67,098
10	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 69,402	$ -	$ 433	$ 12,975.00	$ 12,344	$ 74,358
11	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 76,154	$ -	$ 433	$ 12,542.50	$ 11,873	$ 81,581
12	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 82,872	$ -	$ 433	$ 12,110.00	$ 11,406	$ 88,766
13	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 89,557	$ -	$ 433	$ 11,677.50	$ 10,944	$ 95,912
14	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 96,208	$ -	$ 433	$ 11,245.00	$ 10,487	$ 103,022
15	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 102,827	$ -	$ 433	$ 10,812.50	$ 10,033	$ 110,093
16	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 109,412	$ -	$ 433	$ 10,380.00	$ 9,584	$ 117,128
17	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 115,965	$ -	$ 433	$ 9,947.50	$ 9,139	$ 124,126
18	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 122,485	$ -	$ 433	$ 9,515.00	$ 8,698	$ 131,087
19	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 128,972	$ -	$ 433	$ 9,082.50	$ 8,261	$ 138,011
20	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 135,428	$ -	$ 433	$ 8,650.00	$ 7,829	$ 144,899
21	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 141,851	$ -	$ 433	$ 8,217.50	$ 7,400	$ 151,751
22	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 148,242	$ -	$ 433	$ 7,785.00	$ 6,976	$ 158,566
23	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 154,602	$ -	$ 433	$ 7,352.50	$ 6,556	$ 165,346
24	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 160,930	$ -	$ 433	$ 6,920.00	$ 6,139	$ 172,090
25	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 167,226	$ -	$ 433	$ 6,487.50	$ 5,727	$ 178,799
26	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 173,491	$ -	$ 433	$ 6,055.00	$ 5,319	$ 185,472
27	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 179,725	$ -	$ 433	$ 5,622.50	$ 4,914	$ 192,111
28	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 185,928	$ -	$ 433	$ 5,190.00	$ 4,514	$ 198,714
29	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 192,100	$ -	$ 433	$ 4,757.50	$ 4,117	$ 205,283
30	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 198,241	$ -	$ 433	$ 4,325.00	$ 3,724	$ 211,817
31	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 204,352	$ -	$ 433	$ 3,892.50	$ 3,335	$ 218,317
32	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 210,432	$ -	$ 433	$ 3,460.00	$ 2,950	$ 224,783
33	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 216,482	$ -	$ 433	$ 3,027.50	$ 2,568	$ 231,214
34	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 222,502	$ -	$ 433	$ 2,595.00	$ 2,190	$ 237,612
35	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 228,492	$ -	$ 433	$ 2,162.50	$ 1,816	$ 243,976
36	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 234,453	$ -	$ 433	$ 1,730.00	$ 1,446	$ 250,307
37	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 240,383	$ -	$ 433	$ 1,297.50	$ 1,079	$ 256,604
38	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 246,284	$ -	$ 433	$ 865.00	$ 716	$ 262,869
39	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 252,156	$ -	$ 433	$ 432.50	$ 356	$ 269,100
40	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 257,998	$ -	$ 433	$ -	$ -	$ 275,298
41	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 263,812	$ -	$ 433	$ (432.50)	$ (353)	$ 281,464
42	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 269,596	$ -	$ 433	$ (865.00)	$ (702)	$ 287,598
43	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 275,352	$ -	$ 433	$ (1,297.50)	$ (1,047)	$ 293,699
44	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 281,079	$ -	$ 433	$ (1,730.00)	$ (1,389)	$ 299,768
45	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 286,778	$ -	$ 433	$ (2,162.50)	$ (1,728)	$ 305,806
46	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 292,448	$ -	$ 433	$ (2,595.00)	$ (2,063)	$ 311,811
47	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 298,090	$ -	$ 433	$ (3,027.50)	$ (2,395)	$ 317,785
48	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 303,704	$ -	$ 433	$ (3,460.00)	$ (2,723)	$ 323,727
49	$ -		$ 17,300	$ -	$ 17,300	$ 7,133	$ 309,290	$ -	$ 433	$ (3,892.50)	$ (3,049)	$ 329,639

Jones & DeMille Engineering

1-800-748-5275
www.jonesanddemille.com

Rural Development Present Worth Analysis

Project:	Central Valley Town
Project Number:	1706-043
Date:	February 9, 2018
PM:	Darin Robinson, PE

Chlorine Treatment - Generator

Summary

Study Period	Present Worth Cumulative Capital Cost	Present Worth Annual O&M	Present Worth Salvage Value	Net Present Value of Facility
20	$ 90,000.00	$ 83,449.71	$ 40,727.83	$ 132,721.88

Capital Cost	$ 90,000	(From Probable Cost Total)
Study Period	20	Years
Annual O&M Cost	$ 4,395	(See CellsP12:Q28)
Real Interest Rate	0.5%	(From Circular A-94 Appendix C) https://www.whitehouse.gov/omb/circulars/

*Please only change the values in the blue boxes

Assumptions: 1. Salvage Value will be $0 at end of projected lifespan
2. Annual budget for O&M does not change.

	Capital Cost					O & M		Salvage Value				NPV
Year	Capital Cost	Projected Lifespan	Cumulative Capital Cost	Present Worth Capital Cost	Present Worth Cumulative Capital Cost	Uniform Annual O&M ($/yr.)	Present Worth Annual O&M	Straight Line Depreciation per year per Capital Cost	Cumulative Depreciation per Year	Annual Salvage Value	Present Worth Salvage Value	Net Present Value of Facility
			(Adds current and any new capital costs)	=-pv(Real Interest Rate, Year,Captital Cost)	(Adds current and any new present worth capital costs)	(Annual O&M budget remains the same)	=-pv(real interest Rate, Year,Annual O&M)	=sln(Capital Cost, Salvage Value at end of lifespan, Projected Lifespan)	(Adds current and any new depreciation)	=Cumulative Capital Cost - Cumulative Depreciation Per Year	=-pv(real interest Rate, Year,Annual Salvage Value)	=Cumulative Capital Cost + Present Worth Annual O&M - Present Worth Salvage Value
0	$ 90,000	40	$ 90,000	$ 90,000	$ 90,000	$ 4,395	$ -	$ 2,250	$ -	$ 90,000.00	$ 90,000	$ -
1	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 4,373	$ -	$ 2,250	$ 87,750.00	$ 87,313	$ 7,060
2	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 8,725	$ -	$ 2,250	$ 85,500.00	$ 84,651	$ 14,073
3	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 13,054	$ -	$ 2,250	$ 83,250.00	$ 82,014	$ 21,041
4	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 17,362	$ -	$ 2,250	$ 81,000.00	$ 79,400	$ 27,962
5	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 21,649	$ -	$ 2,250	$ 78,750.00	$ 76,810	$ 34,839
6	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 25,915	$ -	$ 2,250	$ 76,500.00	$ 74,245	$ 41,670
7	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 30,159	$ -	$ 2,250	$ 74,250.00	$ 71,702	$ 48,456
8	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 34,382	$ -	$ 2,250	$ 72,000.00	$ 69,184	$ 55,198
9	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 38,584	$ -	$ 2,250	$ 69,750.00	$ 66,688	$ 61,896
10	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 42,765	$ -	$ 2,250	$ 67,500.00	$ 64,216	$ 68,549
11	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 46,926	$ -	$ 2,250	$ 65,250.00	$ 61,767	$ 75,159
12	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 51,065	$ -	$ 2,250	$ 63,000.00	$ 59,340	$ 81,725
13	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 55,184	$ -	$ 2,250	$ 60,750.00	$ 56,936	$ 88,248
14	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 59,283	$ -	$ 2,250	$ 58,500.00	$ 54,555	$ 94,728
15	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 63,361	$ -	$ 2,250	$ 56,250.00	$ 52,195	$ 101,166
16	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 67,419	$ -	$ 2,250	$ 54,000.00	$ 49,858	$ 107,561
17	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 71,457	$ -	$ 2,250	$ 51,750.00	$ 47,543	$ 113,914
18	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 75,474	$ -	$ 2,250	$ 49,500.00	$ 45,250	$ 120,225
19	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 79,472	$ -	$ 2,250	$ 47,250.00	$ 42,978	$ 126,494
20	**$ -**		**$ 90,000**	**$ -**	**$ 90,000**	**$ 4,395**	**$ 83,450**	**$ -**	**$ 2,250**	**$ 45,000.00**	**$ 40,728**	**$ 132,722**
21	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 87,408	$ -	$ 2,250	$ 42,750.00	$ 38,499	$ 138,909
22	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 91,346	$ -	$ 2,250	$ 40,500.00	$ 36,291	$ 145,055
23	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 95,265	$ -	$ 2,250	$ 38,250.00	$ 34,105	$ 151,160
24	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 99,164	$ -	$ 2,250	$ 36,000.00	$ 31,939	$ 157,225
25	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 103,044	$ -	$ 2,250	$ 33,750.00	$ 29,794	$ 163,250
26	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 106,904	$ -	$ 2,250	$ 31,500.00	$ 27,669	$ 169,235
27	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 110,745	$ -	$ 2,250	$ 29,250.00	$ 25,565	$ 175,181
28	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 114,567	$ -	$ 2,250	$ 27,000.00	$ 23,481	$ 181,087
29	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 118,371	$ -	$ 2,250	$ 24,750.00	$ 21,417	$ 186,954
30	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 122,155	$ -	$ 2,250	$ 22,500.00	$ 19,373	$ 192,782
31	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 125,920	$ -	$ 2,250	$ 20,250.00	$ 17,349	$ 198,571
32	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 129,667	$ -	$ 2,250	$ 18,000.00	$ 15,345	$ 204,322
33	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 133,395	$ -	$ 2,250	$ 15,750.00	$ 13,360	$ 210,035
34	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 137,104	$ -	$ 2,250	$ 13,500.00	$ 11,394	$ 215,710
35	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 140,795	$ -	$ 2,250	$ 11,250.00	$ 9,448	$ 221,347
36	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 144,468	$ -	$ 2,250	$ 9,000.00	$ 7,521	$ 226,947
37	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 148,123	$ -	$ 2,250	$ 6,750.00	$ 5,613	$ 232,510
38	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 151,759	$ -	$ 2,250	$ 4,500.00	$ 3,723	$ 238,036
39	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 155,377	$ -	$ 2,250	$ 2,250.00	$ 1,852	$ 243,525
40	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 158,977	$ -	$ 2,250	$ -	$ -	$ 248,977
41	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 162,559	$ -	$ 2,250	$ (2,250.00)	$ (1,834)	$ 254,393
42	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 166,124	$ -	$ 2,250	$ (4,500.00)	$ (3,650)	$ 259,773
43	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 169,670	$ -	$ 2,250	$ (6,750.00)	$ (5,447)	$ 265,117
44	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 173,199	$ -	$ 2,250	$ (9,000.00)	$ (7,227)	$ 270,426
45	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 176,711	$ -	$ 2,250	$ (11,250.00)	$ (8,988)	$ 275,699
46	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 180,205	$ -	$ 2,250	$ (13,500.00)	$ (10,732)	$ 280,937
47	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 183,681	$ -	$ 2,250	$ (15,750.00)	$ (12,459)	$ 286,140
48	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 187,140	$ -	$ 2,250	$ (18,000.00)	$ (14,168)	$ 291,308
49	$ -		$ 90,000	$ -	$ 90,000	$ 4,395	$ 190,583	$ -	$ 2,250	$ (20,250.00)	$ (15,859)	$ 296,442

CENTRAL VALLEY TOWN
COMBINED CASH INVESTMENT
JUNE 30, 2015

COMBINED CASH ACCOUNTS

01-10200	ZIONS BANK CHECKING	26,618.61
01-10400	PTIF (4320)	111,196.24
01-10420	BOND & RESERVE FUND-PTIF 4628	14,488.73
01-10422	WATER BOND & RESERVE PTIF 5439	24,175.53
	TOTAL COMBINED CASH	176,479.11
01-10100	COMBINED CASH	(176,479.11)
	TOTAL UNALLOCATED CASH	.00

CASH ALLOCATION RECONCILIATION

10	ALLOCATION TO GENERAL FUND	93,338.73
51	ALLOCATION TO WATER DEPARTMENT FUND	83,140.38
	TOTAL ALLOCATIONS TO OTHER FUNDS	176,479.11
	ALLOCATION FROM COMBINED CASH FUND - 01-10100	(176,479.11)
	ZERO PROOF IF ALLOCATIONS BALANCE	.00

CENTRAL VALLEY TOWN
BALANCE SHEET
JUNE 30, 2015

GENERAL FUND

	ASSETS			
10-10100	COMBINED CASH		93,338.73	
10-13110	DUE FROM OTHER GOV'T UNITS		7,342.85	
	TOTAL ASSETS			100,681.58
	LIABILITIES AND EQUITY			
	LIABILITIES			
10-23001	COMM CENTER CLEANING DEPOSIT		100.00	
	TOTAL LIABILITIES			100.00
	FUND EQUITY			
	UNAPPROPRIATED FUND BALANCE:			
10-29800	FUND BALANCE AT START OF YEAR	106,854.47		
	REVENUE OVER EXPENDITURES - YTD	(6,272.89)		
	BALANCE - CURRENT DATE		100,581.58	
	TOTAL FUND EQUITY			100,581.58
	TOTAL LIABILITIES AND EQUITY			100,681.58

CENTRAL VALLEY TOWN
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2015

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	TAXES					
10-31-110	PROPERTY TAXES - CURRENT	.00	35,901.84	36,000.00	98.16	99.7
10-31-120	PROPERTY TAXES - DELINQUENT	.00	813.29	1,000.00	186.71	81.3
10-31-130	FEE-IN-LIEU OF PROPERTY TAXES	.00	9,147.70	9,000.00	(147.70)	101.6
10-31-140	MOTOR CARRIER	.00	679.21	1,000.00	320.79	67.9
10-31-300	GENERAL SALES AND USE TAX	.00	52,690.63	50,000.00	(2,690.63)	105.4
10-31-400	ENERGY SALES AND USE TAX	.00	22,306.62	22,000.00	(306.62)	101.4
10-31-500	TELECOMMUNICATION TAX	.00	1,860.17	2,000.00	139.83	93.0
10-31-600	CABLE TV TAX	.00	1,003.96	1,000.00	(3.96)	100.4
	TOTAL TAXES	.00	124,403.42	122,000.00	(2,403.42)	102.0
	LICENSES AND PERMITS					
10-32-100	BUSINESS LICENSES & PERMITS	.00	750.00	700.00	(50.00)	107.1
10-32-110	DOG LICENSES & PERMITS	.00	2,065.00	1,800.00	(265.00)	114.7
10-32-120	LAND USE FEES	.00	390.00	500.00	110.00	78.0
10-32-130	CEMETERY FEES	.00	800.00	.00	(800.00)	.0
	TOTAL LICENSES AND PERMITS	.00	4,005.00	3,000.00	(1,005.00)	133.5
	INTERGOVERNMENTAL REVENUE					
10-33-120	STATE GRANTS	.00	62,624.42	63,000.00	375.58	99.4
10-33-330	CLASS "C" ROAD FUND ALLOTMENT	7,342.85	38,365.09	39,000.00	634.91	98.4
	TOTAL INTERGOVERNMENTAL REVENUE	7,342.85	100,989.51	102,000.00	1,010.49	99.0
	MISCELLANEOUS REVENUE					
10-36-100	INTEREST EARNINGS	.00	909.22	1,000.00	90.78	90.9
10-36-200	SALE OF PROPERTY	.00	720.00	.00	(720.00)	.0
10-36-300	RENTS AND CONCESSIONS	.00	5,388.01	5,000.00	(388.01)	107.8
10-36-400	EXCESS BEG. FUND BAL. TO BE AP	.00	.00	105,000.00	105,000.00	.0
10-36-500	DONATIONS	.00	11,543.33	11,000.00	(543.33)	104.9
10-36-900	MISCELLANEOUS REVENUE	.00	348.00	.00	(348.00)	.0
	TOTAL MISCELLANEOUS REVENUE	.00	18,908.56	122,000.00	103,091.44	15.5
	TOTAL FUND REVENUE	7,342.85	248,306.49	349,000.00	100,693.51	71.2

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2015

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	GENERAL GOVERNMENT DEPARTMENT					
10-44-110	SALARIES AND WAGES	.00	61,962.08	63,700.00	1,737.92	97.3
10-44-130	EMPLOYEE BENEFITS	.00	5,394.79	5,400.00	5.21	99.9
10-44-230	TRAVEL AND TRAINING	.00	3,300.50	4,000.00	699.50	82.5
10-44-240	OFFICE EXPENSE	.00	1,730.94	4,000.00	2,269.06	43.3
10-44-270	UTILITIES	.00	5,153.43	6,500.00	1,346.57	79.3
10-44-280	TELEPHONE	.00	522.89	500.00	(22.89)	104.6
10-44-290	POSTAGE	.00	.00	500.00	500.00	.0
10-44-310	INSURANCE	.00	4,746.01	6,800.00	2,053.99	69.8
10-44-330	ATTORNEY	.00	600.00	1,200.00	600.00	50.0
10-44-340	ENGINEERING	.00	.00	3,000.00	3,000.00	.0
10-44-350	AUDITOR	.00	1,350.00	2,800.00	1,450.00	48.2
10-44-370	MEMBERSHIP FEES AND DUES	.00	981.69	2,000.00	1,018.31	49.1
10-44-410	COMPUTER SUPPLIES AND MAINT	.00	.00	500.00	500.00	.0
10-44-420	SOFTWARE SUPPORT AND FEES	.00	1,500.00	1,500.00	.00	100.0
10-44-460	PLANNING AND ZONING	.00	834.65	1,000.00	165.35	83.5
10-44-470	COMMUNITTY CENTER	.00	2,735.22	6,000.00	3,264.78	45.6
10-44-480	MAINTENANCE BUILDING	.00	181.87	10,000.00	9,818.13	1.8
10-44-520	LEGAL NOTICES/ADVERTISEMENT	.00	882.50	1,000.00	117.50	88.3
10-44-540	BANK FEES AND CHARGES	.00	230.42	100.00	(130.42)	230.4
10-44-680	NEIGBORHOOD WATCH	.00	486.20	500.00	13.80	97.2
10-44-681	CERT	.00	957.02	1,000.00	42.98	95.7
10-44-910	CONTINGENCIES	.00	.00	4,000.00	4,000.00	.0
	TOTAL GENERAL GOVERNMENT DEPARTMENT	.00	93,550.21	126,000.00	32,449.79	74.3
	STREETS & HIGHWAYS DEPARTMENT					
10-60-110	SALARIES AND WAGES	.00	4,641.29	5,000.00	358.71	92.8
10-60-210	STREET REPAIRS AND MAINTENANCE	.00	32,872.84	86,000.00	53,127.16	38.2
10-60-810	DEBT SERVICE - PRINCIPAL	.00	10,000.00	10,000.00	.00	100.0
	TOTAL STREETS & HIGHWAYS DEPARTMENT	.00	47,514.13	101,000.00	53,485.87	47.0
	PARKS & RECREATION DEPARTMENT					
10-68-110	SALARIES AND WAGES	.00	8,154.95	8,500.00	345.05	95.9
10-68-130	EMPLOYEE BENEFITS	.00	423.64	.00	(423.64)	.0
10-68-210	PARKS REPAIRS, OP. AND MTCE	.00	5,954.27	9,500.00	3,545.73	62.7
10-68-211	PARK IMPR. PROJECTS-SPLASH PAD	.00	92,112.16	95,000.00	2,887.84	97.0
10-68-220	MOSQUITO ABATEMENT	.00	2,000.00	2,000.00	.00	100.0
10-68-230	RECREATION	.00	3,740.27	4,000.00	259.73	93.5
10-68-240	CEMETERY	.00	1,129.75	3,000.00	1,870.25	37.7
	TOTAL PARKS & RECREATION DEPARTMENT	.00	113,515.04	122,000.00	8,484.96	93.1
	TOTAL FUND EXPENDITURES	.00	254,579.38	349,000.00	94,420.62	73.0

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2015

GENERAL FUND

	PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
NET REVENUE OVER EXPENDITURES	7,342.85	(6,272.89)	.00	6,272.89	.0

CENTRAL VALLEY TOWN
BALANCE SHEET
JUNE 30, 2015

WATER DEPARTMENT FUND

	ASSETS			
51-10100	COMBINED CASH		83,140.38	
51-11520	WATER ACCOUNTS RECEIVABLE		8,289.69	
51-16100	LAND		173,200.00	
51-16200	WATER RIGHTS		944,250.00	
51-16250	WATER SOURCES		1,180,000.00	
51-16280	WATER TANKS		727,500.00	
51-16350	WATER DISTRIBUTION SYSTEM		2,194,000.00	
51-16900	ALLOWANCE FOR DEPRECIATION		(733,820.00)	
	TOTAL ASSETS			4,576,560.07
	LIABILITIES AND EQUITY			
	LIABILITIES			
51-21200	WATER DEPOSITS		2,400.00	
51-21300	LOANS PAYABLE		692,000.00	
	TOTAL LIABILITIES			694,400.00
	FUND EQUITY			
	UNAPPROPRIATED FUND BALANCE:			
51-29800	FUND BALANCE AT START OF YEAR	3,945,830.06		
	REVENUE OVER EXPENDITURES - YTD	(63,669.99)		
	BALANCE - CURRENT DATE		3,882,160.07	
	TOTAL FUND EQUITY			3,882,160.07
	TOTAL LIABILITIES AND EQUITY			4,576,560.07

CENTRAL VALLEY TOWN
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2015

WATER DEPARTMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	WATER DEPARTMENT REVENUE					
51-37-100	WATER SERVICE	8,289.69	87,923.12	84,000.00	(3,923.12)	104.7
51-37-200	HOOKUP FEES	.00	3,000.00	3,000.00	.00	100.0
51-37-210	IMPACT FEES	.00	6,000.00	7,000.00	1,000.00	85.7
51-37-220	SUBDIVISION WATERPURCHASEFUND	.00	4,000.00	.00	(4,000.00)	.0
	TOTAL WATER DEPARTMENT REVENUE	8,289.69	100,923.12	94,000.00	(6,923.12)	107.4
	WATER DEPARTMENT REVENUE					
51-38-100	INTEREST & PENALTY EARNINGS	.00	1,555.69	2,000.00	444.31	77.8
51-38-300	TOTAL CASH ON HAND BUDGETED	.00	.00	70,000.00	70,000.00	.0
51-38-900	MISC. REVENUE	.00	670.80	.00	(670.80)	.0
	TOTAL WATER DEPARTMENT REVENUE	.00	2,226.49	72,000.00	69,773.51	3.1
	TOTAL FUND REVENUE	8,289.69	103,149.61	166,000.00	62,850.39	62.1

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2015

WATER DEPARTMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	WATER DEPARTMENT EXPENDITURES					
51-44-110	SALARIES AND WAGES	.00	20,236.94	21,000.00	763.06	96.4
51-44-130	EMPLOYEE BENEFITS	.00	1,473.76	2,000.00	526.24	73.7
51-44-230	TRAVEL AND TRAINING	.00	3,677.62	3,000.00	(677.62)	122.6
51-44-240	MATERIALS AND SUPPLIES	.00	10,002.74	15,000.00	4,997.26	66.7
51-44-270	UTILITIES	.00	24,400.04	25,000.00	599.96	97.6
51-44-280	LAB FEES	.00	1,022.00	6,000.00	4,978.00	17.0
51-44-310	INSURANCE	.00	766.50	2,000.00	1,233.50	38.3
51-44-330	ATTORNEY	.00	600.00	2,000.00	1,400.00	30.0
51-44-342	MAJOR WATER SYSTEM IMPROVEMENT	.00	.00	62,000.00	62,000.00	.0
51-44-350	ACCOUNTING & AUDIT	.00	1,000.00	1,000.00	.00	100.0
51-44-670	DEPRECIATION	.00	103,640.00	.00	(103,640.00)	.0
51-44-680	LOAN PAYMENT	.00	.00	27,000.00	27,000.00	.0
	TOTAL WATER DEPARTMENT EXPENDITURES	.00	166,819.60	166,000.00	(819.60)	100.5
	TOTAL FUND EXPENDITURES	.00	166,819.60	166,000.00	(819.60)	100.5
	NET REVENUE OVER EXPENDITURES	8,289.69	(63,669.99)	.00	63,669.99	.0

CENTRAL VALLEY TOWN
COMBINED CASH INVESTMENT
JUNE 30, 2016

COMBINED CASH ACCOUNTS

01-10200	ZIONS BANK CHECKING	(139,745.50)
01-10400	PTIF (4320)	99,654.56
01-10410	CIB ROAD IMP. ESCROW ACCT-PTIF	2,712,695.13
01-10420	BOND & RESERVE FUND-PTIF 4628	9,985.02
01-10422	WATER BOND & RESERVE PTIF 5439	28,923.91
	TOTAL COMBINED CASH	2,711,513.12
01-10100	COMBINED CASH	(2,711,513.12)
	TOTAL UNALLOCATED CASH	.00

CASH ALLOCATION RECONCILIATION

10	ALLOCATION TO GENERAL FUND	2,641,658.94
51	ALLOCATION TO WATER DEPARTMENT FUND	69,854.18
	TOTAL ALLOCATIONS TO OTHER FUNDS	2,711,513.12
	ALLOCATION FROM COMBINED CASH FUND - 01-10100	(2,711,513.12)
	ZERO PROOF IF ALLOCATIONS BALANCE	.00

