

CHAPTER 2 - ALTERNATIVES

2.1 Introduction

This chapter describes and compares two action alternatives that fully or partially meet the purpose and need identified in Chapter 1, and a No Action Alternative (Alternative A). Each alternative reflects a different response to the significant issues identified through the scoping and analysis process, and each alternative would result in different environmental effects. This chapter concludes with a comparative summary of the alternatives considered in detail. This comparison, combined with the more detailed disclosure of impacts in Chapter 3, provides the information necessary for the decision-maker to make an informed choice between alternatives.

2.2 Development of Alternatives

The Proposed Action was developed by the Interdisciplinary Team using the American Independence Mines and Minerals Co. (AIMMCO) Plan of Operation, revised on June 4, 2010, and further revised on November 12, 2010, as a basis for the actions and was reviewed and approved by the Responsible Official. Further, as documented in Chapter 3 and this project's planning record, the Proposed Action (Alternative B) would be consistent with applicable laws, rules, and regulations. As disclosed in this chapter, any action alternative would require a minor Forest Plan amendment for Visual Resources. The Interdisciplinary Team developed alternatives to the Proposed Action in response to issues and/or concerns identified through internal and external scoping.

2.2.1 Issues Used in Alternative Development

As disclosed in Chapter 1 of this document, three issues were identified during internal or external scoping. The effects to wilderness character and experience, scenic environment, and water/soil/fisheries could not be resolved, nor could anticipated impacts be mitigated.

2.2.2 Concerns Not Used in Alternative Development

Concerns relating to other resource components were evaluated in the analysis. Net effects to these concerns were limited or would be relatively the same for all action alternatives. These concerns are generally addressed by requiring compliance with specific laws, Best Management Practices (BMPs), agency policy, and/or Forest Plan standards.

2.3 Alternatives Eliminated from Detailed Study

In addition to the alternatives fully evaluated in this document, other management approaches were considered by the Interdisciplinary Team in response to preliminary concerns generated from internal and external scoping of the Proposed Action. These alternatives, which were not considered in detail, are described in this section along with an explanation of why the alternatives were not considered further.

2.3.1 Helicopter Transport of Personnel and Equipment

To avoid the need for temporary roads in the FC-RONR Wilderness, reduce effects to soil and water and fisheries, and attempt to better maintain wilderness character and experience, the ID Team considered an alternative that accessed the claims via helicopter. Although AIMMCO's proposal could have been implemented using helicopter support, it was determined that this method would be disruptive to Wilderness users and possibly to wildlife and create undue noise. Mobilization would require more trips than proposed with action alternatives due to the need to break down equipment and fly in multiple loads. Daily staffing, maintenance, and supply would also require more trips due to typical weight restrictions on helicopters that would be used for this type of task at the elevations in the area. Construction of one or more helispots within and potentially outside the wilderness would be required. In addition to requiring more trips, the use of helicopters would create higher noise levels and the noise would carry over greater distances than action alternatives propose. Lastly, helicopter

operations needed to support operations would require the transport of more fuel into the project area than the action alternatives propose.

2.3.2 Non-Mechanized with Access by Foot and Pack Stock

Directives contained in the Wilderness Act and at 36 CFR 228.15 guide motorized incursion into the Wilderness associated with minerals. The Wilderness Act allows for surface disturbing activities that are reasonably incident to mining or processing operations when valid rights have been found to exist (U.S. Congress 1964, Section 4[d-3]). The mining activities described may be implemented if such activity is carried on in a manner compatible with the preservation of the wilderness environment (U.S. Congress 1964, Section 4[d-2]). In the case of valid mining claims or other valid occupancies the Secretary of Agriculture shall permit ingress and egress to such surrounded areas by means which have been or are being customarily enjoyed with respect to other such areas similarly situated (U.S. Congress 1964, Section 5[b]). Operations shall be conducted so as to protect National Forest surface resources in accordance with the general purposes of maintaining the National Wilderness Preservation System unimpaired for future use and enjoyment as wilderness and to preserve its wilderness character, consistent with the use of the land for mineral location, exploration, development, drilling, and production and for transmission lines, water lines, telephone lines, and processing operations, including, where essential, the use of mechanized transport, aircraft or motorized equipment (36 CFR 228.15(b)). Persons with valid mining claims wholly within National Forest Wilderness shall be permitted access to such surrounded claims by means consistent with the preservation of National Forest Wilderness which have been or are being customarily used with respect to other such claims surrounded by National Forest Wilderness (36 CFR 228.15(c)). Other directives associated with the wilderness are contained in Chapters 1 and 3.

A reasonable development scenario would still include the use of drilling equipment and other motorized equipment to conduct confirmation work. Non-mechanized tools would not allow proposed operations to occur and was not considered reasonable by the Forest Service. The proposed activities of core drilling, trenching, and adit opening would not customarily be completed by non-motorized methods. Subsequently there would be a need to provide access to work areas for equipment, whether by air (Section 2.3.1) or ground. While not covered in extensive detail, motorized access throughout the life of the project would likely shorten the overall amount of time intrusions of motorized equipment and vehicles impacted the wilderness thereby limiting the temporal impacts to wilderness characteristics associated with motorized use (Section 3.3). Past instances that required non-motorized means of access were generally more restricted in the scope and type of the activity proposed by the miner. The scope and type of activity associated with this project would necessitate motorized access and likely limit the duration of the activity in the wilderness, therefore a non-mechanized alternative was dropped from further consideration.

2.3.3 Winter Operations

To avoid the typical season of use in the wilderness an alternative was considered but eliminated that would have only allowed winter operations. While the number of human visitors to the wilderness would be minimal during that time period, the effects of activities on wilderness characteristics would still exist. Winter operations would also necessitate the use of helicopters described in Section 2.3.1. It would be reasonably anticipated that the road to the Big Creek airstrip would require plowing, to facilitate a base for aerial operations. While the plowing of snow is feasible, it would create access that would not normally exist into the area and result in additional effects from the plowing itself. Water is typically used as the means for removing cuttings from the hole while drilling and due to freezing winter temperatures on the claims would need to be replaced by other fluids. While snow loads vary greatly from year to year, snow loads can be substantial with the Deadwood SNOTEL site located to the south of project area having 120 inches of standing snow in January of 2008. Snow loads could substantially affect the conduct and timeliness of all activities and frozen ground could substantially affect the ability to cleanly conduct trenching activities and work at the Ella Mine. Lastly, personnel, including those needed by the Forest Service to administer operations, involved in operations would be subjected to increased risk from avalanches, freezing temperatures, and be possibly stranded should helicopters not be able to fly.

2.3.4 Temporary Bridges in FC-RONR Wilderness

An alternative was suggested that would have installed a temporary bridge at the ford on a tributary of Coin Creek instead of filling gabion baskets with rock. Getting the needed materials into the FC-RONR wilderness may have necessitated further road maintenance to widen and clear temporary roads to accommodate the length and type of materials needed. The construction of a temporary bridge could have necessitated more trips into the wilderness than the use of gabions with rock sourced inside the FC-RONR wilderness. Bridge installation would have likely necessitated the construction of bridge abutments requiring removal and subsequent restoration following removal of the bridge at the conclusion of the project. Following removal of the bridge, the trail would still require repair to provide a trail ford of the creek for user access on Forest Trail #13. Additionally, road alignment and grade may have required adjustment to provide a safe approach onto the bridge.

2.4 Alternatives Considered in Detail

2.4.1 Alternative A - No Action

The National Environmental Policy Act (NEPA) requires consideration of a “No Action” alternative. The No Action Alternative serves as a baseline to analyze the environmental effects of the action alternatives. However, under Forest Service mining regulations at Title 36 Code of Federal Regulations (CFR) 228 Subpart A, this option can only be considered as an intermediate step in processing a plan of operation, provided that it has been properly submitted under the authority of the U.S. Mining Laws. For example, some proposed plans or parts of proposed plans of operation may not represent logical and sequential development of mineral property, may not be feasible, may not comply with applicable state or federal laws, or may not be reasonably incident to mining. In such cases, the Forest Service may not simply deny approval of the plan, but has the obligation to notify the operator as required under 36 CFR 228.5, of changes to be made that are necessary for its approval. Ultimately, in accordance with law and regulation, holders of valid mining claims have a legal right to develop their claims and a reasonable plan of operations must be identified and approved.

2.4.2 Alternative B - Proposed Action

On September 4, 2007 AIMMCO submitted an operating plan for drilling operations, trenching and sampling, and reopening the caved Ella Mine adit. The Forest Service worked with AIMMCO for more than two years to revise the initial proposal. A revised Plan of Operations was submitted to the Forest Service on June 4, 2010 and was further revised by a November 12, 2010 letter. AIMMCO has incorporated additional changes to their proposed plan since that time.

This alternative is based on the proposed plan of operations (operating plan or plan) submitted by American Independence Mines and Minerals Company (AIMMCO) to the Forest Service on June 4, 2010, along with subsequent revisions. It represents a reasonable plan which the Forest Service is required to approve, unless actions are needed to minimize adverse environmental impacts on National Forest System surface resources. The Proposed Action would allow AIMMCO to collect subsurface geologic information in order to prepare for a new mineral examination by the Federal Government. The claims encompass approximately 20 acres each and are located near Coin Creek, a tributary of Beaver Creek, which flows into Big Creek, a tributary of the Middle Fork Salmon River. Except for one drill location, the proposed drilling operations, rock chip sampling, and Ella Mine opening would occur on Golden Hand No. 1 and No. 2 lode mining claims (Figure 2-1). The project area includes the Golden Hand claims, the connecting temporary roads between the claims and Pueblo Summit, the temporary road to the Werdenhoff, and Forest Service Roads 343, 371, and 373 (Figure 1-2).

Because the Proposed Action does not meet Forest Plan standard SCST01 for Visual Quality, a one time, site specific, non-significant amendment to the Forest Plan would be necessary. This is described in section 2.4.2.1.

