

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
Centennial Water & Sewer**

June 30, 2004

PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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SOURCE WATER ASSESSMENT SUMMARY FOR Centennial Water & Sewer

PWS Source Water Assessment Summary

The Centennial Water and Sewer is a community public water supply system located in Albany County. The system serves 100 people through 64 connections year-round. Facilities include two wells that draw water from the Casper formation, water treatment/disinfection control building, interconnecting transmission systems, and a steel storage tank for treated water. The water source scored medium with respect to the combined integrity and sensitivity ratings. The Centennial Water and Sewer District scored high for land use susceptibility and low for point source susceptibility.

Delineation Methods

This water system is a community supply that draws water from a fractured sedimentary unit. Hydrogeologic mapping methods were implemented to map 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

Centennial Water and Sewer draws water from the Casper Formation. Recharge to the wells originates from an outcrop of the Casper Formation west of the wells and flows eastward toward the wells through conduit flow. Additional information on these wells is included on the attached Well Information Sheet. As shown on the enclosed source water area delineation map, contaminant inventory zones 2 and 3 were delineated using hydrogeologic mapping methods. Zone 2 encompasses near the section of the Casper and Forelle Formation outcrops, terminating to the north by Mullen Creek and terminating to the south by a draw. Zone 3 encompasses the outcrops of the Casper and Forelle Formations, terminating to the west by Mullen Creek and a surface water drainage divide.

Integrity Summary

The Centennial Water and Sewer District uses two wells, approximately 740 and 860 feet deep, to supply water. The wells were constructed between 1983 and 1993 when moderately stringent construction standards were required by the State of Wyoming. Records indicate that both wells were properly sealed to protect from surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Tables, Centennial Well #1 received a score of 2 due to the well completion date and Centennial Well #2 received a score of 3 due to the well completion date and potential lack of an annular seal.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the wells received sensitivity scores of 10. The wells received the scores for two reasons. First, the wells are completed in an aquifer that is known to be vulnerable to contamination because of the high velocities associated with conduit flow. Second, the wells received a score of 5 for chemical sensitivity due to documented detections in 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 Centennial Water and Sewer District scored high for land use susceptibility because much of the land surrounding the wells is forested. Forested areas were included to evaluate the potential risks of increased runoff and water quality problems following forest fires. Due to the lack of contamination sources present within the delineated zones, the overall point source contaminant susceptibility rating is low.

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 Centennial Water & Sewer
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