



March 2, 2020

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540 North Main Street  
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Electronically submitted via the Forest Service project webpage

**RE: Scoping Comments for the Burntlog Route Geophysical Investigation**

Dear Ms. Pearson-Ramirez:

Thank you for considering our scoping comments for the proposed Burntlog Route Geophysical Investigation Project, Cascade Ranger District, Boise National Forest.

The Idaho Conservation League has a long history of involvement with geophysical investigation and mineral development projects. As Idaho's largest state-wide conservation organization, we represent over 25,000 supporters who want to ensure that Idaho's Inventoried Roadless Areas and fish and wildlife habitat are protected.

Idaho Rivers United represents 3,500 river-loving, environmentally attuned members throughout Idaho and beyond. Our members and supporters expect protection of rivers for their ecological, scenic and recreational values. Therefore, our mission is to execute outstanding and thorough river preservation and conservation work to ensure environmental integrity of all of Idaho's river and citizens.

Past experiences with improperly managed and regulated mineral exploration and mining operations make it necessary to have heightened vigilance about all such proposals. Although the 1872 Mining Law establishes a legal framework for geophysical investigations on the public lands, the Forest Service is not obligated to approve this investigation if it does not fulfill the requirements of all other applicable laws and regulations.

Midas Gold is seeking to develop a new mine access road through Inventoried Roadless Areas between Trapper Creek and Stibnite to support its Stibnite Gold Plan of Operations. Midas Gold

is proposing to collect geophysical data at exposed locations and by drilling or excavating 24 locations, with 39 borings/test pits.

Four sites will be investigated with a Dynamic Cone Penetrometer Test, 14 are test pit sites, seven are truck/track mounted hollow stem auger/core rig sites, and 14 are helicopter assisted casing advancer/core rig sites. Midas Gold hopes to conduct these studies in the summer and fall of 2020.

This project is directly related to the Stibnite Gold Project, the development of which is a connected action and a reasonably foreseeable proposal. The entire premise for this geophysical exploration is questionable in that road construction through the Inventoried Roadless Areas as currently proposed in the Plan of Operations is inconsistent with the Idaho Roadless Rule and the Forest Plan.

We are also concerned about potential segmentation of the NEPA process. We encourage the Forest Service to thoroughly examine the project's plans, potential impacts, and proposed mitigation features and analyze this proposal in an Environmental Assessment (EA). Categorical Exclusions are not appropriate if there are relevant extraordinary circumstances at play.

We provide our detailed comments below.

Respectfully submitted,



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## ICL and IRU Scoping Comments for the Burntlog Route Geophysical Investigation

**Information in scoping notice**

The Forest Service should describe how the investigation activities will be sequenced. The order of drilling and subsequent reclamation was not detailed in the scoping documents. We also recommend that the Forest Service also provide representational photographs of the equipment to be used in the project and more detailed maps showing access routes, water drafting locations and helicopter flight paths.

**Purpose and need; segmentation; alternatives**

The scoping notice states that the purpose and need is to collect crucial data to inform the feasibility of developing a transportation route from the Stibnite mine site to Highway 55. The Forest Service does not disclose whether this same type of geophysical investigation was already conducted along the previously proposed route or if these investigations are being proposed along all potential routes.

The Forest Service infers that these investigations will be used to determine underlying soil strength and investigating cut slopes is necessary to determine the location and design for haul roads, which is consistent with the purpose in the scoping notice to inform the feasibility of developing a transportation route.

On the one hand, such investigations should have been conducted prior to the development of the EIS for Midas Gold's proposed open-pit mines, as concurrent project development represents a possible unlawful segmentation of the NEPA process. The scoping notice itself admits this proposed investigation is a "connected" action to the mining proposal.

On the other hand, it is unclear why this specific investigation is appropriate now, as the Forest Service is currently considering multiple different transportation routes in the EIS. It seems there is no need to carry out these activities when multiple routes are on the table, and in the end a different route may be selected than the one Midas wants to investigate now, making the impacts of this investigation entirely unnecessary. Additionally, entertaining this proposal suggests the Forest Service may have already impermissibly prejudged the outcome of the EIS process by selecting this transportation route.

To address these questions and concerns, the Forest Service needs to better explain the purpose and need of this proposal, especially in light of the permitting and NEPA process currently underway, and should consider a no action alternative where Midas waits until the mine EIS is complete and a transportation route is selected before it conducts any ground-disturbing activities to investigate the route.

Additionally, some of Midas Gold's proposed investigations, such as the excavation of 14 test pits with depths up to 15' deep and core drilling below bedrock using a casing advancer/core rig, are more consistent with mineral exploration drilling activities and are not needed for route assessment or selection. The proponent plans to utilize drill rigs, drill rods, drilling mud, bentonite, and procedures described in the State of Idaho's Best Management Practices for Mining in Idaho. The scoping notice does not indicate the overall depth of drilling. We note that

this type of activity is more consistent with condemnation drilling which is an entirely different purpose and need with more significant potential impacts.

The drilling locations also appears to match up with Midas Gold's mining claims which indicates that Midas Gold may also be conducting mineral exploration and/or condemnation activities as part of this project. Condemnation drilling activities are often conducted before a mining company develops permanent infrastructure such as a tailings storage facility, waste rock, mill site - or a haul road. Such condemnation drilling has the same effects as exploration drilling and needs to be rescoped and analyzed as such.