Golden Hand No. 1 and No. 2 Lode Mining Claims Draft EIS

The following is a summary of the Proposed Action:

- Maintain portions of Forest Roads (FR) 371 and 373 between the Big Creek Trailhead and Pueblo Summit and maintain approximately 4.1 miles of temporary road, including 4.0 miles within the FC-RONR Wilderness. Reconstruct one short approach to a crossing of the North Fork of Smith Creek on FR 373.
- Repair a ford on a tributary to Coin Cr. and repair a ford on Coin Cr.
- Authorize up to 771 motorized trips into the FC-RONR Wilderness annually during a 100 day operating season. Motorized trips within the Wilderness claim operating area to transport needed items from the storage area to work sites would be kept to the minimum necessary.
- Construct 11 drill pads from which 13-18 core holes would be drilled.
- Collect rock chip samples from pits excavated to bedrock at several locations in the temporary roads.
- Reopen and timber a caved mine adit (the “Ella”) to allow access for underground mapping and sampling. Excavated material would be placed on the existing flat disturbed area in front of the portal location.
- Use a variety of vehicles and equipment including, but not limited to, four-wheel-drive pickup trucks, a 7 cubic yard dump truck, flatbed truck, D-8 (or equivalent) bulldozer, 3-cubic yard loader or small excavator, a track or skid-mounted drill rig, air compressor, small jackhammer, and generator.
- Store fuel on the claims or an adjacent valid lode claim (Golden Hand No. 8).
- Use the Penn Ida plaza for storage, if necessary.
- Use the Golden Hand bunkhouse within the FC-RONR Wilderness as office space.
- Establish a temporary camp at the Werdenhoff.
- Obtain water from Coin Creek in accordance with the water right, which would not exceed 25,000 gallons per day. The water would be obtained and used in accordance with a temporary water right issued by the Idaho Department of Water Resources.
- Conduct defined reclamation activities at the end of each season.
- Implement design features and/or mitigation to reduce or prevent undesirable effects resulting from proposed management activities.

A detailed description of activities proposed under Alternative B is provided below.

Access, Road Maintenance, Temporary Roads

Access to the claims would be on Forest Roads (FR) 371 and 373 to the FC-RONR Wilderness boundary at Pueblo Summit, north of Edwardsburg. Maintenance activities would occur on approximately 8.0 miles of system road, from the trailhead at Big Creek to Pueblo Summit. On Forest Roads (FR) 371 and 373, the road maintenance and reconstruction proposed to facilitate project activities and reduce sediment would:

- Construct driveable dips where appropriate along FR 371 and 373.
- Place coarse and well graded aggregate on approximately 500 feet of road surface.
- Construct an insloped ditch on FR 373 for approximately 450 feet.

- Repair a small (approximately 50 linear feet of road) section of road fill on FR 373 by adding additional material. At the same location, widen a section of FR 373 by further cutting into the slope.
- Install a box culvert/steel arch pipe capable of Aquatics Organism Passage (AOP) on FR 373 at the North Fork Smith Creek near Werdenhoff. Improve the road alignment on both sides of the stream to straighten the approaches.
- Armor, by placing coarse gravel, approaches to several North Fork Smith Creek crossings of FR 371.
- Raise the road surface where substantial portions of road with poor drainage exist.

Proposed ongoing maintenance along these roads would include clearing loose rock to the original road width, removing fallen trees, and clearing brush to provide access to vehicles and equipment described in Table 2-4. Any brush and trees cleared for road maintenance would be placed along the side of the road and serve as a slash-filter windrow. Additionally, a 0.1 mile temporary road to provide access to Werdenhoff would be authorized along an existing unauthorized road. Temporary access would be provided by clearing loose rock to the original road width, removing fallen trees, and clearing brush, if necessary. Table 2-1 displays the mileage of individual segments of road maintenance and reconstruction needed to accomplish proposed activities.

Within the FC-RONR Wilderness, this alternative proposes to authorize 4.0 miles of temporary road to facilitate proposed activities. Temporary road authorization would occur on roughly 1.0 mile of existing unauthorized roads, all of which were built as roads prior to the designation of the FC-RONR Wilderness. While these unauthorized roads are not part of the current National Forest system of roads, they remain in very good condition overall. Approximately 3.0 miles of Forest Service System Trail #13 would be authorized as a temporary road. Forest Service Trail #13 was originally a road accessing the Golden Hand claims and has been maintained as a foot and pack stock trail following the designation of the FC-RONR Wilderness. Table 2-1 displays the mileage of individual segments of temporary road authorization needed to accomplish proposed activities. Maintenance activities required on these temporary roads to facilitate exploration activities would include the removal of brush from existing roadbeds, the casting of rock debris in the prism to the fill side of the road, and the placement of slash from brushing activities on the fill side of the road. Temporary roads accessing several of the drill locations would have drainage improved where water has saturated the road by reestablishing drainage from the road surface and/or reinforcing the road bed with geotextile fabric.

A ford on a tributary to Coin Creek would require more extensive repair to provide access. The repair would consist of placing rock filled gabion baskets to restore the road bed and placing coarse rock to form a tread. Fill rock would be sourced from the talus slope located on the road from the Golden Hand bunkhouse to the Ella Portal or the Penn Ida site.

Additionally, the ford at Coin Creek would be repaired to provide passage. The rock substrate in the creek would require no further armoring. Approaches to the stream would be armored. An intermittent stream channel intersecting the road approximately 50 feet southeast of this ford would have drainage features maintained/installed to allow proper drainage of the channel where it intersects the road.

Table 2-1. Proposed Temporary Roads and Maintenance for the Golden Hand Mine Project under Alternative B.

Route	Activity	Mileage	Within the FC-RONR
013	Authorization of Temporary Road and Maintenance	3.0	Yes
371	Road Maintenance	4.1	
373	Road Maintenance and Reconstruction	3.9	
503731000	Authorization of Temporary Road and Maintenance	0.1	
503739000	Authorization of Temporary Road and Maintenance	0.3	Yes
503739500	Authorization of Temporary Road and Maintenance	0.3	Yes
503739800	Authorization of Temporary Road and Maintenance	0.3	Yes
503739900	Authorization of Temporary Road and Maintenance	0.1	Yes

Confirmation Activity

Core Drilling

Core drilling would occur on eleven drill sites in the project area (Figure 2-1). Temporary roads would be used to access 11 drill sites (with 13-18 drill holes). Drilling would be conducted by one drilling rig on a 24 hour basis utilizing two crews on 12 hour shifts. Drill pads would be constructed by widening the temporary roadways to provide a 20 foot by 20 foot drill pad.

A lined mud pit with an approximate capacity of 4,000 gallons of drilling fluid and cuttings would be constructed in the road at each drill pad or a portable pit would be used. After drilling at each site is completed, drill cuttings would be excavated from the pit and placed on the road to complete drying. The pit would be back filled with cuttings and previously excavated material.

Silt fences would be placed down slope of drill pads.

Drill holes would be approximately 500 to 800 feet in depth. The principle drilling fluid would be water. If necessary, other drilling fluids containing, but not limited to, bentonite, polyacrylamide, silica, mineral or vegetable oil, and gypsum products may also be used. Drill core would be boxed and transported daily to Werdenhoff for logging. Additionally, Werdenhoff would serve as a staging area for supplies. Drill core would be stored at Werdenhoff until transported off Forest for assay or permanent storage.

Rock Chip Sampling

Rock chip samples would be collected from three pits excavated to bedrock (Figure 2-1). Constructed pits would occur within roadways with a dimension of approximately 6 feet wide by 15 feet long by 10 feet deep. Excavated material would be temporarily stockpiled on roadways. Rock chip samples would be collected from the pit using a small jackhammer and transported to Werdenhoff. Following sample collection the pit would be backfilled with the stockpiled material.

Ella Mine Opening

The Ella adit would be opened to allow for rock chip sampling and geologic mapping (Figure 2-1). The currently caved adit would be opened using a small excavator or equivalent to remove caved/sloughed material from the portal. This material would be removed until bedrock is reached. If bedrock is not reached within approximately 30 feet, a mining technique called spiling would be used to advance the excavation through unconsolidated ground. The portal and adit would be timbered to provide safe working conditions. Timbers would be brought from outside the FC-RONR Wilderness. Rock samples would be transported to Werdenhoff.

The disturbed area around the portal (the plaza) would be cleared of larger rock to provide a work area and store excavated material in lifts of appropriate size. A locked gate or door would be installed at the portal to prevent unauthorized entry and screened to exclude bats.

