

ABSTRACTS

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WHY YOU SHOULD CONSIDER CONSTRUCTION DEWATERING DURING THE DESIGN PHASE ON PROJECTS IN SOUTHERN NEVADA

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Even though we live in the desert, much of Southern Nevada has shallow groundwater conditions. In Las Vegas Valley, the water table is less than 25 feet in nearly half of the valley, with many areas having shallow groundwater less than 15 feet. Both Laughlin and Mesquite have localities with similar conditions.

Shallow groundwater conditions present at project sites usually requires dewatering during construction for pipelines, tunnels, depressed roadways, deep foundations and basements. The chief reason for dewatering on these types of projects is to provide access to the excavation for the construction work and safety of the workers involved. If not properly addressed during design, shallow groundwater may force project managers and engineers to make major decisions on dewatering during construction. Lack of understanding on dewatering issues at the time of construction can result in extraordinary measures that were not required if anticipated. Hence, the cost of projects, even routine projects, have been unnecessarily increased, often dramatically.

Along with the need to stabilize the excavations and to maintain dry working conditions with dewatering, there is also a risk of undesirable effects related to polluted groundwater in the environment. Contaminated shallow groundwater is fairly common in the developed areas of Southern Nevada. Dewatering projects may initially tap into contamination, or may expand and draw contaminant plumes from nearby during the course of the project. NPDES permits for temporary and permanent dewatering discharge are mandatory, and should be considered at the design level, particularly if the risk of contamination is high. Treatment of groundwater before discharging offsite is becoming more and more common on many projects in the area.

This presentation presents general technical and contractual procedures that can anticipate the effects of dewatering during design and thus control or minimize costs, claims and litigation during construction.