### **Use of a Categorical Exclusion**

We encourage the Forest Service to thoroughly examine the project's plans, potential impacts, alternatives, and proposed mitigation features and analyze this proposal in an Environmental Assessment (EA), not by Categorical Exclusion (CE).

First, the CE the Forest Service proposes for this project is limited to specific types of "[s]hort-term (1 year or less)" mineral projects. 36 C.F.R. 220.6(e)(8). As already discussed above, the Forest Service admits in the scoping notice that this investigation is a connected action to Midas Gold's proposed open pit mines for the Stibnite site, making the CE inapplicable.

Second, a CE is not appropriate if there are relevant extraordinary circumstances at play, including:

- (1) Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species;
- (2) Flood plains, wetlands, or municipal watersheds;
- (3) Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas;
- (4) Inventoried roadless areas or potential wilderness areas;
- (5) Research natural areas;
- (6) American Indians and Alaska Native religious or cultural sites, and
- (7) Archaeological sites, or historic properties or areas.

It is the existence of a cause-effect relationship between a proposed action and the potential effect on these resource conditions and if such a relationship exists, the degree of the potential effect of a proposed action on these resource conditions that determine whether extraordinary circumstances exist. 36 CFR 220.6(b). In considering extraordinary circumstances, the responsible official should determine whether or not any of the listed resources are present, and if so, the degree of the potential effects on the listed resources. If the degree of potential effect

raises uncertainty over its significance, then an extraordinary circumstance exists, precluding use of a categorical exclusion.

Midas Gold's proposal implicates multiple extraordinary circumstances, as discussed below, and use of a CE is not appropriate here.

Federally listed threatened or endangered species or designated critical habitat, species proposed for Federal listing or proposed critical habitat, or Forest Service sensitive species;

The watershed contains habitat for westslope cutthroat trout, bull trout, steelhead and Chinook salmon, lynx and wolverine. As discussed in other sections below, the investigation will have adverse effects on fish and wildlife in and near the investigation area.

Furthermore, the South Fork of the Salmon River and its tributaries are home to important populations of Chinook salmon, steelhead, and bull trout. In fact, the Forest Service has acknowledged that the South Fork Salmon River Watershed is home to the most important remaining habitat for summer Chinook salmon in the entire Columbia River Basin. In example, Burntlog Creek is designated critical habitat for ESA listed Bull Trout, Steelhead, and Chinook salmon, and the 2010 Forest Plan states that The Lower Burntlog Creek and Upper Burntlog Creek subwatersheds have been identified as important to the recovery of listed fish species, and as high-priority areas for restoration." Drilling activities and even drilling fluids created with potentially contaminated water may have adverse impacts on these species. In addition, increased sedimentation from the digging of test pits up to 625 square feet has the potential to create negative impacts to water quality and habitat.

Congressionally designated areas, such as wilderness, wilderness study areas, or national recreation areas;

The project is located very close to the Frank Church-River of No Return Wilderness. This is the largest contiguous congressionally-designated wilderness in the lower 48, and it is important habitat for numerous species of fish and wildlife. The wilderness is important to recreators and guides, especially during the summer to fall season in which Midas Gold proposes operating helicopters and drill rigs. Helicopter flights, drilling, and other proposed activities--even if they occur outside the wilderness--will cause noises, smells, and visual disturbances to people and wildlife within the wilderness, degrading people's experiences in the wilderness and disturbing wildlife. Helicopter flights may even interfere with flights accessing wilderness airstrips. We note that Johnson Creek is a popular airstrip.

### **Inventoried Roadless Areas**

Midas Gold is seeking to develop a new mine access road through Inventoried Roadless Areas between Trapper Creek and Stibnite to support its Stibnite Gold Plan of Operations. The entire premise for this geophysical exploration is questionable in that road construction through the Inventoried Roadless Areas as currently proposed in the Plan of Operations appears to be inconsistent with the Idaho Roadless Rule and the Forest Plan.

The development of the Burntlog Route will adversely impact several Inventoried Roadless Areas, Visual Quality Objectives and the Frank Church River of No Return Wilderness. The Idaho Roadless Rule states that roads may be constructed for mining activities if no other reasonable access exists. The Stibnite Modified Plan of Operations has determined that a route can be constructed around the Yellow Pine Pit and that Burnt Log route is not the only reasonable route.

According to the Plan of Operations, the road would be in place for 20+ years, providing that there are no problems with mine development or operations, no suspension of operations due to depressed metals prices, and no extension of mining operations to develop additional mineral resources. The 20+ years that the road would be in use fits the Forest Service description of long-term (15+ years) and thus does not meet the definition of a temporary road. Furthermore, some components of a haul road in this location cannot be reclaimed and will persist as cut slopes for centuries.

### **Season**

Midas Gold intends to utilize ground pressure reducing mats when crossing areas delineated as having wetland characteristics. The Forest Service needs to describe the efficacy of these mats on protecting soils and vegetation and organisms such as amphibians. We note that similar geophysical investigations in Meadow Creek for tailings dam stability were conducted in winter over snow which minimized impacts to a greater extent than crossing wetlands with wheeled or tracked vehicles, even over mats. The Forest Service should analyze winter activities as an alternative.

