March 8, 2016

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VIA U.S. MAIL AND ELECTRONIC SUBMISSION

RE: Crevice Mining Group Exploration Project

Dear Ms. Lane:

Earthjustice submits these comments on behalf of the Yellowstone Gateway Business Coalition, Park County Environmental Council, Greater Yellowstone Coalition, and National Parks Conservation Association regarding the Montana Department of Environmental Quality's ("DEQ's") Scoping Notice for Crevice Mining Group, LLC's Exploration Application and Plan of Operations (January 29, 2016) ("Scoping Notice"). The organizations and their thousands of members in Montana urge DEQ to engage in a full environmental review of the proposed mineral exploration on Crevice Mountain overlooking Yellowstone National Park, one of our country's most iconic places.

I. BACKGROUND

DEQ must be guided in its review of the Crevice Mining Project (alternately "Crevice Mine", "mine", or "project") by the Montana constitution and the Montana Environmental Policy Act ("MEPA"), Mont. Code Ann. §§ 75-1-201 et seq. Montana's Constitution guarantees "the right to a clean and healthful environment" and provides that "[t]he State and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations." Mont. Const., art. II, § 3, art. IX, § 1. The Montana legislature identified MEPA as one necessary tool for implementing the state's constitutional obligation to prevent unreasonable environmental degradation. See Mont. Sess. Laws 2003, ch. 361, § 5 (HB 437). While MEPA mandates procedures rather than particular outcomes, "[t]he Legislature enacted MEPA to prevent or eliminate environmental damage." Pompeys Pillar Historical Ass'n v. Mont. Dep't of Envtl. Quality, 2002 MT 352, ¶ 17, 313 Mont. 401, 61 P.3d 148. "MEPA requires that an agency be informed when it balances preservation against utilization of our natural resources and trust lands. The [state decisionmaker] may not … reach a decision without first engaging in the requisite significant impacts analysis." Ravalli County Fish & Game Ass'n v. Mont. Dep't of State Lands, 273 Mont. 371, 384, 903 P. 2d 1362, 1371 (1995).

MEPA requires DEQ to analyze and disclose the environmental consequences of its proposed actions before decisions are made. MEPA uses the scoping process to "identify the issues related to the proposed action that are likely to involve significant impacts" so that the agency's review can focus on "those issues and resources that are considered most important." MEPA Model Rule VII(b)(2); A Guide to the Montana Environmental Policy Act, 47 (June 2015) ["MEPA Guide"]. See also MCA § 75-1-220(7). The Scoping Notice indicates that DEQ will conduct an Environmental Assessment ("EA") for the Crevice Mine. But an EA would be inappropriate here, where Crevice Mining Group ("CMG") has submitted its application as the first step of a planned wide-ranging, multi-year effort to explore and extract approximately 1 million ounces of gold (or more) from underneath Crevice Mountain. CMG's proposal covers a large area of private land, and has not foreclosed the option of expanding the scope of its project onto adjoining public land. Furthermore, as this letter explains, the project may significantly harm wildlife, wilderness, roadless areas, existing county roads, cultural and historical resources, water quality, the local economy, and other key resources.

On the basis of MEPA, Montana's Constitution, and the State's prior commitments, we respectfully encourage DEQ to draft an environmental impact statement ("EIS") for the Crevice Mine that thoroughly evaluates the substantial cumulative environmental costs of this mine and enables the agencies to fulfill their public trust responsibilities to ensure that the proposal is consistent with the well-being of present Montanans and future generations.

II. YELLOWSTONE NATIONAL PARK AND THE CREVICE MINE

Crevice Mining Group intends to undertake extensive mineral exploration on Crevice Mountain, in a series of private inholdings abutting the Custer-Gallatin National Forest, three miles from the town of Jardine, Montana. This historic mining district lies within the viewshed of—and, as the crow flies, less than one mile from—Yellowstone National Park. Standing at the historic archway in the town of Gardiner and looking to the northeast, one would be able to see the surface operations, facilities, and lights identifying the Mine's entry portal. Grizzly bears that rely on this important linkage habitat between Yellowstone National Park and the Beartooth Plateau would be required either to select less secure routes, or to pick their way around waste rock storage areas, over topsoil stockpiles, across a new widened access road, and along the banks of the Mine's proposed settling pond. Local residents would contend with significantly increased traffic on roads uniquely ill-suited to modern mining equipment. Elk herds would contend with additional truck traffic while seeking forage in an important habitat corridor. Nearly 100,000 tons of waste rock containing elevated arsenic levels will be placed in the project area near the headwaters of numerous small feeder tributaries to the Yellowstone River. CMG anticipates, though tries to downplay, that it will encounter significant quantities of groundwater necessitating discharge to the surface. These foregoing impacts will result directly from the exploratory drilling proposed, without accounting for the larger gold district that CMG reasonably believes it can access after completing exploration.

Although CMG repeatedly contends that the proposed exploration project may not result in additional mining activity, it has secured a Small Miner's Exclusion Statement ("SMES") from DEQ. The SMES exempts CMG from permit requirements over a 5-acre swath of land and will allow CMG to "invest in and construct" mining and associated facilities in the 5-acre envelope during exploration so that "mining may commence" as soon as the exploratory phase concludes. See Crevice Mining Group LLC, Plan of Operations: Exploration Program, Crevice Mining Project, 2 (Oct. 16, 2015) ["Plan of Operations"]. CMG intends to conduct its mining activities under the SMES. Id. Thus, the company intends to build mining infrastructure in anticipation that its exploration will confirm economically-viable mineral deposits.

According to one of its consultants, "it is not unreasonable to expect this resource [currently held by CMG]…could easily exceed 1 million ounces." Plan of Operations, Appendix A-2, A. Branham, Geology of the Crevice Mountain Gold Mine, Park County, Montana, § 5.12 (July 16, 2015) ["Branham Study"]. CMG's consultant has suggested that the company should acquire mineral rights over neighboring "geophysical anomalies" in the immediate area that suggest other rich gold veins, as "they represent the opportunity to grow this project into a multimillion ounce gold district." Branham Study, § 5.12.[1]

Based on the direct impacts to the environment from the project, as well as the foreseeable collective and cumulative impacts of CMG's broader scope, DEQ must investigate not only the narrow range of impacts of the present proposal but also the more lasting impacts of the project's natural outgrowth.

