

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
Marbleton**

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PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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SOURCE WATER ASSESSMENT SUMMARY FOR Marbleton

PWS Source Water Assessment Summary

The Town of Marbleton is community groundwater system located in Sublette County. The system serves 604 people through 235 service connections year-round. The system is supplied by five wells that draw water from the sandstone units within the Wasatch Formation. The facility also includes two steel storage tanks and the interconnecting transmission system. Water pumped from the wells flows through the distribution system to two elevated storage tanks. Sand traps are located at each well site; no other water treatment is provided. With the exception of Spotsylvania #1 and Marbleton #5, the water sources generally scored medium with respect to the combined integrity and source sensitivity ratings. The town scored high with respect to land use susceptibility, medium for point source susceptibility, and low for transportation corridor susceptibility.

Delineation Methods

This water system is a community system that draws water from a porous sedimentary formation. Groundwater modeling methods were implemented to estimate the 2-year and 5-year time of travel capture zones for the groundwater flow system. The model used well information in the sanitary survey and SEO database and aquifer parameters were similar to those reported by the Water Resources Research Institute Study of groundwater in the Green River Basin.

U.S. 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

Marbleton draws water from the sandstone units within the Wasatch Formation. Recharge to these wells occurs in the outcrops of the Wasatch Formation through porous media flow under artesian conditions generally from north-northwest to south-southeast. 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 WhAEM methods for all five wells. Zones 2 and 3 represent 2-year and 5-year groundwater travel times, respectively. The capture zones extend north-northwest from the five wellheads.

Integrity Summary

The Town of Marbleton uses five wells that range in depth from 605 to 827 feet deep to supply water to the municipal system. The Marbleton #1, #2 and #3 wells were constructed prior to 1983 when less stringent construction standards were required by the State of Wyoming. The Spotsylvania #1 well was constructed between 1983 and 1993 under moderately strict construction requirements. The Marbleton #5 well was constructed after 1993 under more stringent construction requirements. Records show that all five wells were properly sealed to protect against surface infiltration of potential contaminants and flooding around the wellhead. Therefore, as shown on the Integrity Summary Table, the Marbleton #1, #2 and #3 wells received scores of 3, the Spotsylvania #1 well received a score of 2, and the Marbleton #5 well received a score of 1 primarily due to well completion dates.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the wells received a sensitivity score of 6. The wells received a score of 1 for aquifer sensitivity because they draw water from a confined aquifer through porous media flow. The wells received a score of 5 for chemical sensitivity due to 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 Town of Marbleton scores high for land use susceptibility because much of the land surrounding the water sources is urban and irrigated cropland. The overall point source contaminant susceptibility rating is medium due to solid/hazardous waste sites within zones 2 and 3 of the water sources. The water sources were assigned a low transportation corridor susceptibility score because their source water zones are in proximity to a state highway. 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 Marbleton
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
Sol/Haz Waste Site	N/A	6	N/A

- * Illustrates the number of PSOCs in a particular rating class for all water sources
- * N/A - Not Applicable