There Is More Than Sufficient Knowledge to Tackle Bonita Peak Today and Improve Water Quality in the Animas River

February 2018

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I. Executive Summary

The Bonita Peak area is one of the most studied places in the United States, and there is clearly sufficient knowledge in hand to make the decisions necessary to successfully address the major remaining sources of metals loading to the Animas River. Decades of exhaustive analysis has comprehensively covered the geology, geochemistry, hydrology, natural and anthropogenic sources of metals loading, historic and modern mining, flora and fauna, potentially responsible parties, and treatment methodologies. Through years of concerted efforts, many sources of metals loading have already been successfully addressed through reclamation and bulkheading. The few residual opportunities for reclamation and bulkheading will not yield significant additional reduction in metals loading. The remaining significant source of metals loading to the Animas River is point sources in the Cement Creek drainage. It is clear that targeting these point sources should be the priority. Addressing the flows from these point sources would substantially reduce metals loading to the Animas River and demonstrably benefit the trout fishery downstream from Silverton. After in-depth analysis, it is apparent that the best way to address these flows is through utilization of a water treatment plant. This simple technology has been demonstrated to work in this area. EPA's existing water treatment plant at Gladstone has the capacity to treat additional flows, and the existing plant should be run to its full capacity.

II. The Bonita Peak Area has been the Subject of Exhaustive Analysis

a. Overview

The Bonita Peak area in San Juan County, Colorado has been studied exhaustively. Its environmental characteristics and the means to remediate its environmental issues have been studied in depth for upwards of 30 years. It has been studied from many angles, by many entities, representing many scientific disciplines. A partial bibliography of Bonita Peak area studies that extends to 23 pages, encompassing approximately 276 studies, is attached as Exhibit A.[1] A single U.S. Geological Survey study of the area encompasses 1,096 pages.[2] The area's environmental characteristics are well understood, as are the means of environmental remediation.

The Bonita Peak area has been studied by multiple federal agencies, including the U.S. Geological

[1] *See also* Animas River Stakeholders Group, Animas Watershed Bibliography of Reports and Publications, 1994 to 2009, http://www.animasriverstakeholdersgroup.org/page7.html; U.S. Geological Survey, Upper Animas River Study Area Reports, https://archive.usgs.gov/archive/sites/amli.usgs.gov/Animas-River.html#reports.

[2] *See* Church, S.E., von Guerard, Paul, and Finger, S.E, eds., 2006, Integrated Investigations of Environmental Effects of Historical Mining in the Animas River Watershed, San Juan County, Colorado, U.S. Geological Survey Professional Paper 1651, 1096 p.

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Survey,[3] the Environmental Protection Agency (EPA),[4] the Bureau of Land Management (BLM),[5] the U.S. Forest Service (USFS),[6] and the Bureau of Reclamation (BOR).[7] Even Congress has considered certain aspects.[8] The Bonita Peak area has been studied by the State of Colorado, including its Department of Public Health and Environment[9] and its Division of Reclamation Mining and Safety.[10] It has been studied by numerous stakeholders, including the Animas River

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[3] *See, e.g.,* Church, S.E., von Guerard, Paul, and Finger, S.E, eds., 2006, Integrated Investigations of Environmental Effects of Historical Mining in the Animas River Watershed, San Juan County, Colorado, U.S. Geological Survey Professional Paper 1651, 1096 p.; U.S. Geological Survey, 2000, Interim report on the scientific investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 Meeting, Denver, CO: U.S. Geological Survey Open-File Report 00-0245; Church, S.E., Fey, D.L., and Blair, R., 2000, Pre-mining bed sediment geochemical baseline in the Animas River watershed, southwestern Colorado: ICARD 2000, Conference on Acid Rock Drainage, 5th, Denver CO, 2000, Proceedings: Littleton, CO, Society for Mining, Metallurgy, and Exploration, Inc., v. 1, p. 499-512.

[4] *See, e.g.,* U.S. EPA, 1996, Using Qualified Data to Document an Observed Release and Observed Contamination. November, 1996. 18 pages; U.S. EPA, August 10, 2011, Analytical Results Report for Site Reassessment, Upper Animas Mining District; Superfund Technical Assessment and Response Team 3--Region 8.

[5] *See, e.g.,* Bureau of Land Management and U.S. Geological Survey, Abandoned Mine Lands Initiative--Watershed Characterization; Prizim, Inc, June 2009, Potentially Responsible Party Search Final Report, Mogul and Grand Mogul Mines Site, San Juan County Colorado; prepared for Bureau of Land Management; Robinson, Rob, Jan. 2000, U.S. Bureau of Land Management, Denver office, unpublished spreadsheet describing expenditures in the Upper Animas Basin.

[6] *See, e.g.,* Walsh, William, 1999, Upper Animas River Biological Evaluation Draft Final Report, prepared for San Juan/Rio Grande National Forest, U.S.D.A. Forest Service. Completion date unknown; Anderson, C,A., 2000, Analysis of biomonitoring data, Project report to U.S. Forest Service, Durango, Colo. B.U.G.S. Consulting, Choctaw, Oklahoma.

[7] *See, e.g.,* Bureau of Reclamation, 1992, Whole Tissue Digestion Analysis of Fish Collected in the Animas River. Durango Field Office, Durango, CO.; U.S. Bureau of Reclamation, 1992, Animas River Trace element Toxicity Study. Durango Projects Office, Durango, CO.; U. S. Bureau of Reclamation and U. S. Forest Service, 2007, Abandoned Mine Lands: A Decade of Progress Reclaiming Hardrock Mines. Vincent, K.R., S.E. Church, and D.L. Fey, "Geomorphological Context of Metal-Laden Sediments in the Animas River Floodplain, Colorado," U.S. Geological Survey Toxic Substances Hydrology Program- Proceedings of the Technical Meeting, Charleston, South Carolina, March 8-12, 1999, Water Resources Investigations Report 99-4018A.

[8] *See* Majority Staff Report, Committee on Natural Resources, Feb. 2016, EPA, the Department of the Interior, and the Gold King Mine Disaster.

[9] *See, e.g.,* Farrell, Camille, February 1995, Site Assessment Upper Animas River Basin; Colorado Department of Public Health and Environment; Farrell, Camille M. S. 1997, Comprehensive Analytical Results Report Cement Creek watershed, San Juan County, Colorado. Colorado Division of Hazardous Materials and Waste Management; Colorado Department of Public Health and Environment; Farrell, Camille, 1999, Comprehensive Analytical Results Report, Site Inspection Sampling Activities Report, Upper Animas Watershed (CERCLIS ID #CO0001411347), Colorado Department of Public Health and Environment, Hazardous Materials and Waste Management Division.

[10] *See, e.g.,* Stover, Bruce; Colorado Division of Reclamation, Mining & Safety, 2008, Mine-Drainage 319 Project, Bulkhead Feasibility Investigation, 2008 Reconnaissance Report, Underground Source Control Sites; Stover, Bruce; Colorado Division of Reclamation, Mining & Safety, August 2007, Report of Structural Geologic Investigation--Red & Bonita Mine, San Juan County Colorado; Prepared for ARSG.

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Stakeholders Group (ARSG),[11] Trout Unlimited,[12] and Sunnyside Gold Corporation (SGC).[13]

Studies span the environmental and engineering spectrum. The Bonita Peak area's water quality and geochemistry,[14] hydrology,[15] geology,[16] macroinvertebrates and wildlife,[17] acid rock drainage

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[11] *See, e.g.,* Animas River Stakeholders Group, 2004, The Animas Watershed Plan, Plans for Remediation of Historical Mining Sites in the Upper Animas River Basin; Animas River Stakeholders Group, Updated May 2013, The Animas Watershed Plan, Plans for Remediation of Historical Mining Sites in the Upper Animas River Basin; Anderson, C., 2002, Macroinvertebrate Survey of Arrastra Creek; BUGS Consulting for Animas River Stakeholder's Group.

[12] Roberts, S., 2015. Lower Animas Bioassessment: 2014 BMI data in context of historical data. Prepared for Trout Unlimited, 5 Rivers Chapter, Durango, CO.

[13] *See, e.g.,* Formation, 2018, Aquatic Biota Baseline Ecological Risk Assessment Mayflower Tailings Impoundments Area; Formation Environmental, July 2015, Subsurface Investigation Work Plan -- Mayflower Mill and Tailings Impoundments Area; Formation Environmental, July 2015, Surface Water, Groundwater, and Solid Phase Media Investigation Work Plan -- Mayflower Mill and Tailings Impoundments Area; Sunnyside Gold Corporation, 1985, Use Attainability Analysis of the Upper Animas River. Final Report. Laramie, WY.

[14] *See, e.g.*, Fisher, F.S. and Leedy, W.P., 1973, Geochemical Characteristics of Mineralized Breccia Pipes in the Red Mountain District, San Juan Mountains, Colorado. U.S. Geological Survey Bulletin 138; Wirt, Laurie, Vincent, K.R., Verplanck, P.L., Yager, D.B., Church, S.E., and Fey, D.L., 2006, Geochemical and hydrologic processes controlling formation of ferricrete, Chapter E17 in U.S. Geological Survey Professional Paper 1651; Smith, D.B., Cannon, W.F., Woodruff, L.G., Solano, Federico, Kilburn, J.E., and Fey, D.L., 2013. Geochemical and Mineralogical Data for Soils of Conterminous United States; USGS Data Series 801; Casadevall T., and Ohmoto, H., 1977, Sunnyside mine, Eureka mining district, San Juan county, Colorado: Geochemistry of gold and base metal ore deposition in a volcanic environment: Economic Geology, v. 92, p. 1285-1320.

[15] *See, e.g.,* Milhous, R.T., 2000, Hydrology, Metals and Aquatic Physical Habitat in the Upper Animas Watershed, Colorado, in M. Flug and D. Frevert, eds., Proceedings of the 2000 Joint Conference on Water Resources Engineering and Water Resources Planning and Management, American Society of Civil Engineers, Reston, VA, 10 p.; Mast, M.A., Evans, J.B., Leib, K.J., and Wright, W.G., 2000, Hydrologic and water-quality data at selected sites in the upper Animas River Watershed, southwestern Colorado, 1997-99: U.S. Geological Survey Open-File Report 2000-53, 20 p.; Simon Hydro-Search, February 11, 1992, Preliminary Characterization of the Hydrology and Water Chemistry of the Sunnyside Mine and Vicinity, San Juan County, Colorado; prepared for San Juan County Mining Venture.

[16] *See, e.g.,* Burbank, W.S., and Luedke, R.G., 1968, Geology and ore deposits of the western San Juan Mountains, Colorado, in Ridge, J.D., ed., Ore deposits of the United States, 1933-1967 (Graton-Sales Volume), v. 7: New York, American Institute of Mining, Metallurgical, and Petroleum Engineers, p. 714-733; Bove, D.J., 1996, Geology, alteration, and rock and water chemistry of the Iron, Alum, and Bitter Creek areas, upper Alamosa River, southwestern Colorado: U.S. Geological Survey Open-File Report 96— 39, 34 p.; Yager, D.B., and Bove, D.J., 2006, Geologic framework, Chapter E1 in U.S. Geological Survey Professional Paper 1651.

[17] *See, e.g.,* Anderson, C., 2002, Macroinvertebrate Survey of Arrastra Creek; BUGS Consulting for Animas River Stakeholder's Group; Mountain Studies Institute, May 2016, Porphyry Gulch 2015 Benthic Macroinvertebrate (BMI) Report, for ARSG; Anderson, C., 2010, Benthic Macroinvertebrate Analysis; BUGS Consulting for Animas River Stakeholder's Group; Owen, J.R., Anderson, C.R., Simon, W., 2007, Effects of Mine Remediation on Water Quality and Benthic Macroinvertebrates in the Upper Animas River Watershed, Southwestern Colorado. Impact vol. 9, No.5, Sept. 2007; Colorado Parks and Wildlife, June 2014, Lynx Reintroduction.

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potential,[18] and innumerable other environmental characteristics are well known.[19] The feasibility of remedial measures is well understood.[20] Remedial alternatives have been meticulously analyzed, and remedial opportunities providing for measurable improvement to Animas River water quality have been identified.[21]

b. Geologic Analysis

The Bonita Peak area is located in the Silverton caldera—a part of the San Juan volcanic field—"one of the largest erosional remnants of a volcanic province that covers much of the southern Rocky Mountain region."[22] The complex geology and mineralization of the area has been the subject of extensive study for more than a century.[23] As a result of historical hydrothermal activity,

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[18] *See, e.g.,* Church, S.E., Owen, J.R., von Guerard, P., Verplanck, P.L., Kimball, B.A., and Yager, D.B., 2007, The effects of acidic mine drainage from historical mines in the Animas River watershed, San Juan County, Colorado: What is being done and what can be done to improve water quality? in J.D. DeGraff, ed., Understanding and Responding to Hazardous Substances at Mine Sites in the Western United States: Geological Society of America, Reviews in Engineering Geology, v. 17 pp. 47-83; Kimball, B.A., Runkel, R.L., and Walton-Day, K., 2003, Use of field-scale experiments and reactive solute-transport modelling to evaluate remediation alternatives in streams affected by acid mine drainage, in Jambor, J.L., Blowes, D.W., and Ritchie, A.I.M., eds., Environmental aspects of mine wastes: Vancouver, British Columbia, Mineralogical Association of Canada, p. 261-282; Walton-Day, K., Runkel, R.L., Kimball, B.A., and Bencala, K.E., 1999, Application of the solute-transport models OTIS and OTEQ and implications for remediation in a watershed affected by acid mine drainage, Cement Creek, Animas River Basin, Colorado: U.S. Geological Survey Water-Resources Investigations Report 99-4018A, p. 37-46.

[19] *See generally* Representative Analysis and Studies, attached as Exhibit A.

[20] *See, e.g.*, Stover, Bruce; Colorado Division of Reclamation, Mining & Safety, 2008, Mine-Drainage 319 Project, Bulkhead Feasibility Investigation, 2008 Reconnaissance Report, Underground Source Control Sites; Simon, W. , Butler, P., Owen, R., 2001, Use Attainability Analysis for the Animas River Watershed. Animas River Stakeholders Group (presented to Colorado Water Quality Control Commission for the adoption of steam standards). 240p.

