

WYOMING WATER ASSESSMENT AND PROTECTION PROGRAM (SWAP)



SOURCE WATER ASSESSMENT PROGRAM EXECUTIVE SUMMARY

Source Water Assessment Prepared For:
Burlington

Assessment Completed By:
Lidstone and Associates, Inc.
Engineering, Geology & Water Resource Consultants
4025 Automation Way, Building E
Fort Collins, CO 80525



June 30, 2004

SOURCE WATER ASSESSMENT SUMMARY FOR Burlington

PWS Source Water Assessment Summary

The Town of Burlington water facility is a community groundwater system that is located about 20 miles east of the Town of Basin on Wyoming Highway 30. The system provides water to a resident population of about 210 people through 93 service connections. Source water for the facility is obtained from two shallow wells that are completed in the alluvial aquifer adjacent to the Greybull River. Produced water is first piped to the distribution system and then to a 150,000-gallon storage facility. For disinfection purposes, a sodium hypochlorite solution is injected into the transmission line at a facility adjacent to the well sites.

Burlington's water sources score high for land use susceptibility because the land within the source water area is classified as irrigated cropland. The overall point source contaminant susceptibility rating is low due to the lack of contaminants within the delineated zones.

Delineation Methods

The Town of Burlington has a community water system that obtains its source water from a porous sand and gravel formation. For this aspect of the project, Lidstone obtained and reviewed a source water area delineation that was previously completed by MSE-HKM and Weston Engineering. This delineation was conducted as part of the Burlington Level II Water Supply Project for the Wyoming Water Development Commission in 1997. Although three contaminant inventory zones were delineated, Lidstone's Professional Geologist amended the delineation using the WhAEM method to meet SWAP criteria.

EPA's Wellhead Analytic Element Model or WhAEM method was used to delineate contaminant inventory Zones 1 and 2 in accordance with SWAP guidelines. The WhAEM model uses well and limited hydrogeologic data to estimate time-of-travel capture zones in relatively simple hydrogeologic settings for either confined or unconfined aquifers.

Groundwater Sources

Burlington obtains groundwater for its municipal supply from two wells that are completed to depths ranging from 45 to 48 feet. These wells obtain water from saturated sand and gravel zones within the Greybull terrace deposits along the Greybull River. Recharge to the terrace deposits occurs through the direct infiltration of precipitation on outcrops, and from the perennial flow of the nearby Greybull River. Groundwater flows eastwardly through these sand and gravel deposits to the wells under unconfined conditions through porous media. Additional information on each of these two wells is available on the enclosed Well Information Sheet.

As shown on the attached source water area map, contaminant inventory zones for the wells encompass areas immediately adjacent to and west of the wells. Zones 2 and 3 were delineated as narrow, elongate areas that extend northwestward toward and beyond the Farmers Canal.

Integrity Summary

The Town uses two wells to supply water to the municipal system. The wells, Burlington #3 & #4, were constructed between 1983 and 1993, when more stringent construction standards were required by the State of Wyoming. Records show that the wells were properly sealed to protect against the surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, both wells received a low score of 2, which is a direct reflection of the well completion date.

Water Source Sensitivity Summary

Burlington uses two shallow alluvial wells that are completed to depths of less than 65 feet. As shown on the Source Sensitivity Summary Table, the wells both received sensitivity scores of 10.

These wells received the maximum sensitivity score for two reasons. First, the alluvial aquifer is known to be vulnerable to contamination. The second reason is that laboratory analysis of water samples from the Town within the last five years detected a few contaminants that are listed on EPA's primary and secondary drinking water standards. These include nitrate, gross beta, fluoride, sulfate, and total coliform. These contaminants were generally 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. Burlington's water sources score high for land use susceptibility because the land within the source water area is classified as irrigated cropland. The overall point source and transportation corridor contaminant susceptibility ratings are low due to the general lack of contaminants within the delineated zones. While Weston Engineering produced a similar inventory, they noted the water sources may be susceptible to contamination from private septic systems and a few above ground storage tanks among other things. 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 Burlington
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