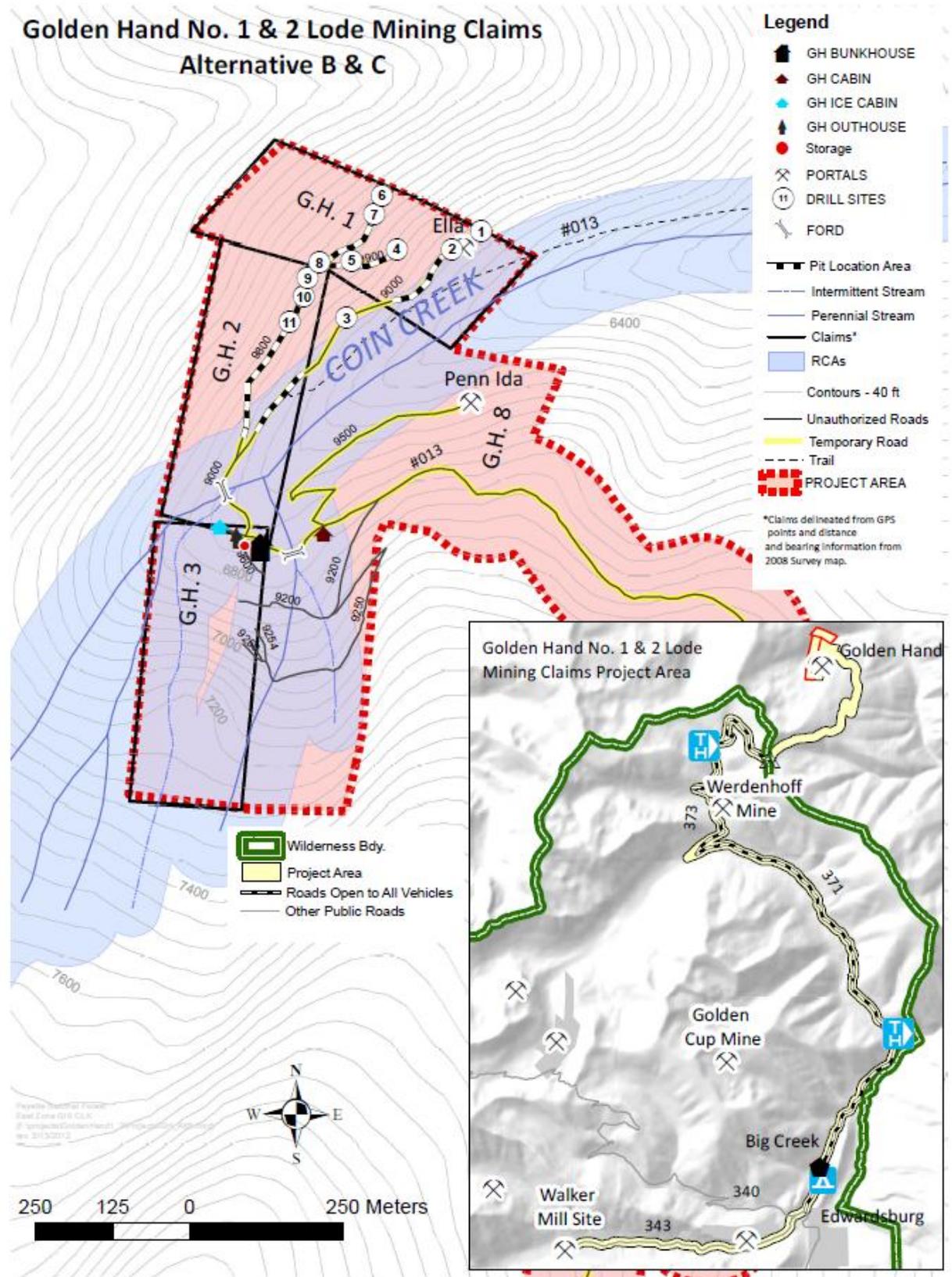


Figure 2-1 Alternative B, Proposed Action, and Alternative C

Vehicles and Equipment

Alternative B proposes to bring supplies, equipment, and personnel from the Werdenhoff staging area to the project area using four-wheel drive vehicles. All Terrain Vehicles (ATVs/UTVs) could also be used to move personnel around the site. Regular motorized access to the mine site would include the use of two larger 6x6 vintage 1940 era trucks. Drill rigs would consist of skid or track-mounted core or reverse circulation types. A complete list of vehicles and equipment expected to be used during the project is provided in Table 2-4.

Travel to and from the site would be kept to the minimum necessary. It is anticipated that following each shift a pickup/service truck (two vehicles) would make a twice daily round trip from the mining area to the Werdenhoff staging area on average over the season. Additionally while drilling, a daily round trip to transport core samples (consistent with needed chain of custody) would be incurred on average over the season and up to one round trip per day for needed supplies, management, and consultants could occur on average over the season. While confirmation activities take place, approximately 500 gallons of diesel fuel would be brought to the drill site every other day on average over the season in a DOT approved truck mounted tank. The GMC 6x6 would move equipment in and out at the beginning and end of each season and would transport goods such as timbers and other equipment associated with the operation. Drilling and related equipment would be brought in at the beginning of the season, remain on site, and be removed at the end of the season.

Once on site within the wilderness, crews would be authorized to travel back and forth from the work sites to wilderness storage areas (Golden Hand Bunkhouse and Penn-Ida) to obtain necessary equipment to conduct activities using motorized vehicles. These trips would be considered part of a round trip as described above for shift change. These motorized trips to transport needed items from the storage area to work sites would be kept to the minimum necessary and to extent practicable be accomplished as trips described above pass the storage area and proceed to the work areas.

It is reasonable to expect that a vehicle or piece of equipment that was not anticipated may be needed. Those that fall within a 96 inch by 161 inch wheelbase may be approved for use after the Forest Service is notified.

Hazardous Materials

Hazardous substances associated with the project would include, but are not limited to, diesel fuel, gasoline, drilling fluids, and lubricating grease. In the event hazardous or regulated materials were spilled, spill containment measures would be taken to control and contain the spill and the Forest Service and the State of Idaho would be notified, as required. In compliance with all state and federal hazardous substance regulations, any hazardous substance spills would be cleaned immediately and resulting waste would be transferred off-site in accordance with all applicable local, state, and federal regulations. Contract drillers would maintain spill kits on site for use in case of a spill.

While drilling, approximately 500 gallons of diesel fuel would be brought to the site every other day in a DOT approved truck mounted tank from AIMMCO's operations on Logan Creek to the Golden Hand Mine. The diesel would be stored in a 1,320 gallon (maximum) double-walled trailer mounted tank. The 1,320 (maximum) gallon tank would be transported empty and placed in lined containment at either the Penn Ida adit or outside of RCAs. Gasoline for vehicles would be transported from Logan Creek to Werdenhoff on an as needed basis, likely to be weekly. Gasoline would be transported in DOT approved truck mounted tanks.

Timbers

Timbers would be transported from outside the Wilderness.

Work Crew Housing and Storage

The work crew would include approximately seven people. Larger crews may be necessary at times; for example, field crews may temporarily increase to nine or ten during drilling crew cycle changes and management personnel may be added to this number on a temporary irregular basis. The work crew would be housed at Werdenhoff. Travel trailers and/or platform tents would be used to house crews

and provide needed cooking and sanitation facilities. Trailers or tents would also serve as needed office space at Werdenhoff.

Alternative B proposes to use the existing bunkhouse on Claim 3 for office space. Toilets (self-contained) would be placed on the relatively level, open ground west of the bunkhouse. AIMMCO would engage in limited restoration of the bunkhouse to facilitate use as a meeting space, including:

- Foundation repair/putting the building on a level basis through the replacement of rotted lower logs with logs obtained from outside the Wilderness.
- Repair of the front porch and the roof support.
- Replacement or repair of broken windows on the backside of the bunkhouse exposed to the hillside.
- While it is unlikely that a new roof would be required, the stove pipes protruding from the roof could be replaced with weathered used pipe.

Minor leveling of about 4000 square feet of the area west of the bunkhouse is likely to be necessary to accommodate the storage of drilling supplies and a service trailer.

If necessary, additional storage needs could be met by using the level work area at the Penn-Ida portal on Claim 8. The area would be cleared of brush after opening an existing, 0.3 mile unauthorized roadbed that would be maintained as a temporary road to facilitate access to the site. Brush would be removed from the existing road bed using a chainsaw, rock/debris in the prism would be cast to the side, and slash from brushing activities would be placed on the fill side of the road cut.

Water

The operation would utilize water from Coin Creek near the bunkhouse location for drilling operations. Water would be directed from the creek to the point of use via a plastic pipe. Water delivered by pump or gravity from Coin Creek would be contained in multiple (approximately two) 5,000 gallon capacity tanks, located on the temporary road, and then conveyed to drill sites through PVC pipes by pump or gravity. No ditches or creek dams are anticipated. Overall, it is expected that the proposed drilling activities would use between 4,000 and 8,000 gallons of water per day. Regardless of the expected daily use for actual drilling, water diversion would not exceed 25,000 gallons of water per day for drilling and recharging storage tanks.

Timing and Duration

The general field season for the activity is during the summer and fall months, but typically only lasts for four months out of the year. The project is projected to be completed within 3 field seasons, unless unanticipated delays occur.

Reclamation and Bonding

Alternative B proposes a number of reclamation activities at the end of various operations. All drill holes would be abandoned to state standards. The following would apply:

- All holes would be plugged with bentonite and water mixed to a +50 viscosity
- The surface casing would be pulled or cut off
- The top 20 feet of the hole would be cemented, unless artesian flow is encountered. In which case, the holes would be cemented from the bottom to the top.

Additionally, trenches (including sump pits) would back filled and drill pad locations would be recontoured to the original cross-section.

Under Forest Service Mining Regulations at 36 CFR 228 Subpart A, reclamation bonds that are required must be posted with the Forest Service prior to final approval of the plan of operation.

2.4.2.1 Forest Plan Amendments Associated with Alternative B

Alternative B would require one amendment to the Forest Plan. This would be a one time, site specific, non-significant amendment that would not change overall Forest Plan goals, objectives, DFC, or associated outputs. Alternative B would:

Golden Hand No. 1 and No. 2 Lode Mining Claims Draft EIS

- Amend Forest Plan Standard SCST01 to allow for activities not meeting Visual Quality Objectives associated with the Golden Hand No. 1 and No. 2 Lode Mining Claims Project to occur, by appending the following: “For the Golden Hand No. 1 and No. 2 Lode Mining Claims Project allow activities within that portion of the project area, approximately 291 acres, which would not meet the Visual Quality Objective of Preservation.”

2.4.2.2 Design Features Specific to Alternative B

In addition to Forest Plan standards and guidelines designed to mitigate impacts, the following measures would be applicable to Alternative B. These design features have been incorporated to reduce or prevent undesirable effects resulting from proposed management activities.

Wilderness/Recreation

Once mobilization has occurred motorized access into the wilderness would be limited to two trips per day for shift change, one trip for core sample transport, one trip for miscellaneous supplies/overhead, and one trip every other day for fuel delivery. Motorized trips inside the FC-RONR Wilderness for other purposes or in excess of that described would only occur with prior approval from the Forest Service⁽¹⁾.

Following excavation and sampling of the Ella Portal, a gate would be installed and securely locked.

Facilities

Repairs conducted to the bunkhouse are not limited to those described in Section 2.4.2 and would entail all items needed to make the structure habitable per applicable standards for the purposes described as directed by the Forest Service at the time of project implementation⁽¹⁾.

2.4.3 Alternative C

This alternative was developed to identify any terms and conditions to ensure that mining activities are conducted in a manner that minimizes adverse environmental impacts to National Forest surface resources. Additionally, this Alternative responds to issues identified during internal and external scoping. This alternative would allow AIMMCO to collect subsurface geologic information in order to prepare for a new mineral examination by the Federal Government. The claims encompass approximately 20 acres each and are located near Coin Creek, a tributary of Beaver Creek, which flows into Big Creek, a tributary of the Middle Fork Salmon River. Except for one drill location, the proposed drilling operations, rock chip sampling, and Ella Mine opening would occur on Golden Hand No. 1 and No. 2 lode mining claims (Figure 2-1). The project area includes the Golden Hand claims, the connecting temporary roads between the claims and Pueblo Summit, the temporary road to the Werdenhoff, and Forest Service Roads 343, 371, and 373 (Figure 1-2).