CENTRAL VALLEY TOWN
BALANCE SHEET
JUNE 30, 2016

GENERAL FUND

	ASSETS			
10-10100	COMBINED CASH		2,641,658.94	
10-11520	GARBAGE ACCOUNTS RECEIVABLE		2,380.25	
10-13110	DUE FROM OTHER GOV'T UNITS		9,971.28	
	TOTAL ASSETS			2,654,010.47
	LIABILITIES AND EQUITY			
	LIABILITIES			
10-23001	COMM CENTER CLEANING DEPOSIT		100.00	
	TOTAL LIABILITIES			100.00
	FUND EQUITY			
	UNAPPROPRIATED FUND BALANCE:			
10-29800	FUND BALANCE AT START OF YEAR	100,581.58		
	REVENUE OVER EXPENDITURES - YTD	2,553,328.89		
	BALANCE - CURRENT DATE		2,653,910.47	
	TOTAL FUND EQUITY			2,653,910.47
	TOTAL LIABILITIES AND EQUITY			2,654,010.47

CENTRAL VALLEY TOWN
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2016

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	TAXES					
10-31-110	PROPERTY TAXES - CURRENT	.00	36,995.41	37,000.00	4.59	100.0
10-31-120	PROPERTY TAXES - DELINQUENT	.00	397.30	1,000.00	602.70	39.7
10-31-130	FEE-IN-LIEU OF PROPERTY TAXES	.00	8,595.17	9,000.00	404.83	95.5
10-31-140	MOTOR CARRIER	.00	637.62	1,000.00	362.38	63.8
10-31-300	GENERAL SALES AND USE TAX	.00	54,934.17	52,000.00	(2,934.17)	105.6
10-31-310	LOCAL OPTION SALES TAX ROADS	.00	358.70	.00	(358.70)	.0
10-31-400	ENERGY SALES AND USE TAX	.00	22,744.81	23,000.00	255.19	98.9
10-31-500	TELECOMMUNICATION TAX	.00	1,547.38	3,000.00	1,452.62	51.6
10-31-600	CABLE TV TAX	.00	974.10	1,000.00	25.90	97.4
	TOTAL TAXES	.00	127,184.66	127,000.00	(184.66)	100.2
	LICENSES AND PERMITS					
10-32-100	BUSINESS LICENSES & PERMITS	.00	800.00	800.00	.00	100.0
10-32-110	DOG LICENSES & PERMITS	.00	1,995.00	2,100.00	105.00	95.0
10-32-120	LAND USE FEES	.00	580.00	500.00	(80.00)	116.0
10-32-130	CEMETERY FEES	.00	1,300.00	600.00	(700.00)	216.7
	TOTAL LICENSES AND PERMITS	.00	4,675.00	4,000.00	(675.00)	116.9
	INTERGOVERNMENTAL REVENUE					
10-33-120	STATE GRANTS	.00	2,595,375.58	2,595,000.00	(375.58)	100.0
10-33-140	STATE LOAN	.00	250,000.00	250,000.00	.00	100.0
10-33-330	CLASS "C" ROAD FUND ALLOTMENT	9,971.28	40,155.53	40,000.00	(155.53)	100.4
	TOTAL INTERGOVERNMENTAL REVENUE	9,971.28	2,885,531.11	2,885,000.00	(531.11)	100.0
	MISCELLANEOUS REVENUE					
10-36-100	INTEREST EARNINGS	.00	5,246.27	1,000.00	(4,246.27)	524.6
10-36-200	SALE OF PROPERTY	.00	405.00	.00	(405.00)	.0
10-36-300	RENTS AND CONCESSIONS	.00	5,150.93	5,000.00	(150.93)	103.0
10-36-400	EXCESS BEG. FUND BAL. TO BE AP	.00	.00	100,000.00	100,000.00	.0
10-36-500	DONATIONS	.00	365.85	1,000.00	634.15	36.6
10-36-600	REFUSE COLLECTION	2,380.25	24,558.30	24,000.00	(558.30)	102.3
	TOTAL MISCELLANEOUS REVENUE	2,380.25	35,726.35	131,000.00	95,273.65	27.3
	TOTAL FUND REVENUE	12,351.53	3,053,117.12	3,147,000.00	93,882.88	97.0

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2016

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	GENERAL GOVERNMENT DEPARTMENT					
10-44-110	SALARIES AND WAGES	.00	66,912.33	66,900.00	(12.33)	100.0
10-44-130	EMPLOYEE BENEFITS	.00	5,902.97	5,700.00	(202.97)	103.6
10-44-230	TRAVEL AND TRAINING	.00	2,947.65	4,000.00	1,052.35	73.7
10-44-240	OFFICE EXPENSE	.00	1,894.58	5,000.00	3,105.42	37.9
10-44-270	UTILITIES	.00	4,412.66	6,500.00	2,087.34	67.9
10-44-280	TELEPHONE	.00	535.08	500.00	(35.08)	107.0
10-44-290	POSTAGE	.00	387.33	500.00	112.67	77.5
10-44-310	INSURANCE	.00	4,695.88	7,000.00	2,304.12	67.1
10-44-330	ATTORNEY	.00	1,200.00	1,200.00	.00	100.0
10-44-340	ENGINEERING	.00	.00	3,000.00	3,000.00	.0
10-44-350	AUDITOR	.00	1,350.00	2,800.00	1,450.00	48.2
10-44-360	ELECTIONS	.00	.00	1,000.00	1,000.00	.0
10-44-370	MEMBERSHIP FEES AND DUES	.00	861.77	2,000.00	1,138.23	43.1
10-44-410	COMPUTER SUPPLIES AND MAINT	.00	.00	500.00	500.00	.0
10-44-420	SOFTWARE SUPPORT AND FEES	.00	1,500.00	1,500.00	.00	100.0
10-44-460	PLANNING AND ZONING	.00	812.35	1,000.00	187.65	81.2
10-44-470	COMMUNITTY CENTER	.00	2,367.88	6,000.00	3,632.12	39.5
10-44-480	MAINTENANCE BUILDING	.00	13.47	10,000.00	9,986.53	.1
10-44-520	LEGAL NOTICES/ADVERTISEMENT	.00	607.50	1,000.00	392.50	60.8
10-44-540	BANK FEES AND CHARGES	.00	253.16	200.00	(53.16)	126.6
10-44-680	NEIGBORHOOD WATCH	.00	564.59	700.00	135.41	80.7
10-44-681	CERT	.00	255.71	1,000.00	744.29	25.6
10-44-910	CONTINGENCIES	.00	.00	10,000.00	10,000.00	.0
	TOTAL GENERAL GOVERNMENT DEPARTMENT	.00	97,474.91	138,000.00	40,525.09	70.6
	STREETS & HIGHWAYS DEPARTMENT					
10-60-110	SALARIES AND WAGES	.00	4,656.75	6,000.00	1,343.25	77.6
10-60-210	STREET REPAIRS AND MAINTENANCE	.00	20,816.21	58,000.00	37,183.79	35.9
10-60-220	ROAD IMPROVEMENT PROJECT 2016	.00	310,001.12	2,875,000.00	2,564,998.88	10.8
10-60-810	DEBT SERVICE - PRINCIPAL	.00	10,000.00	10,000.00	.00	100.0
	TOTAL STREETS & HIGHWAYS DEPARTMENT	.00	345,474.08	2,949,000.00	2,603,525.92	11.7
	PARKS & RECREATION DEPARTMENT					
10-68-110	SALARIES AND WAGES	.00	6,440.63	6,000.00	(440.63)	107.3
10-68-130	EMPLOYEE BENEFITS	.00	430.93	.00	(430.93)	.0
10-68-210	PARKS REPAIRS, OP. AND MTCE	.00	12,012.63	14,000.00	1,987.37	85.8
10-68-211	PARK IMPR. PROJECTS-SPLASH PAD	.00	10,000.00	10,000.00	.00	100.0
10-68-220	MOSQUITO ABATEMENT	.00	2,000.00	2,000.00	.00	100.0
10-68-230	RECREATION	.00	4,054.83	4,000.00	(54.83)	101.4
10-68-240	CEMETERY	.00	700.47	4,000.00	3,299.53	17.5
10-68-250	REFUSE (WHITE'S)	.00	21,199.75	20,000.00	(1,199.75)	106.0
	TOTAL PARKS & RECREATION DEPARTMENT	.00	56,839.24	60,000.00	3,160.76	94.7

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2016

GENERAL FUND

	PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
TOTAL FUND EXPENDITURES	.00	499,788.23	3,147,000.00	2,647,211.77	15.9
NET REVENUE OVER EXPENDITURES	12,351.53	2,553,328.89	.00	(2,553,328.89)	.0

CENTRAL VALLEY TOWN
BALANCE SHEET
JUNE 30, 2016

WATER DEPARTMENT FUND

	ASSETS			
51-10100	COMBINED CASH		69,854.18	
51-11520	WATER ACCOUNTS RECEIVABLE		10,744.14	
51-16100	LAND		327,550.00	
51-16200	WATER RIGHTS		944,250.00	
51-16250	WATER SOURCES		1,180,000.00	
51-16280	WATER TANKS		727,500.00	
51-16350	WATER DISTRIBUTION SYSTEM		2,226,580.92	
51-16900	ALLOWANCE FOR DEPRECIATION		(837,460.00)	
	TOTAL ASSETS			4,649,019.24
	LIABILITIES AND EQUITY			
	LIABILITIES			
51-21200	WATER DEPOSITS		3,000.00	
51-21300	LOANS PAYABLE		665,000.00	
	TOTAL LIABILITIES			668,000.00
	FUND EQUITY			
	UNAPPROPRIATED FUND BALANCE:			
51-29800	FUND BALANCE AT START OF YEAR	3,882,160.07		
	REVENUE OVER EXPENDITURES - YTD	98,859.17		
	BALANCE - CURRENT DATE		3,981,019.24	
	TOTAL FUND EQUITY			3,981,019.24
	TOTAL LIABILITIES AND EQUITY			4,649,019.24

CENTRAL VALLEY TOWN
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2016

WATER DEPARTMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	WATER DEPARTMENT REVENUE					
51-37-100	WATER SERVICE	10,744.14	91,218.49	85,000.00	(6,218.49)	107.3
51-37-200	HOOKUP FEES	.00	7,500.00	3,000.00	(4,500.00)	250.0
51-37-210	IMPACT FEES	.00	18,000.00	7,000.00	(11,000.00)	257.1
51-37-220	SUBDIVISION WATERPURCHASEFUND	.00	2,000.00	4,000.00	2,000.00	50.0
51-37-300	DISCONNECT/RECONNECT FEES	.00	40.00	.00	(40.00)	.0
	TOTAL WATER DEPARTMENT REVENUE	10,744.14	118,758.49	99,000.00	(19,758.49)	120.0
	WATER DEPARTMENT REVENUE					
51-38-100	INTEREST & PENALTY EARNINGS	.00	1,375.05	2,000.00	624.95	68.8
51-38-300	TOTAL CASH ON HAND BUDGETED	.00	.00	80,000.00	80,000.00	.0
51-38-800	CONTRIBUTIONS	154,350.00	154,350.00	.00	(154,350.00)	.0
51-38-900	MISC. REVENUE	.00	2,692.75	.00	(2,692.75)	.0
	TOTAL WATER DEPARTMENT REVENUE	154,350.00	158,417.80	82,000.00	(76,417.80)	193.2
	TOTAL FUND REVENUE	165,094.14	277,176.29	181,000.00	(96,176.29)	153.1

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2016

WATER DEPARTMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	WATER DEPARTMENT EXPENDITURES					
51-44-110	SALARIES AND WAGES	.00	20,135.47	22,000.00	1,864.53	91.5
51-44-130	EMPLOYEE BENEFITS	.00	1,205.78	2,000.00	794.22	60.3
51-44-230	TRAVEL AND TRAINING	.00	2,970.36	4,000.00	1,029.64	74.3
51-44-240	MATERIALS AND SUPPLIES	.00	14,297.66	16,000.00	1,702.34	89.4
51-44-270	UTILITIES	.00	21,792.76	27,000.00	5,207.24	80.7
51-44-280	LAB FEES	.00	6,180.00	6,000.00	(180.00)	103.0
51-44-310	INSURANCE	.00	966.50	2,000.00	1,033.50	48.3
51-44-330	ATTORNEY	.00	1,200.00	1,000.00	(200.00)	120.0
51-44-342	MAJOR WATER SYSTEM IMPROVEMENT	(32,580.92)	4,928.59	68,000.00	63,071.41	7.3
51-44-344	WATER PURCHASE FUND	.00	.00	5,000.00	5,000.00	.0
51-44-350	ACCOUNTING & AUDIT	.00	1,000.00	1,000.00	.00	100.0
51-44-670	DEPRECIATION	.00	103,640.00	.00	(103,640.00)	.0
51-44-680	LOAN PAYMENT	.00	.00	27,000.00	27,000.00	.0
	TOTAL WATER DEPARTMENT EXPENDITURES	(32,580.92)	178,317.12	181,000.00	2,682.88	98.5
	TOTAL FUND EXPENDITURES	(32,580.92)	178,317.12	181,000.00	2,682.88	98.5
	NET REVENUE OVER EXPENDITURES	197,675.06	98,859.17	.00	(98,859.17)	.0

CENTRAL VALLEY TOWN
COMBINED CASH INVESTMENT
JUNE 30, 2017

COMBINED CASH ACCOUNTS

01-10200	ZIONS BANK CHECKING	4,594.10
01-10400	PTIF (4320)	111,097.83
01-10410	CIB ROAD IMP. ESCROW ACCT-PTIF	150,815.88
01-10420	BOND & RESERVE FUND-PTIF 4628	28,097.31
01-10422	WATER BOND & RESERVE PTIF 5439	31,221.09
	TOTAL COMBINED CASH	325,826.21
01-10100	COMBINED CASH	(325,826.21)
	TOTAL UNALLOCATED CASH	.00

CASH ALLOCATION RECONCILIATION

10	ALLOCATION TO GENERAL FUND	252,115.44
51	ALLOCATION TO WATER DEPARTMENT FUND	73,710.77
	TOTAL ALLOCATIONS TO OTHER FUNDS	325,826.21
	ALLOCATION FROM COMBINED CASH FUND - 01-10100	(325,826.21)
	ZERO PROOF IF ALLOCATIONS BALANCE	.00

CENTRAL VALLEY TOWN
BALANCE SHEET
JUNE 30, 2017

GENERAL FUND

	ASSETS			
10-10100	COMBINED CASH		252,115.44	
10-11520	GARBAGE ACCOUNTS RECEIVABLE		2,150.48	
10-13110	DUE FROM OTHER GOV'T UNITS		11,360.92	
	TOTAL ASSETS			265,626.84
	LIABILITIES AND EQUITY			
	LIABILITIES			
10-21000	ACCOUNTS PAYABLE		31,032.39	
10-23001	COMM CENTER CLEANING DEPOSIT		200.00	
	TOTAL LIABILITIES			31,232.39
	FUND EQUITY			
	UNAPPROPRIATED FUND BALANCE:			
10-29800	FUND BALANCE AT START OF YEAR	2,653,910.47		
	REVENUE OVER EXPENDITURES - YTD	(2,419,516.02)		
	BALANCE - CURRENT DATE		234,394.45	
	TOTAL FUND EQUITY			234,394.45
	TOTAL LIABILITIES AND EQUITY			265,626.84

CENTRAL VALLEY TOWN
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2017

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	TAXES					
10-31-110	PROPERTY TAXES - CURRENT	.00	37,215.16	38,000.00	784.84	97.9
10-31-120	PROPERTY TAXES - DELINQUENT	.00	4,491.61	1,000.00	(3,491.61)	449.2
10-31-130	FEE-IN-LIEU OF PROPERTY TAXES	.00	6,648.00	9,000.00	2,352.00	73.9
10-31-140	MOTOR CARRIER	.00	608.11	1,000.00	391.89	60.8
10-31-300	GENERAL SALES AND USE TAX	.00	58,068.09	55,000.00	(3,068.09)	105.6
10-31-310	LOCAL OPTION SALES TAX ROADS	.00	4,375.89	4,000.00	(375.89)	109.4
10-31-400	ENERGY SALES AND USE TAX	.00	21,536.26	23,000.00	1,463.74	93.6
10-31-500	TELECOMMUNICATION TAX	.00	1,559.92	2,000.00	440.08	78.0
10-31-600	CABLE TV TAX	.00	891.00	1,000.00	109.00	89.1
	TOTAL TAXES	.00	135,394.04	134,000.00	(1,394.04)	101.0
	LICENSES AND PERMITS					
10-32-100	BUSINESS LICENSES & PERMITS	.00	924.03	800.00	(124.03)	115.5
10-32-110	DOG LICENSES & PERMITS	.00	2,080.00	2,100.00	20.00	99.1
10-32-120	LAND USE FEES	.00	160.00	500.00	340.00	32.0
10-32-130	CEMETERY FEES	.00	400.00	600.00	200.00	66.7
	TOTAL LICENSES AND PERMITS	.00	3,564.03	4,000.00	435.97	89.1
	INTERGOVERNMENTAL REVENUE					
10-33-330	CLASS "C" ROAD FUND ALLOTMENT	11,360.92	46,385.95	40,000.00	(6,385.95)	116.0
	TOTAL INTERGOVERNMENTAL REVENUE	11,360.92	46,385.95	40,000.00	(6,385.95)	116.0
	MISCELLANEOUS REVENUE					
10-36-100	INTEREST EARNINGS	.00	12,235.64	5,000.00	(7,235.64)	244.7
10-36-300	RENTS AND CONCESSIONS	.00	5,736.94	5,000.00	(736.94)	114.7
10-36-400	EXCESS BEG. FUND BAL. TO BE AP	.00	.00	2,780,000.00	2,780,000.00	.0
10-36-500	DONATIONS	.00	300.32	500.00	199.68	60.1
10-36-600	REFUSE COLLECTION	2,150.48	25,370.21	24,000.00	(1,370.21)	105.7
10-36-900	MISCELLANEOUS REVENUE	.00	2,216.34	.00	(2,216.34)	.0
10-36-901	SALE OF ROTO-MILL MATERIAL	.00	6,926.20	.00	(6,926.20)	.0
	TOTAL MISCELLANEOUS REVENUE	2,150.48	52,785.65	2,814,500.00	2,761,714.35	1.9
	TOTAL FUND REVENUE	13,511.40	238,129.67	2,992,500.00	2,754,370.33	8.0

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2017

GENERAL FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	GENERAL GOVERNMENT DEPARTMENT					
10-44-110	SALARIES AND WAGES	.00	72,438.00	72,800.00	362.00	99.5
10-44-130	EMPLOYEE BENEFITS	.00	5,669.01	6,000.00	330.99	94.5
10-44-230	TRAVEL AND TRAINING	.00	3,155.32	4,000.00	844.68	78.9
10-44-240	OFFICE EXPENSE	.00	1,840.75	5,000.00	3,159.25	36.8
10-44-270	UTILITIES	.00	5,278.53	4,500.00	(778.53)	117.3
10-44-280	TELEPHONE	.00	611.07	500.00	(111.07)	122.2
10-44-290	POSTAGE	.00	86.62	500.00	413.38	17.3
10-44-310	INSURANCE	.00	5,505.30	7,000.00	1,494.70	78.7
10-44-330	ATTORNEY	.00	.00	1,200.00	1,200.00	.0
10-44-340	ENGINEERING	.00	.00	3,000.00	3,000.00	.0
10-44-350	AUDITOR	.00	2,425.00	2,800.00	375.00	86.6
10-44-370	MEMBERSHIP FEES AND DUES	.00	999.95	2,000.00	1,000.05	50.0
10-44-410	COMPUTER SUPPLIES AND MAINT	.00	500.00	500.00	.00	100.0
10-44-420	SOFTWARE SUPPORT AND FEES	.00	1,500.00	1,500.00	.00	100.0
10-44-460	PLANNING AND ZONING	.00	815.36	1,000.00	184.64	81.5
10-44-470	COMMUNITTY CENTER	.00	3,595.95	6,000.00	2,404.05	59.9
10-44-480	MAINTENANCE BUILDING	.00	959.98	6,000.00	5,040.02	16.0
10-44-520	LEGAL NOTICES/ADVERTISEMENT	.00	660.00	1,000.00	340.00	66.0
10-44-540	BANK FEES AND CHARGES	.00	268.61	300.00	31.39	89.5
10-44-680	NEIGBORHOOD WATCH	.00	591.52	700.00	108.48	84.5
10-44-681	CERT	.00	194.57	700.00	505.43	27.8
10-44-910	CONTINGENCIES	.00	.00	10,000.00	10,000.00	.0
	TOTAL GENERAL GOVERNMENT DEPARTMENT	.00	107,095.54	137,000.00	29,904.46	78.2
	STREETS & HIGHWAYS DEPARTMENT					
10-60-110	SALARIES AND WAGES	.00	9,025.92	9,000.00	(25.92)	100.3
10-60-130	EMPLOYEE BENEFITS	.00	678.40	.00	(678.40)	.0
10-60-210	STREET REPAIRS AND MAINTENANCE	.00	27,921.93	72,500.00	44,578.07	38.5
10-60-220	ROAD IMPROVEMENT PROJECT 2016	30,922.50	2,464,550.10	2,714,000.00	249,449.90	90.8
10-60-810	DEBT SERVICE - PRINCIPAL	.00	10,000.00	10,000.00	.00	100.0
	TOTAL STREETS & HIGHWAYS DEPARTMENT	30,922.50	2,512,176.35	2,805,500.00	293,323.65	89.5
	PARKS & RECREATION DEPARTMENT					
10-68-110	SALARIES AND WAGES	.00	5,774.24	6,000.00	225.76	96.2
10-68-130	EMPLOYEE BENEFITS	.00	385.02	.00	(385.02)	.0
10-68-210	PARKS REPAIRS, OP. AND MTCE	109.89	3,645.15	14,000.00	10,354.85	26.0
10-68-220	MOSQUITO ABATEMENT	.00	2,000.00	2,000.00	.00	100.0
10-68-230	RECREATION	.00	3,247.17	4,000.00	752.83	81.2
10-68-240	CEMETERY	.00	1,204.22	4,000.00	2,795.78	30.1
10-68-250	REFUSE (WHITE'S)	.00	22,118.00	20,000.00	(2,118.00)	110.6
	TOTAL PARKS & RECREATION DEPARTMENT	109.89	38,373.80	50,000.00	11,626.20	76.8

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2017

GENERAL FUND

	PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
TOTAL FUND EXPENDITURES	31,032.39	2,657,645.69	2,992,500.00	334,854.31	88.8
NET REVENUE OVER EXPENDITURES	(17,520.99)	(2,419,516.02)	.00	2,419,516.02	.0

CENTRAL VALLEY TOWN
BALANCE SHEET
JUNE 30, 2017

WATER DEPARTMENT FUND

	ASSETS			
51-10100	COMBINED CASH		73,710.77	
51-11520	WATER ACCOUNTS RECEIVABLE		10,013.50	
51-16100	LAND		327,550.00	
51-16200	WATER RIGHTS		951,750.00	
51-16250	WATER SOURCES		1,180,000.00	
51-16280	WATER TANKS		727,500.00	
51-16350	WATER DISTRIBUTION SYSTEM		2,226,580.92	
51-16900	ALLOWANCE FOR DEPRECIATION		(942,729.00)	
	TOTAL ASSETS			4,554,376.19
	LIABILITIES AND EQUITY			
	LIABILITIES			
51-21200	WATER DEPOSITS		2,800.00	
51-21300	LOANS PAYABLE		638,000.00	
	TOTAL LIABILITIES			640,800.00
	FUND EQUITY			
	UNAPPROPRIATED FUND BALANCE:			
51-29800	FUND BALANCE AT START OF YEAR	3,981,019.24		
	REVENUE OVER EXPENDITURES - YTD	(67,443.05)		
	BALANCE - CURRENT DATE		3,913,576.19	
	TOTAL FUND EQUITY			3,913,576.19
	TOTAL LIABILITIES AND EQUITY			4,554,376.19

CENTRAL VALLEY TOWN
REVENUES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2017

WATER DEPARTMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEARNED	PCNT
	WATER DEPARTMENT REVENUE					
51-37-100	WATER SERVICE	10,013.50	88,000.07	88,000.00	(.07)	100.0
51-37-200	HOOKUP FEES	.00	3,000.00	3,000.00	.00	100.0
51-37-210	IMPACT FEES	.00	8,000.00	7,000.00	(1,000.00)	114.3
51-37-220	SUBDIVISION WATERPURCHASEFUND	.00	.00	4,000.00	4,000.00	.0
	TOTAL WATER DEPARTMENT REVENUE	10,013.50	99,000.07	102,000.00	2,999.93	97.1
	WATER DEPARTMENT REVENUE					
51-38-100	INTEREST & PENALTY EARNINGS	.00	1,263.59	2,000.00	736.41	63.2
51-38-300	TOTAL CASH ON HAND BUDGETED	.00	.00	40,000.00	40,000.00	.0
	TOTAL WATER DEPARTMENT REVENUE	.00	1,263.59	42,000.00	40,736.41	3.0
	TOTAL FUND REVENUE	10,013.50	100,263.66	144,000.00	43,736.34	69.6

