



# State of Utah

DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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January 14, 1992

TO: File

FROM: Tom Munson, Senior Reclamation Hydrologist *TM*

RE: Underground Monitoring Wells, Revised Probable Hydrologic Consequences (PHC), Cyprus-Plateau Mining Company, Star Point Mine, ACT/007/006, Folder #2, Carbon County, Utah

## Synopsis

On December 26, 1991, the Division received a letter from Mr. Ben Grimes addressed to Mr. Lowell Braxton. Referenced in this letter was a statement that on December 13, 1991, the Division approved Plateau's request for an extension of time to revise the PHC (Division Order ACT/007/006-DO-91C). Included in that approval was the typical design of the monitoring well to be drilled in mine. The depth of the wells was not specified in that approval. Also referenced in this letter was a conversation (on December 12, 1991) between Mr. Ben Grimes and Mr. Tom Munson to discuss the depth of the wells. In this letter, Mr. Grimes stated that we had agreed that Well #2, renamed P92-02-WD, would be drilled to a depth of 60 feet into the Spring Canyon Sandstone, the upper member of the Star Point Sandstone. Also addressed in this letter was that Well #1, renamed P92-01-WD, was to be drilled to the bottom of the Spring Canyon Member of the Star Point Sandstone. Aquifer tests will be conducted in Well P92-01-WD.

This memo will discuss this letter and the conversation relating to the requirements of the rules and to the fact that Mr. Grimes appears to feel that definite plans were made between himself and Tom Munson to the intent of how deep these holes would be drilled and how they would be completed.

## Analysis

It needs to be pointed out that the Division, namely Mr. Tom Munson, is not responsible for how these wells were to be drilled. Mr. Grimes asked my opinion of what information should be gathered while those wells were being drilled, how they should be completed, and what the purpose of the drilling program was. At that time, I told him that the coal rules require several things and that there was more than one issue at stake in regards to the drilling of these wells.

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In an inspection on December 17 & 18, 1991, Henry Sauer, Tom Munson, and Ben Grimes went underground at the Star Point Mine to see the location of the drill holes. Nothing was discussed in terms of where those drill holes were to be placed, although Mr. Grimes had chosen spots and, at the time, Mr. Tom Munson agreed that that would probably be an appropriate location.

One thing that should be noted in regards to the drilling of these wells, the purpose of these wells is to obtain data for the current operation in regards to supplying information for the revised PHC. It also must be noted that the well which exists on the south end of Gentry Mountain has currently been noted as having a large amount of water, over 200 feet, above the current coal seam in which Plateau Mining Company is mining. Since this was a concern to the Division, a revised PHC was requested. The information gathered from these wells will hopefully determine whether Plateau Mining Company, as they mine to the south on Gentry Ridge, will intercept large quantities of groundwater. And also, these wells will provide information on ground water impacts in general.

It is appropriate to mention that the Division is not a consultant to Cyprus-Plateau Mining Company in helping them determine how those wells will be completed or what information will be gathered as they are drilled. The company is responsible for supplying the Division with baseline ground water information which will help the Division make a CHIA determination. The hydrologic and geologic information for the cumulative impact area necessary to assess the probable hydrologic impacts of the proposed coal mining and reclamation activities is to be supplied to the Division. How the applicant, or the operator in this case, determines how that information will be gathered, is strictly up to the operator.

The Division has to make certain findings according to the rules. One of those findings is found under rule R645\*-301-724.100 Groundwater Information. The operator is responsible for gathering ground water quantity and quality descriptions. They are described as follows: "Water quality descriptions will include, at a minimum, total dissolved solids or specific conductance corrected to 25 degrees C, pH, total iron and total manganese. Groundwater quantity descriptions will include, at a minimum, approximate rates of discharge or usage and depth to the water in the coal seam, and each water-bearing stratum above and potentially impacted stratum below the coal seam."

Rule R645\*-301-724.310 states the following: "Determining the probable hydrologic consequences of the operation upon the quality and quantity of surface and ground water in the permit and adjacent areas, including the extent to which surface- and ground-water monitoring is necessary;"

Rule R645\*-301-724.500 Supplemental information states that "if the determination of the PHC required by R645\*-301-728 indicates that adverse impacts on or off the proposed permit area may occur to the hydrologic balance, ..... supplemental information may be required using drilling, aquifer tests, hydrogeologic analysis of the water-bearing strata, flood flows, or analysis of other water quality or quantity characteristics" to help define those impacts.

Rule R645\*-301-724.600 Survey of Renewable Resource Lands states "the applicant will provide a survey that shows whether aquifers or areas for the recharge of aquifers exist within the permit and adjacent area and whether subsidence, if it occurred, could cause material damage or diminution of reasonably foreseeable use of aquifers or areas for the recharge of aquifers."

In addition, rule R645\*-301-728 Probable Hydrologic Consequences (PHC) Determination. Rule R645\*-301-728.100 state "the permit application will contain a determination of the PHC of the proposed coal mining and reclamation operation upon the quality and quantity of surface and ground water under seasonal flow conditions (*1 year minimum*) for the proposed permit and adjacent areas."

Rule R645\*-301-728.200 states "the PHC determination will be based on baseline hydrologic, geologic and other information collected for the permit application and may include data statistically representative of the site."

### Recommendation

The purpose of spelling out these rules is to provide Mr. Grimes with the regulatory information needed to make his decision regarding what will be required in terms of data collection. The operator is responsible for providing this data in the form of a PHC document to the Division. The Division then reviews that document and makes that determination whether the operator has supplied sufficient data to assess both the quality and quantity of ground water and any aquifers above, within, or below the coal seam that potentially could be impacted on or off their permit area. The information that they will be collecting in these drill holes, in this mine, potentially could be used to assess ground-water impacts in this Castle Valley Ridge to the north, but will not supply information site specific to this lease addition.

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The Division has not made a determination at this point in time since they have not received any site specific information regarding ground water other than springs and surface water information for the Castle Valley Ridge Tract, in the current permit document. The operator must be aware that sufficient ground water information will have to be submitted to meet the requirements of these rules in order that the Castle Valley Ridge Tract can be permitted.

\* R645 rules were formerly R614

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cc: P. Grubaugh-Littig  
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