III. THE CUMULATIVE IMPACTS OF THE CREVICE MINE PROJECT EXTEND FAR BEYOND THE LIMITED SCOPE OF INITIAL EXPLORATION

A. MEPA Requires DEQ to Evaluate Cumulative Past, Present, and Future Actions Related to the Crevice Mine

DEQ's regulations mandate that the agency examine the mine's primary, secondary, and cumulative impacts when appropriate. MCA § 75-1-208(11); ARM 17.4.617(4)(b). An analysis of cumulative impacts should evaluate the proposed action's "collective impacts on the human environment…when considered in conjunction with other [related] past, present, and future actions." MCA § 75-1-220(4). DEQ therefore has the duty to evaluate a foreseeable cumulative impacts flowing from CMG's proposal; in short, it cannot review the project in a vacuum.

[1] To place the scope of this proposed 1 million ounce gold mine on Yellowstone's northern border in context, the New World Mine near Cooke City, shuttered after then-President Clinton declared that Yellowstone is "'more precious than gold'" would have produced approximately 2 million ounces of gold. See John Broder, "Clinton unveils deal to stop Yellowstone mine" Los Angeles Times (Aug. 13, 1996), available at: http://articles.latimes.com/1996-08-13/news/mn-33893_1_yellowstone-mine; Eric Torbenson, "Crown Butte executive defends Yellowstone mine controversy aired before friendly audience at mine conference" The Spokesman-Review (Dec. 8, 1995), available at: http://www.spokesman.com/stories/1995/dec/08/crown-butte-executive-defends-yellowstone-mine/.

Here, CMG's Plan of Operations, if approved, would trigger numerous foreseeable future activities which collectively would increase the level of impacts likely to result from the Crevice Mine Project. In addition, it builds upon a series of actions undertaken two decades ago, the results of which still resonate today.

B. DEQ Must Account for Ongoing Environmental Impacts from TVX's 1996 Crevice Tunnel Project

In the 1990s, TVX-Mineral Hill Mine Inc. ("TVX's") underwent an EA to evaluate impacts to its proposed "Upper Crevice Project", or the Crevice Tunnel Project. TVX planned to drill a 13,000-foot long tunnel from Mineral Hill to the Conrad zone on Crevice Mountain to access the gold reserves under Crevice Mountain. See TVX Mineral Hill Mine Inc., Expl. Lic. No. 00559, Crevice Tunnel Exploration Project Environmental Assessment, 6 (Aug. 25, 1994) ["Crevice Tunnel Project EA"] (attached as Exhibit 1). Once TVX received DEQ approval, it began tunneling toward the ore body that CMG intends to explore in the present project. However, TVX encountered so much "unexpected" groundwater along the Palmer fault that it was forced to abandon the project. Branham Study § 5.2. Groundwater flows from the Crevice Tunnel Project required significant mitigation which may continue indefinitely, and also may have contributed to impacts to surface water quality.

CMG ties the current proposal to the Crevice Tunnel Project, calling it "similar in scope" to TVX's previous attempt to access the Conrad zone under Crevice Mountain. Plan of Operations, 1. In fact, the two projects share more than just an interest in gold veins under Crevice Mountain. As discussed infra, CMG has copied most of TVX's proposed mitigation measures. See infra Part IV.E. It also has minimized, as did TVX, the possibility of encountering significant quantities of groundwater. See Plan of Operations, 2 ("[I]t is anticipated that little, if any, underground water will be encountered"); Crevice Tunnel Project EA, 9 ("Little groundwater in-flow to the tunnel is anticipated"). Moreover, the TVX proposal and CMG's current proposal both confront the "narrow and erratic nature of the sheared vein zones" that make it difficult to accurately access gold from the Conrad zone. Branham Study, § 5.12. Those same erratic faults erroneously led TVX to drill directly into the Palmer fault and release [insert quantity] gallons per minute into the tunnel shaft, halting operations. Yet CMG's Plan of Operations appears to have taken few precautions based on past exploration missteps. See infra Part IV.B.1-2. Further, CMG distances itself from TVX's Crevice Tunnel Project when evaluating possible impacts, or drawing conclusions on foreseeable dangers based on past related projects.[2]

[2] Indeed, CMG's manager, Michael Warner, was chief operating officer of TVX during TVX's Crevice Tunnel Project, and has publicly claimed to have "'authorized the majority of the drilling that's been done on Crevice'" during his tenure with TVX. Michael Wright, "Public comment opens on gold search near YNP border" Bozeman Daily Chronicle (Feb. 7, 2016), available at: http://www.bozemandailychronicle.com/news/environment/public-comment-opens-on-gold-search-near-ynp-border/article_11cc36b9-0661-5f2e-a016-e176d782a821.html.

DEQ must therefore account for ongoing impacts from the Crevice Tunnel Project, and evaluate the possible additive impacts that CMG's exploration may cause to the area.

C. DEQ Must Examine the Impacts of a Multi-Million Ounce Gold Mine on Yellowstone National Park's Northern Boundary If Exploration Uncovers Economically-Viable Ore

DEQ has a duty to evaluate foreseeable future interrelated actions. According to CMG's mining consultant, "exploration potential of the Crevice Mountain project is very good," and the "current 'resource' defined by TVX [CMG's predecessor in the Crevice Mining District] is said to be just over 490,000 ounces" based only on surface samplings taken near the present project site as well as historic workings. Branham Study § 5.12. Furthermore, with new technology available since 1996 (when a similar project last received DEQ approval), "it is not unreasonable to expect [that] this resource…could easily exceed 1 million ounces." Moreover, additional work by TVX and other explorations in the immediate area "suggest other gold veins are likely present" and that "the mineral rights over these anomalies should be acquired as they represent the opportunity to grow this project into a multimillion ounce gold district." Id.

Based on drilling conducted in 1993-1996, CMG plans to drill in the Conrad zone, which "currently is the most attractive gold zone" for exploration. Branham Study § 5.12; see also id. § 5.2. In 1994 TVX conducted drilling in the Conrad zone and subsequently proposed to drive an underground tunnel two miles to access the vein. Id. While TVX abandoned the project because it encountered some "unexpected high water flow zones" at the Palmer fault intersection, id.; see also Plan of Operations, 22, the attraction of potential ore bodies in Conrad zone has convinced CMG to renew the effort.

Tellingly, the "challenge at Crevice Mountain is not to find additional gold, but to actually develop the mining techniques that can economically extract the gold from the Conrad zone…the narrow and erratic nature of the sheared vein zones/strands and the lack of water to process the ore limited development in the 1900s and is still the challenge today." Branham Study, § 5.12. Therefore, "once the mining of the current deposit is defined to be profitable, then exploration could proceed to expand the resources of the [Crevice Mountain] district to well over 1 million ounces." Branham Study, § 5.12. Barring technological challenges, the proposed exploration will trigger development of a significant gold mining district.