CENTRAL VALLEY TOWN
EXPENDITURES WITH COMPARISON TO BUDGET
FOR THE 12 MONTHS ENDING JUNE 30, 2017

WATER DEPARTMENT FUND

		PERIOD ACTUAL	YTD ACTUAL	BUDGET	UNEXPENDED	PCNT
	WATER DEPARTMENT EXPENDITURES					
51-44-110	SALARIES AND WAGES	.00	17,754.85	23,000.00	5,245.15	77.2
51-44-130	EMPLOYEE BENEFITS	.00	1,345.27	2,000.00	654.73	67.3
51-44-230	TRAVEL AND TRAINING	.00	4,102.28	4,000.00	(102.28)	102.6
51-44-240	MATERIALS AND SUPPLIES	.00	15,397.47	16,000.00	602.53	96.2
51-44-270	UTILITIES	.00	19,695.35	28,000.00	8,304.65	70.3
51-44-280	LAB FEES	.00	2,298.00	7,000.00	4,702.00	32.8
51-44-310	INSURANCE	.00	844.49	2,000.00	1,155.51	42.2
51-44-330	ATTORNEY	.00	.00	1,000.00	1,000.00	.0
51-44-342	MAJOR WATER SYSTEM IMPROVEMENT	.00	.00	28,000.00	28,000.00	.0
51-44-344	WATER PURCHASE FUND	.00	.00	5,000.00	5,000.00	.0
51-44-350	ACCOUNTING & AUDIT	.00	1,000.00	1,000.00	.00	100.0
51-44-670	DEPRECIATION	.00	105,269.00	.00	(105,269.00)	.0
51-44-680	LOAN PAYMENT	.00	.00	27,000.00	27,000.00	.0
	TOTAL WATER DEPARTMENT EXPENDITURES	.00	167,706.71	144,000.00	(23,706.71)	116.5
	TOTAL FUND EXPENDITURES	.00	167,706.71	144,000.00	(23,706.71)	116.5
	NET REVENUE OVER EXPENDITURES	10,013.50	(67,443.05)	.00	67,443.05	.0

Description	Church	Commercial	None	Residential	School	Totals
WATER Usage	1,111,400	4,010	0	56,121,580	0	57,236,990
WATER Amount	776.60	.00	.00	85,795.02	.00	86,571.62
Garb Amount	.00	.00	.00	12,268.44	.00	12,268.44
OTHER Amount	.00	.00	.00	60.00	.00	60.00
RetCk Amount	.00	.00	.00	.00	.00	.00
Dis Amount	.00	.00	.00	.00	.00	.00
HookU Amount	.00	.00	.00	.00	.00	.00
BL Amount	.00	.00	.00	.00	.00	.00
PNLTY Amount	10.00	.00	.00	1,185.00	.00	1,195.00
Total Charges	786.60	.00	.00	99,308.46	.00	100,095.06
Previous Balance	30.00	.00	.00	4,224.76	.00	4,254.76
Payments	786.60 -	.00	.00	99,117.89 -	.00	99,904.49 -
Deposit Applieds	.00	.00	.00	.00	.00	.00
Balance Transfers	.00	.00	.00	.00	.00	.00
Balance Write-Offs	.00	.00	.00	.00	.00	.00
Deposit Interest	.00	.00	.00	.00	.00	.00
Total Charges	786.60	.00	.00	99,308.46	.00	100,095.06
Current Balance	30.00	.00	.00	4,415.33	.00	4,445.33

Year-To-Date: 07/01/2014 to 12/31/2015

WATER Usage	1,810,900	5,230	0	75,208,140	0	77,024,270
WATER Amount	1,512.40	.00	.00	126,758.59	.00	128,270.99
Garb Amount	.00	.00	.00	12,268.44	.00	12,268.44
OTHER Amount	.00	.00	.00	20.85	.00	20.85
RetCk Amount	.00	.00	.00	.00	.00	.00
Dis Amount	.00	.00	.00	.64 -	.00	.64 -
HookU Amount	.00	.00	.00	.00	.00	.00
BL Amount	.00	.00	.00	.00	.00	.00
PNLTY Amount	15.00	.00	.00	1,955.11	.00	1,970.11
Total Charges	1,527.40	.00	.00	141,002.35	.00	142,529.75
Previous Balance	.00	.00	.00	.00	.00	.00
Payments	1,497.40 -	.00	.00	136,587.02 -	.00	138,084.42 -
Deposit Applieds	.00	.00	.00	.00	.00	.00
Balance Transfers	.00	.00	.00	.00	.00	.00
Balance Write-Offs	.00	.00	.00	.00	.00	.00
Deposit Interest	.00	.00	.00	.00	.00	.00
Total Charges	1,527.40	.00	.00	141,002.35	.00	142,529.75
Current Balance	30.00	.00	.00	4,415.33	.00	4,445.33

Description	Church	Commercial	None	Residential	School	Totals
WATER Usage	993,300	4,720	2,109,590	56,280,870	0	59,388,480
WATER Amount	768.10	.00	.00	87,979.01	.00	88,747.11
Garb Amount	.00	.00	.00	25,188.03	.00	25,188.03
OTHER Amount	.00	.00	.00	60.00	.00	60.00
RetCk Amount	.00	.00	.00	.00	.00	.00
Dis Amount	.00	.00	.00	.00	.00	.00
HookU Amount	.00	.00	.00	.00	.00	.00
BL Amount	.00	.00	.00	700.00	.00	700.00
PNLTY Amount	.00	.00	.00	1,375.02	.00	1,375.02
Total Charges	768.10	.00	.00	115,302.06	.00	116,070.16
Previous Balance	30.00	.00	.00	4,415.33	.00	4,445.33
Payments	768.10 -	.00	.00	114,895.94 -	.00	115,664.04 -
Deposit Applieds	.00	.00	.00	.00	.00	.00
Balance Transfers	.00	.00	.00	.00	.00	.00
Balance Write-Offs	.00	.00	.00	.00	.00	.00
Deposit Interest	.00	.00	.00	.00	.00	.00
Total Charges	768.10	.00	.00	115,302.06	.00	116,070.16
Current Balance	30.00	.00	.00	4,821.45	.00	4,851.45

Year-To-Date: 07/01/2015 to 12/31/2016

WATER Usage	1,587,800	6,460	2,109,590	90,705,710	0	94,409,560
WATER Amount	1,183.05	.00	.00	132,763.35	.00	133,946.40
Garb Amount	.00	.00	.00	37,456.47	.00	37,456.47
OTHER Amount	.00	.00	.00	120.00	.00	120.00
RetCk Amount	.00	.00	.00	.00	.00	.00
Dis Amount	.00	.00	.00	.00	.00	.00
HookU Amount	.00	.00	.00	.00	.00	.00
BL Amount	.00	.00	.00	700.00	.00	700.00
PNLTY Amount	.00	.00	.00	2,005.02	.00	2,005.02
Total Charges	1,183.05	.00	.00	173,044.84	.00	174,227.89
Previous Balance	123.25	.00	.00	4,363.56	.00	4,486.81
Payments	1,276.30 -	.00	.00	172,586.95 -	.00	173,863.25 -
Deposit Applieds	.00	.00	.00	.00	.00	.00
Balance Transfers	.00	.00	.00	.00	.00	.00
Balance Write-Offs	.00	.00	.00	.00	.00	.00
Deposit Interest	.00	.00	.00	.00	.00	.00
Total Charges	1,183.05	.00	.00	173,044.84	.00	174,227.89
Current Balance	30.00	.00	.00	4,821.45	.00	4,851.45

UNITED STATES OF AMERICA
STATE OF UTAH
COUNTY OF SEVIER
CENTRAL VALLEY TOWN

R-1

WATER REVENUE BOND, SERIES 2010

* * * * * * * * * * * *

Central Valley Town, Sevier County, Utah (the "Issuer") for value received, promises to pay from the special fund hereinafter described and in the manner hereinafter set forth, and not otherwise, to the order of the registered owner hereof, the Total Principal Sum set forth in the Treasurer's Certificate of Dates of Payment and Amount (hereinafter "Treasurer's Certificate") set forth at the end of this Bond but in no event more than a Maximum Principal Amount of EIGHT HUNDRED THOUSAND ($800,000.00) DOLLARS, payable in increments of $1000, in thirty (30) annual installments due July 1st of each of the years set forth below:

Maturity Date July 1st	Principal Amount	Maturity Date July 1st	Principal Amount
2012	$27,000.00	2027	$27,000.00
2013	27,000.00	2028	27,000.00
2014	27,000.00	2029	27,000.00
2015	27,000.00	2030	27,000.00
2016	27,000.00	2031	27,000.00
2017	27,000.00	2032	27,000.00
2018	27,000.00	2033	27,000.00
2019	27,000.00	2034	27,000.00
2020	27,000.00	2035	27,000.00
2021	27,000.00	2036	27,000.00
2022	27,000.00	2037	27,000.00
2023	27,000.00	2038	27,000.00
2024	27,000.00	2039	27,000.00
2025	27,000.00	2040	27,000.00
2026	27,000.00	2041	17,000.00

As long as principal installments are paid when due, no interest shall accrue on the outstanding principal balance of this Bond. As amounts are delivered to the Issuer by the original purchaser of this Bond, the Issuer shall give written authorization to the original purchaser to make an appropriate notation of the amount advanced on the Principal Certificate. If less than the Maximum Principal Amount is advanced, the principal amount payable on the due date shall be the total unpaid principal sum set forth in the Principal Certificate. The Issuer shall pay the Installment Amounts on each Payment Date thereafter and liability of Issuer shall continue until the Total

APPENDIX F. ENVIRONMENTAL REPORT

Central Valley Culinary Water Improvements Project – Environmental Report

February 27, 2018

Prepared for:

USDA Rural Development

Prepared by:

Jones & DeMille Engineering

1-800-748-5275

Project # 1706-043

Table of Contents

1.0 Purpose and Need for the Proposal

1.1 Project Description (Proposed Action)

Central Valley Town is located in southwestern Sevier County, Utah, at the junction of State Route (SR) 120 and Sevier River Road. Culinary water for the community is currently provided by the Central Valley Town culinary water system. The system is fed by two wells and three springs. The Downtown Well is only used occasionally, located near the center of Central Valley Town, and is pumped directly into the culinary water distribution system. The Mecham Well is located approximately 1.1 miles southeast of the town center (see Maps 1 and 2 in Section 6.0) and is pumped into a water storage tank. The Tunnel Springs (both North and South Springs) are located approximately 1.4 miles southeast of the town center. Mecham Spring is located adjacent to the Mecham Well. The collection systems for all three springs gravity flow into water storage tanks. There are a total of 4 water storage tanks that supply the distribution system (see Maps 1 and 2 in Section 6.0). The existing distribution system consists of approximately 80,000 linear feet of PVC piping ranging from 2 to 10 inches in diameter, servicing all 229 culinary water connections for Central Valley Town.

Ground disturbing activities associated with the Proposed Action would be confined to a single site near Tank 1, Mecham Well, and Mecham Spring. Ground disturbing activities would be located within Township 24 South, Range 3 West, Section 24 (see Map 1 in Section 6.0). Improvements involving ground disturbance are depicted on Map 3 in Section 6.0; improvements to the system not depicted on Map 3 in Section 6.0 would not cause ground disturbance. The Proposed Action would disturb approximately 3.29 acres, all of which is located on privately owned land. The Proposed Action would include the following components:

1) The Mecham Spring collection area would be redeveloped, with new collection pipe buried deeper in the ground to prevent surface water contamination.

2) The roof and walls of the existing Mecham Well building would be replaced, and the existing concrete pad and foundation would be utilized in the new construction. The existing Mecham Well motor and pump would be replaced, and a new variable frequency drive (VFD) would be installed. Improvements to the well system and building would not cause additional ground disturbance because the work would occur on the existing building foundation and concrete pad.

3) The lid to Tank 1 would be replaced to prevent contamination of the stored water and to ensure the longevity of the existing tank. The existing damaged lid would be disposed of in an approved landfill.

4) A new chlorination building would be constructed and a new chlorination system installed southeast of Tank 1 to treat water from Mecham Well, Mecham Spring, and Tunnel Springs (see Map 3 in Section 6.0).

5) The piping associated with Mecham Spring and Tunnel Springs would be reconfigured and directed to a junction box prior to water entering the proposed chlorination building. The piping from Mecham Well would be reconfigured to enter directly into the chlorination building. This will ensure that water from the aforementioned sources is treated prior to entering the distribution system (see Map 3 in Section 6.0). Approximately 113 feet of pipeline would be needed to reconfigure the system piping described above.

6) The Downtown Well pump and motor would be thoroughly inspected and fully serviced; a

new VFD would be installed within the existing pump station building. Improvements to the well system would not cause additional ground disturbance because the work would occur within an existing building.

7) Tank 2 would receive a new access hatch and latter. Improvements to this tank would not cause ground disturbance.

If approved, construction would begin in May of 2018, and last approximately 5 months, reaching completion in October of 2018. The project schedule could be lengthened if design and construction necessitates additional time to complete the project.

Best management practices and design features that would be applied include:

- A SWPPP would be prepared for compliance with Clean Water Act Section 402.
- Equipment would be cleaned and fueled off-site prior to construction.
- Topsoil would be stockpiled separate from subsoil, and replaced upon project completion.
- Disturbed areas would be seeded and reclaimed.

1.2 Purpose and Need for the Proposal

The purpose of this project is to provide a safe and reliable culinary water source for Central Valley Town residents. The current system does not meet State standards for water treatment. Further, the system has undergone several investigative water quality tests, which indicated contamination. Mecham Spring is suspected of being one possible source for contamination as the existing spring collection system is likely too shallow and may become contaminated by surface water. Deepening the collection piping would reduce the risk of surface water contamination. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution system without power; therefore, reworking the collection area at Mecham Spring would increase the volume of water captured by the collection system and increase water availability during power outage conditions.

Water contamination issues necessitate that a chlorination system be installed. Piping from Mecham Well, Mecham Spring, and Tunnel Springs would need to be reconfigured to allow water from these sources to be chlorinated. The necessary piping reconfiguration is shown on Map 3 in Section 6.0.

Well pump and motor reliability is uncertain as they have reached or exceeded their expected design life; well pumps and motors are in need of inspection, repair, or replacement. Water storage Tank 1 is in need of a new tank lid, and water storage Tank 2 is in need of a new access hatch and ladder. Improvements to well systems and water storage tanks would increase the reliability and ease of maintenance of the water delivery system, as well as provide added water quality protection.

The USDA Rural Development would consider whether to fund the project. The No Action alternative would be to deny funding for the project; the culinary water system would not be improved, the system would continue to not meet state water quality requirements, the system would pose a continued health risk to residents, and the aged system would continue to be susceptible to breakdowns.

2.0 Alternatives to the Proposed Action

2.1 Alternatives Considered

No feasible alternatives have been identified to provide water treatment and system upgrades sufficient to meet the current and future needs of the community. The Proposed Action has been designed to maximize use of the existing system and minimize new disturbance.

2.2 Alternatives Considered but Not Analyzed in Detail

One alternative considered was to install an independent feed pipeline from the Mecham pump station vault, up to Tanks 3 and 4, which would allow treated water to gravity feed from Tanks 3 and 4 to the distribution system. This alternative would essentially provide the same functions and benefits as the Proposed Action, but it would cause approximately 2.62 acres of additional ground disturbance and approximately 26 percent more initial cost than the Proposed Action. Consequently, this alternative is not considered to be a reasonable alternative.

3.0 Affected Environment/Environmental Consequences

The project area is located near Central Valley Town in Sevier County, Utah (see Maps 1 and 2 in Section 6.0). The project is within the Colorado Plateau physiographic province. The elevation of the proposed project is approximately 5,325 feet above sea level. Much of the project area has been previously disturbed by agriculture and utility developments.

3.1 Land Use/Important Farmland/Formally Classified Lands

3.1.1 Affected Environment

Currently, land use is primarily for the existing water system utility and agricultural use. Approximately 3.29 acres would be disturbed by project activities. All of the project disturbance would occur on privately owned lands. The project area land use is designated as Agricultural on Sevier County zoning maps. The Proposed Action would not alter the existing land use.

No hazardous materials are known to occur within the project area. A Phase I Environmental Site Assessment or Transaction Screen Questionnaire have not been completed for the project area within the past 6 months because the project would be occurring within areas previously disturbed by agriculture and activities associated with constructing or improving the existing culinary water system. No known commercial development has occurred within the project area based on evaluations of aerial imagery from years 1950, 1958, 1998, and 2015.

Based on review of the NRCS Web Soil Survey soils data, the farmland classification for the project area is considered "Not Prime Farmland." See Appendix A for soil descriptions.

3.1.2 Environmental Consequences

Neither the Proposed Action nor the No Action Alternative would affect land use plans or be non-compliant with existing ordinances. Farmland of statewide importance would not be adversely affected as the project area is not located on prime farmland. Neither alternative would adversely affect formally classified lands.

3.1.3 Mitigation

No mitigation is required as there would be no effects to land use from implementation of either alternative.

3.2 Floodplains

According to the FEMA floodplain mapping service, the Proposed Action would not impact 100-year floodplains (FEMA 2017). The Proposed Action would occur within the floodplain Zone X, an area of minimal floodplain hazard, as classified by Panel 49041C1675D (see Map 4 Section 6.0).

According to the NRCS' Web Soil Survey, soils within the project area are Annabella sandy loam, alkali, 2 to 5 percent slopes. This soil type is not prone to flooding (see Appendix A for soil description).

There would be no effect to floodplains from implementation of either alternative.

3.3 Wetlands

Wetlands do not occur within or near the project area. The Proposed Action would cross an abandoned ditch segment at one location that is designated as a National Wetland Inventory (NWI) riverine wetland feature; however, NWI features often do not represent wetland conditions in the field. Such discrepancies are expected, given that the methods employed to create the NWI are based off of imagery analysis and not on-the-ground survey data for vegetation or soils. Because no wetlands would be impacted by project activities, permitting with the U.S. Army Corps of Engineers associated with wetland impacts would not be necessary. NWI wetland features associated with the project are represented on Map 5 in Section 6.0.

There will be no effect to wetlands from implementation of either alternative.

3.4 Historic Properties and Visual Aesthetics

3.4.1 Affected Environment

The project area is located within an area previously disturbed by agriculture and activities associated with constructing or maintaining the existing culinary water system. Further, the original tank structure has been modified by new penetrations for additional water sources, and repairs to the tank structure. Cultural resources are unlikely to occur within the project area.

The only additional structures that would result from the Proposed Action is a new water junction box and small chlorination building. These new structures would be located adjacent to the existing water tank, and would not be highly visible from 2300 East and Landslide Road.

3.4.2 Environmental Consequences

There is no potential to affect historic properties or visual aesthetics from implementation of either alternative.

3.4.3 Mitigation

The following Historical Preservation measures will be implemented: Any ground disturbance resulting from work performed by, or on behalf of the project owner or contractor(s) that uncovers an apparent or suspected historical or archaeological artifact shall be immediately reported to the Agency. Work in the area of the discovery shall be immediately and temporarily halted pending the notification process and further directions issued by the Agency after consultation with the SHPO.

3.5 Biological Resources

3.5.1 Affected Environment

3.5.1.1 Threatened and Endangered Species

The U.S. Fish and Wildlife Service's (USFWS) IPaC system was access on December 6, 2017 (see Appendix B). There are no critical habitats within the project area. The following species were identified as potentially occurring within the project areas, and are eliminated from further analysis as follows:

Utah prairie dog (*Cynomys parvidens*); Threatened

The project area is located outside of the 2015 Utah Prairie Dog Survey Intensity Map boundaries. There would be no effect to Utah prairie dog.

California condor (*Gymnogyps californianus*); Endangered

No known cliff nesting sites occur near the project area. Any condor in the area would be incidental and would avoid project disturbance. There would be no effect to California condor.

Yellow-billed cuckoo (*Coccyzus americanus*); Threatened

The nearest proposed critical habitat for this species is located approximately 111 miles away. The project area does not provide suitable riparian nesting habitat. There would be no effect to yellow-billed cuckoo.

Jones cycladenia (*Cycladenia humilis jonesii*); Threatened

This species is not known to occur within or near the project area. The nearest known populations are at least 37 miles away. Further, the project area does not exhibit steep side slope habitat characteristics favored by this species. There would be no effect to Jones cycladenia.

3.5.1.2 Fish and Wildlife Resources

The Utah Natural Heritage Program GIS database was reviewed for the potential presence of sensitive species; the following sensitive species were identified as potentially occurring within the project area:

Southern leatherside chub (*Lepidomeda aliciae*); Sensitive

The Proposed Action would incorporate best management practices that would prevent sediment and other pollutants from discharging into the Sevier River during construction (see Section 3.6 for more information). There would be no effect to southern leatherside chub.

Western toad (*Anaxyrus boreas*); Sensitive

The project area is located approximately 1,070 feet away from the Sevier River. Given this distance from a perennial water source, the project area would likely not provide habitat suitable for this species. There would be no effect to western toad.

Burrowing owl (*Athene cunicularia*); Sensitive

The project area does not provide exclusively open habitat favored by this species; the project area is surrounded by medium to large trees and would not provide favorable habitat. This species was observed in the general vicinity of the project area 25 years ago, but no observations have been made since that time. There would be no effect to burrowing owl.

Bald eagle (*Haliaeetus leucocephalus*); Sensitive

The trees nearby with the project area may provide suitable habitat for this species; however, there are currently no nests in the trees, and bald eagles would likely avoid the project area due to existing disturbance associated with agriculture and vehicle traffic on 2300 East and Landslide Road. There would be no effect to bald eagle.

No other species of concern have been identified. There would be no effect to fish and wildlife resources.

3.5.1.3 Vegetation

Vegetation in the project area is generally sparse, consisting primarily of greasewood (*Sarcobatus vermiculatus*), Woods' rose (*Rosa woodsia*), cheatgrass (*Bromus tectorum*), and weedy forbs.

3.5.2 Environmental Consequences

The Proposed Action would remove up to 3.29 acres of sparse vegetation. Vegetation losses would be temporary as the disturbed areas would be seeded and reclaimed as part of project completion.

The No Action Alternative would not adversely affect vegetation in the long-term.

3.5.3 Mitigation

No mitigation has been identified as necessary with implementation of the best management practices.

3.6 Water Quality Issues

3.6.1 Affected Environment

All stormwater from the project area would discharge to the Sevier River. The river is approximately 1,070 feet northeast of the project area. Best management practices would be applied to comply with the Clean Water Act Sections 401, 402, and 404. Sole source aquifer areas do not occur within or near the project area, and the nearest sole source aquifer area is more than 270 miles to the east of the project area (Environmental Protection Agency [EPA] 2017a; see also Figure 1 in Section 6.0).

3.6.2 Environmental Consequences

Implementation of the Proposed Action would impact surface water flows, and would potentially increase sedimentation or pollution of surface waters. Approximately 3.29 acres would be disturbed by project activities; this disturbance could lead to increased erosion and sedimentation of the disturbed soils into the Sevier River.

To reduce or prevent adverse impacts to water quality, best management practices would be applied to prevent sediment and other pollutants from discharging into the river during construction. Further, a Stormwater Pollution Prevention Plan (SWPPP) would be prepared for the project and a Notice of Intent would be submitted to the Utah Division of Water Quality to gain coverage under Utah's General Stormwater Permit for construction activities. Implementation of the Proposed Action would not adversely affect water quality in the long-term.

There would be no adverse impacts to water quality from implementation of the No Action alternative.

3.6.3 Mitigation

No mitigation has been identified as necessary with implementation of the best management practices.

3.7 Coastal Resources

Coastal resources do not occur within or near the project area, as Utah is an inland state.

3.8 Air Quality

The project area is located outside of any PM_{10} and $PM_{2.5}$ nonattainment areas designated by the Utah Division of Air Quality. The Proposed Action would require heavy equipment for trenching, pipe handling, and site preparation for new structures. Emissions resulting from the Proposed Action would include mobile equipment emissions and particulate emissions resulting from ground disturbing activities. Given the nature and size of the project, emissions associated with the Proposed Action would be minimal and insignificant. Further, soils impacted by the Proposed Action would be stabilized by seeding disturbed areas with a site-specific seed mix and complying with other soil stabilization measures outlined in the SWPPP for the project. There would be no adverse effect on air quality with implementation of either alternative.

3.9 Socio-Economic/Environmental Justice Issues

3.9.1 Affected Environment

Per the 2010 Census, there would be between 0 and 8 people impacted by the Proposed Action (EPA 2017b; see Map 6 in Section 6.0). Per the 2010 Census, there would be no minority households impacted by the Proposed Action (EPA 2017b; see Map 7 in Section 6.0). Low income populations exist within the vicinity of the project area. Per the 2010 Census, the proposed project would be located within an area where between 217 and 399 households fall below the poverty level (EPA 2017b; see Map 8 in Section 6.0). The Proposed Action would not directly impact any dwellings or households.

3.9.2 Environmental Consequences

The No Action alternative could adversely affect the local population by leading to a lack of safe and reliable culinary water or creating a financial burden to otherwise fund repair of the system.

The Proposed Action would not directly impact any dwellings or households. There would be no adverse impacts to minority or low-income populations.

3.9.3 Mitigation

No mitigation is necessary as the project would benefit low-income and minority populations in the area.

4.0 Summary of Mitigation

The following Historical Preservation measures will be implemented: Any ground disturbance resulting from work performed by, or on behalf of the project owner or contractor(s) that uncovers an apparent or suspected historical or archaeological artifact shall be immediately reported to the Agency. Work in the area of the discovery shall be immediately and temporarily halted pending the notification process and further directions issued by the Agency after consultation with the SHPO.

