

**SOURCE WATER ASSESSMENT  
EXECUTIVE SUMMARY  
FOR  
Antelope Mobile Home Park**

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**June 30, 2004**

**PROJECT: 424-001**

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**ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION**

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## **SOURCE WATER ASSESSMENT SUMMARY FOR Antelope Mobile Home Park**

### **PWS Source Water Assessment Summary**

Antelope Mobile Home Park is a community groundwater system located in Campbell County. The system serves 30 people per day through 141 connections year-round. The system is supplied through two wells that draw water from the sandstone units within the Wasatch Formation. Additionally, facilities include a 10,000 gallon steel tank to store treated water, and the interconnecting transmission system. The water is disinfected prior to storage. The water sources scored medium with respect to the combined integrity and aquifer sensitivity ratings. The mobile home park generally scored low with respect to land use and point source susceptibility, and high 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 used in the calculation were similar to those reported by the Water Resources Research Institute Study of groundwater in the Powder 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**

The Antelope Mobile Home Park draws water from sandstone units within the Wasatch Formation. Recharge to the wells occurs in the outcrops of the Wasatch Formation through porous media flow under artesian conditions generally from south-southeast to north-northwest. 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 both wells. Zones 2 and 3 represent 2-year and 5-year groundwater travel times, respectively. The capture zones extend south-southeast from the two wellheads.

## **Integrity Summary**

Antelope Mobile Home Park uses two wells that are approximately 750 feet and 1,000 feet deep to supply water to its residents. The wells were completed prior to 1983 when less stringent construction standards were required by the State of Wyoming. However, records show that wells were properly sealed to protect against surface infiltration of potential contaminants and flooding around the wellhead. Both wells, however, lack additional protection of the vicinity immediately around the wellhead from contaminant sources. In addition both wells have long conveyance structure lengths. Therefore, as shown on the Integrity Summary Table, both wells received a score of 6.

## **Water Source Sensitivity Summary**

As shown on the Source Sensitivity Summary Table, each well received a sensitivity score of 6. The wells each received a score of 1 for aquifer sensitivity due to being located at relatively deep depths and drawing water from a confined aquifer through porous media flow. Both 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 Antelope Mobile Home Park scores low for land use susceptibility. Due to the lack of contamination sources being present within the delineated zones, the overall point source contaminant susceptibility rating is low. The water sources were assigned a high transportation corridor susceptibility score because their source water zones are in proximity to a railroad.

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](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 Antelope Mobile Home Park  
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