Thus, CMG's proposed exploration is the necessary pre-condition for sizeable future mining activity in the district, and will set off a foreseeable cascade of direct and indirect present and future impacts that DEQ must analyze in its environmental review, including: establishment and expansion of the Crevice Mountain mining district; accompanying mine traffic; social and economic impacts; air quality impacts due to increased traffic, equipment use, drilling, and related mining activities; water quality impacts to a tributary to the Yellowstone River due to acid mine drainage; impacts to wildlife; and remediation challenges.

IV. DEQ MUST THOROUGHLY EXAMINE IMPACTS FROM PROPOSED OPERATIONS

A. DEQ Must Examine Impacts to Wildlife Migratory Routes, Habitat, Food Sources, and Other Relevant Factors

Despite deep impacts from a century of human mining activity in the Crevice Mountain district, the area still manages to provide important habitat and migration corridors linking numerous species living in Yellowstone Park – including but not limited to wolverine and elk – to suitable habitat in the Beartooth Mountains. The grizzly bear (*Ursus arctos horribilis*) and the Canada lynx (*Lynx canadensis*) ("lynx") also rely heavily on the area for both critical habitat and passage out of Yellowstone Park. Both are listed as threatened species under the federal Endangered Species Act. 50 C.F.R. § 17.11(h).

CMG's Plan of Operations indicates scant consideration of potential harm to members of the two federally-listed species, and only provides for very limited mitigation measures to prevent harm to any wildlife. See Plan of Operations, 37-38 (listing measures primarily designed to reduce human-wildlife interactions, including imposing speed limits on access roads; restricting firearms; and placing bear-proof garbage cans). These generalized measures do not demonstrate whether CMG will actually mitigate any confrontations, or whether the environmental impacts of the mine may have an effect on landscape functions, habitat suitability, cover and protection, and water or forage availability.

Without more, DEQ has insufficient information to approve the Plan of Operations unless it conducts a full EIS.

1. Grizzly Bears

The Greater Yellowstone Ecosystem—including Yellowstone and Grand Teton National Parks and surrounding forest lands—is one of the few remaining strongholds for grizzly bears in the lower-48 states. Yet with an estimated population of only 757 bears,[3] and whitebark pine—one of the Yellowstone grizzly's most important food sources—dwindling, active conservation measures are essential to the population's continued survival and recovery. The importance of occupied grizzly bear habitat in the area of CMG's proposed exploration project constitutes an extraordinary circumstance necessitating full MEPA review.

CMG's Plan of Operations envisions increased motorized intrusion into grizzly bear habitat. The planned exploration all will take place within the current grizzly bear recovery area and the primary conservation area ("PCA") identified by the Yellowstone-area grizzly bear

[3] See F.T. vanManen, et al, eds., Yellowstone Grizzly Bear Investigations, 2014 Annual Report of the Interagency Grizzly Bear Study Team, at 16 (2015).

Conservation Strategy.[4] The initial exploration will require significant improvements to and increase the use of existing roads, and expand human presence within occupied grizzly bear habitat. See Plan of Operations, 4.

Human-caused mortality—including hunter self-defense, poaching, and agency removal of bears involved in conflicts—is the principal cause of grizzly bear deaths in the Greater Yellowstone region. See Final Rule Designating the Greater Yellowstone Area Population of Grizzly Bears as a Distinct Population Segment; Removing the Yellowstone Distinct Population Segment of Grizzly Bears From the Federal List of Endangered and Threatened Wildlife, 72 Fed. Reg. 14,866, 14,920-22 (March 29, 2007).[5] To avoid conflicts that most commonly lead to such mortality, grizzly bears require secure habitat that minimize opportunities for human encounters.

As a general principle, "grizzly bear survival is positively related to remoteness from humans." Troy Merrill & David Mattson, The Extent and Location of Habitat Biophysically Suitable for Grizzly Bears in the Yellowstone Region, 14 Ursus 171 (2003) (attached as Exhibit 2). Indeed, researchers have found that, in the Greater Yellowstone Ecosystem, "survival of independent (age ≥ 2 yr) grizzly bears [is] best explained by the level of human development of the landscape within the home range of bears." Charles C. Schwartz et al., Hazards Affecting Grizzly Bear Survival in the Greater Yellowstone Ecosystem, 74 J. Wildlife Mgmt. 654, 654 (2010) (attached as Exhibit 3). According to the Conservation Strategy, "[m]otorized access is one of the most influential factors affecting grizzly bear use of habitats." Conservation Strategy, 43.

Roads in particular are known to have a significant negative effect on grizzly bears through a variety of mechanisms, and generally speaking, "[b]ears living in roadless areas ha[ve] higher predicted survival." Charles C. Schwartz et al., Impacts of Rural Development on Yellowstone Wildlife: Linking Grizzly Bear *Ursus arctos* Demographics with Projected Residential Growth, 18 Wildlife Biology 246, 249 (2012) (attached as Exhibit 4).[6] Roads fragment habitat and populations, elicit behavioral changes in grizzly bears (e.g., grizzlies may avoid preferred

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[4] Interagency Conservation Strategy Team, Final Conservation Strategy for the Grizzly Bear in the Greater Yellowstone Area (2007) ["Conservation Strategy"]. The Conservation Strategy was developed by an interagency team that included the Forest Service to guide Yellowstone grizzly bear management and habitat conservation following eventual removal of the grizzly from the federal list of threatened species. Because Yellowstone grizzly bears remain listed under the Endangered Species Act, the Conservation Strategy is not currently in effect; however, it identifies the minimum standards that the agencies have agreed are necessary to conserve the population into the future.

[5] Although the U.S. Fish and Wildlife Service eliminated Endangered Species Act protections for Yellowstone grizzly bears in 2007, those protections were restored in 2009 by a court order finding that the action was unlawful. See Greater Yellowstone Coal. v. Servheen, 672 F. Supp. 2d 1105 (D. Mont. 2009), affirmed 665 F.3d 1015, 1029 (9th Cir. 2011).

[6] See also John Boulanger et al., Use of Multi-State Models to Explore Relationships Between Changes in Body Condition, Habitat and Survival of Grizzly Bears *Ursus arctos horribilis*, 19 Wildlife Biology 274, 278 (2013) ("the presence of roads strongly affect[s grizzly bear] survival") (attached as Exhibit 5).

feeding areas near roads or expend extra energy avoiding roads), result in indirect mortality such as vehicle collisions, and lead to direct mortality through increased poaching and self-defense killings. See D.J. Mattson et al., The Effects of Developments and Primary Roads on Grizzly Bear Habitat Use in Yellowstone National Park, Wyoming, 7 Seventh Int'l Conf. Bear Research & Mgmt. 259 (1987) (excerpt attached as Exhibit 6).[7] In the Greater Yellowstone Ecosystem, grizzly bear "[s]urvival … decline[s] as road density, number of homes, and site developments increase[s]." Schwartz et al. (2010), 654.

