Lechuguilla Cave Culvert Replacement Project

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Abstract

The Lechuguilla Cave breakthrough was in May of 1986. During the first week of exploration a 24-inch diameter road culvert with a locking gate was placed through the rubble to make entry into the cave safe and to add security. Due to the constant exchange of air (sometimes by winds up to 60 miles per hour) due to barometric pressure in the culvert, the Sandia Grotto replaced the locking gate with a counter-balanced lid and seal. The interior of the culvert was always either wet or dry depending on whether the cave was exhaling or inhaling. This constant variation of climate on the interior of the culvert created a very hostile environment and the perfect conditions for corrosion on metal surfaces. After several years, the mild steel ladder and the culvert were in a state of severe corrosion. For safety purposes, the management of Carlsbad Caverns National Park's Cave Resource Office, decided that the culvert should be replaced with a combined non-corrosive airlock and culvert. Various ideas and materials were discussed and they finally decided that stainless steel would be the best material for corrosion resistance and security for the cave. Basically, the project started in February of 1999 with the combining of ideas and the writing of an environmental assessment. Along with combined long hours, frustration, and hard work, the construction phase of the project ended June 18, 2001. The restoration phase of the project has begun with many volunteers and grottos donating their time and effort to return Lechuguilla Cave's entrance as closely as possible to what it was prior to the project. The presentation at the National Cave Management Symposium will cover the construction phase of the culvert and airlock from the very beginning through up to date on the restoration phase of the project.