[21] Animas River Stakeholders Group, 2004, The Animas Watershed Plan, Plans for Remediation of Historical Mining Sites in the Upper Animas River Basin; Animas River Stakeholders Group, Updated May 2013, The Animas Watershed Plan, Plans for Remediation of Historical Mining Sites in the Upper Animas River Basin; Herron, J., Stover, B., Krabacher, P., and Bucknam, D., Feb. 1997, Reconnaissance Feasibility Investigation Report of the Upper Animas, Colo. Division of Minerals and Geology; Herron, Jim, Bruce Stover, and Paul Krabacher, November 2000, Reclamation Feasibility Report Animas River Below Eureka, Colo. Division of Minerals and Geology; Herron, Jim, Bruce Stover, and Paul Krabacher, October 1999, Reclamation Feasibility Report Animas River above Eureka, Colo. Division of Minerals and Geology; Herron, Jim, Bruce Stover, and Paul Krabacher, Sept. 1998, Cement Creek Reclamation Feasibility Report, Colo. Division of Minerals and Geology; Herron, Jim, Bruce Stover, Paul Krabacher, and Dave Bucknam, Feb. 1997, Mineral Creek Feasibility Investigations Report, Colo. Division of Minerals and Geology.

[22] Yager, D.B., and Bove, D.J., 2006, Geologic framework, Chapter E1 in U.S. Geological Survey Professional Paper 1651.

[23] U.S. Geological Survey, 2006, Summary and conclusions from investigation of the effects of historical mining in the Animas River watershed, San Juan County, Colorado, Chapter A in U.S. Geological Survey Professional Paper 1651 (collecting studies dating back to 1901); Steven, T.A. and Lipman, P.W., 1976, Calderas of the San Juan Volcanic Field, Southwestern Colorado. U.S. Geological Survey Professional Paper 958; Lipman, P.W., 1976, Caldera-collapse Breccias in the Western San Juan Mountains, Colorado, Geological Society of America Bulletin Vol. 87, pp. 1397-1420; Grauch, R.I., Hon, K., Reynolds, R.L., Bove, D.J., and Grauch, V.J.S., 1985, Episodic Metallization in the Western San Juan Caldera Complex, Colorado [abst]. U.S. Geological Survey Circular 949; Fisher, F.S. and Leedy, W.P., 1973, Geochemical Characteristics of Mineralized Breccia Pipes in the Red Mountain District, San Juan Mountains, Colorado. U.S. Geological Survey Bulletin 138; Burbank, W.S., and Luedke, R.G., 1968, Geology and ore deposits of the western San Juan Mountains, Colorado, in Ridge, J.D., ed., Ore deposits of the United States, 1933-1967 (Graton-Sales Volume), v. 7: New York, American Institute of Mining, Metallurgical, and

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the region is extensively fractured and faulted, and extensively mineralized.[24] Ferricrete occurs throughout the area, demonstrating that acidic conditions "have existed in the watershed before, during, and after mining."[25] This geologic setting and natural contribution of metals, combined with historic mining in the area, has resulted in metals loading to the Animas River.[26]

c. Understanding of the Natural Condition

Water in portions of the Animas River watershed has always been of poor background quality. The alteration of volcanic and sedimentary rocks by hydrothermal processes resulted in the formation of ore bodies containing minerals and the development of extensive areas of naturally acidic rocks and soils.[27] This geologic setting resulted in naturally elevated background levels of acid and toxic metals in some stream reaches.[28] Even in streams less affected by high background levels of acid and metals, the high altitude of the watershed led to relatively poorly developed aquatic communities.[29]

Water quality studies in highly mineralized unmined areas in the region have shown that background weathering processes contribute significant amounts of metals and impart acidity to streams.[30] Studies have shown that background sources accounted for 56-90 percent of the metals load and were derived from highly altered rocks associated with mineral deposits.[31]

Petroleum Engineers, p. 714-733; Lipman, P.W., Doe, B.R., Hedge, C.E., and Steven, T.A., 1978, Petrologic Evolution of the San Juan Volcanic Field, Southwestern Colorado Pb and Sr Isotope Evidence. Geological Society of America Bulletin, Vol. 89, pp. 59-82.

[24] *Id.*; *see also* U.S. Geological Survey, 2006, Summary and conclusions from investigation of the effects of historical mining in the Animas River watershed, San Juan County, Colorado, Chapter A in U.S. Geological Survey Professional Paper 1651; von Guerard, Paul, Church, S.E., Yager, D.B., and Besser, J.M., 2006, The Animas River watershed, San Juan County, Colorado, Chapter B in U.S. Geological Survey Professional Paper 1651; Simon Hydro-Search, February 11, 1992, Preliminary Characterization of the Hydrology and Water Chemistry of the Sunnyside Mine and Vicinity, San Juan County, Colorado; prepared for San Juan County Mining Venture; Farrell, Camille, February 1995, Site Assessment Upper Animas River Basin; Colorado Department of Public Health and Environment; Wright, Winfield G., Natural-Background and Mining-Related Sources of Dissolved Minerals during Low Flow in the Upper Animas River Basin, Southwestern Colorado, Fact Sheet FS-148-97, Oct. 1997, U.S. Geological Survey, Durango, CO.

[25] Yager, D.B., and Bove, D.J., 2006, Geologic framework, Chapter E1 in U.S. Geological Survey Professional Paper 1651.

[26] U.S. Geological Survey, 2000, Interim report on the scientific investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 Meeting, Denver, CO: U.S. Geological Survey Open-File Report 00-0245; Yager, D.B., and Bove, D.J., 2006, Geologic framework, Chapter E1 in U.S. Geological Survey Professional Paper 1651.

[27] Bove, D.J., Yager, D.B., Mast, M.A., and Dalton, J.B., 2007, Alteration map showing major faults and veins and associated water-quality signatures of the Animas River watershed headwaters near Silverton, southwest Colorado: U.S. Geological Survey Scientific Investigations Map 2976, 18-page pamphlet, 1 plate, scale 1:24,000.

[28] Mast, M.A., Verplanck, P.L., Wright, W.G., and Bove, D.J., 2007, Characterization of background water quality, in Church, S. E., von Guerard, P., and Finger, S. E., eds., Integrated investigations of environmental effects of historical mining in the Animas River Watershed, San Juan County, Colorado, U.S. Geological Survey, p. 347-386.

[29] Besser, J.M., Finger, S.E., and Church, S.E., 2006, Impacts of historical mining on aquatic ecosystems—An ecological risk assessment, Chapter D in U.S. Geological Survey Professional Paper 1651.

[30] Mast, M.A., Verplanck, P.L., Wright, W.G., and Bove, D.J., 2007, Characterization of background water quality, in Church, S. E., von Guerard, P., and Finger, S. E., eds., Integrated investigations of environmental effects of historical mining in the Animas River Watershed, San Juan County, Colorado , U.S. Geological Survey, p. 347-386.

[31] Mast, M.A., Verplanck, P.L., Wright, W.G., and Bove, D.J., 2007, Characterization of background water

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d. Analysis of Historic Mining

There is an extensive history of mining in San Juan County. Placer gold was discovered in Arrastra Creek as early as the 1700s.[32] Starting with major discoveries in 1871, "the industry evolved and grew, owing to a complex mix of technology and economics influenced in the broadest sense by America's need for metals."[33] The area grew to be a massive industrial mining complex with over 1,500 mines,[34] over 50 mill sites, 8 distinct smelters, and 35 different aerial trams.[35]

As was typical in historic mining and milling practices, waste rock was disposed of in waste dumps outside mine portals, and mill wastes were deposited directly into streams.[36] An estimated 8.6 million short tons of mill waste, about 47.5 percent of the total ore produced, was discharged directly into surface streams between 1872 and 1935.[37]

e. The Record of Modern Mining

SGC was formed in 1985. It acquired the then closed Sunnyside Mine in November 1985. The former owner of the property had been in violation of its mining permit and multiple discharge permits. SGC immediately began work to bring the permits into compliance and was awarded a Most Improved Site Award by the Colorado Mined Land Reclamation Division.[38]

During SGC's 5 years of mining, it conducted its operations using modern techniques and under the modern era of environmental regulation. As concluded in *SGC Mining and Reclamation Activities and Metals Loading in the Animas River* (Lange 2018), "… it is incontrovertible that the actions of SGC have substantially reduced acid rock drainage and metals loading in the Animas from what would have otherwise been the case."[39] An Executive Summary of the Lange Report is attached as Exhibit B.

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quality, in Church, S. E., von Guerard, P., and Finger, S. E., eds., Integrated investigations of environmental effects of historical mining in the Animas River Watershed, San Juan County, Colorado , U.S. Geological Survey, p. 347-386.

[32] Church, S.E., von Guerard, Paul, and Finger, S.E., 2007, Environmental Effects of Historical Mining in the Animas River Watershed, Southwestern Colorado: U.S. Geological Survey Fact Sheet 2007-3051, 4 p.

[33] Jones, W.R., 2006, History of mining and milling practices and production in San Juan County, Colorado, 1871–1991, Chapter C in U.S. Geological Survey Professional Paper 1651.

[34] U.S. Geological Survey, Jan. 1999. Fact Sheet, The USGS Abandoned Mine Lands Initiative.

[35] Jones, W.R., 2006, History of mining and milling practices and production in San Juan County, Colorado, 1871–1991, Chapter C in U.S. Geological Survey Professional Paper 1651.

[36] Jones, W.R., 2006, History of mining and milling practices and production in San Juan County, Colorado, 1871–1991, Chapter C in U.S. Geological Survey Professional Paper 1651.

[37] Jones, W.R., 2006, History of mining and milling practices and production in San Juan County, Colorado, 1871–1991, Chapter C in U.S. Geological Survey Professional Paper 1651.

[38] Banta, Director Colorado Department of Natural Resource, Mined Land Reclamation Division Ltr. to Bergstrom, Sunnyside Gold Corporation (Feb. 29, 1988); *see also* Brown, Colorado Mined Land Reclamation Board Award Committee Chairman Ltr. to Goodhard, Sunnyside Gold Corporation (April 17, 1995) (recognizing award for reclamation work).

[39] Lange, Steven, January 2018, SGC Mining and Reclamation Activities and Metals Loading in the Animas River, Knight Piesold Consulting.

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f. Metals Loading Source Analysis

The Upper Animas watershed has undergone comprehensive scientific investigations of metals loading sources.[40] The U.S. Geological Survey selected the watershed as one of two watersheds nationwide for its Abandoned Mine Lands (AML) Initiative in 1997.[41] The watershed had been studied extensively before the AML Initiative,[42] but the Initiative produced "a level of scientific study" that would be infeasible in other contexts, as reflected in the level of detail and focus that went into the studies.[43]

Geologic studies have "define[d] the geologic controls that affect the extent of impact to streams."[44] Hydrologic studies have determined the "level of metals in the streams and the relative contribution of various point and natural sources within those reaches."[45] Cartographic data has been collected "to provide a base for geospatial referencing of scientific data and to allow geospatial analysis of the interrelationships among the various types of watershed data that were collected."[46]

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[40] Church, S.E., Owen, J.R., von Guerard, P., Verplanck, P.L., Kimball, B.A., and Yager, D.B., 2007, The effects of acidic mine drainage from historical mines in the Animas River watershed, San Juan County, Colorado: What is being done and what can be done to improve water quality? in J.D. DeGraff, ed., Understanding and Responding to Hazardous Substances at Mine Sites in the Western United States: Geological Society of America, Reviews in Engineering Geology, v. 17 pp. 47-83.

[41] U. S. Bureau of Reclamation and U. S. Forest Service, 2007. Abandoned Mine Lands: A Decade of Progress Reclaiming Hardrock Mines. Vincent, K.R., S.E. Church, and D.L. Fey, "Geomorphological Context of Metal-Laden Sediments in the Animas River Floodplain, Colorado," U.S. Geological Survey Toxic Substances Hydrology Program- Proceedings of the Technical Meeting, Charleston, South Carolina, March 8-12, 1999, Water Resources Investigations Report 99-4018A; U.S. Geological Survey, 2000, Interim report on the scientific investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 Meeting, Denver, CO: U.S. Geological Survey Open-File Report 00-0245; Bureau of Land Management and U.S. Geological Survey, Abandoned Mine Lands Initiative--Watershed Characterization; Hite, Barbara J., 1995. Abandoned Mine Land Inventory of BLM Administered Land in Upper Animas River Watershed, Colorado, Colorado State BLM Office, Denver, CO., Feb. 1995.

[42] *See* Representative Analysis and Studies, attached as Exhibit A.

[43] Church, S.E., Owen, J.R., von Guerard, P., Verplanck, P.L., Kimball, B.A., and Yager, D.B., 2007, The effects of acidic mine drainage from historical mines in the Animas River watershed, San Juan County, Colorado: What is being done and what can be done to improve water quality? in J.D. DeGraff, ed., Understanding and Responding to Hazardous Substances at Mine Sites in the Western United States: Geological Society of America, Reviews in Engineering Geology, v. 17 pp. 47-83; U.S. Geological Survey, 2000, Interim report on the scientific investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 Meeting, Denver, CO: U.S. Geological Survey Open-File Report 00-0245.

[44] U.S. Geological Survey, 2000, Interim report on the scientific investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 Meeting, Denver, CO: U.S. Geological Survey Open-File Report 00-0245 (citing Yager and Bove, 2000; B.D. Smith, unpub. Data, 1999; Dalton and others, 2000; Yager and others, 2000; Yager and others, 2000; Bove and others, 2000; Nash, 1999a, 1999b; Fey and others, 2000; Church and others, 1997; Church and others, 2000; Vincent and others, 1999; J.G. Elliot and K.R. Vincent, unpub. Data, 1998).

[45] *Id.* (citing K.J. Leib, unpub. Data, 2000; K.J. Leib, unpub. Data, 1999; Besser and Leib, 1999; Nash, 2000; Wright and Nordstrom, 1999, W.G. Wright, unpub. Data, 1999; Kimball and others, in press; B.A. Kimball, unpub. Data, 1999; Wirt and others, 1999; L. Wirt and others, unpub. Data, 1999; Kimball and others, 1999; Schemel and others, 2000; Church and others, 1997; Herron and others, 1997, 1998, 1999; W.G. Wright, M.A. Mast, J.T. Nash, and L. Wirt, unpub. Data, 2000).