Because this alternative does not meet Forest Plan standard SCST01 for Visual Quality, a one time, site specific, non-significant amendment to the Forest Plan would be necessary. This is described in section 2.4.3.1.

The following is a summary of Alternative C:

- Maintain portions of Forest Roads (FR) 371 and 373 between the Big Creek Trailhead and Pueblo Summit and maintain approximately 4.1 miles of temporary road, including 4.0 miles within the FC-RONR Wilderness. Reconstruct one short approach to a crossing of the North Fork of Smith Creek on FR 373.

¹ While not included in AIMMCO’s plan of operation, these design features are documented to clarify activities that are considered standard operating procedure during mineral/general project implementation, minimize effects of the activities, and/or are needed mitigation to meet Forest Plan standards and guidelines where possible

- Repair a ford on a tributary to Coin Cr. and repair a ford on Coin Cr.
- Authorize up to 571 motorized trips into the FC-RONR Wilderness annually during a 100 day operating season. Motorized trips within the Wilderness claim operating area to transport needed items from the storage area to work sites would be kept to the minimum necessary.
- Construct 11 drill pads from which 13-18 core holes would be drilled.
- Collect rock chip samples from pits excavated to bedrock at several locations in the temporary roads.
- Reopen and timber a caved mine adit (the “Ella”) to allow access for underground mapping and sampling. Excavated material would be placed on the existing flat disturbed area in front of the portal location.
- Use a variety of vehicles and equipment including, but not limited to, four-wheel-drive pickup trucks, a 7 cubic yard dump truck, flatbed truck, D-8 (or equivalent) bulldozer, 3-cubic yard loader or small excavator, a track or skid-mounted drill rig, air compressor, small jackhammer, and generator.
- Store fuel at Werdenhoff.
- Establish a temporary camp at Werdenhoff.
- Obtain water from Coin Creek in accordance with the water right, which would not exceed 25,000 gallons per day. The water would be obtained and used in accordance with a temporary water right issued by the Idaho Department of Water Resources.
- Conduct defined reclamation activities at the end of each season.
- Implement design features and/or mitigation to reduce or prevent undesirable effects resulting from proposed management activities.

While covered below in detail in the descriptions the principle differences between Alternative B and Alternative C are: Fuel Storage would occur at Werdenhoff rather than within the FC-RONR Wilderness under Alternative C; the use of Penn Ida for storage would not occur under Alternative C; Alternative C would further restrict the number of daily motor vehicle trips into the FC-RONR Wilderness; and, the bunkhouse would not be used as an office under Alternative C. A detailed description of the activities proposed under Alternative C is provided below.

Access, Road Maintenance, Temporary Roads

Access to the claims would be on Forest Roads (FR) 371 and 373 to the FC-RONR Wilderness boundary at Pueblo Summit, north of Edwardsburg. Maintenance activities would occur on approximately 8.0 miles of system road, from the trailhead at Big Creek to Pueblo Summit. On Forest Roads (FR) 371 and 373, the road maintenance and reconstruction proposed to facilitate project activities and reduce sediment would:

- Construct driveable dips where appropriate along FR 371 and 373.
- Place coarse and well graded aggregate on approximately 500 feet of road surface.
- Construct an insloped ditch on FR 373 for approximately 450 feet.
- Repair a small (approximately 50 linear feet of road) section of road fill on FR 373 by adding additional material. At the same location, widen a section of FR 373 by further cutting into the slope.
- Install a box culvert/steel arch pipe capable of Aquatics Organism Passage (AOP) on FR 373 at the North Fork Smith Creek near Werdenhoff. Improve the road alignment on both sides of the stream to straighten the approaches.

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- Armor, by placing coarse gravel, approaches to several North Fork Smith Creek crossings of FR 371.
- Raise the road surface where substantial portions of road with poor drainage exist.

Proposed ongoing maintenance along these roads would include clearing loose rock to the original road width, removing fallen trees, and clearing brush to provide access to vehicles and equipment described in Table 2-4. Any brush and trees cleared for road maintenance would be placed along the side of the road and serve as a slash-filter windrow. Additionally, a 0.1 mile temporary road to provide access to the Werdenhoff would be authorized along an existing unauthorized road. Temporary access would be provided by clearing loose rock to the original road width, removing fallen trees, and clearing brush, if necessary. Table 2-2 displays the mileage of individual segments of road maintenance and reconstruction needed to accomplish proposed activities.

Within the FC-RONR Wilderness, this alternative proposes to authorize 4.0 miles of temporary road to facilitate proposed activities. Temporary road authorization would occur on roughly 1.0 mile of existing unauthorized roads, all of which were built as roads prior to the designation of the FC-RONR Wilderness. While these unauthorized roads are not part of the current National Forest system of roads, they remain in very good condition overall. Approximately 3.0 miles of Forest Service System Trail #13 would be authorized as a temporary road. Forest Service Trail #13 was originally a road accessing the Golden Hand claims and has been maintained as a foot and packstock trail following the designation of the FC-RONR Wilderness. Table 2-2 displays the mileage of individual segments of temporary road authorization needed to accomplish proposed activities. Maintenance activities required on these temporary roads to facilitate exploration activities would include the removal of brush from existing roadbeds, the casting of rock debris in the prism to the fill side of the road, and the placement of slash from brushing activities on the fill side of the road. Temporary roads accessing several of the drill locations would have drainage improved where water has saturated the road by reestablishing drainage from the road surface and/or reinforcing the road bed with geotextile fabric.

A ford on a tributary to Coin Cr. would require more extensive repair to provide access. The repair would consist of placing rock filled gabion baskets to restore the road bed and placing coarse rock to form a tread. Fill rock would be sourced from the talus slope located on the road from the Golden Hand bunkhouse to the Ella Portal or the Penn Ida site.

Additionally, the ford at Coin Creek would be repaired to provide passage. The rock substrate in the creek would require no further armoring. Approaches to the stream would be armored. An intermittent stream channel intersecting the road approximately 50 feet southeast of this ford would have drainage features maintained/installed to allow proper drainage of the channel where it intersects the road.

Table 2-2. Proposed Temporary Roads and Maintenance for the Golden Hand Mine Project under Alternative C.

Route	Activity	Mileage	Within the FC-RONR
013	Authorization of Temporary Road and Maintenance	3.0	Yes
371	Road Maintenance	4.1	
373	Road Maintenance and Reconstruction	3.9	
503731000	Authorization of Temporary Road and Maintenance	0.1	
503739000	Authorization of Temporary Road and Maintenance	0.3	Yes
503739500	Authorization of Temporary Road and Maintenance	0.3	Yes
503739800	Authorization of Temporary Road and Maintenance	0.3	Yes
503739900	Authorization of Temporary Road and Maintenance	0.1	Yes

Confirmation Activity

Core Drilling

Core drilling would occur on eleven drill sites in the project area (Figure 2-1). Temporary roads would be used to access 11 drill sites (with 13-18 drill holes). Drilling would be conducted by one drilling rig on a 24 hour basis utilizing two crews on 12 hour shifts. Drill pads would be constructed by widening the temporary roadways to provide a 20 foot by 20 foot drill pad.

A lined mud pit with an approximate capacity of 4,000 gallons of drilling fluid and cuttings would be constructed in the road at each drill pad or a portable pit would be used. After drilling at each site is completed, drill cuttings would be excavated from the pit and placed on the road to complete drying. The pit would be back filled with cuttings and previously excavated material.

Silt fences would be placed down slope of drill pads.

Drill holes would be approximately 500 to 800 feet in depth. The principle drilling fluid would be water. If necessary, other drilling fluids containing, but not limited to, bentonite, polyacrylamide, silica, mineral or vegetable oil, and gypsum products may also be used. Drill core would be boxed and transported daily to Werdenhoff for logging. Additionally, Werdenhoff would serve as a staging area for supplies. Drill core would be stored at Werdenhoff until transported off Forest for assay or permanent storage.

Rock Chip Sampling

Rock chip samples would be collected from three pits excavated to bedrock (Figure 2-1). Constructed pits would occur within roadways with a dimension of approximately 6 feet wide by 15 feet long by 10 feet deep. Excavated material would be temporarily stockpiled on roadways. Rock chip samples would be collected from the pit using a small jackhammer and transported to Werdenhoff. Following sample collection the pit would be backfilled with the stockpiled material.

Ella Mine Opening

The Ella adit would be opened to allow for rock chip sampling and geologic mapping (Figure 2-1). The currently caved adit would be opened using a small excavator or equivalent to remove caved/sloughed material from the portal. This material would be removed until bedrock is reached. If bedrock is not reached within approximately 30 feet, a mining technique called spiling would be used to advance the excavation through unconsolidated ground. The portal and adit would be timbered to provide safe working conditions. Timbers would be brought from outside the FC-RONR Wilderness. Rock samples would be transported to Werdenhoff.

The disturbed area around the portal (the plaza) would be cleared of larger rock to provide a work area and store excavated material in lifts of appropriate size. A locked gate or door would be installed at the portal to prevent unauthorized entry and screened to exclude bats.

Vehicles and Equipment

Alternative C proposes to bring supplies, equipment, and personnel from the Werdenhoff staging area to the project area using four-wheel drive vehicles. All Terrain Vehicles (ATVs/UTVs) could also be used to move personnel around the site. Regular motorized access to the mine site would include the use of two larger 6x6 vintage 1940 era trucks. Drill rigs would consist of skid or track-mounted core or reverse circulation types. A complete list of vehicles and equipment expected to be used during the course of the project is provided in Table 2-4.