### **Transportation issues**

The Forest Service needs to describe the numbers and classes of vehicle(s) to be used as part of the project. The Forest Service also needs to describe the number of trips per week, the type and volume of hazardous materials to be transported, the transportation route and the details of a Spill Prevention Plan.

This scoping notice does not provide details on how the drilling equipment will be transported for the road-accessible drill sites. In order to reduce impacts to the public, we recommend that transportation of heavy equipment and helicopter flights be limited to weekdays and not allowed on public holidays, and the day before opening day and opening day of hunting seasons. The Forest Service should consider requiring the operator to inform the County and members of the public about the timing for transporting equipment and working out a schedule to minimize conflicts. We also recommend the use of pilot cars, flaggers and road signs to alert the public during transportation of fuels and heavy equipment.

The analysis needs to address concerns of vehicle accidents and spills. We recommend developing a specific travel access plan that minimizes the risk of a fuel spill into creeks, reduces the chances of collisions with other vehicles, and minimizes the risk of vehicles striking wildlife. The Payette National Forest completed a petroleum risk assessment for the Golden Meadows exploration project and we believe that a similar assessment is warranted here. See the following Attachments: Attachment A (Golden Meadows EA Petroleum Risk Assessment), pp. 3-165-3-177 & amp and Attachment B (CuMo Project EA, 411-38, Fuel Transport Memorandum.

We are also concerned about the transportation of fuel into this area where cleanup would be particularly difficult. The Forest Service should develop a fuel haul plan for this operation to minimize the risk of spills.

All vehicles should maintain slow speeds to minimize fugitive dust. We recommend further defining the speeds for each section of the access route. There may need to be some timely form of road maintenance along the access route before operations commence.

### **Water withdrawal from Johnson Creek**

Midas Gold is seeking a temporary water right to withdraw water from Johnson Creek to support drilling operations. The Forest Service needs to describe the amount of water to be utilized. The Forest Service also needs to examine the timing, duration and intensity of water withdrawal to ensure that stream temperature and available habitat are maintained for sensitive and threatened species.

Midas Gold is utilizing poly tanks to store water and stock tanks for mud mixing. Recycling this water will greatly reduce the amount of water withdrawn and accompanying transportation activities.

### **Baseline groundwater studies needed**

Depending on the drilling depth, drilling activities for geophysical investigations may have adverse effects for surface and groundwater resources, particularly if one of the undisclosed purposes for this study is to examine the underlying mineral estate for condemnation purposes.

We note that the drilling locations match up with Midas Gold's mining claims which indicates that Midas Gold may also be conducting mineral exploration or condemnation activities as part of this project. Please see the map of Midas Gold's claims holdings in the Stibnite Gold Project Plan of Restoration and Operations, figure 1, Appendix C-4. Condemnation drilling activities are often conducted before a mining company develops permanent infrastructure such as a tailings storage facility, waste rock, mill site - or a haul road. Such condemnation drilling has the same effects as exploration drilling and needs to be disclosed and analyzed as such.

Before conducting drilling activities, the Forest Service and Midas Gold need to conduct studies to establish surface and groundwater baseline conditions.

The Forest Service is required to "describe the environment of the areas to be affected or created by the alternatives under consideration." 40 C.F.R. § 1502.15. The establishment of the baseline conditions of the affected environment is a fundamental requirement of the NEPA process:

NEPA clearly requires that consideration of environmental impacts of proposed projects take place before [a final decision] is made." [LaFlamme v. FERC, 842 F.2d 1063, 1071 \(9th Cir.1988\)](#) (emphasis in original). **Once a project begins, the "pre-project environment" becomes a thing of the past, thereby making evaluation of the project's effect on pre-project resources impossible. Id. Without establishing the baseline conditions which exist in the vicinity ... before [the project] begins, there is**

**simply no way to determine what effect the proposed [project] will have on the environment and, consequently, no way to comply with NEPA.**

Half Moon Bay Fisherman's Mark't Ass'n v. Carlucci, 857 F.2d 505, 510 (9<sup>th</sup> Cir. 1988) (emphasis added). "In analyzing the affected environment, NEPA requires the agency to set forth the baseline conditions." Western Watersheds Project v. BLM, 552 F.Supp.2d 1113, 1126 (D. Nev. 2008) (emphasis added). "The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process." Council of Environmental Quality, Considering Cumulative Effects under the National Environmental Policy Act (May 11, 1999).

Here, the Forest Service is proposing 14 test pits, 7 truck/track mounted drilling sites and 14 remote core rigs sites. Some of these activities will intersect groundwater, yet we are aware of no data, analysis or baseline studies of current groundwater conditions (e.g., quality, quantity, flow, geochemistry, etc.).

The Forest Service acknowledges that exploration drilling can affect groundwater resources:

Aquifers can be vulnerable to degradation during and following exploration drilling in the following ways:

- Aquifers could become contaminated through open boreholes by run-off water from the surface.
  - Separate aquifers could become interconnected through drillholes
  - Cross-flow between aquifers may be induced by natural pressure differences or pressure differentials induced by pumping
  - Contamination by certain types of drilling fluids
- Golden Meadows EA at 3-31.

