

In amending the draft bill in 1927 to continue to allow locations under the mining laws, in particular for precious metals found in separate vein deposits in lands valuable for potash, the Congress apparently thought that the patenting of such 20-acre mining claims would be preferable to patenting 160-acre portions of the 640-acre 1917 potash permit areas, and not arise with such frequency as to adversely affect the development of potassium deposits (66 Cong. Rec. 2031, January 16, 1925). Unless this exception was made, there could have been no opportunity to obtain these locatable mineral deposits in lands containing potassium deposits. Of course the Multiple Mineral Development Act of 1954 has since then established new ground rules allowing the General Mining Law to operate in lands valuable for leasable minerals, with reservation of the latter, thus again opening wide areas to the 1872 mining law.

Much of the foregoing also applies to sodium deposits. Here, too, the Congress was careful to spell out an identical long list of sodium compounds to which the leasing act would apply, thereby specifically including sodium silicates. The applicability was not initially identical, however. The initial Mineral Leasing Act language limited the leasable sodium compounds to those "dissolved in and soluble in water and accumulated by concentration." This restriction was deleted by an amending Act of December 11, 1928 (45 Stat. 1019; 30 U.S.C. 261).

NEW TECHNOLOGY MAY MAKE MINERAL VALUABLE

Changes in technology as well as successful exploration can, of course, change a mineral occurrence of scientific interest only into a mineral deposit by showing that it is valuable. In 1929 W. H. Bradley suggested that the authigenic analcite beds he had found in the Green River formation might have economic value as a source of zeolitic material for water softening. Thirty years later discoveries were made of extensive beds of mordenite, phillipsite, clinoptillite, erionite and other sodium or potassium zeolites in western Tertiary deposits. At about the same time research began to show new, sophisticated uses for synthetic zeolites in catalytic cracking, molecular sieve applications, and selective ion exchange reactions, suggesting that bulk applications in water softening and pollution control are just around the corner for the much less expensive natural zeolites. Lands known to be valuable for these zeolites are now classified as sodium or potash lands.

ARE THERE EXCEPTIONS?

What are the exceptions, if any? One exception that has been suggested is that if a valuable mineral deposit only incidentally contains potassium or sodium and is not primarily used or valuable for its potassium or sodium content, it should be considered to be locatable. The key word here is "incidentally."

The potassium content of potash feldspar is not incidental even today when the potential potassium extraction processes of World War I lie fallow. Feldspar now is primarily used as a flux in glass and ceramics, and is sold on potash content, or its potash/soda content or ratio. It cannot be said that feldspar is valuable only as feldspar for those uses without referring to its potash or soda content.

It is not necessary that the sodium or potassium salt or silicate content be greater than that of any other constituent of the mineral. The percentage may be relatively small. Also, it is immaterial what constituents of the mineral or deposit are the most useful or valuable after processing for sale.

It is thus clear that nearly all valuable mineral deposits containing potassium or sodium as chlorides, sulfates, carbonates, borates, silicates or nitrates are leasable in public lands, whether or not they occur as veins, dikes or beds or as double salts or complex silicates. However, a potassium uranium vanadate (carnotite) or a sodium aluminum fluoride (cryolite) would not be subject as such to leasing.

In view of the foregoing, can there really be any doubt about dawsonite being leasable mineral, both on its own right as a sodium aluminum carbonate mineral or as a mineral intimately associated with organic matter in Colorado oil shale beds? Or can there be any doubt that polyhalite will some day be produced under lease from New Mexico deposits when technology and markets are right? Or that the known deposits of glauberite (sodium-calcium sulfate) or gaylussite (sodium-calcium carbonate) in Nevada and elsewhere will not some day find a market via a leasing operation?