



# Sierrita Facts from FCX

## Sulfate Information at Sierrita

Mining in the area around Green Valley started in the late 1800s and the modern open-pit Sierrita operation dates to 1959.

- Since the 1970s, the 3,600-acre Sierrita Tailings Impoundment (STI) has been the final repository for the crushed rock from which essential copper and molybdenum have been extracted.
- Over decades of operation, water seeping from the STI, which contains sulfate, was not fully contained by the collector well system and migrated down gradient of the wells, resulting in sulfate impacted groundwater.
- Sulfate can be produced when sulfide minerals, such as those found naturally in Sierrita and elsewhere, are exposed to air and water. Most sulfates dissolve readily in water.
- Sulfate is not considered hazardous by environmental regulations. EPA has identified a non-mandatory federal guideline for drinking water, based on aesthetics (taste, color or odor of water). Ingestion of water with high concentrations of sulfate is known to have a laxative effect. There are locations in Arizona, as well as other states, with elevated levels of naturally-occurring sulfate in groundwater.
- In June 2006, Sierrita signed a Mitigation Order on Consent (MOC) with the Arizona Department of Environmental Quality (ADEQ). Under the MOC, Sierrita is to undertake mitigation so that drinking water supplies do not exceed 250 mg/l of sulfate at the point of drinking water use as a result of the operation of the STI. The mitigation is accomplished through the installation and operation of ground water wells, monitoring, ground water modeling, and reporting to ADEQ to ensure that the mitigation is functioning as required by the MOC.
- In 2006, Sierrita completed the replacement of two drinking water wells operated by the Community Water Company of Green Valley that had sulfate levels greater than 250 mg/l.
- Sierrita prepared and submitted a feasibility study for the sulfate plume in October 2008 and ADEQ approved the study in March 2009. The study evaluated five mitigation alternatives that used different combinations of source control and plume management to accomplish the mitigation objective. The recommended mitigation alternative calls for moving the location of groundwater pumps that are needed to supply the Sierrita mining operations to locations where pumping will control migration of the sulfate plume into unaffected portions of the basin fill aquifer, which will reduce the extent of the plume over time.
- Sierrita submitted the Mitigation Plan in May 2009. It describes the process to implement, operate, monitor, adapt, terminate and report measures to address sulfate with respect to drinking water supplies.
- In 2014, Sierrita completed the construction of the groundwater pumping system to supply the Sierrita mining operations with water from the sulfate plume as defined in the Mitigation Plan.
- Additionally, a Community Advisory Group meets to hear updates from the company and ADEQ, ask questions, and participate in the progress of the Mitigation Order on Consent.

For additional information, visit <http://fcx.com/sierrita>.