Simply because a resource is unknown or variable does not obviate the agency's responsibility to monitor this resource. The Forest Service should require basic design features such as drill logs tracking the depth to bedrock, the water table and any losses in drilling fluid from bedrock fractures because of the assumption that proper well closing would eliminate contamination issues. The Forest Service needs to address contamination that could occur during drilling operations and before the bore holes are sealed.

The geology adjacent to the project area contains potentially hazardous levels of arsenic and other contaminants. These contaminants may be securely bound within the surrounding rock matrix or may be leaching into groundwater. The Stibnite area consists of a highly mineralized zone with naturally elevated background arsenic levels. Cinnabar is another highly contaminated area.

The Forest Service needs to assure that there will be no changes or impacts to groundwater as a result of drilling operations and, as a result, that there is a need for a groundwater baseline study.



The effects of mining activities on surface water and groundwater quantity and quality need to be determined for a full range of flow conditions at the mining site and along the transportation route. This geochemical analysis should include the following factors:

- pre existing water quality issues from previous mining activities in the drainage, including roads
- potential for acid mine drainage, arsenic or other contaminants
- continued baseline monitoring and analysis of all new cores
- sedimentation from roads
- transportation of hazardous materials near streams
- on-site water needs
- source of water
- the depth and flow of water table
- hole depth
- the potential for household chemicals and toxins to leach into surface and ground waters
- waste water discharge from site
- storm water runoff

One water source for the project will be obtained from existing water rights located on private lands at the Gestrin Well at Stibnite. The quality of this water is not disclosed but the surrounding area is highly contaminated. Within the nearby Hanger Flats area, groundwater samples contained arsenic levels at 13,800 parts per billion, over 1,000 times the EPA's safe drinking water standard for arsenic.<sup>1</sup> In addition, dissolved arsenic concentrations of over 1,000 micrograms per liter were observed in groundwater and seeps on the Meadow Creek Mine hillside.<sup>2</sup>

We are concerned that transporting water from a contaminated location to a different watershed for drilling purposes could contaminate groundwater, springs and seeps and threaten downstream aquatic life, including threatened species. Because the project is proposed for federal lands, the Forest Service must ensure that operations associated with the proposal do not adversely impact water resources throughout the area. At the Stibnite site itself, an adversely lowered water table could potentially affect the quality and quantity of community water sources, alter septic infiltration and percolation patterns, change water temperatures in nearby streams and creeks, and contribute to ground subsidence. This hydrologic and geologic analysis should incorporate anticipated pumping rates, surrounding geology and water table descriptions and cover potential impacts to community water supplies due to prolonged, high-rate pumping and water removal.

While the drill holes will reportedly be sealed, contamination could occur any time during the multiple days that each drill will be running at each drill pad and continuously pumping drilling fluids into leaking core holes. If the rock is fractured, water could penetrate the fractures causing minerals, such as arsenic, to leach from the surrounding rock and create higher concentrations in groundwater; the additional water could lubricate any fault lines creating a potential for

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<sup>1</sup> Stibnite Area Site Characterization Report Executive Summary, September 8, 200, page no. 1-19.  
[http://www.deq.idaho.gov/media/571926-\\_newinternet\\_waste\\_data\\_reports\\_mining\\_waste\\_stibnite\\_characterization\\_rpt\\_execsum\\_0900.pdf](http://www.deq.idaho.gov/media/571926-_newinternet_waste_data_reports_mining_waste_stibnite_characterization_rpt_execsum_0900.pdf)

<sup>2</sup> Ibid, p. 1-20.

destabilizing landforms in the immediate area. The pressure from a water column in deep drill holes may be sufficient pressure to cause hydraulic fracturing, especially with fractures already present in the rock. If water loss occurs in the lower part of the hole, it is unclear which aquifers it contaminates. We note that high pressurized drilling activities in the vicinity of the Glory Hole resulted in at least one case in drilling fluids moving laterally through fractured bedrock, exiting the sides of the abandoned mine pit, and entering the East Fork South Fork Salmon below. Midas Gold employed spotters to report such occurrences.

It is impossible to determine if or how the Midas Gold drilling program would have any impact on groundwater resources without a more thorough baseline groundwater analysis. It is possible to monitor water quality and quantity in seeps, springs and select river locations without additional drilling. It is important to collect baseline information over at least a two year period to capture seasonal changes in flows. The groundwater issue is extremely significant because the drilling activity is in the headwaters of the drainage and the listed fish species that inhabit the area. As noted earlier, this represents an extraordinary circumstance negating the use of a Categorical Exclusion. A permit first, review baseline-conditions-later approach violates NEPA at its core.

A baseline water monitoring program would include establishing water quality sampling points above and below potentially affected areas. The Forest Service should describe the monitoring locations, the frequency of testing, the triggers for additional actions, and the protocols if these triggers are tripped. It is important to establish baseline water quality sampling well in advance of drilling operations.

