

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
Bighorn NF Burgess Jct Vstr Ct**

June 30, 2004

PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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SOURCE WATER ASSESSMENT SUMMARY FOR Bighorn NF Burgess Jct Vstr Ct

PWS Source Water Assessment Summary

The Bighorn National Forest Burgess Junction Visitors Center is a non-community groundwater system located in Sheridan County, 27-miles east of Dayton, Wyoming on Highway 14. It provides water to about 250 people through five service connections from April to October. Facilities include one well, treated water storage tanks and the interconnecting transmission systems. The Burgess #2 well draws water from plutonic rocks. Disinfection of the water, by five-percent sodium hypochlorite, occurs before storage and the residual disinfectant is monitored. The water source scored low with respect to the combined integrity and aquifer sensitivity ratings. The Burgess Junction Visitors Center scored medium for land use susceptibility, low for point source contaminant susceptibility, and medium for transportation corridor contaminant susceptibility.

Delineation Methods

This water system is a non-community system that draws water from a fractured igneous formation. Hydrogeologic mapping methods were implemented to estimate the 2-year and 5-year time of travel zones for the groundwater flow system.

Hydrogeologic mapping techniques use surface observations in combination with subsurface geologic and hydrogeologic data to identify aquifer boundaries and areas that contribute water to the aquifer. These techniques were used when a PWS's source was derived from a spring, fractured bedrock, or from a limestone or dolomite aquifer. Conduit flow aquifers have extremely variable flow patterns and rates, making the calculation of time of travel difficult. In some instances, only one contaminant inventory zone was identified beyond Zone 1 due to the inherent difficulty in attempting to assign a particular time of travel to a given area. Because of this issue, aquifer vulnerability mapping techniques were also used as part of the hydrogeologic mapping effort to identify and delineate vulnerable areas. These areas (faults, fractures, exposed bedrock, etc.) are anticipated to be more susceptible to the rapid infiltration of contaminants released at the ground surface.

Groundwater Sources

The Bighorn National Forest Burgess Junction Visitors Center draws water from plutonic rock. Recharge to the well originates as infiltrating precipitation and surface water from the surrounding drainage basin, and reaches the well via conduit flow. Additional information on this well is included on the attached Well Information Sheet. As shown on the enclosed source water area delineation map, contaminant inventory zones 2 and 3 are delineated by hydrogeologic mapping methods. Zone 2 is bound on the north by an unnamed fault, on the east by South Tongue River, on the south by various tributaries of the Tongue River, and on the west by the North Tongue River. Zone 3 encompasses the plutonic rock, terminating on the east and west at the South Tongue River and the North Tongue River respectively.

Integrity Summary

Bighorn National Forest Burgess Jct. Visitor Center uses one well that is approximately 285 feet deep to supply water. The well was constructed after 1993 when more stringent construction standards were required by the State of Wyoming. 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 Burgess #2 well received a score of 1 directly reflecting the well's completion date.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the well received a sensitivity score of 6. The well received a score of 1 for aquifer sensitivity because it draws water from a confined aquifer through porous media flow. The well received a score of 5 for chemical sensitivity due to documented chemical detections in the groundwater.

Water System Susceptibility Rating

Susceptibility is defined as the potential for a public water supply to draw contaminated water at concentrations that would pose a threat or concern to human health. In general, the Bighorn National Forest Burgess Jct. Visitor Center scores medium for land use susceptibility because much of the land surrounding the water sources is forested. Forested areas were included to evaluate the potential risks of increased runoff and water quality problems following forest fires. The overall point source contaminant susceptibility rating is low due to the lack of contamination sources being present within the delineated zones. The well was assigned a medium transportation corridor susceptibility rating for Zone 2 and a low rating for Zone 3 because state highways are in proximity to 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 Bighorn NF Burgess Jet Vstr Ct
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