5.0 Correspondence and Coordination

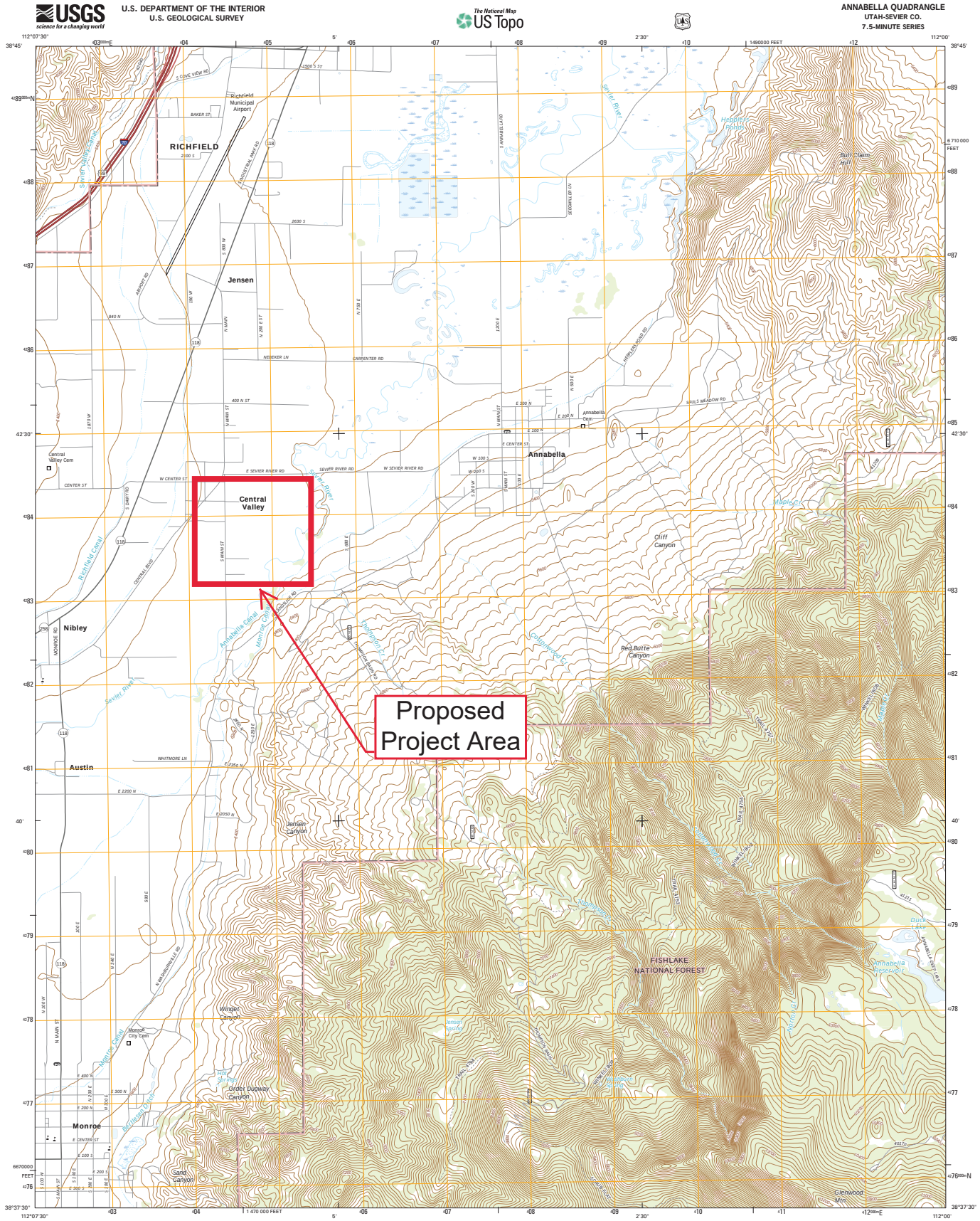
Introductory letters of Notice of Intent were sent to initiate Section 106 Review with the Utah State Historic Preservation Office (SHPO), Bureau of Indian Affairs (BIA), and the appropriate tribal entities (see Appendix C and Appendix D for letters).

The intent of letters to tribal contacts was to engage the tribes in the proposed project. Tribes were given a reasonable opportunity to identify and evaluate any concerns about impacts to historic properties or other important tribal resources, and to express their views on the effects of the Proposed Action on such resources. Letters were sent to the following tribal entities: Ute Indian Tribe of the Uintah and Ouray Reservation, Utah; Navajo Nation –Arizona, New Mexico, and Utah; and the Paiute Indian Tribe of Utah.

All consultation efforts are summarized in the table below:

Name	**Purpose or Authorities for Consultation or Coordination**	**Findings and Conclusions**
Utah State Historic Preservation Office (SHPO)	Section 106 of NHPA	The SHPO concurred with the determinations of eligibility and effect in a letter dated February 27, 2018. See Appendix C.
Navajo Nation Tribal Historic Preservation Office (THPO)	Section 106 of NHPA	The THPO was notified of the project in a letter from Rural Development dated January 24, 2018. No response was received. See Appendix C.
Bureau of Indian Affairs (BIA)	Section 106 of NHPA	The BIA was notified of the project in a letter from Rural Development dated January 24, 2018. No response was received. See Appendix C.
Native American Tribal Entities	Tribal consultation	Project notification letters with the *Blanket Delegation of Authority for Section 106 Review* letter were sent to tribal contacts on December 13 2017. Responses were requested by January 18, 2018. See Appendix D.

6.0 Exhibits/Maps



USGS science for a changing world

U.S. DEPARTMENT OF THE INTERIOR
U.S. GEOLOGICAL SURVEY

The National Map US Topo

ANNABELLA QUADRANGLE
UTAH-SEVIER CO.
7.5-MINUTE SERIES

Produced by the United States Geological Survey

North American Datum of 1983 (NAD83)
World Geodetic System of 1984 (WGS84). Projection and 1 000-meter grid: Universal Transverse Mercator, Zone 12S
10 000-foot ticks: Utah Coordinate System of 1983 (central zone)

This map is not a legal document. Boundaries may be generalized for this map scale. Private lands within government reservations may not be shown. Obtain permission before entering private lands.

Imagery.....NAIP, October 2014
Roads.....U.S. Census Bureau, 2015 - 2016
Roads within US Forest Service Lands.....FSTopo Data with limited Forest Service updates, 2012 - 2016
Names.....GNIS, 2016
Hydrography.....National Hydrography Dataset, 2014
Contours.....National Elevation Dataset, 2000
Boundaries.....Multiple sources; see metadata file 1972 - 2016
Public Land Survey System.....BLM, 2016
Wetlands.....FWS National Wetlands Inventory 1977 - 2014

UTM GRID AND 2017 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

U.S. National Grid
100,000-m Square ID
VH
Grid Zone Designation
12S

SCALE 1:24 000

1 KILOMETERS 0.5 0 1 2
1000 500 0 METERS 1000 2000
1 MILES 0.5 0 1
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000 FEET

CONTOUR INTERVAL 40 FEET
NORTH AMERICAN VERTICAL DATUM OF 1988

This map was produced to conform with the National Geospatial Program US Topo Product Standard, 2011.
A metadata file associated with this product is draft version 0.6.19

UTAH
QUADRANGLE LOCATION

1	2	3
4		5
6	7	8

ADJOINING QUADRANGLES
1 White Pine Peak
2 Richfield
3 Sigurd
4 Elsinore
5 Water Creek Canyon
6 Antelope Range
7 Monroe Peak
8 Koosharem

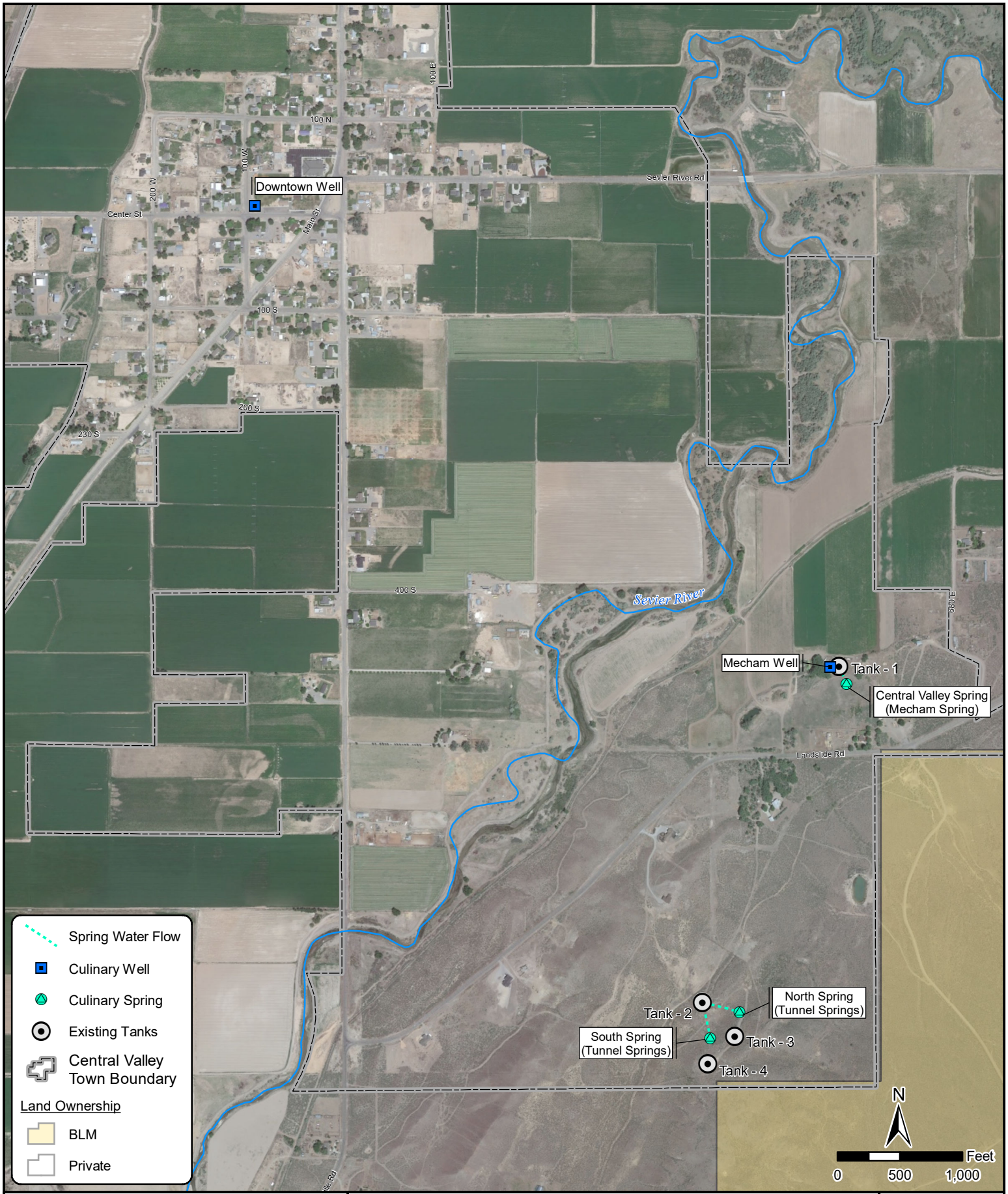
ROAD CLASSIFICATION
Expressway
Secondary Hwy
Ramp
Local Connector
Local Road
4WD
Interstate Route
US Route
State Route
FS Primary Route
FS Passenger Route
FS High Clearance Route

Check with local Forest Service unit for current travel conditions and restrictions.

ANNABELLA, UT
2017

NGA REF NO. USGS X24K1069

Map 1

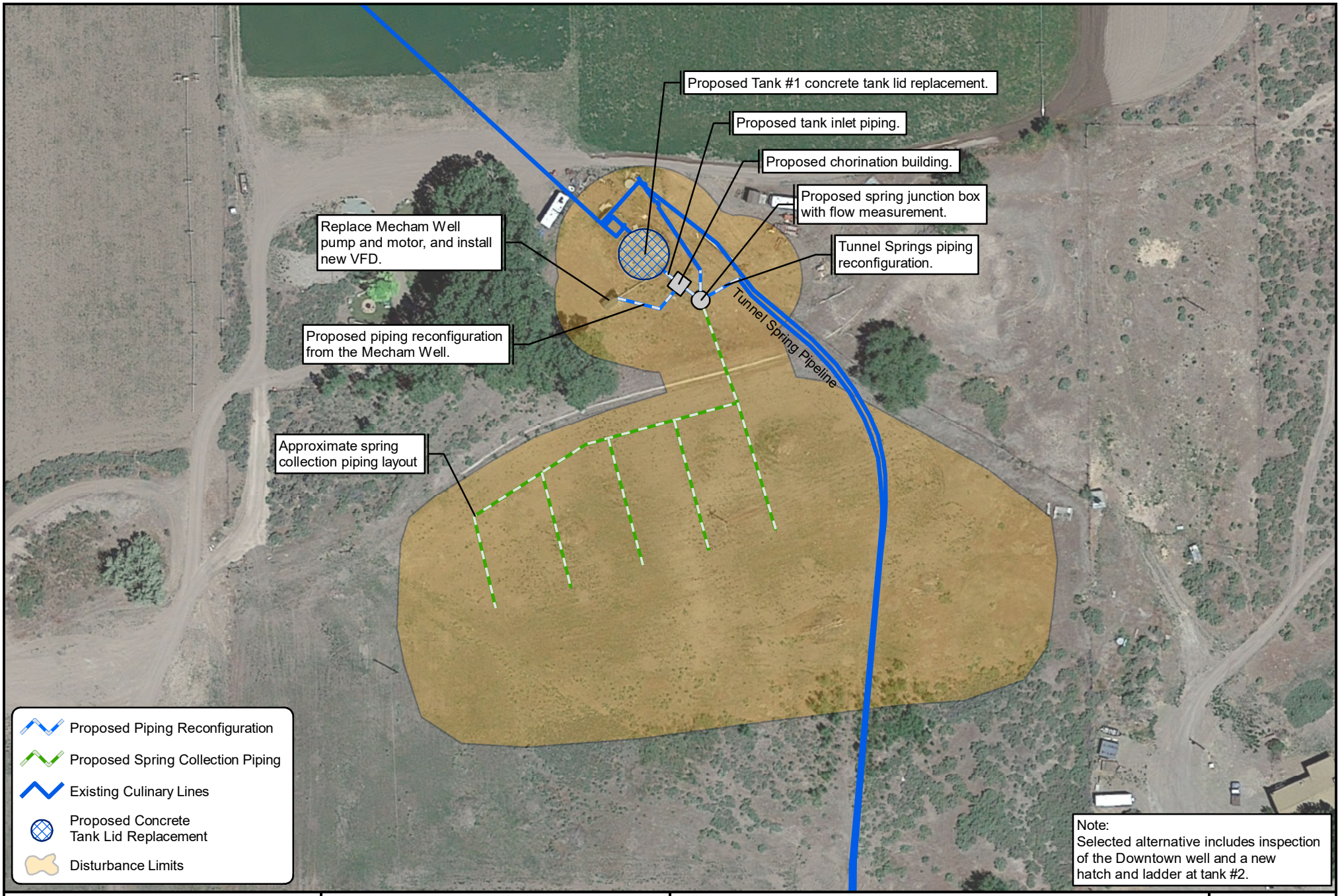


Jones & DeMille Engineering

- Shaping the Quality of Life -

800.748.5275 www.jonesanddemille.com

Central Valley Town		**Sevier County**
Central Valley Culinary Water Improvements Overview		Scale: 1 " = 1,000 '
Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\2_Central_Valley_Culinary_Water_Improvements_Overview_img.mxd		**2**
Project Number: 1706-043	Drawn by: JEM 12-17	Last Edit: 12/13/2017



N

0 50 100 Feet

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Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

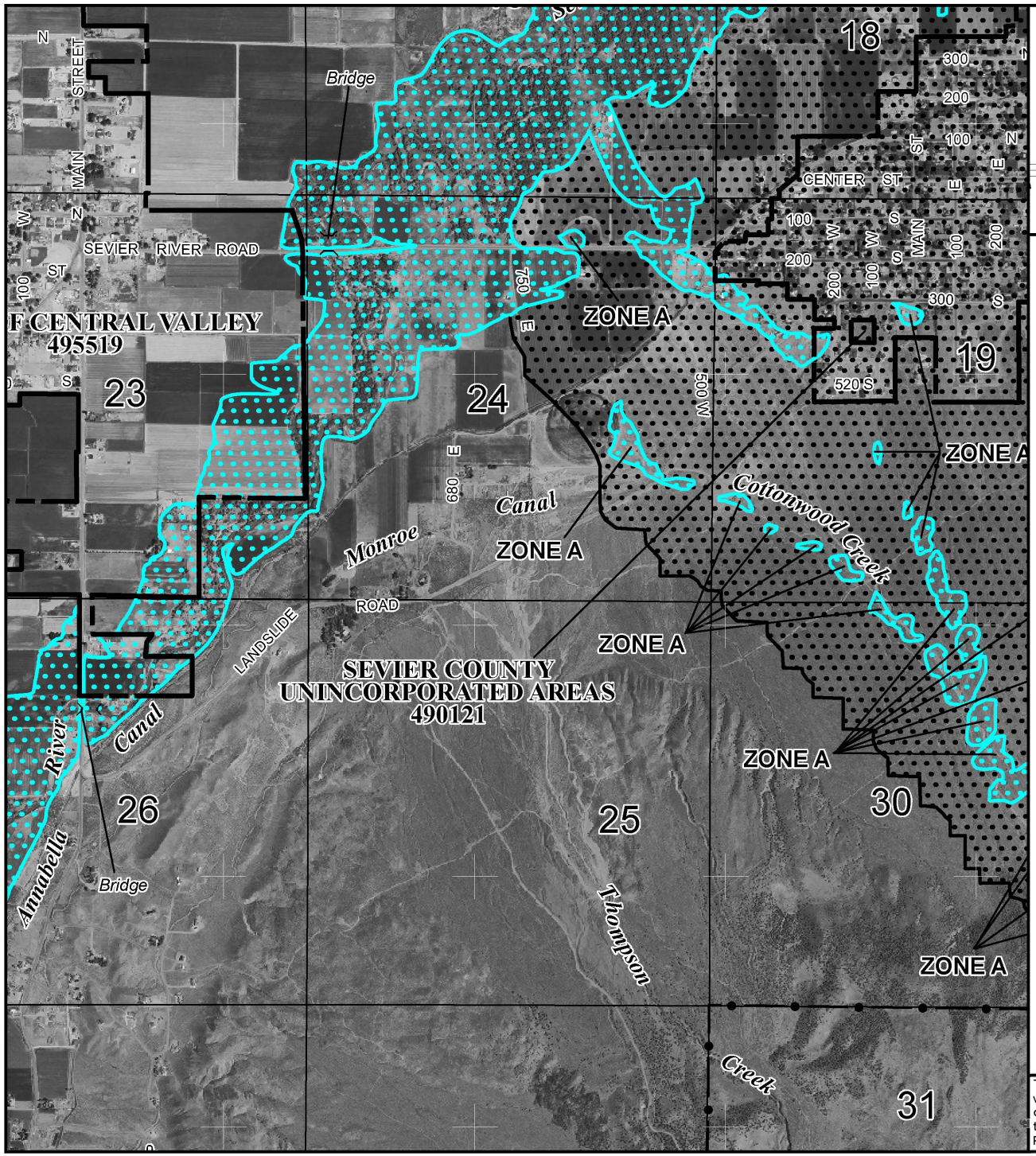
Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\3_Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/13/2017

Sevier County

Scale: 1 " = 100 '

3



This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Map 4

Wetlands Overview

December 12, 2017

Map 5

1:4,514

0 0.0375 0.075 0.15 mi

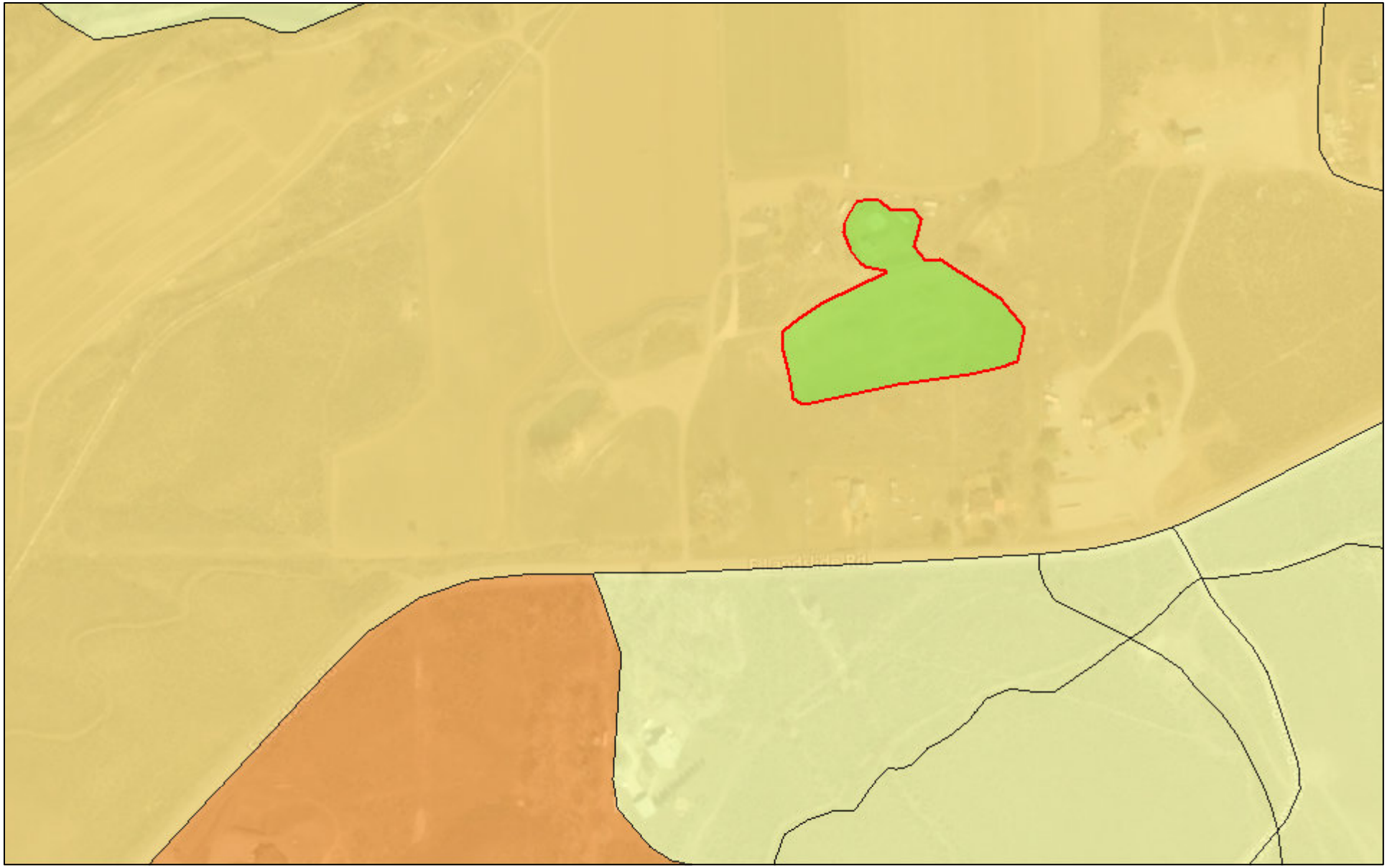
0 0.05 0.1 0.2 km

U.S. Fish and Wildlife Service, National Standards and Support Team, wetlands_team@fws.gov

