



Environmental Assessment

United States
Department of
the Interior

U.S. Forest
Service

Bicknell Town Water Improvement Project

Bureau of Land
Management



**Bicknell, Utah
Fremont River Ranger District
Fishlake National Forest**



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ABBREVIATIONS AND ACRONYMS

BLM	Bureau of Land Management
BMPs	Best Management Practices
CFR	Code of Federal Regulations
dB	decibel scale
DOI	Department of the Interior
EA	Environmental Assessment
EDRR	Early Detection Rapid Response
EIS	Environmental Impact Statement
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
FONSI	Finding of no significant impact
gpm	gallons per minute
HDPE	high density polyethylene
KOP	Key Observation Point
NEPA	National Environmental Policy Act
NRCS	Natural Resources Conservation Service
OSHA	Occupational Safety and Health Administration
RDCC	Resource Development Coordinating Committee
ROD	Record of Decision
ROW	Right-of-way
SRF	State Revolving Fund
SHPO	State Historic Preservation Office
Sunrise	Sunrise Engineering, Inc.
UDWR	Utah Division of Wildlife Resources
USACE	U.S. Army Corps of Engineers
USDA	U.S. Department of Agriculture
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USU	Utah State University

SUMMARY

Bicknell Town has submitted a request for a special use permit amendment to the U.S. Forest Service (USFS)-Fremont River Ranger District for authorization to develop a new spring and redevelop five existing springs in the Fishlake National Forest and also submitted an application for a Right-of-Way (ROW) amendment to the U.S. Department of the Interior (USDI) Bureau of Land Management (BLM)-Richfield Field Office for authorization to construct a 250,000-gallon water storage tank and a chlorination building adjacent to an existing 350,000-gallon water storage tank on BLM-administered public lands. Also, an underground power line would be installed to provide power to the new chlorination building. Additionally, Bicknell Town plans to replace some sections of small diameter distribution pipeline and install valves and hydrants to meet fire suppression needs within the limits of the incorporated Bicknell Town. The Town also plans to replace the existing metering system to better manage its water resources. The project would be partially funded by the Utah Drinking Water Board from the Federal State Revolving Fund (SRF) Loan.

This Environmental Assessment (EA) analyzes the potential effects of the proposed project. The USFS-Fremont River Ranger District is the lead agency and the BLM-Richfield Field Office is a participating agency. This EA assists the USFS-Fremont River Ranger District, the BLM-Richfield Field Office and funding agencies in project planning and ensuring compliance with the National Environmental Policy Act (NEPA).

The analysis evaluates the following alternatives in detail:

- Alternative 1 (No Action): This alternative would not provide for construction of the proposed water system improvement project. There would be no environmental effects associated with construction or operation of the new facilities. However, the advantages of the proposed new water system could not be realized. The water supply in the area would remain as it is currently constructed. Bicknell Town would continue to operate its current water supply system short of meeting demands for the present and projected fire suppression, and indoor and outdoor uses. This alternative is not acceptable.
- Alternative 2 (Proposed Action): A new spring would be developed and five existing springs would be re-developed on forest land. A new water storage tank and a chlorination building would be constructed, and an underground power line would be installed to provide power to the chlorination building on BLM-administered public land. Some smaller diameter distribution pipelines would be replaced, and valves and hydrants would be installed within the limits of the incorporated Bicknell Town.

Based on the analysis of the alternatives, USFS and BLM will decide whether, under terms and conditions, to authorize the construction of proposed project components on public lands, and the funding agencies will decide whether to release funds for the construction of the proposed project.

The proposed project may have minor adverse impacts on land use, vegetation, wildlife resources, special status species, water quality, air quality, noise, transportation, soils and visual resources. These impacts are summarized in subsequent sections and are more fully discussed in Chapter 3: Affected Environment and Environmental Consequences.

1.0 PURPOSE AND NEED

1.1 Introduction

This EA has been prepared to analyze the effects on the human environment of the water system improvement project proposed by Bicknell Town, the Proponent of the proposed action. The Proponent has proposed to redevelop five existing springs to improve their production and develop a new spring to obtain additional water on the Fishlake National Forest administered by the USFS-Fremont River Ranger District. The Proponent has also proposed to construct a new 250,000-gallon water storage tank and a new chlorination building to replace the existing one, and install a buried electric line to provide power to the new chlorination building adjacent to an existing 350,000-gallon water storage tank on public lands administered by the BLM-Richfield Field Office. Additionally, the Proponent has proposed to replace approximately 2,000 feet of existing distribution lines and the existing metering system within the boundaries of the incorporated Bicknell Town. Approximately 20 valves and 9 hydrants would also be installed in the same area within the town. The proposed project would be partially funded by the Utah Drinking Water Board from the Federal SRF Loan.

The USFS-Fremont River Ranger District is the lead agency for this EA and the BLM-Richfield Field Office is a participating agency. This EA also meets requirements of funding agencies.

The EA assists the USFS-Fremont River Ranger District, BLM-Richfield Field Office and funding agencies in project planning and ensuring compliance with NEPA, and in making a determination as to whether any “significant” impacts could result from the analyzed actions. “Significance” is defined by the NEPA and is found in regulation 40 CFR 1508.27. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of “Finding of No Significant Impact” (FONSI).

1.2 Background

Bicknell is a town located between the Dixie National Forest and the Fishlake National Forest in Rabbit Valley, south central Utah. The Town of Bicknell owns and operates a public culinary water system that serves residents in Bicknell, Utah. The water sources for the system are six springs. Five of the springs are located on Thousand Lake Mountain, and the other (the Brinkerhoff Spring) is located approximately 1.5 miles southwest of the town and originates from the Awapa Plateau. The water quality of the Brinkerhoff Spring cannot always meet the drinking water standard set forth by the Utah Division of Drinking Water. As a result, the Brinkerhoff Spring is used primarily as a backup to the culinary system. The production of the five existing springs on Thousand Lake Mountain has decreased from a maximum of 150 gallons per minute (gpm) in the past to a maximum of 80 gpm at the present time. Sunrise Engineering (2012) completed a 5-point analysis of Bicknell Town’s water system based on a projected annual population growth rate of 1% over the next 20 years. The analysis indicates the following:

- The system does not have adequate water sources to meet the current need for indoor, outdoor and fire suppression water uses.

- The system will not have adequate storage capacity as well as water sources to meet future indoor, outdoor and fire suppression water needs.
- The existing water system does not have the capacity to continuously disinfect the mountain spring water. The existing metering building needs to be replaced with a new chlorination building.
- Within the boundaries of the incorporated Bicknell Town, some distribution lines are too small, and additional valves and hydrants are needed to meet normal water supply and fire suppression requirements.

1.3 Purpose of and Need for Action

The purpose of the proposed project is to upgrade the water supply system owned and operated by Bicknell Town to meet present and projected indoor, outdoor and fire suppression needs.

Presently, Bicknell Town owns water rights of 794 acre-feet/year (or 492.25 gpm). The current and projected needs are 159 and 182 acre-feet/year, respectively. Therefore, Bicknell Town has enough water rights for additional water source development.

Presently, the town has a minimum combined source capacity of 175 gpm. The majority of the capacity (150 gpm) is produced from the Brinkerhoff Spring. As stated earlier, Bicknell Town would like to use this spring as a backup water source due to the quality and taste of the spring water. The current and projected source capacity needs are 240 and 335 gpm, respectively, in accordance with relevant Utah Drinking Water Supply System Regulations. The system is now 65 to 160 gpm short of meeting current and projected water source demands. The purpose of development of a new spring and redevelopment of the existing springs is to increase production of Bicknell Town's main water sources to cover more of its source demands.

The current water storage capacity is 320,000 gallons. The current and projected storage capacity needs are approximately 357,000 and 430,000 gallons, respectively. The purpose of constructing the new storage tank is to increase the storage capacity to meet projected storage capacity requirements.

The purpose of replacing the chlorination building is to provide Bicknell Town with the ability to disinfect its water sources.

The purpose of replacing some 4-inch diameter distribution pipelines with 6- and 8-inch diameter PVC lines, replacing the existing metering system, and installing additional water meters, valves and hydrants is to meet water supply and fire suppression requirements.

The proposed project is needed to provide Bicknell Town residents and visitors with an adequate and safe culinary water system for the present and the future.

1.4 Proposed Action

The proposed action would consist of the following three components:

Water Storage Tank and Chlorination Building: A new 250,000-gallon water storage tank would be constructed adjacent to an existing 350,000-gallon water storage tank on public lands administered by the BLM-Richfield Field Office. The tank would be constructed of reinforced concrete. The existing metering building that sits near the existing water storage tank would be replaced with a new building that would include chlorination equipment. After the new tank and the new chlorination building are installed and connected to the water supply system, the existing metering building would be disconnected from the supply system and demolished. The existing access road would continue to be used for the site access road to the new and existing tank site. This access road may need to be extended a short distance to reach the new tank site. Short pipelines would also be installed to connect the proposed new and existing tanks and the new chlorination building at the tank site. A buried electric line would be installed along the existing water pipeline ROW on BLM land and existing road ROW within Bicknell Town between 350 North 300 East and the proposed chlorination building. The power line would provide power to the new chlorination facility.

Spring Development and Redevelopment: The five existing springs on the Thousand Lake Mountain would be redeveloped to improve their production and a new spring would be developed to obtain additional water on the Fishlake National Forest administered by the USFS-Fremont River Ranger District. Approximately 1,300 feet of 4-inch diameter PVC pipeline would also be installed to connect the new spring to the existing pipeline which transmits water from the existing springs to the existing water storage tank. Development of the new spring and re-development of the existing springs would be accomplished using backhoes for excavation and dump trucks for materials.

Replacement of Distribution Line and Metering System and Installation of Additional Valves and Hydrants: Approximately 2,000 lineal feet of 4-inch diameter distribution lines would be replaced with 8-inch diameter PVC pipes and the existing metering system would be replaced with a new system within the boundaries of the incorporated Bicknell Town. Twenty additional valves and 9 hydrants would also be installed in the same area. All work within the Bicknell Town boundaries would be on existing road ROW.

1.5 Decisions to Be Made

As a result of this EA, the following decisions will be made:

- The USFS-Fremont River Ranger District, the Lead Agency for this EA, working together with the BLM-Richfield Field Office, a participating agency, will determine whether to prepare an EIS or a FONSI statement to approve the project.
- The funding agencies (Utah Drinking Water Board and potentially USDA Rural Development) will decide whether to release funds for the project.

1.6 Public Involvement

The proposed project was presented to the Bicknell Town Council, the USFS-Fremont River Ranger District and the BLM-Richfield Field Office. Under the guidance of the USFS-Fremont River Ranger District, the proposed project was then provided to the public for comment during an extended scoping period between March 20 and July 27, 2012. Scoping letters were sent to interested individuals, and federal and state agencies according to a mailing list provided by the USFS-Fremont River Ranger District.

The proposed project was also advertised in The Wayne and Garfield County Insider and on the Utahlegals.com website on May 24, 2012. An Affidavit of Publication is attached in **Attachment A**.

The BLM-Richfield Field Office resource professionals also screened the proposed actions, completed an interdisciplinary team analysis record checklist (**Attachment B**) and provided recommendations regarding project design features that could avoid and minimize environmental effects on public lands. The BLM-Richfield Field Office posted the proposed project on BLM's Environmental Notification Bulletin Board (ENBB), a website, on June 28, 2012 and assigned a log number of DOI-BLM-UT-C0120-2012-028-EA.

The proposed project was posted on the Utah Governor's Office of Planning & Budget's Resource Development Coordinating Committee (RDCC) website for state agencies' comments on the proposed project during the scoping period. RDCC is a clearinghouse for information on activities affecting state and public lands throughout Utah. RDCC includes representatives from the state agencies that are generally involved or impacted by public lands management. RDCC coordinates the review of technical and policy actions that may affect the physical resources of the state and facilitates the exchange of information on those actions among federal, state and local government agencies. No comment was received from any state agencies after the comment period expired, as stated in an email from Ms. Judy Edwards, Senior Policy Analyst and Director of RDCC. The email is provided as **Attachment C**.

A letter dated April 9, 2012 was received from Mr. Mike Domeier, State Soil Scientist for the USDA Natural Resources Conservation Service (NRCS). Mr. Domeier indicates that the proposed project would not impact important farmland resources in Utah and none of the soil map units would be affected, including statewide, prime and unique. Mr. Domeier also indicates that the *Soil Survey of Loa-Marysvale Area, Utah* does not indicate the presence of any hydric soils in the project area. The NRCS letter is provided as **Attachment D**.

A letter dated April 17, 2012 was received from Ms. Karen Clementsen, Project Manager of the U.S. Army Corps of Engineers (USACE)-St. George Regulatory Office. Ms. Clementsen mentioned that the project is located near Shingle Mill Creek; that every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States; and that in the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation. The USACE letter is provided as **Attachment E**.

A letter dated March 27, 2012 was received from Mr. Verl Bagley, County Agent and Professor at the Utah State University (USU) Wayne County Extension. Mr. Bagley stated that he had been involved in promoting and securing funding for three different community drinking water projects in the past five years and that he would rank the proposed Bicknell Town water project as the most necessary among 17 drinking water systems with which he is familiar. Mr. Bagley also stated that he could not identify any environmental or social consequences that should prevent the development of the proposed project. The letter from Mr. Bagley is provided as **Attachment F**.

The Ute Indian Tribe was contacted but no comments were received from the tribe when this EA was completed. Letters to the Ute Indian Tribe is provided as **Attachment G**.

On April 5, 2012, a USFS fisheries biologist sent an email to Mr. Cody Clark, USFS Environmental Coordinator, and Mr. Clark forwarded the email to Sunrise Engineering (**Attachment H**). The fisheries biologist had concerns about the boreal toad. The boreal toad is currently listed as a sensitive species by Utah and an endangered species by Colorado and New Mexico. The fisheries biologist also recommended survey requirements for this species. His concerns are addressed in Section 3 and **Attachments I and J**.

No comments were received from other interested parties when this EA was completed.

1.7 Issues

Through public scoping, discussion with USFS resource specialists and BLM's interdisciplinary team review, only a few issues (e.g., vegetation, noxious weeds, soils, wildlife resources, special status species, cultural resources, visual quality, and wetlands) were identified. However, to meet the funding agencies' NEPA requirements, additional resources/environmental elements (land use, floodplain, water quality, coastal resources, socio-economic/environmental justice, air quality, transportation and noise) were analyzed in Section 3 – Affected Environment and Environmental Consequences.

1.8 Relationship to Statutes, Regulations, or Other Plans

The proposed project is consistent with federal, state and local laws, regulations and plans to the maximum extent possible. The proposed project would be initiated and maintained as mandated by the following federal laws, statues and regulations:

- The Endangered Species Act of 1973 (P.L. 85-624; 16 U.S.C. 661, 664 1008)
- The National Environmental Policy Act of 1969 (NEPA, P.L. 91-190; 42 U.S.C. 4321)
- The Clean Air Act (as amended by P.L. 92-574; 42 U.S.C. 4901)
- Section 404, Federal Water Pollution Control Act/Clean Water Act of 1972 (P.L. 92-500; 33 U.S.C. 1344, as amended)
- Farmland Protection Act (P.L. 97-98 and 7 CFR Part 658)
- Section 201(a), Federal Land Policy and Management Act of 1976 (P.L. 94-579; 43 U.S.C.

1701 et seq.)

- Section 106, National Historic Preservation Act of 1966 (P.L. 89-665; 16 U.S.C. 407(f))
- American Indian Religious Freedom Act (920 Stat. 469; U.S.C. 1996)
- The Archaeological and Historic Preservation Act of 1974 (P.L. 86-253; as amended by P.L. 93291; 16 U.S.C. 469)
- Native American Graves Protection and Repatriation Act (P.L. 101-601)
- Executive Order 11988, Floodplain Management (43 CFR 6030)
- Executive Order 11990, Protection of Wetlands
- Executive Order 11514, Protection and Enhancement of Environmental Quality
- Executive Order 11593, Protection and Enhancement of Cultural Environment
- Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- Executive Order 13007, Indian Sacred Sites
- 40 CFR Parts 1500-1508, CEQ Implementation of NEPA
- 36 CFR Part 800, as amended, Protection of Historic Properties
- 7 CFR Part 658, as amended, Prime and Unique Farmlands
- Title R317 – Environmental Quality, Water Quality
- Utah Safe Drinking Water Act, Title 19, Chapter 4
- Title 9, Chapter 8 – Antiquities, Historic Sites, Historical Preservation Act
- BLM-Richfield Field Office Resource Management Plan
- USFS-Fremont River Ranger District Fishlake National Forest Land and Resource Management Plan

2.0 ALTERNATIVES, INCLUDING PROPOSED ACTION

This chapter focuses on the proposed action and a no action alternative. The no action alternative is considered and analyzed to provide a baseline for comparison of the effects of the proposed action. No other action alternatives were considered.

2.1 Alternatives

2.1.1 *Alternative 1: No Action*

The *Code of Federal Regulations* (CFR), at 40 CFR 1502.14, directs agencies to consider a “no action” alternative in environmental impact statements, but does not provide similar direction for EA level analysis. Analysis of a no action alternative establishes “*a benchmark, enabling decision makers to compare the magnitude of environmental effects of the action alternative*” (40 CFR 1502.14). Therefore, the EA level analysis includes a study of a no action alternative to serve as a baseline for evaluating effects related to the proposed action.

This alternative would not provide for construction of the proposed water system improvement project. There would be no environmental effects associated with construction or operation of the new facilities. However, the advantages of the proposed new water system could not be realized. The water supply in the area would remain as it is currently constructed.

If no improvements were made to the water supply system, the system would be inadequate and the users of Bicknell Town’s water system currently and in the future would not have a safe and adequate water supply system for fire suppression, and indoor and outdoor uses. This alternative is not acceptable.

2.1.2 *Alternative 2: Proposed Action*

The proposed action would be constructed and operated by Bicknell Town (Proponent). During the preliminary project design, the Proponent worked closely with the USFS-Fremont River Ranger District and the BLM-Richfield Field Office. Environmental commitments were also developed to be integral components of the proposal to avoid or minimize potential resource impacts.

A special use permit amendment request was submitted to the USFS-Fremont River Ranger District for authorization to develop a new spring and redevelop existing springs. A ROW amendment application was submitted to the BLM-Richfield Field Office for authorization to construct a new tank and a chlorination building, associated pipelines to connect the new and existing tanks and chlorination building and a buried electric line to provide power to the new chlorination facility. The proposed project locations on public lands can be described as follows:

Salt Lake Meridian(Spring Development on Forest Land)

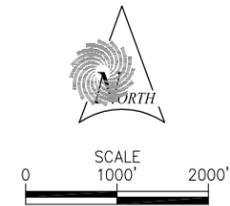
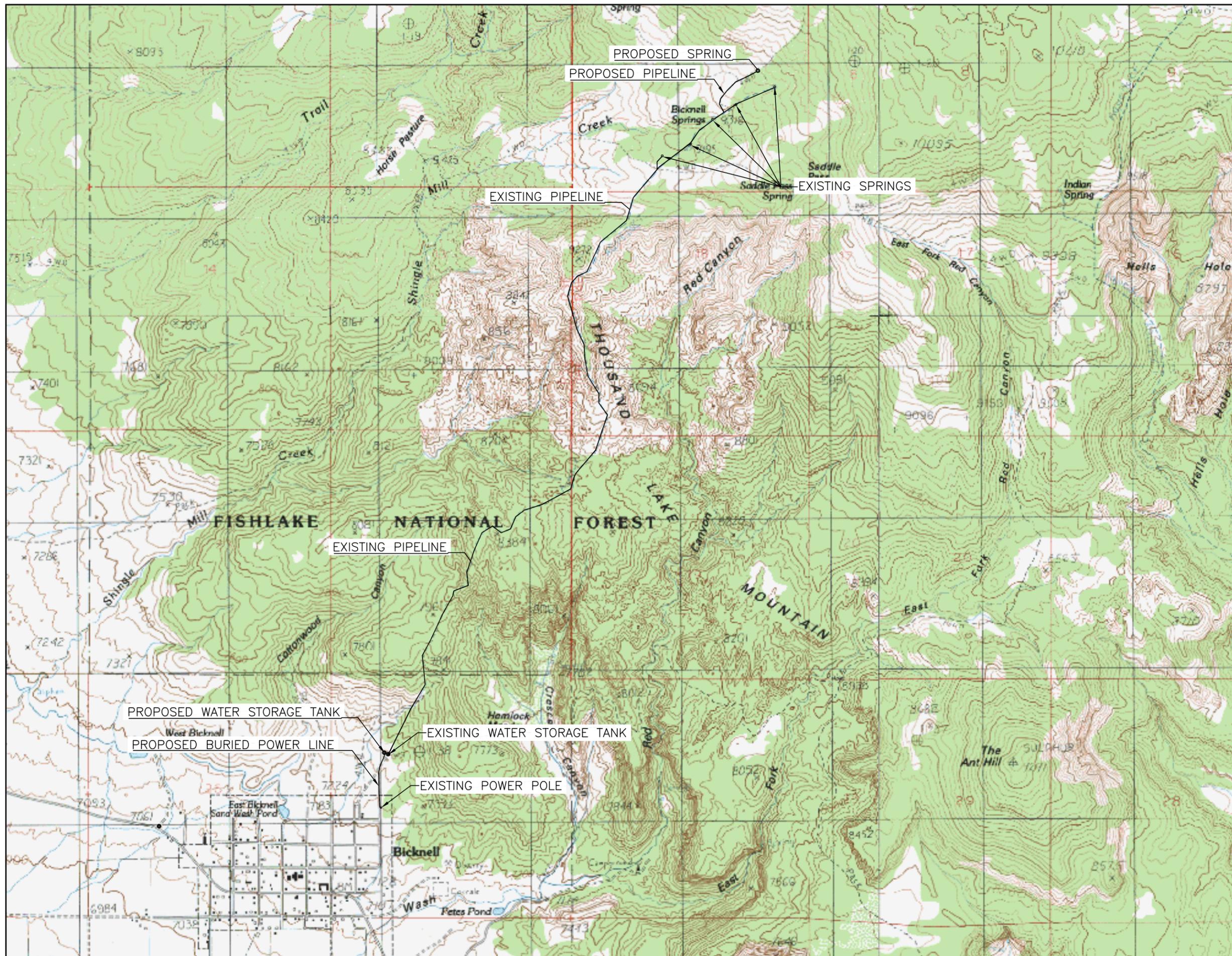
T28S, R4E, Sec. 7, N¹/₂SE¹/₄SW¹/₄, E¹/₂NW¹/₄SE¹/₄, SW¹/₄NW¹/₄SE¹/₄, NW¹/₄NE¹/₄SE¹/₄ & NW¹/₄ SW¹/₄SE¹/₄.

(Tank/Chlorination Building Construction on BLM Land)

T28S, R3E, Sec. 25, SW¹/₄NW¹/₄.

The proposed project would occur on public and private lands in Wayne County, Utah. The proposed project would include the following components:

Water Storage Tank and Chlorination Building: As shown in **Figure 1**, a new 250,000-gallon water storage tank would be constructed adjacent to an existing 350,000-gallon water storage tank on public lands administered by the BLM-Richfield Field Office. The reinforced concrete tank would be placed at an elevation of approximately 5,468 feet. The tank would have a diameter of approximately 50 feet and a height of approximately 16 feet. All but the top 1 foot of the tank would be buried using the original soil excavated for the tank construction with a 3 : 1 (horizontal : vertical) slope around the perimeter. A new building that would include chlorination equipment would be constructed north of the new tank so that it would be less visible. The new building would replace the existing metering building that sits near the existing water storage tank. After the new tank and the new chlorination building are installed and connected to the water supply system, the existing metering building would be disconnected from the supply system and demolished. Presently, the Town of Bicknell has a permit to use a 330-foot by 330-foot ROW from BLM for the existing water tank and the chlorination building. The ROW would need to be expanded to a 400-foot square to accommodate the proposed new tank, new chlorination building and construction activities. The existing access road would continue to be used for the site access road to the new and existing tank site. This access road may need to be extended a short distance to reach the new tank site. Short pipelines would also be installed to connect the proposed new and existing tanks and the new chlorination building. An approximately 1,200-foot long buried electrical line would also be installed to provide power to the chlorination facility. The nearest distribution power source available for the proposed power line is near 350 North 300 East Street where there is a power pole (see **Figure 1**). From the existing overhead pole, an underground service tap would run in a trench that would have a minimum depth of 48 inches. From this point, the power line would run along the west side of 300 East Street for approximately 300 feet through the Bicknell Town incorporated area into BLM land. The buried power line would continue on BLM land for approximately 900 feet to the proposed chlorination building at the tank site. Presently, Bicknell Town has a 20-foot wide and 700-foot long ROW for an existing water pipeline from the tank site to the boundary between Bicknell Town and BLM land. A 30-foot wide ROW would be required to excavate the trench far away enough from the existing water pipeline and to stockpile the trench excavation material while the underground cable is being placed. A warning tape would be placed one foot above the cable to provide warning for future excavation.