[46] *Id.*

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Ultimately, regardless of how many studies are conducted in the watershed, the reality is that most of the metals loading in the basin comes from Cement Creek.[47] As determined by ARSG after meticulous analysis, "The upper Cement Creek area (four adits) contribute 76% of the zinc loading in the Upper Animas River Basin from draining adits."[48] Zinc is used as the target metal because it is the most conservative target metal, remaining as an available metal in the water column at higher pH, and having comparatively higher concentrations down river.[49]

This outcome is largely a function of the area geology. The U.S. Geological Survey notes:

> Large areas of the upper Cement Creek basin are underlain by highly altered rocks that geologic and airborne geophysical data indicate extend to a depth of hundreds to thousands of meters. These highly fractured, intensely altered rocks provide pathways for ground water where natural weathering processes produce large, fracture–controlled acidic seeps. This network of highly fractured rock results in seeps along the banks of the streams in Cement Creek and its subbasins, producing large iron bogs. Such processes form a dispersed natural source of acidity and dissolved metals that has been ongoing for the last 9,000 years on the basis of carbon-14 dating of logs in the ferricretes.[50]

g. Wildlife Analysis

Extensive wildlife study has occurred in the Bonita Peak area. Those studies have shown that macroinvertebrates and fish probably did not exist in Cement Creek or Mineral Creek upstream of its confluence with South Fork Mineral Creek prior to mining because of the Bonita Peak area's

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[47] Logsdon, M.J., July 14, 2012, Mass loading analysis of the upper Animas River at water quality station A72: contribution of sub-basin drainages to total loading (and concentrations); Technical Memorandum, Geochimica, Inc.; Animas River Stakeholders Group, Updated May 2013, The Animas Watershed Plan, Plans for Remediation of Historical Mining Sites in the Upper Animas River Basin; Simon, W. , Butler, P. , Owen, R., 2001. Use Attainability Analysis for the Animas River Watershed. Animas River Stakeholders Group (presented to Colorado Water Quality Control Commission for the adoption of steam standards) 240p.

[48] Animas River Stakeholders Group, December 2015, Background Summary Metal Loading in Upper Animas River Basin.

[49] Animas River Stakeholders Group, December 2015, Background Summary Metal Loading in Upper Animas River Basin.

[50] U.S. Geological Survey, 2000, Interim report on the scientific investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 Meeting, Denver, CO: U.S. Geological Survey Open-File Report 00-0245; Church, S.E., Owen, J.R., von Guerard, P., Verplanck, P.L., Kimball, B.A., and Yager, D.B., 2007, The effects of acidic mine drainage from historical mines in the Animas River watershed, San Juan County, Colorado: What is being done and what can be done to improve water quality? in J.D. DeGraff, ed., Understanding and Responding to Hazardous Substances at Mine Sites in the Western United States: Geological Society of America, Reviews in Engineering Geology, v. 17 pp. 47-83. View Church paper; Logsdon, M.J., July 14, 2012. Mass loading analysis of the upper animas river at water quality station A72: contribution of sub-basin drainages to total loading (and concentrations); Technical Memorandum, Geochimica, Inc.; Animas River Stakeholders Group, Updated May 2013, The Animas Watershed Plan, Plans for Remediation of Historical Mining Sites in the Upper Animas River Basin; Simon, W. , Butler, P. , Owen, R., 2001. Use Attainability Analysis for the Animas River Watershed. Animas River Stakeholders Group (presented to Colorado Water Quality Control Commission for the adoption of steam standards) 240p; Schemel, L.E., Kimball, B.A., and Bencala, K.E., 2000, Colloid formation and metal transport though two mixing zones affected by acid mine drainage near Silverton, Colorado: Applied Geochemistry, v. 15, p. 1018.

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natural mineralization and the natural condition's corresponding impact on water quality.[51] Studies also show that the risk of metals loading to aquatic dependent wildlife in the Upper Animas River, upstream of its confluence with Cement Creek, is minimal or *de minimis*.[52]

Natural mineralization has been shown to have pronounced effects on water quality and wildlife in the Bonita Peak area. The U.S. Geological Survey concluded:

> Weathering of hydrothermally altered rock not associated with historical mine sites results in the release of trace elements and acidity that degrade water quality (Bove and others, this volume). The annual freeze-thaw cycle each winter exposes fresh mineral surfaces to the weathering process. Weathering of pyrite, the ubiquitous iron sulfide present in hydrothermally altered and mineralized rock, results in the release of sulfuric acid and trace elements that potentially are toxic to aquatic life. This weathering process takes place whether or not a mineral deposit has been mined or the ground disturbed.[53]

In fact, water quality conditions in Cement Creek today are likely not very different from those that existed before any mining in the area:

> Geochemical studies of sediment from premining terrace deposits (Church, Fey, and Unruh, this volume, Chapter E12), constrained by the 14C age data, indicate that premining geochemical conditions in Cement Creek were not very different than they are today. The observations of Rhonda (1876) indicating that, in 1874, the water in Cement Creek was "so strongly impregnated with mineral ingredients as to be quite unfit for drinking" confirm our conclusions.[54]

Before any mining in the region, "parts of Cement and Mineral Creeks were always acidic, contained high metals loads, and likely did not support any aquatic life other than species of algae that can tolerate a pH < 4 (Church, et al. 2007)."[55] Macroinvertebrates probably did not exist in Cement Creek or Mineral Creek upstream of its confluence with South Fork Mineral Creek:

> Data from springs in unmined areas (Mast and others, this volume), stream-sediment data from terraces (Church, Fey, and Unruh, this volume), and the absence

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[51] U.S. Geological Survey, 2006, Summary and conclusions from investigation of the effects of historical mining in the Animas River watershed, San Juan County, Colorado, Chapter A in U.S. Geological Survey Professional Paper 1651; TechLaw, Inc., 2015, Final Draft Baseline Ecological Risk Assessment Upper Animas Mining District, San Juan County, Colorado. Prepared for U.S. Environmental Protection Agency Region 8, Denver, CO. April 2015.

[52] Formation, 2018, Aquatic Biota Baseline Ecological Risk Assessment Mayflower Tailings Impoundments Area; EPA, 2015, Final Draft Baseline Ecological Risk Assessment Upper Animas Mining District, San Juan County, Colorado.

[53] U.S. Geological Survey, 2006, Summary and conclusions from investigation of the effects of historical mining in the Animas River watershed, San Juan County, Colorado, Chapter A in U.S. Geological Survey Professional Paper 1651.

[54] U.S. Geological Survey, 2006, Summary and conclusions from investigation of the effects of historical mining in the Animas River watershed, San Juan County, Colorado, Chapter A in U.S. Geological Survey Professional Paper 1651.

[55] Lange, Steven, January 2018, SGC Mining and Reclamation Activities and Metals Loading in the Animas River, Knight Piesold Consulting.

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> of paleontological evidence for a viable aquatic ecosystem at the time the terrace deposits formed suggest that a viable macroinvertebrate community probably did not exist in either Mineral Creek upstream from the confluence with South Fork Mineral Creek or in Cement Creek prior to mining (Church and others, 1999)."[56]

In its Baseline Ecological Risk Assessment for the Upper Animas Mining District, EPA recognized that "mainstem Mineral Creek upstream of the confluence with South Fork Mineral Creek, and mainstem Cement Creek, may not have supported viable fish or macroinvertebrate communities before large-scale mining activities started in the 19th century due to naturally high levels of metals and low pH levels in their surface waters."[57]

h. Potentially Responsible Party Analysis

Extensive potentially responsible party (PRP) analysis has taken place in the Bonita Peak area. In May 2011, at EPA's direction, Toeroek Associates, Inc. submitted its final draft report on its PRP search for the Upper Animas Mining District.[58] The report identifies individuals and companies, regardless of viability, that might be liable for response actions and costs pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). The report is 206 pages, with appendices expanding it to 5,426 pages. In May 2015, at EPA's direction, Toeroek Associates submitted its final draft report on its PRP search for the Mayflower Mill and Impoundment Site in the Upper Animas Mining District.[59] The report is 98 pages, without appendices. In June 2009, PRIZIM, Inc., at the direction of BLM, submitted its final report on its PRP search for the Mogul and Grand Mogul Mine Site, located in the Cement Creek drainage.[60] The report is 124 pages long, with data sources, references, figures, and attachments extending it to 268 pages.

III. Significant Reclamation has Been Completed and There are Negligible Remaining Opportunities for Impactful Reclamation

The Bonita Peak area has seen significant and successful reclamation.[61] Opportunities for further

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[56] U.S. Geological Survey, 2006, Summary and conclusions from investigation of the effects of historical mining in the Animas River watershed, San Juan County, Colorado, Chapter A in U.S. Geological Survey Professional Paper 1651.

[57] TechLaw, Inc., 2015, Final Draft Baseline Ecological Risk Assessment Upper Animas Mining District, San Juan County, Colorado. Prepared for U.S. Environmental Protection Agency Region 8, Denver, CO. April 2015.

[58] Toeroek Associates, Inc., May 9, 2011. Upper Animas Mining District Draft PRP Search Report, U.S. EPA, Contract No. EP-R8-09-10.

[59] Toeroek Associates, Inc., May 7, 2015, Mayflower Mill Final PRP Search Report, U.S. EPA, Contract No. EP-BPA-11-W-0001.

[60] PRIZIM, Inc, June 2009, Potentially Responsible Party Search Final Report, Mogul and Grand Mogul Mines Site, San Juan County Colorado; prepared for Bureau of Land Management.

[61] *See e.g.* U. S. Bureau of Reclamation and U. S. Forest Service, 2007, Abandoned Mine Lands: A Decade of Progress Reclaiming Hardrock Mines. BLM Pub. No. BLM-WO-GI-07-013-3720. (Recognizing that: "Approximately 50 mining remediation projects, which addressed draining adit and waste site concerns, were successfully completed within the Animas River watershed. Of the completed projects, which includes the completion of remediation activities for 19 priority sites, mining companies addressed approximately one-half, Federal land management agencies addressed approximately one-quarter, and the ARSG addressed approximately one-quarter. The BLM has completed seven projects and the Forest Service has completed four. The community is reaping the benefits of these cleanup efforts, including overall increased water quality and two reproducing species of trout that did not

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impactful reclamation, however, are limited.[62] Any further earthworks projects are limited and of negligible value in improving water quality. In many cases, they would result in adverse impacts to alpine tundra or historical sites that would far outweigh any resulting reductions in metals loading.[63]

In 2000, ARSG, based on a "comprehensive analysis of all significant current and legacy mining sites in San Juan County" and a corresponding estimation of "the amount of metal loading" each site contributed to the Animas River basin, "identified 32 mine waste sites in the whole basin that would be desirable to remediate."[64] "Most of those sites have been completed."[65] As of 2014, the last two remaining sites were the Bullion King Mine and the Henrietta Mine.[66] The Bullion King Mine was the last site in the Mineral Creek drainage identified for remediation.[67] ARSG has now completed remediation work at the Bullion King Mine. At the Henrietta Mine in Prospect Gulch, although significant remedial work has been done, some remedial work remains.[68]

It is unlikely that further remediation at the Mayflower Impoundments would achieve any significant results. SGC, in conformance with its permitting obligations and a Consent Decree, has reclaimed all four of the Impoundments, despite the fact that during SGC's 5 years of mining it only deposited tails in the upper portions of Impoundment No. 4, well clear of any groundwater infiltration or surface path to the Animas River. SGC has recently spent over $6 million studying the Mayflower Impoundments, in part under a coercive Administrative Order on Consent. Baseline Ecological Risk Assessments have been conducted in the vicinity of the Mayflower Impoundments.[69] Risks to aquatic dependent wildlife are low or minimal, and may be *de minimis* in this river reach.[70] While the data from SGC's investigatory work needs to be

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exist before in downstream areas.")

[62] The "remaining area of primary concern… [is] the vicinity of the old town site of Gladstone located in the upper Cement Creek drainage basin and the four draining adits – American Tunnel; Gold King # 7; Red and Bonita; and Mogul." "The upper Cement Creek area (four adits) contribute 76% of the zinc loading in the Upper Animas River Basin from draining adits. Reduction of metal loading from these adits…clearly is the overwhelming opportunity to improve water quality in the Animas River downstream of Silverton." Animas River Stakeholders Group, December 2015, Background Summary Metal Loading in Upper Animas River Basin.

[63] *See, e.g.,* ARSG Meeting Summary (Jan. 27, 2015).

[64] Animas River Stakeholders Group, December 2015, Background Summary Metal Loading in Upper Animas River Basin; Animas River Stakeholders Group, September 29, 2014, Draft ARSG Timeline for Reducing Metal Loading in Upper Animas River Basin.

[65] Animas River Stakeholders Group, September 29, 2014, Draft ARSG Timeline for Reducing Metal Loading in Upper Animas River Basin; Animas River Stakeholders Group, December 2015, Background Summary Metal Loading in Upper Animas River Basin.

[66] Animas River Stakeholders Group, September 29, 2014, Draft ARSG Timeline for Reducing Metal Loading in Upper Animas River Basin.

[67] Animas River Stakeholders Group, September 29, 2014, Draft ARSG Timeline for Reducing Metal Loading in Upper Animas River Basin.

[68] Animas River Stakeholders Group, September 29, 2014, Draft ARSG Timeline for Reducing Metal Loading in Upper Animas River Basin.

[69] *See* Formation, 2018, Aquatic Biota Baseline Ecological Risk Assessment Mayflower Tailings Impoundments Area; TechLaw, Inc., 2015, Final Draft Baseline Ecological Risk Assessment Upper Animas Mining District, San Juan County, Colorado. Prepared for U.S. Environmental Protection Agency Region 8, Denver, CO. April 2015.

[70] *See* Formation, 2018, Aquatic Biota Baseline Ecological Risk Assessment Mayflower Tailings Impoundments Area; TechLaw, Inc., 2015, Final Draft Baseline Ecological Risk Assessment Upper Animas Mining District, San Juan County, Colorado. Prepared for U.S. Environmental Protection Agency Region 8, Denver, CO.

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analyzed, it is likely that much of the metals loading in this stream segment does not come from the Mayflower Impoundments at all, and that a *de minimis* portion of any loading comes from the upper level of Impoundment No. 4 used by SGC.