Travel to and from the site would be kept to the minimum necessary. It is anticipated that following each shift a pickup/service truck (two vehicles) would make a twice daily round trip from the mining area to the Werdenhoff staging area on average over the season. Additionally, a miscellaneous trip to transport needed drill core (consistent with needed chain of custody), consultants, management, and supplies would be authorized every other day on average over the season. The GMC 6x6 would move equipment in and out at the beginning and end of each season and would transport goods such as timbers and other equipment associated with the operation. Drilling and related equipment would be brought in at the beginning of the season, remain on site, and be removed at the end of the season.

Once on site within the wilderness, crews would be authorized to travel back and forth from the work sites to the wilderness storage area (Golden Hand Bunkhouse) to obtain necessary equipment to conduct activities using motorized vehicles. These trips would be considered part of a round trip as described above for shift change. These motorized trips to transport needed items from the storage area to work

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sites would be kept to the minimum necessary and to extent practicable be accomplished as trips described above pass the storage area and proceed to the work areas.

It is reasonable to expect that a vehicle or piece of equipment that was not anticipated may be needed. Those that fall within a 96 inch by 161 inch wheelbase would be approved for use after the Forest Service is notified.

Hazardous Materials

Hazardous substances associated with the project would include, but are not limited to, diesel fuel, gasoline, drilling fluids, and lubricating grease. In the event hazardous or regulated materials were spilled, spill containment measures would be taken to control and contain the spill and the Forest Service and the State of Idaho would be notified, as required. In compliance with all state and federal hazardous substance regulations, any hazardous substance spills would be cleaned immediately and resulting waste would be transferred off-site in accordance with all applicable local, state, and federal regulations. Contract drillers would maintain spill kits on site for use in case of a spill.

While drilling, diesel fuel would be brought to the site daily during shift change in a DOT approved truck mounted tank from AIMMCO's operations on Logan Creek via the Werdenhoff staging area. Approximately 500 gallons of diesel fuel would be brought to the Werdenhoff staging area every other day in a DOT approved truck mounted tank. The diesel would be stored in a 1,320 gallon (maximum) double-walled trailer mounted tank and transferred as needed for each shift. The 1,320 gallon (maximum) tank would be transported empty and placed in lined containment at Werdenhoff. Gasoline for vehicles would be transported from Logan Creek to Werdenhoff on an as needed basis, likely to be weekly. Gasoline would be transported in DOT approved truck mounted tanks.

Timbers

Timbers would be transported from outside the Wilderness.

Work Crew Housing and Storage

The work crew would include approximately seven people. Larger crews may be necessary at times; for example, field crews may temporarily increase to nine or ten during drilling crew cycle changes and management personnel may be added to this number on a temporary irregular basis. The work crew would be housed at Werdenhoff. Travel trailers and/or platform tents would be used to house crews and provide needed cooking and sanitation facilities. Trailers or tents would also serve as needed office space at Werdenhoff.

Toilets (self-contained) would be placed on the relatively level, open ground west of the bunkhouse. Minor leveling of about 4000 square feet of the area west of the bunkhouse is likely to be necessary to accommodate the storage of drilling supplies and a service trailer.

Water

The operation would utilize water from Coin Creek near the bunkhouse location for drilling operations. Water would be directed from the creek to the point of use via a plastic pipe. Water delivered by pump or gravity from Coin Creek would be contained in multiple (approximately two) 5,000 gallon capacity tanks, located on the temporary road, and then conveyed to drill sites through PVC pipes by pump or gravity. No ditches or creek dams are anticipated. Overall, it is expected that the proposed drilling activities would use between 4,000 and 8,000 gallons of water per day. Regardless of the expected daily use for actual drilling, water diversion would not exceed 25,000 gallons of water per day for drilling and recharging storage tanks.

Timing and Duration

The general field season for the activity is during the summer and fall months, but typically only lasts for four months out of the year. The project is projected to be completed within 3 field seasons, unless unanticipated delays occur.

Reclamation and Bonding

Alternative C proposes a number of reclamation activities at the end of various operations. All drill

holes would be abandoned to state standards. The following would apply:

- All holes would be plugged with bentonite and water mixed to a +50 viscosity
- The surface casing would be pulled or cut off
- The top 20 feet of the hole would be cemented, unless artesian flow is encountered. In which case, the holes would be cemented from the bottom to the top.

Additionally, trenches (including sump pits) would back filled and drill pad locations would be recontoured to the original cross-section.

Under Forest Service Mining Regulations at 36 CFR 228 Subpart A, reclamation bonds that are required must be posted with the Forest Service prior to final approval of the plan of operation.

2.4.3.1 Forest Plan Amendments Associated with Alternative C

Alternative C would require one amendment to the Forest Plan. This would be a one time, site specific, non-significant amendment that would not change overall Forest Plan goals, objectives, Desired Future Conditions, or associated outputs. Alternative C would:

- Amend Forest Plan Standard SCST01 to allow for activities not meeting Visual Quality Objectives associated with the Golden Hand No. 1 and No. 2 Lode Mining Claims Project to occur, by appending the following: “For the Golden Hand No. 1 and No. 2 Lode Mining Claims Project allow activities within that portion of the project area, approximately 291 acres, which would not meet the Visual Quality Objective of Preservation.”

2.4.3.2 Design Features Specific to Alternative C

In addition to Forest Plan standards and guidelines designed to mitigate impacts, the following measures would be applicable to Alternative C. These design features have been incorporated to reduce or prevent undesirable effects resulting from proposed management activities.

Wilderness/Recreation

Once mobilization has occurred motorized access into the wilderness would be limited to two trips per day for shift change. Additionally, a miscellaneous trip to transport needed drill core (consistent with needed chain of custody), consultants, management, and supplies would be authorized every other day on average over the season. Motorized trips inside the FC-RONR Wilderness for other purposes or in excess of that described would only occur with prior approval from the Forest Service ⁽¹⁾.

Following excavation and sampling of the Ella Portal, the first sets of timbers would be removed and the portal backfilled⁽¹⁾.

2.4.4 Design Features Common to All Alternatives

In addition to Forest Plan standards and guidelines designed to mitigate impacts, the following measures would be applicable to all action alternatives. These design features would be incorporated to reduce or prevent undesirable effects resulting from proposed management activities.

Wilderness/Recreation

Operators would remove trash generated from project activities. All trash would be removed from National Forest System lands.

All equipment usage, including UTV/ATV, within the FC-RONR Wilderness would be kept to a practicable minimum to accomplish project activities and would only be used to accomplish actions described specifically under either action alternative. Where feasible, non-mechanized means of travel would be utilized to obtain supplies or perform other functions, e.g. obtaining small items from supplies at the Golden Hand Bunkhouse supply area needed to support drill operations ⁽¹⁾.

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Informational signs would be posted to inform users of the project activities. Signs would be posted at Pueblo Summit, north and east of the project area on Forest Trail #013, and in the Big Creek area at location(s) deemed appropriate ⁽¹⁾.

The gate at Pueblo Summit would remain closed and locked at all times ⁽¹⁾.

Mobilization inside the wilderness would begin no more than 15 days prior to the commencement of actual operations each operating season. Project activities would not commence until all mobilization is completed and approved. Demobilization from the wilderness would be completed no more than 10 days following completion of each operating season ⁽¹⁾.

Gray water would be dumped at least 200 feet from any water source ⁽¹⁾.

To the extent practicable, all equipment used within the FC-RONR Wilderness would be fitted with devices that provide maximum noise dampening. Noise dampening devices would be maintained for utmost effectiveness ⁽¹⁾.

Ensure that disruptions to public access and use of Forest Trail #013 would be avoided or minimized ⁽¹⁾.

Firewood, if needed, would be cut outside the FC-RONR Wilderness and hauled in. Only a small amount of firewood should remain at the end of each operating season. Firewood would not be cut and stored in anticipation of next season's activity. Firewood gathering would be consistent with current permit requirements for personal use gathering on the Payette National Forest ⁽¹⁾.

Cameras or road counters would be installed at or near Pueblo Summit and at appropriate locations near confirmation activities to record trips ⁽¹⁾.

The clearing or constructing of new trails would not be permitted ⁽¹⁾.

Air Quality

Operations would comply with federal and state air quality standards.

To the extent practicable, dust from use of roads would be minimized by minimizing vehicular traffic and using prudent vehicle speeds.

When drilling or trenching activities create fugitive dust, water to abate dust would be applied at appropriate intervals ⁽¹⁾.

To the extent practicable, all equipment used within the FC-RONR Wilderness would be fitted with appropriate devices for that type of equipment to reduce emissions, i.e. catalytic converter or other suitable devices. Emission reducing devices would be maintained for utmost effectiveness ⁽¹⁾.

Watershed/Fisheries (Transportation)

Upon completion of activities, ford approaches on temporary roads within the FC-RONR Wilderness would be rehabilitated and decommissioned. Approximately 200 to 300 feet either side of the fords would be rehabilitated and decommissioned by reducing the contributing area for sediment by converting the road to a trail. Rehabilitation would include some or all of the following activities ⁽¹⁾:

- Create a single track trail by scarifying/ripping the road to a depth of up to 18 inches until a single tread remains.
- Retain fords for foot and stock travel.
- Following scarifying/ripping, some or all of the subsequent activities would take place on the disturbed area:

- Distribute slash and large wood material, where available, in an effort to cover at least 30 percent of the exposed surface.
- Place plugs, using a backhoe, of adjacent native vegetation randomly throughout the disturbed area.
- Mulch the surface using a noxious weed free straw or other suitable material.
- Fertilize the scarified surface with BioSol or similar fertilizer.
- Seed with native seed mixture appropriate for the elevation and habitat.

Where practicable, roads would not be widened beyond the original cleared width⁽¹⁾.

At the reconstructed ford crossing of the North Fork of Smith Creek an equivalent area of RCA would be rehabilitated at the abandoned crossing. Rehabilitation would include re-establishing drainage patterns of the seeps with emphasis on reducing sediment delivery, decompaction of old ford approaches by ripping where feasible, and planting riparian vegetation such as alder or willow where appropriate.

Construction material needed for road maintenance may be taken from a borrow source at the talus slope located on the road from the Golden Hand bunkhouse to the Ella Portal, Werdenhoff, or Penn Ida. Sources within the FC-RONR Wilderness would only be utilized for road maintenance within the wilderness. A metals leachability test (Synthetic Precipitation Leaching Procedure or equivalent) would be completed prior to use of waste rock as aggregate. If used, the Werdenhoff gravel source used for this project would be reclaimed at the end of the project by recontouring the site, mulching, and seeding with native seed⁽¹⁾.

