

WYOMING WATER ASSESSMENT AND PROTECTION PROGRAM (SWAP)



SOURCE WATER ASSESSMENT PROGRAM EXECUTIVE SUMMARY

Source Water Assessment Prepared For:
Spencer Homesites

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SOURCE WATER ASSESSMENT SUMMARY FOR Spencer Homesites

PWS Source Water Assessment Summary

The Spencer Homesites water facility is a community groundwater system that is located about one mile north of Riverton on U.S. Highway 26 on the Honor Farm Road. This PWS provides water on a year round basis to about 40 people through 17 service connections. Source water for the facility is obtained from two wells, one of which is used as a back-up source. Produced water is piped to a 3,000 gallon pressure tank and then to the distribution grid. Periodic shock chlorination is used to disinfect the system.

The Spencer Homesites water facility scores high for land use susceptibility because the land surrounding the water sources is irrigated agriculture. The overall point source contaminant susceptibility rating is low due to the lack of contamination sources being present within the delineated zones.

Delineation Methods

Spencer Homesites has a community water system that obtains its source water from a porous sandstone formation. WhAEM methods were used to delineate the two and five year source water areas based on information obtained from the Wyoming SEO, the sanitary survey, and a Wyoming Water Development Commission report for the City of Riverton.

EPA's Wellhead Analytic Element Model or WhAEM method was used for community water systems that derive their sources from alluvial or shallow bedrock aquifers. 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. For the source water assessment, the WhAEM model was used to develop two year and five year groundwater capture zones. Due to this methodology, the delineated source water areas may be larger than the true capture zones for each well. However, use of this method typically results in source water protection areas that can be used to more reliably protect the water supply.

Groundwater Sources

Spencer Homesites obtains groundwater for its community supply from two wells that are completed to depths ranging from 60 to 175 feet. These wells obtain water from sufficiently saturated sandstone beds of the Wind River Formation. Recharge to the Wind River Formation occurs through the direct infiltration of precipitation on outcrops. Groundwater flows through these sandstone beds to the wells through porous media flow. Additional information of each of these two wells is available on the enclosed Well Information Sheet.

As shown on the attached source water area maps, contaminant inventory zones for the wells encompass areas immediately adjacent to the wells. Zones 2 and 3 are generally centered on each well. The shape and size of the source water area is a reflection of well pumping rates, aquifer transmissivities, and groundwater flow directions.

Integrity Summary

The Spencer Homesites water facility is a community groundwater system. The wells were constructed before 1983 when less stringent construction standards were required by the State of Wyoming. Records show that these wells were properly sealed to prevent surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, Spencer #1 and Spencer #2 received a low score of 3, primarily due to its well completion date.

Water Source Sensitivity Summary

The Spencer Homesites water facility obtains source water for the facility from two wells, one of which is used as a back-up source. As shown on the Source Sensitivity Summary Table, the Spencer #1 well received a sensitivity score of 6. Spencer #2 received a score of 10.

These wells received their unique sensitivity scores for two reasons. The first reason is that water from Spencer #1 is obtained from a confined aquifer which is relatively insensitive to contamination. Water from Spencer # 2 is obtained from an unconfined aquifer which is more sensitive to contamination in this area. The second reason is that laboratory analysis of water from both wells within the last five years detected a few contaminants that are listed on EPA's primary and secondary drinking water standards. These included nitrate, fluoride, and sulfate among others. While sulfate concentrations exceeded the EPA's secondary standards, the remaining 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. The Spencer Homesites water facility scores high for land use susceptibility because the land surrounding the water sources is irrigated agriculture. The overall point source contaminant susceptibility rating is low due to the lack of contamination sources being present within 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 Spencer Homesites
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