

COAL BED METHANE INJECTIONS

General Permits:

A General Permit is a permit written by the department to cover all operators and all wells within a specified area. A General Permit may be thought of as a hybrid between a permit and a rule. All operators under a General Permit must have exactly the same requirements. (In other words, the department cannot cover one operator under General Permit 5C5-3 and waive the monitoring for Arsenic.) The department can waive Arsenic monitoring, but only if it is willing to re-issue the General Permit to change the requirements for all operators within that area.

General Permits have now been written to cover all of Campbell, Johnson and Sheridan Counties for all coal bed methane operators. There are three permits, 5C5-1 covers Campbell County from the south line of Township 48 North to the state line. 5C5-2 covers all of Campbell and Johnson Counties from the south line of Township 48 North and south to the county lines. 5C5-3 covers all of Sheridan County and Johnson County from the south line of Township 48 North and north to the county line. Operators of wells within these areas are required to obtain coverage under these general permits within six months of the issue date of the permits for existing wells. After that deadline, rule authorizations within these areas will expire, and the operators will not be allowed to continue injecting unless coverage is obtained. The general permits are available on this web site.

Requirements for coverage are included in Part II of the general permits and the application form is included as part of the permit. Operators of existing wells who have already submitted information required under Part II are not required to re-submit the same information, but they are required to submit information which was not previously submitted. For example, if the property owners within a half mile were notified at the time when the rule authorization request was submitted, the department will not require that process to be repeated. If the property owners were not notified then the department will require that it be done before coverage is granted under the general permit.

All of these permits limit the operator to the fracture pressure of the receiving aquifer as determined using a fracture gradient of .7 psi/ft and the depth of the top-most perforation. You must subtract the static water pressure in the well which is .433 psi/ft to obtain the allowable surface pressure. An operator could obtain an individual permit within these areas to inject at a higher pressure, but only if the operator could provide actual step rate test data which showed the fracture pressure for the well to be permitted. Before such a test is done, the operator should consider the cost and the likely outcome. For example, if the fracture gradient turned out to be .85 psi/ft and the top-most perforation was 1,000 feet deep, then the step rate test could be used to justify injecting at a maximum pressure of 417 psig vs. 267 psig based on the general permit. This small difference of only 150 psi is likely to yield very little increased volume, possibly an additional 5%. This agency cannot issue any permit which allows injection above the fracture pressure, not through an individual permit and not under a general permit.

All of these permits require quarterly monitoring and reporting. Report parameters include monthly volume in barrels injected, maximum monthly pressure of injection, and chemical analysis of the injected water on a quarterly basis. All three permits require Total Dissolved Solids, Sodium Adsorption Ratio, Iron Fixing Bacteria, Sulfate Reducing Bacteria and Coliform Bacteria as well as pH. Permit 5C5-3 also requires quarterly sampling for Arsenic.

Permit 5C5-1 covers an area where all of the coal bed methane water meets only Class III groundwater standards, and allows only injection into an aquifer which is class III groundwater of the state under Chapter 8, Wyoming Water Quality Rules and Regulations. The easiest way to establish that an aquifer is Class III is to determine if its Total Dissolved Solids content is over 500 precluding it from being Class I groundwater and if the Sodium Adsorption Ratio is over 8 precluding it from being Class II groundwater. Sulfate, Chloride and other parameters may also influence the classification process. Permit 5C5-3 is identical to 5C5-1 except that it also requires quarterly monitoring for Arsenic.

Permit 5C5-2 covers an area where the coal bed methane produced water may be better quality than Class III groundwater. In this area analysis for individual coal bed wells shows that they sometimes produce water which meets class I or II standards. Accordingly, this permit allows for injection into Class I, II, III or IV(a) groundwater after first establishing the class of use for the receiving aquifer and the coal bed methane water to be injected.

Other general permits may be written if the industry moves into another area. For example, none of the existing permits covers the parts of the Powder River Basin in Natrona or Converse Counties, primarily because the UIC program has seen no interest in injecting in that area and has no information on the water quality in that area. When there is a need permit(s) can be written. Typically, these permits are written at the department's discretion, but a company or trade group can submit information and request that a general permit be issued for an area.

Individual Permits:

The operator always has the alternative of obtaining an individual permit even in areas covered by a general permit. For example, if an operator within the area covered by general permit 5C5-1 or 5C5-3 found that the coal bed methane water he was producing meets Chapter 8 standards for class I groundwater he could still inject that water under the general permit, but only if the groundwater he was injecting into was class III groundwater. However, he could obtain an individual permit to inject into class I or II groundwater.

There are operators who already obtained individual permits within the areas now covered by general permits. Those operators have a choice, they can either relinquish their individual permits and be covered by the general permit, or they can retain their individual permit.

Areas outside of those covered by General Permits:

The department requires an individual permit to inject coal bed methane water outside of those areas covered by general permits.

General Permits

5C5-1 (11943-doc)

5C5-2 (11944-doc)

5C5-3 (11945-doc)

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