NOT TO SCALE



REV. NO.	COMMENT	DATE

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION
 DATE


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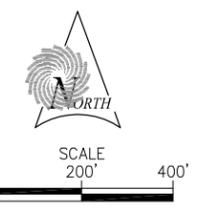
BICKNELL TOWN
WATER IMPROVEMENT PROJECT
ENVIRONMENTAL ASSESSMENT
PROJECT LOCATION MAP

REV. NO.	DESIGNED	DRAWN	CHECKED	SHEET NO.
04087	DY	DY	DSA	01 of 03

FIG. 1

Spring Development and Redevelopment: As shown in **Figures 1 and 2**, the five existing springs on the Thousand Lake Mountain would be redeveloped to improve their production and a new spring would be developed to obtain additional water on the Fishlake National Forest administered by the USFS–Fremont River Ranger District. Approximately 1,300 feet of 4-inch diameter PVC pipeline would also be installed to connect the new spring to the existing pipeline which transmits water from the existing springs to the existing water storage tank. Currently, Bicknell Town has a permit to operate and maintain culinary water facilities which include five fenced areas of land for the five existing springs, each 60 feet wide and 180 feet long, and a strip of land 12 feet wide (6 feet on each side of the centerline) and 16,400 feet long for a water transmission line. Redevelopment of the five existing springs would occur on the permitted area for the springs that had previously been disturbed for the construction of the springs, along with a 20-foot buffer around the existing fenced areas. Springs #4 and #5 would be expanded to the north and west to collect adjacent areas to the spring site. Additional area needed for Springs #4 and #5 would be approximately 0.2 acre. Development of the proposed new spring and installation of the new pipeline would require about 0.6 acre of additional forest land (an area of 60 feet wide and 180 feet long for the new spring and a strip of land 12 feet wide and 1,300 feet long for the new pipeline). Development of the new spring and redevelopment of the existing springs would not result in the removal of any trees. Materials to be used for spring development/redevelopment would include washed gravel, bentonite, 4- and 6-inch diameter PVC piping, concrete manholes, 40-mil high density polyethylene (HDPE) liner, geotextile fabric, filter fabric fence and barb wire fencing materials. Equipment would include one backhoe and one trackhoe for ground grubbing and excavation, two dump trucks to haul materials to and from the site, two flatbed trucks to transport manholes and pipes to the spring site and two personal vehicles to haul materials and personnel. The spring development/redevelopment would consist of the following:

- Pothole potential collection sites with a backhoe and then clear and grub the identified areas for excavation.
- Filter fabric fence would be placed within 20 feet of the work zone in order to provide erosion protection and to control any unnecessary excavation outside the identified collection areas.
- Excavated material would be stockpiled within the existing spring development area to be utilized in rehabilitation work.
- The collection area would be identified and 40-mil HDPE liner as well as filter fabric would be installed to protect the collection zone. The zone would be sloped in a manner to collect the spring water into perforated 4- and 6-inch diameter collection pipes.



- Legend**
- FUTURE MANHOLES
 - EXISTING MANHOLES
 - FUTURE LINE



REV. NO.	COMMENT	DATE

FOR REVIEW ONLY
 NOT FOR CONSTRUCTION
 DATE



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BICKNELL TOWN

**WATER IMPROVEMENT PROJECT
 ENVIRONMENTAL ASSESSMENT
 AERIAL PHOTOGRAPH OF SPRING SITES**

SEI NO. 04087	DESIGNED DY	DRAWN DY	CHECKED DSA	SHEET NO. 02 of 03	FIG. 2
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- Approximately 3-4 feet of ¾-inch to 2-inch drain gravel would then be placed in the collection area to provide a non-restrictive flow path to the collection pipe. The filter fabric would be wrapped around the collection zone, and the native material which was stockpiled previously would be placed over the filter fabric. The HDPE liner would be placed a few feet below the existing grade to protect the spring collection zone. Surface drains would surround the spring site to protect the spring from surface-influenced water. Fencing would be placed around the spring site to protect the spring zone from damage and contamination. All debris and excess materials would be hauled from the site to a certified location for disposal. All improvements and practices would be in accordance with the State of Utah Rules for Public Drinking Water Systems.

No access road construction is required for spring development/redevelopment. Development of the new spring would use an existing road where the transmission line would be installed. There are existing access roads to the existing springs. However, redevelopment of the existing springs may require cross country travel from one spring to another. Where necessary, disturbed areas would be re-vegetated using a seed mix approved by USFS after the spring development/redevelopment work is completed.

Replacement of Distribution Line and Metering System and Installation of Additional Valves and Hydrants: Approximately 2,000 lineal feet of 4-inch diameter distribution lines would be replaced with 6- and 8-inch diameter PVC pipes to meet fire flow requirements and the existing metering system would be replaced with a new system within the boundaries of the incorporated Bicknell Town in Sections 25, 26, 35 and 36, Township 38 South, Range 3 East, Salt Lake Meridian. Twenty additional valves and 9 hydrants would also be installed in the same area to meet fire suppression requirements. All the work would be conducted within ROW of existing roads.

Total surface disturbance required for the proposed project is summarized in **Table 2-1**.

Table 2-1 Summary of Project Disturbance

Land Status	Project	Disturbance (acre)		Remarks
	Component	Temporary	Permanent	
BLM	Tank Construction	0.9	0.3	
	Buried Power Line	0.1	~0	
USFS	Spring Development	0.8	~0	
Private	Pipeline Replacement	0.5	~0	On previously disturbed road ROW
	Buried Power Line	~0	~0	
Total		2.3	~0.3	

Construction of the tank and chlorination building, trenching for the buried power line and pipeline replacement, installation of valves and hydrants, and development of the springs could result in a total soil excavation of approximately 11,000 cubic yards. Excavated soils from trenching would be approximately 2,800 cubic yards and would be used for backfilling the trenches. Generally, there is a 10% soil loss. Excavated soil for the tank and chlorination building would be approximately 7,500

cubic yards and would be used to bury the tank. Excavated soils for spring development could be approximately 700 cubic yards and would be re-used for spring development.

After construction of the project is complete, the disturbed area would be restored to the existing contour as much as practically possible. Where necessary, re-vegetation would occur on disturbed areas.

2.2 Environmental Protection Measures for Proposed Action

The Proponent (Bicknell Town) is committed to implementation of the following environmental protection measures, including a number of best management practices (BMPs) that are intended to reduce short- and long-term impacts, as required components of the proposed action:

- A. The proposed project would be constructed in strict compliance with the Plans and Specifications approved by the Utah Division of Drinking Water.
- B. Waste materials including trash, garbage, petroleum products, etc. would be collected and sent for prompt disposal at an appropriate waste disposal site. Accidental fuel/oil spills would be cleaned up immediately, removed from the project area for disposal at an appropriate site.
- C. BMPs (e.g., silt fences) would be used to minimize soil erosion and prevent the introduction of non-native invasive weeds on public lands. The Proponent would continue to monitor, control and/or eradicate any non-native invasive weeds on public lands after the project is complete and as long as the project components on public lands are in operation.
- D. All project components would be designed and constructed in accordance with pertinent seismic codes and standards (e.g., the International Building Code).
- E. Fugitive dust and vehicle emissions would be controlled according to the Utah Department of Environmental Quality requirements for construction projects.
- F. Local ordinances would be followed as they relate to public safety and could include a notice of closure of use in the area during construction phases, barricades for open trenches, signing, etc.
- G. Implementation of the proposed project would comply with all applicable federal and state laws, and local zoning and building ordinances during all phases of project construction.
- H. Excavation activities for construction of the project, including the manner of supporting excavation and provision for access to excavations, would be in strict compliance with the current provisions for access to the excavations, as determined by regulations of the Occupational Safety and Health Administration (OSHA). The maximum amount of open trench in any location would be 500 feet or the amount necessary to accommodate the lineal feet of pipe or cable that can be installed in a single day, whichever is greater.
- I. Construction workers and inspectors would be required to wear hearing devices in accordance with OSHA regulations when necessary during the construction phase.
- J. Every effort would be made to minimize impacts on the natural landscape, native plants and animal species. All unnecessary destruction or scarring of the natural surroundings in the vicinity of the work would be prevented. Movement of crews and equipment would be limited within the areas defined in the Plans and Specifications.

- K. If paleontological resources are discovered during the construction phase, all work in the vicinity of the discovery will immediately cease, and Bicknell Town, BLM or USFS, the Utah State Historic Preservation Office (SHPO) and the Utah Division of Drinking Water notified. Work will not resume in that portion of the project area until the discovery has been professionally evaluated and a “Notice to Proceed” issued by appropriate agencies.
- L. Should previously undetected archeological sites or human remains be discovered on public lands during project activities, all work in the vicinity of the discovery would immediately cease and appropriate agencies notified. Work would not resume in that portion of the project area until the discovery has been professionally evaluated, consultations with American Indian Tribes and SHPO conducted, appropriate site treatments completed, and a “Notice to Proceed” issued by appropriate agencies.
- M. Flagmen would be provided, if required by the Utah Department of Transportation, to ensure motor vehicle safety during construction activities along public roads and highway.
- N. Construction activities in the incorporated area would be limited to normal daylight working hours and exclude weekends and holidays to minimize the effects of construction-related noise levels. Standard noise control devices would be required on all construction equipment.
- O. Disturbed areas around the tank site would be restored to the natural contour of the land and, where necessary, re-vegetated with a native seed mix approved by a BLM Authorized Officer. Topsoil would be stockpiled for the rehabilitation process.
- P. Disturbed areas around each spring development locale would be restored to the natural contour of the land and, where necessary, re-vegetated with a native seed mix approved by a USFS Authorized Officer. Topsoil would be stockpiled for the rehabilitation process.
- Q. During construction activities, any evidence of the presence of an endangered and/or threatened and/or candidate species or their critical habitat should be brought to the attention to Bicknell Town and appropriate agencies. Construction should be temporarily halted pending the notification process and further directions issued by Bicknell Town and appropriate agencies after consultation with the U.S. Fish and Wildlife Service (USFWS) and the Utah Division of Wildlife Resources (UDWR).
- R. Construction activities on USFS lands would not occur during winter months or summer months to minimize potential impacts on winter range and summer range species.

2.3 Comparison of Alternatives

This section provides a summary of the effects of implementing each alternative. Information in **Table 2-2** is focused on activities and effects where different levels of effects or outputs can be distinguished quantitatively or qualitatively between alternatives.

Table 2-2 Comparison of Alternatives

Issue	Alternative 1: No Action	Alternative 2: Proposed Action
Land Use	No effect	Temporary disturbance of 2.3 acres and permanent disturbance of 0.3 acre
Floodplain	No effect	No effect
Wetlands	No effect	No effect
Cultural Resources	No effect	No effect
Vegetation	No effect	Temporary removal of 1.7 acres of vegetation and permanent removal of 0.3 acre of vegetation
Noxious Weeds	No effect	Minor short-term effect
Wildlife Resources	No effect	Permanent loss of 0.3 acre of sparse vegetation on BLM land and short-term minor impact on wildlife resources during construction
Special Status Species	No effect	Minor short-term impact on special status species
Water Quality	Bicknell Town would not have adequate good-quality water.	Minor short-term impact on water quality during spring development/redevelopment
Coastal Resources	No effect	No effect
Socio-Economic/ Environmental Justice	Bicknell would not have adequate water supply.	Minor to moderate short- and long-term beneficial effects from project. No impact on minority or poor
Air Quality	No effect	Minor short-term impact due to fugitive dust from construction
Noise	No Effect	Minor short-term impact during construction
Transportation	No effect	Minor short-term impact due to potential road closure during construction
Soils	No effect	Minor short-term impact due to soil excavation of 11,000 cubic yards and 2.3 acres of surface disturbance
Visual Resources	No effect	Minor short-term impact during construction

3.0 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

The analysis of Affected Environment and Environmental Consequences has been combined in this section to simplify the document. Relevant resource issues related to the Proposed Action are discussed below in Sections 3.1 through 3.16.

Environmental consequences are discussed in terms of effects of the alternatives on the resource. Impacts and effects are used interchangeably throughout this document and have the same meaning. The following terms will be used to describe effects:

- **No Effect:** A change to a resource's condition, use, or value that is not measurable or perceptible
- **Beneficial Effect:** An action that would improve the resource's condition, use, or value compared to its current condition, use, or value
- **Minor Adverse Effect:** A measurable or perceptible localized degradation of a resource's condition, use, or value that is of little consequence
- **Moderate Adverse Effect:** A localized degradation of a resource's condition, use, or value that is measurable and of consequence
- **High Adverse Effect:** A measurable degradation of a resource's condition, use, or value that is large and/or widespread and could have permanent consequences for the resource.
- **Short-term Effect:** An effect that would result in the change of a resource's condition, use, or value lasting less than one year
- **Long-term Effect:** An effect that would result in the change of a resource's condition, use, or value lasting more than one year and probably much longer.

Effects will also be described in terms of indirect or direct effects:

- **Direct Effects:** are caused by the action and occur at the same time and place.
- **Indirect Effects:** are caused by the action and are later in time and farther removed in distance, but are still reasonably foreseeable. Indirect effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.

Cumulative Effects: Cumulative effects were analyzed for each resource. Cumulative effects are defined as:

The impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions (40 CFR 1508.7).

Cumulative effects most likely arise when a relationship exists between the effects of a Proposed

Action or Alternative and the effects of other actions in the same location during the same time period.

For the proposed spring development on the USFS lands, no other actions are anticipated at the present time and no reasonably foreseeable future actions are expected. The existing springs and associated conveyance pipelines are the result of past actions on the forest land.

For the proposed tank construction on BLM lands, no other actions are anticipated at the present time and no reasonably foreseeable future actions are expected. The existing tank, chlorination building and the associated pipelines and access road are the result of past actions on BLM lands.

For the proposed replacement of distribution line and metering system and installation of additional valves and hydrants in the incorporated area, normal road improvements and residential development are considered ongoing present, past and reasonably foreseeable future actions. These actions are addressed under the cumulative effects sections at the end of each resource area described.

3.1 Land Use

3.1.1 *Affected Environment*

The lands involving the proposed project would include public lands administered by USFS and BLM and private lands within the incorporated Bicknell Town boundaries.

According to correspondence with NRCS (**Attachment A**), there is no important farmland, including statewide, prime and unique.

None of the Formally Classified Lands (**Table 3-1**) are identified within the proposed project areas:

Table 3-1 Formally Classified Lands

National parks and monuments	Wild, scenic and recreational rivers
National natural landmarks	Wildlife refuges
National battlefield park sites	National seashores, lake shores and trails
National historic sites and parks	State parks
Wilderness areas	

3.1.2 *Environmental Consequences*

3.1.2.1 No Action Alternative

There would be no project-related effects on land use under the no action alternative.

3.1.2.2 Proposed Action

The proposed project would have minor direct effects on land use during the construction phase due to temporary surface disturbance of approximately 2.3 acres, of which 0.3 acre would remain permanent because re-vegetation on the tank and the chlorination building would not be likely after construction activities are complete.

The BLM lands that would be affected by the proposed construction at the tank site are located within the BLM-Richfield Field Office Resource Management Plan (RMP) approved on October 31, 2008. The proposed construction at the tank site would be in conformance to this Land Use Plan, even though it is not specifically provided for, because it is consistent with the language in the Management Considerations in the RMP Record of Decision (Page 31), and the Desired Outcomes (Goals and Objectives, page 128) in the approved RMP which states: "Provide effective public land management and to improve land use, productivity, and utility through the authorization of legitimate uses of public land by processing use authorizations, such as right-of-way, leases, permits, and state land selections in response to demonstrated public needs; and assist in orderly resource management through special land designations and right-of-way corridor designations."

The USFS lands that would be affected by the proposed spring development are located within the USFS-Fremont River Ranger District Fishlake National Forest Land and Resource Management Plan (LRMP) and amendments. The spring development is in conformance with Management Prescription 10E: "Management emphasis is to protect or improve the quality and quantity of municipal water supplies. Management practices vary from use restrictions to water resource improvement practices, with the primary objective of meeting water quality standards established for the individual watershed. A secondary objective is to manage the watershed to improve the yield and timing of water flows, consistent with water quality requirements."

Certain existing road ROW within the incorporated Bicknell Town boundaries would be disturbed by trenching for replacement of distribution pipelines and installation of valves and hydrants. The proposed water improvement activities within the incorporated area are consistent with local zoning ordinance.

There would be no effects on important farmlands, including statewide, prime and unique. There would be no effects on Formally Classified Lands.

3.1.2.3 Cumulative Effects

The proposed project would have minor to no cumulative effects on land use.

3.2 Floodplain

3.2.1 Affected Environment

A floodplain is flat or nearly flat land adjacent to a stream or river that experiences occasional or

periodic flooding. It includes the floodway, which consists of the stream channel and adjacent areas that carry flood flows, and the flood fringe, which are areas covered by the flood that do not experience a strong current. A 100-year flood is calculated to be the level of flood water expected to be equaled or exceeded every 100 years on average. The 100-year flood is more accurately referred to as the 1% flood, since it is a flood that has a 1% chance of being equaled or exceeded in any single year. Based on the expected flood water level, a predicted area of inundation can be mapped out.

The Federal Emergency Management Agency (FEMA) website was searched for Flood Insurance Rate Maps (FIRMs) for the project area. However, Bicknell Town (Community ID 490184) is in an un-mapped area. The project component within the incorporated Bicknell Town would be all within residential area where no flood insurance is required, and thus it is outside the 100-year flood zone. The tank site is 60 feet higher than the northernmost part of Bicknell Town and therefore is outside of the 100-year flood zone. The spring sites are approximately 2,000 feet above Bicknell on mountain slopes where there is no stream present and are not likely within a 100-year flood zone.

3.2.2 Environmental Consequences

3.2.2.1 No Action Alternative

There would be no effect on floodplains under the no action alternative.

3.2.2.2 Proposed Action

The proposed project would not have any direct effects on floodplains since the proposed project activities would be outside the 100-year flood zone.

3.2.2.3 Cumulative Effects

The proposed project would have no potential cumulative effects on floodplains.

3.3 Wetlands

3.3.1 Affected Environment

Wetlands are defined as areas that are inundated or saturated by surface water or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions (33 Code of Federal Regulations [CFR] 328.3[b], 40 CFR 230.3). For a wetland to qualify as jurisdictional by the USACE and therefore be subject to regulation under Section 404 of the Clean Water Act, the site must support a prevalence of hydrophytic vegetation, hydric soils and wetland hydrology. Other waters of the United States are sites that typically lack one or more of the three indicators.

According to NRCS (**Attachment D**), there is no hydric soil in the proposed project area. There is no wetland hydrology within the incorporated Bicknell Town boundaries or the tank site. A biologic

survey was conducted in the proposed project construction areas and no wetland was noted. The biologic report is provided as **Attachment I**.

3.3.2 Environmental Consequences

3.3.2.1 No Action Alternative

There would be no effect on wetlands under the no action alternative.

3.3.2.2 Proposed Action

The proposed project would not have any effects on wetlands since the proposed project activities would not involve any wetlands.

3.3.2.3 Cumulative Effects

Wetlands are protected under Section 404 of the Clean Water Act and by Executive Order 11990. The proposed project would not impact any wetlands. Because any other projects in the area would require avoidance and minimization measures as outlined in Section 404, cumulative effects to wetlands are unlikely.

3.4 Cultural Resources

3.4.1 Affected Environment

Bighorn Archaeological Consultants, LLC conducted a Class I cultural resource file search and Class III intensive level pedestrian cultural resources inventory for the proposed project. The inventory was conducted in order to determine the presence/absence of cultural resources before the proposed project is approved by the USFS-Fremont River Ranger District and the BLM-Richfield Field Office for use of public lands.

No new sites or isolated finds were encountered during examination of the proposed project areas. However, two previously recorded sites (42Wn807 and 42Wn808) were relocated and updated. These two sites are lithic scatters of undetermined cultural affiliation that are considered non-significant. These two sites, initially recorded in 1975, were re-recorded by Bighorn Archaeological Consultants, LLC as one site under number 42Wn807.

Site 42Wn807 is located outside the area of potential effect, and would not be impacted by the proposed project.

The cultural resource inventory report is included as **Attachment K**.

The Ute Tribe was contacted but no response was received when this EA was completed. The letter to the Ute Tribe is included as **Attachment G**. It is assumed that no Indian Assets are present in the

project area.

3.4.2 Environmental Consequences

3.4.2.1 No Action Alternative

There would be no effect on cultural resources under the no action alternative.

3.4.2.2 Proposed Action

The proposed project would not have any direct or indirect effects on cultural resources since no cultural resources have been identified within the proposed project construction areas. Moreover, with implementation of environmental protection measures K and L as described in Section 2.2, any potential effects on cultural resources would be minimized.

3.4.2.3 Cumulative Effects

The proposed project would have no cumulative effects on cultural resources.

3.5 Vegetation

3.5.1 Affected Environment

In the downtown area, there is no vegetation in the proposed project construction areas. The tank site is located within the Upper Sonoran Zone and vegetation at the tank site includes sparsely vegetated pinyon/juniper, snakeweed, saltbush, Indian ricegrass and prickly pear cactus. The spring site is located within the Canadian Life Zone and vegetation at the spring site is summarized in **Table 3-2**.

3.5.2 Environmental Consequences

3.5.2.1 No Action Alternative

There would be no project-related effects on vegetation under the no action alternative.

3.5.2.2 Proposed Action

The implementation of the proposed project would directly disturb approximately 1.8 acres of native vegetation (0.9 acre at the tank site, 0.1 acre for buried power line and 0.8 acre at the spring site) during the construction phase of the proposed project. Permanent removal of approximately 0.3 acre of native vegetation at the tank site on the BLM-administered public land would be the direct results of the proposed project. The effect on vegetation in other areas would be temporary and short-term until successful re-vegetation and/or naturalization occurs. The implementation of environmental protection measures O and P as described in Section 2.2 would help minimize the

short-term and temporary project-related effects on vegetation.

Table 3-2 Vegetation Observed at Project Sites

White fir	Common juniper
Verbena	Oregon grape
Yarrow	Scotch thistle
Pygmyflower rockjasmine	Prickly pear
Pussytoes	Low beardtongue penstemon
Columbine	Canary reed grass
Greenleaf manzanita	Limber pine
Mountain sagebrush	Ponderosa pine
Aster	Kentucky blue grass
Colton's milkvetch	Quaking aspen
Blue grama	Woolly cinquefoil
Smooth brome	Cliffrose
Dunhead sedge	Douglas fir
Paintbrush	Skunkbush sumac
Blue virgins bower	Woods rose
Cryptanth	Sorrel or dock
Western tansymustard	Uinta groundsel
Squirreltail	Buffaloberry
Western wheatgrass	Dandelion
Eaton's fleabane	Prairie goldenbean
Snakeweed	Clover
Skyrocket, scarlet gilia	

3.5.2.3 Cumulative Effects

The proposed project would have minor long-term cumulative effects on vegetation since the permanent vegetation loss would be only 0.3 acre.

3.6 Noxious Weeds

3.6.1 Affected Environment

According to ag.utah.gov (2010), the following weeds are officially designated and published as noxious weeds for the State of Utah, as per the authority vested in the Commissioner of Agriculture and Food under Section 4-17-3, Utah Noxious Weed Act:

There are three designated classes of noxious weeds in the State of Utah: Class A (Early Detection Rapid Response), Class B (Control) and Class C (Containment).

Class A: Early Detection Rapid Response (EDRR) Declared noxious weeds not native to the State of Utah that pose a serious threat to the state and should be considered as a very high priority. They are listed in **Table 3-3**.

Table 3-3 Utah Class A Noxious Weeds

Black henbane	Spotted knapweed
Diffuse knapweed	Squarrose knapweed
Leafy spurge	St. Johnswort
Medusahead	Sulfur cinquefoil
Ox-eye daisy	Yellow starthistle
Purple loosestrife	Yellow toadflax
Perennial sorghum spp. including but not limited to Johnsongrass and sorghum alnum	

Class B: Control Declared noxious weeds not native to the State of Utah that pose a threat to the state and should be considered as a high priority for control. They are listed in **Table 3-4**.

Table 3-4 Utah Class B Noxious Weeds

Bermudagrass (not for Washington County)	Musk thistle
Broad-leaved peppergrass (tail whitetop)	Poison hemlock
Dalmatian toadflax	Scotch thistle (cotton thistle)
Dyers woad	Squarrose knapweed
Hoary cress	

Class C: Containment Declared noxious weeds not native to the State of Utah that are widely spread but pose a threat to the agricultural industry and agricultural products with a focus on stopping expansion. They are listed in **Table 3-5**.

Table 3-5 Utah Class C Noxious Weeds

Field bindweed (wild morning-glory)	Saltcedar
Canada thistle	Quackgrass
Houndstounge	

Russian olive is an additional noxious weed declared by Wayne County (Utah Association of Conservation Districts and others, 2006).

Scotch thistle was observed at the spring site during a recent visit to the proposed project construction sites.

3.6.2 Environmental Consequences

3.6.2.1 No Action Alternative

There would be no project-related effects associated with noxious weeds under the no action alternative.

3.6.2.2 Proposed Action

After surface disturbance for the proposed project construction, a successful re-vegetation program would take some time. Invasive non-native species may invade and dominate disturbances on public

lands. The implementation of environmental protection measures C, O and P as described in Section 2.2 would help minimize the short-term and temporary project-related effects associated with noxious weeds.

3.6.2.3 Cumulative Effects

The proposed project would have minor to no cumulative effects associated with noxious weeds.

3.7 Wildlife Resources

3.7.1 Affected Environment

JBR Environmental Consultants, Inc. (JBR) conducted a biologic survey for the proposed project. On June 7, 2012, a JBR biologist visited the project area. Wildlife species observed during the site survey are summarized in **Table 3-6**.

Table 3-6 Wildlife Species Observed at Project Sites

Mammals	Birds
Mule deer (scat)	Red tail hawk
Black tailed jack rabbit	Mountain bluebird
Various small mammal burrows	Northern flicker
	Green swallow
	Raven

3.7.2 Environmental Consequences

3.7.2.1 No Action Alternative

There would be no project-related effect on wildlife resources under the no action alternative.

3.7.2.2 Proposed Action

Implementation of the proposed project would have minor short- and long-term impacts on terrestrial wildlife populations and their habitat. Heavy equipment use, vehicular traffic, trenching and other activities related to the construction of the proposed project could minimally impact some wildlife species during the construction phase. The noise/activity impact on wildlife would be temporary during the construction phase. Direct impacts would be short-term and localized to those portions of the project area that are currently undisturbed. Some small mammals and reptiles may be susceptible to injuries or mortality during the construction phase. Populations of terrestrial wildlife species on the whole are unlikely to be adversely affected. A net of permanent loss of approximately 0.3 acre of sparsely vegetated land at the tank site would eliminate minimal forage, thermal cover and habitat. The effects on wildlife due to the area of lost habitat would be very small compared to the large areas of undisturbed habitat on adjacent federal lands managed by the BLM-Richfield Field Office and the USFS-Fremont River Ranger District.

The proposed project would unlikely alter feeding, breeding, or other behaviors, even during the construction phase of the proposed project. Moreover, similar habitat is available on lands adjacent to the project area where these species could find refuge.