Alder thickets cleared during road maintenance activities would be cut rather than uprooted⁽¹⁾.

Unless agreed otherwise, following initial road maintenance, blading or road excavation would not occur within 25 feet of perennial streams⁽¹⁾.

Following the initial authorized road maintenance, road improvements, and reconstruction of a ford, necessary to offset sediment delivery and provide access, the use of heavy equipment for road maintenance would require Forest Service approval⁽¹⁾.

The following would apply to maintenance activities occurring along Forest Roads #371 and #373: Berms would not be left along the outside edge of roads, unless an outside berm was designed to be part of the road and low-energy water drainage is provided⁽¹⁾.

Grading and shaping would be done in a manner to conserve surface material. Grading would be accomplished in a manner that maintains or improves the surface drainage⁽¹⁾.

Ditches and culverts would be inspected on a regular basis and cleaned when needed. Cleaning would be conducted in a manner that removes the debris, while minimizing sediment production. To the extent possible, the cut slope and ditch back slope would not be undercut. Debris obstructing any drainage system would be removed promptly⁽¹⁾.

When blading roads, avoid side-casting excess fine material on to the fill slope. Excessive fine material that cannot be bladed into the surface would be hauled to an approved storage or disposal site⁽¹⁾.

Coarse rocks (approx. Cobble size or greater) could be cleared (usually bladed) from the road except within 300 feet of perennial stream and 100 feet of an intermittent stream⁽¹⁾.

Road maintenance activities would be avoided during times in which listed fish eggs or alevins are in gravels near enough to be affected. Unless agreed otherwise, a Forest Service Fish Biologist would determine those times and areas where maintenance would be avoided⁽¹⁾.

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Road maintenance would not occur when surface material is saturated with water⁽¹⁾.

Road clearing of encroaching vegetation would not be in excess of that needed to provide access or adequate site distance⁽¹⁾.

Large woody debris (greater than 19 inches in diameter) located in RCAs requiring removal for road maintenance would be placed on the down slope side of roads⁽¹⁾.

Existing drain gullies on the road sites would be repaired to direct runoff away from streams⁽¹⁾.

Water drafting locations would require prior approval from a journey level fisheries biologist. Intake would be screened with a mesh size of 3/32 inch or smaller⁽¹⁾.

Watershed/Fisheries (Fuel/Contaminants)

Unless specifically approved by a Forest Service Fishery Biologist, locate fuel and other toxicant storage outside of RCAs⁽¹⁾.

Any fixed storage of fuel would require proper containment.

The maximum shipment of fuel on Forest Roads #371 and #373 would be 500 gallons. Fuel shipments in excess of 500 gallons into the project area, would use Johnson Creek Road or Lick Creek Road in lieu of the South Fork Salmon River Road⁽¹⁾.

Crews would maintain spill kits on site for use in case of a spill⁽¹⁾.

Appropriate spill containment would be provided for all stored toxicants. The operator would adhere to the guidelines pertaining to transport, storage, handling, and disposal of hazardous materials and spill response cited in the Best Management Practices for Mining in Idaho. A Spill Prevention Containment and Countermeasures (SPCC) plan would be submitted for Forest Service approval prior to project implementation⁽¹⁾.

Unless specifically approved by a Forest Service Fishery Biologist, the tank would be placed in a liner capable of containing 120 percent of the tanks volume⁽¹⁾.

Watershed/Fisheries (Water Withdrawal)

Water would be conducted from a stream or tanks to the drill pads by means of a flexible plastic pipe laid slightly inclined to the land contour to avoid excess head pressure at discharge end. A shut-off valve would be installed at the pipe discharge⁽¹⁾.

The Forest Service would approve the type and placement of a waterline to be placed in Coin Creek⁽¹⁾.

The rate of diversion must be measured with a flow meter approved by the Forest Service. In stream flows would be measured at a point about 100 meters downstream of the confluence of Coin Creek and the unnamed tributary that flows through claim No. 4. Monitoring would occur throughout the months of operation. The water diversion rate would be reduced if the flow at the point of measurement dropped below 0.4 cfs in order to maintain a removal of less than 10 percent of the flow⁽¹⁾.

If water use at the pad is not anticipated for more than twelve hours, the intake end of the line would be removed from the stream after each use period⁽¹⁾.

Watershed/Fisheries (Mining Operations)

Where practicable, no trenching would occur within 200 feet of any stream, nor would any trenching occur in areas of the road saturated from interception of ground water⁽¹⁾.

All drill pads constructed on high to moderate landslide prone areas would utilize silt fence with steel posts and wire mesh backing below the disturbed area⁽¹⁾.

No additives for drilling fluids, outside of those identified in the plan of operations, would be used without prior approval⁽¹⁾.

Settling basins at drill pads would be excavated at lowest point of pad, downslope of all potential discharge sources, and would be of a size that is sufficient to contain 120% of the maximum volume expected to be used⁽¹⁾.

Prior to discharge, the drilling fluid would be checked by Forest Service personnel for hydro-carbon contamination and AIMMCO would clean the fluid of all contaminants⁽¹⁾.

The drilling fluid would be discharged in a controlled manner to the excavated settling basin. The inspection for contamination would be repeated after all of the fluid has ponded in the settling basin and any further contamination removed⁽¹⁾.

If open tanks are used for drilling fluids, oil absorbent pads would be floated on the surface during operations to absorb any petroleum-based contaminants. All mechanical equipment would be inspected by PNF to ensure good working condition and determination of no visible leaks⁽¹⁾.

Oil absorbent pads would be on site and placed, prior to any activities, under the drilling platform and any possible sources of fuel, oil, or hydraulic fluid leakage. Soiled pads would be disposed of per applicable Federal and/or State requirements⁽¹⁾.

Reclamation of the project area would include recontouring to the original slope shape where this project has altered slopes and revegetation of the disturbed ground. Roads would not be fully recontoured, but would be returned to the original width at drill pad locations. All disturbed areas would be seeded with a certified weed-free native seed mix and mulched⁽¹⁾.

Watershed/Fisheries (General Erosion Control Measures)

All ground disturbance would require erosion control measures as determined by the Forest Service (e.g., soil movement barriers, water control devices, mulch or erosion control matting, revegetation plants and grass seed), when the disturbance is within RCAs or on slopes greater than 45%⁽¹⁾.

Mulch and native grass seed would be used on all disturbed areas, unless specified otherwise⁽¹⁾.

Generic avoidance/minimization measures that can be used include: silt fence and filter barriers; straw-bale sediment barriers; erosion control blankets and mats; hydro-mulching; mulching; waterbars and rolling dips; temporary sediment basins; straw rolls; straw bale dikes; slash filter windrows; scattered slash; brush layering; and shrub planting. If using silt fence, fence should be considered only a temporary sediment control measure; restored vegetation would be the preferred final erosion control. Silt fences would be maintained by removing stored sediment, and fence would be removed as soon as vegetative erosion control measures have effectively reduced sediment production⁽¹⁾.

Watershed/Fisheries (Arched/Box Culvert)

Sediment entering streams would be minimized by: using silt-fence, or straw bales between structures and stream, by avoiding abutment construction, or by using keystone blocks or native rock type material that avoid erosion/sedimentation⁽¹⁾.

Stream fording would be minimized during installation as much as is practicable⁽¹⁾.

Structures and any needed abutments would be installed well outside of active stream channel. A Forest Service fisheries biologist or hydrologist would determine the extent of active stream channel⁽¹⁾.

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Short approach inclines would be constructed at the ends of the structure to prevent water movement from road onto structure ⁽¹⁾.

Noxious Weeds

Equipment used for drilling, road construction, reclamation, and similar activities would be thoroughly cleaned prior to entering National Forest System lands.

Source sites for gravel and borrow materials would be inspected prior to use for noxious weeds ⁽¹⁾.

Wildlife

To the extent practicable, trees found to contain nesting cavities or nests would not be disturbed or cut ⁽¹⁾.

Any gate or door installed at the Ella would have screening suitable to exclude entry and colonization by bats ⁽¹⁾.

No trees with active nests would be cut ⁽¹⁾.

Visuals

To the extent practicable, within the FC-RONR Wilderness temporary facilities such as storage units or tents would be colored to blend with the characteristic landscape (natural or neutral color) ⁽¹⁾.

During night operations, lighting fixtures would be pointed downward to the extent practicable to reduce light impacts within the FC-RONR Wilderness ⁽¹⁾.

All stumps from the cutting of trees for timbers would be within six inches of the ground on the high side ⁽¹⁾.

Slash associated with the cutting of trees for timbers would be lopped and scattered to within one foot of the ground ⁽¹⁾.

Along that portion of Forest Road #50371 having a VQO of retention, 70 percent or more of the merchantable trees would be retained in areas where trees for timbers are cut ⁽¹⁾.

Botanical

Seed with native seed mixtures appropriate for the elevation and habitat ⁽¹⁾.

Where practicable, avoid removal or heavy trimming whenever possible of whitebark pine ⁽¹⁾.

Fire

All applicable federal and state fire laws and regulations would be adhered to during operations.

Reasonable measures to prevent and suppress fires in the project area would be taken by employees, contractors, and sub-contractors.

All vehicles and equipment would have spark arrestors and fire suppression tools and supplies.

The base camp would have a fire tools cache on site.

Smoking and the building of fires by persons engaged in project operations would be prohibited, except at established camps. At the request of the operator the Forest Service would designate places where (1) campfires may be built or (2) smoking may be permitted. Such designated places would be cleared of flammable material to mineral soil prior to use ⁽¹⁾.

Sufficient fire tools of a kind and type satisfactory for fire suppression would be made available to equip persons engaged in project operations. Fire tools would be used only for suppressing fires. Tools would be stored in fireboxes and be readily available to employees. Each toolbox would be marked "Tools for Fire Only," painted red and kept sealed⁽¹⁾.

Each piece of equipment, truck, or other form of vehicle used in conjunction with activities would be equipped with one size 0, or larger, round-pointed shovel. Shovels would be so placed on the machines that they could be readily obtained at all times⁽¹⁾.