IV. The Major Adits have been Bulkheaded

The major adits in the Bonita Peak area have been bulkheaded for purposes of environmental remediation. SGC has installed nine engineered concrete bulkheads that are stable and performing as designed.[71] As intended, and as approved by the State of Colorado and EPA, the interior workings of the Sunnyside Mine have been isolated and the water table has returned toward natural levels, resulting in the expected increase in flows from springs, seeps, and adits.[72] EPA has also installed one bulkhead of similar design.[73] Fifteen bulkheads have been installed at various sites in the Bonita Peak area.[74] The cost and extensive investigations necessary for further bulkheads make it an unlikely option for any potential remaining location.[75]

V. Further Study is Not Required for Intelligent Decision Making

Notwithstanding the exhaustive study, analysis, and successful remediation that has already occurred, some at EPA Region 8 are advocating years of additional study. For example, EPA Region 8 representatives have stated that "this mining district will be the source of many forthcoming papers and a lot of research,"[76] that Bonita Peak will be a "very long term project"[77] or "a 20 year project,"[78] and that "high resolution flow data is necessary" to "characterize the system."[79]

Many others, especially in the local community, are skeptical of this indefensible approach. William Simon, a founding member and Coordinator *Emeritus* of ARSG has stated that "EPA needs to put their money toward making major reductions in metal loading that can only be achieved by addressing the major draining sources near Gladstone"[80] Peter Butler, Co-Coordinator of the ARSG, recently stated that "I worry that the EPA will spend tens of millions of dollars studying the groundwater and come up with a solution that may or may not work and might

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April 2015.

[71] *See* Stephen Phillips, Feb. 2018, The American Tunnel Bulkhead Stability Analysis and Report.

[72] *See* Stephen Phillips, Feb. 2018, The American Tunnel Bulkhead Stability Analysis and Report.

[73] EPA has contemplated bulkheading the Gold King Mine. *See e.g.* EPA, May 2015, Upper Animas Mining District Fact Sheet.

[74] U.S. EPA, May 2017, Bonita Peak Mining District Update.

[75] Simon, W., Butler, P., Owen, R., 2001, Use Attainability Analysis for the Animas River Watershed. Animas River Stakeholders Group (presented to Colorado Water Quality Control Commission for the adoption of steam standards). 240p.; Animas River Stakeholders Group, September 29, 2014, Draft ARSG Timeline for Reducing Metal Loading in Upper Animas River Basin.

[76] Silverton Standard, July 27, 2017, *EPA seeks new tech for mine cleanup*, quoting the Project Manager.

[77] Indian Country Today, Dec. 19, 2016, *Navajo Nation seeks $160 million in damages for Gold King Mine spill*, quoting the Project Manager.

[78] Silverton Standard, October 19, 2017, *EPA: 35 mining sites pose a risk*, quoting the Project Manager; Silverton Standard, March 2, 2017, *EPA plots early response, seeks sludge site*, quoting the Project Manager.

[79] Ian Bowen, USEPA, Bonita Peak Mining District Hydrology Path Forward, available at: https://semspub.epa.gov/work/08/1885286.pdf.

[80] Durango Herald, June 9, 2017.

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be just as costly as a water-treatment plant[.]"[81] William Perry Pendley, in *Gold King: EPA's Two-Year Rolling Disaster and a Path Forward to Fix It* (July 2017), concludes that the approach of endless study "... is not acceptable to anyone, other than federal bureaucrats."[82] He concisely states that "EPA...needs to put an end to conducting additional time-consuming studies that are redundant or unnecessary given the decades of study that have already been conducted."[83] The Pendley Paper is attached as Exhibit C.

Even some at EPA Region 8 seem to recognize that "It is a valid criticism of the EPA—taking far too long in the studies before we start to take response actions[.]"[84] Fortunately, Administrator Pruitt has placed the site on the "Intense and Immediate Attention" List. As directed by Administrator Pruitt, study must not delay prevention of source migration and addressing risks:

> Utilize early or interim response actions, including removal authority or interim remedies, more frequently as appropriate to address immediate risks, prevent source migration and return portions of sites to reuse while more-detailed evaluations of other portions of sites are ongoing. We should not allow for years of study to delay addressing immediate risks.[85]

It is telling that ARSG's 2014 "Timeline" called for implementation of the selected means to address remaining problems in the Bonita Peak area by June 2017.[86] Intelligent decision making can be done now. Further study would be wasteful and is not required.

a. Further Study of Underground Water is Not Required

Extensive hydrological studies have been conducted in the Bonita Peak area. Water quality data has been collected at least monthly since 1991.[87] ARSG has compiled all of the data collected, and the database includes information collected by a multitude of entities. Those sampling water in the region include EPA, Bureau of Reclamation, Colorado Division of Wildlife, Colorado Water Quality Control Division, Colorado Division of Reclamation Mining and Safety, SGC, and ARSG. The U.S. Geological Survey has also conducted extensive studies in the area. More studies will

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[81] Denver Post, October 19, 2017, *EPA crews working on Gold King cleanup find elevated lead threatening birds, animals and, potentially, people*; https://www.denverpost.com/2017/10/19/gold-king-mine-cleanup-epa-lead-spreading-to-animals-people/.

[82] Pendley, William, July 31, 2017, Gold King: EPA's Two-Year Rolling Disaster and a Path Forward to Fix it; Mountain States Legal Foundation.

[83] Pendley, William, July 31, 2017, Gold King: EPA's Two-Year Rolling Disaster and a Path Forward to Fix it; Mountain States Legal Foundation.

[84] Denver Post, October 19, 2017, https://www.denverpost.com/2017/10/19/gold-king-mine-cleanup-epa-lead-spreading-to-animals-people/.

[85] E. Scott Pruitt, EPA Administrator, July 25, 2017, Memo: Receipt of Superfund Task Force Report and Next Steps to Revitalizing the Superfund Program.

[86] Animas River Stakeholders Group, September 29, 2014, Draft ARSG Timeline for Reducing Metal Loading in Upper Animas River Basin.

[87] Church, S.E., Owen, J.R., von Guerard, P., Verplanck, P.L., Kimball, B.A., and Yager, D.B., 2007, The effects of acidic mine drainage from historical mines in the Animas River watershed, San Juan County, Colorado: What is being done and what can be done to improve water quality? in J.D. DeGraff, ed., Understanding and Responding to Hazardous Substances at Mine Sites in the Western United States: Geological Society of America, Reviews in Engineering Geology, v. 17 pp. 47-83.

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not provide any clarity beyond what can already be understood from the 30 years' worth of existing data. Indeed, "[T]he hydrogeological interpretation of loadings in the complex setting of the San Juan Mountains is enigmatic."[88] No matter how many more studies occur, scientists will not totally understand the hydrological conditions. Nor need they be understood. Certain issues may remain unsolved (or be unsolvable), but that circumstance has not prevented successful remediation from occurring.

Improving water quality can be achieved by using what we know—where the water comes out of the mountain, what its quality is, and what can be done about it. The internal underground wanderings of the water are irrelevant. Further study of the irrelevant and unknowable is not justified.

b. Further Study is Not Required for Purposes of Apportioning Liability

Potentially responsible parties are known.[89] There are no significant viable PRPs with potential liability other than BLM,[90] EPA,[91] and, to a lesser degree, the U.S. Forest Service.[92] CERCLA provides that the federal government will be treated no differently than any other nongovernmental entity with respect to responsibility for environmental cleanup.[93]

c. Further Study of Bulkhead Stability is Not Required

Bulkheading is understood and its efficacy in the Bonita Peak area is proven. Placement of engineered bulkheads in draining mine adits for environmental remediation is a best management practice for final mine closure. The engineered concrete bulkheads SGC installed in the Bonita Peak area for purposes of environmental remediation are stable and performing as designed. As intended and designed, and as approved by the State of Colorado and EPA, the engineered bulkheads have isolated the interior workings of the Sunnyside Mine and have returned the water table toward natural levels. This has resulted in the expected increase in flows from springs and seeps which has, as anticipated, increased flows from unbulkheaded adits.[94]

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[88] U.S. Geological Survey, 2000, Interim report on the scientific investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 Meeting, Denver, CO: U.S. Geological Survey Open-File Report 00-0245.

[89] *See Infra* Section II(h).

[90] *See, e.g.,* BLM CERCLA Liability at Bonita Peak (Crowley Fleck Memorandum)

[91] EPA has accepted responsibility for the Gold King Blowout ("EPA takes responsibility for the Gold King Mine release"). EPA, Emergency Response to August 2015 Release from Gold King Mine, https://www.epa.gov/goldkingmine (accessed Feb. 15, 2018). The week after the Blowout, acting EPA Administrator Gina McCarthy was quoted in the *Los Angeles Times*: "We want to reassure everyone that the EPA does take full responsibility for the spill" Los Angeles Times, August 12, 2015.

[92] SGC is not factually, equitably or legally liable for water quality issues in the area. SGC's five years of responsible mining and 30 years of reclamation and remediation in the Silverton Caldera has resulted in less metals in the Animas River than would have otherwise been the case. Additionally, SGC is a small corporation with limited and depleting resources that was relieved of legal liability by the 1996 Consent Decree and is further protected from legal liability by the doctrine of federally permitted release, divisibility, and the statute of limitations, among other things.

[93] 42 U.S.C. § 9620(a)(1).

[94] *See* Stephen Phillips, Feb. 2018, The American Tunnel Bulkhead Stability Analysis and Report.

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As recognized in a Deere & Ault report commissioned by EPA:

> Water impounding concrete bulkheads installed at strategic locations in draining and discharging underground mine workings have the potential to flood the workings and create a mine pool that will eventually establish a ground water system with water table and flow paths similar to the pre-mining system. Saturation of sulfide minerals in the flooded workings and country rock will create relatively anoxic conditions and limit the generation of ARD. Bulkhead installation eliminates rapid and continuous collection and discharge of ground water through open mine workings and minimizes direct discharge of ARD from mine portals....Bulkhead installation in mines that are determined to be good candidates has the potential to significantly reduce metal loading to receiving streams. (May18, 2015 DRMS report at 1-2).[95]

d. Further Study of Treatment Methodologies is not Required

Proposed remedial actions have been analyzed since the early 1990s. ARSG has extensively considered various remedial activities and the associated costs and benefits.[96] The group even issued an Innocentive Challenge aimed at "seeking new or improved treatment methods to significantly reduce overall costs of removing metals from water draining from active and abandoned mines."[97] Innocentive Challenges are a crowd-sourcing method of pushing innovation and seeking access to new ideas for a problem. ARSG's Use Attainability Analysis for the Animas River Watershed outlines the feasibility of a number of remedial options. It includes an analysis of both preventative measures and treatment.[98] Similarly, the U.S. Geological Survey outlined the potential remedial actions that could occur in each basin.[99] There is no justification for additional analysis of treatment methodologies.

VI. EPA's Focus Should be on Significant Point Sources of Metals Loading

It is clear from the exhaustive study of the Bonita Peak area that the point sources of metals loading in Cement Creek are the remaining problem that must be addressed. By focusing on these known Cement Creek point sources, tangible Animas River water quality improvement can be achieved.

ARSG, again based on a "comprehensive analysis of all significant current and legacy mining sites in San Juan County" and a corresponding estimation of "the amount of metal loading" each site contributed to the Animas River basin, recognized that:

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[95] Deere & Ault, March 24, 2016, Red and Bonita Mine Bulkhead Closure Evaluation; for Weston Solutions.

[96] Animas River Stakeholders Group, 2004, The Animas Watershed Plan, Plans for Remediation of Historical Mining Sites in the Upper Animas River Basin. *See also* ARSG Meeting Summaries, http://animasriverstakeholdersgroup.org/blog/index.php/meeting-summaries/.

[97] *See* https://www.innocentive.com/ar/challenge/9933520.

[98] Simon, W., Butler, P., Owen, R., 2001, Use Attainability Analysis for the Animas River Watershed. Animas River Stakeholders Group (presented to Colorado Water Quality Control Commission for the adoption of steam standards). 240p.

[99] U.S. Geological Survey, 2000, Interim report on the scientific investigations in the Animas River watershed, Colorado to facilitate remediation decisions by the U.S. Bureau of Land Management and the U.S. Forest Service, March 29, 2000 Meeting, Denver, CO: U.S. Geological Survey Open-File Report 00-0245.

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> The remaining area of primary concern is in the vicinity of the old town site of Gladstone located in the upper Cement Creek drainage basin and the four draining adits – American Tunnel; Gold King # 7, Red and Bonita; and Mogul.
>
> ...
>
> Reduction of metal loading from these adits...clearly is the overwhelming opportunity to improve water quality in the Animas River downstream of Silverton.[100]

Where such clarity exists:

> The focus should be on the main adits that have been identified by ARSG as the source of water quality problems. These can be addressed with existing knowledge, and, in fact, would have been addressed already according to the ARSG work plan[[101]] that was in place prior to the EPA spill.
>
> ...
>
> That means taking advantage of the expert groundwork already laid by ARSG by focusing on the real problems. Specifically, it means treating the water flowing from the main adits that, after years of study, have been identified as the key sources of water quality issues in the Animas River.[102]

As cogently summarized by William Simon, a founding member and Coordinator *Emeritus* of ARSG:

> If measurable improvements to water quality and aquatic habitat are important goals, then the EPA needs to put their money toward making major reductions in metal loading that can only be achieved by addressing the major draining mine sources located near Gladstone (*i.e.*, Gold King, Red and Bonita, American Tunnel and the Mogul mines)... The Gladstone draining mines are where the problem lies and where significant achievements can be attained.[103]

After in-depth study, it is clear that targeting these flows should be the priority. No amount of further study will change this. Addressing these flows would substantially reduce metals loading to the Animas River. There is more than sufficient knowledge to tackle these point sources today.

VII. The Existing Gladstone Treatment Plant Should be Run to its Full Capacity

The only viable means of addressing metals loading from the major Cement Creek point sources is through the operation of a lime treatment plant.[104] This technology has been successfully

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[100] Animas River Stakeholders Group, December 2015, Background Summary Metal Loading in Upper Animas River Basin.

[101] Animas River Stakeholders Group, September 29, 2014, Draft ARSG Timeline for Reducing Metal Loading in Upper Animas River Basin.

[102] Pendley, William, July 31, 2017, Gold King: EPA's Two-Year Rolling Disaster and a Path Forward to Fix it; Mountain States Legal Foundation.

[103] *Durango Herald*, June 9, 2017.

[104] It is possible that a more effective technology may be developed in the future.

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demonstrated by SGC, which ran a lime treatment plant in the area from 1985-2003.[105] The existing plant at Gladstone has the capacity to treat additional sources, and much more water, than it is presently treating.[106]

Alternative methodologies, including passive treatment options, have been studied exhaustively,[107] but are most likely infeasible. Analysis of passive treatment systems has concluded that those systems would most likely be infeasible for treating the Upper Cement Creek area because of the nature and characteristics of the area. Among the factors making passive treatment unsuited to the Upper Cement Creek area are the unavailability of suitable land, differing flowrates and water chemistries, harsh environment and the short (approximately 4 month) growing season, and lack of directly applicable technology with proven success.[108] In combination, these factors, and others, mean that a passive treatment system would most likely be unsuccessful.