We note that the Forest Service established similar parameters for other drilling projects. In the Kilgore Project on the Caribou-Targhee National Forest, Otis Gold agreed to create an annual report that includes analysis of the surface water and ground water quality data noting any changes to water chemistry. The parameters would remain the same as baseline monitoring. The yearly report was going to be provided to the Forest minerals administrative staff administering the Plan of Operation. In addition, if water quality data indicates an increased concentration of hazardous substances in the sample analysis, the Forest will require the operator to investigate possible causes for the negative change in water quality, provide the forest a written report, and recommend mitigation if water quality contaminant increases are directly the result of exploration operations. The Kilgore North Project also had a design feature that if water quality analysis indicates water quality has degraded below State of Idaho and Clean Water Act criteria for the protection of surface water, and State of Idaho water quality criteria to protect groundwater, operations will cease until mitigation can be implemented to protect surface and groundwater. The Idaho Department of Environmental Quality will be notified and informed of the situation. The Burntlog Route Geophysical Investigation should contain similar or more protective requirements.

We note that the Midas Gold's Golden Meadows Project on the Payette National Forest was placed on hold to allow for more thorough examinations of groundwater conditions. We encourage the staff of the Boise National Forest to coordinate closely with the staff of the Payette National Forest to ensure that similar protective standards are used.

### **Additional Potential Groundwater Issues**

Exploratory drilling of this nature has had unexpected consequences before, particularly if the drill hole is not completely cemented top to bottom. Kubichek et al. (1997) found that, “Improperly plugged wells compromise aquifer integrity by destroying its natural isolation, and exposing it to potentially toxic materials from nearby formations.”

While the Scoping Notice states that the drill holes will be closed using bentonite, it does not describe the potential negative effects if the drill holes are not adequately sealed. Furthermore, there is no information on the track record for fully sealing drill holes or how the Forest Service will determine if drill holes are securely sealed. Factors to consider are the type of rock (particularly sulfides), whether the area is fractured, and whether aquifers are encountered. Contamination can be from a variety of sources, including the introduction of fuel into the hole that stimulates bacterial growth and changes the redox potential. This can lead to mobilization of metals. Additional contamination sources include opening up reactive rock (like sulfides) to water and oxygen, and the effects of introducing the mud itself which can result in pH changes, introduction of arsenic, salts and oxygen into a formerly anaerobic environment, acid mine drainage, and cation exchange. In addition, lime and other additives from the cement mix may have adverse impacts on water quality. *See Fate and Effects of Whole Drilling Fluids and Fluid Components in Terrestrial and Freshwater Ecosystems: A Literature Review*, to EPA Marcy 13, 1981, by John G. Ferrante, Lisa Sumi, Research Director, Oil and Gas Accountability Project, Chemical Release Incidents.

Even if the record contains the required analysis of the “drilling additives” as required, a full analysis of the chemical and physical nature of the materials brought to the surface by the drilling itself, must be completed.

Drilling activities are likely to encounter groundwater. The Forest Service needs to gather sufficient baseline data to determine if mining activities alter ground water quality or quantity. The Forest Service should require standard practices for protecting against and minimizing groundwater quality and hydrology as called for in the agency’s own Working Guide: Evaluating Groundwater Resources For Mineral Exploration Drilling (Aug. 2014) (Attachment C), Attachment D CuMo Groundwater Supplemental Report and Attachment E Kilgore, North Area, DN and FONSI showing water quality monitoring program in Appendix D.

The Working Guide explains: “A description of the type of drilling proposed (diamond core, reverse circulation, etc.), the drilling materials/fluids that will be used, and the anticipated location, number, depth and spacing of drill holes is essential for understanding the potential effects on groundwater.” Attachment G, p. 2. Additionally, “proposed drill hole abandonment procedures, materials, and timing should be clearly described”. *Id.* at 3. “Based on information gathered on the affected hydrogeologic environment and the subsequent environmental analysis, specific abandonment methods and procedures may need to be revised to limit effects on groundwater resources.” In addition to describing drilling and abandonment processes, the Forest Service needs to consider drill spacing.

The Working Guide also calls for a description of the hydrogeologic setting—“where groundwater occurs and how it moves through various rock units”—considering local geology,

aquifer types, groundwater flow systems, groundwater quality, water wells and public drinking water source areas, springs and wetlands, and streams. Attachment G, pp. 3–7. The Working Guide calls for an analysis of effects to municipal watersheds, domestic wells, and public water supplies, and to effects on aquatic habitats by contamination or dewatering through impacts to springs, streams, cave and karst systems, and wetlands habitats. Id. at 7. The Working Guide warns of uncontrolled artesian flow and cross aquifer flow should be considered and may have impacts. Id. at 8. The Forest Service needs to identify any aquifers, springs, and wetlands in the area as well as analysis of municipal watersheds, domestic wells, and public water supplies near and downstream of the project area.

The Working Guide also calls for the Forest Service to consider drilling fluid loss/gain, stating “[a]n assessment should be made of the potential for large solution cavities or other preferential pathways to exist in the rock formations targeted for drilling so that the potential for loss or gain of drilling fluid can be anticipated.”

The Working Guide also calls for consideration of contamination from the surface. Id. at 9–10. “An assessment should be made as to whether the drilling proposal adequately addresses the possibility of groundwater or surface water contamination from spillage or leakage of contaminants at the surface. This includes leakage of hydraulic or other fluids from a poorly maintained drilling rig, fuel or other spills, and leakage of contaminants from sumps or other drilling fluid reservoirs or holding pits.” Id. at 9. The Forest Service should have “specific procedures identified” to prevent surface water runoff from entering open drill holes.

