0001

STATE OF UTAH
NATURAL RESOURCES
Oil, Gas & Mining

Scott M. Matheson, Governor
Temple A. Reynolds, Executive Director
Dianne R. Nielson, Ph.D., Division Director

4241 State Office Building • Salt Lake City, UT 84114 • 801-533-5771

December 28, 1984

TO: Mary M. Boucek, Permit Supervisor/Reclamtion Biologist

FROM: Richard V. Smith, Geologist RVS

RE: Grassy Trail Creek Alluvial Valley Floor (AVF) Determination, Kaiser Steel Corporation, Sunnyside Mines, ACT/007/007, #2, Carbon County, Utah

The applicant has submitted a map of Grassy Trail Creek (Plate III-29) that displays unconsolidated (alluvial fan) deposits, unconsolidated streamlaid (flood plain) deposits, stream, topography, flood and sprinkler irrigated lands, historically irrigated lands and diversion structure locations as required by UMC 785.19(c)(1).

The Division is required by UMC 785.19(c)(2) to utilize the above information to determine whether an AVF exists. Accordingly, a positive AVF determination for Grassy Trail Creek is justifiably made on the basis of:

1. Unconsolidated streamlaid deposits holding streams being present and,

2. Sufficient water to support agricultural activities occur as evidenced by the existence of historical and current flood and sprinkler irrigated lands along Grassy Trail Creek.

Following the positive AVF determination, the Division may waive the requirements of UMC 785.19(d) and (e) if Mining and Reclamation Plan (MRP) data show the operation will not cause "significant disturbance of the surface or ground water regime" and "the area of the AVF to be affected provides or may provide negligible support for production from farming."

Data given in the MRP indicate the average yearly flow for Grassy Trail Creek to be 5,100 acre-feet. This value presumably includes the 1,200 acre-feet of water currently

being discharged from the mine. Thus, mine closure will initially result in an average flow reduction of 23.5 percent for Grassy Trail Creek. Please note that base flow recharge from ground water resources may encompass a greater percentage of stream flow during the late summer growing season when the amount of rainfall decreases. Other MRP data indicate approximately 1,100 acres of land either have been or currently are flood or sprinkler irrigated with water from Grassy Trail Creek.

The Division must determine whether or not a 23.5 percent flow reduction represents "significant disturbance of the surface water regime" and approximately 1,100 acres "provides negligible support for farm production."

Option I

If there is no significant disturbance and only negligible support for farm production, then the Division may waive all or part of the ensuing regulatory requirements.

Option II

If there is significant disturbance and support for farm production, then "the complete application shall include an appropriate combination of detailed surveys and baseline data adapted to site-specific conditions and the degree of proposed disturbance as required by the Division. . . ."

Recommendation

I would recommend that if Option II is pursued, then the applicant should provide a suite of data that will allow an assessment of the cumulative impacts of mining on the ground water system and in particular, base flow recharge to Grassy Trail Creek. After mining, will flooding of the workings result in natural equilibration of the ground water system and initiate or sustain or impeded recharge to stream base flow? If recharge is initiated, how long will it take for the system to equilibrate? Will impacts incurred during the lag time required for sustem equilibration necessitate mitigation?

It would seem prudent for the Division to carefully consider the ramifications of the Grassy Trail Creek AVF determination. The precedent set by this determination may, in

the future, become of interest as mining proceeds along the eastern Wasatch Plateau and elsewhere. Conceivably, base flow recharge and associated stream flow may be impacted and therefore, areas having AVF characteristics may be affected.

btb
cc: Steve Cox
Pam Grubaugh-Littig
Ev Hooper
Tom Munson
John Whitehead
9206R-21-23