Neither the Plan of Operations nor the scoping notice discusses how the direct, indirect, and cumulative effects of proposed exploration activity would impact grizzly bears. Such analysis is necessary under MEPA; moreover, the need for such consideration in light of the documented grizzly bear presence and importance of grizzly bear habitat that will be adversely affected by the proposed exploration constitutes an extraordinary circumstance that makes reliance on an EA inappropriate.

2. Wolverine

The wolverine, *Gulo gulo*, is the largest member of the weasel family. This rare and elusive animal "select[s] high elevation habitats where deep snow exists during winter, the growing season is brief, and food resources are relatively limited." Robert M. Inman et al., Spatial Ecology of Wolverines at the Southern Periphery of Distribution, 76 J. Wildlife Mgmt. 778, 789 (2012) (attached as Exhibit 12). In order to successfully exploit such unproductive environments, wolverines require large home ranges with low levels of competition. Id.

The wolverine has a circumpolar distribution, and primarily occupies boreal and tundra ecosystems in North America, Europe, and Asia. Wolverines once ranged across the entire northernmost tier of the United States, from Maine to Washington, and in the Rocky Mountains as far south as Arizona and New Mexico. Today, the last wolverine populations in the lower 48 states exist only in the Northern Rocky Mountain regions of Idaho, Montana, and Wyoming; the Cascade Mountains of Washington; and a single mountainous region of eastern Oregon. Wolverine populations in the conterminous United States are small and isolated as a result of naturally fragmented habitat and infrequent immigration. Kerry Murphy et al., Wolverine Conservation in Yellowstone National Park: Final Report 1 (March 2011a) (attached as Exhibit 13).

[7] See also B.N. McLellan & D.M. Shackleton, Grizzly Bears and Resource-Extraction Industries: Effects of Roads on Behaviour, Habitat Use and Demography, 25 J. Applied Ecology 451 (1988) (attached as Exhibit 7); Bruce N. McLellan, Relationships Between Human Industrial Activity and Grizzly Bears, 8 Eighth Int'l Conf. Bear Research & Mgmt. 57 (1990) (attached as Exhibit 8); Richard D. Mace et al., Relationships Among Grizzly Bears, Roads and Habitat in the Swan Mountains in Montana, 33 J. Applied Ecology 1395 (1996) (attached as Exhibit 9); Richard D. Mace et al., Landscape Evaluation of Grizzly Bear Habitat in Western Montana, 13 Conservation Biology 367 (1999) (attached as Exhibit 10); Schwartz et al. (2010); John Boulanger & Gordon B. Stenhouse, The Impact of Roads on the Demography of Grizzly Bears in Alberta, PLOS One 9(12): e115535 doi:10.1371/jounal.pone.0115535 (Dec. 22, 2014) (attached as Exhibit 11).

Due to their low numbers, fragmented habitat, and large spatial requirements, wolverines are vulnerable to extirpation. Murphy et al. (2011a), 1. Wolverines are known to be particularly sensitive to human impacts and habitat alternation, and tend to avoid areas with human activity (e.g., roads, infrastructure, recreation, extractive industries). See Nicole Alexis Heim, Complex Effects of Human-Impacted Landscapes on the Spatial Patterns of Mammalian Carnivores, MSc Thesis, Univ. of Victoria, Ch. 2, at 3, 39, 43-45 (2015) (attached as Exhibit 14).[8] For example, in the Canadian Rockies, "[w]olverines were more likely to occur in more topographically rugged terrain and areas where industrial activity and habitat alteration were low. Wolverine occurrence was negatively related to seismic-line density and was positively related to landscape ruggedness." Fisher et al., 710-11. See also id., 711 (noting that wolverine densities in undeveloped areas were 2-3 times higher than in developed areas); id., 712 (explaining their finding that "the probability of wolverine occurrence decreases across a gradient of increasing anthropogenic landscape development"). This sensitivity of wolverines to anthropogenic activities appears to be pronounced in females, especially during the natal denning period—an important consideration for species like the wolverine that have a low reproductive rate. See Krebs et al., 2181, 2189; May et al. 291; Fisher et al., 712 ("Habitat alteration and accompanying human activity may degrade habitat quality and depress naturally late-onset reproduction, low reproductive rates, juvenile survival, and population growth rates.").

Human infrastructure, including roads, may affect wolverine populations through direct mortality (e.g., road kill; more direct access for poachers and trappers). See Krebs et al., 2189-90; May et al., 292. See also Jens Persson et al., Human Caused Mortality in the Endangered Scandinavian Wolverine Population, 142 Biological Conservation 325, 328, 330 (2009) (attached as Exhibit 20) (noting that in Scandinavia, "[p]oaching was the single most important cause of mortality for adult wolverines" and that "the wolverine with a low average annual reproduction may be susceptible to variation in adult survival caused by human induced mortality, with poaching as a significant part"). Such anthropogenic mortality is typically additive—that is, in addition to background levels of natural mortality—and can lead to population declines. Fisher et al., 712. Further, habitat fragmentation can alter ecological processes, indirectly affecting distribution and population viability. Fisher et al., 712. Fragmentation can lead to a disconnect between wolverine home ranges, depressing the

[8] See also J.T. Fisher et al., Wolverines (*Gulo gulo luscus*) on the Rocky Mountain Slopes: Natural Heterogeneity and Landscape Alteration as Predictors of Distribution, 91 Can. J. Zool. 706, 707, 710-11, 712 (2013) (attached as Exhibit 15); Robert M. Inman et al., Developing Priorities for Metapopulation Conservation at the Landscape Scale: Wolverines in the Western United States, 166 Biological Conservation 276, 284 (2013) (attached as Exhibit 16); Carlos Carroll et al., Carnivores as Focal Species for Conservation Planning in the Rocky Mountain Region, 11 Ecological Applications 961, 973, 975 (2001) (attached as Exhibit 17); John Krebs et al., Multiscale Habitat Use by Wolverines in British Columbia, Canada, 71 J. Wildlife Mgmt. 2180, 2181 (2007) (attached as Exhibit 18); Roel May et al., Impact of Infrastructure on Habitat Selection of Wolverines *Gulo gulo*, 12 Wildlife Biology 285, 289-92 (2006) (attached as Exhibit 19).

species' already low reproductive rate and leading to local extirpation. See Murphy et al. (2011a), 38; Heim, Ch. 2, at 44.