3.7.2.3 Cumulative Effects

The proposed project would have minor to no cumulative effects on wildlife resources.

3.8 Special Status Species

3.8.1 Affected Environment

JBR contacted a USFS wildlife biologist regarding the proposed project and potential occurrences of special status species. Threatened, endangered, candidate or sensitive species that may occur or may potentially have suitable habitat within the project area were derived from information provided by the USFS biologist and summarized in **Table 3-7**. Additionally, a USFS fisheries biologist had concerns about the boreal toad (**Attachment H**). Boreal toad is a Utah sensitive species due to the discovery of chytrid fungus and the declines in boreal populations in the Rocky Mountains. Since the proposed project would not involve any open waters or riparian systems, all fish species were eliminated from analysis. JBR also reviewed the special species currently listed by the U.S Fish and Wildlife Service (USFWS) and last updated on January 12, 2012. Furthermore, JBR reviewed sensitive species currently listed by the Utah Division of Wildlife Resources (UDWR) and last updated on March 29, 2012. The UDWR had recent records of occurrence for bald eagle and Utah prairie dog, and historic records of occurrence of western toad within ½ mile of the proposed project footprint; and had recent records of occurrence for burrowing owl and long-billed curlew, and historic records of occurrence for American white pelican within 2 miles of the proposed project footprint. On June 7, 2012, a JBR biologist surveyed the project area. The survey findings are also summarized in **Table 3-7**.

The vicinity of the proposed spring site access road is suitable for foraging habitat for six USFS MIS species: goshawk, peregrine falcon, bald eagle, flammulated owl, three-toed woodpecker and Brewer's sparrow. Brewer's sparrow is known to nest in high elevation meadows. However, no individuals were recorded at the spring site. The area of surface disturbance is not suitable nesting habitat for vesper sparrow or sage thrasher. Williamson's sapsucker and broad-tailed hummingbirds are summer migrant species. However, no individuals were recorded during the site survey conducted on June 7, 2012.

The project area is within winter range for elk and summer range for mule deer.

Table 3-7 Analysis of Special Status Terrestrial Wildlife Species

Species Common Name <i>Scientific Name</i>	Status	Suitable Habitat	Rationale
Southwestern Willow Flycatcher <i>Empidonax traillii eximius</i>	E	No	Based on DNA research this subspecies does not occur on this forest.
California Condor <i>Gymnogyps californianus</i>	E/Migratory	No	Project area is outside known distributional range.
Utah Prairie Dog <i>Cynomys parvidens</i>	T	No	Project area is outside known distributional range and does not have suitable sagebrush/grassland habitat with deep soils.
Mexican Spotted Owl <i>Strix occidentalis</i>	T	No	No suitable canyon habitat within 0.5 mile of project footprint or access road.
Greater Sage Grouse <i>Centrocercus urophasianus</i>	C/Migratory USFS Sensitive	No	Project area is outside known distributional range and does not have suitable sagebrush habitat.
Western Yellow-billed Cuckoo <i>Coccyzus americanus</i>	C/USFS Sensitive	No	Project area does not support suitable habitat.
Northern Goshawk <i>Accipiter gentilis</i>	USFS Sensitive MIS/Migratory	Potential nesting / foraging habitat	No nests discovered within 0.5 mile of project No response to played, recorded calls
Pygmy Rabbit <i>Brachylagus idahoensis</i>	USFS Sensitive	No	No suitable sagebrush habitat
Townsend's Big-eared Bat <i>Corynorhinus townsendii</i>	USFS Sensitive	Potential foraging habitat	Potential roost sites: mines, caves or rock crevices not impacted by project
Spotted Bat <i>Enderma maculatum</i>	USFS Sensitive	Potential foraging habitat	Potential roost sites: mines, caves or rock crevices not impacted by project
Peregrine Falcon <i>Falco peregrinus anatum</i>	USFS Sensitive Migratory	Potential foraging habitat	Cliff habitat 0.75 mile to south of project. No known active eyries within 1 mile of spring site
Bald Eagle <i>Haliaeetus leucocephalus</i>	USFS Sensitive Migratory	Potential upland winter foraging habitat	No known nest sites within 1 mile of project area or access route. UDWR recorded occurrence with last 2 years
Flammulated Owl <i>Otus flammeolus</i>	USFS Sensitive Migratory	Potential foraging habitat	Project area is mixed conifer aspen, secondary habitat. No tree removal is anticipated.
Desert Bighorn Sheep <i>Ovis Canadensis nelsoni</i>	USFS Sensitive	Near winter/ summer range	UDWR is eliminating herd in the greater area due to concern over disease.
Three-toed Woodpecker <i>Picoides tridactylus</i>	USFS Sensitive Migratory	Potential breeding habitat nearby	Project area is mixed conifer aspen, secondary habitat. No tree removal is anticipated. Potential indirect impact if species are present within area during construction
Rocky Mountain Elk <i>Cervus elephus</i>	MIS	Within winter range near summer range	Potential temporary displacement during construction.
Mule Deer <i>Odocoileus hemionus</i>	MIS	Within winter range near summer range	Potential temporary displacement during construction.
Cavity Nesters (Hairy Woodpecker, Mountain Bluebird, Western Bluebird)	MIS	Potential habitat may be available in nearby snags	Project area is mixed conifer aspen, secondary habitat. No tree removal is anticipated. Individual may avoid immediate area during construction
Sage Nester Guild (Brewer's Sparrow, Vesper Sparrow, Sage Thrasher)	MIS Migratory	Potential nesting habitat for Brewer's sparrow. Not suitable for Vesper sparrow of sage thrasher	Suitable nesting habitat for Brewer's sparrow No individuals were observed during site visit.
Riparian Dependent Guild (Lincoln's Sparrow, Song Sparrow, Yellow Warbler, Mac Gillivray's Warbler)	MIS	No	No riparian habitat within project area of access road
Williamson's Sapsucker <i>Sphyrapicus thyroideus</i>	Migratory	Potential habitat	Project area is high altitude mixed conifer aspen, secondary habitat. No tree removal is anticipated. Potential indirect impact if species are present within area during construction. No individuals were discovered during site visit
Broad-tailed Hummingbird <i>Selasphorus platycercus</i>	Migratory	Potential habitat	Project area is high altitude mixed conifer aspen, secondary habitat. Summer migrant species, individuals often return to same tree to nest. No tree removal is anticipated. Potential indirect impact if species are present within area during construction. No individuals were discovered during site visit

Abbreviations: T = Federal Threatened; E = Federal Endangered; C = Federal Candidate; MIS = Management Indicator Species; Migratory = Migratory Bird Species to evaluate to meet Utah Strategy Agreement with USFS.

JBR contacted a USFS botanist regarding the proposed project and potential impacts to special status plant species. The USFS botanist provided a plant list taken from R-4 TES Plant List dated July 2011. **Table 3-8** summarizes those plants, status, description and rationale for elimination from further survey or review. Five of the plants listed in **Table 3-8** were surveyed for during the site visit to the proposed disturbance area on June 7, 2012. They are last chance townsendia, Bicknell milkvetch, pinnate spring parsley, Wonderland Alice flower and Bicknell thelesperma. During the survey on June 7, 2012, none of the five species were discovered in the proposed project area.

The biologist report is provided in **Attachment I**.

Additionally, JBR biologists surveyed the spring site on August 6, 2012 and August 16, 2012 to address boreal toad concerns. No toads, tadpoles or egg masses were discovered during all three surveys to the spring site (June 7, August 6 and August 16). A memorandum for the boreal toad survey was provided in **Attachment J**.

3.8.2 Environmental Consequences

3.8.2.1 No Action Alternative

There would be no project-related effect on special status species under the no action alternative.

3.8.2.2 Proposed Action

Project construction-related effects would be confined almost entirely to the existing footprint of the proposed construction areas. Construction of the new tank and the chlorination building would cause permanent loss of 0.3 acre of sparse vegetation on BLM land. Development of the new spring and redevelopment of the existing springs would have approximately 0.8 acre of forest land permanently fenced without access to some of the special status species for foraging.

While the vicinity of the proposed spring site access road is suitable for foraging habitat for six USFS MIS species (goshawk, peregrine falcon, bald eagle, flammulated owl, three-toed woodpecker and Brewer's sparrow), it is unlikely that the proposed project would have direct impacts to these species since no nests or sightings were recorded during the site survey conducted on June 7, 2012 and the proposed project would not involve any tree removal (live or dead). Brewer's sparrow is known to nest in high elevation meadows. However, no individuals were recorded at the spring site. If construction occurs during the nesting season, indirect harassment to foraging birds is possible. The area of surface disturbance is not suitable nesting habitat for vesper sparrow or sage thrasher. Williamson's sapsucker and broad-tailed hummingbirds are summer migrant species. If construction occurs during summer months, indirect harassment of these birds is possible. However, no individuals were recorded during the site survey conducted on June 7, 2012.

The project area is within winter range for elk and summer range for mule deer. Individuals utilizing the area could be displaced to other areas of the forest during construction. Suitable habitat is available in adjacent forest lands.

Table 3-8 Analysis of Special Status Plant Species

Species Common Name <i>Scientific Name</i>	Status	Known Habitat Requirement*	Site Survey?
San Rafael cactus <i>Pediocactus despaninii</i>	E	Pinyon-juniper communities, grama grass on limestone gravel and flakes, desert pavements, 4750-5900 foot elevation	No
Last chance townsendia <i>Townsendia aprica</i>	T	Salt desert shrub and P/J communities on clay or clay silt soils of the Mancos Shale, 6100-8000 foot elevation	Yes
Wonderland Alice flower <i>Aliciella (=Gilia) caespitosa</i>	USFS Sensitive	Endemic to Wayne County; P/J communities on Carmel and Navajo formations, 5200-8515 foot elevation	Yes
Dana milkvetch <i>Astragalus henrimontanensis</i>	USFS Sensitive	Endemic to Wayne County in ponderosa pine, P/J and sagebrush communities on gravelly loam soil, 7000-9200 foot elevation	No
Bicknell milkvetch <i>Astragalus consobrinus</i>	USFS Sensitive	Sagebrush-grassland, desert shrub and P/J communities on Manaco Shale formation, volcanic gravel, open gravelly or sand knolls, and barren stony hillsides, 6000-8500 foot elevation	Yes
Paradox moonwort <i>Botrychium paradoxum</i>	USFS Sensitive	Meadow habitats and snowfields, 9000-10000 foot elevation. Known from Escalante Ranger District	No
Aquarius paintbrush <i>Castilleja aquariensis</i>	USFS Sensitive	Endemic to Aquarius Plateau, Garfield and Wayne Counties, in sagebrush and grass meadow communities adjacent to aspen-subalpine fir on clay loam soils at 9800-11000 foot elevation	No
Pinnate spring parsley <i>Cymopterus beckii</i>	USFS Sensitive	P/J, mountain brush, and ponderosa pine communities in sandy canyon bottoms or cliff crevices between 5500-9000 foot elevation. Known from Teasdale District	Yes
Nevada willowherb <i>Epilobium nevadense</i>	USFS Sensitive	P/J and oak/mountain mahogany communities, on talus slopes and rocky limestone or quartzite outcrop, 5100-8800 foot elevation.	No
Maguire daisy <i>Erigeron maguirei</i>	USFS Sensitive	Cool, mesic wash bottoms and dry, partially shaded slopes of eroded sandstone cliffs of Wingate, Chinle and Navajo sandstone in mountain shrub, Douglas-fir, ponderosa pine and lower limits of P/J woodland communities, 5400-7100 foot elevation	No
Fish Lake naiad <i>Najas caespitosa</i>	USFS Sensitive	Shallow water to about 12 inches deep, 8600 foot elevation. Known only from type collection at Pelican Point, Fish Lake	No
Little penstemon <i>Penstemon parvus</i>	USFS Sensitive	Endemic to Garfield, Piute, Sevier and maybe Wayne Counties, in sagebrush-grass and spruce communities between 82800-10170 foot elevation	No
Ward beardtongue <i>Penstemon wardii</i>	USFS Sensitive	Ephedra, rabbitbrush, shadscale, mountain mahogany, sagebrush and P/J communities on semibarren, white to gray fine-textured substrates (mostly Arapien Shale), 5500-6800 foot elevation	No
Angell's cinquefoil <i>Potentilla angelliae</i>	USFS Sensitive	Endemic in Wayne County on Aquarius Plateau in rocky subalpine meadows at about 10988 foot elevation	No
Arizona willow <i>Salix arizonica</i>	USFS Sensitive	Riparian corridors about 8500 foot elevation in unshaded or partially shaded wet meadows, streamsides.	No
Bicknell thelesperma <i>Thelesperma subnudum var. alpinum</i>	USFS Sensitive	Endemic to Wayne County; restricted to Navajo sandstone and Carmel limestone on peculiar vari-colored phase in pinyon-juniper, mountain brush and bristlecone pine communities at 7380-9000 foot elevation	Yes

Abbreviations: T = Federal Threatened; E = Federal Endangered; C = Federal Candidate

Note: *Adapted from Utah Rare Plant Guide, April 5, 2012.

With the implementation of environmental protection measures Q and R, the proposed project would have minor to no effects on listed threatened, endangered or candidate species. The proposed project could temporarily displace listed MIS species during construction to nearby suitable habitat within the forest. The proposed project would not likely cause a trend towards federally listing any of these species.

3.8.2.3 Cumulative Effects

The proposed project would have minor to no cumulative effects on special status species.

3.9 Water Quality Issues

3.9.1 Affected Environment

Presently, the water sources for the Bicknell Town water supply system include six springs: five existing springs on Thousand Lake Mountain on the forest land and the Brinkerhoff Spring approximately 1.5 miles southwest of the town. The water quality of the five springs on the forest land meets all drinking water standards. However, the water quality of the Brinkerhoff Spring does not always meet all drinking water standards. Bicknell Town currently uses the Brinkerhoff Spring as a backup source. There are no surface water bodies in the proposed project construction areas.

3.9.2 Environmental Consequences

3.9.2.1 No Action Alternative

The no action alternative would not have any project-related effects on water quality. However, without development of the new spring and redevelopment of the existing springs, Bicknell Town would not have less good-quality water and would use more water from the back-up source (the Brinkerhoff Spring).

3.9.2.2 Proposed Action

Due to surface disturbance during the spring development, the turbidity of the subsurface water in the vicinity of the springs would be elevated, resulting in high concentration of suspended solids in the producing aquifer to the springs locally. This effect would be short-term and insignificant. Once the construction phase is over, this impact would disappear.

The proposed project would have beneficial effects to Bicknell Town. With the implementation of the proposed project, Bicknell Town would have more good-quality water and use less or no water from the back-up source (the Brinkerhoff Spring), depending on how much water production could be increased from the proposed spring development/redevelopment.

3.9.2.3 Cumulative Effects

The proposed project would have minor to moderate beneficial cumulative effects on water quality, depending on how much water production could be increased from the spring development/redevelopment. The proposed project would have no adverse cumulative effects on water quality.

3.10 Coastal Resources

3.10.1 Affected Environment

There are no coastal resources in the project area.

3.10.2 Environmental Consequences

3.10.2.1 No Action Alternative

There would be no effects on coastal resources under the no action alternative.

3.10.2.2 Proposed Action

The proposed project would have no effects on coastal resources because there are no coastal resources in the project area.

3.10.2.3 Cumulative Effects

The proposed project would have no cumulative effects on coastal resources.

3.11 Socio-Economic/Environmental Justice

3.11.1 Affected Environment

The population in Bicknell was 459 in 2010 and 353 in 2000 according to the 2010 U.S. Census data (Zip-Codes.com, 2012). The average annual population growth rate during the 10-year period is estimated to be approximately 2.7%. The majority of the population was white Americans, accounting for approximately 95.6%. Residents with income below the poverty level in Bicknell in 2009 were 13.8% of the total population (City-Data.com, 2012).

3.11.2 Environmental Consequences

3.11.2.1 No Action Alternative

There would be no project-related effects under the no action alternative. However, the current water system would not meet requirements for fire suppression, and indoor and outdoor water uses for the present time and future. Bicknell Town residents and visitors would not have an adequate and safe water supply system.

3.11.2.2 Proposed Action

Implementation of the proposed project would have minor short- and long-term beneficial socio-economic impacts to Bicknell Town. The proposed project would provide necessary water supply to

meet the current water needs and support anticipated population growth. The proposed project could potentially have short-term beneficial impact by creating jobs and increased revenue to local business during the construction phase.

Implementation of the proposed project would not disproportionately (unequally) affect any low-income or minority communities within the project area. The reason for this is that the proposed project would not involve major facility construction, population relocation, health hazards, hazardous waste, property takings, or substantial economic impacts. This action would therefore have no adverse human health or environmental effects on minority and low-income populations as defined by environmental justice policies and directives. Executive Order 12898 established environmental justice as a federal agency priority to ensure that minority and low-income groups are not disproportionately affected by federal actions.

3.11.2.3 Cumulative Effects

The proposed project would have no cumulative adverse effects on socio-economic/environmental justice.

3.12 Air Quality

3.12.1 Affected Environment

According to the Utah Division of Air Quality (2012), the project area is classified by the Utah Division of Air Quality as an attainment area with respect to criteria air pollutants.

3.12.2 Environmental Consequences

3.12.2.1 No Action Alternative

There would be no project-related effects on air quality under the no action alternative.

3.12.2.2 Proposed Action

Since the project area is classified as an attainment area with respect to criteria air pollutants, construction and operation of the proposed project would not exceed this standard and would conform to all county, state and federal requirements for compliance with the Clean Air Act.

However, the proposed construction activities would temporarily generate a small amount of fugitive dust from excavation and backfilling activities, especially in the incorporated town. The qualities generated by the project would be relatively small and would affect only localized areas for a brief period. No violation of air quality standards would occur during construction. Therefore, the effects associated with fugitive dust are considered short-term and would disappear after the construction activities are completed. Moreover, the implementation of environmental protection measure E as described in Section 2.2 would help minimize the short-term effects.

3.12.2.3 Cumulative Effects

The proposed project would have no cumulative effects on air quality.

3.13 Noise

3.13.1 Affected Environment

Total noise in a given environment is usually measured with an A-weighted decibel scale (dB), which approximates the range of sound audible to the human ear. 10 dB is at the low threshold of hearing and 120 dB is the threshold of pain. Noise levels in the general vicinity of the proposed project site are governed primarily by noise from traffic of local roads. Local vehicle traffic and overhead aircraft are intermittent sources of noise throughout the area.

3.13.2 Environmental Consequences

3.13.2.1 No Action Alternative

There would be no project-related effects on noise under the no action alternative.

3.13.2.2 Proposed Action

Construction of the proposed project would not generate much noise during the process. The noise effect would be short-term and would disappear after construction is completed. The implementation of environmental protection measures I and N would help minimize the short-term noise effects.

3.13.2.3 Cumulative Effects

The proposed project would have no cumulative effects on noise.

3.14 Transportation

3.14.1 Affected Environment

At the tank site and spring development area, there is little transportation. In the downtown area, there is traffic on local roads.

3.14.2 Environmental Consequences

3.14.2.1 No Action Alternative

There would be no project-related effects on transportation under the no action alternative.

3.14.2.2 Proposed Action

Construction activities in the downtown area may cause temporary road closure. The implementation of environmental protection measure M as described in Section 2.2 would help minimize the short-term effects on transportation. The effect would disappear after the proposed construction activities are complete.

3.14.2.3 Cumulative Effects

The proposed project would have no cumulative effects on transportation.

3.15 Soils

3.15.1 Affected Environment

The soil survey for the Bicknell area is being conducted by NRCS. The soil survey data and associated maps were not available at the time this EA was being prepared.

Based on a recent site visit to the project area, it was observed that the soils are generally shallow and are derived from the erosion of the volcanic deposits that dominate the general area.

3.15.2 Environmental Consequences

3.15.2.1 No Action Alternative

The No Action alternative would not have any project-related effects on soils.

3.15.2.2 Proposed Action

The implementation of the proposed project could result in the direct surface disturbance of approximately 2.3 acres of public and private lands. An estimated 11,000 cubic yards of soil would be excavated for pipe burial, grading at the tank site and spring development.

Soil disturbance of approximately 0.3 acre at the tank site would be permanent because re-vegetation on the tank and chlorination building would not be likely. Other soil disturbances would be short-term until successful re-vegetation or naturalization occurs. Any project-related soil erosion would also be temporary and short-term until re-vegetation and/or naturalization are completed. The implementation of environmental protection measure C as described in Section 2.2 would help minimize the short-term and temporary project-related effects on soils.

3.15.2.3 Cumulative Effects

The proposed project would have minor cumulative effects on soils since the permanent soil

disturbance would be only 0.3 acre.

3.16 Visual Resources

3.16.1 Affected Environment

The area of the springs on the forest land is remote and not visible from any major roads in the project area.

The tank site is on BLM-administered land. BLM uses a visual resource management (VRM) system to inventory and manage visual resources on public lands. The primary objective of VRM is to maintain the existing visual quality of BLM-administered public lands and to protect unique and fragile visual resources. The VRM system uses four classes to describe the different degrees of modification allowed to the landscape.

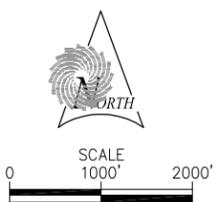
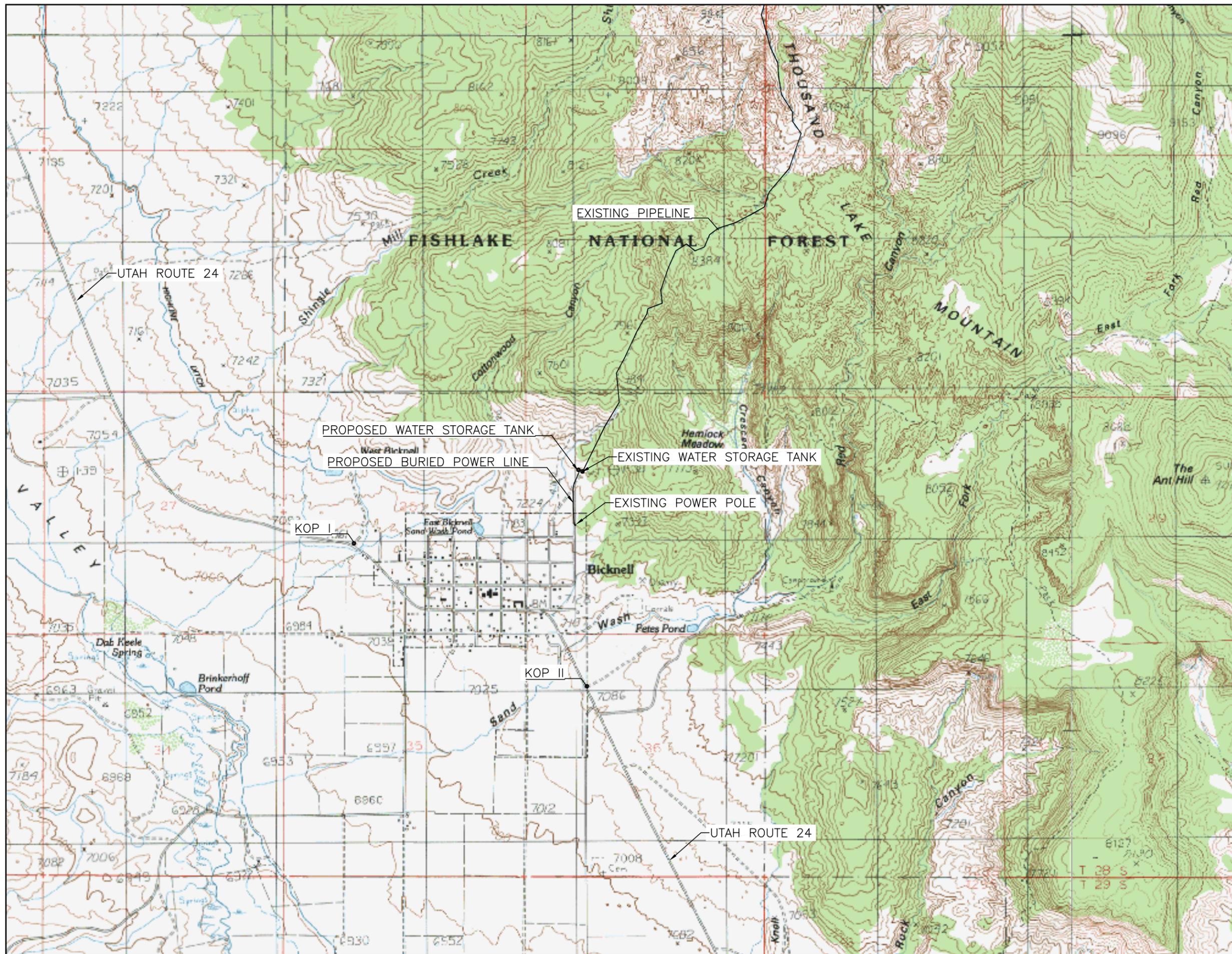
The portion of the project area on BLM-administered public lands is within a BLM VRM Class III area. The management of Class III area is intended:

“to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.”

The method BLM uses to determine whether proposed projects conform to VRM class objectives is a contrast rating system that evaluates the effects of proposed projects on visual resources. Contrast rating is done from critical viewpoints, known as Key Observation Points (KOPs), which are usually along commonly traveled routes, such as highways, access roads, or hiking trails. A KOP can be a single point of view that an observer/evaluator uses to rate an area or panorama or linear view along a roadway, trail, or river corridor.

The primary public views of the proposed project would be from major travel routes. KOPs were selected to represent the effects of the project as seen from public areas that permits a high degree of visibility to the project area. The evaluator visited each KOP and rated the degree of visual contrast based on form, line, color and texture changes between the existing landscapes and how the landscapes would look after project disturbance.

Two KOPs (KOP I and KOP II) were selected and their locations are shown in **Figure 3**. Both KOPs are located on State Route 24. Between these two KOPs, the tank site is not visible from the route.