Wetlands

- Estuarine and Marine Deepwater
- Estuarine and Marine Wetland

Total Population Overview



December 12, 2017

by Block

0 - 0

0 - 8

8 - 24

24 - 56

56 - 19352

Map 6

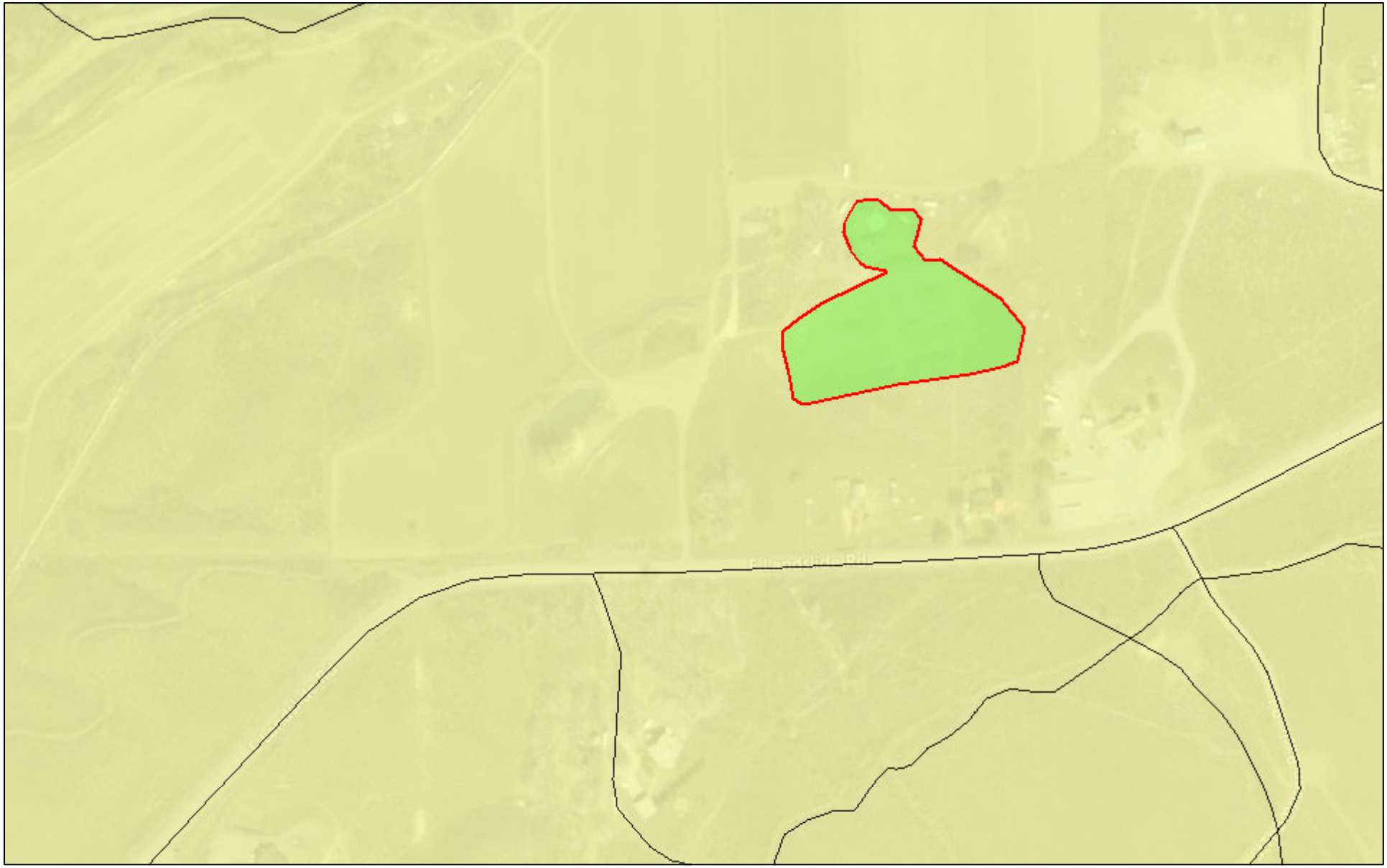
1:4,514

0 0.0375 0.075 0.15 mi

0 0.05 0.1 0.2 km

EPA OEI, OEJ

Minority Population Overview



December 12, 2017

by Block

0 - 0

0 - 3

3 - 10

10 - 30

30 - 8905

Map 7

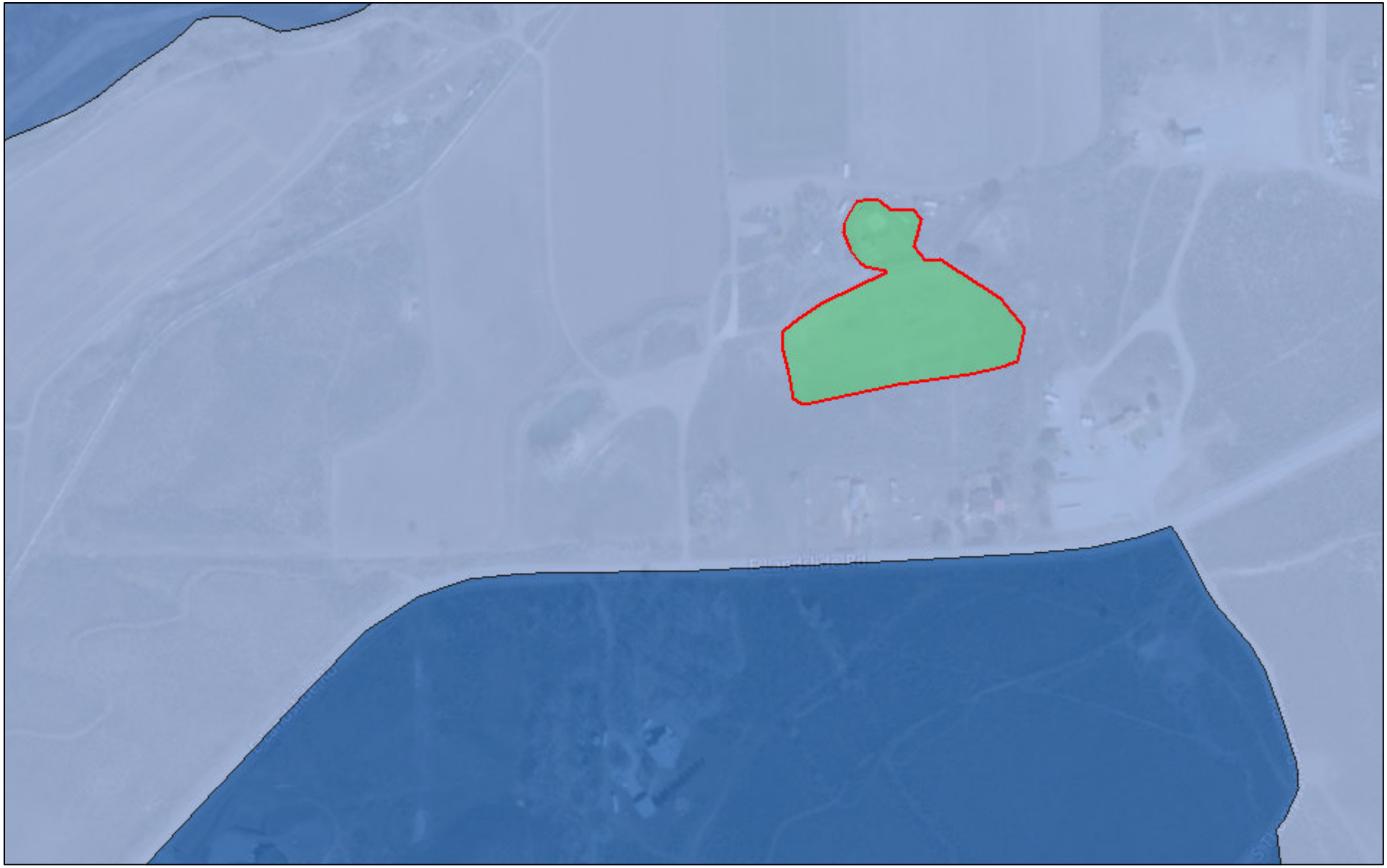
1:4,514

0 0.0375 0.075 0.15 mi

0 0.05 0.1 0.2 km

EPA OEI, OEJ

Population Below Poverty Level Overview



December 12, 2017

by Tract

- 0 - 217
- 217 - 399
- 399 - 633
- 633 - 1025
- 1025 - 10595

Map 8

1:4,514

0 0.0375 0.075 0.15 mi

0 0.05 0.1 0.2 km

EPA

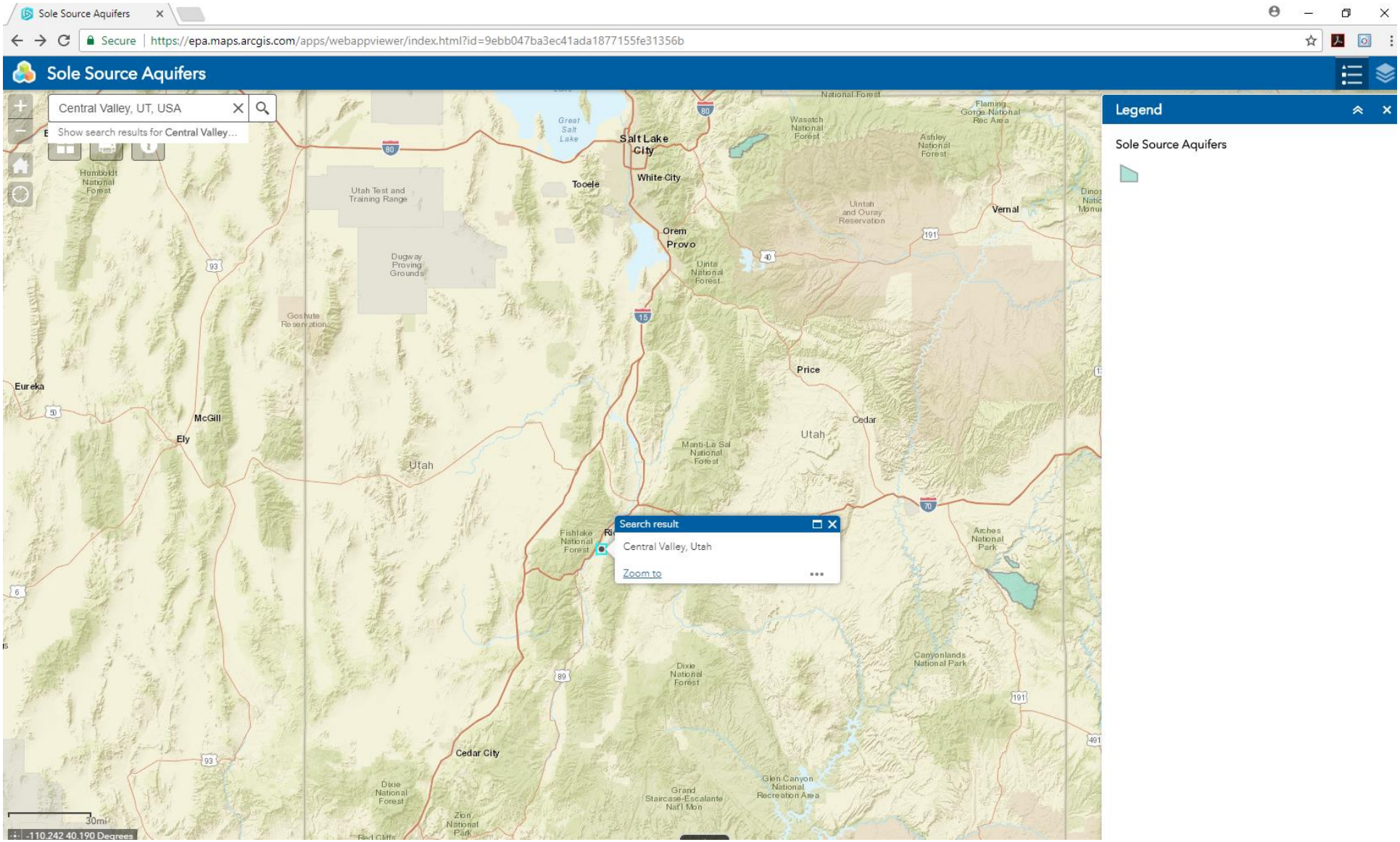


Figure 1. Screenshot of sole source aquifer areas in the vicinity of the project area. The nearest sole source aquifer area is approximately 270 miles to the east of the project area.

7.0 List of Preparers

Responsibility	Name	Affiliation
Document preparation	Wyatt Shakespear	Jones and DeMille Engineering
Document review	Jeff Rich	Rural Development

8.0 References

Environmental Protection Agency. 2017a. Sole Source Aquifer Webmap Viewer. https://epa.maps.arcgis.com/apps/webappviewer/index.html?id=9ebb047ba3ec41ada1877155fe31356b (accessed 12-06-2017).

Environmental Protection Agency. 2017b. NEPAssist mapping tool. https://nepassisttool.epa.gov/nepassist/nepamap.aspx?wherestr=montezuma+Creek+utah (accessed 12-06-2017).

Federal Emergency Management Agency. 2017. FEMA Flood Map Service Center. https://msc.fema.gov/portal/search?AddressQuery=central%20valley%20utah#searchresultsanchor (accessed 12-06-2017).

Appendix A. Soil Description

Sevier County Area, Utah

108—Annabella sandy loam, alkali, 2 to 5 percent slopes

Map Unit Setting

National map unit symbol: j71l
Elevation: 5,270 to 6,030 feet
Mean annual precipitation: 8 to 12 inches
Mean annual air temperature: 46 to 51 degrees F
Frost-free period: 100 to 140 days
Farmland classification: Not prime farmland

Map Unit Composition

Annabella, alkali, and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Annabella, Alkali

Setting

Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Convex
Parent material: Alluvium derived from igneous and sedimentary rock

Typical profile

A - 0 to 3 inches: sandy loam
C - 3 to 60 inches: very gravelly sandy loam

Properties and qualities

Slope: 2 to 5 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Somewhat excessively drained
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum in profile: 15 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 5.0
Available water storage in profile: Low (about 3.7 inches)

Interpretive groups

Land capability classification (irrigated): 3e
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A

Ecological site: Semidesert Stony Loam (Black Greasewood) (R028AY263UT)
Hydric soil rating: No

Minor Components

Wrango
Percent of map unit: 8 percent
Landform: Alluvial fans
Landform position (three-dimensional): Tread
Down-slope shape: Linear
Across-slope shape: Linear
Ecological site: Semidesert Stony Loam (Black Greasewood) (R028AY263UT)
Hydric soil rating: No

Medburn
Percent of map unit: 7 percent
Landform: Alluvial fans
Down-slope shape: Concave
Across-slope shape: Linear
Ecological site: Semidesert Alkali Sandy Loam (Alkali Sacaton) (R028AY205UT)
Hydric soil rating: No

Data Source Information

Soil Survey Area: Sevier County Area, Utah
Survey Area Data: Version 7, Sep 7, 2017

Appendix B. USFWS IPaC Report

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Utah Ecological Services Field Office
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603
Phone: (801) 975-3330 Fax: (801) 975-3331
http://www.fws.gov
http://www.fws.gov/utahfieldoffice/

In Reply Refer To: December 12, 2017
Consultation Code: 06E23000-2018-SLI-0094
Event Code: 06E23000-2018-E-00264
Project Name: Central Valley Culinary Water Improvements

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having

similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Utah Ecological Services Field Office
2369 West Orton Circle, Suite 50
West Valley City, UT 84119-7603
(801) 975-3330

Project Summary

Consultation Code: 06E23000-2018-SLI-0094

Event Code: 06E23000-2018-E-00264

Project Name: Central Valley Culinary Water Improvements

Project Type: WATER SUPPLY / DELIVERY

Project Description: Located just southeast of Central Valley Town, Sevier County, Utah. Disturbance area of approximately 3.29 acres. Timing would be from approximately May through November 2018. This is a culinary water improvement project.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/38.692887580160935N112.08512854864182W

Counties: Sevier, UT

Endangered Species Act Species

There is a total of 4 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Utah Prairie Dog *Cynomys parvidens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/5517	Threatened

Birds

NAME	STATUS
California Condor *Gymnogyps californianus* Population: U.S.A. (specific portions of Arizona, Nevada, and Utah) There is **proposed** critical habitat for this species. The location of the critical habitat is not available. Species profile: https://ecos.fws.gov/ecp/species/8193	Experimental Population, Non-Essential
Yellow-billed Cuckoo *Coccyzus americanus* Population: Western U.S. DPS There is **proposed** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

Flowering Plants

NAME	STATUS
Jones Cycladenia *Cycladenia humilis var. jonesii* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/3336	Threatened

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

Appendix C. SHPO, THPO, and BIA Consultation Documentation

USDA United States Department of Agriculture

Rural Development

Utah State Office

125 South State Street RM 4311
Salt Lake City, Utah 84138

Voice 801.524.4320
Fax 844.715.5084

January 24, 2018

Dr. Christopher W. Merritt, Ph.D.
Utah State Historic Preservation Office
300 South Rio Grande Street, Room 218
Salt Lake City, Utah 84101

RE: Central Valley Town Water Improvement Project
Central Valley Town, Sevier County, UT
Section 106 NHPA Finding of Effect

Dear Dr. Merritt:

Central Valley Town plans to seek financial assistance from the USDA, Rural Development, Rural Utilities Service (RUS), under its Water and Environmental Program for the referenced proposed project.

The current culinary water system does not meet State standards for water treatment. One spring collection system needs to be reworked and deepened. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution sy stem without power; therefore, reworking the spring collection area would increase the volume of water captured by the collection system and increase the water availability during power outage conditions.

Water contamination issues necessitate that a chlorination system be installed. Piping from water sources would need to be reconfigured to allow water to be chlorinated. The necessary piping reconfiguration is shown on the attached exhibit.

Well pumps and motors are aging and need inspection, repair, or replacement. One water storage tank needs a new lid, while another water storage tank is in need of a new access hatch and ladder. Improvements to well systems and water storage tanks would increase the reliability and ease of maintenance of the water delivery system, as well as provide added water quality protection.

Ground disturbing activities would be located within Township 24 South, Range 3 West, Section 24. The project would disturb approximately 3.29 acres, all of which is located on privately owned land. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

If RUS elects to fund this proposed project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

Jones and DeMille Engineering initiated contact with the following tribes by sending letters of Notice of Intent to Initiate Section 106 Review dated December 23, 2017: Navajo Nation, Arizona, New Mexico & Utah; Paiute Indian Tribe of Utah; Ute Indian Tribe of the Uintah and Ouray Reservation, Utah.

The following Historical Preservation measures will be implemented:

- *Any ground disturbance resulting from work performed by, or on behalf of the project owner or contractor(s) that uncovers an apparent or suspected historical or archaeological artifact shall be immediately reported to the Agency. Work in the area of the discovery shall be immediately and temporarily halted pending the notification process and further directions issued by the Agency after consultation with the SHPO.*

Based on our review of this proposed project and earlier correspondence listed above, RUS recommends a finding of **No Adverse Effect to Historic Properties**. If you have questions concerning this letter, please contact me at (801) 524-4327.

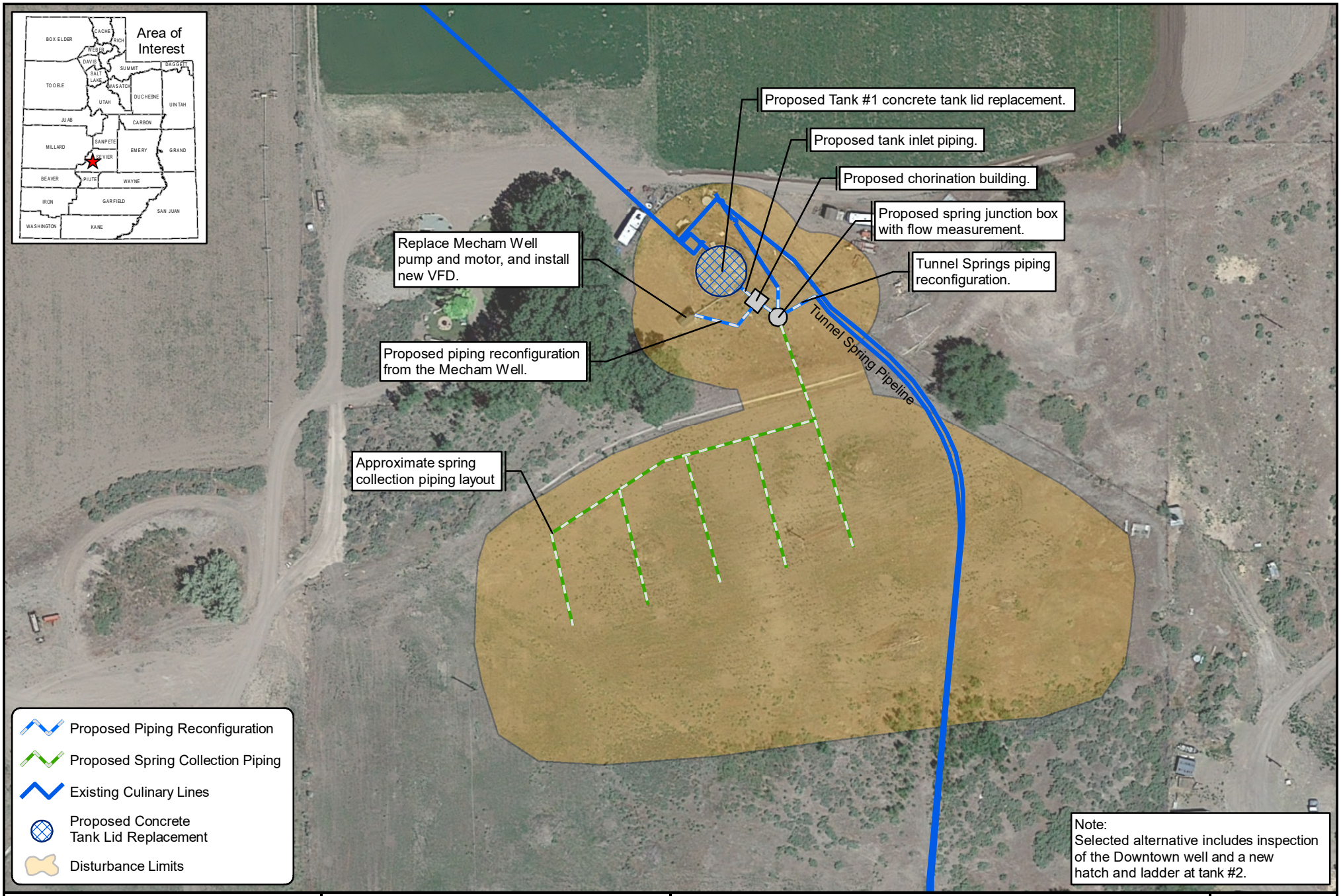
Sincerely,

Digitally signed
by JEFF RICH
Date: 2018.01.24
11:15:49 -07'00'

Jeff J. Rich, P.E.
State Engineer & State Environmental Coordinator
USDA Rural Development

Attachment

cc (via email): Pam Snedeger, USDA RD Area Specialist
Heath Price, USDA RD Community Programs Director
Wyatt Shakespear, Jones & DeMille Engineering, Inc.



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Jones & DeMille Engineering

- Shaping the Quality of Life -

800.748.5275 www.jonesanddemille.com

Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/12/2017

Sevier County

Scale: 1 " = 100 '

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GARY R. HERBERT
Governor

SPENCER J. COX
Lieutenant Governor

Jill Remington Love
Executive Director
Department of
Heritage & Arts

Utah Division of State History

Brad Westwood
Director

February 27, 2018

Jeff Rich
State Environmental Coordinator
USDA - Rural Development

RE: Central Valley Town Culinary Water Improvements Project

For future correspondence, please reference Case No. 18-0189

Dear Mr Rich,

The Utah State Historic Preservation Office received your request for our comment on the above-referenced undertaking on February 27, 2018.

We concur with your determination of effect for this undertaking.

This letter serves as our comment on the determinations you have made within the consultation process specified in §36CFR800.4. If you have questions, please contact me at 801-245-7263 or by email at cmerritt@utah.gov.

Sincerely,

Christopher W. Merritt, Ph.D.
Deputy State Historic Preservation Officer

USDA United States Department of Agriculture

Rural Development

Utah State Office

125 South State
Street RM 4311
Salt Lake City, Utah
84138

Voice 801.524.4320
Fax 844.715.5084

January 24, 2018

Ora Marek-Martinez
Tribal Preservation Officer
Navajo Nation, Arizona, New Mexico & Utah
P.O. Box 4950
Window Rock, AZ 86515-7440

RE: Junction Town Culinary Water Improvements Project
Central Valley Town, Sevier County, UT
Section 106 NHPA Finding of Effect

Dear Ora Marek-Martinez:

Central Valley Town plans to seek financial assistance from the USDA, Rural Development, Rural Utilities Service (RUS), under its Water and Environmental Program for the referenced proposed project.

The current culinary water system does not meet State standards for water treatment. One spring collection system needs to be reworked and deepened. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution system without power; therefore, reworking the spring collection area would increase the volume of water captured by the collection system and increase the water availability during power outage conditions.

Water contamination issues necessitate that a chlorination system be installed. Piping from water sources would need to be reconfigured to allow water to be chlorinated. The necessary piping reconfiguration is shown on the attached exhibit.

Well pumps and motors are aging and need inspection, repair, or replacement. One water storage tank needs a new lid, while another water storage tank is in need of a new access hatch and ladder. Improvements to well systems and water storage tanks would increase the reliability and ease of maintenance of the water delivery system, as well as provide added water quality protection.

Ground disturbing activities would be located within Township 24 South, Range 3 West, Section 24. The project would disturb approximately 3.29 acres, all of which is located on privately owned land. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

If RUS elects to fund this proposed project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

Jones and DeMille Engineering initiated contact with the tribe by sending a letter of Notice of Intent to Initiate Section 106 Review dated December 23, 2017.

The following Historical Preservation measures will be implemented:

- *Any ground disturbance resulting from work performed by, or on behalf of the project owner or contractor(s) that uncovers an apparent or suspected historical or archaeological artifact shall be immediately reported to the Agency. Work in the area of the discovery shall be immediately and temporarily halted pending the notification process and further directions issued by the Agency after consultation with the SHPO.*

Based on our review of this proposed project and earlier correspondence listed above, RUS recommends a finding of **No Adverse Effect to Historic Properties**. If you have questions concerning this letter, please contact me at (801) 524-4327.

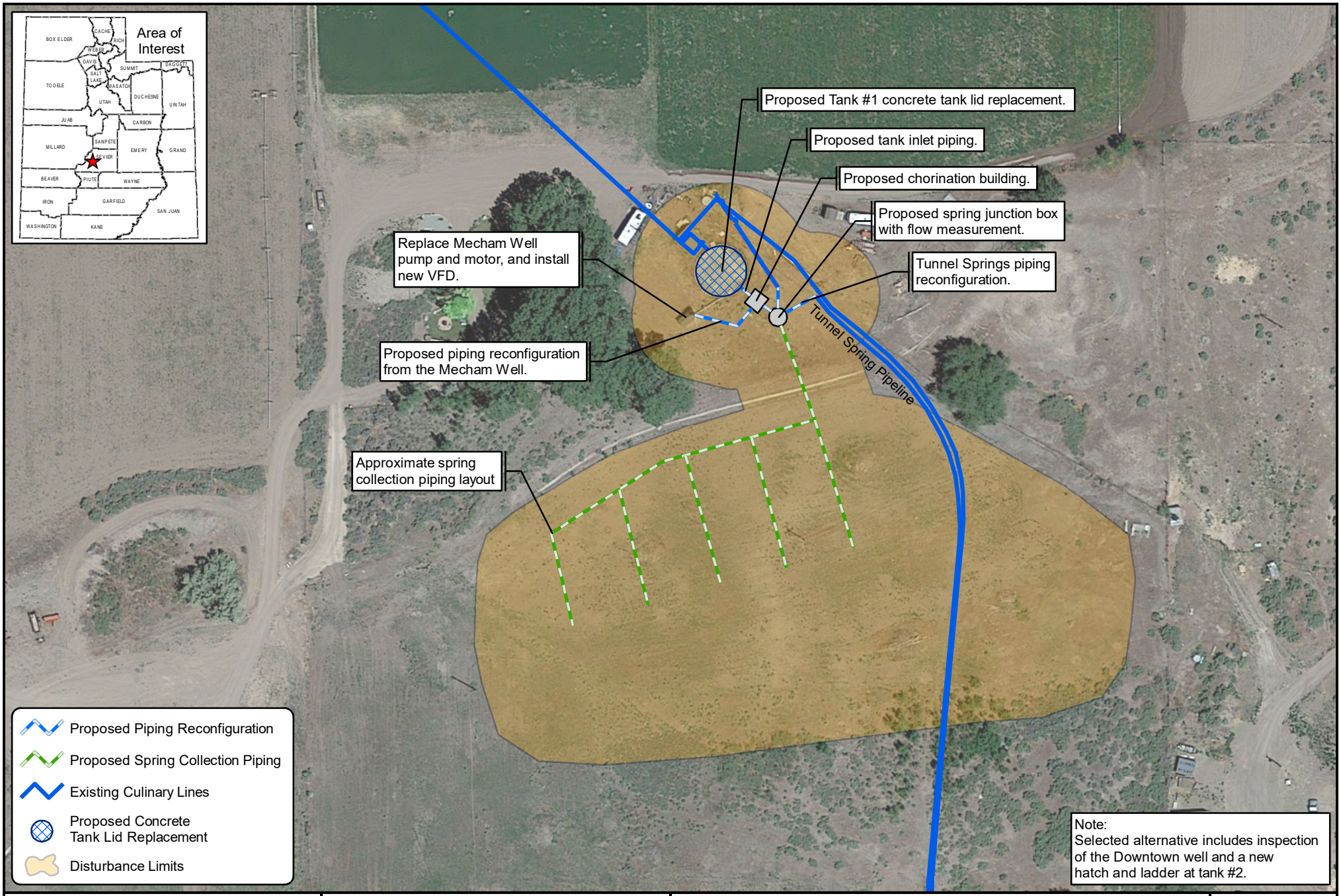
Sincerely,

Digitally signed
by JEFF RICH
Date: 2018.01.24
11:13:12 -07'00'

Jeff J. Rich, P.E.
State Engineer & State Environmental Coordinator
USDA Rural Development

Attachment

cc (via email): Pam Snedeger, USDA Loan Specialist
Heath Price, USDA RD Community Programs Director
Wyatt Shakespear, Jones & DeMille Engineering



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Jones & DeMille Engineering

- Shaping the Quality of Life -

800.748.5275 www.jonesanddemille.com

Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/12/2017

Sevier County

Scale: 1 " = 100 '

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USDA United States Department of Agriculture

Rural Development

Utah State Office

125 South State
Street RM 4311
Salt Lake City, Utah
84138

Voice 801.524.4320
Fax 844.715.5084

January 24, 2018

Mr. Bryan Bowker
Regional Director
Bureau of Indian Affairs
Western Regional Office
2600 North Central Avenue
4th Floor Mail Room
Phoenix, AZ 85001

RE: Central Valley Town Water Improvement Project
Central Valley Town, Sevier County, UT
Section 106 NHPA Finding of Effect

Dear Bryan Bowker:

Central Valley Town plans to seek financial assistance from the USDA, Rural Development, Rural Utilities Service (RUS), under its Water and Environmental Program for the referenced proposed project.

