

WYOMING WATER ASSESSMENT AND PROTECTION PROGRAM (SWAP)



SOURCE WATER ASSESSMENT PROGRAM EXECUTIVE SUMMARY

Source Water Assessment Prepared For:
Three Forks Muddy Gap Svc

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SOURCE WATER ASSESSMENT SUMMARY FOR Three Forks Muddy Gap Svc

PWS Source Water Assessment Summary

The Three Forks - Muddy Gap Service water system is a transient non-community groundwater facility that is located 45 miles north of Rawlins on U.S. Highway 287. It provides water to a transient population of about 25 people through two service connections on a year-round basis. Source water for this facility is obtained from a well that is completed in Miocene Rocks. One small hydropneumatic tank provides additional pressure to the distribution system. No other treatment is provided.

In general, the Muddy Gap Service scores low for land use susceptibility. The overall land use susceptibility rating is low due to the lack of contamination sources present within the delineated zones. Because a state highway runs through Zones 2 and 3, the facility received a high transportation corridor contaminant susceptibility score.

Delineation Methods

Because the Three Forks Muddy Gap Service facility is classified as a transient non-community groundwater system and obtains water from a porous sandstone aquifer, Lid stone delineated the source water area for this system using calculated fixed radius (CFR) methods. This method was used to estimate the two and five year time of travel radii for the groundwater system based on data obtained from the Wyoming SEO, the PWS sanitary survey, and the SWAP guidance document.

The 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 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 area (screened interval) of the well, porosity of the aquifer, and the selected time of travel (2 years and 5 years).

Groundwater Sources

The PWS obtains its source water from one well that is completed in Miocene Rocks to a depth of 319 feet. Recharge to the Miocene Rocks occurs through the direct infiltration of precipitation. Groundwater reaches the well through porous media flow. Additional information on this well is included on the attached Well Information Sheet.

As shown on the enclosed source water area map, the contaminant inventory zones for this well are centered around the wellhead. Zone 2 extends approximately 1,295 feet radially from the wellhead, while Zone 3 extends approximately 2,048 feet.

Integrity Summary

The Three Forks - Muddy Gap Service uses one well to supply water to the system. The well, Erickson Well #2, was completed between 1983 and 1993, when more stringent construction standards were not required by the State of Wyoming. Records show the well was properly sealed to protect against surface infiltration of potential contaminants, but was missing an annular seal. As shown on the Integrity Summary Table, the well received a score of 4, which is a direct reflection of the well completion date, lack of annular seal and wellhead accessibility.

Water Source Sensitivity Summary

The Three Forks - Muddy Gap Service obtains its water from one well, completed in the Miocene Rocks. As shown on the Source Sensitivity Summary Table, the well received a sensitivity score of 6.

This well received a sensitivity score of 6 for two reasons. First, the porous confined aquifer is less vulnerable to contamination. The second reason is that laboratory analysis of water samples from the Service Station within the last five years detected a contaminant that is listed on EPA's primary and secondary drinking water standards, nitrate. Despite detection, this contaminant was 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 contaminated water at concentrations that would pose a threat or concern to human health. In general, the Muddy Gap Service scores low for land use susceptibility. The overall land use susceptibility rating is low due to the lack of contamination sources present within the delineated zones. A state highway runs through Zones 2 and 3. Therefore, a high score was assigned to Zone 2 and a low score was assigned to 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 Three Forks Muddy Gap Svc
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