Gladstone is demonstrably a suitable location for active treatment.[109] "[C]ollecting and routing of the Upper Cement Creek [mining-influenced water] sources to the current Gladstone [water treatment plant] provides the greatest certainty of beneficial results combined with the ability to implement new or improved technologies as they are developed and proven in the future."[110] The existing water treatment plant at Gladstone can, at full capacity, treat flows from the Gold King Mine, American Tunnel, Red & Bonita Mine, and Mogul and Grand Mogul Mines.[111] Decades of study have led to the inexorable conclusion that the existing Gladstone water treatment plant should be run to its full capacity.

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[105] From 1985 until 2003, SGC treated the entire American Tunnel discharge and stored the resulting sludge at Mayflower Impoundment No. 4, even though not all of the discharge was generated from SGC property or operations. In addition, from 1996 until 2003, SGC treated the entire flow of Cement Creek for nine months each year, removing thousands of pounds of metals from this Animas River tributary, again even though there were significant natural and third party sources of metals to the Creek. This treatment addressed the total impact of upper Cement Creek to the Animas River, both natural and mining related. Based upon the NPDES Discharge Monitoring Reports provided to the State of Colorado, SGC's treatment of Cement Creek between August of 1996 and December of 2002 removed over 326,000 pounds of metal from the Creek. Over this same time period, SGC's treatment of water discharging from the American Tunnel prevented approximately 290,000 pounds of metals from entering the Creek. As a result, Cement Creek below the treatment plant had less metals loading than the Creek would have had under natural baseline conditions. During the period of SGC's operations, the "net" load that SGC removed from the Animas was tremendous.

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VIII. Conclusion

It is clear that sufficient knowledge exists to make the decisions necessary to successfully address the major remaining sources of metals loading to the Animas River. The Bonita Peak area has been studied extensively. Every aspect of the problem of metals loading, and the solution to such metals loading, has been analyzed comprehensively. Years of concerted effort has resulted in many sources of metals loading having already been reduced or eliminated. The remaining significant source of metals loading to the Animas River is point sources in the Cement Creek drainage. These flows should be targeted for treatment. Treating these flows would substantially reduce metals loading to the Animas River and demonstrably benefit the trout fishery downstream from Silverton. The best way to address these flows is through the proven technology already being employed at the Gladstone water treatment plant. The existing Gladstone treatment plant should be run to its full capacity.

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Exhibit A

to

There Is More Than Sufficient Knowledge to Tackle Bonita Peak Today
and Improve Water Quality in the Animas River

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Exhibit B
to
There Is More Than Sufficient Knowledge to Tackle Bonita Peak Today
and Improve Water Quality in the Animas River

Executive Summary of the Paper:

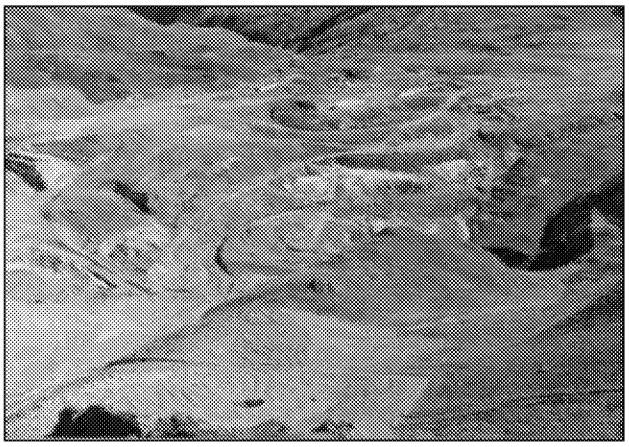
SGC Mining and Reclamation Activities and Metals Loading in the Animas River

by

Steven Lange, M.S., Senior Project Manager, Knight Piésold Consulting

January 2018

Metals loading adversely impacts the Animas River in the area around Silverton, San Juan County, Colorado. The metals of concern include iron, aluminum, cadmium, copper, lead, zinc, arsenic, and nickel. The metals loading in the Animas River is due to acid rock drainage. Acid rock drainage refers to acidic water that is created when sulfide minerals are exposed to air and water to produce sulphuric acid. The acidic water can dissolve area minerals and then deposit metals in rivers like the Animas. Metals loading in the Animas River has limited aquatic life, including the trout fishery downstream from Silverton. Sunnyside Gold Corporation (SGC) was formed and acquired the Sunnyside Mine in 1985 and mined it from 1986 until 1991 under modern environmental regulations and using modern mining techniques. Since 1985, SGC has engaged in more than 30 years of reclamation and remediation in the Silverton Caldera. This Paper analyzes the geologic setting and historic mining that have caused the metals loading in the Animas River as well as the effect of SGC's mining and extensive reclamation activities. It is the conclusion of this Paper that it is incontrovertible that the actions of SGC have substantially reduced acid rock drainage and metals loading in the Animas from what would have otherwise been the case.



Sunnyside Basin, 1988

Sunnyside Basin, 1996

Exhibit B

Exhibit C
to
There Is More Than Sufficient Knowledge to Tackle Bonita Peak Today
and Improve Water Quality in the Animas River

GOLD KING: EPA's Two-Year Rolling Disaster and a Path Forward to Fix It

William Perry Pendley*
July 31, 2017

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Exhibit C

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1. Executive summary and introduction

This paper explores a number of actions taken by the Environmental Protection Agency (EPA) in the wake of a major spill affecting the Animas River on August 5, 2015, that was triggered by contractors working on the EPA's behalf at the Gold King mine in Colorado and their relationship to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or "Superfund."

It chronicles a series of missteps and controversies that began in the hours immediately following the spill, and that have continued until the present day. Among others, these include the agency's: failure to notify promptly affected downstream communities; initial failure to treat metal-laden water that it knew was a contributor to water quality issues; apparent ignorance of the risks prior to the spill; failure to compensate affected parties adequately and the intransigent positions it took in subsequent litigation; lack of accountability given the magnitude of the incident; broken promises to the local community regarding the Superfund designation; failure to apply its own rules in listing the Superfund sites; wasteful and unfocused "remediation plan" that ignores decades of previous study; and finally, its threat to conduct further costly, time-consuming and technically challenging studies that will add little or no value to the actual task of remediation.

A number of these actions by the EPA have generated extensive negative media coverage at a national, state, and local level, significantly exacerbating the damage to its reputation the agency suffered by causing the spill. Some actions have alienated key constituents and drawn harsh public rebukes from elected officials. Other actions have been criticized by local stakeholders who previously had a history of working cooperatively with the EPA to address water quality issues.

Most significantly, the EPA's actions in the wake of the spill too often failed to address, efficiently and effectively, the fundamental issue of long-term water quality

in the Animas River. Instead, its actions delayed or pre-empted effective action that was well underway for decades before the EPA triggered the spill, thanks to the award-winning efforts of the local Animas River Stakeholder Group (ARSG).

In many respects, the EPA's use of Superfund following the Gold King spill is a conspicuous example of what too often has gone wrong with Superfund at other sites across the country. In fact, the EPA is repeating many of the same failings that have long characterized the Superfund process elsewhere, for example: failure to engage, fully and meaningfully, the local community; listing of bloated, oversized projects that get bogged down and last for years, even decades; inability to obtain adequate funding; and the ever-present specter of litigation that blocks effective cooperative action.

Fortunately, the new leadership at the EPA gives reason for hope at Gold King. According to news reports, Administrator Scott Pruitt has made Superfund a priority. He has highlighted the problems with the Superfund process and is taking quick action to fix them. Not surprisingly as a former Oklahoma Attorney General, he has expressed his strong belief in federalism and the need to empower state and local authorities. Significantly for those who live, work, and recreate in Colorado, he has proclaimed publicly his dissatisfaction with the EPA's response to the Gold King disaster and his determination to remediate this situation.

To assist Administrator Pruitt, this paper recommends a few fundamental changes in direction at the EPA regarding Superfund that will stop "the rolling disaster" that is the EPA's current approach to that well-intentioned law and bring the Gold King project in line with his stated philosophy and objectives. It argues that the Gold King situation provides a timely and high profile opportunity for the EPA to demonstrate a new approach to Superfund that could be a model for Superfund sites across the country to the benefit of millions of Americans.

2. The spill and its aftermath

Gold King and Crisis Management 101

On August 5, 2015, the U.S. Environmental Protection Agency, through its contractor, Environmental Restoration LLC, released in excess of three million gallons of metals-laden water from the Gold King Mine near Silverton, Colorado, to Cement Creek and the Animas River. Contractors accidentally destroyed the earthen plug holding water trapped inside the mine, spilling three million gallons of impacted water into Cement Creek, a tributary of the Animas River.

The discharge resulted in a plume of orange water stretching 80 miles from Cement Creek into the Animas River and then into the San Juan River, and into New Mexico and Utah. The contaminated water contained high levels of suspended and dissolved solids and a variety of toxic metals including arsenic, lead, copper, aluminum, mercury, cadmium, iron and manganese, among others.

The catastrophic irony of the incident was captured succinctly in a *Newsweek* story that reported on the event:

> The U.S. Environmental Protection Agency was trying to protect the environment when it caused a major spill instead.
>
> The waste spewed from the creek into the Animas River north of Silverton, Colorado, turning the water an opaque orange color reminiscent of boxed mac and cheese.
>
> -- *Newsweek*, August 7, 2015

Images of a pristine river turned orange made headline news in thousands of media outlets across the United States and internationally in the days following the spill. Perhaps the most widely reproduced image on television, in the press, and online showed three kayakers on the Animas River near Durango, Colorado, the day after the spill.

Jerry McBride / *The Durango Herald*

One of the fundamental maxims of crisis management states that organizations are not judged so much by the triggering incident itself as they are by how they deal with its immediate and long-term aftermath. Organizations that have navigated crises successfully attest that there is a real opportunity to minimize reputational damage and to restore (or in some cases even strengthen) stakeholder trust by consistently taking the right steps in the hours, days, weeks, and months following a catastrophic event.

Good crisis management demands: a timely response to affected stakeholders; honesty, transparency, and consistency in all communications; "walking the talk" by making good on promises and commitments; fairness in dealing with injured parties in a spirit of cooperation versus litigiousness; prompt and effective action in providing a solution to underlying problems; and, open and meaningful engagement with local communities and partners who want to be part of that solution.

While it was clearly a public relations nightmare for the nation's environmental watchdog and regulator to be the cause of such a large and visually shocking release, there was opportunity for redemption had the EPA observed these basic principles in the short and long-term aftermath of the Gold King spill.

Unfortunately, the EPA failed to do so in the hours and days following the spill, and has continued to fail to do so in the two years since. As a result, the agency has paid a steadily mounting price in damage to its reputation and its relationships with key stakeholders. This trend appears likely to continue unless the EPA's current direction at the Gold King site is changed.

Failure to notify stakeholders and misinformation on the spill

Once the Gold King spill began, the volume and appearance of the contaminated water gushing from the breach would have indicated to those at the site that they had a major problem on their hands. Subsequent time logs of the EPA actions in the hours following the spill, however, show serious delays in the agency's response and notifications to key stakeholders and the public at large.

EPA personnel at the site acknowledged that the discharge began at 10:51 a.m. on August 5, 2015. It was the Colorado Division of Reclamation, Mining and Safety and not the EPA that first called the National Response Center (NRC) at 12:27 p.m., after many thousands of gallons of contaminated water were discharged into Cement Creek. The NRC then notified several other federal and state agencies at 12:37 p.m. Then, three hours after the discharge began, the Colorado Department of Public Health and Environment notified selected downstream municipal users of the accidental release.

The EPA issued its first press release at 11:26 p.m., nearly 13 hours after the discharge began. Residents in the affected area did not receive notice of the discharge until more than 24 hours after it began. On the afternoon of August 6,

2015, the EPA finally advised the public of the closure of the Animas River to recreational users, which was more than 24 hours after the discharge began.

The failure to inform key stakeholders in a timely way drew intense public criticism. New Mexico Governor Susana Martinez described the EPA response as "cavalier and irresponsible":

> "The governor is disturbed by the lack of information provided by the EPA to our environmental agencies in New Mexico and strongly believes that people in our communities downstream deserve to have all the information about this situation," Chris Sanchez, the governor's spokesman, said in an emailed statement Thursday. "For example, we were not notified about this release until 9:30 a.m. this morning even though the release is reported to have occurred at approximately 10:40 a.m. yesterday. And the first notification received by the State of New Mexico came from an official with the Southern Ute Tribe, not EPA."
>
> "Governor Martinez hopes the EPA will be more cooperative and forthcoming moving forward as we work to address this situation and that the EPA will demand the same of itself as it would of a private business responsible for such a spill."
>
> -- *Newsweek*, August 7, 2015

Officials of the Navajo Nation also complained of their difficulty in receiving timely information from EPA:

> The USEPA inexplicably delayed notification of the spill to the Navajo Nation. The spill occurred the morning of August 5, 2015, but the Nation was not informed of the release until August 6, a full day later, and not even by the USEPA but by the State of New Mexico. It took the USEPA almost two full days to notify us. We view this as a violation of the government-to-government relationship between the federal government and the Navajo Nation.
>
> -- *Testimony of Russell Begaye, President of the Navajo Nation, to Joint Oversight Committee on EPA's Animas Spill, September 17, 2015*

The EPA admits there was a serious delay in the public receiving timely notice of the discharge, which it blames on a "breakdown in the chain of communication." Some critics, however, such as Colorado Attorney General Cynthia Coffman and Utah Attorney General Sean Reyes, publicly accused the EPA of intentionally withholding

information regarding the spill.

Even though "real time" stream data was available immediately online from the U.S. Geological Survey, it took the EPA thirteen hours to provide an estimate of the amount of water released from the mine. Initially, the EPA reported that approximately one million gallons of water had been released. On August 9, 2015, four days after the initial notification, the EPA more than tripled its estimate of the amount of water discharged to over three million gallons. Although the EPA later admitted that its initial one million gallon estimate of the spill was "not fully accurate," the Colorado Attorney General and the Utah Attorney General responded that delayed reporting and the gross underestimation of the volume of the spill suggests not just simple error, but knowingly false statements by the EPA.

Controversy regarding risk assessments prior to the spill

In statements following the spill, EPA officials would claim that they were not aware of the risks when their contractors went in to do the work at Gold King; however, subsequent investigations and reports reveal that they were aware of the potential for a spill.