The purpose of this project is to provide a safe and reliable culinary water source for Central Valley Town residents. The current system does not meet State standards for water treatment. One spring collection system needs to be reworked and deepened in order to reduce the risk of surface water contamination. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution sy stem without power; therefore, reworking the spring collection area would increase the volume of water captured by the collection system and increase the water availability during power outage conditions.

Water contamination issues necessitate that a chlorination system be installed. Piping from water sources would need to be reconfigured to allow water to be chlorinated. The necessary piping reconfiguration is shown on the attached exhibit.

Well pumps and motors are aging and are in need of inspection, repair, or replacement. One water storage tank is in need of a new tank lid, while another water storage tank is in need of a new access hatch and ladder. Improvements to well systems and water storage tanks would increase the reliability and ease of maintenance of the water delivery system, as well as provide added water quality protection.

Ground disturbing activities would be located within Township 24 South, Range 3 West, Section 24. The project would disturb approximately 3.29 acres, all of which is

located on privately owned land. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

If RUS elects to fund this proposed project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

Jones and DeMille Engineering initiated contact with the following tribes by sending letters of Notice of Intent to Initiate Section 106 Review dated December 23, 2017: Navajo Nation, Arizona, New Mexico & Utah; Paiute Indian Tribe of Utah; Ute Indian Tribe of the Uintah and Ouray Reservation, Utah.

The following Historical Preservation measures will be implemented:

- *Any ground disturbance resulting from work performed by, or on behalf of the project owner or contractor(s) that uncovers an apparent or suspected historical or archaeological artifact shall be immediately reported to the Agency. Work in the area of the discovery shall be immediately and temporarily halted pending the notification process and further directions issued by the Agency after consultation with the SHPO.*

Based on our review of this proposed project and earlier correspondence listed above, RUS recommends a finding of **No Adverse Effect to Historic Properties**. If you have questions concerning this letter, please contact me at (801) 524-4327.

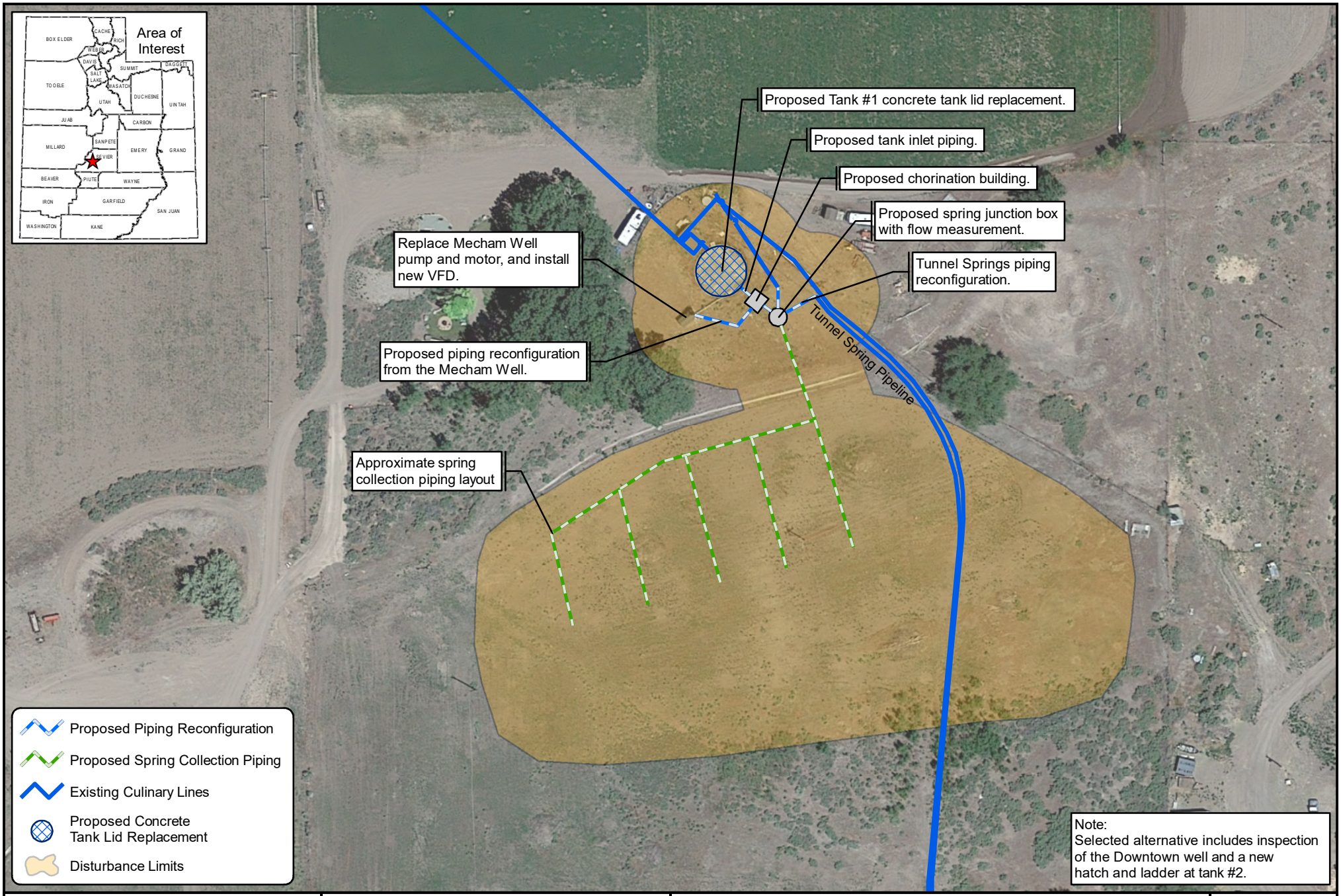
Sincerely,

Digitally signed
by JEFF RICH
Date: 2018.01.24
11:14:34 -07'00'

Jeff J. Rich, P.E.
State Engineer & State Environmental Coordinator
USDA Rural Development

Enclosure

cc (via email): Pam Snedeger, USDA RD Area Specialist
Heath Price, USDA RD Community Programs Director
Wyatt Shakespear, Jones & DeMille Engineering, Inc.



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Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/12/2017

Sevier County

Scale: 1 " = 100 '

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Appendix D. Tribal Consultation Documentation

Jones & DeMille Engineering

800.748.5275
www.jonesanddemille.com
infrastructure professionals

CORPORATE
1535 South 100 West
Richfield, UT 84701
435.896.8266

50 South Main, Suite 4
Manti, UT 84642
435.835.4540

1675 South Highway 10
Price, UT 84501
435.637.8266

45 South 200 West (45-13)
Roosevelt, UT 84066
435.722.8267

775 West 1200 North
Suite 200A
Springville, UT 84663
801.692.0219

435 East Tabernacle, Suite 302
St. George, UT 84770
435.986.3622

16 East 300 South
PO Box 577
Monticello, UT 84535
1.800.748.5275

38 West 100 North
Vernal, UT 84078
435.781.1988

December 13, 2017

Luke Duncan, Chairman
Ute Indian Tribe of the Uintah and Ouray Reservation
P.O. Box 190
Fort Duchesne, Utah 84026-0190

RE: Notice of Intent to Initiate Section 106 Review
Central Valley Culinary Water Improvements Project, Central Valley Town, Sevier County, Utah

Dear Mr. Duncan:

The USDA Rural Utilities Service, one of three agencies comprising USDA Rural Development (RD), provides funding for eligible rural communities under its Water and Environmental Programs in accordance with 7 CFR Part 1780. Central Valley Town has requested financial assistance from RD to complete various improvements to the existing Central Valley culinary water system.

The purpose of this project is to provide a safe and reliable culinary water source for Central Valley Town residents. The current system does not meet State standards for water treatment. One spring collection system needs to be reworked and deepened in order to reduce the risk of surface water contamination. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution system without power; therefore, reworking the spring collection area would increase the volume of water captured by the collection system and increase water availability during power outage conditions.

Water contamination issues necessitate that a chlorination system be installed. Piping from water sources would need to be reconfigured to allow water to be chlorinated. The necessary piping reconfiguration is shown on the attached exhibit.

Well pumps and motors are aging and are in need of inspection, repair, or replacement. One water storage tank is in need of a new tank lid, while another water storage tank in need of a new access hatch and ladder. Improvements to well systems and water storage tanks would increase the reliability and ease of maintenance of the water delivery system, as well as provide added water quality protection.

Ground disturbing activities would be located within Township 24 South, Range 3 West, Section 24. The project would disturb approximately 3.29 acres, all of which is located on privately owned land.

If RD elects to fund this application, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 16 U.S.C. §470m, and its implementing regulations, 36 CFR Part 800. In accordance with the attached blanket authorization issued by RD in August 2012, Central Valley Town is initiating Section 106 review on behalf of RD. In delegating this authority, RD is advocating for the direct interaction between its Water and Waste Program borrowers and Indian tribes. RD believes this interaction, prior to direct agency involvement, will support and encourage the

consideration of impacts to historic properties of importance to Indian tribes earlier in project planning.

Central Valley Town proposes that the Area of Potential Effects (APE) for the referenced project consists of the project disturbance area as shown on the enclosed map. The geographic scope of the APE will not be final until a determination is made by RD pursuant to 36 CFR § 800.4(a)(1). The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

Central Valley Town is notifying you about the referenced project because of the possible interest of the Ute Indian Tribe of the Uintah and Ouray Reservation in Sevier County. Should the Ute Indian Tribe of the Uintah and Ouray Reservation elect to participate in Section 106 review of the referenced project, please notify me in writing via letter or email as soon as possible at the following addresses – Wyatt Shakespear, 1535 S. 100 W., Richfield, UT 84701. Please include with your affirmative response, a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project.
Central Valley Town will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with RD, as the agency responsible for conducting Section 106 review, or to request that RD participate directly in Section 106 review, please notify me at once, preferably via email. However, you may contact RD directly. If you wish to do so, please submit your request to Jeff Rich, RD State Environmental Coordinator, at Jeff.Rich@ut.usda.gov or (801) 524-4327.

Please submit your response to me by January 18, 2018. During this time period, I will follow-up to ensure your receipt of this notification and to identify any constraints which might delay your timely response. Central Valley Town has been advised by RD to proceed to the next step in Section 106 review if you fail to provide a timely response. Should you have any questions or require additional information you may contact me at (435) 896-8266, or w.shakespear@jonesanddemille.com.

Sincerely,

Wyatt Shakespear
Environmental Specialist
Jones and DeMille Engineering
w.shakespear@jonesanddemille.com

Enclosure:
1. USDA Blanket Delegation of Authority for Section 106 Review
2. Area of Potential Effects Figure

cc: Jeff Rich
Karl Larsen

United States Department of Agriculture
Rural Development

Rural Business-Cooperative Service • Rural Housing Service • Rural Utilities Service
Washington, DC 20250

August 14, 2012

To: Federally Recognized Indian Tribes
Tribal Historic Preservation Officers
State Historic Preservation Officers

Subject: Blanket Delegation of Authority for Section 106 Review

Applicability: Applies Nationwide to Undertakings Assisted by the Rural Utilities Service of the U.S. Department of Agriculture

The U.S. Department of Agriculture, Rural Development consists of the following three federal agencies - Rural Business-Cooperative Service (RBS), Rural Housing Service (RHS) and the Rural Utilities Services (RUS). Rural Development agencies administer numerous assistance programs from their offices located in Washington, D.C. and through their representatives in all states and territories. Further information about Rural Development can be found at http://www.rurdev.usda.gov/Home.html.

In order to streamline compliance with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470f, and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800), RUS is authorizing its applicants to initiate consultation on its behalf, pursuant to 36 CFR § 800.2(c)(4). Effective immediately, RUS applicants and their authorized representatives may consult with the State Historic Preservation Officers (SHPO) to initiate the review process established under 36 CFR Part 800 and to carry out some of its steps. Specifically, RUS applicants are authorized to gather information to identify and evaluate historic properties, and to work with consulting parties to assess effects.

RUS, however, retains the responsibility to document its findings and determinations in order to appropriately conclude Section 106 review. RUS also remains responsible for initiating and conducting government-to-government consultation with federally recognized Indian tribes. The responsibility of RUS to consult on a government-to-government basis with Indian tribes as sovereign nations is established through specific legal authorities and is explicitly recognized in 36 CFR Part 800. Accordingly, RUS may not delegate this responsibility to a non-federal party without the agreement of the tribe to do so. In order to facilitate the early involvement of tribes in Section 106 review, RUS will support applicants working directly with Indian tribes, where tribes consent, to carry out the terms of this blanket authorization.

Be advised that applicants authorized in accordance with 36 CFR § 800.2(c)(4) must involve RUS in consultation whenever:

- Any consulting party, including the applicant, the SHPO or an Indian tribe, proposes that the action under consideration by RUS may have an adverse effect on historic properties, as defined pursuant to 36 CFR § 800.5(a);

- There is a disagreement between an applicant or its authorized representative and the SHPO or an Indian tribe about the scope of the area of potential effects, identification and evaluation of historic properties and/or the assessment of effects;

- There is an objection from a consulting party or the public regarding their involvement in the review process established by 36 CFR Part 800, recommended Section 106 findings and determinations, or implementation of agreed upon measures; or

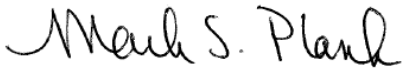
- There is the potential for a foreclosure or anticipatory demolition as defined by 36 CFR § 800.9(b) and 36 CFR § 800.9(c), respectively.

RUS expects its applicants authorized in accordance with 36 CFR § 800.2(c)(4) to involve consulting parties in developing recommendations about Section 106 findings and determinations, and to carry out the exchange of documentation and information in a respectful, constructive and predictable manner. Therefore, Section 106 reviews are to be conducted within the time frames set forth within 36 CFR Part 800.

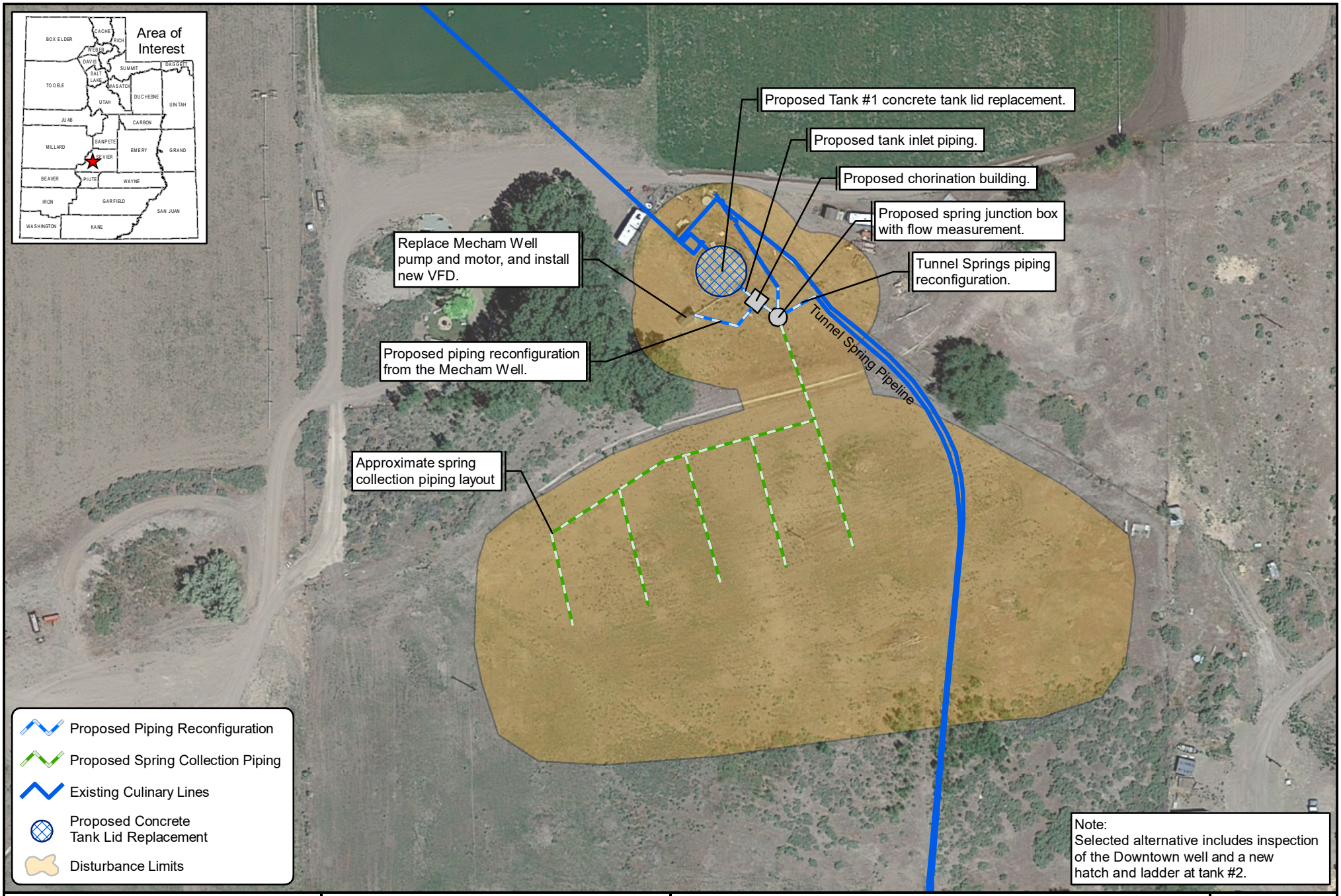
For RUS, this blanket delegation replaces an earlier memorandum issued on July 16, 2009.

Should you have any questions about this blanket authorization, please contact Laura Dean, Ph.D., the Federal Preservation Officer for RUS, at 202-720-9634 or via email at laura.dean@wdc.usda.gov.

Sincerely,



Mark S. Plank
Director, Engineering and Environmental Staff
Rural Utilities Service



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Jones & DeMille Engineering

- Shaping the Quality of Life -

800.748.5275 www.jonesanddemille.com

Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/12/2017

Sevier County

Scale: 1 " = 100 '

1

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infrastructure professionals

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435.835.4540

1675 South Highway 10
Price, UT 84501
435.637.8266

45 South 200 West (45-13)
Roosevelt, UT 84066
435.722.8267

775 West 1200 North
Suite 200A
Springville, UT 84663
801.692.0219

435 East Tabernacle, Suite 302
St. George, UT 84770
435.986.3622

16 East 300 South
PO Box 577
Monticello, UT 84535
1.800.748.5275

38 West 100 North
Vernal, UT 84078
435.781.1988

December 13, 2017

Russell Begaye, President
Navajo Nation
100 Parkway
P.O. Box 7440
Window Rock, Arizona 86515

RE: Notice of Intent to Initiate Section 106 Review
Central Valley Culinary Water Improvements Project, Central Valley Town, Sevier County, Utah

Dear Mr. Begaye:

The USDA Rural Utilities Service, one of three agencies comprising USDA Rural Development (RD), provides funding for eligible rural communities under its Water and Environmental Programs in accordance with 7 CFR Part 1780. Central Valley Town has requested financial assistance from RD to complete various improvements to the existing Central Valley culinary water system.

The purpose of this project is to provide a safe and reliable culinary water source for Central Valley Town residents. The current system does not meet State standards for water treatment. One spring collection system needs to be reworked and deepened in order to reduce the risk of surface water contamination. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution system without power; therefore, reworking the spring collection area would increase the volume of water captured by the collection system and increase water availability during power outage conditions.

Water contamination issues necessitate that a chlorination system be installed. Piping from water sources would need to be reconfigured to allow water to be chlorinated. The necessary piping reconfiguration is shown on the attached exhibit.

Well pumps and motors are aging and are in need of inspection, repair, or replacement. One water storage tank is in need of a new tank lid, while another water storage tank in need of a new access hatch and ladder. Improvements to well systems and water storage tanks would increase the reliability and ease of maintenance of the water delivery system, as well as provide added water quality protection.

Ground disturbing activities would be located within Township 24 South, Range 3 West, Section 24. The project would disturb approximately 3.29 acres, all of which is located on privately owned land.

If RD elects to fund this application, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 16 U.S.C. §470m, and its implementing regulations, 36 CFR Part 800. In accordance with the attached blanket authorization issued by RD in August 2012, Central Valley Town is initiating Section 106 review on behalf of RD. In delegating this authority, RD is advocating for the direct interaction between its Water and Waste Program borrowers and Indian tribes. RD believes

this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties of importance to Indian tribes earlier in project planning.

Central Valley Town proposes that the Area of Potential Effects (APE) for the referenced project consists of the project disturbance area as shown on the enclosed map. The geographic scope of the APE will not be final until a determination is made by RD pursuant to 36 CFR § 800.4(a)(1). The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

Central Valley Town is notifying you about the referenced project because of the possible interest of the Navajo Nation in Sevier County. Should the Navajo Nation elect to participate in Section 106 review of the referenced project, please notify me in writing via letter or email as soon as possible at the following addresses – Wyatt Shakespear, 1535 S. 100 W., Richfield, UT 84701. Please include with your affirmative response, a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project.
Central Valley Town will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with RD, as the agency responsible for conducting Section 106 review, or to request that RD participate directly in Section 106 review, please notify me at once, preferably via email. However, you may contact RD directly. If you wish to do so, please submit your request to Jeff Rich, RD State Environmental Coordinator, at Jeff.Rich@ut.usda.gov or (801) 524-4327.

Please submit your response to me by January 18, 2018. During this time period, I will follow-up to ensure your receipt of this notification and to identify any constraints which might delay your timely response. Central Valley Town has been advised by RD to proceed to the next step in Section 106 review if you fail to provide a timely response. Should you have any questions or require additional information you may contact me at (435) 896-8266, or w.shakespear@jonesanddemille.com.

Sincerely,

Wyatt Shakespear
Environmental Specialist
Jones and DeMille Engineering
w.shakespear@jonesanddemille.com

Enclosure:
1. USDA Blanket Delegation of Authority for Section 106 Review
2. Area of Potential Effects Figure

cc: Jeff Rich
Karl Larsen

United States Department of Agriculture
Rural Development

Rural Business-Cooperative Service • Rural Housing Service • Rural Utilities Service
Washington, DC 20250

August 14, 2012

To: Federally Recognized Indian Tribes
Tribal Historic Preservation Officers
State Historic Preservation Officers

Subject: Blanket Delegation of Authority for Section 106 Review

Applicability: Applies Nationwide to Undertakings Assisted by the Rural Utilities Service of the U.S. Department of Agriculture

The U.S. Department of Agriculture, Rural Development consists of the following three federal agencies - Rural Business-Cooperative Service (RBS), Rural Housing Service (RHS) and the Rural Utilities Services (RUS). Rural Development agencies administer numerous assistance programs from their offices located in Washington, D.C. and through their representatives in all states and territories. Further information about Rural Development can be found at http://www.rurdev.usda.gov/Home.html.

In order to streamline compliance with Section 106 of the National Historic Preservation Act, 16 U.S.C. § 470f, and its implementing regulations, "Protection of Historic Properties" (36 CFR Part 800), RUS is authorizing its applicants to initiate consultation on its behalf, pursuant to 36 CFR § 800.2(c)(4). Effective immediately, RUS applicants and their authorized representatives may consult with the State Historic Preservation Officers (SHPO) to initiate the review process established under 36 CFR Part 800 and to carry out some of its steps. Specifically, RUS applicants are authorized to gather information to identify and evaluate historic properties, and to work with consulting parties to assess effects.

