

WYOMING WATER ASSESSMENT AND PROTECTION PROGRAM (SWAP)



SOURCE WATER ASSESSMENT PROGRAM EXECUTIVE SUMMARY

Source Water Assessment Prepared For:
Ashley NF, Firehole Recreation Area

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SOURCE WATER ASSESSMENT SUMMARY FOR Ashley NF, Firehole Recreation Area

PWS Source Water Assessment Summary

The Firehole Recreation Area water system is classified as a transient non-community groundwater supply. The facility is maintained by the Ashley National Forest Service and is located on the Flaming Gorge Reservoir about 32 miles southwest of Rock Springs. The facility provides water primarily for recreational use. Water is available in the restrooms and from campsite hydrants during the season between mid May and October; however in winter, only the groundskeeper residence is provided with water.

A deep well completed in the Wasatch Formation provides source water for this facility. Water is pumped to a below-ground concrete storage tank, which is located on a hillside about a hundred feet above the recreation area and provides gravity flow to distribution. There is no further treatment or disinfection provided for this system.

In general, the Firehole Recreation Area's water source rated low for land use, potential point source, and transportation corridor susceptibility. The low ratings resulted from the absence of contaminant sources in the area.

Delineation Methods

Because the Firehole Recreation Area is classified as a transient non-community groundwater system and obtains water from a porous sandstone aquifer, Lidstone delineated the source water area for this system using calculated fixed radius (CFR) methods. This method was used to estimate the two and five year time of travel radii for the groundwater system based on data obtained from the Wyoming SEO, the PWS sanitary survey, the PWS operator, and the SWAP guidance document.

Calculated fixed radius (CFR) is an appropriate method to use when groundwater flow to the well, spring or tunnel can be characterized as porous. This process was implemented for small communities that derive water from deeper, confined aquifers, or for non-community water systems. A factor of safety (FS) of 1.5 was applied to all systems where portions of the data were suspect. At the ground surface, the radius can be used to delineate an area around the well to be used for wellhead protection. The radius is the distance from the well to a point where groundwater (and contaminant) can reach the well over a specified time period. Input data requirements are limited, consisting of the pumping rate, open (screened interval) of the well, porosity of the aquifer, and the selected time of travel (2 years and 5 years).

Groundwater Sources

The Firehole Recreation Area obtains its source water from one well that is completed to a depth of 990 feet. This well obtains water from saturated sandstone beds within the Wasatch Formation. Recharge to the Wasatch Formation occurs through the direct infiltration of precipitation on outcrops. Groundwater flows through these sandstone beds to the well under confined artesian conditions through porous media. Additional information on this well is

available on the enclosed Well Information Sheet.

As shown on the enclosed source water area map, the contaminant inventory zones for this well are centered around the wellhead. Zone 2 extends approximately 318 feet radially from the wellhead, while Zone 3 extends approximately 503 feet.

Integrity Summary

The Ashley National Forest Firehole Recreation Area uses one well to supply water to the system. The well, Firehole Well #1, was constructed prior to 1983, when less stringent construction standards were required by the State of Wyoming. However, records show that the well was properly sealed to protect against surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, the well received a low score of 3, which is a direct reflection of the well completion date.

Water Source Sensitivity Summary

The Ashley National Forest Firehole Recreation Area uses a well completed in the Wasatch Formation, a deep confined porous aquifer. As shown on the Source Sensitivity Summary Table, the well received a sensitivity scores of 6.

This well received a sensitivity score of 6 for two reasons. First, the confined aquifer is known to be less vulnerable to contamination. The second reason is that laboratory analysis of water samples from the Recreation Area within the last five years detected a contaminant that is listed on EPA's primary and secondary drinking water standards, nitrate. Despite detection, this contaminant was detected at concentrations below the EPA's maximum contaminant levels.

Water System Susceptibility Rating

Susceptibility is defined as the potential for a public water supply to draw water contaminated at concentrations that would pose a threat or concern to human health. In general, the Firehole Recreation Area scores low for land use susceptibility. While the well lies close to Flaming Gorge Reservoir, its overall susceptibility is considered low because this deep well is completed in a confined aquifer. The overall point source and transportation corridor contaminant susceptibility ratings are also low due to the lack of contamination sources within the delineated zones. Susceptibility ratings for each type of potential contaminant source are summarized on the attached susceptibility tables.

A review of your PWS's routine water analysis results revealed that one or more chemicals that are considered contaminants in drinking water were detected at some time within the last five years. Chemical detections have a large impact on your PWS's sensitivity score because it may indicate that there is a pathway for contaminants to reach the water supply. However, it is likely that these chemicals are present only in small amounts and are not a danger to your health. Some of these chemicals may also occur naturally in water.

For more information about which chemicals were detected, please contact the PWS for a copy of the most recent Consumer Confidence Report or water analysis results. Chemical detections

at levels that are a concern to human health are reported on the EPA's website: http://www.epa.gov/enviro/html/sdwis/sdwis_query.html. To see if your PWS has exceeded the federal primary or secondary drinking water standards, just click on the State of Wyoming and then type in the name of your PWS. Consumer Confidence Reports are prepared by the PWS on a yearly basis. The reports should include information about any chemicals found in the water, even those found at very low levels. Please contact Kim Parker at DEQ, 307-777-7781, or WARWS for assistance. You may also contact EPA to find out what contaminants were detected. You may have to fill out a Freedom of Information Act request to obtain the water test results for your PWS. Please call EPA's Safe Drinking Water Hotline at 1-800-426-4791.

**POINT SUSCEPTIBILITY SUMMARY TABLE
FOR Ashley NF, Firehole Recreation Area
Point Source Susceptibility Summary**

It may appear from the results of this point source susceptibility summary table that your system has too many PSOCs influencing the final ratings. In some cases, a specific PSOC falls within a specific contaminant inventory zone shared by multiple wells or intakes. When this is the case, that PSOC will be scored for each intake. For example, an underground storage tank may appear within a contaminant inventory zone shared by four different wells. This would cause that single storage tank to be entered into the table four times, or once for each well or intake.

Point Source Type	Low	Medium	High
None Identified	N/A	N/A	N/A

- * Illustrates the number of PSOCs in a particular rating class for all water sources
- * N/A - Not Applicable