Each gasoline or diesel internal combustion engine, except powersaws, would be equipped with a spark-arresting device which has been approved by Forest Service. After installation, spark-arresting devices would be kept in a satisfactory working condition⁽¹⁾.

Each gasoline powersaw would have a spark arrester muffler affixed and in good working condition. Said spark arrester-muffler would be of the construction and maintained to the standards approved by Forest Service. In addition, one chemical pressurized fire extinguisher of not less than 8-ounce capacity, by weight, and one size 0, or larger, round-pointed shovel would also be provided to the powersaw operators when in use. The spark arrester-muffler, extinguisher, and shovel would be maintained in good working condition at all times. The shovel and extinguisher would be readily available⁽¹⁾.

If gasoline, oil, grease, or other highly flammable materials are stored in a building, all flammable debris would be cleared away within a radius of 25 feet⁽¹⁾.

A suitable shovel, and dry sand in a covered container of not less than 25-gallon capacity in the aggregate (or a fire extinguisher of not less than 2-quart capacity of a type approved by the Underwriter Laboratory for gasoline and oil fires), would be placed at each gasoline, diesel, and oil shed or storage site, or other motor-fueling station. Mobile servicing units would be equipped with a fire extinguisher of not less than 2-quart capacity of a type approved by the Underwriter Laboratory for gasoline and oil fires⁽¹⁾.

Stoves, stovepipes, chimneys, and electric wiring would be located and maintained to the safety standards set forth in applicable sections of the Forest Service Health and Safety Code, dated March 1970, as revised⁽¹⁾.

Minerals

All water associated with drilling would be contained on or near the drill pads.

Where practicable, minimize the number of total mud pits by consolidating drill site use of pits⁽¹⁾.

The Forest Service would identify and mark trees to be cut for timbers. Any milling or processing of the timbers would occur outside the wilderness⁽¹⁾.

Applicable Best Management Practices for Mining in Idaho would be utilized⁽¹⁾.

Drill holes would be constructed and abandoned in accordance with the minimum well construction standards set by the Idaho Department of Water Resources⁽¹⁾.

No additives for drilling fluids, outside of those identified in the plan of operations, would be used without prior approval⁽¹⁾.

2.5 Summary Comparison of Alternatives

Table 2-3 presents a comparative summary of principle activities and the environmental effects for the alternatives being considered in detail. The summary is limited to the effects on project objectives, significant issues or concerns, Forest Plan standards, and other resources the Interdisciplinary Team deemed important for an informed decision. A brief discussion of the similarities and differences between

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the alternatives follows the table. More detailed information is available in the descriptions of the alternatives in this chapter and in Chapter 3.

Table 2-3 Comparison of Activities and Effects

Project Objective Indicators	Alt. A	Alt. B	Alt. C
Number of Drill Sites	0	11	11
Number of Trench Sites	0	3	3
Mine Portals Opened for Sampling	0	1	1
Access Needs Met?	No	Yes	Yes
Fuel Storage Needs Met?	No	Yes	Yes
Crew Housing Suitable to Conduct Activities?	No	Yes	Yes
Equipment and Vehicle Needs Met	No	Yes	Yes
Water Needs Met?	No	Yes	Yes
Mine Timbers Provided?	No	Yes	Yes
Wilderness Project Issue Indicators	Alt. A	Alt. B	Alt. C
Would Activities Adversely Affect Natural Integrity?	No	Yes	Yes
Would Activities Adversely Affect Untrammeled Condition?	No	Yes	Yes
Would Activities Adversely Affect Solitude?	No	Yes	Yes
Would Activities Adversely Affect Primitive Recreation?	No	Yes	Yes
Authorized Use of Penn Ida for Storage?	No	Yes	No
Number of Annual Authorized Motorized Trips into The FC-RONR Wilderness Expected During 100 Day Operating Season.	0	771	571
Authorized Use of the Golden Hand Bunkhouse for Office Space?	No	Yes	No
Scenic Project Issue Indicators	Alt. A	Alt. B	Alt. C
Would Activities Comply with Visual Quality Objectives (VQOs) Standards?	Yes	No	No
Would Activities Allow the Use of the Golden Hand Bunkhouse within the FC-RONR Wilderness?	No	Yes	No
Watershed, Soil, and Fisheries Project Issue Indicators	Alt. A	Alt. B	Alt. C
Modeled Interstitial Sediment Delivery (Pounds)	6,200	182	182
Would Activities Result in Changes to Peak/Base Flow?	No	Yes	Yes
Number of Annual Authorized Motorized Trips into The FC-RONR Wilderness Expected During 100 Day Operating Season.	0	771	571
Forest Plan Consistency/Other Key Items	Alt. A	Alt. B	Alt. C
Activities Result in Forest Plan Amendment?	No	Yes	Yes
Activities Result in the Development of any IRA?	No	No	No
Activities Consistent with the Idaho Roadless Rule?	Yes	Yes	Yes
Activities Increase Potential Spread of Noxious Weeds?	No	Yes	Yes
Activities Compliant with National Historic Preservation Act and Archaeological Resources Protection Act?	Yes	Yes	Yes
Activities Result in Measureable Effects to any Class I Area or Monitoring Site for Air Quality?	No	No	No
Activities Consistent with ROS Designations?	Yes	Yes	Yes
Threatened, Endangered, and Proposed Species	Alt. A	Alt. B	Alt. C
Wildlife Species	NE	NE/NLAA	NE/NLAA
Plant Species	NE	NE	NE
Potential Negative Effects to Fish Species?	No	Yes	Yes
Sensitive Species	Alt. B	Alt. B	Alt. C
Wildlife Species	NI	NI/MIIH	NI/MIIH
Plant Species	NI	NI/MIIH	NI/MIIH
Fish Species	NI	MIIH	MIIH
Management Indicator Species	Alt. A	Alt. B	Alt. C
Pileated Woodpecker Population Trend	Maintained	Maintained	Maintained
Bull Trout Population Trend	Maintained	Maintained	Maintained

NE = No Effect; LLA = May affect, likely to adversely affect, NLAA = May affect, not likely to adversely affect; NI = No Impact; BI = Beneficial Impact; MIIH = May impact individuals or habitat but would not likely contribute to a trend towards Federal listing or a loss of viability. Reference discussions below and in Chapter 3 for detailed information.

2.5.1 Project Objective Indicators

2.5.1.1 Confirmation Activities

Alternative A would not provide the proposed confirmation activities. Both Alternative B and C would authorize the proposed confirmation activities to meet the legal rights of the claim holder.

2.5.1.2 Access

Alternative A would not provide the needed access to conduct proposed activities. Current access in the project area would remain as is with only Forest Roads #371 and #373 being open to motorized travel.

Alternative B and C would both authorize the use of temporary roads to access the claims. Approximately 8.0 miles of National Forest system roads would be maintained. Approximately 4.1 miles of temporary road would be authorized to provided needed access; of which, 4.0 miles would be authorized in the FC-RONR Wilderness.

2.5.1.3 Fuel Storage

Alternative A would not authorize the storage of any fuel on National Forest System lands.

Under Alternative B, a 1,320 gallon tank would be transported empty and placed in lined containment at either the Penn Ida adit or outside of RCAs within the FC-RONR Wilderness. The diesel would be transferred as needed for each shift in truck mounted tanks.

Under Alternative C, a 1,320 gallon tank would be transported empty and placed in lined containment at Werdenhoff. The diesel would be transferred as needed for each shift in truck mounted tanks.

2.5.1.3 Crew Housing

Alternative A would not authorize crew housing or staging on National Forest System lands.

Under both Alternative B and C crews would be housed at Werdenhoff. Travel trailers and/or platform tents would be used to house crews and provide needed cooking and sanitation facilities. Werdenhoff would also serve as a staging area for needed equipment and supplies being transported in and out of the FC-RONR Wilderness.

2.5.1.4 Equipment

Alternative A would not authorize the use of any equipment or vehicles to conduct project activities. The following table lists the known facilities, equipment, and vehicles to facilitate operations proposed under Alternative B and C within the FC-RONR Wilderness:

Table 2-4 Equipment Needs in the FC-RONR Wilderness

Equipment/Vehicle Needs Alternative B	Equipment/Vehicle Needs Alternative C
<ul style="list-style-type: none"> • 1940 era International Harvester 6x6 Truck with 7 Cubic Yard Dump • 1940 era GMC 6x6 Truck with Flatbed • Dodge Ram 3500 Quad-Cab 4x4 with 8 foot box or Equivalent, Multiple, including DOT approved truck mounted tank • ATV and/or UTV, including DOT 	<ul style="list-style-type: none"> • 1940 era International Harvester 6x6 Truck with 7 Cubic Yard Dump • 1940 era GMC 6x6 Truck with Flatbed • Dodge Ram 3500 Quad-Cab 4x4 with 8 foot box or Equivalent, Multiple, including DOT approved truck mounted tank • ATV and/or UTV, including DOT

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Equipment/Vehicle Needs Alternative B	Equipment/Vehicle Needs Alternative C
<p>approved truck mounted tank</p> <ul style="list-style-type: none"> ● Bulldozer, Cat D-8 or Smaller ● Air Compressor (≤600 cfm) ● Light Plant ● 3 Yard Loader Tracked or Rubber Tire ● Excavator ● Skid Mounted Core Drill ● Telescopic Forklift, 10,000 lb. Capacity ● Drill Rod Baskets ● Mud Trailer ● Service Trailer ● 50 Gallon Hydraulic Oil Storage ● Bean Supply Pump ● Drilling Fluid Storage ● Saws ● Generators ● Small Jackhammer ● Toilets at worksite ● Water pump, water storage tanks, water pipe ● Bunkhouse ● Fuel Truck (500 gallon) ● 1,320 Gallon Diesel Storage 	<p>approved truck mounted tank</p> <ul style="list-style-type: none"> ● Bulldozer, Cat D-8 or Smaller ● Air Compressor (≤600 cfm) ● Light Plant ● 3 Yard Loader Tracked or Rubber Tire ● Excavator ● Skid Mounted Core Drill ● Telescopic Forklift, 10,000 lb. Capacity ● Drill Rod Baskets ● Mud Trailer ● Service Trailer ● 50 Gallon Hydraulic Oil Storage ● Bean Supply Pump ● Drilling Fluid Storage ● Saws ● Generators ● Small Jackhammer ● Toilets at worksite ● Water pump, water storage tanks, water pipe

2.5.1.5 Water

Alternative A would not authorize needed access to water, water storage, or water pipes to supply water for drilling operations.