In the Greater Yellowstone Ecosystem, an area that includes the proposed mineral exploration on and near Crevice Mountain, wolverines are located primarily on National Forest lands. See Inman et al. (2012), 782 (noting that in the Madison and Teton mountain ranges, "[e]ighty-six percent of wolverine locations occurred on lands administered by the United States Forest Service, 12% of National Park Service lands, and 28% occurred on all other ownerships. Thirty-six percent of all wolverine locations occurred in designated wilderness."). They occur at a very low density in this ecosystem as compared to other wolverine populations. See id., 787 ("our estimate of 3.5 wolverines/1,000 km^2 is at the low end of reported values for North America"). Nonetheless, "[b]ecause it has some of the largest and most contiguous patches of wolverine habitat in the conterminous United States, the Yellowstone ecosystem is likely to play an increasingly important role in the population dynamics and persistence of wolverine populations as the regional-scale coverage of spring snow declines." Kerry Murphy et al., Wolverines in Greater Yellowstone, 19 Yellowstone Science 17, 23 (2011b) (attached as Exhibit 21).

From 2005-2009, researchers conducted wolverine studies in the area encompassing the proposed mineral exploration. See generally Murphy et al. (2011a). The study area covered 13,000 km^2 in the eastern portion of Yellowstone National Park and adjoining portions of the Bridger-Teton, Gallatin, and Shoshone National Forests, including largely roadless areas in the Absaroka-Beartooth and North Absaroka Wilderness areas. Id., 3.

The results of the study demonstrate the importance of the Jardine and Crevice Mountain area of the Absaroka Mountains to wolverines in the Greater Yellowstone Ecosystem. Over the entire project area, scientists live-trapped just four individuals. Three of these wolverines were captured and resided in the Absaroka Range north of Yellowstone National Park. Murphy et al. (2011b), 18.

Wolverines were documented to use areas within and near the sites of CMG's proposed exploration activities. M1, a resident male captured in 2006, had a home range encompassing 1,600 km^2 in the high Absaroka Range north of Yellowstone National Park, including areas adjacent to Crevice Mountain. Absaroka-Beartooth Wolverine Project Newsletter 2 (Spring 2007) ["2007 Newsletter"] (attached as Exhibit 22); Murphy et al. (2011a), 26.[9] F3, a young female (~1 year old), was captured in March 2007. Id., 2. She also occupied habitat in the Absaroka Range north of Yellowstone. Id. M4, a 3-year old male, was captured in 2007, and appeared to use areas similar to M1. Id. at 27; 2007 Newsletter, 2. The researchers also monitored individuals originally radio-collared by the Wildlife Conservation Society that immigrated into the area. Murphy et al. (2011a), 13. One male, M557, established a home range in the Absaroka-Beartooth Wilderness that largely overlapped the home range of F3. Id., 27.

[9] This individual was legally taken by a trapper in February 2007. 2007 Newsletter, 1.

Reproductive rates of wolverines in this area were extremely low. However, F3 did reproduce after the study ended; this is the only known reproduction in the region—a feat that highlights the ecological importance of the Absarokas for the wolverine in the conterminous United States. Id., ix, 27. Given that any recovery in this area is likely to be protracted, id. at 41, wolverines that have begun to occupy the region should be afforded the highest level of protection.

This protection is all the more warranted due to the potential effects of climate change on the species:

> Increasing global temperature may degrade wolverine habitat quality and quantity in the conterminous United States during the 21st century, triggering reductions in the size of wolverine habitat patches and their connectivity. … Because of its high average elevation and location in the continent's interior, the Yellowstone ecosystem has some of the largest and most contiguous patches of wolverine habitat in the conterminous United States. Thus, the ecosystem is likely to play an increasingly important role in the population dynamics and persistence of wolverine populations as the regional-scale coverage of spring snow declines.

Id. at 42.

Given the wolverine's vulnerability to climate change, habitat alteration, and other anthropogenic impacts (e.g., recreation), Inman et al. (2012), 789, scientists recommend that "precautionary steps to protect habitat … be taken until more focussed [sic] research examining the behavioral and demographic responses of wolverines to human use is completed to establish thresholds for managers working to resolve conflicts in multiuse landscapes." Krebs et al., 2190. Such precaution warrants a thorough analysis of any impacts that mineral exploration and development in prime—and occupied—wolverine habitat on and near Crevice Mountain may have on the species. An EIS that includes a thorough analysis of the impacts to wolverines must be completed before any exploration activities on Crevice Mountain are permitted.

3. Lynx

CMG's proposed exploration also may significantly affect lands within a portion of the Greater Yellowstone Ecosystem identified both as a "core area" for lynx conservation and critical habitat for the lynx. See Interagency Lynx Biology Team, Canada Lynx Conservation Assessment and Strategy 37 (3rd ed. 2013) ["Lynx Conservation Assessment"] (excerpts attached as Exhibit 23).[10]

[10] See also Revised Designation of Critical Habitat for the Contiguous United States Distinct Population Segment of the Canada Lynx and Revised Distinct Population Segment Boundary, 79 Fed. Reg. 54,782, 54,823 (Sept. 12, 2014).

The Interagency Lynx Biology Team—which includes members from the Forest Service, Fish and Wildlife Service, Bureau of Land Management, and National Park Service—recently updated its Canada Lynx Conservation Assessment and Strategy and specifically addressed the potential threat of minerals exploration within lynx habitat.

> Activities associated with exploration and development of locatable minerals could affect lynx habitat by changing or eliminating the native vegetation, and by contributing to habitat fragmentation. Amount of impact can be variable depending on the size of the associated mining operation or development. Locatable minerals are extracted through both open pit and sub-surface mines with potential habitat alteration ranging from tens to thousands of hectares. … Development of road and railroad access to facilitate exploration and development could also directly impact lynx habitat, contribute to fragmentation, facilitate increased competition as a result of snow-compacted routes, and result in direct mortality.

Lynx Conservation Assessment, 83. The authors identified conservation measures to minimize lynx mortality and habitat loss from minerals development within core areas, including the Crevice Mountain area. Id., 95. Among other things, they recommend "locat[ing] facilities and roads outside of lynx habitat and linkage areas where possible." Id.

The Plan of Operations fail even to mention lynx, let alone the identified threats of minerals exploration. Because these impacts are adverse and potentially significant, they warrant a full environmental review.