As the *Denver Post* reported:

> The Environmental Protection Agency employee overseeing work at the Gold King Mine was aware of blowout danger at the site before a massive August wastewater spill, according to a report released Thursday.
>
> The revelation, in findings by congressional Republicans, comes in contrast to the EPA's claims that the risk was underestimated ahead of excavation at the mine's collapsed opening. That work ultimately led to the disaster.
>
> Hays Griswold, the agency's on-scene coordinator, wrote in an October e-mail to other EPA officials that he personally knew the blockage "could be holding back a lot of water and I believe the others in the group knew as well."
>
> "This is why I was approaching (the mine) as if it were full," he wrote of the day of the Aug. 5 release at the Gold King.

> The note provides more indications the EPA probably had knowledge of the potentially looming disaster at the mine long before workers accidentally unleashed 3 million gallons of contaminants. The Oct. 28 e-mail came in response to an independent Bureau of Reclamation report about the spill released six days earlier.
>
> Documents revealed by the EPA in the summer already showed blowout warnings predated the spill by more than a year.
>
> An EPA internal review released three weeks after the spill, however, said operators believed water inside the Gold King was not very high because of draining at the site and based on seep levels above its opening. Those factors, officials said, made checking pressure seem unnecessary, and it was never done.
>
> Griswold's e-mail appears directly to contradict those findings and statements he made to the *Denver Post* in the days after the disaster, when he claimed "nobody expected (the acid water backed up in the mine) to be that high."
>
> -- *Denver Post,* February 11, 2016

Reversal on promises for compensation and subsequent litigation

The EPA initially expressed its willingness to take full responsibility for the Gold King spill. The week after the spill, acting EPA Administrator Gina McCarthy was quoted in the *Los Angeles Times*:

> "We want to reassure everyone that the EPA does take full responsibility for the spill," which took place at the long-closed mine north of Durango, she said. "No agency could be more upset about this incident and more dedicated to doing our job and doing it right."
>
> -- *Los Angeles Times,* August 12, 2015

Unfortunately, as Senator Cory Gardner (R-CO) noted, the EPA "walked away from the people of Colorado and the promises made." In fact, the agency made it clear that it would not be entertaining claims for compensation for damages due to the spill and all but told potential claimants to "Sue us!" Here is what the EPA put on its website:

> On January 13, 2017, the independent claims officer within the

> Environmental Protection Agency – guided by the U.S. Department of Justice – made a decision on the administrative claims brought under the Federal Tort Claims Act (FTCA) in connection with the Aug. 5, 2015 Gold King Mine release. After careful analysis, the claims officer concluded that the agency is not legally able to pay compensation for the claims.
>
> Because the agency was conducting a site investigation at the Gold King Mine under the Comprehensive Environmental Response, Compensation, and Liability Act, the agency's work is considered a "discretionary function" under this law. Therefore, the circumstances surrounding the Gold King Mine incident unfortunately do not meet the conditions necessary to pay claims.
>
> However, those who have filed claims and whose claims have been denied may challenge this decision with the United States District Court within six months of the date of the denial.

Not surprisingly, the EPA's decision drew sharp criticism from both injured parties and elected officials:

> The announcement brought outrage from many, including David Moler, owner of Durango Rivertrippers & Adventure Tours.
>
> "This is yet another devastating blow from the EPA," he said. "As a small business that relies on the river to make our living, we're certainly drastically impacted by the event that took place in 2015. We were shut down and lost substantial amounts of business."
>
> (Colorado) Gov. John Hickenlooper released a statement, saying the state would continue to fight for residents.
>
> "We are disappointed in the EPA's decision. We expected the EPA to make good on its promise to reimburse any Colorado resident or business that suffered a legitimate loss as a result of the spill," he said in the statement. "The Attorney General has agreed to help us find ways we can make sure our residents receive just compensation."
>
> -- *Durango Herald,* January 13, 2017

In February of 2017, Senator Gardner stated: "I have had conversations with Mr. Pruitt about my sincere disappointment in the broken promises related to the EPA spill, specifically EPA's refusal to pay for lost property, lost economic opportunity, and lost business opportunity. Mr. Pruitt assured me that he is going to make it

right and work with me to make sure those injured and those that experienced economic loss are fully compensated."

As of this writing, the Trump administration has awarded some payments, but many other claims remain outstanding.

The State of New Mexico has launched a legal action against the EPA and other parties in connection with the spill, alleging that the state is experiencing "enormous economic losses" due to the spill while emphasizing that "the indelible images of a mustard-hewed toxic plume meandering downstream — into the habitat of several endangered species and superb sport fishing and recreational grounds — will linger long after the visible impacts of the release have vanished."

The Navajo Nation also commenced a lawsuit against the EPA and other parties, alleging that the EPA and its subcontractor "consistently acted improperly, shirked responsibility, and failed to fulfill their moral and legal obligations [and] must be held accountable for the harms caused to the San Juan River, the Nation, and to the Navajo people."

Rather than honestly accepting responsibility for its mistake, and striking agreements to settle with these claimants, to date the EPA appears to have chosen a path of drawn-out litigation at taxpayers' expense.

This appears to contradict the views of the new EPA Administrator, Scott Pruitt. Administrator Pruitt recently told a Senate Appropriations subcommittee hearing on the EPA budget, "I'm not sure the agency has taken full responsibility. I think the agency's response to the Gold King spill, where it shirked in my estimation, its response to help compensate claimants that were impacted or injured."

A double standard on accountability

Days following the spill, a high-ranking EPA official was quoted in *The New York Times* as insisting that the agency would "hold ourselves to the same standards that we would anyone that would have created this situation." Two years later, this has not in fact been the case. No EPA personnel have been fired or reprimanded, and the EPA contractor directly responsible for the disaster has been awarded a lucrative contract to continue work in the area to the shock and amazement of local residents still reeling from the Gold King disaster it caused.

If the EPA were a private party, it would face the very real possibility of tens of millions of dollars in fines and penalties for the August 5, 2015 discharge. In addition to the fines and penalties, it would potentially be required to pay millions more in cleanup costs and for the investigation and restoration of natural resource damages. Based on the events known to date, it is also possible that criminal sanctions could have been pursued against both the EPA and its management. It is little wonder the American people believe being a government official means "never having to say you're sorry" or being held accountable for your misdeeds.

A commentator in *Forbes* magazine noted that at the same time the U.S. House of Representatives released a highly critical report on the EPA's actions at Gold King, executives of a chemical supply company in West Virginia were being sent to prison for discharging a pollutant and failing to have a pollution-prevention plan:

> The juxtaposition of the two cases amply demonstrates the double standard that prevails where federal government employees evade accountability for their actions while demanding full environmental compliance from everyone else.
>
> The amount of negligence related to the Gold King Mine disaster exceeds by orders of magnitude that which occurred prior to the chemical leak at Freedom Industries. The volume of waste released in Colorado was 400 times (!) the amount spilled in West Virginia. And yet EPA and its leadership continues business as usual. No one has resigned over the disaster. No one has been fired. And no one has been prosecuted, unlike the six officials at Freedom Industries.

> The federal government derives its authority to enforce laws not only from the Constitution, but also from the consent of the governed. In offering that consent, citizens expect that those who govern will abide by the laws they enforce. Can we really entrust the Environmental Protection Agency with the mission of protecting the environment if it doesn't hold its own employees accountable for their harmful misdeeds?
>
> --- *Forbes,* February 24, 2016

The Animas River Stakeholder Group

As background to the EPA's listing of the Gold King mine and the surrounding district as a Superfund site, it is important to understand the history of environmental remediation in the area, and in particular, the key role of the ARSG.

The Silverton Caldera is highly mineralized and acid rock drainage and poor water quality were prevalent long before the advent of mining (*Colorado Geological Survey Bulletin 54 – Natural Acid Rock Drainage Associated with Hydrothermally Altered Terrane in Colorado*). Not surprisingly, the Upper Animas Watershed has a long history of extensive metal mining as an economic mainstay dating back to the 1870s. In fact, there are hundreds of abandoned and inactive mines in the region. Finally, part of the legacy of historic mining is metal loading to alpine streams and creeks in addition to the natural metal loading already occurring through the centuries in this mineralized area:

> Over time, the impacts of contaminants including aluminum, cadmium, copper, iron, lead, and zinc emanating from historic mines and natural sources became environmentally and economically visible; acidity levels in the water rose to levels impairing many fisheries and leaving some streams devoid of fish. Project stakeholders faced the challenge of improving water quality not only for the benefit of local residents and aquatic life, but to ensure the well-being of the town's tourist and recreational trades.
>
> -- *Abandoned Mine Lands: A Decade of Progress Reclaiming Hardrock Mines.* Bureau of Land Management and U.S. Forest Service, 2007.

In 1994, a coalition of federal, state, and local agencies, as well as mining companies and interested individuals, banded together as the ARSG to improve the river's water quality.

ARSG began as a process to determine appropriate water quality standards for the Upper Animas River Basin. Specifically, in 1995, the Colorado Water Quality Control Commission tasked ARSG to locate and evaluate sources of metals contamination, determine potential improvements and prioritize sites for remediation in order to recommend achievable water quality standards and use classifications.

The ARSG's process involves the extensive collection, consolidation, and analysis of chemical, physical and biological components necessary to assess the impacts of contamination on aquatic life and habitat throughout the basin. Using a watershed approach, ARSG developed a remediation plan, recommended feasible water quality standards, which were adopted in 2001, and implemented remediation projects throughout the Upper Animas River Basin. With these efforts, the ARSG has reduced zinc and copper concentration by 70 percent in Mineral Creek, and also achieved a significant reduction in the upper Animas River.

The group has characterized the entire Animas basin and the inactive or abandoned mine sites contributing heavy-metal laden water. A total of 34 mine waste piles and 33 discharging portals were identified as accounting for 90 percent of the legacy of mining-related metal loading in the basin, and the stakeholders group drafted a plan of action for dealing with them.

The ARSG has been the recipient of a number of third-party recognitions, including the National Cooperative Conservation Award from the U.S. Secretary of the Interior in 2008. The Bureau of Land Management and the U.S. Forest Service found that "the ARSG continues to demonstrate that a highly engaged, active, and patient stakeholder group can make critical progress toward cleanup and reclamation

goals." (Abandoned Mine Lands: A Decade of Progress Reclaiming Hardrock Mines, 2007).

Historic local opposition to Superfund

At various points during the ARSG history prior to the August 5, 2015 spill, the EPA had contemplated a Superfund designation in the Silverton area. This was a classic case of someone with an expensive hammer thinking that every problem is a nail.

In 2008, the EPA began to collect data for a Superfund assessment, and in 2011, the agency announced that the area could meet listing criteria for Superfund, though no official determination was made and the methodology utilized by the agency was questionable. The local community and most of the ARSG stakeholders were opposed, as explained on the ARSG website:

> Most of the Stakeholders thought that such a designation would lead to lots of litigation, reduced property values, distrust, and resources going to attorneys and consultants as opposed to on the ground projects that might improve water quality.

Numerous community members and elected officials also expressed their concerns over the possibility of a Superfund designation replacing or superseding the work of the ARSG. For example, in a letter to the Region 8 EPA administrator, Congressman Scott Tipton (R – CO03) stated:

> The Animas River Stakeholder Group has proposed a collaborative process to improve water quality in the Animas River. The group has taken great care to include the voices of those affected and advance an effective, common sense solution. I support the collaborative effort to improve the environmental integrity of the area. I also believe that the community-based process is a superior option to the Superfund designation. Relying on local efforts that have far and wide an invested interest in the well-being of the Animas River and surrounding areas is an ideal alternative.

In response to this continued determined and united resistance from the community and other stakeholders, the EPA was obliged to back off its insistence on Superfund designation in favor of continued cooperation and collaboration with the stakeholder group:

The Environmental Protection Agency has something to say to Silverton:

"We heard you loud and clear," said Martin Hestmark, acting office director for ecosystems protection and remediation at the EPA's regional office in Denver.

"We are going to set aside the whole Superfund listing in the interest of continuing to collaborate with you and the Animas River Stakeholders Group, as we have for the last 17 years," Hestmark said Thursday morning, April 19, in a meeting with town and county officials.

-- *Silverton Standard,* April 19, 2012

The Superfund listing and subsequent broken promises

Unfortunately, after the EPA set off the spill at Gold King, everything changed.

For the EPA, the spill offered the opportunity to get the Superfund listing it had always wanted at Silverton. As Chicago Mayor Rahm Emmanuel once said, "You never let a serious crisis go to waste. And what I mean by that is it's an opportunity to do things you think you could not do before." The EPA took that advice to heart in the wake of its Gold King spill.

From a public relations perspective, a Superfund designation offered the EPA the appearance of strong, decisive action. Images of orange water made the Silverton region look like a big problem that required a big solution – a solution that only Superfund could deliver. As the EPA's Regional Administrator said in the press release announcing the Superfund listing: "Listing the Bonita Peak Mining District on the National Priorities List is an important step that enables EPA to secure the necessary resources to investigate and address contamination concerns of San Juan and La Plata Counties, as well as other downstream communities in New Mexico, Utah, and the Navajo Nation."

For the local community as well, things had changed dramatically after the spill. Residents always feared the stigma the EPA might bring to the region with a

Superfund listing. Now, with the nation-wide notoriety surrounding the Gold King disaster, the EPA had brought that stigma to Silverton, in spades.

In its news release announcing the Superfund listing, the EPA promised, "[A]ll our affected communities (will) have a voice in the process as this moves forward." In their local lobbying for the Superfund designation after the spill, the EPA gave the community two key assurances. First, the town of Silverton would not be listed as part of the Superfund site, a promise reported in the local press:

> Thursday night was a pivotal turning point in that conversation, especially since the EPA and state officials said last week the Superfund boundary would not extend to the town limits of Silverton – a major concern from residents in years past.
>
> — *Durango Herald*, November 19, 2015

Second, both the town and the county would have a seat at the table going forward in making decisions. On the strength of those two assurances and facing pressure from some in the general public who did not have the necessary background to understand why a Superfund listing was such a poor fit given the area's facts and history, the Silverton Town Board and the San Juan County Commissioners endorsed a Superfund listing in February of 2016.

Regrettably, those promises to the community were broken quickly. In September of 2016, contrary to its previous assurances that the area designated as a Superfund site would not include the town of Silverton, the EPA listing included the town within the covered area! Recently, community officials have expressed concerns that the EPA is not living up to its promise to give the town and county a seat at the decision-making table. As reported in the *Silverton Standard:*

> Town officials are not happy with the EPA's 54-page draft Community Involvement Plan for the Bonita Peak Mining District Superfund Site.
>
> And Town Attorney Jeff Robbins has drafted a letter to EPA officials expressing concerns that conditions the town and county raised in their request for a Superfund listing in the wake of the Aug. 5, 2015 Gold King Mine spill have not been addressed.