NOT TO SCALE



REV. NO.	COMMENT	DATE

SUNRISE ENGINEERING

12227 S. BUSINESS PARK DR, SUITE 220
DRAPER, UTAH 84020
TEL 801.523.0100 · FAX 801.523.0990
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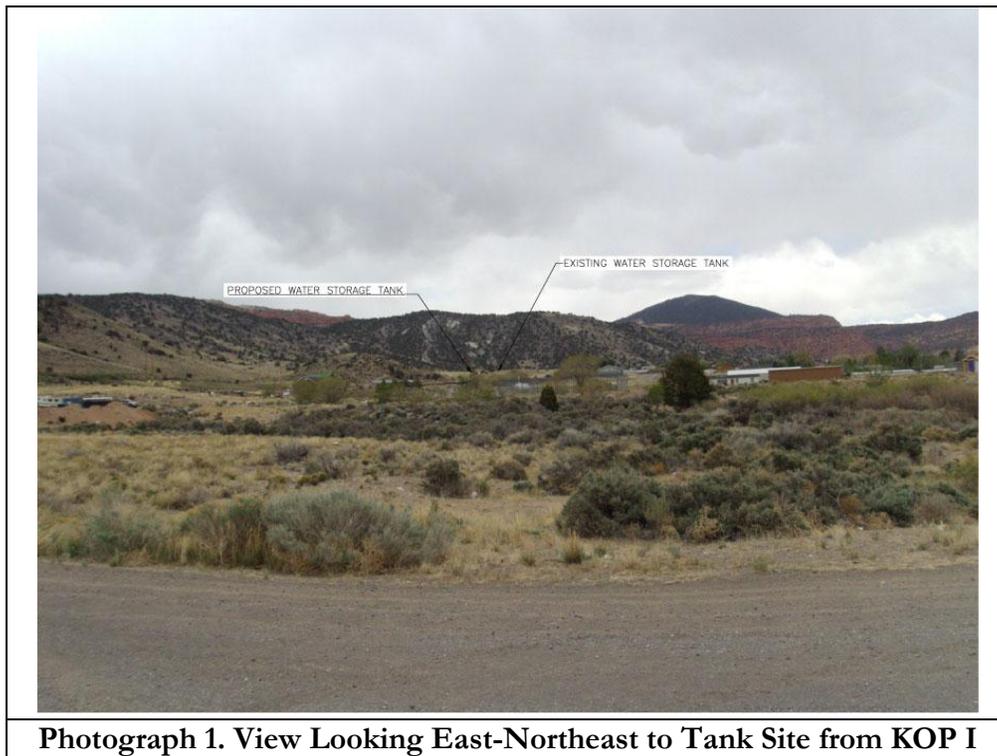
BICKNELL TOWN

**WATER IMPROVEMENT PROJECT
ENVIRONMENTAL ASSESSMENT
KEY OBSERVATION POINTS**

SEI NO. 04087	DESIGNED DY	DRAWN DY	CHECKED DSA	SHEET NO. 03 of 03	FIG. 3
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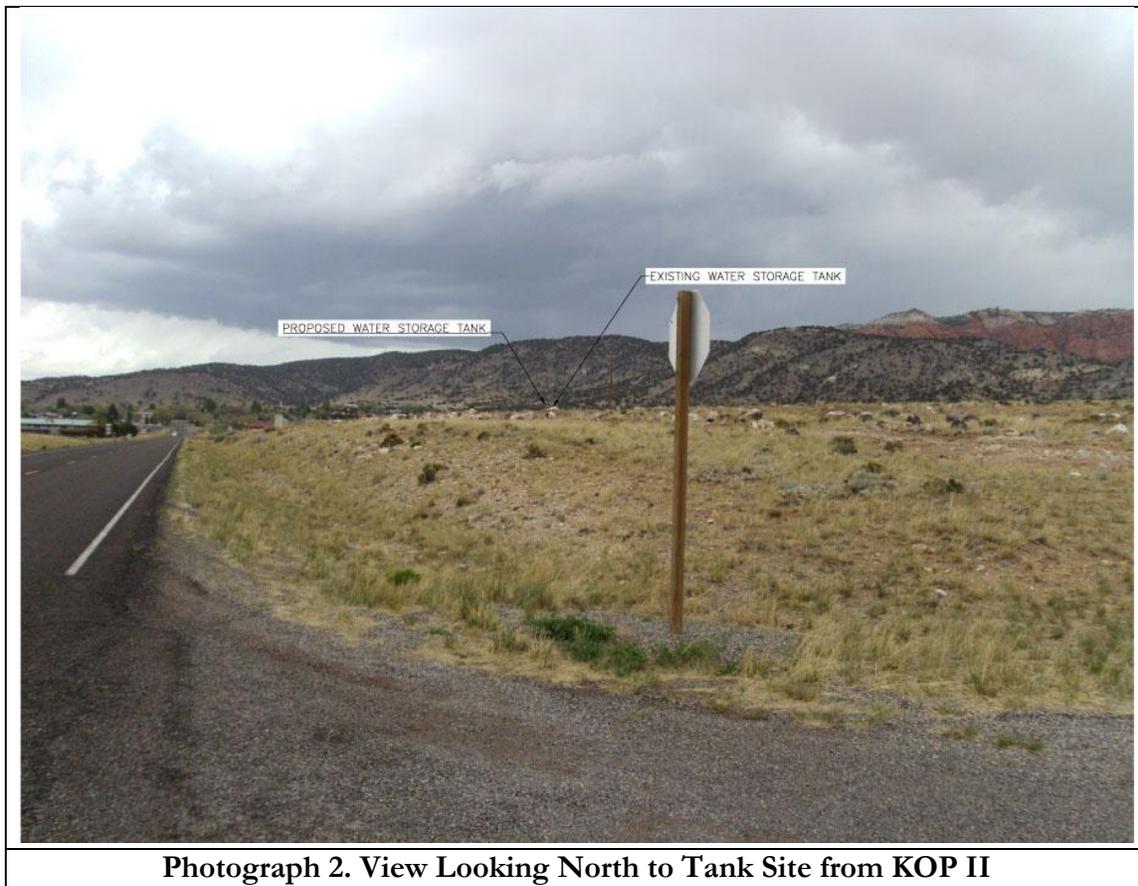
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From KOP I (as shown in Photograph 1), views to the east-northeast look straight to the tank site. Foreground views are part of State Route 24 and rolling lowlands, including yellowish green weeds and dark green low trees. Middle ground views are buildings, trees and rolling hills. The tank site is in the middle of the views. Behind the tank site is a steep-sloping hill block with white rocks exposed among moderately dense dark-green trees on the slope. Reddish sandstone covered with sparse vegetation is also present on the shoulders of the hill block. It appears that the tank site sits on a relatively flat bench that is good for tank construction. Several trails or small roads and contacts between different colors form several lines. Background views are the bluish rolling clouds in the sky.



Photograph 1. View Looking East-Northeast to Tank Site from KOP I

From KOP II (as shown in Photograph 2), views to the north look straight to the tank site. Foreground views are low density of yellowish green weeds and parts of roads. Light brown boulders, cobbles, gravel and sand are exposed amid weeds. A STOP sign and the supporting post are prominent. Middle views are rolling hills covered with moderately dense dark green trees on the top and white rocks on relatively flat ground, and buildings at the bottom. Reddish sandstone with little vegetative cover is also present to the east. Two power poles are dimly evident. Several trails or small roads and contacts between different colors form several lines. Background views are the bluish rolling clouds in the sky.



3.16.2 Environmental Consequences

3.16.2.1 No Action Alternative

There would be no project-related effects on visual resources under the no action alternative.

3.16.2.2 Proposed Action

As described in Section 3.16.1, the spring site is not visible from any major roads in the project area. Furthermore, after construction work at the spring site is done, only the fence surrounding the new spring will be visible from the surface near the new spring. Therefore, the spring development would have minor to no impact on visual resources.

Also as described in Section 3.16.1, the VRM for the tank site is Class III, for which the objectives are to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape.

Construction activities and equipment for construction of the tank and chlorination building at the tank site may be considered a temporary aesthetic nuisance for a short period of time by local residents. Given the short-term duration of construction activities at the tank site, this impact is considered minor. This impact would disappear when the construction activities at the tank site are complete.

Surface disturbance during the construction phase of the proposed project would temporarily result in increased dust and haze, creating short-term impacts on the visual resources. Completion of the proposed project would ultimately lessen the amounts of dust and haze through stabilization of the soil and restoration of plant cover. Re-vegetation and naturalization of the disturbed area would also reduce the short-term project-related dust and haze over the long term.

Form KOPs I and II (as shown in Photographs 1 and 2), the tank site on the BLM-administered public land would remain as a somewhat permanent visible point feature, similar to the existing tank, but would not dominate the view of the casual observer traveling on Utah Route 24 because of the existing tank. The overall visual contrast of the tank site with the existing landscape is considered minor.

3.16.2.3 Cumulative Effects

The proposed project would have minor to no cumulative effects on visual resources.

4.0 CONSULTATION AND COORDINATION

The following federal, state and local agencies, tribe and individuals were contacted during the development of this EA:

4.1 Persons, Groups and Agencies Consulted

Name	Purpose & Authorities for Consultation or Coordination	Findings & Conclusions
Bicknell Town	For comments	No comments received
Army Corps of Engineers	Consultation about wetlands	Protect wetlands
Aspen Achievement Academy	For comments	No comments received
BLM	Consultation about the project	Responded with a checklist
Capitol Reef National Park	For comments	No comments received
Carl R. Albrecht	For comments	No comments received
Dwight Daniels	For comments	No comments received
Fish Lake Cabin Owners	For comments	No comments received
Fish Lake Resorts	For comments	No comments received
Fremont Irrigation Co.	For comments	No comments received
Fremont River Outfitters	For comments	No comments received
GOPB	For comments from state agencies	Responded with no comments
Grand Canyon Trust	For comments	No comments received
Jeff and Sue Bates	For comments	No comments received
Jim Lamb	For comments	No comments received
Mary Obrien	For comments	No comments received
Natural Resource Conservation Service	Consultation about important farmland and hydric soils	No important farmland or hydric soils
Rex Griffiths	For comments	No comments received
Richfield Reaper	For comments	No comments received
Seven-Mile Grazers	For comments	No comments received
Sevier County Commission	For comments	No comments received
Sevier Wildlife Federation	For comments	No comments received
Six County Association of Governments	For comments	No comments received
Southern Utah Wilderness Alliance	For comments	No comments received
SUWA	For comments	No comments received
Thousand Lake Lumber	For comments	No comments received
U.S. Fish & Wildlife Service	Consultation about listed species	No comments received
USFS - Fremont Ranger District	Consultation about the project	Concerns about boreal toad
UM Grazing Association	For comments	No comments received
USA-All	For comments	No comments received
USU Extension Office	For comments	Support the project
Utah Division Wildlife Resource (South Region)	For comments	No comments received
Utah Environmental Congress	For comments	No comments received
Utah Farm Bureau	For comments	No comments received
Ute Indian Tribe	For comments	No comments received
Wayne County Commissioners	For comments	No comments received
Wayne Co. Economic Dev.	For comments	No comments received

4.2 List of Preparers

4.2.1 USFS Preparers and Reviewers

Name	Responsibility
Cody Clark	Project Manager/Environmental Coordination
Joanne Stenten	Wildlife Biology
Dave Tait	Botany

4.2.2 BLM Preparers and Reviewers

Name	Responsible for Following Sections of this Document
Michael Utely	Project Manager/Realty Specialist/Socio-Economics/Environmental Justice
Phil Zieg	Air Quality/Water Resources/Quality
Noelle Glines-Bovio	Areas of Critical Environmental Concern/BLM Natural Areas /Visual Resources/Wild and Scenic Areas/Wilderness/WSA/Recreation
M. Jared Lundell	Cultural Resources
Brant Hallows	Farmlands (Prime or Unique)/Floodplain/Soils/Watershed
Larry Greenwood	Fish and Wildlife/Migratory Birds/Special Status Species/Wetland/Riparian Zones/Vegetation
Bob Bate	Fuels/Fire Management/Woodland/Forestry
John Reay	Geology/Mineral Resources/Energy Production/Paleontology
Burke Williams	Invasive Species/Noxious Weeds
Brandon Jolley	Livestock Grazing/Range/Rangeland Health Standards & Guidelines
Craig Harmon	Native American Religious Concerns
Randy Peterson	Wastes
Chris Colton	Wild Horses and Burros

4.2.3 Other Preparers and Reviewers

Name	Title	Responsible for Following Section(s) of this Document
<i>Sunrise Engineering</i>		
Derek Anderson	Service Center Manager	Reviewed entire report
Jeff Albrecht	Project Manager	Reviewed entire report
Dao Yang	Project Environmental Engineer/Hydrogeologist	Prepared entire report
<i>JBR Environmental Consultants, Inc.</i>		
Jill Hankins	Biologist	Provided Attachments I and J
<i>Bighorn Archaeological Consultants, LLC</i>		
Jon R. Baxter	Principal Archaeologist	Provided Attachment K
Robert Nash	Archaeologist	Provided Attachment K

5.0 REFERENCES

Ag.utah.gov, 2010, <http://ag.utah.gov/divisions/plant/noxious/documents/noxUtah.pdf>.

City-Data.com, 2012, <http://www.city-data.com/poverty/poverty-Bicknell-Utah.html>.

Sunrise Engineering, 2012, Bicknell Town Culinary Water Project 2012 – Plan of Development.

Utah Association of Conservation Districts, Utah Department of Agriculture and Food, and N

Utah Division of Air Quality, 2012, Utah Division of Air Quality 2011 Annual Report.

Zip-Codes.com, 2012, <http://www.zip-codes.com/zip-code/84715/zip-code-84715-2010-census.asp>.

Attachment A
Affidavit of Newspaper Publication



Affidavit of Publication

State of Utah
County of Wayne-SS.

I, Ryan Davis, being duly sworn depose and say that I am the Editor of The Wayne and Garfield County Insider, a weekly newspaper, published in Loa, Utah, and that an advertisement of which the annexed is a true copy, taken from said paper, was published in a regular issue and was also published on the Utahlegals.com website as required by state statute on May 24, 2012.

The said notice was published in the regular and entire issue of every number of said newspaper during the period times and publication, and that the same was published in the newspaper proper and not in a supplement.

Signed: 
Title: Publisher

Subscribed and sworn to before me this 27 day of June, 2012


Notary Public, Wayne County, Utah



BICKNELL TOWN PUBLIC NOTICE

Bicknell Town has made application with the Division of Drinking Water for some necessary improvements to its culinary water system.

As required by the National Environmental Policy Act, an Environmental Review will be prepared that evaluates the potential environmental effects and consequences of the proposed project. If implemented, the proposed project may convert important farmlands, wetlands, or have an Adverse Effect to Cultural Resources. The purpose of this notice is to inform the public of the Financial Assistance request, potential Adverse Effects, and request comments concerning the proposed project, alternative sites or actions that would avoid potential impacts, and methods that could be used to minimize these impacts.

The project would occur on public lands administered by the U.S. Forest Service (USFS) and the U.S. Bureau of Land Management (BLM), and existing roads within the limits of the incorporated Bicknell Town, Utah.

The Town of Bicknell has found the need to improve its culinary water system based on the following criteria:

- * The system does not have adequate water sources to meet the current need for indoor, outdoor and fire prevention water uses.
- * The system will not have adequate storage capacity as well as water sources to meet future indoor, outdoor and fire prevention water needs.
- * The existing water system does not have the capacity to continuously disinfect the mountain spring water. The existing metering building needs to be replaced with a new chlorination building.
- * Within the boundaries of the incorporated Bicknell Town, some distribution lines are too small, and additional valves and hydrants are needed to meet normal water supply and fire prevention requirements.
- * The metering system is outdated and does not meet back flow prevention requirements issued by the state. The metering system is in need of replacement.

To provide Bicknell residents with a safe and adequate water supply system, the Town of Bicknell has proposed some culinary water system improvements. These improvements include redevelopment of their Mountain Springs located on the Thousand Lake Plateau, the development of a new spring area near these existing springs, construction of a new 250,000 gallon storage facility, the construction of a new chlorination building, and some distribution improvements within the limits of Bicknell Town, Utah.

Copies of the Application and Environmental Review, when completed, will be available for at 138 South Main, Fremont River Ranger District, Loa UT, 84747. For further information contact Cody Clark, Recreation Manager, at 435.896.1023. Any person interested in commenting on this proposed project should submit comments to the address above by June 30, 2012.

Published in The Wayne and Garfield County Insider on MAY 24, 2012.

Attachment B
BLM Interdisciplinary Team Analysis Record Checklist



INTERDISCIPLINARY TEAM CHECKLIST

Project Title: Bicknell Town Culinary Water Project

NEPA Log Number: DOI-BLM-UT-C020-2012-0028-EA

File/Serial Number: UTU-32112

Project Leader: Michael Utley, Realty Specialist

Proposed Action: The Bicknell Town Culinary Water Project consists of redeveloping existing and developing new spring sources, construction of an additional storage tank, construction of a new chlorination building, replacing the town's water meters, and replacing some of the distribution lines.

The construction items affecting BLM administered lands will be the construction of a 250,000 gallon storage tank adjacent to the existing 350,000 gallon tank and construction of a new chlorination building near the same location as the existing building. The new storage tank will be constructed of concrete material and will be approximately 50 feet in diameter and 16 feet tall. All but the top 1-foot of the tank will be buried with native vegetation with a 3-1 slope around the perimeter. The tanks will be fenced in order to protect the Town's water source. The valves and piping necessary to connect the new tank to the existing distribution system will also be installed at the time of construction. The existing chlorination building will be demolished and removed from the site once the new building is in place and in operation. There will also be a buried electrical line along the linear portion of the right-of-way and ending at the chlorination facility. The size of the linear portion of the currently authorized right-of-way is 20' x 700'. This width will need to be increased to 30' to facilitate the buried power line. It is proposed that we add 5' on each side of this portion of the right-of-way.

An approximate construction area of 335' x 335' will be needed. The total size of the pad for the new tank along with the additional tank will revert back to the currently authorized 300' x 300'.

All changes are contained to T. 28 S., R. 3 E., sec. 25 SW1/4NW1/4.

Legal Description:

Bicknell Town Culinary Water Project

Salt Lake Meridian (Twenty-Sixth Principal Meridian)

T. 28 S., R. 3 E.,
 sec. 25, NE1/4NW1/4, E1/2SW1/4NW1/4, W1/2SW1/4NW1/4
 sec. 26, S1/2NE1/4SE1/4NE1/4, S1/2SE1/4NE1/4

DETERMINATION OF STAFF: *(Choose one of the following abbreviated options for the left column)*

NP = not present in the area impacted by the proposed or alternative actions
 NI = present, but not affected to a degree that detailed analysis is required
 PI = present with potential for relevant impact that need to be analyzed in detail in the EA
 NC = (DNAs only) actions and impacts not changed from those disclosed in the existing NEPA documents cited in Section D of the DNA form. The Rationale column may include NI and NP discussions.

Determi- nation	Resource	Rationale for Determination*	Signature	Date
RESOURCES AND ISSUES CONSIDERED (Includes Supplemental Authorities Appendix 1 H-1790-1)				
NI	Air Quality	No impact to air quality would be expected by the small amount of localized and short term dust created by the proposed project.	Phil Zieg	7/13/12
NP	Areas of Critical Environmental Concern	There are no Areas of Critical Environmental Concern located in the project area.	Noelle Glines-Bovio	7-2-12
NP	BLM Natural Areas	There are no BLM Natural Areas located in the project area.	Noelle Glines-Bovio	7-2-12
NP	Cultural Resources	No cultural resources of significance located in project area.	M. Jared Lundell	7/17/12
NP	Environmental Justice	Title VI of the Civil Rights Act and Executive Order 12898 ("Environmental Justice") requires federal agencies to identify and address "disproportionately high and adverse human health or environmental effects of its programs, policies and activities on minority populations and low-income populations." In accordance with CEQ Environmental Justice Guidelines, minority populations should be identified and effects to them analyzed, if either of the following two conditions apply: (1) of those likely to be affected by the Proposed Action, 50 percent or more would be part of the minority population, and (2) within the project area, the minority population percentage is greater than the minority population percentage outside the project area or in the general population. Neither of these conditions applies to the project area for this effort. Therefore, implementation and potential environmental consequences of the action considered would not disproportionately affect any specific group of people (including any racial, ethnic, or socioeconomic group).	Michael B. Utley	6/29/2012

Determination	Resource	Rationale for Determination*	Signature	Date
NP	Farmlands (Prime or Unique)	Proposed project area has no identified Prime/unique farmlands on or near the area.	Brant Hallows	7/19/12
NI	Fish and Wildlife	Dominant wildlife species known to occur in the area include mule deer, elk, black-tailed jackrabbit, cottontail rabbit, rock squirrel, horned lark, pinyon jay, great horned owl, striped skunk, spotted skunk, Ord's kangaroo rat and deer mouse. Wildlife habitat (approx. 2 acres) would be lost due to this proposal. Some wildlife species would be permanently displaced and some would be temporarily displaced due to this proposal. Considering the fact that 2 acres of lost habitat is miniscule compared to the existing, surrounding habitat, and the fact that all wildlife species would not be permanently displaced and lost from the site, it is determined that fish and wildlife would not be significantly impacted.	Larry Greenwood	6-29-12
NP	Floodplains	Although the proposed action may cross ephemeral channels, there will be no floodplains that will be impacted. Proposed actions will not be contrary to Executive Order 11988 – Floodplain Management.	Brant Hallows	7/19/12
NI	Fuels/Fire Management	The proposed project would have no impact on Fuels/Fire Management	Bob Bate	7/13/12
NI	Geology / Mineral Resources/Energy Production	The proposed project will have no negative impact on geology/mineral resources or energy production	John Reay	7/24/12
NI	Invasive Species/Noxious Weeds (EO 13112)	No known noxious weeds on site. Bicknell City should be responsible for all weed control in relation to their right of way and areas of disturbance.	Burke Williams	7/16/12
NI	Lands/Access	The only other rights-of-way in the vicinity of the subject right-of-way are UTU-29404 and UTU-60627. UTU-29404 is a Garkane Power Association line. UTU-60627 is an irrigation pipeline and holding pond. Contractors should be diligent in avoiding damage to the improvements authorized by these two rights-of-way. Any damages to these improvements shall be the responsibility of the contractor and holder of the subject right-of-way.	Michael B. Utley	6/29/2012
NI	Livestock Grazing/Range	Livestock grazing occurs on the Bicknell allotment that the proposed facilities fall within. Grazing takes place from mid November to mid January. The proposed facilities will have negligible effects on the range and livestock grazing but the proponent should take measures to restore any adverse impacts to the range as well as avoid livestock conflicts if construction occurs during the grazing season.	Brandon Jolley	7/18/2012
NP	Migratory Birds.	Priority Migratory Birds are not present. Wrong Habitat.	Larry Greenwood	6-29-12
NI	Native American Religious Concerns	There are Indian religious issues in the surrounding areas, but they will not be affected by this project.	Craig Harmon	7/12/12
NI	Paleontology	The surficial geology in the project area is characterized by Tertiary deposits and will have no negative impact on potential paleontological resources	John Reay	7/24/12
NI	Rangeland Health Standards & Guidelines	No long term negative impacts to rangeland health, vegetation and the watershed should occur.	Brandon Jolley	7/18/2012
NI	Recreation	The recreation activities found within the project area are hunting, OHVing, and photography. All of these activities are dispersed in nature. There is no developed recreation sites located in the project area.	Noelle Glines-Bovio	7-2-12

Determination	Resource	Rationale for Determination*	Signature	Date
NI	Socio-Economics	Socio-economic impact from the proposed project is expected to be minor. The project could potentially have a short term impact by creating jobs and increased revenue to local businesses during construction. The project could also possibly create long term impacts by improving culinary water delivery and capacity allowing planning for future growth of the area.	Michael B. Utley	6/29/2012
NI	Soils / Watersheds	The new tank will permanently displace a small (50 ft. diameter tank) amount of soil. The soil loss is negligible. The majority of the proposed action will occur in existing disturbance and does not need to be addressed. Any disturbance outside of the existing disturbance will naturally aggregate and/or stabilize through re-vegetation. The area may be more susceptible to wind and water erosion during the construction phase and shortly thereafter, but the increased susceptibility will only be short-term and there will be no long-term or offsite impacts.	Brant Hallows	8/1/12
NP	Utah Sensitive Plant and Animal Species other than FWS candidate or listed species	See Attached Clearance.	Larry Greenwood	6-29-12
NP	Threatened, Endangered or Candidate Plant Species	See Attached Clearance.	Larry Greenwood	6-29-12
NP	Threatened, Endangered or Candidate Animal Species	See Attached Clearance.	Larry Greenwood	6-29-12
PI	Vegetation	<p>The proposed project site is dominated by scattered pinyon/juniper trees, snake weed, low rabbit-brush, blue grama, Indian ricegrass, Wyoming big sagebrush and annual weedy species such as Russian thistle, tumble mustard, blue mustard, African mustard and halogeton. The existing vegetation (approx. 2 acres) would be lost due to surface disturbance.</p> <p>Some of the existing vegetation would be permanently loss due to culinary water tank placement etc. However, it is assumed that some of the disturbance would be rehabilitated through seeding. Any rehabilitation would be a positive impact, because seeding with desirable perennial species would result in better, future vegetation. Long-term benefits, due to rehabilitation through seeding, far out-weigh any short-term loss of the current vegetative resource on the proposed project area.</p> <p>For the recommended seed mixture, see the attached Special Status Plant and Animal Clearance.</p> <p>Topsoil should be collected and piled and used in the final rehabilitation process. All of the seed should be mixed together, and should either be broadcast seeded or drill seeded. If the area is broadcast seeded then this should be done by using a four-wheeler equipped with a seeder. Seeding rate should be 16 pounds per acre. After broadcast seeding, then the area should be drwg with a small harrow (used with four wheeler), which would cover the seed.</p> <p>If the area is drill seeded then a small tractor equipped with a</p>	Larry Greenwood	6-29-12

Determination	Resource	Rationale for Determination*	Signature	Date
		farm drill should be used. Seeding rate should be 8 pounds per acre. All of the seeding should be done in mid to late Fall (October/November) to prevent premature sprouting and subsequent winter killing of the forb species, due to late summer/early Fall Precipitation combined with warm soil temperatures.		
NI	Visual Resources	This project is located in VRM Class III. VRM Class III states that the project can be seen but not dominate the landscape. Visual Resource Management considers projects in reference to landscape management from start to finish of a project. As state in the Plan of Development this project would be partially buried. The project described above would only be visual form higher locations. The construction phase would be the only time that this project would be visible. The sights and sounds of the construction could stand out. Once the project has been completed and the proponent follows standard reclamation procedures identified in the Plan of Development the contrast of this project will not be obvious. Seeding and edging will help blend the project; making the finished project look semi-natural. Due to the topography and short duration of construction this project will not have a significant adverse effect on the recreating public. Some recreation groups might be more sensitive to the temporary contrast of the vegetation, and construction equipment, while others recreationist might notice the project with no impression. This project is acceptable under the Visual Resource Management guidelines.	Noelle Glines-Bovio	7-2-12
NI	Wastes (hazardous or solid)	There currently are no identified issues with solid or hazardous wastes in the proposed area. The project itself is not anticipated to create any wastes issues. However, during construction all state and federal laws should be followed for any storage, use or disposal of chemicals. Should a release of any petroleum or other chemicals during construction occur, these laws would govern the reporting and remediation of such.	Randy Peterson	7/6/12
NI	Water Resources/Quality (drinking/surface/ground)	This assumes no alteration will occur that would diminish the channel characteristics of the ephemeral drainage system involved with BLM water right 95-2222 (Unnamed Intermittent Stream).	Phil Zieg	7/13/12
NP	Wetlands / Riparian Zones	No Zones Present.	Larry Greenwood	6-29-12
NP	Wild and Scenic Rivers	There are no Wild and Scenic Rivers located in the project area.	Noelle Glines-Bovio	7-2-12
NP	Wilderness/WSA	There are no Wilderness/WSA located in the project area.	Noelle Glines-Bovio	7-2-12
NP	Wild Horses and Burros	Not located within any Herd Management Unit. No horses or burros present.	Chris Colton	7/5/12
NI	Woodland / Forestry	The proposed project site does contain some scattered piñon and juniper trees. Some of the existing vegetation would be permanently loss due to culinary water tank placement etc. However, it is	Bob Bate	7/13/12

Determination	Resource	Rationale for Determination*	Signature	Date
		<p>assumed that some of the disturbance would be rehabilitated through seeding. Any rehabilitation would be a positive impact, because seeding with desirable perennial species would result in better, future vegetation. Long-term benefits, due to rehabilitation through seeding, far out-weigh any short-term loss of the current vegetative resource on the proposed project area.</p> <p>***see recommended rehabilitation seed mixtures under the vegetation portion***</p>		
	Other Applicable Resources / Issues**			

FINAL REVIEW:

Reviewer Title	Signature	Date	Comments
Environmental Coordinator		8/5/12	
Authorized Officer			

SPECIAL STATUS PLANT AND ANIMAL CLEARANCE

DATE June 29, 2012

PROJECT Bicknell Town Culinary Water Project

BLM ALLOTMENT Bicknell

GEOLOGY Flagstaff Limestone, Quaternary Gravelly Soils

LEGAL DESCRIPTION T. 28 S. R. 3 E. Section 25; NE1/4NW1/4, E1/2SW1/4NW1/4
W1/2SE1/4NW1/4

INTRODUCTION

BLM land within the Richfield Field Office contains eleven species that are federally listed as Threatened, Endangered or Proposed as such (Special Status Species). There are four animal species and seven plant species as follows:

Centrocercus urophasianus (Greater Sage Grouse) Candidate 92 FR 989; March 5, 2010.

