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## FOR IMMEDIATE RELEASE:

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## EMNRD Mining and Minerals Division completes Swastika Mine and Dutchman Canyon Maintenance and Stream Restoration Project

Reclamation work included planting cottonwood poles, willow cuttings and wetland plugs provided by Santa Ana Native Plants

**SANTA FE, NM** – The Energy, Minerals and Natural Resources Department's (EMNRD) Mining and Minerals Division (MMD) has completed reclamation work at the Swastika Mine and Dutchman Canyon Maintenance and Stream Restoration Project, located west of Raton. The work restores the land back to beneficial use and protects the public from potential adverse environmental effects.

This project follows a 2012 project that was damaged by flooding from an extreme rain event. A geomorphic reclamation method, which is a landscape reconstruction technique that attempts to recreate the original surface forms surrounding a mined area, thereby mimicking the natural drainage patterns of a natural landscape was used. This included installing a series of steep gullies in previously restored landform, and a series of rock structures within a section of the stream channel were installed to further prevent downcutting, scour, and lateral erosion of the stream channel. The work was completed in collaboration with the Pueblo of Santa Ana, Oxbow Ecological Engineering, Vermejo Park Ranch, and Sweatt Construction of New Mexico.

"Maintaining previously constructed reclamation projects that restored mine impacted areas to beneficial use and enhance wildlife habitat is fundamental to mine reclamation," said MMD Director Jerry Schoeppner. "Partnering with Santa Ana Native Plants Nursery to obtain locally grown riparian vegetation, enhancing water quality better suitable for wildlife habitat, and employing a New Mexico business exemplifies the collaborative approach we strive for when working on reclamation projects."

A series of boulder and graded rock structures were installed within the stream channel to reduce erosion, headcutting of the channel, and to protect existing banks and benches that contain a myriad of archeological resources. Innovative GPS technology was used with heavy equipment to ensure the accuracy of the structures being built. More than 900 clusters of willows and cottonwoods and nearly 2,000 wetland plugs obtained from the Santa Ana Native Plants Nursery were planted along the channel to reduce storm runoff energy and revegetate the site. Design and construction oversight was completed by George Cathey of Oxbow Ecological

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Engineering. Reclamation projects benefit local communities by creating jobs across multiple sectors, bringing both environmental and economic benefits.

The Swastika Mine operated from early to mid-1900's. Its name comes from the Navajo symbol for good luck, and at its peak, the mine was producing 1,500 tons of coal a day and had a population of 500 people.

The reclamation work was funded by the Abandoned Mine Reclamation Fund, a federal grant financed by a collection of fees on coal production throughout the United States and works across the state to identify dangerous abandoned mine areas to enhance public health and safety and restore land and water resources adversely affected by historic mining operations. The law authorizing the fee is set to expire on September 30, 2021. However, legislation has been proposed to reauthorize the fee collection for up to 15 more years.



Figure 1. Working conditions were often challenging – Ice covering the river during winter construction



Figure 2. Boulders between 4ft-8ft were used for cross vane structures



Figure 3. Upland structures consisted of check dams, media lunas and zuni bowls



Figure 4. Planting willow clusters provided by the Santa Ana Native Plants Nursery.



Figure 5. Stream after construction

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