The Working Guide also calls for monitoring, including: having the driller report important hydrogeological data collected during drilling including aquifer types, depth to first and additional water zones, lithology and structural geology, salinity or specific conductance of groundwater, water quality analyses, water yields, standing water levels several hours after completion, and significant losses of circulation while drilling; accurate records of abandonment procedures and details including groundwater conditions, depth sealed, quantity and type of sealing materials used, casing details, and changes made to the drill hole during abandonment. Attachment F, pp. 11–12.

Without monitoring key areas, there is simply no way to know whether many of the drill holes are causing adverse water quality impacts.

The Forest Service and operator need to establish baseline surface and groundwater water quantity and quality sampling upstream of, within and downstream of the project area. This monitoring should sufficient time to cover two years of seasonal flows. Given the previous exploration activity in the area, this data may already have been collected. The Forest Service should describe the monitoring locations, the frequency of testing, the triggers for additional actions, and the protocols if these triggers are tripped. In addition, if water quality data indicates an increased concentration of hazardous substances in the sample analysis, the Forest should require the operator to investigate possible causes for the negative change in water quality, provide the forest a written report, and recommend mitigation if water quality contaminant increases are directly the result of exploration operations. If the water quality analysis indicates water quality has degraded below State and Clean Water Act criteria for the protection of surface

water, and water quality criteria to protect groundwater, operations should cease until mitigation can be implemented to protect surface and groundwater. The Nevada and Idaho Departments of Environmental Quality should be informed of the situation.

We note that the US District Court has remanded the 2018 Kilgore Exploration Project on the Caribou-Targhee National Forest and the 2011 CuMo Exploration Project on the Boise National Forest due to failure to conduct adequate groundwater baseline studies.

### **Sumps and pits**

If any natural infiltration is to be used as part of drilling operations, these operations should be suspended if sumps approach the capacity for allowing infiltration to occur. The Forest Service needs to explicitly define “approaching capacity.” Further, the Forest Service needs to analyse BMPs for sump and pit construction and ensure that the sump and pits do not pose a danger or act as an attractant for wildlife. We recommend the use of fencing that can deter deer and elk as well as silt fencing to deter small mammals as well as the installation of an escape ramp. Vegetation should be kept clear around the sumps and pits, and the area should be monitored for the introduction of invasive grasses and noxious weeds. See our comments for Noxious Weeds below.

### **Air Quality**

Emission standards need to meet air shed standards for the region. We are concerned about air pollutants, including diesel fuel exhaust and fugitive dust that will be released from drill pad sites and along all transportation routes. These air pollutants can affect public health, vegetation, wildlife, water quality and the use and enjoyment of private properties. The dust management guidelines should require suppression activities when dust clouds are measurable within a reasonably protective predetermined threshold.

### **Noise and Detrimental Effects**

We are concerned about the noise from drilling operations on wildlife, recreationists and residents in the area. The Forest Service needs to describe the volume (decibels) and regularity of noise from drilling and transportation activities and analyze the potential effects. Alternatives to address this issue may include either dispersing or concentrating use of drill pads in certain areas, depending on how the noise is shielded or amplified across the surrounding topography. We suggest that water pumping and drilling should be limited to daylight hours to reduce impacts on recreationists, wildlife, and community residents. If a generator is allowed, decibels should be regulated, fuel adequately contained with secondary containment systems outside of riparian areas, and generators should be turned off at sunset to minimize noise levels. Sound baffling such as the ENC 25 Acoustic Barrier Blanket should also be required for all drill rigs and generators. Noise suppression technology should be incorporated with any noise-emitting equipment on the drill pads. The true degree of sound reduction should first be measured with and without the sound baffles before the start of operations.

### **Dark Skies and Light Pollution**

The negative effects of light pollution on circadian rhythms of plants, wildlife, and humans has become apparent and more widely studied in the past decade. Moreover, a growing number of Western U.S. populations increasingly place more value on dark skies and viewable celestial

bodies such as individual stars, constellations, planets and events such as meteor showers. The Forest Service must analyze the potential adverse effects lighted drill rigs operating at night pose to nocturnal wildlife and the potential impacts to the immediate areas as well as dark sky parks and reserves. We note that the Arnett Creek exploration project on the Salmon-Challis National Forest adopted specific measures to avoid and minimize light pollution.

Any light fixtures should be shielded and downcast during nighttime or low-light operations when additional lighting is needed to reduce excess light pollution, as long as these shields do not compromise operational efficiency or safety. The Forest Service should assist in implementation monitoring to assess if the above equipment is being used properly and will monitor the effectiveness of the equipment in reducing light and noise levels. The use of this equipment may be discontinued should compelling problems arise with respect to personnel safety or operational efficiency.

### **Wildlife**

The Forest Service needs to further describe the potential short and long-term effects on wildlife species, including threatened, endangered, sensitive, and MIS species. This assessment should include surveys for sensitive species such as goshawks and great gray owls, game species such as elk, and rare plants. Moreover, increased traffic, noise, lights and potential 24-hour site occupation and operation will further decrease security for these animals. The analysis should also take into account increased vehicle collisions with mule deer, elk, amphibians, and other wildlife. Should goshawks or other sensitive wildlife be encountered, operations should be delayed or shifted to another part of the project area to avoid disturbing adults or fledglings.