Cynomys parvidens (Utah Prairie Dog) Threatened 49 FR 22334; May 29, 1984.

Empidonax trailii extimus (Southwestern Willow Flycatcher) Endangered 60 FR 10715; February 27, 1995.

Haliaeetus leucocephalus (Bald Eagle) Threatened 60 FR 36010; July 12, 1995.

Strix occidentalis lucida (Mexican Spotted Owl) Threatened 58 FR 14271; March 16, 1993.

Erigeron maguirei Cronq. (Maguire Daisy) Threatened 61 FR 31058; June 19, 1996.

Pediocactus despainii Welsh & Goodrich (San Rafael Cactus) Endangered 52 FR 34917; September 16, 1987.

Pediocactus winkleri Heil (Winkler's Footcactus) Threatened 63 FR 44587; August 20, 1998.

Schoenocrambe barnebyi (Welsh & Atwood) Rollins (Barneby Reed-mustard) Endangered 57 FR 1403; January 14, 1992.

Sclerocactus wrightiae L. Benson (Wright Fishhook Cactus) Endangered 44 FR 58868; October 11, 1979.

Spiranthes diluvialis (Sheviak) Welsh Threatened 57 FR 2053;
January 17, 1992.

Townsendia aprica Welsh & Reveal (Last Chance Townsendia)
Threatened 50 FR 33737; August 21, 1985.

There are many other species within the Richfield Field Office that are not officially listed, but are considered Special Status Species. Known populations of all Threatened, Endangered and other special status species have been located and documented within the Field Office Area. Habitat information and requirements are known and can be applied to various actions accordingly.

REFERENCE SOURCES

1. Welsh, S.L. 1978. Endangered and Threatened Plants of Utah; A Reevaluation. Great Basin Naturalist 38 (1) : 118.
2. Greenwood, L.R. 1980 Endangered, Threatened or Sensitive Plant List - Richfield Field Office.
3. Endangered, Threatened or Sensitive Plant photograph collection Richfield Field Office - Photos verified by Dr. Welsh of BYU.
4. Endangered, Threatened or Sensitive plant location data summary for the Richfield Field Office - Data taken from mounted specimens contained in the BYU Herbarium; computer printout for the BYU Herbarium; and plants collected by L. Greenwood and subsequently Verified by Dr. Welsh.
5. Special Status Species location overlay for the Richfield Field Office.
6. Richfield Field Office Herbarium - Endangered, Threatened and Sensitive Plant collection for the Richfield Field Office. All specimens verified by S.L. Welsh of BYU.
7. Utah Endangered, Threatened and Sensitive Plant Field Guide. 1991. Atwood, Holland, Bolander, Franklin, House, Armstrong, Thorne and England.
8. A Field Guide to the Mammals. 1985. William H. Burt and Richard P. Grossenheider.
9. Birds of North America. 1966. Chandler S. Robbins, Bertel Bruun and Herbert S. Zim.
10. Utah Candidate Species. 1993. U.S. Fish and Wildlife Service, Utah-Colorado Field Office. Salt Lake City, Utah.

SPECIAL STATUS SPECIES OCCURRENCE

Populations of the described special status species do not occur in the area of concern. Therefore, there would not be any adverse impacts to special status plant and animal species.

RECOMMENDATIONS

Allow the action to take place.

RECOMMENDED SEED MIXTURE

<u>Plant Species</u>	<u>Pounds/Acre</u>
1) Sand Dropseed	0.5
2) Alkali Sacaton	0.5
3) Bozoisky Russian Wildrye	2.0
4) Trailhead Great Basin Wildrye	1.0
5) Luna Pubescent Wheatgrass	1.0
6) Covar Sheep Fescue	2.0
7) Rocky Mountain Beeplant	0.5
8) Gooseberry Leaf Globemallow	0.5
9) Richfield Firecracker Penstemon (P. eatonii)	0.5
10) Cedar Palmer Penstemon (P. palmeri)	0.5
11) Appar Lewis Flax	2.0
12) Common Sunflower	2.0
13) Madrid Yellow Sweetclover	0.5
14) Delar Small Burnet	1.0
15) Wyoming Big Sagebrush	0.5
16) Forage Kochia	1.0

TOTAL 16.0

COMMENTS

Topsoil should be collected and piled and used in the rehabilitation process. All of the seed should be mixed together, and then either be broadcast seeded or drill seeded. Depending on topography, a combination of broadcasting and

drilling may have to be used. If the area is broadcast seeded then this should be done by using a four-wheeler equipped with a seeder. Seeding rate should be 16 pounds per acre. After broadcast seeding, then the area should be drug with a small harrow (used with four wheeler), which would cover the seed.

If the area is drill seeded then a small tractor equipped with a farm drill should be used. Seeding rate should be 8 pounds per acre.

All of the seeding should be done in mid to late Fall (October/November) to prevent premature sprouting and subsequent winter killing of the forb species, due to late summer/early Fall Precipitation combined with warm soil temperatures.

/s/ Larry Greenwood

Lands Administered by the
FISHLAKE NATIONAL FOREST
 Threatened, Endangered, Proposed and Sensitive Plant Species
 (from R-4 TES Plant List of 07/2011)

Districts with Known
 Occurrences
B F FR R

<u>B F FR R</u>		<u>Common Name</u>
	Listed Endangered Plant Species:	
FR	<i>Pediocactus despainii</i>	San Rafael cactus
	Listed Threatened Plant Species:	
FR R	<i>Townsendia aprica</i>	Last Chance townsendia
	Sensitive Plant Species on Regional Forester's List:	
F	<i>Aster kingii</i> var. <i>barnebyana</i>	Barneby woody aster
FR	<i>Astragalus henrimontanensis</i>	Dana's milkvetch
FR	<i>Botrychium paradoxum</i>	Paradox moonwort
FR	<i>Astragalus consobrinus</i>	Bicknell milkvetch
FR	<i>Castilleja aquariensis</i>	Aquarius paintbrush
B	<i>Castilleja parvula</i> var. <i>parvula</i>	Tushar paintbrush
FR	<i>Cymopterus beckii</i>	pinnate spring-parsley
B	<i>Draba ramulosa</i>	Belknap Peak draba
B	<i>Draba sobolifera</i>	creeping draba
F FR	<i>Epilobium nevadense</i>	Nevada willowherb
FR	<i>Erigeron maguirei</i>	Maguire daisy
B F R	<i>Eriogonum batemanii</i> var. <i>ostlundii</i>	Elsinore buckwheat
FR	<i>Gilia caespitosa</i>	Wonderland alice-flower
FR	<i>Najas caespitosa</i>	Fish Lake naiad
FR	<i>Penstemon parvus</i>	little penstemon
B F FR R	<i>Penstemon wardii</i>	Ward beardtongue
FR	<i>Potentilla angelliae</i>	Angell cinquefoil
FR R	<i>Salix arizonica</i>	Arizona willow
B	<i>Senecio castoreus</i>	Beaver Mountain groundsel
FR	<i>Thelesperma subnudum</i> var. <i>alpinum</i>	Bicknell thelesperma
F R	<i>Townsendia jonesii</i> var. <i>lutea</i>	Sevier townsendia

District codes: B - Beaver; F - Fillmore; FR – Fremont River; R - Richfield; (DAT, 03-06-12)

Attachment C
Email from RDCC



Dao Yang

From: Judy Edwards <judyedwards@utah.gov>
Sent: Friday, April 20, 2012 2:10 PM
To: Dao Yang; Cindy Smith
Subject: Re: Bicknell Water Improvement

Dao, the project was posted on the RDCC site. The time for comments has passed and we received no comments from any of our agencies. If you would like to see the posting, it is #31761.

Judy Edwards
Senior Public Lands Policy Analyst
Public Lands Policy Coordination Office
5110 State Office Building
Salt Lake City, UT 84114

801-537-9023 office
801-657-2060 cell
>>> Dao Yang <dyang@sunrise-eng.com> 4/20/2012 1:37 PM >>>
Judy and Cindy,

I sent the attached on March 20, 2012 for posting on RDCC website. However, I checked on the website today. I did not see the project posted there.

Please post the project for public comments.

Thanks,
Dao

Attachment D
Letter from NRCS



United States Department of Agriculture



Natural Resources Conservation Service
125 South State Street, Room 4402
Salt Lake City, UT 84138-1100
(801) 524-4550
FAX (801) 524-4403

April 9, 2012

Mr. Dao Yang, P.E.
Sunrise Engineering, Inc.
12227 South Business Park Drive, Suite 220
Draper, Utah 84020

RE: Prime Farmland Status

Dear Mr. Yang:

Please find attached Farmland Conversion Impact Rating (CPA-106), Farmland Classification Report, and Hydric Soil Rating for the proposed project in Wayne County, Utah.

The proposed development project will not impact important farmland resources in Utah. None of the soil map units are affected, including statewide, prime, and unique.

The *Soil Survey of Loa-Marysvale Area, Utah* does not indicate the presence of any hydric soils in the project area. However, on-site verification is necessary to establish the existence, size, shape, and type of wetlands. The NRCS cannot perform wetland determinations unless it is in support of USDA farm programs.

The U.S. Army Corps of Engineers administers the Section 404 program governing the discharge of dredge and fill material into waters in the U.S. as defined and guided by Section 404 of the Clean Water Act. The wetlands which fall within the Section 404 regulation are referred to as jurisdictional wetlands.

I hope you find this information helpful. Please don't hesitate to call (801.524.4574) or email (mike.domeier@ut.usda.gov) with any further questions.

Sincerely,

A handwritten signature in blue ink that reads "Mike Domeier".

Mike Domeier
State Soil Scientist, NRCS, Utah

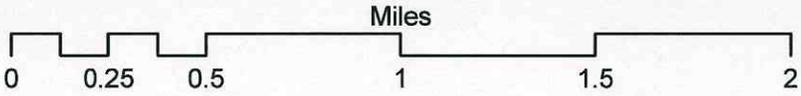
Enclosure: Form AD-1006, Farmland Classification Report, and Hydric Soil Rating for project area

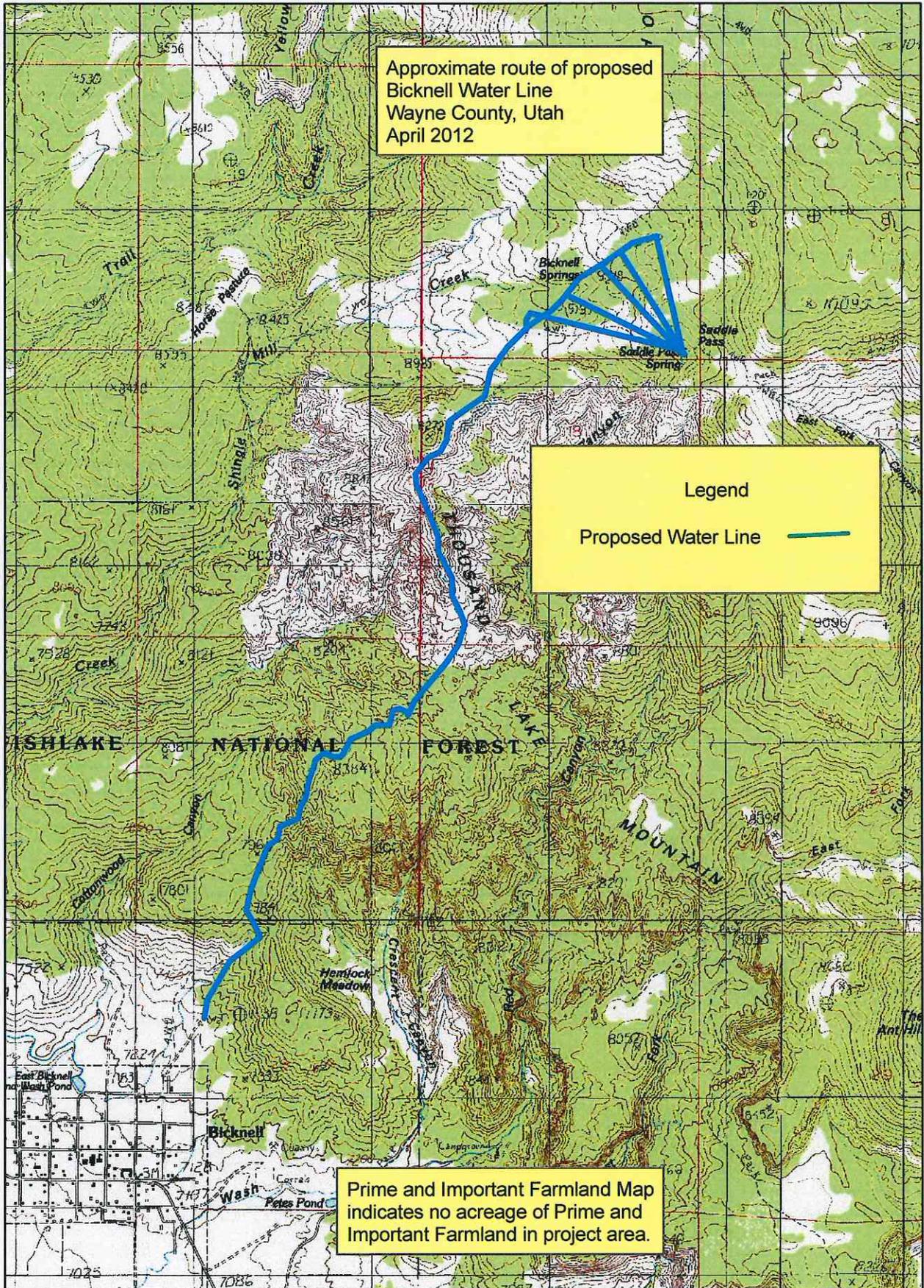
Approximate route of proposed
Bicknell Water Line
Wayne County, Utah
April 2012

Legend

Proposed Water Line ———

Prime and Important Farmland Map
indicates no acreage of Prime and
Important Farmland in project area.

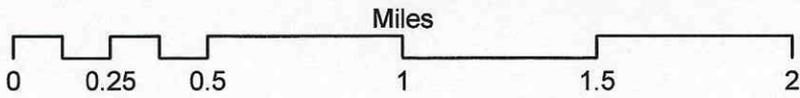




Approximate route of proposed
Bicknell Water Line
Wayne County, Utah
April 2012

Legend
Proposed Water Line —

Prime and Important Farmland Map
indicates no acreage of Prime and
Important Farmland in project area.



Attachment E
Letter from USACE





DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, SACRAMENTO
CORPS OF ENGINEERS
1325 J STREET
SACRAMENTO CA 95814-2922

REPLY TO
ATTENTION OF

April 17, 2012

Regulatory Division SPK-2012-00384

Mr. Dao Yang
Sunrise Engineering
12227 South Business Park Dr, Ste 220
Draper, UT 84020

Dear Mr. Yang:

We are responding to your March 20, 2012 request for comments on the Bicknell Culinary Water System Improvement project. The project is located near Shingle Mill Creek, Section 7, Township 28 South, Range 4 East, Salt Lake Meridian, Latitude 38.388°, Longitude -111.511°, north of Bicknell, Wayne County, Utah. Your identification number is SPK-2012-00384.

The Corps of Engineers' jurisdiction within the study area is under the authority of Section 404 of the Clean Water Act for the discharge of dredged or fill material into waters of the United States. Waters of the United States include, but are not limited to, rivers, perennial, intermittent, or ephemeral streams, lakes, ponds, wetlands, wet meadows, springs, and seeps. Project features that result in the discharge of dredged or fill material into waters of the United States will require Department of the Army authorization prior to starting work.

To ascertain the extent of waters on the project site, the applicant should prepare a wetland delineation, in accordance with the "Minimum Standards for Acceptance of Preliminary Wetlands Delineations", under "Jurisdiction" on our website at the address below, and submit it to this office for verification. A list of consultants that prepare wetland delineations and permit application documents is also available on our website at the same location.

The range of alternatives considered for this project should include alternatives that avoid impacts to wetlands or other waters of the United States. Every effort should be made to avoid project features which require the discharge of dredged or fill material into waters of the United States. In the event it can be clearly demonstrated there are no practicable alternatives to filling waters of the United States, mitigation plans should be developed to compensate for the unavoidable losses resulting from project implementation.

Please refer to identification number SPK-2012-00384 in any correspondence concerning this project. If you have any questions, please contact Karen Clementsen at 196 E Tabernacle St, Suite 30, St George, UT 84770-3474, email Karen.L.Clements@usace.army.mil, or telephone 435-986-1961. For more information regarding our program, please visit our website at www.spk.usace.army.mil/regulatory.html.



We appreciate your feedback. At your earliest convenience, please tell us how we are doing by completing the customer survey on our website under *Customer Service Survey*.

Sincerely,

A handwritten signature in black ink that reads "Karen Clementsen". The signature is written in a cursive style with a large, stylized initial "K".

Karen Clementsen
Project Manager
St George Regulatory Office

Copy furnished:

Cody Clark, USDA Forest Service, Fremont River Ranger District, 138 South Main Street, P.O. Box 129, Loa, UT 84747

Mike Utley, Bureau of Land Management, Richfield Field Office, 150 East 900 North, Richfield, UT 84701

Attachment F
Letter from USU Wayne County Extension



18 South Main
Post Office Box 160
Loa, UT 84747-0160
Phone: (435) 836-1312
Fax: (435) 836-2479



Sunrise Engineering-Dao Yang

March 27, 2012

12227 South Business Park Drive #220

Draper, Utah 84020

Mr. Yang:

After reading the information and viewing maps of the proposed improvements to the Bicknell town drinking water system I endorse the proposed changes.

During the past five years I have been involved in promoting and securing funding for three different community drinking water projects. All projects were necessary. In the multi-county area that I serve, I would rank the Bicknell system the most necessary among seventeen drinking water systems that I am familiar with.

I cannot identify any environmental or social consequences that should prevent the proposed practices.

Sincerely,

Verl Bagley,

County agent and professor

Attachment G
Letter to Ute Indian Tribe





March 20, 2012

Ute Indian Tribe
Ms. Betsy Chapoose
Cultural Rights and Protection Office
PO Box 190
Ft. Duchesne, UT 84026-0190

RE: Proposed Water System Improvement Project
Bicknell, Utah

Dear Ms. Chapoose:

I am working on an Environmental Assessment (EA) for a proposed culinary water system improvement project in Bicknell, Utah. The project would occur on public lands administered by the U.S. Forest Service (USFS) and the U.S. Bureau of Land Management (BLM), and existing roads within the limits of the incorporated Bicknell Town, Utah. The project would be funded by the Rural Development of the U.S. Department of Agriculture (USDA-RD). This EA is required by USDA-RD, USFS-Fremont River Ranger District and BLM-Richfield Field Office.

Bicknell is a town located between the Dixie National Forest and the Fishlake National Forest in Rabbit Valley, south central Utah. The Town of Bicknell owns and operates a public culinary water system that serves residents in Bicknell, Utah. The water sources of the system are six springs. Five of the springs are located in the Thousand Lake Mountain (see Figure 1), and the other (the Brinkerhoff Spring) is located approximately 1.5 miles southwest of the town and originates from the Awapa Plateau. Recently, Sunrise Engineering completed a 5-point analysis of Bicknell Town's water system based on a projected annual population growth rate of 0.7% in next 20 years. The analysis indicates the following:

- The system does not have adequate water sources to meet the current need for indoor, outdoor and fire prevention water uses.
- The system will not have adequate storage capacity as well as water sources to meet future indoor, outdoor and fire prevention water needs.
- The existing water system does not have the capacity to continuously disinfect the mountain spring water. The existing metering building needs to be replaced with a new chlorination building.

- Within the boundaries of the incorporated Bicknell Town, some distribution lines are too small, and additional valves and hydrants are needed to meet normal water supply and fire prevention requirements.

To provide Bicknell residents with a safe and adequate water supply system, the Town of Bicknell has proposed the culinary water system improvements project that would include the following:

Water Storage Tank and Chlorination Building: As shown in Figure 1, a new 250,000-gallon water storage tank would be constructed adjacent to an existing 350,000-gallon water storage tank on public lands administered by the BLM-Richfield Field Office. The tank would be completely buried using the original soil excavated for the tank construction. The existing metering building that sits near the existing water storage tank would be replaced with a new building that would include chlorination equipment. After the new tank and the new chlorination building are installed and connected to the water supply system, the existing metering building would be disconnected from the supply system and demolished. Presently, the Town of Bicknell has a permit to use a 330-foot by 330-foot Right-of-Way (ROW) from the BLM for the existing water tank and the chlorination building in the northwestern quarter of Section 25, Township 28 South, Range 3 East, Salt Lake Base and Meridian (SLBM). The ROW would need to be expanded to a 400-foot square to accommodate the proposed new tank, new chlorination building and construction activities. The existing access road would continue to be used for the site access road to the new and existing tank site. This access road may need to be extended a short distance to reach the new tank site. Short pipelines would also be installed to connect the proposed new and existing tanks and the new chlorination building at the tank site.

Spring Development and Redevelopment: As shown in Figures 1 and 2, the five existing springs on the Thousand Lake Mountain would be redeveloped to improve their production and a new spring would be developed to obtain additional water on the Fishlake National Forest administered by the USFS-Fremont River Ranger District. Approximately 1,300 feet of 6-inch diameter PVC pipeline would also be installed to connect the new spring to the existing pipeline which transmits water from the existing springs to the existing water storage tank. The proposed spring development and redevelopment would occur in the southern half of Section 7, Township 28 South, Range 4 East, SLBM. Currently, Bicknell Town has a permit to operate and maintain culinary water facilities which include five fenced areas of land for the five existing springs, each 60 feet wide and 180 feet long, and a strip of land 12 feet wide (6 feet on each side of the centerline) and 16,400 feet long for a water transmission line. Redevelopment of the five existing springs would occur on the permitted area for the springs that had previously been disturbed for the construction of the springs, along with a 20-foot buffer around the existing fenced areas. Spring #4 would be expanded to the north and west to collect adjacent areas to the spring site. Additional area needed for this spring would be approximately 0.2 acre. Development of the proposed new spring and installation of the new pipeline

would require approximately 0.6 acre of additional forest land (an area of 60 feet wide and 180 feet long for the new spring and a strip of 12 feet wide and 1,300 feet long for the new pipeline).

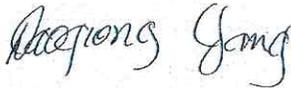
Replacement of Distribution Line and Metering System and Installation of Additional Valves and Hydrants: Some 4-inch diameter distribution lines would be replaced with 8-inch diameter PVC pipes and the existing metering system would be replaced with a new system within the boundaries of the incorporated Bicknell Town in Sections 25, 26, 35 and 36, Township 38 South, Range 3 East, SLBM. Twenty additional valves and 14 hydrants would also be installed in the same area. All the work would be conducted within ROW of existing roads.