4. Elk

CMG's operations lie directly within significant migration routes and on or near prime habitat for numerous game species, most notably the northern Yellowstone elk herd (*Cervus canadensis*). Elk in the herd frequent Crevice Mountain and the Jardine area during the herd's annual migration from the Yellowstone high country into the Paradise Valley. Increased vehicle traffic, light pollution from exploration operations, and surface disturbance all negatively impact this key species, and DEQ should closely scrutinize impacts and possible mitigation measures.

The northern Yellowstone elk herd's winter range extends throughout Paradise Valley from Jardine and Gardiner north to Dome Mountain and Dailey Lake. See P.J. White et al., Migration of northern Yellowstone elk: implications of spatial structuring, 91 J. Mammalogy 827, 831-32 (2010) (attached as Exhibit 24). During its migration from the Yellowstone plateau to its winter grazing grounds, the herd passes through and grazes in the Crevice Mountain area. Id. See also State officials say gold mine near Yellowstone near closing, The Missoulian (May 2, 2001), available at: http://missoulian.com/state-officials-say-gold-mine-near-yellowstone-near-

closing/article_129474f6-cf28-5e89-98d8-52d81e8c9218.html. The migration provides valuable ecological benefits to the Greater Yellowstone Ecosystem, including by promoting more productive grasslands and contributing to soil health throughout the migration route. See, e.g. D. Frank, et al., Ungulate vs. landscape control of soil C and N processes in grasslands of Yellowstone National Park, 79 Ecology 2229 (1998) (attached as Exhibit 25); D. Frank, et al., Evidence for the promotion of aboveground grassland production by native large herbivores in Yellowstone National Park, 96(2) Oecologia 157 (1993) (attached as Exhibit 26).

In addition to these species' vital ecological roles within the Greater Yellowstone Ecosystem, elk also provide an important economic driver for communities in Paradise Valley that rely on wildlife enthusiasts of all stripes to recreate there. See, e.g., P. Robbins, 37 Geoforum 185, 186 (2006) (attached as Exhibit 27) ("The migrations of the Northern Yellowstone elk herd…provide[s] meat supplies for local hunters, capital for local outfitters, and a crucial economic resource for hoteliers and others servicing the hunting and tourism community. The rising and falling of the [northern Yellowstone elk] herd's population is, therefore, a central economic and political concern for the region's residents.").

Increased vehicle traffic and mining equipment have the potential to restrict or prohibit the northern Yellowstone elk herd from using a portion of its already-narrow migration corridor into Paradise Valley, pushing it down toward the Gardiner Basin and Highway 89 and subjecting the herd to increased risk of interaction with human communities and infrastructure. Compelling the northern Yellowstone elk herd to undergo greater environmental stressors during its migration harms the species' overall health and welfare. CMG does not discuss any impacts to elk, or offer any mitigation measures to minimize human-wildlife interactions that could harm the animals on their winter migration. Because these impacts are adverse and potentially significant, they warrant environmental review.

B. DEQ Must Fully Investigate Water Quality and Availability

DEQ must carefully evaluate potential impacts on water quality and availability due to the Crevice project. DEQ's scrutiny of proposed hard rock mining operations is made all the more essential by the inherently risky nature of such activities. As the Bozeman Daily Chronicle recently editorialized, "Mining has a long and checkered history in this state. And the despoiling of water is a major part of that history. Decades of mining from the Berkeley Pit in Butte spawned the largest Environmental Protection Agency Superfund site in the nation. More recent projects have left the state – and its taxpayers – on the hook for cleaning up pollution that pre-mining clean-up bonding fell short of covering." Eds., "Mine permitting requires careful balance" Bozeman Daily Chronicle (Feb. 25, 2016), available at: http://www.bozemandailychronicle.com/opinions/editorials/mine-permitting-requires-careful-balance/article_555fb879-e5fb-58f3-bb26-61aa2e52047b.html. Empirical research supports this concern. A detailed study in 2005 found that regulatory agency predictions of water quality impacts during the permitting process overwhelmingly underestimated actual water quality impacts at the mines evaluated, as determined based on operational data. While agencies generally relied on the

implementation of mitigation measures to conclude a low probability of groundwater and surface water impacts, actual impacts were found to more closely reflect the agencies' discussion of the potential consequences of mine operations without mitigation. In other words, the agencies' predictions that mitigation measures would reduce inherent risks to water resources generally were wrong.

Given this history and the risks inherent in mining a sulfide ore-body, DEQ must thoroughly and conservatively analyze potential impacts from the Crevice project on the area's irreplaceable water resources. As described below, those potential impacts are significant and merit study in an EIS.

1. Past Explorations Have Exposed Significant Groundwater Flows

The Plan of Operations maintains that "very little groundwater is expected to be encountered during exploration operations" citing to historic data confirming that "no water was encountered during mining and/or exploration operations within the project area." Plan of Operations, 21. However, as Crevice admitted in its Plan of Operations, significant groundwater flow does exist in the immediate vicinity, and previous attempts at exploratory drilling in the area resulted in uncontrollable groundwater flow from the Palmer Fault. See Branham Study, § 5.2 (stating that the Crevice Tunnel Project encountered "unexpected high water flow zones" from the Palmer fault); Plan of Operations, 1, 22 (indicating that this project is located "one-half mile to the east" of the portal to the Crevice Tunnel Project, where "significant water was encountered at the Palmer fault intersection"). Groundwater flows intersected at the Palmer fault require mitigation to this day. The fact that no significant water has been intersected or observed at the higher elevations on Crevice Mountain is not adequate proof the increased drilling program proposed by CMG won't interact ground water at a significant level.

2. CMG's Proposed LAD Area Does Not Address Groundwater Mitigation Concerns and Is Situated Partially on Federal Lands

While CMG disavows the presence of any groundwater in the project area, the Plan of Operations dedicates ink to a proposed 4.5-acre Land Application Discharge (LAD) area onto which it may discharge excess groundwater intercepted during exploration. See Plan of Operations, 32-33. CMG may have to design and utilize such a LAD area "if excessive water volume is encountered," but "does not anticipate the need" for it. Id. CMG has not yet developed or completed a characterization of the proposed LAD area, and must also establish a monitoring well network to confirm baseline groundwater quality levels. Id., 32.

The Plan of Operations also lacks meaningful discussion of CMG's permitting capabilities in the event it needs to activate the LAD area. In order to accommodate discharge, CMG expects either to apply pumped groundwater at "agronomic rates" to allow for return flow, or alternately to design and manage the LAD to allow for "discharge to subsurface" but avoid any "potential for surface runoff of irrigated water." Id. CMG indicates broadly that applied water

would meet groundwater quality standards for all constituents except possibly nitrates and arsenic, or alternately CMG would submit to DEQ's determination of a dilution and/or mixing zone to minimize exceedences. Alternately, CMG admits the LAD area may require an underground injection control (UIC) permit from EPA. See id.

