

File

0019



STATE OF UTAH  
NATURAL RESOURCES  
Oil, Gas & Mining

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February 25, 1985

Mr. Allen Emmel  
Tower Resources, Inc.  
P. O. Box 902  
Price, Utah 84501

Dear Mr. Emmel:

Re: Emergency Lease Addendum - Hydrology Concerns, Centennial Project, Tower Resources, ACT/007/019A, Carbon County, Utah

On February 8, 1985, you discussed Tower Resources' concerns, with Tom Suchoski (Reclamation Hydrologist), regarding the Divisions' letter of January 28, 1985. You indicated that the revised hydrologic inventory, appendix B of the April 1984 Addendum for Emergency Lease #U-52341, addressed the concerns raised by the Division letter. Specifically, the information is addressed by the report as follows:

| <u>POINT</u> | <u>DESCRIPTION</u>        | <u>PAGE</u>                                       |
|--------------|---------------------------|---|
| 1.A, 1       | Water level               | 9, 12, 15, 20 and 21                              |
| 1.A, 2       | Quality                   | 10 and 13   |
| 1.A, 3       | Recharge                  | 7, 9, 12, 15, 20 and 21                           |
| 1.A, 4       | Mine discharge            | Water Analyses on File w/Division                 |
| 1.B          | Surface water             | 28, 33, 41 and 53-Table 8                         |
| 2            | Detailed map              | 23-Fig. 6 & 30-Fig. 7                             |
| 3            | Expand monitoring         | Surface - Already Monitoring; Ground - No Springs |
| 4 & 5        | Water encountered in mine | Analyses of Pinnacle Burn or Outfall #6           |

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Discussion also centered on the potential mid-term review which OSM has requested. Mr. Suchoski indicated the requirement for such a review was contained in UMC 788.11.

The Division has reviewed the Addendum for the emergency lease, in light of the information presented in the February 8, 1985 telephone conversation. Some of the concerns have been met, however, the following concerns still need to be addressed:

1. The description of the regional groundwater system and its specific application to the Tower Resources area is unclear. The information presented does not adequately support the proposed operating mechanism for the groundwater system.

On page 4, of the revised Hydrologic Inventory, it is stated that strata, in the mine area, dips to the north and east at approximately 10 percent (6 degrees). Also, on page 9, the sandstone beds are identified as the principal water bearing strata, but their ability to yield water for extended periods is largely controlled by the relative impermeability of the beds. In several sections of the revised hydrologic inventory it is indicated that impermeable shales prevent downward movement of groundwater and force these waters to the surface where a portion can and sometimes does, occur as a spring. This is similar to the occurrence of springs in the Wasatch Plateau.

If the groundwater system in the Tower Resources area operated in a similar fashion to the Wasatch Plateau, one would expect to see many more springs than have been found; though the number would be proportionately less than found on the Wasatch Plateau because of the lower annual precipitation.

Nowhere in the inventory is the effect of dip addressed. If dip is to the north - northeast at 10 percent as indicated in the report, it would seem that a more plausible explanation of the groundwater occurrence, in the Book Cliffs, and specifically in the area of Tower Resources' Mine, is as follows. Water entering the ground, which is not used by vegetation, is impeded from deep vertical percolation by the shales rather than forcing

these waters toward the surface. The dip of the strata, and therefore generally the shale beds, would convey the water along the dip until the regional water table was intersected.

Based on the above, the applicant must modify the groundwater system description. Such a description must discuss site specific data and conditions, conform or tie to regional conditions but must not be dependent on regional data with only two or three site specific points, and all points and data information must be included and addressed.

2. The revised hydrologic inventory only presents data through 1981. While Tower Resources has been collecting data since 1981 and submitting that information to the Division, other agencies which review the report do not have access to that information. As such, the applicant must revise the inventory to incorporate the existing data through the present and address some of the uncertainties regarding the understanding of the hydrologic system (i.e. changes in water type at springs and variations in flow).
3. The proposed mining of lease U-52341 extends under and adjacent to the Hoffman Creek Drainage. Little information has been provided to address the hydrologic conditions of the Hoffman Creek Drainage. The applicant must include the Hoffman Creek Drainage into the hydrologic inventory and the hydrologic monitoring program.
4. In 1983 Tower Resources encountered water in a burn area of the Gilson Seam. The inventory does not address such an occurrence nor does it include the water quality and quantity data. The applicant must include a discussion of the waters encountered and the location of the burn area in the hydrologic inventory.
5. Several references in the report section of the inventory are not included in the Bibliography. The applicant must upgrade the Bibliography to include all referenced sources in the report.

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Tower Resources must address these outstanding concerns by April 1, 1985. Adequately addressing these concerns will aid in enabling the Division to approve the emergency lease. If you have any questions regarding this letter please call me, Tom Suchoski, or Rick Summers of my staff.

Sincerely,



Susan C. Linner  
Reclamation Biologist/  
Permit Supervisor

jvb  
cc: A. Klein  
W. Swain  
T. Suchoski  
R. Summers  
T. Wright  
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