> "I felt like it was not honest in addressing the points that were made in our letter to the governor (requesting Superfund listing) that this happen only on the condition that we have a fundamental seat at the decision-making table," Robbins said.
>
> Trustee Larry Gallegos pointed out that many local residents were concerned that after the big push for Superfund listing, interest would fade. "Now it's kind of gone away and we're being brushed under the table. It's what everyone in Silverton and San Juan County was worried about," Gallegos said. "We're just a member of the audience."
>
> Robbins suggested the town and county enlist the help of the governor's office and alert the governor that "this community involvement plan shows that promises are not being met."
>
> -- *Silverton Standard*, June 29, 2017

The Superfund listing process is contrary to the EPA's own rules

On September 9, 2016, the EPA added what it called the Bonita Peak Mining District (BPMD) area to the National Priority List (NPL) of Superfund designated listings in direct response to the Gold King spill it caused.

The BPMD is not a recognized mining district, but rather is a term used by the EPA to describe a huge and diverse geographical area covering more than 100,000 acres incorporating three separate drainages within San Juan County, Colorado. It specifically includes 46 different sites where mining has historically occurred, and two study areas.

Local property owners and others charge that the BPMD is far too big; it greatly exceeds the actual areas of concern with respect to water quality. Critically, the EPA also ignored its own statutory and regulatory mandates for identifying areas for listing according to the Hazard Ranking System (HRS).

The EPA created the HRS to ensure that potential sites were reviewed in an objective manner. The HRS is a mathematical model incorporating standard calculations to create a score for different sites in order to prioritize them and

assess whether or not they should be listed under Superfund. Generally, the EPA must score a site under the HRS before adding it to the NPL.

However, only 19 of the 46 mine sites and two study areas within the BPMD were scored using the HRS before being added to the NPL. Without authorization from Congress, the EPA simply added 27 non-scored sites and two study areas to the NPL.

Affected property owners, including one of the ARSG Coordinators, the National Mining Association, and the American Exploration & Mining Association, all represented by Mountain States Legal Foundation, argued in court that the failure of the EPA to use its own standard system to assess and evaluate sites for Superfund designation is unlawful:

> *Amici* object to the EPA's creation of this huge and mostly undefined Superfund site, and submit that the EPA's actions were an attempt to obscure and/or limit its own liability for triggering the massive Gold King release.
>
> -- Initial *Amicus Curiae* Brief of Frank J. Anesi

The EPA's plan: "just what many stakeholders feared"

For many who have been working for years to improve water quality in the Animas River – and who helped to make real progress on that path – it is frustrating to watch the EPA's plans unfold as it took over remediation in the wake of the spill.

Some believe the EPA is wrong to lump together a large number of sites (the so-called BPMD), instead of targeting the primary sources of pollution that are well-known given decades of study and observation.

William Simon, a founding member and Coordinator *Emeritus* of the ARSG, recently offered a public critique in the *Durango Herald*:

The Environmental Protection Agency recently released their plans to spend significant funds for simple fixes of the "low lying fruits" in the Animas River watershed. They are, unfortunately, just what many stakeholders feared if the EPA was allowed to take over much of the watershed as a Superfund site.

In their recent litigation petition to the U.S. Court of Appeals, D.C. Circuit, Sunnyside Gold Corporation and others, presented the case that the required evaluations and hazardous waste scoring of 27 of the 46 named sites, plus two study areas, was not accomplished.

Without basic site characterization, including identifying and quantifying the contaminants leaving the site, it is impossible to logically prioritize remediation efforts and evaluate results. For example, EPA's current plan to simply divert surface water away from mine waste is not a "no-brainer," as the EPA implies. One has to first determine if the mine waste is acting beneficially to sequester contaminants from the surface water or if it is a source of additional contamination.

The Animas River Stakeholders Group spent more than seven years characterizing over 400 historic mine sites within the Upper Animas Watershed. The ARSG determined that 33 draining mines and 34 mine waste sites were responsible for more than 90 percent of the metal contamination coming from mine sources. Those sites were identified, prioritized and chosen for remediation. With 40 percent of all funding coming from voluntary sources (property owners, mining companies, citizens groups and other ARSG participants), the low lying fruits of the remediation tree were picked first. This ensured that the 60 percent of funding provided by Colorado's Nonpoint Source Management Program 319 was justified and ultimately effective.

The ARSG received state, regional and federal awards for their collaborative accomplishments. The newly established fisheries in upper Mineral Creek and the headwaters of the Animas above Animas Forks are the result of proper characterization and strategic targeting to maximize measurable results.

If measurable improvements to water quality and aquatic habitat are important goals, then the EPA needs to put their money toward making major reductions in metal loading that can only be achieved by addressing the major draining mine sources located near Gladstone (*i.e.*, Gold King, Red and Bonita, American Tunnel and the Mogul mines).

We can now expect greatly reduced funding available for the nation's 1,300 Superfund sites. Instead of addressing the main problem, it appears the EPA's present plans will focus on spending millions of dollars on scattered minor contributing sources that will not lead to quantifiable improvements.

Exhibit C

> Why waste resources on projects that were determined long ago to have minimal impact on water quality and whose remediation will not achieve measurable results? The Gladstone draining mines are where the problem lies and where significant achievements can be attained.
>
> The EPA needs to redirect their funds from the less-significant "feel good" projects to those where measurable results can be achieved.
>
> -- *Durango Herald*, June 9, 2017

Others are catching on to the EPA's charade:

> (Peter) Butler (the ARSG co-ordinator) and Ty Churchwell, San Juan Mountains Coordinator for Trout Unlimited, a national nonprofit dedicated to conserving and protecting the state's coldwater fisheries and watersheds, think that if the EPA wants to make real headway when it comes to mine waste, those top offenders need to be addressed.
>
> The EPA, however, just isn't ready to tackle them. They're still collecting data and crunching the numbers.
>
> -- Durango Telegraph July 6, 2017

More risks and cost instead of positive remedial action

The EPA's plan to drill into the workings of the Sunnyside Mine – part of the designated BPMD that was not properly scored according to the HRS – has been cited as a further example of the agency diverting attention, resources, and funding away from addressing the known problem to undertake a costly and environmentally risky "science project" that will likely have little practical value.

By way of context, Sunnyside Gold Corporation (SGC) acquired the Sunnyside Mine in 1985 and operated it for five years from 1986 until 1991 using modern techniques and under the modern environmental regulatory scheme.

In 1996, SGC entered into a voluntary agreement with the State of Colorado to complete numerous activities in the district designed to improve water quality in

the Animas River. One element of the State-approved plan, which was reviewed by the EPA, was the installation of engineered concrete bulkheads with the primary purpose of isolating the interior workings of the Sunnyside mine, and to prevent water flow from the interior workings to the Animas Basin and surface connections. In 2003, SGC was released from liabilities after the work was inspected and approved by the relevant agencies.

Despite that there has been no demonstrated connection between the interior mine workings at Sunnyside and the Gold King mine or American Tunnel discharge, the EPA proposed a program of exploratory drilling into the mine workings.

In a letter to EPA Region 8, SGC expressed strong concerns regarding the risks, costs, and dubious value of this proposed project:

> Following the August 5 EPA/Gold King blowout, curiosity on the part of some within the EPA has been piqued regarding the interior mine workings, along with a desire to "fully characterize" the hydrology in the region – where the water is, where is it going, what is its quality? These same on the ground facts have existed for twenty years, yet every regulatory agency, including the EPA, has been completely comfortable with the remediation that the comprehensive bulkheading has provided. There has been no demonstrated release of a hazardous substance, and thus there is no justification for further action.
>
> To purportedly answer these "new" questions, some at the EPA are considering an expensive and unjustifiable drilling program. Drilling into the interior mine workings, however, would be unsafe. Accessing drilling locations with necessary equipment would be extremely difficult. The drilling terrain is steep, highly variable, and unstable. Identifying and then hitting a desired drilling target by drilling into the interior mine workings would be very difficult if not impossible. The interior mine workings consist of tunnels, shafts, adits, timber, voids, rock, water, cables, and innumerable other obstacles of unknown location, extent, or potential impact on drilling operations. Drilling into the interior mine workings would be environmentally destructive and counter-productive....(it) would be very costly, and that cost would far exceed any possible benefit that might somehow arise from this unwarranted activity.

> SGC presents these issues today in an effort to save both SGC and EPA significant time and money and allow EPA to focus resources on legitimate cleanup efforts that will actually improve water quality, rather than engaging in ill-conceived, unnecessary, dangerous, environmentally destructive, and expensive work at the American Tunnel, functioning bulkheads, or interior mine workings that is not a reasonable expenditure of limited funds or consistent with the National Contingency Plan.

SGC has also taken issue with the increasingly heavy-handed and threatening approach by the EPA in the post-spill Superfund site environment.

Previously, SGC had engaged voluntarily in investigatory work in complete cooperation with the EPA, but now the EPA demanded that future work be done under an Administrative Order of Consent (AOC).

EPA's AOC, which has built-in inefficiencies, burdens, and costs, forced the company to carry out sampling work – the same work that the company has undertaken for years voluntarily. SGC Reclamation Manager Larry Perino expressed his views in a terse response to the EPA Region 8:

> In light of the years of investigations that SGC has voluntarily undertaken at Mayflower in complete cooperation with EPA without an AOC, SGC views the AOC as superfluous and wasteful. We very much regret that EPA has chosen to exercise its vast coercive power to insist upon an AOC.

Liability fears take precedence over improving water quality?

The EPA's actions since designating the Superfund site have spawned fears that, in the wake of the spill, liability or other concerns at the agency have overridden its fundamental mandate to protect regional water quality.

Following the spill, the EPA constructed a water treatment plant to treat water coming from Gold King. The treatment plant was built in precisely the area where metal-laden water from the portal of American Tunnel was draining out. Even though the agency was aware that water from the portal of the Bureau of Land

Management owned American Tunnel was a contributor to water quality issues, it initially chose to divert water from the American Tunnel around the new water treatment plant, which allowed it to flow directly into Cement Creek (see photo below).

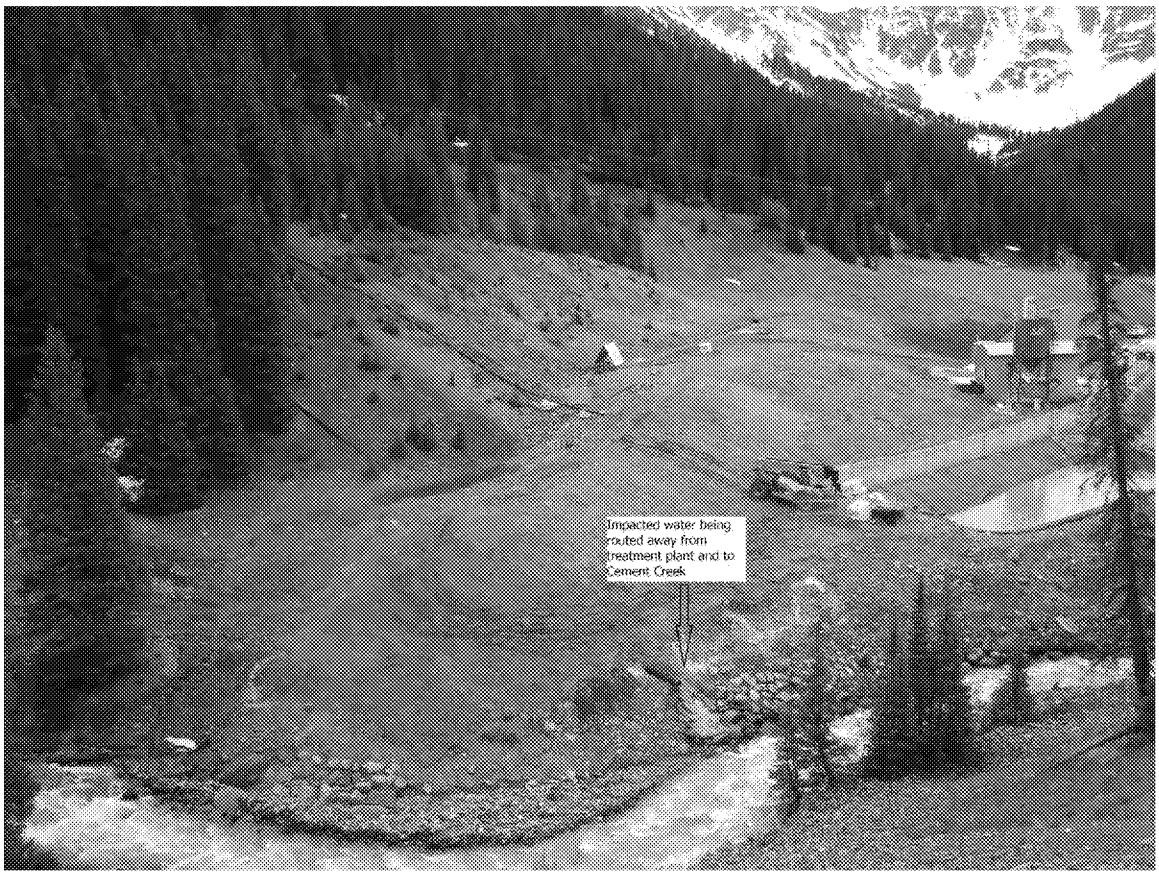

Photo dated June 9, 2016. The EPA's temporary water treatment plant is on the right. Water from BLM's American tunnel portal has been diverted away from the plant and can be seen at the bottom flowing from a pipe into Cement Creek.

It is unclear why the EPA chose not to treat water it knew to be a source of pollution. One explanation is that the agency wanted to restrict treatment to water from Gold King and to avoid responsibility for any source not directly connected to the EPA's August 5, 2015, spill.

Exhibit C

Subsequently, the EPA appeared to have changed its course, and redirected the American Tunnel discharge through the treatment plant (see photo below).