Moreover, CMG does not have sole ownership over its proposed LAD area. The 4.5-acre area is situated outside the SMES area, partially on U.S. Forest Service land – on which CMG has a small unpatented mining claim. See Plan of Operations, 7 (Fig. 2); 10 (Fig. 5). Without securing permits from U.S. Forest Service CMG has no legal right to apply excess groundwater to public lands. The nexus to federal public lands also raises the possibility that CMG must apply to U.S. Forest Service for a surface disturbance permit.

Without undertaking a more detailed and rigorous water quality analysis, DEQ cannot make a meaningful determination on CMG's proposed LAD area. The company provides no guidance whether it already has secured a discharge permit, and has not even acknowledged that it does not own the LAD area it intends to discharge excess groundwater. Without additional scoping and analysis, DEQ has no basis on which to approve CMG's LAD area proposal.

3. Acid Mine Drainage and Elevated Water Quality Constituents of Concern

CMG downplays potentially significant water quality concerns. First, CMG claims that baseline water quality levels in the Crevice Mountain area are "generally good quality" but that some tests show "elevated levels of arsenic, iron, and manganese." Plan of Operations, 29-30. In fact, arsenic levels exceeded DEQ-7 water quality standard of 0.01 mg/L at three sampling stations within the project area, and reached 1.22 mg/L at the exploration portal. Plan of Operations, 29-30. Yet CMG concludes that surface water quality is "generally of high quality." Id. In so doing, CMG ignores its own conclusions. The company concludes that "all of the [historic] sampling sites are likely affected by drainage from historic mine workings" including tailings and waste rock piles. Id. The current proposal estimates that 96,000 tons of waste rock will be produced from the portal and decline, precisely the area where water quality samples captured arsenic concentrations up to 120 times greater than DEQ's allowable water quality standards. See id., 24, 30. Under CMG's Plan of Operations, the company intends to extract nearly 100,000 tons of waste rock from an area with extraordinarily high arsenic levels, and to move it to areas surrounding the project site. DEQ should closely evaluate this aspect of CMG's project.[11]

[11] Worth noting is a 2000 U.S. Geological Survey study of arsenic loads and sources in Mineral Hill and Jardine, downstream from CMG's project area and in similar mining districts in the neighboring vicinity. It concludes that water quality in Bear Creek, another tributary of the Yellowstone River, "has been affected by arsenic derived from mine waste" as well as natural sources, and that subsurface inflow into the surface waters "derives arsenic from a possible combination of tailings…and from natural weathering." U.S. Geological Survey, Arsenic Loads and Source Areas in and along Bear Creek, Park County, Montana, September 2000, Water Resource Investigations Report 02-4074, 23-24 (Sept. 2000) (attached as Exhibit 28).

Second, CMG relies on a 1994 water quality study, also cited in TVX's 1996 Crevice Tunnel Project, concluding that on-site testing disproves any potential for acid mine drainage despite the fact that "results for Crevice samples indicated the potential for acid generation in 19 of 21 samples." See Plan of Operations, 30-31 (emphasis added); see also Crevice Tunnel Project EA, 12. CMG bases its conclusion on the fact that no acid mine drainage has been identified at Crevice, and therefore it does not anticipate any acid mine drainage will result. The absence of identifiable acid mine drainage at this time does not adequately exculpate CMG from any possible acid mine drainage resulting from its activities on site.

Finally, it bears noting that CMG only identifies one surface water, Malin Creek, as potentially impacted by site activities. See Plan of Operations, 37 (discussing the company's minimal plans to mitigate sediment loading into Malin Creek due to storm water runoff). CMG downplays the fact that Malin Creek drains into Yellowstone Park, directly into the Yellowstone River. Id. In addition Malin Creek is not, in fact, the only surface water subject to possible negative water quality impacts: independent research identifies Palmer Creek, possibly Crevice Creek, and at least two unnamed tributaries to the south and east of the project area that may receive storm water runoff from waste rock piles, disturbed development rock, or newly-constructed roadways providing access. CMG does not address any impacts to these headwater streams.

C. CMG Has Not Confirmed Access to the Proposed Mining Portal Via Public Roads

While the Plan of Operations indicates that CMG will access the project "through a combination of existing U.S. Forest Service and county roads," the company has yet to confirm that it is authorized to use such roads in order to haul mining implements and waste to and from the site. See Plan of Operations, 20-21.[12] In fact, on April 14, 2015 Robert Cronholm, Environmental Science Specialist with the DEQ Small Miner and Exploration Program wrote to CMG asking for written confirmation that Park County would maintain Crevice Mountain Road after mining ceases, in order to exclude the road from its acreage calculation for CMG's SMES. See DEQ Letter to Crevice Mining Group (Apr. 14, 2015) (attached as Exhibit 29). As of March 3, 2016 Park County has not agreed to this condition, yet CMG indicates that it intends to use Crevice Mountain Road and will make substantive improvements. Plan of Operations, 20.

Likewise, the U.S. Forest Service and CMG have a "limited access agreement" allowing CMG to use Sinombre Road "only to develop their plans for true access." USFS Email to R. Cronholm, DEQ (Oct. 26, 2015, 3:23 PM) (attached as Exhibit 30) (explaining that U.S. Forest Service will condition CMG's road use permit only after the company has "an exploration plan submitted and approved with the State"). Further, CMG's use of Sinombre Road would impact U.S. Forest Service's Travel Plan for the area; in its Plan of Operations the company has failed to address how it would – or even could – avoid conflict with established federal lands policy.

[12] The County Road is referred to as "Crevice Mountain Road" while the U.S. Forest Service Road is named "Sinombre Road." CMG's project depends on access to the site via one of these two roads.

Thus, it is unclear how CMG's Plan of Operations can indicate with certainty the types of road work and maintenance it is authorized to undertake to ensure safe access for mining vehicles as well as recreational users and local residents.

Further, CMG brief discussion of road work and maintenance does not pencil – for example, the company indicates that it will "improve the road surface by placing and compacting waste rock generated from exploration operations." Plan of Operations, 20. But prior to exploration, how and with what material does CMG propose to improve the road surface? Is the road in adequate condition to allow heavy trucks and exploration equipment to pass before excavating waste rock? Will the waste rock contain heavy metals that could impinge water quality? What sort of "significant analytical testing," id., will confirm the waste rock's inert nature? CMG leaves these important questions unanswered.

