



United States Department of the Interior

NATIONAL PARK SERVICE
Southern Colorado Plateau Network
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RE: Proposed Post-Gold King Mine Release Incident: Conceptual Monitoring Plan for Surface Water, Sediments and Biology

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Aztec Ruins National Monument is located on the Animas River in northwestern New Mexico near the town of Aztec. The Farmer's Ditch, which traverses through the Monument, is the main source of water for the city of Farmington, New Mexico. This ditch also supplies the Monument with water for the Historic Maintained Landscape and restoration projects. Both the river and the ditch are important to the National Park Service, and the agency has been active in collection of hydrologic and biologic data from these locations.

Thank you for the opportunity to comment on the September 2015 EPA *Draft Post-Gold King Mine Release Incident: Conceptual Monitoring Plan for Surface Water, Sediments and Biology*. Please accept and give consideration to the following suggestions and comments.

Sampling Design

The Draft Conceptual Monitoring Plan is heavily based on use of historical data to assess potential effects of the GKM release. However, since there is relatively little historical data available for reaches of the Animas and San Juan Rivers in New Mexico an alternative investigation plan should be developed. We suggest adding the following measure to address this shortcoming.

- Implementation of strategies designed to identify the chemical signature of the GKM release. For example, use of isotopic fingerprinting, sediment coring, and careful evaluation of available historical data could be used to distinguish between pre and post release conditions.

Sample Sites

The Draft Conceptual Monitoring Plan does not identify plans to collect samples at wells or from irrigation ditches. Both of these may have been impacted by the GKM release and we recommend they are added.

Sample Frequency and Duration

Large volumes of GKM release sediments are currently stored in low gradient reaches of the Animas River upstream from the Colorado-New Mexico state line. Runoff events during the next few years

will mobilize these sediments, distributing through the river system. We feel the number of runoff event and sediment samples identified in EPA's Conceptual Monitoring Plan is not sufficient to characterize movement of contaminants. We recommend higher frequency sample collection and use of integrated samplers such as a MiniSipper.

Due to the inter and intra annual range of variability in hydrologic systems it is difficult to assess trends with data representing only one year. This is particularly true when limited historical data are available. We recommend a post-GKM monitoring period of five years for surface water, sediments, benthic macroinvertebrates, and fish.

Sample Analytes

We suggest adding the following list of analytical and field methods to the suite presented in EPA's Conceptual Monitoring Plan.

- For complete water quality general parameters, recommend adding total suspended solids, total dissolved solids and alkalinity.
- Recommend adding nutrients including: total phosphorus, total nitrogen, nitrite, nitrate and ammonia to water column sampling.
- Recommend adding total phosphorus and total nitrogen to sediment sampling.
- Recommend adding Chlorophyll-a (algae) and periphyton biomass for water column sampling.
- Recommend oxidation-reduction potential of sediment sampling.
- Recommend adding total organic carbon from sediments.
- In order to compare to listed standards, recommend speciation of chromium and radio chemicals in both water column and sediments and thallium speciation for sediments. Please review reference standards for specific analytes.
- Recommend adding multi-habitat benthic macroinvertebrate sample collection.
- Recognize that results from full screening sampling were not available and if additional constituents from the mine site are found they may need to be incorporated into the sampling plan. Develop a procedure for adding constituents and monitoring sites to the Watershed Monitoring Plan, if needed, as more information is developed.

Data Assessment

Contaminants from the Gold King Mine release may potentially cause negative impacts to sediments, soils, groundwater, and surface water, thereby affecting agriculture, industrial, and commercial water users, drinking water supplies, recreational use, and the aquatic ecosystem. Data collected during the monitoring program should be quantitatively evaluated to assess risk for all of these uses.