After construction of the project is complete, the disturbed area would be restored to the existing contour as much as practically possible. Where necessary, re-vegetation would occur on disturbed areas.

Please review the information presented herein and return your comments in writing within 30 days upon receipt of this letter.

Thank you for your assistance. If you have any question regarding this letter, please contact me at (801) 523-0100. My email address is dyang@sunrise-eng.com.

Sincerely,
Sunrise Engineering, Inc.



Dao Yang, P.E.
Project Engineer/Hydrogeologist

Cc: Cody Clark – USFS Recreation Manager
Mike Utley – BLM Realty Specialist

Enclosure: Figures 1 and 2

Attachment H
Email from USFS about Boreal Toad



Dao Yang

From: Jeff Albrecht
Sent: Thursday, April 05, 2012 7:39 AM
To: Derek Anderson; Dao Yang
Subject: FW: TES Boreal Toad

Here is a comment from the fisheries biologist. Please read through this and let me know how we plan to include these comments in the report.

Thanks,

Jeff

From: Clark, Cody D -FS [<mailto:cclark@fs.fed.us>]
Sent: Thursday, April 05, 2012 7:36 AM
To: Jeff Albrecht
Cc: slanders@blm.gov
Subject: TES Boreal Toad

Jeff I got an email from our fisheries biologist. His only species he is concerned about is the Boreal Toad, and suggest doing some surveys. I will cut and past the relevant parts of his email below.

Most boreal toad sightings on Thousand Lake mountain are on top at the 10,000 foot level on the east side of the peak. I think this is the best habitat, but some of the fact that we have the most sightings there is due to the fact that is where the road is - you find things where you look for them, and we haven't looked at all the isolated ponds and springs on the mountain away from the main roads. We use 8,000 feet as a cut-off elevation for the two Forests for BT. We have found boreal toads at Round Lake, which is right about 8,000 feet. I had thought Sulphur Spring was low probability when we dealt with that for Torrey, but later a toad was found there or at a nearby pond. Surveys can have a low probability of detection - boreal toads have low densities even in strong populations in good habitat. I think Mike Golden provided me with a figure of about .1-.15 probability of detection per visit, which would argue for 8-10 visits to be sure (Note that UDWR missed boreal toads in several surveys at multiple sites on Thousand Lake mountain before a Forest Service employee found them again in 2000). Given what I feel is a lower probability of use on the Bicknell Springs, I was thinking of 3 surveys. I ran that past UDWR biologists and they felt comfortable with 3 surveys if the contractor had some experience with amphibians and their surveys.

So my proposal for the surveys would be something like this:

3 site visits to all of the springs and general habitat

- One in late spring-early summer; as early as you could practically get there - maybe late May to early June

- One in early summer - late June to early July

- One in mid-late summer - late July to early August no later than mid-August

Spend at least an hour min looking at each survey even if habitat is simple, more if needed to fully do below -

- Look for any standing water, including ponds, seeps, standing water in depressions, vehicle ruts, etc.

 - Look for boreal toad egg masses/strings

 - Look for tadpoles

 - Look for adult toads

Adult or juvenile toads:

 - Look along any seeps or flowing channels even if only inches wide.

 - Check undercuts, by feel if necessary

Look under large wood

Look in/near riparian vegetation

Look at upland habitat within 100m of water or riparian habitat

Document any toads found - egg masses, tadpoles, or adults with GPS location, date, time, habitat type, weather conditions

Document any negative surveys with date, time surveyed, and location

Document # of survey participants

Because of AIS issues I mentioned in the 7-mile email about toads, I'd recommend they generally not handle toads, disinfect hands between toads if they do wind up handling them, and have relatively clean/dry waders or boots. I wouldn't worry too much about regular hiking boots, but if someone was in wet mud looking at amphibians at one site, you would want to clean/dry or disinfect waders or irrigator boots prior to using it at another site.

If you have any questions please contact me

Cody Clark - Recreation Manager

Fremont River Ranger District

Fishlake National Forest

138 S. Main

Loa, UT 84747

Ph. 435-896-1023

Fax. 435-836-2366

cclark@fs.fed.us

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Attachment I
Biologic Review



**Biological Review
of
Special Status Species
for the
Bicknell Culinary Water Improvement Project**

**Fremont Ranger District
Fish Lake National Forest**



Prepared by:

JBR Environmental Consultants, Inc.
321 N. Mall Dr. #I-202
St. George, UT 84790
435-652-8301

Prepared for:

Sunrise Engineering, Inc.
12227 Business Park Dr. Suite #220
Draper, Utah 84020
801-523-0100

June 21, 2012

Contents

1. Introduction 1
2. Consultation to Date..... 3
 Table 1. Terrestrial wildlife species analyses for this project..... 3
 Table 2. Sensitive plant species analyses for this project. 6
3. Survey Results 8
 Table 3. Species observed during survey (June 7, 2012) 9
4. Conclusion 11

Appendices

Appendix A – Project Maps

Appendix B – Site Photos

1. Introduction

The Town of Bicknell has proposed a culinary water system improvement project. The project would occur on public lands administered by the U.S. Forest Service (USFS) and the U.S. Bureau of Land Management (BLM), and existing roads within the limits of the incorporated Bicknell Town, Utah. The project would be funded by the U.S. Department of Agriculture Rural Development (USDA-RD).

The Town of Bicknell owns and operates a public culinary water system that serves residents in Bicknell, Utah. The water sources of the system are six springs. Five of the springs are located in the Thousand Lake Mountain and the other is located approximately 1.5 miles southwest of the town. Recently, Sunrise Engineering completed a 5-point analysis of Bicknell Town's water system based on a projected annual population growth rate of 0.7% in the next 20 years. The analysis indicates the following:

- The system does not have adequate water sources to meet the current need for indoor, outdoor, and fire prevention water uses.
- The system will not have adequate storage capacity as well as water sources to meet future indoor, outdoor, and fire prevention water needs.
- The existing water system does not have the capacity to continuously disinfect the mountain spring water. The existing metering building needs to be replaced with a new chlorination building.
- Within the boundaries of Bicknell Town, some distribution lines are too small and additional valves and hydrants are needed to meet normal water supply and fire prevention requirements.

To provide Bicknell residents with a safe and adequate water supply system, the Town of Bicknell has proposed the culinary water system improvements project that would include the following:

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construction activities. The existing access road would continue to be used for the site access road to the new and existing tank site. This access road may need to be extended a short distance to reach the new tank site. Short pipelines would also be installed to connect the proposed new and existing tanks and the new chlorination building at the tank site.

Spring Development and Redevelopment: The five existing springs on the Thousand Lake Mountain would be redeveloped to improve their production and a new spring would be developed to obtain additional water on the Fishlake National Forest, Fremont River Ranger District. Approximately 1,300 feet of 6-inch diameter pipeline would also be installed to connect the new spring to the existing pipeline which transmits water from the existing springs to the existing water storage tank. The proposed spring development and redevelopment would occur in the southern half of Section 7, Township 28 South, Range 4 East, SLBM. The spring sites are located at approximately 9,300 feet msl. Currently, Bicknell Town has a permit to operate and maintain culinary water facilities which include five fenced areas of land for the five existing springs, each 60 feet wide and 180 feet long, and a strip of land 12 feet wide (6 feet on each side of the centerline) and 16,400 feet long for a water transmission line. Redevelopment of the five existing springs would occur on the permitted area for the springs that had previously been disturbed for the construction of the springs, along with a 20-foot buffer around the existing fenced areas. Spring #4 would be expanded to the north and west to collect adjacent areas to the spring site. Additional area needed for this spring would be approximately 0.2 acre. Development of the proposed new spring and installation of the new pipeline would require approximately 0.6 acre of additional USFS land (an area of 60-feet wide and 180-feet long for the new spring and a strip of 12-feet wide and 1,300-feet long for the new pipeline).

Replacement of Distribution Line and Metering System and Installation of Additional Valves and Hydrants: Some 4-inch diameter distribution lines would be replaced with 8-inch diameter PVC pipes and the existing metering system would be replaced with a new system within the boundaries of the Bicknell Town in Sections 25, 26, 35, and 36, Township 38 South, Range 3 East, SLBM. Twenty additional valves and 14 hydrants would also be installed in the same area. All the work would be conducted within ROW of existing roads.

After construction of the project is complete, the disturbed area would be restored to the existing contour as much as practically possible. Where necessary, re-vegetation would occur on disturbed areas.

Sunrise Engineering contracted JBR Environmental Consultants, Inc. (JBR) to complete a biological review of the proposed project to determine potential effects on plant and animal species listed as federally endangered, threatened, or candidate, or sensitive by the Regional Forester (Regional Forester's Sensitive Species List for the Intermountain Region); referred to as special status species.

2. Consultation to Date

JBR biologist, Jill Hankins, contacted USFS wildlife biologist, Joanne Stenten, regarding the proposed project and potential occurrences of special status species. Ms. Stenten completed a GIS database review of the USFS recorded occurrences and/or suitable habitat for special status species and prepared a species list for those species of potential concern. Table 1 is derived from information provided by Ms. Stenten. Threatened, endangered, candidate, or sensitive species that may occur or may potentially have suitable habitat within the project area are listed below in Table 1. Since the project does not involve impacts to open waters or riparian systems, all fish species were eliminated from analysis. The JBR biologist also reviewed the US Fish and Wildlife Service (USFWS) currently listed species list, last updated January 12, 2012, available on USFWS website (USFWS 2012) and the Utah Division of Wildlife Resources (UDWR) currently listed sensitive species list, last updated March 29, 2011 to verify listed species and status. JBR also contacted the UDWR for species recorded in the Utah Natural Heritage Program Database within 2 miles of the project footprint. UDWR replied in a letter dated June 21, 2012 stating that within a ½-mile of the project area noted above, the Utah Division of Wildlife Resources (UDWR) has recent records of occurrence for bald eagle and Utah prairie-dog, and historical records of occurrence for western toad. In addition, within a two-mile radius there are recent records of occurrence for burrowing owl and long-billed curlew, and historical records of occurrence for American white pelican.

Table 1. Terrestrial wildlife species analyses for this project.

SPECIES <i>Scientific Name</i>	STATUS	SUITABLE HABITAT	RATIONAL
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i>	E- Federal	No	The Fishlake National Forest has an agreement with USFWS (2002) that based on DNA research this subspecies does not occur on the Forest.
California Condor <i>Gymnogyps californianus</i>	E- Federal Migratory	No	The project area is outside the known distributional range of the California condor.
Utah Prairie Dog <i>Cynomys parvidens</i>	T- Federal	No	The project area is outside known distributional range of the Utah prairie dog and does not contain suitable sagebrush/grassland habitat with deep soils.
Mexican Spotted Owl <i>Strix occidentalis</i>	T- Federal	No	No suitable canyon habitat found within 0.5 miles of project footprint or access route. Red Canyon is potential nesting habitat 1.8 miles from the proposed spring site.
Greater Sage Grouse <i>Centrocercus urophasianus</i>	C- Federal USFS Sensitive Migratory	No	The project area is outside known distributional range and does not contain suitable sagebrush habitat.
Western Yellow-billed Cuckoo <i>Coccyzus americanus</i>	C- Federal USFS Sensitive	No	The project area does not support suitable habitat. In the west, habitat generally contains tall cottonwoods and

SPECIES <i>Scientific Name</i>	STATUS	SUITABLE HABITAT	RATIONAL
			willows in at least 25-acre patches.
Northern Goshawk <i>Accipiter gentilis</i>	USFS Sensitive MIS Migratory	Potential nesting/foraging habitat	No nests discovered within 0.5 mile of project site or access route during site review. No response to played, recorded calls from the spring site.
Pygmy Rabbit <i>Brachylagus idahoensis</i>	USFS Sensitive	No	Suitable sagebrush habitat below 8,500 feet elevation is not present in project area.
Townsend's Big-eared Bat <i>Corynorhinus townsendii</i>	USFS Sensitive	Potential foraging habitat	Potential roost sites; mines, caves, or rock crevices would not be impacted by the project.
Spotted Bat <i>Euderma maculatum</i>	USFS Sensitive	Potential foraging habitat	Potential roost sites; mines, caves, or rock crevices would not be impacted by the project.
Peregrine Falcon <i>Falco peregrinus anatum</i>	USFS Sensitive Migratory	Potential foraging habitat	Cliff habitat located 0.75 mile to the south of the project area. No known active eyries within 1 mile of the spring site.
Bald Eagle <i>Haliaeetus leucocephalus</i>	USFS Sensitive Migratory	Potential upland winter foraging habitat	No known nest sites within 1 mile of the project area or access route. UDWR recorded occurrence within the last 2 years.
Flammulated Owl <i>Otus flammeolus</i>	USFS Sensitive Migratory	Potential nesting/ foraging habitat	Project area is mixed conifer aspen, secondary habitat. No tree removal is anticipated.
Desert Bighorn Sheep <i>Ovis Canadensis nelsoni</i>	USFS Sensitive	Near potential summer/winter range.	UDWR is eliminating herd in the greater area due to concern over disease.
Three-toed woodpecker <i>Picoides tridactylus</i>	USFS Sensitive Migratory	Potential breeding habitat nearby	Project area is mixed conifer aspen, suitable habitat. No tree removal is anticipated. Potential indirect impacts if species are present within the area during construction.
Rocky Mountain Elk <i>Cervus elephus</i>	MIS	Within winter range, near summer range	Potential temporary displacement during construction. Long-term reduction in foraging habitat, 0.8 acres of fenced spring area.
Mule Deer <i>Odocoileus hemionus</i>	MIS	Within summer range, near winter range	Potential temporary displacement during construction. Long-term reduction in foraging habitat, 0.8 acres of fenced spring area.
Cavity Nesters (Hairy Woodpecker, Mountain Bluebird, Western Bluebird)	MIS	Potential habitat may be available in nearby snags.	Project area is mixed conifer aspen. Suitable habitat in vicinity. No tree removal is anticipated. Individuals may avoid the immediate area during construction.
Sage Nester Guild	MIS	Potential nesting	Area of proposed surface disturbance is

SPECIES <i>Scientific Name</i>	STATUS	SUITABLE HABITAT	RATIONAL
(Brewer's Sparrow, Vesper Sparrow, Sage Thrasher)	Migratory	habitat for Brewer's sparrow. Not suitable for Vesper sparrow or sage thrasher.	suitable nesting habitat for Brewer's sparrow. No individuals were observed during site review.
Riparian Dependent Guild (Lincoln's Sparrow, Song Sparrow, Yellow Warbler, Mac Gillivray's Warbler)	MIS	No	No riparian habitat within project area or access route.
Williamson's Sapsucker <i>Sphyrapicus thyroideus</i>	Migratory	Potential habitat	Project area is high altitude mixed conifer, aspen, suitable habitat. No tree removal is anticipated. Potential indirect impacts if species are present in the area. No individuals were discovered during site review.
Broad-tailed Hummingbird <i>Selasphorus platycercus</i>	Migratory	Potential habitat	Project area is high altitude mixed conifer, aspen, secondary suitable habitat. Summer migrant species, individuals often return to the same tree to nest. No tree removal is anticipated. Potential indirect impacts if species are present in the area during construction. No individuals were discovered during site review.

Definitions:

E = Federal Endangered

T = Federal Threatened

C = Federal Candidate

USFS = United States Forest Service

USFWS = United States Fish and Wildlife Service

MIS = Fishlake Management Indicator Species

Migratory = Migratory Bird Species to evaluate to meet Utah Strategy agreement with USFWS.

JBR contacted Dave Tait, USFS botanist, regarding the proposed project and potential impacts to special status plant species. Mr. Tait provided a plant list taken from R-4 TES Plant List dated July, 2011. Table 2 lists those plants, status, description, and rational for elimination from further survey or review. Five of the plants listed in Table 2 were surveyed for during site review of the proposed disturbance area; *Townsendia aprica*, *Astralus consobrinus*, *Cymopterus beckii*, *Aliciella caespitosa*, and *Thelesperma subnudum var. alpinum*. None of these plants were discovered during site review.

Table 2. Sensitive plant species analyses for this project.

Species Common Name <i>Scientific Name</i>	Current Status	Known Habitat Requirements*	Site Review for Species
San Rafael cactus <i>Pediocactus despaninii</i>	E- Federal	Open pinyon-juniper communities, grama grass on limestone gravels and flakes, desert pavements, 4,750 - 5,900 feet elevation.	No
Last chance townsendia <i>Townsendia aprica</i>	T- Federal	Salt desert shrub and P/J communities on clay or clay silt soils of the Mancos Shale, 6,100 – 8,000 feet elevation.	Yes, none discovered during site review.
Wonderland Alice Flower <i>Aliciella (=Gilia) caespitosa</i>	USFS Sensitive	Endemic to Wayne County; P/J communities on the Carmel and Navajo formations, 5,200-8,515 feet elevation.	Yes, none discovered during site review.
Dana milkvetch <i>Astragalus henrimontanensis</i>	USFS Sensitive	Endemic to Garfield County in ponderosa pine, P/J, and sagebrush communities on gravelly loam soil, 7,000-9,200 feet elevation.	No
Bicknell milkvetch <i>Astragalus consobrinus</i>	USFS Sensitive	Sagebrush-grassland, desert shrub, and P/J communities on the Mancos Shale Formation, volcanic gravel, open gravelly or sand knolls, and barren stony hillsides, 6,000-8,500 feet elevation. May-July	Yes, none discovered during site review.
Paradox moonwort <i>Botrychium paradoxum</i>	USFS Sensitive	Meadow habitats and snowfields, 9,000-10,000 feet elevation. Known from Escalante Ranger District.	No
Aquarius paintbrush <i>Castilleja aquariensis</i>	USFS Sensitive	Endemic to the Aquarius Plateau, Garfield and Wayne counties, in sagebrush and grass meadow communities adjacent to aspen-subalpine fir on clay-loam soils at about 9,800-11,000 feet elevation.	No
Pinnate spring-parsley <i>Cymopterus beckii</i>	USFS Sensitive	P/J, mountain brush, and ponderosa pine communities in sandy canyon bottoms or cliff crevices between 5,500 and 9,000 feet elevation. Known from Teasdale District.	Yes, none discovered during site review.
Nevada willowherb <i>Epilobium nevadense</i>	USFS Sensitive	P/J and oak/mountain mahogany communities, on talus slopes and rocky limestone or quartzite outcrops, 5,100-8,800 feet elevation.	No

Species Common Name <i>Scientific Name</i>	Current Status	Known Habitat Requirements*	Site Review for Species
Maguire daisy <i>Erigeron maguirei</i>	USFS Sensitive	Cool, mesic wash bottoms and dry, partially shaded slopes of eroded sandstone cliffs of Wingate, Chinle, and Navajo Sandstone Formations in mountain shrub, Douglas-fir, ponderosa pine, and lower limits of P/J woodland communities, 5,400-7,100 feet elevation.	No
Fish Lake naiad <i>Najas caespitosa</i>	USFS Sensitive	Shallow water to about 12 inches deep, 8,600 feet elevation, Known only from the type collection at Pelican Point, Fish Lake.	No
Little penstemon <i>Penstemon parvus</i>	USFS Sensitive	Endemic in Garfield, Piute, Sevier, and maybe Wayne counties in sagebrush-grass, and spruce communities between 8,200 and 10,170 feet elevation.	No
Ward beardtongue <i>Penstemon wardii</i>	USFS Sensitive	Ephedra, rabbitbrush, shadscale, mountain mahogany, sagebrush, and P/J communities on semibarren, white to gray fine-textured substrates (mostly the Arapien Shale Formation), 5,500-6,800 feet elevation.	No
Angell's cinquefoil <i>Potentilla angelliae</i>	USFS Sensitive	Endemic in Wayne County on the Aquarius Plateau in rocky subalpine meadows at about 10,988 feet elevation.	No
Arizona willow <i>Salix arizonica</i>	USFS Sensitive	Found in riparian corridors above 8,500 feet elevation in unshaded or partially shaded wet meadows, streamsides. No suitable habitat within project area.	No
Bicknell thelesperma <i>Thelesperma subnudum var. alpinum</i>	USFS Sensitive	Endemic to Wayne County; restricted to the Navajo Sandstone and Carmel Limestone on the peculiar vari-colored phase in pinyon-juniper, mountain brush, and bristlecone pine communities at 7,380-9,000 feet elevation.	Yes, no individuals discovered during site review.

*Adapted from Utah Rare Plant Guide, April 5, 2012.

Definitions:

E = Federal Endangered

T = Federal Threatened

C = Federal Candidate

USFS = United States Forest Service

3. Survey Results

On June 7, 2012 a JBR biologist completed field review of the existing tank site and the spring development site to characterize and determine biological resources of the project area. Field conditions on the day of review were 81° F, clear, 0 - 5 mph wind increasing to 10 mph in the afternoon.

The existing Bicknell water tank site is BLM land located just north east of town. The site is disturbed from construction of the existing tank. The surrounding land is sparsely vegetated pinyon/juniper. An ephemeral wash drains surface flows from the northeast through the site, terminating in the disturbed vacant land just north of 100 East, drainage from heavy precipitation events and snow melt could possibly flow into East Bicknell Sand Wash Pond. No wetlands or jurisdictional Waters of the U.S were discovered at the tank site.

Travel to the spring site was initiated from the Bicknell water tank at 9:00 am, the JBR biologist traveled up the existing pipeline for approximately 1.5 miles. Due to the rugged terrain, travel along this access route was terminated and the JBR biologist traveled to the access route from Lyman, known as FS road 208. This access route cuts between agricultural fields on private property, then approximately 1 mile of BLM land, then enters the Fish Lake National Forest. The spring location is approximately 3.5 miles inside the Fish Lake National Forest. This access route has been recently graded and is in relatively good condition, approximately 8-10 feet wide (Photo 1, Appendix B). The access route crosses 2 ephemeral streams; Trail Creek and Shingle Mill Creek. Shingle Mill Creek flows into West Bicknell Pond and is used for irrigation. Culverts are located under the road for both of these washes. The elevation climb is from 7,000 at Lyman to 9,350 feet at the spring site. The spring site is located on surface deposits from landslides off Thousand Lake Mountain (Photo 2, Appendix B). Thousand Lake Mountain is a volcanic mountain from the Miocene-Pliocene era, uplift of the Colorado Plateau puts the peak at over 11,300 feet (Photo 3, Appendix B). Vegetation cover changes from cultivated fields, to sagebrush shrub, to Pinyon-Juniper, to Ponderosa Pine, to mixed conifer and aspen forest as you approach the spring site (Photo 4, Appendix B). No wetlands or jurisdictional waters of the U.S. were discovered at the spring site.

Vegetation and wildlife observed at the tank site and spring site during biological review were recorded. Species observed are listed in Table 3 below.

Table 3. Species observed during survey (June 7, 2012)

Mammals	
<i>Odocoileus hemionus</i>	Mule deer (scat)
Various small mammal burrows	
<i>Lepus californicus</i>	Black tailed jack rabbit
Birds	
<i>Buteo jamaicensis</i>	Red tail hawk
<i>Sialia currucoides</i>	Mountain bluebird
<i>Colaptes auratus</i>	Northern flicker
<i>Tachycineta sp.</i>	Green swallow
<i>Corvus corax</i>	Raven
Plants	
<i>Abies concolor</i>	White fir
<i>Abronia fragrans</i>	Verbena
<i>Achillea millefolium</i>	Yarrow
<i>Androsace septentrionalis</i>	Pygmyflower rockjasmine
<i>Antenaria spp.</i>	Pussytoes
<i>Aquilegia flavescens</i>	Columbine
<i>Arctostaphylos patula</i>	Greenleaf manzanita
<i>Artemisia tridentata</i>	Mountain sagebrush
<i>Aster spp.</i>	Aster
<i>Astragalus coltonii</i>	Colton's milkvetch
<i>Bouteloua gracilis</i>	Blue grama
<i>Bromus inermis</i>	Smooth brome
<i>Carex phaeocephala</i>	Dunhead sedge
<i>Castilleja spp.</i>	Paintbrush
<i>Chrysothamnus nauseosus</i>	Rabbitbrush
<i>Clematis occidentalis</i>	Blue virgins bower
<i>Cryptantha spp.</i>	Cryptanth
<i>Descurainia pinnata</i>	Western tansymustard
<i>Draba densifoliasp</i>	
<i>Elymus elymoides</i>	Squirreltail
<i>Elymus smithii</i>	Western wheatgrass
<i>Erigeron eatonii</i>	Eaton's fleabane
<i>Gutierrezia sarothrae</i>	Snakeweed
<i>Ipomopsis aggregata</i>	Skyrocket, Scarlet gilia
<i>Juniperus communis</i>	Common juniper
<i>Mahonia repens</i>	Oregon grape
<i>Onopordum canthium*</i>	Scotch thistle

<i>Opuntia sp.</i>	Prickly pear
<i>Penstemon humilis</i>	Low beardtongue penstemon
<i>Phalaris arundinacea</i>	Canary reed grass
<i>Pinus flexilis</i>	Limber pine
<i>Pinus ponderosa</i>	Ponderosa pine
<i>Poa pratensis</i>	Kentucky blue grass
<i>Populus tremuloides</i>	Quaking aspen
<i>Potentilla hippiana</i>	Woolly cinquefoil
<i>Purshia stansburiana</i>	Cliffrose
<i>Pseudotsuga menziesii</i>	Douglas fir
<i>Rhus trilobata</i>	Skunkbush sumac
<i>Rosa woodsii</i>	Woods rose
<i>Rumex spp.</i>	Sorrel or dock
<i>Senecio multilobatus</i>	Uinta groundsel
<i>Shepherdia rotundifolia</i>	Buffaloberry
<i>Taraxacum officinale</i>	Dandelion
<i>Thermopsis rhombifolia</i>	Prairie goldenbean
<i>Trifolium spp.</i>	Clover

*Listed on Utah Noxious Plant List, noted along access route, tank site and existing pipeline route.