### **Sediment impacts to water quality**

The South Fork Salmon River and the EFSFSR are listed by the Idaho Department of Environmental Quality (DE) as impaired under the Clean Water Act due to excess sediment. While Johnson Creek is not currently listed as impaired due to excess sediment, it has been listed as impaired due to sediment in the recent past. EPA has found, and IDEQ and NOAA have recognized, that the high road densities found in the South Fork Salmon River Watershed are the primary sources of anthropogenic-cause sediment entering these rivers.

Midas Gold's proposal will contribute sediment to tributaries of Johnson Creek, which in turn flows to the East Fork South Fork Salmon River. The Forest Service should calculate estimated sediment delivery with and without the project, and should develop mitigation and monitoring measures to address sediment delivery.

### **Hazardous Materials**

Diesel fuel and petroleum products pose hazards to aquatic life. Fuel should be transported in Department of Transportation-approved tanks at quantities not to exceed 55 gallons. All fuel storage should be greater than 300' from live water. A hazardous material plan needs to be in place in the event of a fuel or solvent leak along the transportation route to the drilling sites. We recommend locating spill response kits at strategic points along the transportation route. Hazardous wastes including grease, lubricants, oil, and fuels need to be disposed off off-site in an environmentally appropriate manner on a weekly basis.

We are concerned about even moderate quantities of chemicals being transported at once

because an accident could release large amounts of hazardous materials. The Forest Service should allow for a minimal amount of chemicals necessary for that month's operations. If chemicals are transported and utilized as needed throughout the process, there will be a smaller stockpile on site if operations are suspended for some reason. If operations are suspended unexpectedly, there will also be a smaller stockpile to transport back out through the transportation corridor for reclamation. The operator should provide the Forest Service with monthly reports on fuel and chemical usage so that the allowable amounts of materials can be further refined for future operations. The Forest Service needs to further define the quantities of materials that can be transported on a monthly basis. The Forest Service should examine the potential impacts of the various chemicals to water, soil, plants and wildlife if the hazardous materials were inadvertently spilled or otherwise introduced into the environment.

The Forest Service should provide restrictions for which chemicals can be stored next to each other and transported together in the same vehicle. The Forest Service should also specify the types of vehicles to be used (tanker truck, pickup, truck, etc) and the operating standards for these vehicles. Specifically, the Forest Service should require regular vehicle inspections to ensure that brakes, lights, and seatbelts are functioning properly. Only inspected vehicles should be allowed to transport certain chemicals.

Chemical containers need to be rated to withstand impacts, pressure, and extreme temperature gradations. For example, if there were a vehicle fire next to a river, a container could become super-heated and then roll into the cold river. The differential expansion and contraction in the lid and body of the container could result in a catastrophic leak. All items transported need to be packaged in such a way that no spillage would result in the event of a crash.

The transportation route should be examined to locate particularly hazardous areas that could be improved through guardrails, lower speed limits, or other road improvements. A Spill Prevention, Containment, and Countermeasures plan should be required given the sensitive nature of this watershed. This plan would require that each vehicle is equipped with all necessary equipment for spill containment and countermeasures and that all drivers are trained and tested in rapid response. Fuel containment equipment, including chemical absorbers and booms to intercept stream transport, need to be on site and cached at stream crossings. Fuel containment equipment, including chemical absorbers and booms to intercept stream transport need to be on site and cached at strategic places downgradient.

Any waste material not re-injected in the drill holes should be characterized for contaminants and stabilized and reseeded if appropriate. We are particularly concerned about heavy metal contamination and the potential for acid mine drainage.

### **Reclamation**

We recommend establishing geo-referenced photo plots to show pre-disturbance conditions and help determine when revegetation goals have been met. The reclamation plan should be an integral part of this NEPA process. To minimize sedimentation effects, the reclamation of the area must take place concurrently with exploration activities. If the operator fails to adhere to reclamation protocols, then the Forest Service must issue a Cease and Desist order for any additional work. Any topsoil or large woody debris should be salvaged and replaced following

operations. This aspect of the project should cover refilling all sumps, recontouring and revegetating the roads and drill pads, removing noxious weeds, and naturalizing the area. Complete reclamation should occur as soon as possible after operations cease.

### **Bonding and Financial Assurances**

Under 36 CFR § 228, the agency should require a financial assurance that ensures the reclamation would be completed in the event of abandonment of the site. The bond estimate should reflect current prices for labor, equipment, and fuel. The reclamation bond must be independent of the bond covering any other mining operations. The bond must be substantive enough to cover the potential impacts to the area's ecosystem as well as the area surrounding the transportation route. Bonding should also be provided for possible spills of fuels and other hazardous materials along the roadsides. Bonding costs should be calculated according to Forest Service pricing, including the cost of renting and transporting equipment and wages for all workers and supervisors. These bonding calculations should be included in an environmental review and available for public comment and review.