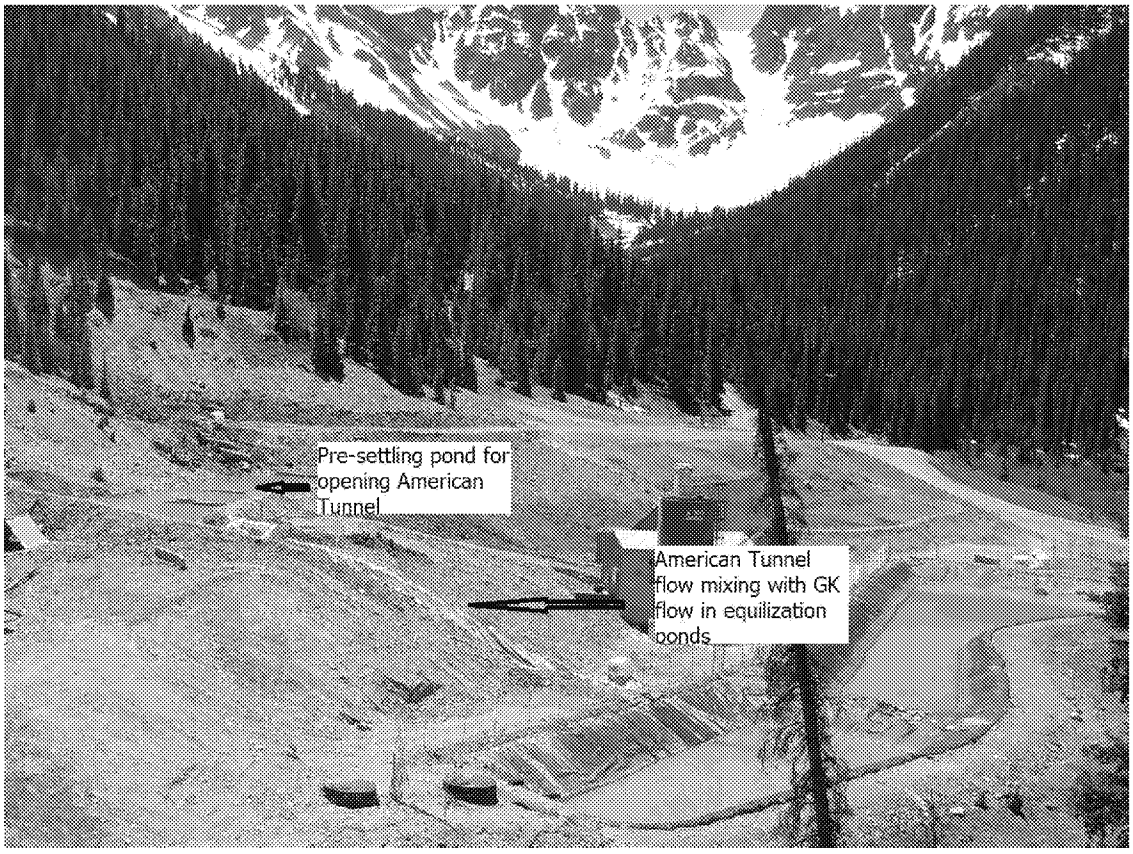

Photo dated June 16, 2017. Water from BLM's American Tunnel portal is now flowing into the EPA treatment plant.

Interestingly, not all officials at the EPA were aware of the change.

At an EPA presentation on June 20, 2017, at the Town Hall in Silverton, when directly asked if water from the American Tunnel was being treated at the treatment plant, a key Region 8 official responded that it was not.

Exhibit C

An end to the "Good Samaritan" initiative

A significant and unfortunate casualty of the Gold King spill and subsequent Superfund designation has been the San Juan Clean Water Coalition's initiative to pass pilot regional "Good Samaritan" legislation.

Southwest Colorado has thousands of abandoned mines as a result of its extensive mining history. Hundreds of miles of rivers and streams in the region have water quality problems because of acidity and dissolved metal loading coming from abandoned mines.

Numerous community, watershed, and conservation groups are interested in assisting with the cleanup of these impacted streams; however, current laws and regulations create a disincentive for groups that had no role in the original mining activity to participate in the cleanup of these abandoned mines.

Shortly before the Gold King spill, a coalition of groups lead by Trout Unlimited formed the San Juan Clean Water Coalition to support pilot federal legislation to remove the liability barriers that frustrate those who want to cleanup abandoned mines. The group supported site-specific legislation for the San Juan Mountains region of Southwestern Colorado that provides for liability relief for abandoned mine cleanups and an alternative to expensive, stigmatizing Superfund listings. In a letter to Senator Gardner dated June 10, 2015, the San Juan County Commissioners pleaded: "San Juan County would like to express our strong support for legislation that could greatly assist in cleaning up abandoned hardrock mines in the San Juan Mountains. . . . We would request that you consider limiting the scope… to provide a pilot program within the San Juan Mountains."

The initiative was seen as a local, small-scale pilot project that might succeed where efforts at passing nation-wide Good Samaritan mine cleanup legislation had failed.

The Coalition was making good progress with key Congressmen supporting the legislation, and it was seen as having good odds of passing.

Regrettably, the August 5, 2015, spill and subsequent designation of the Superfund site halted this pilot Good Samaritan initiative, and the model it might have provided for passing similar "common sense" legislation on a national basis. While Congressmen from Colorado are now pressing for nation-wide Good Samaritan legislation, the opportunity for the pilot bill was lost due to the EPA's actions.

3. The Path Forward

New leadership signals new opportunity

The sad record of the EPA in the wake of its Gold King spill exemplifies many of the worst features that have characterized the agency for decades.

The good news is that change has arrived.

Administrator Pruitt has pledged a new direction for the agency, and for Superfund. His philosophy is very much aligned with the sort of reforms that are needed at the BPMD Superfund site, and his comments to date regarding the Gold King spill clearly show he understands that the agency needs to do a much a better job removing this blot from its record.

A key source of optimism is Administrator Pruitt's core belief in federalism:

> "Process, rule of law, and cooperative federalism, that is going to be the heart of how we do business at the EPA," Pruitt said.
>
> In his role as EPA administrator, Pruitt said that he would work to restore the role of the states. "What really matters a lot is federalism," the former Oklahoma attorney general said.

> "We are going to once again pay attention to states across this country. I believe the people in Oklahoma, in Texas, Indiana, Ohio, New York, and California and all the states across the country ... care about the air they breathe and they care about the water they drink and we are going to be partners with those individuals, not adversaries."
>
> -- *The Daily Signal,* February 25, 2017

Before the Gold King spill, the path to better water quality in the Animas River had been well-defined – and to a large extent, accomplished – at a state and local level. The EPA had delegated the Clean Water Act program to the State of Colorado with its approval of the State Implementation Plan. In addition, in 1996, with the EPA's blessing, the State entered into a Consent Decree with SGC under which the company performed extensive mine closure and remediation work, and committed to ongoing remediation activities as part of the ARSG, in exchange for release from liabilities. Moreover, since its formation in 1994, the ARSG has made significant progress in remediating the area and created a solid, practical, workable plan for finishing the job. In the spirit of federalism, and re-empowering state and local authorities, the EPA needs to return to that well-defined path, defer to the State of Colorado, and re-engage meaningfully with the ARSG.

Administrator Pruitt has outlined his plan "to properly prioritize the Superfund program that citizens count on to revitalize their communities." The plan includes establishment of a task force "to provide recommendations on an expedited time frame on how the agency can restructure the cleanup process, realign incentives of all involved parties to promote expeditious remediation, reduce the burden on cooperating parties, incentivize parties to remediate sites, encourage private investment in cleanups and sites, and promote the revitalization of properties across the country."

The stage is set for a new direction at the EPA and for Superfund. Given the high profile and controversy surrounding the Gold King spill and subsequent Superfund

designation, Coloradoans, westerners, and the American people will be watching the EPA to see if it can put its new approach into action at the site of its most infamous debacle.

By taking the following steps, the EPA could rebuild its damaged relationships with residents and visitors affected by the spill, re-establish the Superfund site at Gold King consistent with federal law, win back the trust of local partners, and, most importantly, accomplish its critical core task of restoring water quality in the Animas River as quickly and as cost-effectively as possible.

Focus on fixing known problems

Administrator Pruitt has specifically cited a number of Superfund sites that have dragged on for far too long without resolution. "It is important to me and the agency that we show progress on Superfund. We have not shown progress in many years at many sites and it is important that we change that direction," he said in his recent responses to the Senate Appropriations subcommittee on the EPA budget.

While it is relatively early at the BPMD Superfund site, there are troubling signs that it could become another example of an endless bureaucratic make-work project. The site manager has been quoted as saying that a "sitewide remedy" "could take twenty years" and that it will be a "very long term project." Earlier this week, she stated, "this mining district will be the source of many forthcoming papers and a lot of research." This is not acceptable to anyone, other than federal bureaucrats.

There are several key ways in which the EPA can change this course at the BPMD Superfund site to help expedite progress, in line with the new direction announced by Administrator Pruitt.

Unfortunately, rather than focus on the problem areas that years of study have shown are causing water quality issues in the Animas River, the EPA takes the view that "bigger is better" and has listed a vast area as a Superfund site. Further, in its haste to define the area, the agency did not use its own HRS under which sites must be prioritized before being listed, and included many sites that had not been scored.

This victimizes property owners whose sites were unfairly listed and are now stigmatized with a Superfund designation. It is also highly inefficient as it dilutes remediation efforts with the distraction of sites that have no impact whatsoever on water quality, or rank as low priorities. The EPA should limit the scope of the Superfund listing to HRS scored sites in order to focus efficiently on the major sources of poor water quality.

The EPA also needs to put an end to conducting additional time-consuming studies that are redundant or unnecessary given the decades of study that have already been conducted. To repeat the words of ARSG Coordinator *Emeritus* Bill Simon:

> "The Animas River Stakeholders Group spent more than seven years characterizing over 400 historic mine sites within the Upper Animas Watershed. The ARSG determined that 33 draining mines and 34 mine waste sites were responsible for more than 90 percent of the metal contamination coming from mine sources. Those sites were identified, prioritized and chosen for remediation."

The focus of work should be on the main adits that have been identified by the ARSG as the source of water quality problems. These can be addressed with existing knowledge, and, in fact, would have been addressed already according to the ARSG work plan that was in place prior to the EPA spill.

Settle the litigation

At a recent Senate Appropriations subcommittee hearing to consider the EPA's budget request, Scott Pruitt testified: "I'm not sure the agency has taken full responsibility. I think the agency's response to the Gold King spill, where it's shirked in my estimation, its response to help compensate claimants that were impacted or injured."

In keeping with this view, the EPA needs to take responsibility for damages the EPA inflicted and focus on reaching reasonable and fair settlements in the New Mexico and Navajo suits. It is not only the right thing to do, but it will also save money, time, and resources that would be expended continuing to fight court cases rather than focusing on the main task of remediation.

Obtain adequate funding

Administrator Pruitt has called attention to Superfund sites that have languished due to neglect and in many cases lack of funding. He has also testified, "It's important for the agency to do more than what it's done with respect to the Gold King situation and I'm committing to you that we will do that."

Getting the job done at Gold King depends on getting the funding needed to do it. A delegation of local officials recently traveled to Washington to lobby to ensure the funding is there for the cleanup. As one member of the delegation, San Juan County Commissioner Scott Fetchenhier, said:

> We don't want it (the Superfund effort) drawn out for 20 or 30 years. This is a golden opportunity for the EPA to polish a tarnished image. If this is Superfund it needs to be funded."
>
> After the Gold King spill we were assured by the EPA during Superfund

> negotiations that the project to clean up the upper Animas watershed would be fully funded—it was one of the main reasons we were willing to endorse the Bonita Peak Mining District Superfund process in Silverton. There really is no point in declaring a Superfund site if you aren't going to fund it.
>
> ---quoted in *Silverton Standard*, June 22, 2017.

Among funding sources, the EPA should include obtaining monies from the Bureau of Land Management and the United States Forest Service, the owners of several of the HRS scored sites as well as other vast tracts of land in the region. The U.S. Court of Appeals for the Tenth Circuit recently held that, under the Superfund statute, the United States, as a landowner, "is strictly liable for its equitable portion of the costs necessary to remediate the contamination arising from mining activity on federal land." *Chevron Mining Inc. v. United States*, 2017 WL 3045887 (July 19, 2017). The decision made clear that the federal government, as a landowner, has a legal obligation to contribute to clean up efforts and not simply cast about for others to blame for the results of historic mining. Mountain States Legal Foundation submitted an *amicus* brief in the case urging that result on behalf of the American Exploration & Mining Association and the Colorado Mining Association.

The EPA should also attempt to reach settlement with SGC and obtain some monies from SGC to put toward remediation, rather than fight in court over dubious potential liability. SGC's relatively brief five years of mining in the Silverton Caldera is plainly not the cause of water quality problems in the Animas River, and SGC was released from liabilities by the State of Colorado in 2003.

While it is critical that funding is available to do the work, it is just as critical that the funds are applied on a cost benefit basis, and not a penny is wasted on questionable projects, like some of those currently contemplated. That means taking advantage of the expert groundwork already laid by the ARSG by focusing on the real problems. Specifically, it means treating the water flowing from the main adits that,

after years of study, have been identified as the key sources of water quality issues in the Animas River.

Impose accountability

With almost two years having passed since the EPA's spill, and multiple investigations into the matter having been concluded, the time has come for appropriate actions to be taken against the EPA personnel and contractors who are culpable. This is only proper, and it will set an example and send the message that no federal agency and its employees are above the law.

4. Conclusion

This is a timely opportunity for the EPA to demonstrate its new direction at the BPMD Superfund site.

By implementing the measures suggested above, the EPA can demonstrate a more efficient, focused, and cooperative approach to Superfund.

These measures will allow the agency to address the water quality issues more quickly, more efficiently, and at a lower cost. They will help repair strained relationships with key stakeholders. Finally, they will show the spirit of federalism in action by re-engaging in a more cooperative and truly inclusive way with state and local officials and residents.

The Gold King spill may go down as the most publicly humiliating mistake in the history of the EPA. The agency's additional mistakes over the past two years have kept that sad story in the news, providing the media with a steady supply of new negative twists and angry reactions from community members and politicians.

Exhibit C

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Now, new EPA leadership has been provided the opportunity to turn the Gold King story around. With a few fundamental changes, the agency can showcase its new direction for Superfund at one of its most high-profile and controversial sites.

It is time to stop the rolling disaster. Begin now.

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As president of Mountain States Legal Foundation, he has argued cases before the Supreme Court of the United States as well as various federal courts of appeals; he won what *Time* called a "legal earthquake" when the Supreme Court ruled in his favor in the historic *Adarand* (equal protection) case. His monthly column, *Summary Judgment*, appears throughout the country. He is the author of five books: *It Takes A Hero* (1994); *War on the West* (1995); *Warriors for the West* (2006); *Sagebrush Rebel* (2013), and *Summary Judgment* (2015). He is admitted to practice law in Colorado, Washington, D.C., Virginia, and Wyoming.

Exhibit C