4. Conclusion

The vicinity of the proposed spring site route is suitable foraging habitat for 6 Forest Service MIS species: goshawk, peregrine falcon, bald eagle, flammulated owl, three-toed woodpecker, and Brewer's sparrow. Since no nests or sightings were recorded during site review and the proposed project does not involve any tree removal (live or dead) it is unlikely the proposed action would have direct impacts to these species. Brewer's sparrow are known to nest in high elevation meadows, however, no individuals were recorded at the spring site. If construction occurs during the nesting season, indirect harassment to foraging birds is possible. The area of surface disturbance is not suitable nesting habitat for vesper sparrow or sage thrasher. Williamson's sapsucker and broad-tailed hummingbirds are summer migrant species. If construction occurs during summer months, indirect harassment of these birds is possible. No individuals were recorded during site survey.

The project area is within winter range for elk and summer range for mule deer. Individuals utilizing the area could be displaced to other areas of the forest during construction. Suitable habitat is available in the vicinity for wildlife displaced during construction.

The proposed project would have no effect on listed threatened, endangered, or candidate species. The proposed project could temporarily displace the above listed MIS species during construction to other suitable habitat within the forest. The proposed project would not likely cause a trend towards federally listing any of these species.

References

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- Utah Rare Plant Guide. 2012. <http://www.utahrareplants.org> Accessed online June 13, 2012.

Appendices
Appendix A – Project Maps
Appendix B – Site Photos

Appendix Maps and Figures

Appendix B

Site Photos



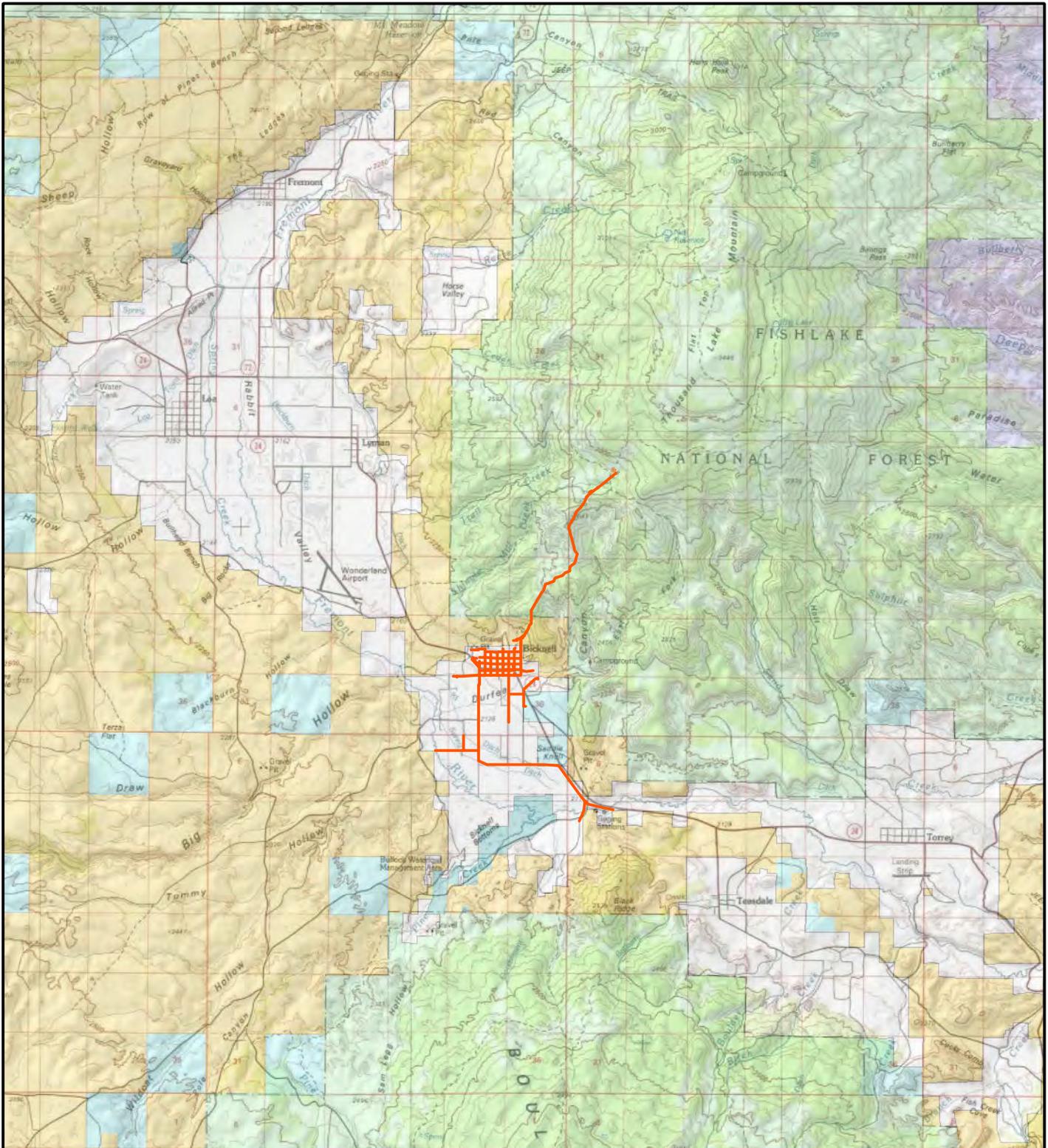
Photo 1. View to the east at the access route, FS208. June 7, 2012



Photo 2. Typical vegetation near proposed spring site. June 7, 2012.



Photo 3. View of typical vegetation in the vicinity of the spring site. June 7, 2012.



BASE MAP: 1:100,00 TOPOGRAPHIC MAP (USGS) Accessed at ArcGis online.

- Project Area
- Existing Facilities
- Bureau of Land Management
- National Park Service
- Private
- State
- Utah Division of Wildlife Resources
- US Forest Service



SUNRISE ENGINEERING INC.
BICKNELL CULINARY WATER IMPROVEMENT PROJECT

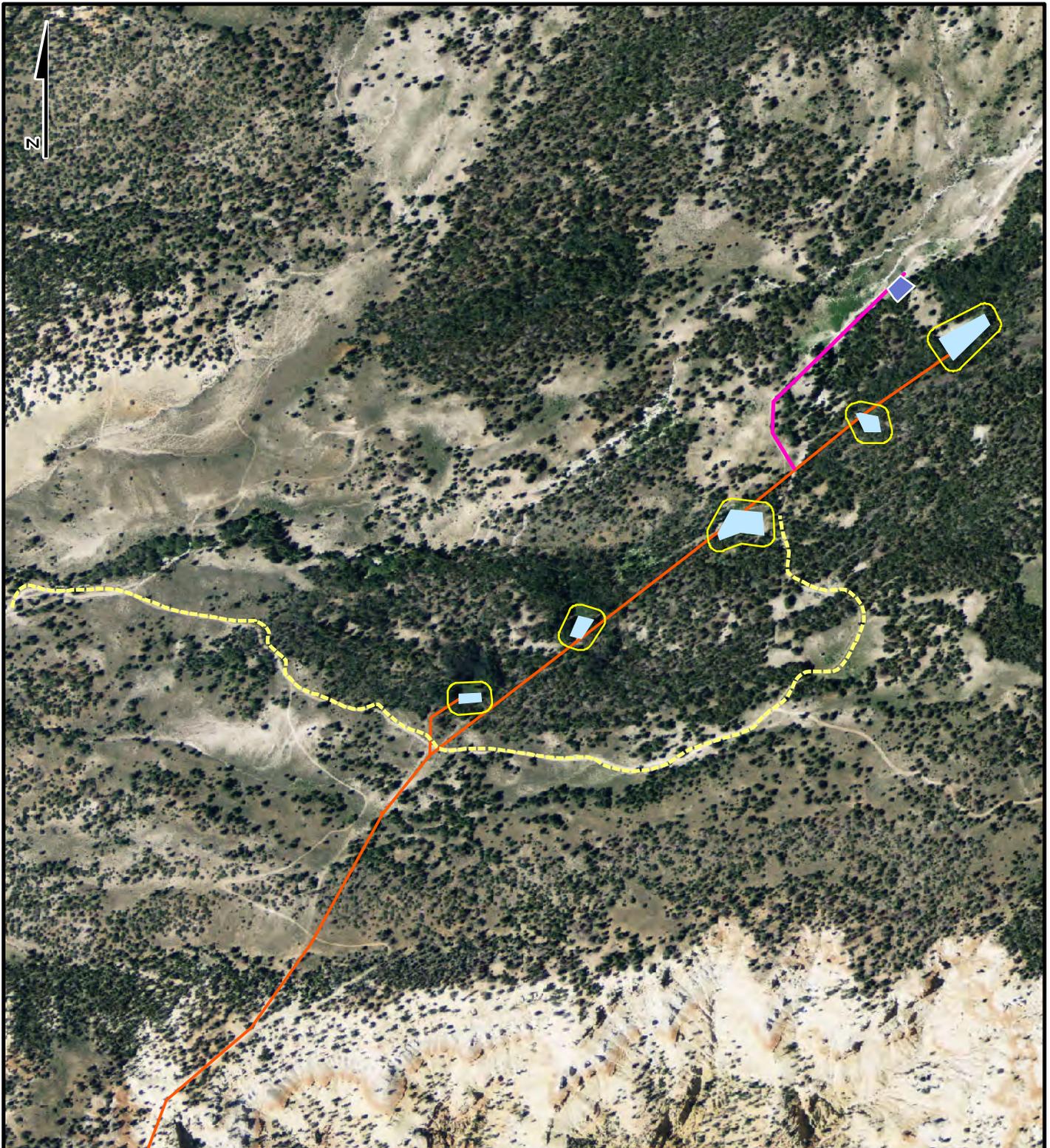
FIGURE 1
GENERAL PROJECT AREA



DRAWN BY: SStopham
DATE DRAWN: 06/20/2012

SCALE: 1 in = 2 miles

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BASE MAP: NAIP 2011 (USDA)

- Existing Pipeline
- Existing Improved Springs
- Proposed Spring Development (0.16 Acre)
- Proposed 6 inch Tie in Line
- Chainlink Fence
- Access Road FS208



SUNRISE ENGINEERING INC.
BICKNELL CULINARY WATER IMPROVEMENT PROJECT

FIGURE 2
PROPOSED SPRING SITE



DRAWN BY	STopham	DATE DRAWN	06/20/2012
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SCALE	1 in = 632 feet
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Attachment J
Boreal Toad Survey



MEMORANDUM

To: Joanne Stenten, Wildlife Biologist
Fish Lake National Forest

From: Jill Hankins, Environmental Scientist
JBR Environmental Consultants, Inc.

Cc: Dao Yang, Project Engineer
Sunrise Engineering, Inc.

Date: August 17, 2012

Project: Bicknell Culinary Water Improvement

Subject: Boreal Toad Survey

This memo is intended as supplemental information for submission of the Biological Review of Special Status Species for the Bicknell Culinary Water Improvement Project completed on June 21, 2012 by our office.

In 1995 the boreal toad (*Bufo boreas boreas*) was listed a Utah sensitive species due to the discovery of chytrid fungus (*Batrachochytrium dendrobatidis*) and the declines in boreal toad populations in the Rocky Mountains. Boreal toad is a subspecies of the western toad. Its coloration is variable; dusky gray, brown, tan, olive, dark green, or yellow. Warts on the back and legs are often surrounded with dark blotches and tinged with a rust color. Populations have been recorded on the Awapa Plateau near Thousand Lake Mountain east of the proposed action (DWR 2005).

On August 6, 2012 from 3:00 pm until 7:45 pm JBR Biologist, Greg Sharp and three junior biologists, completed a survey of the proposed spring development site for boreal toads. The spring areas were also surveyed on June 7, 2012 as documented in the biological review. No toads, tadpoles, or egg masses were discovered during the surveys. The spring sites are dry with upland vegetation over the area. The project site is high alpine meadow surrounded by aspen and mixed conifer. Some moist areas were observed from recent summer rains. Logs and rocks in moist areas were turned over, no toad burrows were discovered. An ephemeral drainage flows west along the north side of the project area. Approximately 1,600 feet of the drainage was walked looking for toads or standing water, neither was discovered.

On August 16, 2012 from 9:45 until 2:30, JBR biologist, Greg Sharp completed a third

survey of the spring development sites. Winds were calm, 65° F, partly cloudy. Ground surface was moist to wet from recent summer thundershowers. Greg walked the ephemeral channel looking for toads and visited each of the 6 spring sites. Puddles remained in low spots and in depressions from cattle from the recent rains. No toads, tadpoles or egg masses were discovered.



Photo 1: Spring 1

Aug 6, 2012



Photo 2: Spring 2

Aug 6, 2012



Photo 3: Spring 3

Aug 6, 2012



Photo 4: Spring 5

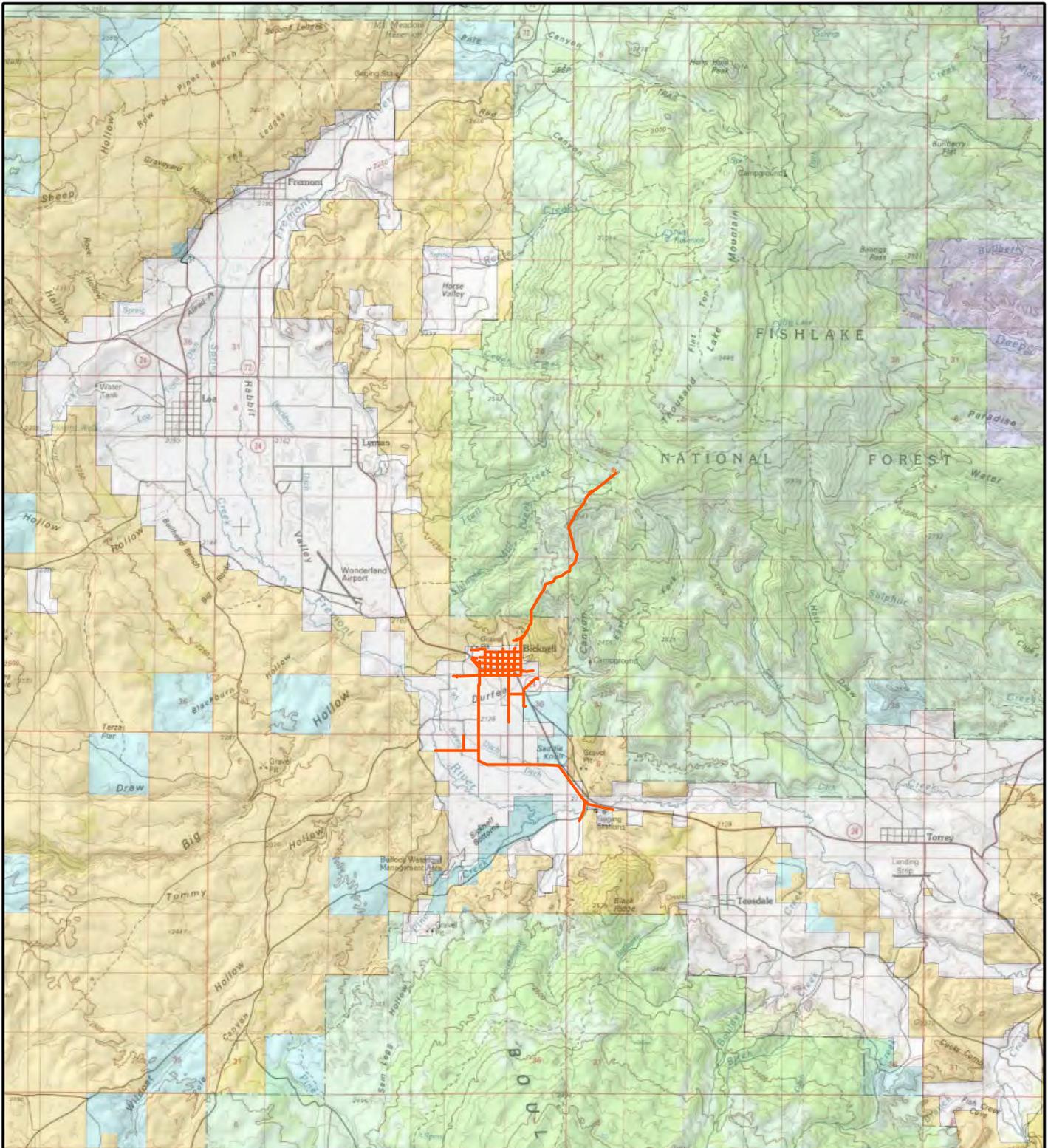
Aug 6, 2012



Photo 5: Spring 6 (proposed developed) Aug 16, 2012



Photo 6: Ephemeral wash moist from recent rain. Aug 16, 2012



BASE MAP: 1:100,00 TOPOGRAPHIC MAP (USGS) Accessed at ArcGis online.

- Project Area
- Existing Facilities
- Bureau of Land Management
- National Park Service
- Private
- State
- Utah Division of Wildlife Resources
- US Forest Service



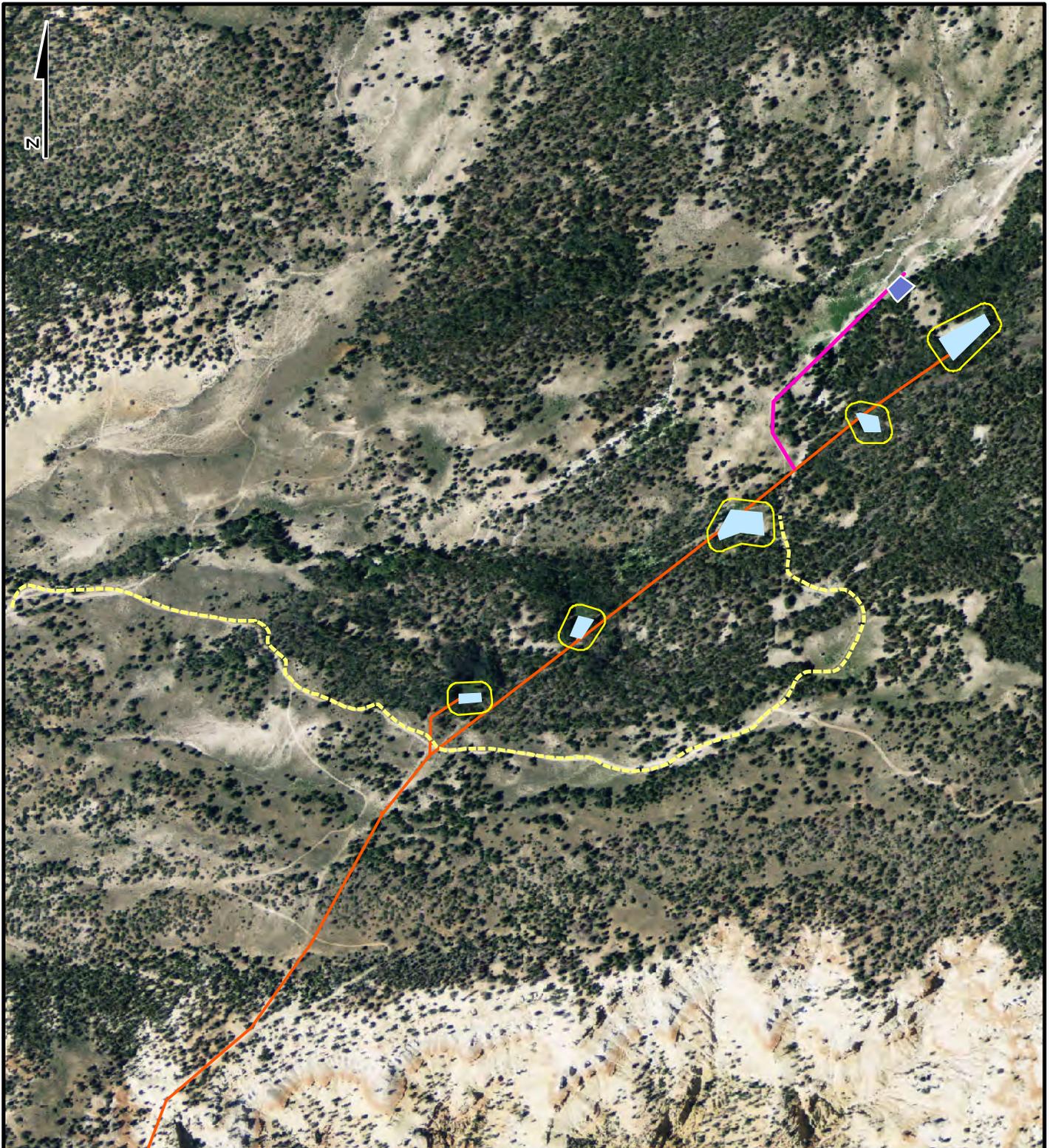
SUNRISE ENGINEERING INC.
BICKNELL CULINARY WATER IMPROVEMENT PROJECT

FIGURE 1
GENERAL PROJECT AREA



DRAWN BY	DATE DRAWN
STopham	06/20/2012
SCALE	
1 in = 2 miles	

File Path: C:\Users\stopham\Documents\PROJECTS\Bicknell Springs\GIS\MXD\Working\Bicknell_Figure2.mxd



BASE MAP: NAIP 2011 (USDA)

-  Existing Pipeline
-  Existing Improved Springs
-  Proposed Spring Development (0.16 Acre)
-  Proposed 6 inch Tie in Line
-  Chainlink Fence
-  Access Road FS208



SUNRISE ENGINEERING INC.
BICKNELL CULINARY WATER IMPROVEMENT PROJECT

FIGURE 2 PROPOSED SPRING SITE



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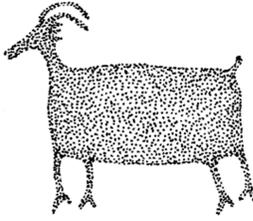
DATE DRAWN
06/20/2012

SCALE
1 in = 632 feet

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Attachment K
Cultural Resource Inventory





**BIGHORN ARCHAEOLOGICAL
CONSULTANTS, LLC**

**1712 NORTH 320 WEST, OREM, UTAH 84057
(801) 368-8091 (801) 437-1736 FAX**

Report Number 12-23

**A Cultural Resource Inventory for
the Bicknell Water Project
Wayne County, Utah**

by

Robert B. Nash
&
Jon R. Baxter

Prepared for

Fishlake National Forest
115 East 900 North
Richfield, UT 84701

Department of the Interior
Bureau of Land Management
Richfield Field Office
150 East 900 North
Richfield, Utah 84701

Sunrise Engineering
12227 S. Business Park Dr, Suite 220
Draper, UT 84020

Utah Project Authorization Number U12-HO-0297b,s,p
Federal Antiquities Permit Number 12UT81316

May 2012

Abstract

At the request of Sunrise Engineering, Inc., Bighorn Archaeological Consultants, LLC conducted a Class I cultural resource file search and Class III intensive level pedestrian cultural resources inventory for the proposed Bicknell Water Project in Wayne County, Utah under Utah State Project Number U12-HO-0297b,s,p. The project area covers a total of 5.8 acres, including 2.5 acres of land administered by the Bureau of Land Management (BLM) and 3.3 acres of land administered by the USDA Fishlake National Forest (Fishlake). The inventory was conducted in order to determine the presence/absence of cultural resources prior to the proposed Bicknell Town culinary water system improvement project.

No new sites or isolated finds were encountered during examination of the project area; however, two previously recorded sites (42Wn807 and 42Wn808) were relocated and updated. Sites 42Wn807 and 42Wn808 are lithic scatters of undetermined cultural affiliation that are considered non-significant. These two sites, initially recorded in 1975, were re-recorded by Bighorn as one site under site number 42Wn807.

Site 42Wn807 is located outside the area of potential effect (APE), and will not impact the project. In the unlikely event that additional archaeological remains are encountered during project construction or operations, all ground disturbing activities in the immediate vicinity should cease and a representative of the Fishlake National Forest or Bureau of Land Management should be contacted within 24 hours of the accidental discovery to evaluate the find.

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Appendix A – Project and Site Location Map

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Table 1. Cultural Phases of the Region 4
Table 2. Previous Cultural Resource Inventories within One Mile of the APE 7
Table 3. Previously Recorded Cultural Resource Sites within One Mile of the APE 7

Introduction

Bighorn Archaeological Consultants, LLC (Bighorn) has completed a Class I cultural resource file search and Class III intensive level pedestrian cultural resources inventory for the proposed Bicknell Water Project Wayne County, Utah. The project was undertaken at the request of Sunrise Engineering, Inc. to assist in fulfilling requirements under various federal and state environmental protection laws, including, but not limited to, the National Historic Preservation Act of 1966 (NHPA) and the National Environmental Policy Act of 1969 (NEPA). The inventory was conducted under Utah Project Authorization Number U12-HO-0297b,s,p. The Class I cultural resource file search was completed by Jon Baxter of Bighorn through the Utah Division of State History, Antiquities and Historic Preservation sections in May of 2012. Fieldwork was completed by Robert Nash on 08 May 2012. Field conditions for the inventory were excellent.