Therefore, contrary to CMG's Plan of Operations, it still lacks the ability to access the project area in a manner consistent with its intent; moreover its plan lacks cohesion or details that would allow DEQ to accurately review the project without undertaking a more searching review of the company's plans and the likely impacts of the roads on recreational users, wildlife, and locals. See supra Part IV.A. MEPA requires a higher bar to ensure that DEQ can affirmatively conclude that this project will not have a significant impact on the environment.

D. Proposed Operations Expand Beyond the Boundaries of CMG's SMES Area Without Adequate Remediation Measures

CMG has secured a SMES from DEQ exempting it from most of the permitting requirements of the Metal Mine Reclamation Act ("MMRA"). See supra Part II. Under the MMRA, small miners may qualify for the exemption if their operation "results in no more than 5 acres of the earth's surface being disturbed or unreclaimed." MCA § 82-4-303(30); see generally id. § 82-4-305. CMG itself admits that "new surface disturbance associated with the exploration" will total 7 acres. Plan of Operations, 3. Not only does this exceed the 5-acre threshold intended under the MMRA's small miner exception, but it also is incomplete. CMG's Plan of Operations identifies as much as 21 acres (including the 5-acre SMES envelope) that will be disturbed under the scope of the proposal. In fact, nearly all of the surface disturbance identified in the Plan of Operations will fall outside the boundaries of the SMES, including: three waste rock storage areas (8.9 acres);[13] two topsoils stockpiles (1.1 acres); an exploration road (1.6 acres); and the LAD area over which to discharge groundwater (4.5 acres). At best, CMG substantially miscalculated the scope of surface disturbance associated with the exploration portal. On its face, however, it appears that CMG flagrantly exceeds the limits of its SMES by attempting to bootstrap the significant impacts of the exploration project onto the legal protections offered by its SMES.

[13] In its narrative, CMG omits a 4-acre "Contingent Waste Rock Storage Area" from its calculation of waste rock storage areas. Compare Plan of Operations, 3 ("A primary (west) waste rock storage area…and a secondary (south) waste rock storage area…" with id., 7, (Fig. 2), and 17 (Fig. 12) (identifying a 4-acre contingent storage area).

Even if CMG intended to reclaim the entirety of the surface disturbed by the proposal put forth in the Plan of Operations, it has not sufficiently developed a remediation plan or provided adequate bonding estimates on which DEQ could base bonding requirements. The Plan of Operations provides an estimated $151,291.60 ($20,172.21 per acre) to cover remediation of all areas outside the SMES envelope, and expressly disclaims a bonding requirement for the contingent waste rock storage area or the LAD area on the assumption that it would not have to use those areas. Moreover, it provides only $12,500 ($2,500 per acre) for remediation of the SMES area. Plan of Operations, 33-35, 36 (Table 3).

CMG provides virtually no details of its site reclamation plan and makes no assurances that it will be able to re-establish the pre-project topography. Id., 33. Thus, even if CMG intends to fully reclaim those areas of disturbance outside of the SMES before further operations, the proposal underestimates the challenges, short growing seasons, materials, and cost required for revegetating admittedly nutrient-poor land in an area that lacks adequate surface water, and attempts to disclaim its responsibility for any shortcomings in the remediation process. CMG provides no studies or additional details that might explain these numerous discrepancies in estimated remediation cost within the context of the current project. In short, the proposed bonding is insufficient to adequately remediate the full scope of the lands that CMG intends to disturb, and the company's lack of any detail that would explain its rationale for pegging such a low cost estimate to remediation indicates it has not fully vetted this project's environmental impacts.

E. Mitigation Measures Proposed Are Inadequate to Address or Minimize Potential Impacts

CMG proposes numerous mitigating measures to justify minimal DEQ oversight. These measures are too few and too broad to be of much use. CMG appears merely to have copied many mitigation measures from TVX's Crevice Tunnel Project. Compare Plan of Operations, 37-39 with Crevice Tunnel Project EA, 14-18. While CMG indicates that both projects are "similar in scope", Plan of Operations, 1, TVX's project only disturbed 3.3 acres and contemplated a nearly 3-mile long tunnel in an attempt to reach potentially rich gold veins in the Conrad mining area. See Crevice Tunnel Project EA, 6. Here, CMG intends to disturb up to 21 acres in an attempt to justify a potential multi-million ounce gold mine. Even if CMG's proposal does not develop beyond exploration, it will represent a surface disturbance nearly seven times greater than TVX's project, even if the final product – a massive underground gold mine – is substantially similar in scope to the Crevice Tunnel Project. By parroting the Crevice Tunnel Project's mitigating measures, CMG's proposal may reflect the state-of-the-art for a much smaller underground exploration conducted over two decades ago, but does not represent the appropriate actions that should be followed today.

One striking similarity with the Crevice Tunnel Project is CMG's failure to develop any meaningful mitigating measures for water quality.[14] Like the Crevice Tunnel Project, CMG merely reiterates that the area is "plagued by chronic water shortages" and that "very little water is likely to be encountered" by exploratory drilling. Plan of Operations, 27. See also supra Part IV.B.[15] On that basis, CMG apparently decided against developing any water quality mitigation measures even though it tacitly acknowledged (by proposing a LAD area) that the company might be forced to apply excess water to the surface in a fashion that may necessitate a water quality permit or compliance with DEQ's surface water quality standards. CMG's decision to include a LAD area at least appears to signal the company's recognition that it may encounter unforeseen water quantity issues like its predecessor 20 years ago. But CMG's decision not to include any mitigation plan for implementing water quality controls over its proposed LAD area constitutes a significant oversight that DEQ should analyze in detail.

V. CONCLUSIONS

Under the Montana Constitution, MEPA, its regulations, and DEQ's own interpretive rules, the above issues merit DEQ's hard look as it evaluates the Crevice project; furthermore, the enormity of the environmental, social, and economic impacts justify the agency's decision to review CMG's proposal in an environmental impact statement.

Thank you for the opportunity to comment. We trust that DEQ will take action that will most faithfully execute its constitutional duty to uphold Montana's clean and healthful environment for present and future generations.

Sincerely,

Marcus Pearson
Jenny Harbine

[14] It includes passing reference to water quality in its "Water Management" mitigating measure. See Plan of Operations, 31, 38 (explaining that "water quality will be monitored regularly" at the proposed LAD area to establish baseline water quality in the event that CMG must discharge groundwater there).
[15] TVX also had concluded that "little water would be encountered" during drilling. Crevice Tunnel Project EA, 10.