RUS, however, retains the responsibility to document its findings and determinations in order to appropriately conclude Section 106 review. RUS also remains responsible for initiating and conducting government-to-government consultation with federally recognized Indian tribes. The responsibility of RUS to consult on a government-to-government basis with Indian tribes as sovereign nations is established through specific legal authorities and is explicitly recognized in 36 CFR Part 800. Accordingly, RUS may not delegate this responsibility to a non-federal party without the agreement of the tribe to do so. In order to facilitate the early involvement of tribes in Section 106 review, RUS will support applicants working directly with Indian tribes, where tribes consent, to carry out the terms of this blanket authorization.

Be advised that applicants authorized in accordance with 36 CFR § 800.2(c)(4) must involve RUS in consultation whenever:

- Any consulting party, including the applicant, the SHPO or an Indian tribe, proposes that the action under consideration by RUS may have an adverse effect on historic properties, as defined pursuant to 36 CFR § 800.5(a);

- There is a disagreement between an applicant or its authorized representative and the SHPO or an Indian tribe about the scope of the area of potential effects, identification and evaluation of historic properties and/or the assessment of effects;

- There is an objection from a consulting party or the public regarding their involvement in the review process established by 36 CFR Part 800, recommended Section 106 findings and determinations, or implementation of agreed upon measures; or

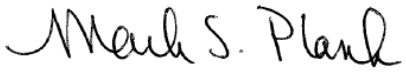
- There is the potential for a foreclosure or anticipatory demolition as defined by 36 CFR § 800.9(b) and 36 CFR § 800.9(c), respectively.

RUS expects its applicants authorized in accordance with 36 CFR § 800.2(c)(4) to involve consulting parties in developing recommendations about Section 106 findings and determinations, and to carry out the exchange of documentation and information in a respectful, constructive and predictable manner. Therefore, Section 106 reviews are to be conducted within the time frames set forth within 36 CFR Part 800.

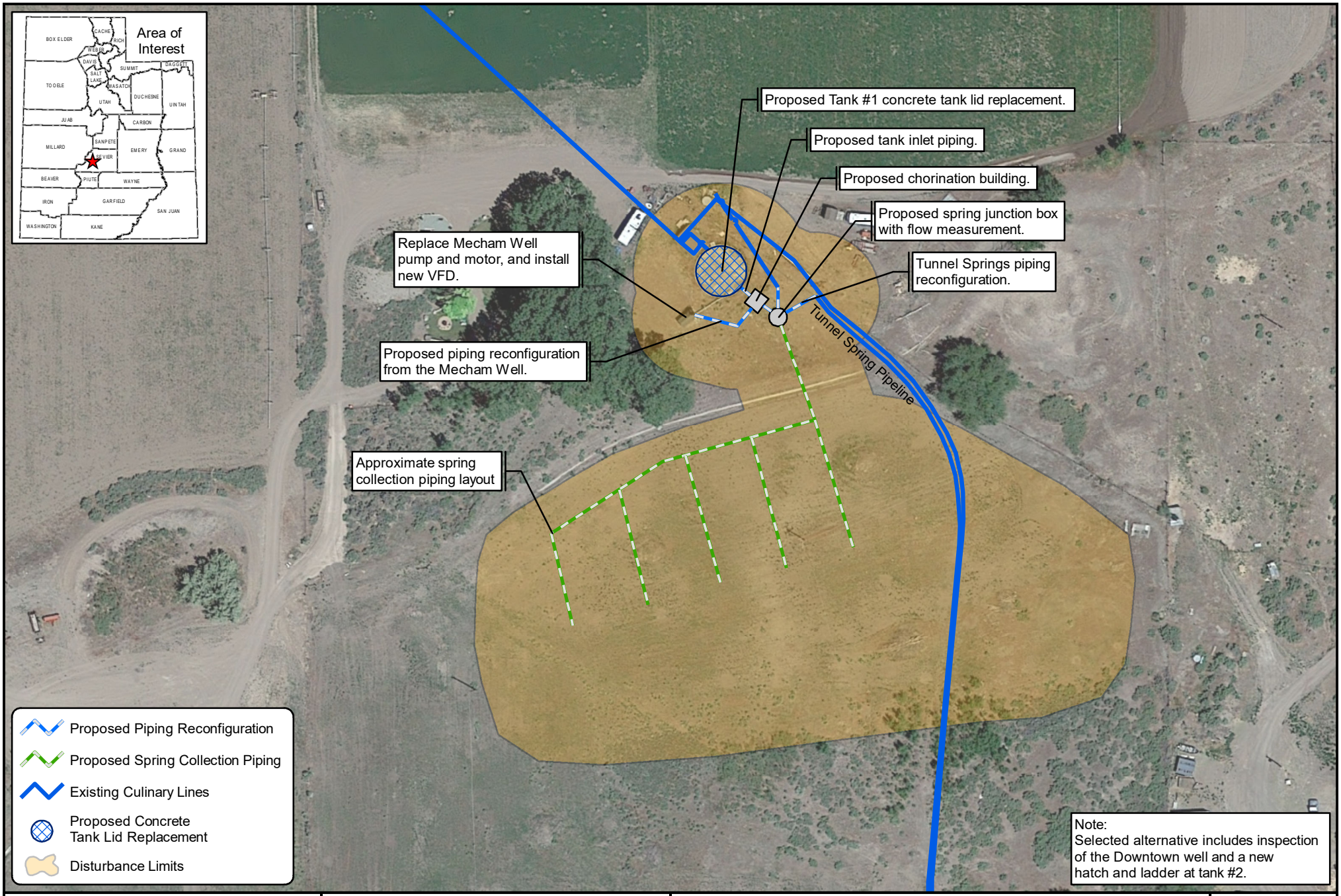
For RUS, this blanket delegation replaces an earlier memorandum issued on July 16, 2009.

Should you have any questions about this blanket authorization, please contact Laura Dean, Ph.D., the Federal Preservation Officer for RUS, at 202-720-9634 or via email at laura.dean@wdc.usda.gov.

Sincerely,



Mark S. Plank
Director, Engineering and Environmental Staff
Rural Utilities Service



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Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/12/2017

Sevier County

Scale: 1 " = 100 '

1

From: Timothy Begay
To: Wyatt Shakespear
Subject: Water source for Central Valley Town resients
Date: Wednesday, January 10, 2018 3:11:58 PM

Dear Mr. Shakespear:

The Navajo Nation Heritage and Historic Preservation Department in receipt of your letter dated December 13, 2017, regarding the section 106 consultation for Central Valley Culinary Water Improvements Project, Central Valley Town, Sevier County, Utah.

The Navajo Nation has no concerns at this time. Thank you for your consultation with Navajo Nation.

Sincerely,
Timothy C. Begay, Navajo Cultural Specialist
Navajo Nation Heritage and Historic Preservation Department

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infrastructure professionals

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38 West 100 North
Vernal, UT 84078
435.781.1988

December 13, 2017

Tamra Borchardt-Slayton, Chairwoman
Paiute Indian Tribe of Utah
440 North Paiute Dr.
Cedar City, Utah 84721

RE: Notice of Intent to Initiate Section 106 Review
Central Valley Culinary Water Improvements Project, Central Valley Town, Sevier County, Utah

Dear Ms. Borchardt-Slayton:

The USDA Rural Utilities Service, one of three agencies comprising USDA Rural Development (RD), provides funding for eligible rural communities under its Water and Environmental Programs in accordance with 7 CFR Part 1780. Central Valley Town has requested financial assistance from RD to complete various improvements to the existing Central Valley culinary water system.

The purpose of this project is to provide a safe and reliable culinary water source for Central Valley Town residents. The current system does not meet State standards for water treatment. One spring collection system needs to be reworked and deepened in order to reduce the risk of surface water contamination. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution system without power; therefore, reworking the spring collection area would increase the volume of water captured by the collection system and increase water availability during power outage conditions.

Water contamination issues necessitate that a chlorination system be installed. Piping from water sources would need to be reconfigured to allow water to be chlorinated. The necessary piping reconfiguration is shown on the attached exhibit.

Well pumps and motors are aging and are in need of inspection, repair, or replacement. One water storage tank is in need of a new tank lid, while another water storage tank in need of a new access hatch and ladder. Improvements to well systems and water storage tanks would increase the reliability and ease of maintenance of the water delivery system, as well as provide added water quality protection.

Ground disturbing activities would be located within Township 24 South, Range 3 West, Section 24. The project would disturb approximately 3.29 acres, all of which is located on privately owned land.

If RD elects to fund this application, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 16 U.S.C. §470m, and its implementing regulations, 36 CFR Part 800. In accordance with the attached blanket authorization issued by RD in August 2012, Central Valley Town is initiating Section 106 review on behalf of RD. In delegating this authority, RD is advocating for the direct interaction between its Water and Waste Program borrowers and Indian tribes. RD believes

this interaction, prior to direct agency involvement, will support and encourage the consideration of impacts to historic properties of importance to Indian tribes earlier in project planning.

Central Valley Town proposes that the Area of Potential Effects (APE) for the referenced project consists of the project disturbance area as shown on the enclosed map. The geographic scope of the APE will not be final until a determination is made by RD pursuant to 36 CFR § 800.4(a)(1). The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

Central Valley Town is notifying you about the referenced project because of the possible interest of the Paiute Indian Tribe of Utah in Sevier County. Should the Paiute Indian Tribe of Utah elect to participate in Section 106 review of the referenced project, please notify me in writing via letter or email as soon as possible at the following addresses – Wyatt Shakespear, 1535 S. 100 W., Richfield, UT 84701 or w.shakespear@jonesanddemille.com. Please include with your affirmative response, a description of any specific historic properties or important tribal resources in the APE and your recommendations about the level of effort needed to identify additional historic properties which might be affected by the referenced project. Central Valley Town will respect the confidentiality of the information which you provide to the fullest extent possible.

If at any time you wish to share your interests, recommendations and concerns directly with RD, as the agency responsible for conducting Section 106 review, or to request that RD participate directly in Section 106 review, please notify me at once, preferably via email. However, you may contact RD directly. If you wish to do so, please submit your request to Jeff Rich, RD State Environmental Coordinator, at Jeff.Rich@ut.usda.gov or (801) 524-4327.

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Sincerely,

Wyatt Shakespear
Environmental Specialist
Jones and DeMille Engineering
w.shakespear@jonesanddemille.com

Enclosure:
1. USDA Blanket Delegation of Authority for Section 106 Review
2. Area of Potential Effects Figure

cc: Jeff Rich
Karl Larsen

United States Department of Agriculture
Rural Development

Rural Business-Cooperative Service • Rural Housing Service • Rural Utilities Service
Washington, DC 20250

August 14, 2012

To: Federally Recognized Indian Tribes
Tribal Historic Preservation Officers
State Historic Preservation Officers

Subject: Blanket Delegation of Authority for Section 106 Review

Applicability: Applies Nationwide to Undertakings Assisted by the Rural Utilities Service of the U.S. Department of Agriculture

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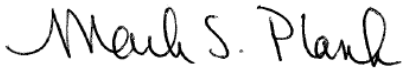

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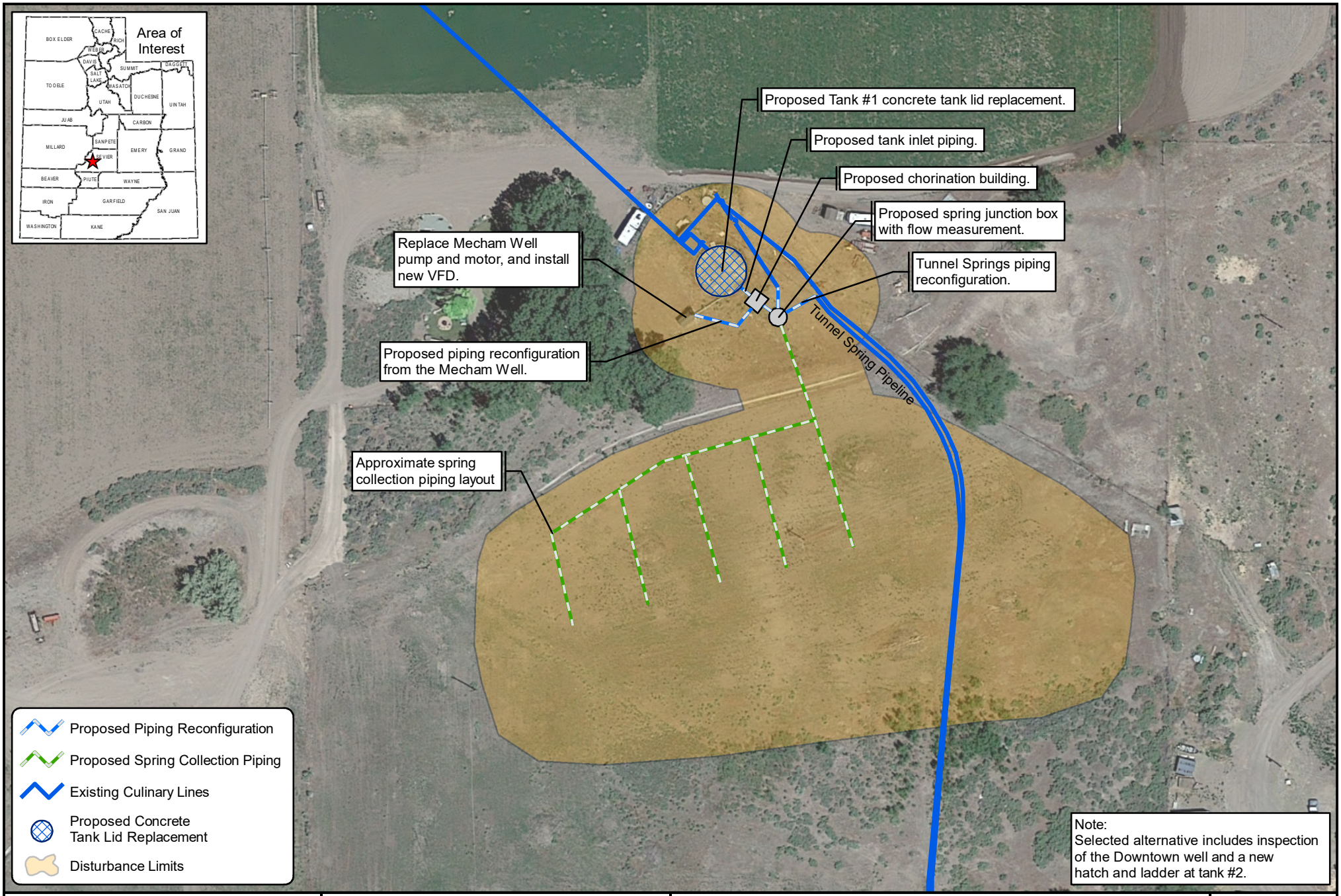
Director, Engineering and Environmental Staff
Rural Utilities Service



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Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/12/2017

Sevier County

Scale: 1 " = 100 '

1

USDA United States Department of Agriculture

Rural Development

Utah State Office

125 South State
Street RM 4311
Salt Lake City, Utah
84138

Voice 801.524.4320
Fax 844.715.5084

January 24, 2018

Doreen Martineau
Paiute Indian Tribe of Utah
440 North Paiute Drive
Cedar City, UT 84721

RE: Junction Town Culinary Water Improvements Project
Central Valley Town, Sevier County, UT
Section 106 NHPA Finding of Effect

Dear Doreen Martineau:

Central Valley Town plans to seek financial assistance from the USDA, Rural Development, Rural Utilities Service (RUS), under its Water and Environmental Program for the referenced proposed project.

The current culinary water system does not meet State standards for water treatment. One spring collection system needs to be reworked and deepened. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution system without power; therefore, reworking the spring collection area would increase the volume of water captured by the collection system and increase the water availability during power outage conditions.

Water contamination issues necessitate that a chlorination system be installed. Piping from water sources would need to be reconfigured to allow water to be chlorinated. The necessary piping reconfiguration is shown on the attached exhibit.

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Ground disturbing activities would be located within Township 24 South, Range 3 West, Section 24. The project would disturb approximately 3.29 acres, all of which is located on privately owned land. The APE does not include any tribal lands as defined pursuant to 36 CFR § 800.16(x).

If RUS elects to fund this proposed project, it will become an undertaking subject to review under Section 106 of the National Historic Preservation Act, 54 U.S.C. 306108, and its implementing regulations, 36 CFR Part 800.

Jones and DeMille Engineering initiated contact with the tribe by sending a letter of Notice of Intent to Initiate Section 106 Review dated December 23, 2017.

The following Historical Preservation measures will be implemented:

- *Any ground disturbance resulting from work performed by, or on behalf of the project owner or contractor(s) that uncovers an apparent or suspected historical or archaeological artifact shall be immediately reported to the Agency. Work in the area of the discovery shall be immediately and temporarily halted pending the notification process and further directions issued by the Agency after consultation with the SHPO.*

Based on our review of this proposed project and earlier correspondence listed above, RUS recommends a finding of **No Adverse Effect to Historic Properties**. If you have questions concerning this letter, please contact me at (801) 524-4327.

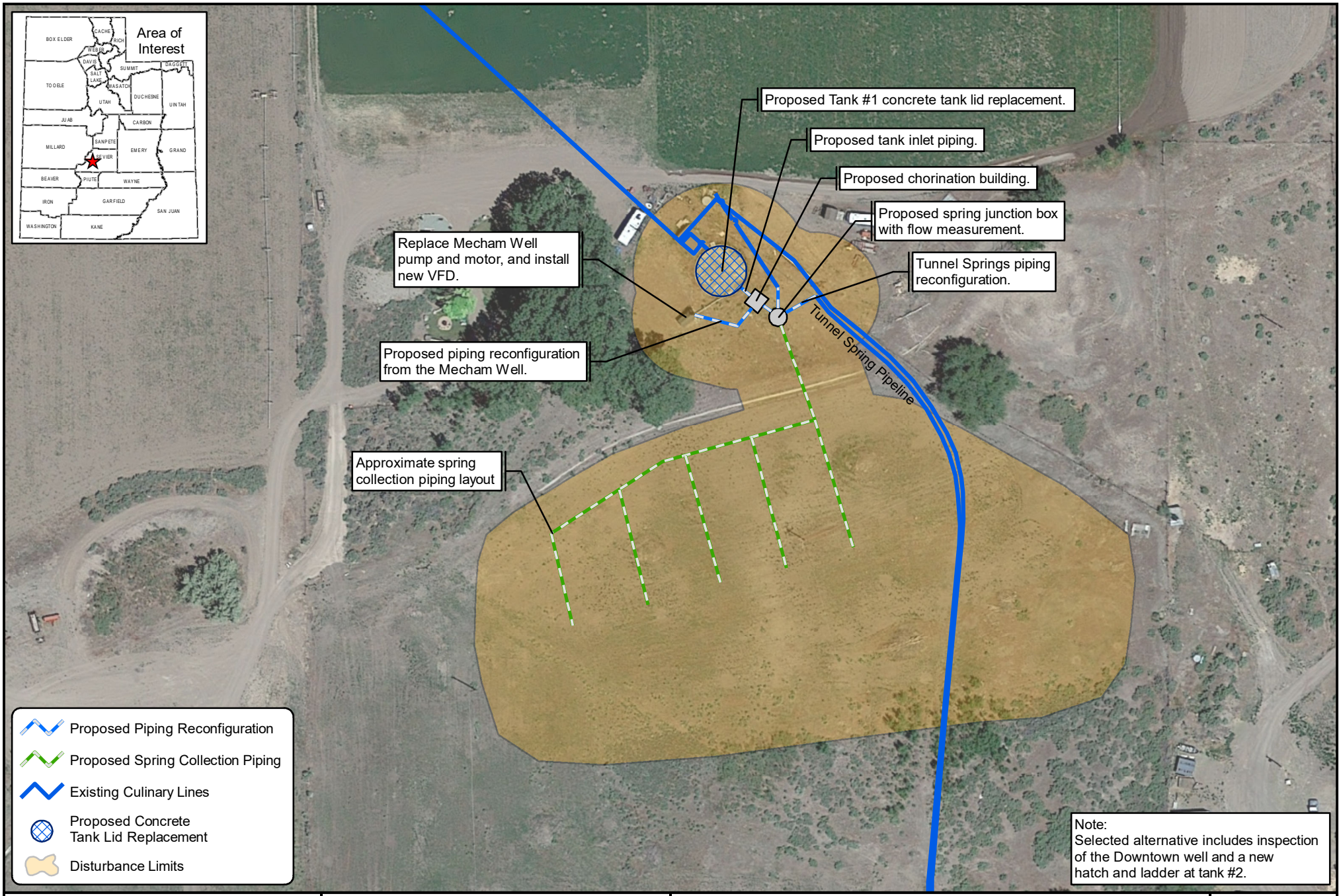
Sincerely,

Digitally signed
by JEFF RICH
Date: 2018.01.24
11:13:59 -07'00'

Jeff J. Rich, P.E.
State Engineer & State Environmental Coordinator
USDA Rural Development

Attachment

cc (via email): Pam Snedeger, USDA Loan Specialist
Heath Price, USDA RD Community Programs Director
Wyatt Shakespear, Jones & DeMille Engineering



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Jones & DeMille Engineering

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800.748.5275 www.jonesanddemille.com

Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/12/2017

Sevier County

Scale: 1 " = 100 '

1

USDA United States Department of Agriculture

Rural Development

Utah State Office

125 South State
Street RM 4311
Salt Lake City, Utah
84138

Voice 801.524.4320
Fax 844.715.5084

January 24, 2018

Gordon Howell
Chairperson
Ute Indian Tribe of the Uintah and Ouray Reservation, Utah
PO Box 190
Fort Duchesne, UT 84026-0190

RE: Junction Town Culinary Water Improvements Project
Central Valley Town, Sevier County, UT
Section 106 NHPA Finding of Effect

Dear Gordon Howell:

Central Valley Town plans to seek financial assistance from the USDA, Rural Development, Rural Utilities Service (RUS), under its Water and Environmental Program for the referenced proposed project.

The current culinary water system does not meet State standards for water treatment. One spring collection system needs to be reworked and deepened. Also, spring water is an important emergency water source for Central Valley Town as it is conveyed to the distribution system without power; therefore, reworking the spring collection area would increase the volume of water captured by the collection system and increase the water availability during power outage conditions.

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Based on our review of this proposed project and earlier correspondence listed above, RUS recommends a finding of **No Adverse Effect to Historic Properties**. If you have questions concerning this letter, please contact me at (801) 524-4327.