### **Monitoring**

We have encountered numerous mining projects that have violated BMPs and operating plans. Unfortunately, monitoring was not sufficient to discover these problems in a timely fashion. We recommend that the Forest Service review and update monitoring protocols, and we suggest monitoring take place at weekly intervals throughout the mining operation, continually throughout reclamation, and regularly following reclamation. The operator's drilling log results should be included in the monitoring efforts for metrics such as depth to groundwater.

### **Contaminated Material**

Even though the volume of excavated material is very small, waste rock and ore associated with drilling activities still need to be characterized for acid mine drainage and heavy metal(s) contamination. The information provided could be useful in advance of any additional exploration and operational design. Any waste material not re-injected in the drill holes should be characterized for contaminants and stabilized and reseeded if appropriate. Waste material containing contaminants should be fully encapsulated by an impermeable cap on top and a lining beneath.

### **Noxious Weeds**

Ground disturbance and vehicular traffic will accelerate the spread of noxious weeds, an ecological problem of epidemic proportions. The tires and undercarriage of all vehicles must be hosed down with pressurized water to dislodge seeds. Work crews trained in noxious weed recognition and removal should patrol the roadbed and the area within 100 ft on either side of the road. Weeds or microtrash should be mechanically removed. These stipulations need to be included in the authorization. Any disturbed soil needs to be reseeded with native plants, and weeded to prevent the proliferation of noxious weeds. Monitoring should continue for five years following reclamation.

### **Off-Road Vehicles**

We are concerned that authorized or unauthorized routes created by the excavator, drill rigs, and any other vehicles used during the project will encourage inappropriate off-highway vehicle



(OHV) use in and around the project area. The devastating impacts of inappropriate OHV use on forest ecosystems are well established. Irresponsible OHV users degrade water quality, spread noxious weeds, fragment wildlife habitat, disturb wildlife, and displace non-motorized recreationists. The Forest Service needs to describe how they will effectively monitor and control the use of OHVs in the project area. The analysis should describe proposed methods for managing OHV access (signs, berms, gates, piles of slash) and the probability of success for each of these measures. This analysis should include funding and numbers of personnel available for monitoring, maintenance, and enforcement.

### **Fire Prevention**

A large percentage of fires are started by human activities, particularly those strongly associated with roads. We are concerned about the increased possibility of fire starts as a result of investigation activity. Summer operations will increase the risk of wildfire. There must be an approved fire plan and emergency equipment accessible during operations. Regularly inspected fire extinguishers, buckets, and shovels need to be placed in all vehicles.

### **Operation protocols**

Operations may need to be suspended under adverse weather conditions such as lightning or wildfires. The Forest Service needs to provide a description of these conditions. Inspector-certified fire extinguishers should be placed in all vehicles and in all structures. There must be a USFS approved fire plan and emergency equipment in place during all times of operation. The Forest Service and operator should develop an evacuation plan in case a wildfire is approaching the area. The operator should be in regular radio contact with the Forest Service.

### **Seasonal and Interim Closures**

The Forest Service should set a date or conditions such as snow depth or temperature which will signify the end of each field season. At or by this point, the operator needs to “winterize” operations by stabilizing roads with berms adequate for spring runoff, removing equipment, stabilizing topsoil and coarse woody debris stockpiles, among other tasks. The Forest Service needs to inspect the site before the operators leave to ensure that this work is completed.

In the event that the company decides to pause or suspend investigation activities and restart them later, the Forest Service should describe the protocols for stabilizing the site during interim closures.

### **Additional Infrastructure Needs**

The Forest Service should describe anticipated infrastructure needs such as water tanks, equipment storage lockers, porta potties, etc. Porta Potties or the equivalent should be mandatory equipment for each drilling location; no human waste should be allowed on the landscape. No surface occupancy should be permitted. As mentioned above, these facilities need to be located outside of Riparian Habitat Conservation Areas.

### **Cumulative Effects**

The Forest Service must also analyze and disclose the direct, indirect, and cumulative impacts of this project in conjunction with all past, present and reasonably foreseeable future actions, including but not limited to past and present mining and mineral exploration operations. The

Forest Service should include a complete Roads Analysis of this area, an assessment of Total Soil Resource Commitment, water yield, Detrimental Disturbance, and Equivalent Clearcut Area. These factors must meet all applicable requirements in the Forest Plan.

### **Helicopter support**

While helicopters significantly reduce the need for surface disturbance, there are increased safety risks and fuel spill risks in the event of an accident. The Forest Service should work with the operator to determine contingency plans in the event of mechanical failure. There are also noise disturbances to homeowners, recreationists and wildlife to consider which could be reduced through seasonal and daily limitations.

The Forest Service should select flight helicopter staging areas paths that make sense logistically, are informed by daily and seasonal weather patterns, reduce fuel haul distances, and protect water quality in the event of an accident. Fuel needs to be stored outside of RCAs. For example, flight paths should avoid multiple river or creek crossings if possible.

While helicopters will be necessary to transport equipment and supplies to drill rigs and may transport drill rig crews at the same time, there may be times when no hauling is necessary except to transport drill rig crews. In addition, there may be occasions where crew drop offs and/or pick-ups for workers at helicopter drill sites are not feasible due to mechanical, weather or fire issues. At these times, drill rig crews could walk to the site. As such, the Forest Service should consider identifying a parking area, creek crossing and cross country routes for use when helicopter access is not available or is not determined to be necessary.

### **References**

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