

# STATE OF COLORADO

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Colorado Department  
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The following statements convey the Water Quality Control Division's (Division) response to issues and concerns identified upon reviewing the Environmental Protection Agency's (EPA) September 2015 draft of the *Post-Gold King Mine Release Incident: Conceptual Monitoring Plan for Surface Water, Sediments and Biology*. Statements in this response are jointly provided by:

- Colorado Department of Public Health and Environment (CDPHE) - Water Quality Control Division
- San Juan County Public Health
- San Juan Basin Health Department

## Overview

EPA's Conceptual Monitoring Plan outlines a monitoring strategy, assessment goals and general methods that will be used to evaluate surface waters, sediments and biological communities downstream of the Gold King Mine (GKM) release incident. By and large, EPA's Conceptual Monitoring Plan is both comprehensive and logistically challenging. The Division understands that any broad-scale, multi-state monitoring plan, such as that proposed by EPA, will always present exceptional challenges and debate as to the most appropriate methods and locations to execute such an imposing plan. It is in that regard that the Division, San Juan County Public Health Service and San Juan Basin Health Department (Division and its partners) tentatively supports EPA's framework for initiating, conducting, concluding and potentially extending the Conceptual Monitoring Plan. Full support from the Division and its partners is dependent upon EPA addressing and taking into consideration a number of comments and recommendations that are intended to strengthen the overall framework and improve the outcomes stated within the Conceptual Monitoring Plan. We understand the EPA is eager to commence sampling this fall. Some comments can be addressed in the Conceptual Monitoring Plan as an attachment in order to begin sampling efforts.

## Comments and Recommendations

### **Section I. Background - Gold King Mine Release Incident and Animas River Watershed Historic Conditions**

The Division and its partners have no comments or recommendations.

### **Section II. Context for Conceptual Monitoring Plan and Data Uses**

Page 3, End of Paragraph 2

Historic biological datasets are "limited". In terms of just benthic macroinvertebrates, the Division has identified historic datasets collected by the Division, CO-RiverWatch, and the Animas River Stakeholder Group from the confluence of Cement Creek and Animas River to the CO-NM state line between 1992 and 2014. Considering the number of federal, state, local agencies, as well as local stakeholders involved in this basin over that term, it is difficult to fathom that more biological datasets cannot be pulled together, analyzed for method comparability, and then standardized for pre- and post-release assessments.

Accordingly, the Division and its partners recommend that EPA add biological communities as a third "primary media" used to determine maintenance of historic conditions.

Page 3, Paragraph 3

The Division and its partners strongly agree with adding sites without robust datasets to the plan in order to complete the geographic distribution of sites so post-release benchmarking can proceed in areas previously not visited.

Page 3, Paragraph 4

Explain exactly what metrics or statistical measures will be used to determine if and when results have returned to historic, pre-release conditions.

The Division and its partners also recommend that EPA add language to this section that addresses the potential of “mixed” results across the three primary media. This recommendation addresses what happens if the surface water chemistry or sediments have returned to historic, pre-release conditions but the benthic macroinvertebrate or fish communities remain depressed. Does EPA have a contingency plan to handle “mixed” results across the three primary media?

### Section III. Objectives and Study Questions

Page 4, Bullet 1

It is recommended that EPA explain exactly how changes in surface water, sediment, and biological community trends, since the GKM Release Incident, will be identified statistically. In other words, what outcomes indicate that conditions are okay or a meaningful change occurs between pre- and post-release conditions?

Also, related to Objective A, EPA should clarify what the period of record will be regarding datasets used to compare pre- and post-release conditions. Is it all data, regardless of time period, or will a standardized period of record be used, e.g. 5 years or 10 years?

Page 4, Paragraph 3

This speaks to the last sentence that reads “*Include biological community and biological tissue data-set comparisons if historic datasets allow*”. Above, the Division and its partners already recommended adding the biological community to the list of primary media. To further this thinking, please detail what State indices or biological metrics will be used to compare before and after with the biological community. The Division would recommend the Colorado Multi-metric Index for benthic macroinvertebrate condition comparisons in Colorado, but would also advocate for categorical metrics that improve understanding of diversity, richness, pollution, and taxa dominance across all sites regardless of state.

Page 5, under Study Questions - Objective A:

The Division and its partners recommends adding the sentence “How do they compare to state water quality standards and/or screening levels?” to Sub-section 1a. It would make more sense to have this sentence under both Objectives A and B since state water quality standards should be used as a point of reference at sites with robust historic datasets (Objective A) or without (Objective B).

Page 6, under Study Questions - Objective B:

Clarify what is meant by “*previous assessments*” in Sub-section 1d. Is this referring to current EPA assessment efforts using data in a recent period of record before the event or is this referring to the assessment efforts for the most recent Integrated Reporting cycle? Additional clarity here would provide transparency on how this study question will be answered in the future. The Division and its partners would recommend adding a comprehensive table, as an attachment, that would summarize historical, pre-release water quality data and assessment results. This would include assessment statistics used (e.g. for Colorado, the 85<sup>th</sup> percentile for chronic standards), the number of samples (e.g. n=\_\_\_), the corresponding water quality standards, by State, for those same parameters.

### Section IV. Monitoring Frequency and Analytes of Interest

Page 7, Table 1

How will EPA staff mobilize or react to a stormwater event on short notice. It is the Division’s experience that stormwater events are highly variable and occur with little to no notice. Accessing sites can be difficult during storms. Does EPA intend to collect stormwater samples at each site listed in Table 2? If so, how will EPA mobilize staff in time to visit each site in Table 2 after a stormwater event? The Division and its partners recommend bolstering the section on Stormwater Sampling, perhaps in the forthcoming EPA Sample Analysis Plan, to detail what sites will be visited and how/where EPA staff will mobilize upon incidence of precipitation events.