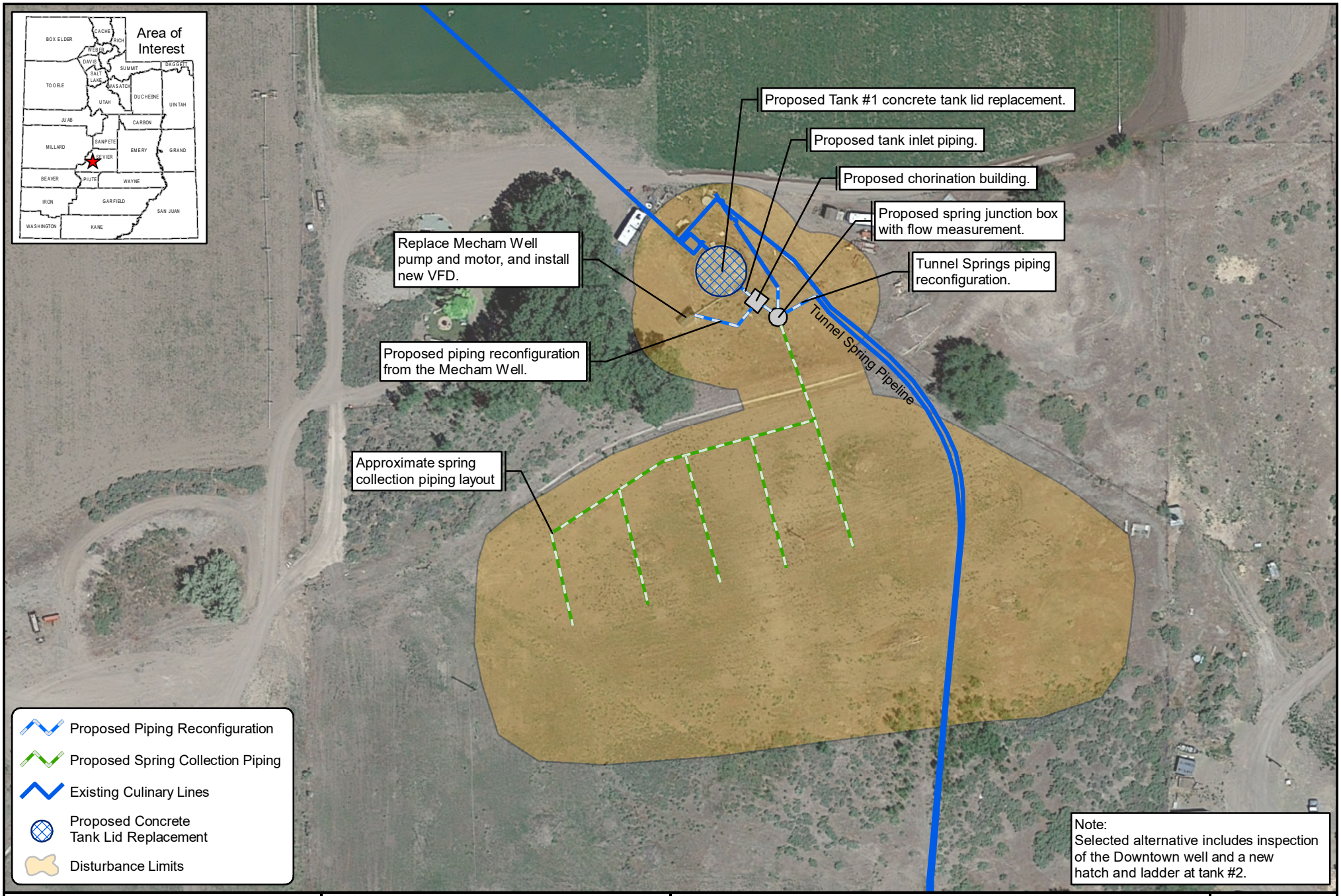
Sincerely,

Digitally signed by JEFF RICH
Date: 2018.01.24 11:12:33 -07'00'

Jeff J. Rich, P.E.
State Engineer & State Environmental Coordinator
USDA Rural Development

Attachment

cc (via email): Pam Snedeger, USDA Loan Specialist
Heath Price, USDA RD Community Programs Director
Wyatt Shakespear, Jones & DeMille Engineering



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Central Valley Town

Central Valley Water Study
Proposed Improvements and Disturbance Areas

Map Name: H:\JD\Proj\1706-043\Design\GIS\Maps\Environmental\Central_Valley_proposed_improvements_and_disturbance.mxd

Project Number: 1706-043 | Drawn by: JEM 12-17 | Last Edit: 12/12/2017

Sevier County

Scale: 1 " = 100 '

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APPENDIX G. WATER QUALITY DATA

Central Valley Town Meeham Spring

	Initials	Date
Prepared By		
Approved By		

Don Nave. 978-7713

1	Aug 86	Willard		60 g pm.
2	Apr 27-95	C E		43 g pm.
3	93	Dudut	under Spring	
4	96			38 g pm
5	97			?
6	98			38 g pm
7	99			38 g pm
8	2000			38 g pm
9	2001			38 g pm
10	2002			38 g pm
11	2003			64 g pm
12	2004			43 g pm.
13	2005			43 g pm
14	2006			43 g pm
15	2007			43 g pm.
16	2008			43 g pm
17	2009			31 g pm
18	2010			31 g pm.
19	2011			31 g pm
20	2012			31 g pm
21	Mar 2013	C.E		27.27 g pm
22	Nov 2013	C E	Metered	12 g pm min
23	Feb 3 2014			12 g pm
24	Nov 1 2015			15 g pm
25	Dec 1 2015			15 g pm
26	Jan 3 2017			5 G pm
27	Feb 3 2017			4 G pm
28	Mar 6 2017			4 G pm

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1309204-04

Name:	**Central Valley Town**	***Sample Date:***	10/2/2013 6:30 PM
Sample Site:	Mecham Spring	***Receipt Date:***	10/3/2013 12:50 PM
Comments:		***Sampler:***	Charles Evans
Sample Type:	Drinking Water	***System No.:***	UTAH21006
Source Code:	WS005 ***Sample Point:*** WS005	***Report to State:***	Y

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analysis Date/Time	Analyst Initials	Analytical Method	Flag
Inorganic								
Cyanide, Total	ND	0.2	0.002	mg/L	10/7/2013 8:55	KRW	SM 4500 CN-E	
Fluoride	0.3	4	0.1	mg/L	10/3/2013 12:00	TSM	EPA 300.0	
Nitrate as N	2.9	10	0.1	mg/L	10/3/2013 12:00	TSM	EPA 300.0	
Sulfate	55	250	1	mg/L	10/3/2013 12:00	TSM	EPA 300.0	
Total Dissolved Solids (TDS)	376	1000	20	mg/L	10/7/2013 5:30	RMC	SM 2540 C	
Turbidity	0.02	5	0.02	NTU	10/3/2013 13:57	RMC	EPA 180.1	
Metals								
Antimony, Total	ND	0.006	0.0005	mg/L	10/9/2013 21:22	KSL	EPA 200.8	
Arsenic, Total	0.0032	0.01	0.0005	mg/L	10/15/2013 11:35	KSL	EPA 200.8	
Barium, Total	0.046	2	0.005	mg/L	10/16/2013 22:49	TS	EPA 200.7	
Beryllium, Total	ND	0.004	0.001	mg/L	10/16/2013 22:49	TS	EPA 200.7	
Cadmium, Total	ND	0.005	0.0002	mg/L	10/9/2013 21:22	KSL	EPA 200.8	
Chromium, Total	ND	0.1	0.005	mg/L	10/16/2013 22:49	TS	EPA 200.7	
Mercury, Total	ND	0.002	0.0002	mg/L	10/9/2013 21:22	KSL	EPA 200.8	
Nickel, Total	ND	0.1	0.005	mg/L	10/16/2013 22:49	TS	EPA 200.7	
Selenium, Total	0.0025	0.05	0.0005	mg/L	10/9/2013 21:22	KSL	EPA 200.8	
Sodium, Total	23.8		0.5	mg/L	10/16/2013 22:49	TS	EPA 200.7	
Thallium, Total	ND	0.002	0.0002	mg/L	10/9/2013 21:22	KSL	EPA 200.8	
Radiochemistry								
Gross Alpha	4.2	15		pCi/L	10/31/2013 10:10	ACZ	EPA 900.0	SL-17
Gross Alpha LLD	1.7			pCi/L	10/31/2013 10:10	ACZ	EPA 900.0	SL-17
Gross Alpha Variance	2.5			pCi/L	10/31/2013 10:10	ACZ	EPA 900.0	SL-17
Gross Beta	7.0			pCi/L	10/31/2013 10:10	ACZ	EPA 900.0	SL-17
Gross Beta LLD	3.2			pCi/L	10/31/2013 10:10	ACZ	EPA 900.0	SL-17
Gross Beta Variance	2.5			pCi/L	10/31/2013 10:10	ACZ	EPA 900.0	SL-17
Radium-228	0.44			pCi/L	11/5/2013 14:59	ACZ	EPA 904.0	SL-17
Radium-228 LLD	0.99			pCi/L	11/5/2013 14:59	ACZ	EPA 904.0	SL-17
Radium-228 Variance	0.38			pCi/L	11/5/2013 14:59	ACZ	EPA 904.0	SL-17

9632 South 500 West
Sandy, UT 84070
801-262-7299 Office

CHEMTECH-FORD
LABORATORIES

Certificate of Analysis

Lab Sample No.: 1680753-01

Name:	Central Valley Town	**Sample Date:**	9/14/2016 9:00 AM
Sample Site:	WS005	**Receipt Date:**	9/15/2016 12:30 PM
Comments:		**Sampler:**	Charles Evans
Sample Matrix:	Drinking Water	**Project:**	
PO Number:		**System No.:**	UTAH21006
Source Code:	WS005	**Sample Point:** WS005	**Report to State:** y

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Metals								
Uranium, Total	0.0195	0.03	0.0005	mg/L	EPA 200.8	09/21/2016 11:04	09/21/2016 18:28	
Radiochemistry								
Gross Alpha	17.0	15		pCi/L	EPA 900.0	09/28/2016 00:04	09/28/2016 00:04	SL-17
Gross Alpha LLD	2.1			pCi/L	EPA 900.0	09/28/2016 00:04	09/28/2016 00:04	SL-17
Gross Alpha Variance	4.1			pCi/L	EPA 900.0	09/28/2016 00:04	09/28/2016 00:04	SL-17
Gross Beta	5.0			pCi/L	EPA 900.0	09/28/2016 00:04	09/28/2016 00:04	SL-17
Gross Beta LLD	2.2			pCi/L	EPA 900.0	09/28/2016 00:04	09/28/2016 00:04	SL-17
Gross Beta Variance	2.3			pCi/L	EPA 900.0	09/28/2016 00:04	09/28/2016 00:04	SL-17
Radium-226	0.15	5		pCi/L	EPA 903.1	10/12/2016 00:25	10/12/2016 00:25	SL-17
Radium-226 LLD	0.09			pCi/L	EPA 903.1	10/12/2016 00:25	10/12/2016 00:25	SL-17
Radium-226 Variance	0.09			pCi/L	EPA 903.1	10/12/2016 00:25	10/12/2016 00:25	SL-17
Radium-228	0.21			pCi/L	EPA 904.0	10/31/2016 17:00	10/31/2016 17:00	SL-17
Radium-228 LLD	0.28			pCi/L	EPA 904.0	10/31/2016 17:00	10/31/2016 17:00	SL-17
Radium-228 Variance	0.28			pCi/L	EPA 904.0	10/31/2016 17:00	10/31/2016 17:00	SL-17

Calc for Gross Alpha Adjustment

Uranium = 0.0195 mg/L

$\frac{pCi/L}{0.67} = \frac{mg}{L}$

$(0.0195\ mg/L)\left(\frac{1000\ \mu g}{1\ mg}\right) 0.67 = 13.065\ pCi/L$

Adjusted Gross Alpha = $17 - 13.065 = 3.935\ pCi/L < 15\ pCi/L$

CHEMTECH-FORD
LABORATORIES

Lab Sample No.: 16J0525-01

Name: Central Valley Town
Sample Site: WS003
Comments:
Sample Matrix: Drinking Water
PO Number:
Source Code: WS005 **Sample Point:** WS005

Sample Date: 10/11/2016 11:00 AM
Receipt Date: 10/12/2016 11:30 AM
Sampler: Charles Evans
Project:
System No.: UTAH21006
Report to State: Y

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Radiochemistry								
oss Alpha	15.0	15		pCi/L	EPA 900.0	11/01/2016 00:15	11/01/2016 00:15	SL-17
oss Alpha LLD	3.9			pCi/L	EPA 900.0	11/01/2016 00:15	11/01/2016 00:15	SL-17
oss Alpha Variance	2.0			pCi/L	EPA 900.0	11/01/2016 00:15	11/01/2016 00:15	SL-17
oss Beta	5.3			pCi/L	EPA 900.0	11/01/2016 00:15	11/01/2016 00:15	SL-17
oss Beta LLD	2.2			pCi/L	EPA 900.0	11/01/2016 00:15	11/01/2016 00:15	SL-17
oss Beta Variance	2.4			pCi/L	EPA 900.0	11/01/2016 00:15	11/01/2016 00:15	SL-17
idium-226	0.09	5		pCi/L	EPA 903.1	11/18/2016 00:28	11/18/2016 00:28	SL-17
idium-226 LLD	0.09			pCi/L	EPA 903.1	11/18/2016 00:28	11/18/2016 00:28	SL-17
idium-226 Variance	0.11			pCi/L	EPA 903.1	11/18/2016 00:28	11/18/2016 00:28	SL-17
idium-228	0.22			pCi/L	EPA 904.0	12/05/2016 10:19	12/05/2016 10:19	SL-17
idium-228 LLD	0.27			pCi/L	EPA 904.0	12/05/2016 10:19	12/05/2016 10:19	SL-17
idium-228 Variance	0.26			pCi/L	EPA 904.0	12/05/2016 10:19	12/05/2016 10:19	SL-17

Certificate of Analysis

MTECH-FORD
LABORATORIES

Lab Sample No.: 17A0372-01

Name: Central Valley Town
Sample Site: WS005
Comments:
Sample Matrix: Drinking Water
PO Number:
Source Code: WS005
Sample Point: WS005

Sample Date: 1/11/2017 10:30 AM
Receipt Date: 1/12/2017 2:40 PM
Sampler: Charles Evans
Project:
System No.: UTAH21006
Report to State: Y

Parameter	Sample Result	EPA Max Contaminant Level (MCL)	Minimum Reporting Limit	Units	Analytical Method	Preparation Date/Time	Analysis Date/Time	Flag
Metals								
Uranium, Total	0.0193	0.03	0.0005	mg/L	EPA 200.8	01/17/2017 10:23	01/18/2017 10:45	
Radiochemistry								
Gross Alpha	16.0	15		pCi/L	EPA 900.0	01/24/2017 00:18	01/24/2017 00:18	SL-17
Gross Alpha LLD	1.9			pCi/L	EPA 900.0	01/24/2017 00:18	01/24/2017 00:18	SL-17
Gross Alpha Variance	4.0			pCi/L	EPA 900.0	01/24/2017 00:18	01/24/2017 00:18	SL-17
Gross Beta	4.4			pCi/L	EPA 900.0	01/24/2017 00:18	01/24/2017 00:18	SL-17
Gross Beta LLD	2.4			pCi/L	EPA 900.0	01/24/2017 00:18	01/24/2017 00:18	SL-17
Gross Beta Variance	2.5			pCi/L	EPA 900.0	01/24/2017 00:18	01/24/2017 00:18	SL-17

* Calc for Gross Alpha Adjustment

Uranium = 0.0193 mg/L

$(0.0193\ mg/L)\left(\frac{1000\ ug}{1\ mg}\right)(0.67) = 12.931\ pCi/L$

Adjusted Gross Alpha = $16 - 12.931 = 3.069\ pCi/L < 15\ pCi/L$

$\frac{\frac{pCi}{L}}{0.67} = \frac{ug}{L}$

APPENDIX H. WATER SYSTEM SURVEYS

DEQ | Drinking Water

Public Water System Inventory Report

Central Valley Town | PWS ID: UTAH21006 | Rating: Approved | 09/02/2008

Status: Active

Contacts

Type: Administrative Contact
Name: CHARLES H EVANS
Office: 435-893-9178
Emergency: 435-896-6770
Email: CVTOWN1@GMAIL.COM

Site Information

Address: 50 WEST CENTER STREET , CENTRAL VALLEY, UT 84754
Phone: 435-201-2399
County: SEVIER COUNTY
System Type: Community
Population: 532

Site Updates

Last Inventory Update: 02/21/2017
Last Surveyor Update: 10/17/2016
Surveyor: NATHAN SELIN
Operating Period: 1/1 - 12/31
Last IPS Update: 10/12/2017 07:00:00

Consumptive Use Zone

Irrigation Zone: 3
Date: 02/15/2013

SERVICE CONNECTIONS

Type	Meter Type	Meter Size	Number of Connections
Residential	Unknown	0	215
Commercial	Unknown	0	5
Agicultural	Unknown	0	4

Total Service Connections: 224

TREATMENT PLANTS

ID	Plant Name	Bin	Status	Date	Design Cap	Status	Treatment Purpose

Total Treatment Plants: 0

STORAGE

ID	Name	Type	Effective Volume	Material	Status	Status Reason
ST003	UPPER TANK - ABOVE SPRING	Ground	175,000 GAL	Concrete	Active	
ST001	LOWER RESERVOIR	Ground	75,000 GAL	Concrete	Active	
ST002	UPPER TANK - BELOW SPRING	Ground	250,000 GAL	Concrete	Active	
ST004	SOUTH UPPER TANK ABOVE SPRING	Ground	300,000 GAL	Concrete	Active	Op Issued - Check

Total Effective Volume: 800,000

PUMPING STATIONS

ID	Station Name	Status	Reason	Capacity	Availability

Total Capacity: 0

SOURCES

ID	Source Name	OP Date	Status	Reason	Source Type	Water Type	Period of Op
WS001	DOWNTOWN		Active		Well	Groundwater	1/1 - 12/31

Flow	Flow Rate	UOM
PUMP	332	GPM
SYLD	197	GPM

ID	Source Name	OP Date	Status	Reason	Source Type	Water Type	Period of Op
WS002	NORTH SPRING		Active		Spring	Groundwater	1/1 - 12/31

Flow	Flow Rate	UOM

ID	Source Name	OP Date	Status	Reason	Source Type	Water Type	Period of Op
WS003	SOUTH SPRING		Active		Spring	Groundwater	1/1 - 12/31

Flow	Flow Rate	UOM

ID	Source Name	OP Date	Status	Reason	Source Type	Water Type	Period of Op
WS004	MECHAM WELL		Active		Well	Groundwater	1/1 - 12/31

Flow	Flow Rate	UOM
PUMP	722	GPM

ID	Source Name	OP Date	Status	Reason	Source Type	Water Type	Period of Op
WS005	MECHAM SPRING		Active		Spring	Groundwater	1/1 - 12/31

Flow	Flow Rate	UOM

Total Sources: 5

GROUPED SOURCE SAMPLING STATIONS

Sample Group ID	Sample Group	Facility Details
8250	UTAH SAMPLING STATION SS250	Hide Details

Source ID	Source Name	Sample Group Details	System
WS002	NORTH SPRING		UTAH21006 CENTRAL VALLEY TOWN
WS003	SOUTH SPRING		UTAH21006 CENTRAL VALLEY TOWN

DISTRIBUTION SYSTEM

ID	System Name
DS001	UTAH21006 DISTRIBUTION SYSTEM

Total Distribution Systems: 1

SITE VISIT HISTORY

Date Visited	Survey Type	Surveyor	Notified Date	Next Inspection
06/18/2002	Sanitary Survey, Finished	SURVEYOR, DDW		
08/29/2006	Sanitary Survey, Finished	MOSS, MICHAEL SCOTT	11/06/2006	09/30/2013
07/21/2010	Sanitary Survey, Finished	CHARTIER, JOHN L	07/29/2010	09/30/2013
10/24/2013	Sanitary Survey, Finished	HOLDAWAY, BRAD K	11/18/2013	
10/17/2016	Sanitary Survey, Finished	SELIN, NATHAN	10/17/2016	

Water Use Input - Central Valley Town - 2016

Print

Contact Name :	[Kim Peterson]
Phone Number :	[(435) 201-2399]
E-mail Address :	[a_henningson@msn.com]
New E-mail Address :	[ ]

To the best of my knowledge all information is accurate and complete:

Authorized Person :	[Charles Evans]
Registration/Certification :	[Water Manager]
Registration/Certification Number:	[ ]
Total Population Served :	[554]

Retail Culinary Water Use Breakdown for 2016

Section filled out by :	[Allen V. Henningson]
Phone Number :	[(435) 979-0253]
Method of Measurement :	[meter]
Units of Measure :	[gallons]
Residential Quantity Delivered :	[52717520]
Residential Connections :	[220]
Commercial Quantity Delivered :	[0]
Commercial Connections :	[0]
Industrial Quantity Delivered :	[3003080]
Industrial Connections :	[4]
Institutional Quantity Delivered :	[10121267]
Institutional Connections :	[5]
Total quantity of water delivered for all purposes :	[65841867]
Total number of all connections :	[229]
Is there unmetered culinary institutional water use (churches, city-owned property including city office, parks, cemeteries, etc.)?	[N]
If YES, please provide an estimate of the total unmetered institutional acreage that is irrigated :	[ ] (Acres)
Would you like to have the DWRe prepare a preliminary AWWA water system audit on the data submitted? :	[N]

Untreated or Secondary Water Use Breakdown

Do you provide separate secondary untreated water to your culinary customers? :	[N]
Do other secondary districts and/or irrigation companies provide secondary untreated water within the boundaries of your culinary water service area? :	[N]
What percentage (%) of your culinary customers utilize a separate PRESSURIZED irrigation system for their landscapes? :	[0]

Please list them here (Name of Company, Contact Person and Phone Number) :
[ ]

What percentage (%) of your culinary customers utilize a separate DITCH irrigation system for their landscapes? :	[0]

Please list them here (Name of Company, Contact Person and Phone Number) :
[ ]

Source Inventory

Water supply conditions were :
[Adequate]

Central Spring North

Location : Sec 25 T24S R3W SL

WR Number(s) : 63-4635, 63-4636, 63-4637, 63-2923, 63-10, 63-233, 63-459, 63-694, 63-978, 63-1071, 63-1626

Method of Measurement :	[meter]
Units of Measurement :	[gallons]

NOTE : You must enter monthly amounts. Please estimate monthly amounts when only an annual amount is know. The annual amount will be calculated from the monthly amounts.

Jan	Feb	Mar	Apr
[92583]	[111333]	[134417]	[90250]
May	**Jun**	**Jul**	**Aug**
[48333]	[201417]	[1000]	[137917]

Sep	Oct	Nov	Dec
[46833]	[108333]	[833]	[61667]

Annual Total
[1034916]

Comments
[Charles Evans 435-979-5597]

Central Spring South

Location : Sec 25 T24S R3W SL

WR Number(s) : 63-10, 63-233, 63-459, 63-694, 63-978, 63-1071, 63-1626, 63-4635, 63-4637, 63-4636, 63-2923

Method of Measurement : [meter]

Units of Measurement : [gallons]

NOTE : You must enter monthly amounts. Please estimate monthly amounts when only an annual amount is know. The annual amount will be calculated from the monthly amounts.

Jan	Feb	Mar	Apr
[18517]	[22267]	[26883]	[18050]
May	Jun	Jul	Aug
[9667]	[40283]	[200]	[27583]
Sep	Oct	Nov	Dec
[9367]	[21667]	[167]	[12333]

Annual Total
[206984]

Comments
[Charles Evans 435-979-5597]

Down Town Well

Location : Sec 23 T24S R3W SL

WR Number(s) : 63-10, 63-233, 63-459, 63-694, 63-978, 63-1071, 63-1626, 63-4636, 63-4637, 63-2923, 63-4635

Method of Measurement : [meter]

Units of Measurement : [gallons]

NOTE : You must enter monthly amounts. Please estimate monthly amounts when only an annual amount is know. The annual amount will be calculated from the monthly amounts.

Jan	Feb	Mar	Apr
[664800]	[685100]	[1008000]	[644500]
May	Jun	Jul	Aug
[1366400]	[3298200]	[3920700]	[4620900]
Sep	Oct	Nov	Dec
[2676000]	[3202400]	[2470700]	[742700]

Annual Total
[25300400]

Comments
[Charles Evans 435-979-5597]

Thompson Spring

Location : Sec 24 T24S R3W SL

WR Number(s) : 63-4636, 63-4635, 63-2923, 63-4637, 63-10, 63-233, 63-459, 63-694, 63-978, 63-1071, 63-1626

Are There Spills/Overflow : [y]

Are spills/overflow included in these measurements : [y]

Method of Measurement : [meter]

Units of Measurement : [gallons]

NOTE : You must enter monthly amounts. Please estimate monthly amounts when only an annual amount is know. The annual amount will be calculated from the monthly amounts.

Jan	Feb	Mar	Apr
[479751]	[346314]	[526919]	[516702]
May	**Jun**	**Jul**	**Aug**
[421245]	[698198]	[266698]	[725934]
Sep	**Oct**	**Nov**	**Dec**
[484443]	[474119]	[632740]	[424805]

Annual Total
[5997868]

Comments
[Charles Evans 435-979-5597]

Thompson Spring Well

Location : Sec 24 T24S R3W SL

WR Number(s) : 63-10, 63-233, 63-459, 63-694, 63-978, 63-1071, 63-1626, 63-4636, 63-2923, 63-4635, 63-4637

Method of Measurement : [meter]

Units of Measurement : [gallons]

NOTE : You must enter monthly amounts. Please estimate monthly amounts when only an annual amount is know. The annual amount will be calculated from the monthly amounts.

Jan	Feb	Mar	Apr
[1186500]	[867000]	[1815800]	[3804600]
May	**Jun**	**Jul**	**Aug**
[4511800]	[10993100]	[4712700]	[6413900]
Sep	**Oct**	**Nov**	**Dec**
[1965400]	[265700]	[271100]	[992500]

Annual Total
[37800100]

Comments
[Charles Evans 435-979-5597]

Wholesale Delivery

APPENDIX I. SHORT LIVED ASSETS

Short Lived Asset Infrastructure and Expected Replacement Schedule and Costs

Item	Unit Cost	Number of Replacements				Average Yearly Cost	Total Cost @ 20 Years
		0 - 5 Years	5 - 10 Years	10 - 15 Years	15 - 20 Years		
Source Related							
Pumps	$ 35,000			1		$ 1,750	$ 35,000
Pump Controls	$ 20,000			1		$ 1,000	$ 20,000
Pump Motors	$ 40,000			1		$ 2,000	$ 40,000
Telemetry	$ 2,000				1	$ 100	$ 2,000
Intake/Well Screens	$ 1,500		1		1	$ 150	$ 3,000
Water Level Sensors	$ 1,500		1		1	$ 150	$ 3,000
Treatment Related							
Chemical Feed Pumps	$ 800		1		1	$ 80	$ 1,600
Altitude Valves						$ -	$ -
Valve Actuators	$ 1,000		1		1	$ 100	$ 2,000
Field & Process Instrumentation Equipment	$ 1,000		1		1	$ 100	$ 2,000
Granular Filter Media						$ -	$ -
Air Compressors & Control Units						$ -	$ -
Pumps						$ -	$ -
Pump Motors						$ -	$ -
Pump Controls						$ -	$ -
Water Level Sensors						$ -	$ -
Pressure Transducers						$ -	$ -
Sludge Collection & Dewatering						$ -	$ -
UV Lamps						$ -	$ -
Membranes						$ -	$ -
Back-up Power Generators						$ -	$ -
Chemical Leak Detection Equipment	$ 1,000		1		1	$ 100	$ 2,000
Flow Meters	$ 850		1		1	$ 85	$ 1,700
SCADA Systems	$ 1,000				1	$ 50	$ 1,000
Distribution System Related							
Residential & Small Commercial Meters	$ 200	100	10	10	10	$ 1,300	$ 26,000
Meter Boxes	$ 150	10	10	10	10	$ 300	$ 6,000
Hydrants & Blowoffs	$ 1,800	5	5	5	5	$ 1,800	$ 36,000
Pressure Reducing Valves	$ 4,500		1		1	$ 450	$ 9,000
Cross-Connection Control Devices	$ 250	4	4	4	4	$ 200	$ 4,000
Altitude Valves	$ 4,500		1		1	$ 450	$ 9,000
Alarms & Telemetry	$ 1,000		2		2	$ 200	$ 4,000
Vaults, Lids, and Access Hatches	$ 2,500		1		1	$ 250	$ 5,000
Security Devices and Fencing	$ 4,000		1		1	$ 400	$ 8,000
Storage Reservoir Painting/Patching	$ 2,500		1		1	$ 250	$ 5,000
					Total:	**$ 11,265**	**$ 225,300**