

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
Country Meadow Estates**

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PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

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SOURCE WATER ASSESSMENT SUMMARY FOR Country Meadow Estates

PWS Source Water Assessment Summary

Country Meadow Estates is a community public water system located in Albany County. The system serves 350 people through 111 service connections year-round. The system is supplied by three wells with the produced water piped directly to the distribution system through hydropneumatic tanks located at each well site. There are no additional water storage facilities and no treatment or disinfection procedures used. The water source scored medium with respect to combined integrity and aquifer sensitivity. The Country Meadow Estates scored high for land use susceptibility, high for point source contaminant susceptibility, and high for transportation corridor contaminant susceptibility.

Delineation Methods

This water system is a community system that draws water from a fractured sedimentary unit. Hydrogeologic mapping methods were implemented to estimate the 2-year and 5-year time of travel 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 Country Meadow Estates draws water from three wells in the sedimentary units within the Casper Formation. Recharge to the wells originates from the outcrops of the Casper Formation east of the wells and flows westward via conduit flow. 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 hydrogeologic mapping methods. Zone 2 encompasses gravel and pediment deposits that are terminated to the north and south by a geological contact with the Casper Formation. Zone 3 encompasses the outcrops of the Casper Formation, terminating on the north by Jack Rabbit Canyon and terminating on the south by Government Gulch.

Integrity Summary

Country Meadow Estates uses three wells that are approximately 125, 130 and 190 feet deep to supply water to its residents. The wells were constructed prior to 1983 when less stringent construction standards were required by the State of Wyoming. However, records show that the wells were properly sealed to protect against surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, Vogel #1 well received a score of 4 due to its well completion date, and long conveyance structure length. Dueweke #2 and Enl. Dueweke #2 wells received a score of 5 due to their well completion date, lack of annular seals, and long conveyance structure length.

Water Source Sensitivity Summary

As shown on the Source Sensitivity Summary Table, the wells received a sensitivity score of 10. The wells received a high score for two reasons. First, the wells are completed in an aquifer that is known to be vulnerable to contamination because of the high velocities associated with conduit flow. Second, the wells scored the highest score of 5 for chemical sensitivity due to documented detections in groundwater.

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. In general, the Country Meadow Estates scores high for land use susceptibility because much of the land surrounding the water sources is urban. The overall point source contaminant susceptibility rating is high due to underground tanks, wastewater discharge sites and sol/haz waste sites located within Zones 2 and 3 of the wells. The wells were assigned a high transportation corridor susceptibility score because their source water zones are in proximity to state and interstate highways. 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 Country Meadow Estates
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
Wastewater Discharge	N/A	3	N/A
Underground Tank	N/A	6	9
Sol/Haz Waste Site	N/A	N/A	3

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