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**State of Utah**  
DEPARTMENT OF NATURAL RESOURCES  
DIVISION OF OIL, GAS AND MINING

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April 6, 1993

TO: Pamela Grubaugh-Littig, Permit Supervisor

FROM: Thomas Munson, Senior Reclamation Hydrologist 

RE: NOVs N91-35-6-1, N95-35-7-1, and N91-32-6-1, Western States Minerals Corporation (WSMC), J.B. King Mine, ACT/015/002, Folder #2, Emery County, Utah

The following discussion relates to the December 7, 1992 letter sent from the Director, Dr. Dianne Nielson, to Mr. Gerick. This discussion will address how the operator addressed the requirements of the December 7, 1992 letter.

**N91-35-6-1**

**Division Requirements From the 12/7/92 Letter**

The Division will accept the proposal to remove silt fences, without placement of additional structures, to satisfy the permit stipulation. Abatement of N91-35-6-1 will be accomplished when the text and appropriate maps in the Mining and Reclamation Plan are modified to show elimination of the silt fences. These permit changes must be submitted within 45 days of receipt of this letter (December 7, 1992 letter).

**Review of the Operator's Response**

*The operator has removed the silt fences from Drawing JBK-1 and provided text changes deleting silt fences from the mining and reclamation plan in the permittee's January 20, 1993 response under UMC 817.45. The operator has provided additional information for insertion into their mining and reclamation plan in their response which needs to be reviewed separately from the NOV response.*

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**N91-35-7-1**

**Division Requirements From the 12/7/92 Letter**

The information provided by WSMC basically documents how the approved plan is performing. Since N91-35-7-1 asked for a plan "outlining methods to minimize erosion to the areas referenced" and did not allege performance standard violations beyond minimization of erosion, WSMC's response will be considered satisfactory for abatement purposes (emphasis added).

**Review of the Operator's Response**

*The NOV was abated by the December 7, 1992 letter.*

**N91-32-6-1**

**Division Requirements From the 12/7/92 Letter**

The argument that geomorphic stability under arid land erosion conditions is evolutionary may have merit to the extent that previous attempts to engineer a solution to the problem have not proven successful. To fully apply this concept, under the authority provided at R645-301-743.314 (emphasis added to show that this is a wrong cite and should have probably been R645-301-742.314), the portions of the plan discussing final reclamation configuration and design would need to be amended to show:

1. The current configuration, in plan and cross-section, of the feeder ditch and main feeder ditch;
2. An evolutionary "design sequence" beginning with the constructed configuration in the approved plan, through the present configuration, to an ultimate configuration more compatible with the prevalent geomorphology. Included with additional text would be a series of maps and channel sections (cross sectional and longitudinal)

depicting anticipated evolutionary stages ultimately resulting in geomorphic stability;

3. A discussion of how the proposed amendment to the Reclamation Plan will ensure compliance with applicable laws, rules, and performance standards, including prevention to the extent possible additional contributions of suspended solids to stream flow outside the permit area; and
4. How these changes will approximate the characteristics of the original, premining channels.

#### Conclusion

N91-32-6-1 cannot be abated based on the information submitted in the September 15, 1992 package. In allowing submission of additional data directed towards abatement, the Division is not making a finding of their adequacy in advance of submission. The Division will consider the adequacy of any additional data for abatement of this violation, if submitted within 45 days of receipt of this letter.

#### Review of the Operator's Response

*A review of the operator's response will take into account all the applicable laws, rules and performance standards related to the reclamation of permanent diversions.*

*The Division letter of December 7, 1992 listed rule R645-301-743.314 as the regulatory authority to request changes to the plan. The correct citation is R645-301-742.314 which states the following:*

#### Applicable laws, rules, and performance standards

**742.314.** *The Division may specify additional design criteria for diversions to meet the requirements of R645-301-742.300.*

*Since this regulation does not allow the operator to ignore the requirements of R645-301-742.300, then the operator must also have meet those requirements. They are as follows:*

- 742.300. Diversions.*
- 742.310. General Requirements.*
- 742.311. With the approval of the Division, any flow from mined areas abandoned before May 3, 1978, and any flow from undisturbed areas or reclaimed areas, after meeting the criteria of R645-301-356.300, R645-301-356.400, R645-301-513.200, R645-301-742.200 through R645-301-742.240, and R645-301-763 for siltation structure removal, may be diverted from disturbed areas by means of temporary or permanent diversions. All diversions will be designed to minimize adverse impacts to the hydrologic balance within the permit and adjacent areas, to prevent material damage outside the permit area and to assure the safety of the public. Diversions will not be used to divert water into underground mines without approval of the Division in accordance with R645-301-731.510.*
- 742.312. The diversion and its appurtenant structures will be*
  - 742.312.1. Be stable;*
  - 742.312.2. Provide protection against flooding and resultant damage to life and property;*
  - 742.312.3. Prevent, to the extent possible using the best technology currently available, additional contributions of suspended solids to streamflow outside the permit area; and*
  - 742.312.4. Comply with all applicable local, Utah, and federal laws and regulations.*
- 742.313. Temporary diversions will be removed when no longer needed to achieve the purpose for which they were*

*authorized. The land disturbed by the removal process will be restored in accordance with R645-301 and R645-302. Before diversions are removed, downstream water-treatment facilities previously protected by the diversion will be modified or removed, as necessary, to prevent overtopping or failure of the facilities. This requirement will not relieve the operator from maintaining water-treatment facilities as otherwise required. A permanent diversion or a stream channel reclaimed after the removal of a temporary diversion will be designed and constructed so as to restore or approximate the premining characteristics of the original stream channel including the natural riparian vegetation to promote the recovery and the enhancement of the aquatic habitat.*

Continued Review of the Operator Response

*Based the requirements of these rules, the operator's plan has failed to show that the feeder ditch or the main feeder ditch has been "designed, located, constructed, maintained and used to:*

*742.312.1. Be stable;"*

*The operator has not proven that the existing ditch designs were ever located, constructed, and maintained to be stable or were implemented according to designs found in the approved Mining and Reclamation Plan. The current plan shows a straight channel with no bends or curves like what was installed on the ground. No as-built designs were ever provided to the Division even though such plans were requested, showing the current changes made on the ground. The plan discusses designs which have never been verified as having been correctly installed by the operator. The statement made in the December 7, 1992 letter stating the "operator's attempts to engineer a solution to the problem have not proven successful" is correct based the fact that the engineered designs were never implemented correctly as documented in NOV N91-32-6-1. It is my opinion that this NOV was correctly written. The problem remains that the ditches do not meet the designs found in the approved plan and that the abatement plans do not meet the requirements of the rules.*

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*The operator in his submittal has not provided any criteria by which one can gauge stability of these ditches when potential geomorphic stability is many years in the future by their own submission. A well thought out engineered design mimicking geomorphic processes would speed up the construction of stable designs. The operator needs to provide stable designs and implement those approved ditch designs. Stability criteria must be able to be monitored at some point in the future (i.e. before bond release) to determine that a geomorphically stable channel has been "designed, located, constructed, maintained and used to be stable".*

*The operator's plans do not meet the requirements of the rules as interpreted. The current channels are not stable on the ground due to the operator's inability to construct approved engineering designs on the ground. The intent of the rules is to provide a stable engineered channel properly located and maintained. A plan must be required to show how the operator and the division will obtain stable ditches based on the requirements of R645-301-742.300. Until an engineered "design sequence" with specific stability criteria attached to it can be reviewed by the Division and approved, the operator has not met the requirements of the rules and this abatement plan can not be approved.*

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