REVEGETATION TRIALS ON HARD ROCK MINING DISTURBANCES[1]

by

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Abstract. Three disturbances are associated with many gold and silver mines in the semi-arid west. These include waste rock, inactive cyanide leach pads, and at a few mines exhausted clay pits. Methods for revegetation of these disturbances are based upon research in the more western mountains and at coal or bentonite mines; unfortunately, neither of these directly address the revegetation problems of the hard rock mines. Recently completed research carried out over two growing seasons has revealed that waste rock and derelict leached material can be revegetated relatively easily if particular attention is given to species selection. Clay pits are a more difficult problem, however, and revegetation attempts on them may not be successful in those years in which less than 75% of long-term average precipitation occurs. On waste rock four grass species were particularly successful: Festuca ovina duriuscula, Agropyron spicatum, A. dasystachyum, and Poa compressa. On derelict leach rock the most successful seeded species were Bromus marginatus, Poa compressa, and Melilotus officinalis. The only species that germinated well on the clay pits were Agropyron riparium and Melilotus officinalis. The major problem at the leach rock site were dry soils and erosion. The clay pits revealed soil physical problems which will be difficult to correct. The waste rock was not difficult to revegetate, but several minor problems existed, e.g. nutrient deficiencies, high coarse fragment content and low water holding capacity. These did not present insurmountable problems, however, since plant growth on these materials was very good.

ADDITIONAL KEY WORDS: Revegetation, Northern Great Plains, hard rock mining.

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