

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
YNP Lake Village**

June 30, 2004

PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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SOURCE WATER ASSESSMENT SUMMARY FOR YNP Lake Village

PWS Source Water Assessment Summary

Yellowstone National Park Lake Village is a non-community, groundwater supply system. This system serves Lake Village, Fishing Bridge, and Bay Bridge. There are two springs being utilized at present. This facility is open from June 1st to September 30th each year. The water system serves an average of 900 people per day through 683 service connections. Facilities include four storage tanks and the distribution system. Water treatment consists of utilizing gaseous chlorine. The water sources scored high with respect to the combined integrity and aquifer sensitivity ratings. The village scored high with respect to land use susceptibility and low for point source susceptibility.

Delineation Methods

This water system draws water from a spring. 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 Yellowstone National Park Lake Village draws water from undivided surficial deposits and rhyolite flows along an unnamed fault. Recharge to the springs originates as infiltrating precipitation and surface water from the surrounding drainage basin, and reaches the well through conduit flow. Additional information on these springs is included on the attached Spring Information Sheet. As shown on the enclosed source water area delineation map, contaminant inventory zones 2 and 3 are combined and delineated by hydrogeologic mapping methods. Zone 2 encompasses the immediate unnamed drainage that contributes water to the springs.

Integrity Summary

The Yellowstone National Park Lake Village obtains water from the Lake Spring and Fishing Bridge Spring. As shown on the Integrity Summary Table, the Lake and Fishing Bridge springs received integrity scores of 7 and 6, respectively. These scores primarily reflect the records that indicate that the springs were developed before 1983 when less stringent construction standards were required, and that the springs may be insufficiently screened to prevent the introduction of contaminants.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the springs received sensitivity scores of 10. The springs received the sensitivity score for two reasons. The first reason is that the springs are more vulnerable to contamination due to unpredictable flow pathways and their proximity to the ground surface. The second reason is that there are 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 Yellowstone National Park Lake Village scores high for land use susceptibility for both springs 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 for both springs is low due to the lack of contamination sources being present within the delineated zones.

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 YNP Lake Village
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