

**SOURCE WATER ASSESSMENT
EXECUTIVE SUMMARY
FOR
Broken Wheel Truck Stop**

June 30, 2004

PROJECT: 424-001

ASSESSMENT COMPLETED BY: TRIHYDRO CORPORATION

1252 Commerce Drive, Laramie, WY 82070



ENGINEERING SOLUTIONS. ADVANCING BUSINESS.

Home Office | 1252 Commerce Drive | Laramie, WY 82070 | phone 307/745.7474 | fax 307/745.7729 | www.trihydro.com

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PWS Source Water Assessment Summary

Broken Wheel Truck Stop maintains a non-community groundwater system for a transient population of 250 people through one service connection. The system consists of a single well located in a manhole behind the truck stop. From the well, the water is piped to a pressure tank located in the building and pressurized for distribution into the system. The truck stop scored low with respect to land use susceptibility, high with respect to point source susceptibility, and low with respect to transportation corridor susceptibility. The water sources scored low for integrity and high for sensitivity. The combined system score for integrity and sensitivity is medium.

Delineation Methods

This water system is a non-community system that draws water from a porous sedimentary formation. Calculated fixed radius (CFR) methods were implemented to estimate the 2-year and 5-year time of travel radii for the groundwater flow system. The CFR was calculated using well information in the SEO database. Aquifer parameters used in the calculation were assumed for those of similar type deposits.

CFR is an appropriate method to use when groundwater flow to the well, spring or tunnel can be characterized as porous. This process was implemented for small communities that derive water from deeper, confined aquifers, or for non-community water systems. A factor of safety (FS) of 1.5 was applied to all systems where portions of the data were suspect. At the ground surface, the radius can be used to delineate an area around the well to be used for wellhead protection. The radius is the distance from the well to a point where groundwater (and contaminant) can reach the well over a specified time period. Input data requirements are limited, consisting of the pumping rate, open (screened) interval of the well, porosity of the aquifer, and the selected time of travel (2 years and 5 years).

Groundwater Sources

The Broken Wheel Truck Stop draws water from one well that draws water from sedimentary units within the White River Formation. Recharge to this well occurs in the outcrops of the White River Formation and generally flows to the well under artesian conditions from southeast to northwest. Additional information on this well 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 CFR methods. Zone 2 had a calculated radius of 820 feet. Zone 3 had a calculated radius of 1,297 feet.

Integrity Summary

The Broken Wheel Truck Stop uses one well, approximately 105 feet deep, to supply water to the municipal system. The well, Lower Oil Company #1, was constructed prior to 1983, when less stringent construction standards were required by the State of Wyoming. However, records show that the well was properly sealed to protect against surface infiltration of potential contaminants and flooding around the wellhead. As shown on the Integrity Summary Table, the well received a score of 3, which is a direct reflection of the well completion date.

Water Source Sensitivity Summary

The Broken Wheel Truck Stop uses one well that draws water from the White River formation. As shown on the Source Sensitivity Summary Table, the well received a sensitivity score of 8. The well received a score of 3 for aquifer sensitivity due to drawing water from an unconfined porous flow aquifer. The well had the highest 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 water contaminated at concentrations that would pose a threat or concern to human health. In general, the Broken Wheel Truck Stop scores low for land use susceptibility. The overall point source contaminant susceptibility rating is high due to six underground tanks and one solid/hazardous waste site being located within Zone 2. The well was assigned a low transportation corridor susceptibility score because an interstate highway passes through Zone 3. 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 Broken Wheel Truck Stop
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
Underground Tank	N/A	N/A	6
Sol/Haz Waste Site	N/A	N/A	1

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