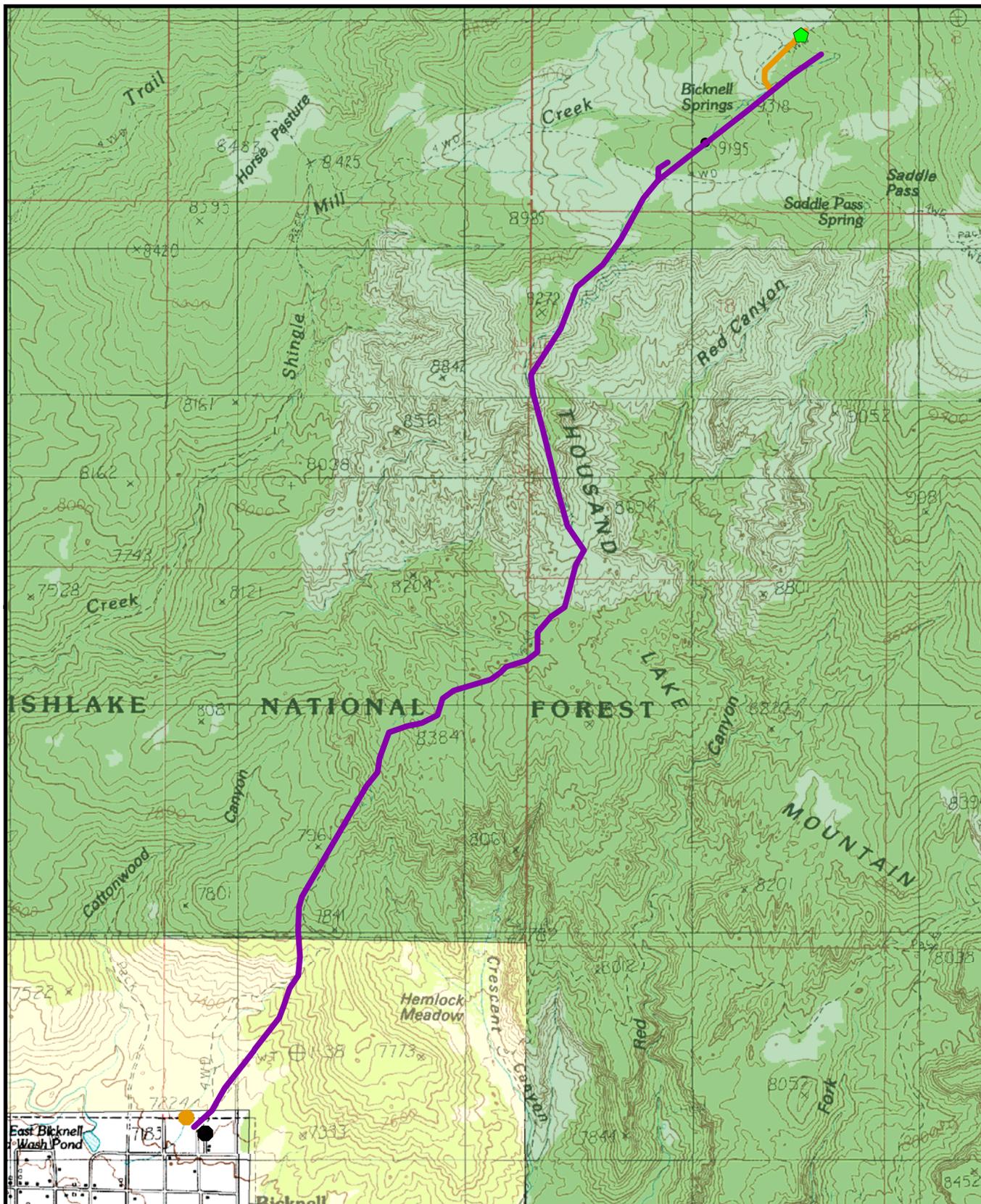
Project Location & Planned Operations

The Bicknell Water Project consists of a proposal to replace/upgrade the existing culinary waterline and related infrastructure for the town of Bicknell, Wayne County, Utah. The project area covers a total of 5.8 acres, including 2.5 acres for construction of a new 250,000-gallon water storage tank and chlorination building on public lands administered by the BLM-Richfield Office at the north end of the town of Bicknell. The project also includes 3.3 acres for development and redevelopment of the Bicknell Springs, which serve as the water source for the town of Bicknell, and which are on the Thousand Lake Mountain on the Fishlake National Forest administered by the USFS-Fremont River Ranger District. Five existing springs will be redeveloped to improve their production, and a new spring will be developed to obtain additional water. Operations on the five existing springs will occur within fenced areas, each 60 feet wide and 180 feet long with a 20-foot buffer. Spring 4 will be expanded to the north and west to collect adjacent areas to the spring site, which will require an additional 0.2 acres. Development of the proposed new spring and installation of a new pipeline will require an additional 0.6 acres of forest land. The project is located on the Bicknell and Lyman, Utah quadrangles:

T. 28 S., R. 3 E., Section 25

T. 28 S., R. 4 E., Section 7

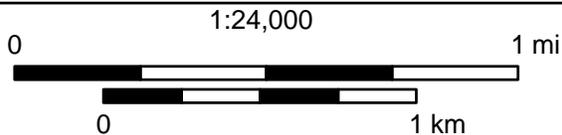
No new sites or isolated finds were encountered during examination of the project area; however, two previously recorded sites (42Wn807 and 42Wn808) were relocated and updated. Sites 42Wn807 and 42Wn808 are lithic scatters of undetermined cultural affiliation that are considered non-significant. These two sites, initially recorded in 1975, were re-recorded by Bighorn as one site under site number 42Wn807.



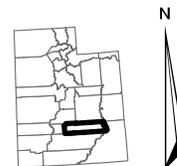
Legend

- Proposed Watertank
- ◆ Proposed Spring
- Existing Watertank
- Existing Waterline
- USFS
- Private
- BLM

Fremont Waterworks Project Location Map



**Wayne County
T28S, R3/4E**



USGS 7.5' Series Quads: Lyman, Bicknell, UT

Environment

Geology

The project is located within the Southern High Plateaus Section of the Great Basin-Colorado Colorado Plateau Transition Province (Stokes 1986). The project is located on and at the southern base of the Thousand Lake Mountain, “a basalt capped, mesa-like outlier” of the greater plateaus to the west and south (Stokes 1986:250) that rises to almost 11,300 ft. Elevations within the APE range from approximately 7300-9600 feet. The soils are shallow and are derived from the erosion of the volcanic deposits that dominate the general area.

Flora

The project is located within the Upper Sonoran and Canadian Life Zones at the water tower and spring locales, respectively. Vegetation at the water tower locale includes pinyon, juniper, snakeweed, saltbush, Indian ricegrass, and prickly pear cactus. Vegetation at the spring locales consist primarily of Douglas Fir and Aspen trees.

Fauna

The faunal community in and surrounding the project area is dominated by small mammals such as blacktailed jackrabbit, desert cottontail, skunk, squirrels, coyote, and a wide variety of rodents. Mule deer, Elk, and Cougar are the most common large mammals. Varieties of small reptiles (snakes and lizards) as well as a wide variety of Aves (birds) such as magpies, crows, ravens, are also present within and surrounding the project area.

Regional Cultural Overview

Human occupation and utilization of the Geographic Area known as the Eastern Great Basin has been long and varied in its intensity and duration. The regions prehistory can be divided into a series of developmental phases, or time periods, based on changing technologies, economics, social systems, and migration. Table 1 provides an overview of each of these cultural phases. Several summaries of the Eastern Great Basin’s regional prehistory have been written (Jennings 1978; Madsen 1979; Madsen 1982; Aikens and Madsen 1986; Simms 1986, Grayson 1993). The following gives a general description for each cultural phase from the PaleoIndian to Historic.

PaleoIndian

The earliest human occupation began in the Late Pleistocene, perhaps as early as 20,000 to 30,000 years ago (Krieger 1964; Fagan 1987; Cordell 1997; Dixon 1999; Adovasio and Page 2002). By 13,500 years ago a wide spread relatively well known culture appeared across North America (Fiedel 1999). Known as the Llano or Clovis complex it is distinguished by well made,

Table 1. Cultural Phases of the Region

Cultural Phase	Sub-phase	Approximate Time Period
PaleoIndian		20,000 – 8,000 BC
Archaic	Early Archaic	8,000 – 3,500 BC
	Middle Archaic	3,500 – 1,500 BC
	Late Archaic	1,500 BC – AD 500
Formative (Fremont)		AD 500 - 1350
Late Prehistoric (Paiute/Ute)		AD 1350 – 1847
Protohistoric/Historic		AD 1776 – 1850s

bifacial flaked, fluted projectile points known as Clovis Fluted points. Initially believed to be highly nomadic big game hunters, discoveries east of the Mississippi River, as well as on the Great Plains and in the Southwest, suggest that Clovis may have been highly variable in regard to subsistence and technology (Anderson and Sassaman 1996; Bonnicksen and Turnmire 1991).

In addition to the Clovis fluted tradition, another cultural complex known as the Great Basin Stemmed Point tradition appears to be roughly contemporaneous, or perhaps slightly earlier, and seemed to occupy a large portion of the Intermountain West (Bryan 1979; Beck and Jones 1997; Grayson 1993). The Stemmed Point tradition was apparently oriented toward marsh and lacustrine resources, and was marked by a number of stemmed projectile points.

Following the Clovis tradition was another fluted point tradition known as Folsom. The Folsom fluted point is an extremely well made point with flutes that extend the full length of the blade and which are considerably smaller than the Clovis point. The Folsom are generally thought to be big game hunters who focused on bison. After the Folsom occur a number of stemmed and lanceolate traditions such as Agate Basin, Hell Gap, Cody, and the Mountain traditions.

In Utah, a few sites have been investigated that have Paleoindian affiliation. 42MD300 is a minimally investigated site in the Sevier Desert that produced radiocarbon dates between 7700 and 9500 years ago (Simms and Lindsey 1989). Diagnostic artifacts included both stemmed and fluted points. The Lime Ridge site (42SA16857) is a small Clovis occupation located in the San Juan drainage of southern Utah (Davis 1989). The Silverhorn site (42EM8) is another small, minimally examined site with both fluted and stemmed points (Gunnerson 1956) located at the western edge of the San Rafael Swell and may have been associated with a pluvial lake. Finally the Montgomery site (42GR1956) is a Folsom occupation located on the Green River near the town of Green River (Davis 1985). Three sites in the vicinity of Utah Lake have also produced Late Paleo-American stage complex artifacts (Janetski 2001). The Martin site (42UT934) produced several Cody complex stemmed points and knives, and isolated Paleo-American artifacts were collected at Spotten Cave and along the shores of Utah Lake near Geneva, Utah County, Utah.

Archaic

The end of the Pleistocene witnessed dramatic shifts in the natural environment in the Great Basin, from cooler and wetter to warmer and drier climatic conditions (Antevs 1948). This shift resulted in major changes in plant and animal resources. Pluvial lakes that existed during the

Pleistocene disappeared, as did the megafauna that characterized the era. This climatic change had a significant impact on the human occupants of the region as well (Grayson 1993).

The Archaic Stage generally dates between 8000 B.C. to ca. A.D. 500, with localized variations occurring from region to region. The Archaic Stage is sub-divided into Early (8000-3500 BC), Middle (3500-1500 BC) and Late (1500 BC-AD 500) temporal phases. The Archaic across the west is characterized by a wide variety of large dart points, seasonal movements responding to changing environmental patterns, short-term occupation of open sites, along with occasional longer occupations of caves or rock shelters, and the development of resource storage (Berry and Berry 1986; Kelly 1997). The Archaic time period is marked by the occurrence of certain cultural materials diagnostic of the Archaic, such as basketry, distinct sandal styles, side-notched and stemmed points, and milling stones (e.g., Jennings 1978; Fowler and Fowler 2008; Simms 2008). The atlatl, or throwing stick, armed with a dart was the primary hunting implement during the Archaic. Dart point styles diagnostic of this stage include Elko Corner-notch, Elko Eared, Pinto, Gatecliff Split stem, Humboldt, Northern Side-notch, Sudden Side-notch, Hawken Side-notch, San Rafael Side-notch, and Gypsum points (Holmer 1986). Some projectile point styles, such as the Elko series and Gypsum points, continued to be made and used into later stages of cultural development. Hunter-gatherer sites dating to this era have been well documented throughout the Intermountain region.

The transition from a primarily hunting-gathering society to one more dependent on horticulture is a process that has generated unremitting archaeological debate. Most of the debate is spurred on more by individual theoretical orientation than hard data. Scattered examples of some of the characteristics that mark the “Fremont Culture,” such as permanent habitation structures and the presence of domestic food (i.e., maize, beans, squash), have been found in sites that pre-date the traditional beginning of the Fremont Culture around A.D. 500.

Formative

The shift from the Archaic subsistence strategy of seasonal movement to a more sedentary settlement pattern appears to have resulted not just on the mere presence of a minimal amount of domestic food and a scattered habitation structure or two, but more on a significant focus on agriculture. Native resources continued to be of importance, however the attendance to domestic crops resulted in a much different lifestyle. Associated with the cultivation of domestic crops were the introduction of new technologies and the modification of older ones. While some (Aikens and Madsen 1986) suggest that the Fremont Culture was simply a technological adaptation by indigenous population, others (c.f. Lindsay 1986) suggest that the Fremont arose from significant influences or perhaps population movements from the Southwest and the Great Plains.

One of the more notable characteristics of the Fremont Period is the development of multi-component habitations with surface storage, and later, the development of larger aggregated village sites. The first permanent Fremont structures were usually small, circular or semicircular pits and associated with small storage units. Habitation structures gradually shifted to larger quadrilateral domiciles at the end of the Fremont Period (about 1250 A.D). Large mound villages were concentrated along or near permanent and semi-permanent streams. Seasonal habitations

were located in more marginal or higher altitude resource areas (Billat 1983). Fremont villages were common in the Parowan and Utah Valleys. Other large Fremont Village sites have been located in the Sevier Valley in, and near, Richfield, Sevier County, Utah.

A significant change in lithic technology occurred during this period with the advent of smaller, more finely made points associated with the introduction of the bow and arrow. Typical of the period are the Rose Spring/Eastgate series, Uintah Side-notch, Nawthis Side-notch, and Bull Creek points. Other point styles include the Parowan Basal-notch and Cottonwood Triangular (Holmer 1978; Holmer and Weeder 1980). Another significant characteristic of the Fremont is the development of ceramic technology. Early forms of pottery tended to be plain grayware, which remained common throughout the period. During the latter portion of the period, painted, decorative techniques were used. Ceramics from the southwestern cultures were often traded into Fremont sites. Finally, as with the advent of horticulture, grinding implements became more specialized and common than in the Archaic Period. One such tool, the “Utah” metate is a trough styled grinding tool with a “shelf” or resting platform on one end for the mano. These grinding stones are found throughout the region and are considered to be temporally diagnostic of this period.

Late Prehistoric

The Late Prehistoric spans the establishment of Numic speaking socio-cultural groups following the collapse of Fremont culture in the region. Generally, it is believed that this phase began around AD 1300 and continued until the establishment of permanent Euro-American settlements in the area. The Numic expansion brought with it another shift in subsistence strategies. This shift is marked by a return to the Archaic way of life of hunting and gathering. The bow and arrow appears to have been the overwhelming choice in hunting technology. Small projectile points dominated the lithic assemblage. Point styles included the Desert Side-notch series, Cottonwood Triangular, and small corner-notched points (Holmer and Weeder 1980). Ceramic technology was not as elaborate as it had been during the Fremont Period. Vessel shapes were flowerpot, globular, and conical shaped. Decoration was minimal and tended to be restricted to fingernail impressions. Late Prehistoric ceramics tended to be thick with coil and rough smoothing techniques as opposed to the thin, polished and painted Fremont ceramics. The more mobile Late Prehistoric inhabitants did, however, have significantly superior basketry and leather working.

The movement of Numic speaking peoples from the southwest across the Great Basin and the Colorado Plateau is a subject of much speculation and debate. Linguistic data suggests that Numic speakers began to expand from the Mojave Desert region sometime around AD 1000. The cause of the Numic expansion is poorly understood, although some researchers have suggested deteriorating environmental conditions (Fowler et al 1973; Lamb 1958).

Protohistoric/Historic

The beginning of the Late Prehistoric phase is marked by the disappearance of Formative (Fremont) culture in the region, while the end is represented by the start of indirect influences from the Spanish following the establishment of colonies in New Mexico and California. The Protohistoric ranges from the establishment of Spanish colonies in New Mexico around AD 1600

until the first documented European exploration of the region by Fathers Domínguez and Escalante in AD 1776. The historic period ranges from 1776 to about 1850 and encompasses the period of initial contact between the Paiute/Ute and Spanish and later American explorers and settlers. Evidence of contact during this period is generally in the form of European-American manufactured trade goods on otherwise aboriginal archaeological sites. Contact with Europeans slowly expanded during this time, until by the 1850s. A large number of permanent settlers, primarily Mormons, occupying the broader region essentially pushed the Southern Paiute and Ute onto reservations. The small town of Bicknell, formerly known as Thurber, was first permanently settled by Albert K. Thurber and Beason Lewis in 1875 when they brought more than a thousand head of cattle into Lower Rabbit Valley near the mouth of Government Creek (Murphy 1999). The small town is located along the Fremont River on at the south-southwest base of the Thousand Lake Mountains.

Previous Research

Prior to initiating fieldwork, Bighorn conducted a Geographic Information System (GIS) record search through the Utah Division of State History for reported projects and previously recorded cultural sites in May 2012. Cadastral plats/General Land Office (GLO) maps and other historic maps of the area were also reviewed for the presence of historic features, such as roads, ditches, cabins, and trails.

File Search Results

Results of the literature review and file search indicated five cultural resource inventories were conducted, and three cultural sites were previously recorded within one mile of the proposed project area (Tables 2 and 3).

Table 2. Previous Cultural Resource Inventories within One Mile of the APE

Project Name	Project Number	Year
Lyman-Fruita Transmission Line	U74BC001	1974
Bicknell Water Storage Pond and Pipeline	U90BL152b	1990
Bicknell Materials Source	U91A1128b	1991
Wasatch, Humbug, and Timpanogas Canals and Site 42Wa201	U99SJ0766p,w	1999
Hell’s Hole Trail Reconstruction	U01FS0839f	2001

Table 3. Previously Recorded Cultural Resource Sites within One Mile of the APE

Site Number	Site Type	Cultural Affiliation	Eligibility
42Wn807	Open Lithic Scatter	Unknown Aboriginal	Not Eligible
42Wn808	Open Lithic Scatter	Unknown Aboriginal	Not Eligible
42Wn1938	Open Lithic Scatter	Late Archaic	Eligible

Inventory Methods

The cultural resource inventory of the proposed Bicknell Water Project locations involved a pedestrian survey to identify cultural resources within the proposed APE. The area inventoried for the proposed project consisted of approximately 5.8 acres. The cultural inventory was

accomplished by walking the project's APE, including (1) the 20-ft buffer perimeter around each of the fenced existing springs, (2) the proposed area for the new spring and pipeline, and (3) the proposed area for the new water tank and chlorination building. The areas of potential effect were identified through the use of a Trimble GeoXT global positioning system (GPS) unit in conjunction with project area maps.

Cultural resources encountered during the inventory were recorded as sites or isolates, as defined in the National Register Bulletin No. 16A as the "location of a significant event, a prehistoric occupation or activity, or a building or structure, whether standing, ruined, or vanished, where the location itself possesses historic, cultural, or archaeological value regardless of any existing structure." To clarify, historic, prehistoric, or archaeological features or any archaeological or historic anomaly that contains, at a minimum, greater than ten artifacts in a 10-meter diameter area, multiple features, a single feature for which sufficient information is available to raise the possibility that it may be significant, or a combination of a feature and artifacts were considered a site. All other cultural materials that do not meet the above criteria were considered isolated artifacts, or single artifacts or features of which little is known possessing no possibility for significance to be determined.

Each site and/or isolated find was plotted on a 7.5 minute USGS topographic map using data obtained from a Trimble GeoXT global positioning system (GPS) and based on NAD 83 (Appendix A). All GPS data will be submitted to the appropriate agency to incorporate into their databases. All previously and newly recorded sites were evaluated against the criteria set forth by the National Register of Historic Places (NRHP).

Inventory Results

No new sites or isolated finds were encountered during examination of the project area; however, two previously recorded sites (42Wn807 and 42Wn808) were relocated and updated. Sites 42Wn807 and 42Wn808 are lithic scatters of undetermined cultural affiliation that are considered non-significant. These two sites, initially recorded in 1975, were re-recorded by Bighorn as one site under site number 42Wn807, and the site form was updated. Bighorn's updated site description is provided below.

42Wn807

Site 42Wn807 was initially recorded in December 1975 by the BLM as two lithic scatter sites (42Wn807 and 42Wn808). Site 42Wn807 was described as "several dozen chert flakes, two utilized flakes," while site 42Wn808 was described as "several dozen flakes and chips, one turtle-back scraper, one broken point." Bighorn Archaeological Consultants revisited the site in May 2011 as part of the Bicknell Water Project. At that time Bighorn observed that the two previously recorded sites were actually one larger site, and combined the two sites into one site under site number 42Wn807.

Bighorn observed hundreds of chert and quartzite flakes, a quartzite retouched flake side scraper, a quartzite early stage biface, and a quartzite drill on site 42Wn807. The site is an irregular polygon that measures roughly 132 m N/S x 110 m E/W. Most of the site is a relatively sparse

lithic scatter; however, there is 15 m x 10 m concentration of debitage in east-central portion of the site consisting of a relatively dense scatter of debitage.

Sites 42Wn807 and 42Wn808 were not evaluated for the National Register of Historic Places (NRHP) by the BLM in December 1975. Upon revisiting and re-examining the sites, Bighorn considers the combined site 42Wn807 not eligible for the NRHP.

Summary & Project Recommendations

At the request of Sunrise Engineering, Inc., Bighorn Archaeological Consultants, LLC conducted a Class I cultural resource file search and Class III intensive level pedestrian cultural resources inventory for the proposed Bicknell Water Project in Wayne County, Utah under Utah State Project Number U12-HO-0297b,s,p. The project area covers a total of 5.8 acres, including 2.5 acres of land administered by the Bureau of Land Management (BLM) and 3.3 acres of land administered by the USDA Fishlake National Forest (Fishlake). The inventory was conducted in order to determine the presence/absence of cultural resources prior to the proposed Bicknell Town culinary water system improvement project.

No new sites or isolated finds were encountered during examination of the project area; however, two previously recorded sites (42Wn807 and 42Wn808) were relocated and updated. Sites 42Wn807 and 42Wn808 are lithic scatters of undetermined cultural affiliation that are considered non-significant. These two sites, initially recorded in 1975, were re-recorded by Bighorn as one site under site number 42Wn807.

Site 42Wn807 is located outside the area of potential effect (APE), and will not impact the project. In the unlikely event that additional archaeological remains are encountered during project construction or operations, all ground disturbing activities in the immediate vicinity should cease and a representative of the Fishlake National Forest or Bureau of Land Management should be contacted within 24 hours of the accidental discovery to evaluate the find.

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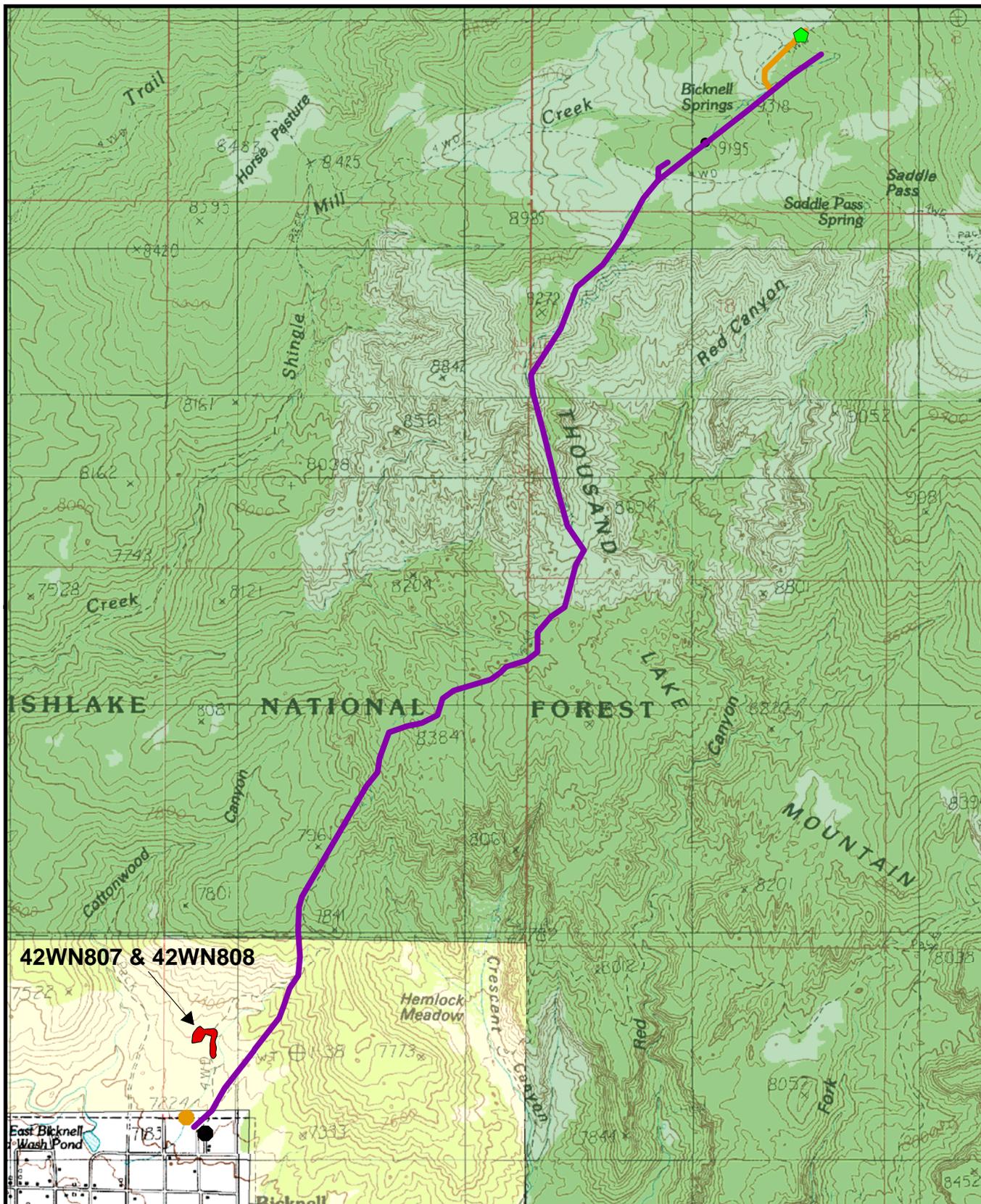
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Appendix A
Project & Site Location Map



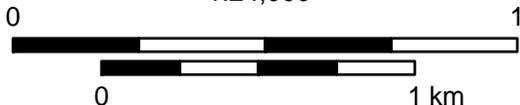
- Legend**
- Arch Site
 - Proposed Watertank
 - Existing Watertank
 - ⬠ Proposed Spring
 - Existing Waterline
 - USFS
 - Private

Appendix A: Project and Site Location Map



**BIGHORN
ARCHAEOLOGICAL
CONSULTANTS, LLC**

1:24,000



**Wayne County
T28S, R3/4E**




USGS 7.5' Series Quads: Lyman, Bicknell, UT