

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
Buffalo Bill SP North Shore Bay**

June 30, 2004

PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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SOURCE WATER ASSESSMENT SUMMARY FOR Buffalo Bill SP North Shore Bay

PWS Source Water Assessment Summary

The Buffalo Bill State Park North Shore Bay is a non-community public water system located in Park County. The system serves 25 people per day in the summer and one person per day in the winter through seven service connections. The system is supplied by one groundwater well that draws water from the Shoshone River Gravels. Facilities also include a pump house, a treatment vault, pressure tanks and the interconnecting transmission system. The water source scored medium with respect to the combined integrity and sensitivity ratings. Buffalo Bill State Park North Shore Bay scored low for land use susceptibility and point source susceptibility, and high for transportation corridor susceptibility.

Delineation Methods

This water system is a non-community supply that draws water from porous alluvium. Calculated fixed radius (CFR) methods were implemented to estimate the 2-year and 5-year time of travel radii for the groundwater flow system. The CFR was calculated using well information and aquifer parameters in the SEO database. A nearby potential aquifer recharge source was also delineated.

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

Buffalo Bill State Park North Shore Bay draws water from alluvium along the Shoshone River valley. Recharge to the alluvial aquifer comes from the Shoshone River and tributaries and flows to the well through porous media generally from northwest to southeast. 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 were delineated using CFR methods and the reservoir was included as an additional buffer. Zone 2 had a calculated radius of 917 feet. Zone 3 had a calculated radius of 1,450 feet. The Buffalo Bill Reservoir was included as an additional aquifer recharge buffer because of its proximity to the well.

Integrity Summary

Buffalo Bill State Park North Shore Bay uses one well, approximately 135 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 North Shore Bay Campground #1 well received a score of 1 due to the well completion date.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the well received a sensitivity score of 10. The well received the maximum sensitivity score for two reasons. First, the well draws water through porous media flow from an unconfined alluvial aquifer that is known to be vulnerable to contamination. The second reason is that there is 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, Buffalo Bill State Park North Shore Bay scored low for general land use susceptibility. The overall point source contaminant susceptibility rating is also low due to the lack of contamination sources present within the delineated zones. The well was assigned a high susceptibility for state highway types of transportation corridor contaminants. 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 Buffalo Bill SP North Shore Bay
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