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USING COAL BED-METHANE PRODUCED SALTWATER FROM WELL-SITES FOR NATIVE AND NON-NATIVE GRASS STAND ESTABLISHMENT

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New Mexico plays a critical role in America's oil and natural gas industry with the first San Juan Basin oil well drilled near Aztec in 1921. The San Juan Fruitland formation is first in coal bed-methane production and reserves with approximately 597 produced saltwater disposal wells. Approximately 12,500 new wells, including natural gas, CO₂, oil, and saltwater disposal units will be drilled during the next 20 years in the San Juan Basin. Around 2.5 acres of land, not including roads, are disturbed during drilling of each well. With an average annual rainfall of approximately 8.0 inches, establishment of vegetation is very critical. Research plots were established in the San Juan Basin in 2004 using coal bed-methane produced saltwater (CBMPS) to enhance native and non-native grass establishment. Soils samples were taken before and after produced water applications to determine electrical conductivity, pH, and sodium adsorption ratios. CBMPS samples were taken at each application and analyzed for total dissolved salts, electrical conductivity, pH, and sodium adsorption ratios. Sixteen grasses, including native and non-native, were evaluated for stand establishment approximately one year after CBMPS application. Approximately 5.2 inches of CBMPS averaging 8.2, 3838 meq/L, 69, and 16.8 in pH, total dissolved salts, electrical conductivity and sodium adsorption ratio respectively, were applied to Conoco/Phillips 242A. Arriba Western, Hy-Crest Crested, Critana Thickspike, Anatone Bluebunch, San Luis Slender Wheatgrasses, and Bottlebrush Squirreltail resulted in good to excellent in stand establishment one year after CBMPS application.

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