The Division and its partners recommend collecting stormwater samples on Cement Creek, too.

The Division and its partners recommend adding Total Organic Carbon (TOC) and Redox (Oxidation/Reduction) Potential or “ORP” measures to the Sediment sampling.

The Division and its partners recommend extending at least benthic macroinvertebrate sampling beyond the one-year plan to two or three years. The reason for this extension is that macroinvertebrates are integrators of slow changes to water and sediment quality. It could take several fall index periods for the macroinvertebrates to exhibit a response to both the initial GKM slug and the continuing introduction of heavy metals still flowing from the Gold King mine and other abandoned mines.

Further expand what measures of physical habitat will be collected in the forthcoming EPA Sample Analysis Plan. How will this information inform decision making in the future?

The Division and its partners recommend identifying which parameters listed at the bottom of Table 1 will be analyzed for the dissolved, total and total recoverable fractions, respectively. Will the same suite of total recoverable metals be analyzed for sediment as water column? If so, add the footnote to sediment as well. This detail may be further clarified in EPA’s forthcoming Sample Analysis Plan.

## Section V. Site Selection and Assessment Approach

Page 8, under Assessment Summary:

The term “quality” of historic data is used for the first time as pre-requisite for data assessment method development. In previous sections, discussing comparisons of pre- and post-release data, EPA did not include the same references to the “quality” of the data.

Define what quality measures will determine what datasets are retained for analysis. In other words, what criteria will exclude historic datasets?

Page 8, 1<sup>st</sup> bullet

This sentence should read *“If the one-year monitoring study indicates that post-release water quality, sediment, and biological trends are similar to trends observed prior to the GKM release:”*

Page 8, 2<sup>nd</sup> bullet

The Division and its partners recommend that EPA develop a decision-rule in this section in the event that the one-year monitoring study concludes that pre-release water quality and sediment trends have degraded since the GKM release but the screening levels or water quality standards are not yet exceeded. This could result in a scenario where EPA may not conduct additional site-specific investigations while screening levels or water quality standards are perhaps inconclusive or near exceedance but not yet exceeding.

Page 9, Screening Levels and Water Quality Standards

The list of federally approved applicable State and Tribal water quality standards are listed and referenced by website. There are no references to federal screening levels in this list. Will federal screening levels be used? If so, they should be included in this list and referenced. There are no screening levels for metals in sediment included in the Colorado Regulations as referenced in this list. What will EPA use when evaluating sediment data in these cases? The Division and its partners would recommend at some point to add another table as an attachment that clearly lays out the applicable screening levels for each parameter by state or tribe, as well as federal. Please list screening levels for sediment exposure, drinking water ingestion, and fish tissue consumption.

## Section VI. Potential Sampling Locations

Page 9, Table 2

This is in reference to the second row with site A68 (EPA). The rationale for selecting this location is because it would serve as a “reference condition” for the release. There is uncertainty how establishing a reference condition at this location will contribute to the framework of pre- and post-release dataset comparisons. For instance, will primary media data collected at this location prior to the release be used for comparison to the Cement Creek location or lower Animas River locations that experienced the GKM spill?

Therefore, the Division and its partners recommend that EPA illuminate how this location will be used as a reference condition and in what context.

The Division and its partners support recommendations from other parties that fine-tune where sediment samples are collected.

Page 10, Table 2

The Division has a station at Bakers Bridge, too. It is WQCD Station # 81. The Division invites EPA to use data from WQCD Station # 81 to bolster the historic, long-term data record.

Page 10, Table 3

When will the TBD be determined?

### **Section IX. Data Management**

The Division and its partners recommend that the long-term data sharing and storage strategy consider accessibility to the general public. This strategy should consider various ways to communicate progress that is easy to interpret.

Will the online SCRIBE database only include the EPA data or will EPA upload data from other sources?

### Other Comments

The Division and its partners recommend adding a comprehensive table, as an attachment, that would summarize historical, pre-release water quality data (e.g. for Colorado, the 85<sup>th</sup> percentile for chronic standards), the number of samples (e.g. n=\_\_\_), the corresponding water quality standards, by State, for those same parameters, and then at a later time, add in the post-release water quality data. This would visually improve presentation of pre- and post-release data, the number of data points, and the State water quality standards that are used to assess attainment of standards and change in water quality trends.

Explain what human health “screening levels” will be used beyond simply listing website links. In other words, how would someone access those screening levels and understand how they would apply in an assessment?

The aforementioned recommendation also ties into a broader theme shared by the Division and its partners that the revised draft of the Conceptual Monitoring Plan must be easy to read and understood by the general public.

Add a section to the plan in which notification of “special” events or on-going findings are consistently and rapidly communicated to the public and agencies supporting the public. Such a section would detail what would constitute a special event and the routes of communication that would convey that information directly to the public.

The Division and its partners suggest adding an Executive Summary at the front of the document so readers can rapidly become acquainted with the large body of the material without having to read it all.

### Summary

The Division and its partners thank EPA for the opportunity to review the draft Conceptual Monitoring Plan. It is our mutual intention to advance the framework of this plan so the stated outcomes are met or exceeded upon completion of the one-year plan or subsequent site-specific investigations.

Responsive comments from EPA may be directed to either Aimee Konowal (aimee.konowal@state.co.us) or Chris Theel (christopher.theel@state.co.us) at the Division, Becky Joyce (director@sjcph.org) at San Juan County Public Health Service, or Brian Devine (BDevine@sjbhd.org) at San Juan Basin Health Department.