

MEMORANDUM

MEMO TO: Daron Haddock, Permit Supervisor
FROM: Priscilla Burton, Soils Reclamation Specialist
DATE: March 5, 1991
RE: Response to N.O.V. 91-37-1-3. Soldier Creek Coal Co.
Soldier Canyon Mine. ACT/007/018. Carbon County,
Utah. Folder #2 & #5.

SUMMARY:

1. Soldier Creek Coal Co. submitted a revised Exhibit 4.2-6. the map indicates areas for "interim on-site waste-rock storage" and "soil stockpile."
2. Analysis of the waste-rock shows that it is non-acidic and high in water soluble sodium.
3. The excavated earth from the stream channel has good potential for substitute topsoil.

ANALYSIS:**Failure to operate within the disturbed area boundary**

N.O.V 91-37-1-3, #1

Backfilling and grading activity in the stream channel is imminent. Therefore, this N.O.V. has been amended to require that Soldier Creek Coal Co. (SC3) submits an **accurate, certified** surface facilities map that includes the disturbed area boundary.

Failure to place excess spoil in a designated area within the permit area.

N.O.V. 91-37-1-3, #2

The "interim waste-rock storage" area is marked on the new Exhibit 4.2-6.

Waste-rock and topsoil samples were sent for analysis according to Table #6 of the Utah Guidelines for Soil Management. The waste-rock has low levels of selenium and boron, high levels of sodium.

In fact, the amount of water soluble sodium (155 meq/L) is 15 times the amount present in the excavated soil. The Sodium Absorption Ratio value of 24.5 is approximately 12 times larger than the SAR of the excavated soil. The Exchangeable Sodium Percentage (ESP) is 22.6%, approximately one quarter of the exchange sites are filled by sodium.

The Electrical conductivity of the waste-rock (20.4 mmhos/cm) is seven times that of the soil removed. Interestingly, the waste-rock has a slightly higher nitrate-nitrogen content (6.89 ppm).

The high concentration of exchangeable sodium in this waste-rock requires care in using it as backfill in the stream channel. Regulation R614-301-731.310 requires that underground development waste is placed to avoid drainage of the material into the surface or underground waters. If the material is used for temporary backfill into the culvert excavation, SC3 must outline the steps they will take to avoid drainage from the waste-rock into the surface or ground water.

If plans call for the revegetation of this area during the life of the mine, then the waste-rock must be covered with two feet of substitute topsoil in preparation for interim revegetation as per R614-301-514.252.

Failure to identify and protect the topsoil resource.

N.O.V 91-37-1-3, # 3

The "soil stockpile" is marked on the new Exhibit 4.2-6. Two composite samples were taken from the soil stockpile. Both samples are suitable for substitute topsoil material with one exception. The percentage of coarse fragments is too high.

To use this material as topsoil will require sorting out rocks and boulders larger than ten inches. The stored substitute topsoil may contain only 10% rock fragments ten inches or greater in size (see Utah Guidelines for topsoil).

SC3 must now determine how many yards of this material will be salvaged for substitute topsoil. And, once this is determined the material must be protected as per R614-301-230 through 240.

CONCLUSION:

1. Soldier Creek Coal Co. has abated the Notices of Violation, 91-37-1-3, #2 & #3. The first violation in this group has been modified to require that Soldier Creek Coal Co submit a certified surface facilities map that is accurate with regards to the disturbed area in the stream channel. The abatement date for this requirement is one week after completion of backfilling in the channel or April 1, 1991, whichever comes first.

2. The analyses of the excavated earth from the stream channel show that the material will be suitable as a substitute topsoil after rocks are reduced to 10% of the volume.

3. The analysis of the waste-rock shows that the material is high in exchangeable sodium. SC3 must present to the Division its plan for eliminating drainage from the waste-rock into the surface and ground water prior to being granted permission to use this material for temporary backfill into the stream channel. The waste-rock must be removed during final reclamation.