Both Alternative B and C would provide the needed access to AIMMCO’s water right. Additionally, multiple water tanks for storage along with the needed pipes and pumps to transport water to drilling operations would be authorized for use.

2.5.1.5 Mine Timbers

Alternative A would not authorize the cutting of needed mine timbers.

Both Alternative B and C would authorize the cutting of trees for mine timbers outside the FC-RONR Wilderness. All processing of timbers would be conducted prior to transport inside wilderness.

2.5.2 Project Issue Indicators

2.5.2.1 Wilderness

Alternative A would have no effects to Wilderness Character and Experience (Section 3.3).

Under Alternative B, the Wilderness user would see physical impacts to the land, motorized and mechanized equipment, and hear noise and could see dust from these machines from July to November for up to 3 years. This type and amount of development would adversely affect the Wilderness users’ sense of solitude and remoteness and enjoyment of a primitive recreation experience in the Beaver Creek and Hand (Coin) Creek drainages, and the surrounding ridge tops that encompass the project area. The activities under this alternative involve use of motorized and

mechanized equipment and vehicle support both on claims and associated off claim roads in the Wilderness. The actual use and the knowledge of these activities would adversely impact the Wilderness character by compromising the natural integrity and untrammelled conditions of the FC-RONR Wilderness (Section 3.3).

Alternative B would authorize the use of Penn Ida plaza for storage of fuel and supplies if needed along with a use for a rock source. Rock to repair fords within the FC-RONR Wilderness would be obtained from this site. This would potentially add to the miles of motorized travel within the wilderness by authorizing travel on additional 0.3 miles of temporary road on a daily basis. This additional road usage would apply to the 771 round trips as needed to acquire stored items at the Penn Ida plaza.

Assuming a 100 day operating season, it would be expected that approximately 771 round trips would be authorized annually to conduct project activities under Alternative B. The Golden Hand bunkhouse would be authorized for use as an office, thereby adding to amount of activities (refurbish of the cabin and general office use) and improving the condition of the building. The effects of these activities are captured in the effects to natural integrity, untrammelled condition, solitude, and primitive recreation (Section 3.3).

While not measurable, there would be slightly less impacts to wilderness character and experience from Alternative C because the alternative would authorize fewer motorized trips, the use of the bunkhouse for an office would be prohibited, and no motorized travel to the Penn Ida site for general storage would occur. (Section 3.3).

Alternative C would not authorize the use of the Penn Ida plaza for storage, but would authorize travel to the plaza to source rock. The only use of the site would be to obtain rock to repair fords within the FC-RONR Wilderness would be obtained from this site. No daily trips to obtain stored items would be authorized along the 0.3 miles of road.

Since fuel storage would occur at Werdenhoff, core removal would occur with shift change, and miscellaneous trips would be restricted to every other day on average, it would be expected that approximately 571 round trips would be authorized annually to conduct project activities under Alternative C. The bunkhouse and its associated activities and improvements would not be authorized. The effects of these activities at the bunkhouse are captured in the effects to natural integrity, untrammelled condition, solitude, and primitive recreation (Section 3.3).

2.5.2.2 Scenic

Alternative A would have no effects to wilderness character and experience (Section 3.11).

Alternatives B and C would require one amendment to the Forest Plan as disclosed in this chapter. This would be a one time, site specific, non-significant amendments that would not change overall Forest Plan goals, objectives, desired future conditions, or associated outputs. Both Alternatives would meet a maximum modification VQO within the FC-RONR wilderness (Section 3.11).

The principle difference in Alternatives is the use of the Golden Hand bunkhouse as an office. Alternative B would need to restore the bunkhouse to facilitate its use as an office. Restoration and occupation of the Golden Hand bunkhouse would be evident to casual observer within the FC-RONR Wilderness. The installation of such features as roofing, stove pipes, new logs, windows, porch posts/flooring would appear evident. These activities would appear as a deviation from the rustic and rundown appearance the observer expects of most structures in the wilderness. These activities would meet a VQO of maximum modification. It is expected that activities to improve the condition of the bunkhouse would not meet a VQO of preservation until the long term when the bunkhouse again takes on a more 'run downed' and weathered quality that the observer would expect to see (Section 3.11).

2.5.2.3 Water, Soil, and Fisheries

Alternative A would not alter the baseline condition for watershed, soils, or fisheries resources.

Alternative B and C would reduce the modeled interstitial sediment from approximately 6,200 pounds to roughly 182 pounds (Section 3.4 and 3.5). Fewer motorized trips within the FC-RONR Wilderness in Alternative C would result in less temporary and short term sediment delivery and turbidity, but there would be no difference in the long term reductions related to road improvements. Installation of stream crossing structure would result in temporary to long term benefits in North Fork Smith Creek.

Under Alternative B and C, the diversion of water would result in a minor temporary to short term degrade of base flow in Coin Creek that would not move the peak/base flow indicator for the Beaver Creek 6th HU from Functioning Acceptable to Functioning at Risk (Section 3.4.3.2).

2.5.3 Forest Plan Consistency/Other Key Items

The Forest Plan Consistency Checklist, contained in the project's planning record, lists all applicable standards and guidelines and discloses that all action alternatives would comply with those standards and guidelines with the exception of one standard requiring an amendment. In addition, the Interdisciplinary Team identified other items considered important in making an informed decision. The following discussions summarize the effects of the alternatives relative to those standards and/or guidelines and other items identified by the Interdisciplinary Team as key in this assessment.

2.5.3.1 Forest Plan Amendments

Alternative A would have no effects to wilderness character and experience.

Alternatives would B and C would require one amendment to the Forest Plan as discussed in this chapter. This would be a one time, site specific, non-significant amendments that would not change overall Forest Plan goals, objectives, Desired Future Conditions (DFC), or associated outputs.

2.5.3.2 Roadless Areas

Alternative A would have no effect on any IRA (Section 3.7).

The principle difference between Alternative B and C would be the potential for impacts on solitude. Assuming a 100 day operating season, it would be expected that approximately 771 round trips would be authorized annually to conduct project activities under Alternative B without prior approval from Werdenhoff to the mining site, while Alternative C would authorize approximately 571 trips annually to the mine site. It would still be expected that many of the trips described in Alternative B would still occur in Alternative C within or immediately adjacent to IRAs with the exception of fuel which would not be transported in bulk past Werdenhoff. Regardless, Alternative B could represent a slight increase when compared to Alternative C in noise and the associated impacts to solitude while the project is ongoing (Section 3.7).

Neither Alternative B or C would result in the development of any IRA. IRAs within the project area would remain suitable for wilderness designation by Congress. Both Alternatives are consistent with the Idaho Roadless Rule (36 CFR 294).

2.5.3.3 Noxious Weeds

Alternative A would have no effect on the potential introduction and distribution of noxious weeds.

Proposed activities and design features associated with Alternative B and C would not be expected to introduce noxious weeds into the analysis area. Alternative B and C may however contribute to

the distribution of noxious weeds already present as vehicles pass along Forest Road #371 while completing project activities. Existing noxious weed populations would be addressed through the District's and the FC-RONR Wilderness noxious weed program (Section 3.9).

2.5.3.4 Air Quality

Alternative A would have no effect on air quality.

Based on estimates and assumptions it was calculated that Alternative B would annually produce approximately 5,500 pounds of PM-10 particulate matter, 700 pounds of PM-2.5 particulate matter, 23,500 pounds of nitrogen dioxide, and 1,600 pounds of sulfur dioxide (Table 3-11).

Based on estimates and assumptions it was calculated that Alternative C would annually produce approximately 4,900 pounds of PM-10 particulate matter, 630 pounds of PM-2.5 particulate matter, 20,100 pounds of nitrogen dioxide, and 1,400 pounds of sulfur dioxide (Table 3-11).

While Alternative B and C would increase pollutants from dust, vehicle, and other emissions in the project area, it would not likely have measurable effects on air quality in any Class I Area, the FC-RONR Wilderness, or at monitoring sites, given the distance and dilution that would occur as particles and air mix over distance.

2.5.3.5 Recreation Opportunity Spectrum (ROS)

Recreation Opportunity Spectrum classifications would remain unchanged with any Alternative.

Within the FC-RONR Wilderness activities would not be consistent the ROS classification due to impacts on wilderness characteristics (Section 3.3) and increased likelihood of frequent encounters with users expecting a primitive setting. However, the activities within the primitive setting are considered to be a setting inconsistency and being conducted pursuant the 1872 Mining Law (Section 1.5). Following project activities, the portion of analysis area in a primitive ROS setting would return to conditions indicative and consistent with the setting. The area would remain classified as a primitive ROS setting.

2.5.4 Threatened and Endangered Species

Determinations disclosed in Chapter 3 and documented in biological assessments and evaluations for threatened, endangered, proposed, and candidate species concluded that:

Alternative A does not propose any federal action that could affect listed species.

Alternative B and C would have no effect to any threatened or endangered plant species. No habitat for any threatened or endangered plant species occurs in the project analysis area (Section 3.8).

Alternative B and C could have temporary to short term negative effects to individual steelhead, bull trout and the associated designated critical habitat (Section 3.4). Effects to Chinook salmon and designated critical habitat would likely be negligible. Installation of stream crossing structure would result in temporary to short term benefits to steelhead.

Alternative B and C would have no effect on Northern Idaho Ground Squirrel and may affect, not likely to adversely affect Canada Lynx (Section 3.6).

Consultation with the USFWS and National Oceanic and Administration (NOAA) is ongoing for threatened and endangered species and any effect determination would be preliminary until consultation is completed.

2.5.5 Sensitive Species, Including Candidate Species

Alternative A would have no impact on any sensitive species

Alternative B and C may impact individuals but would not likely contribute to a trend toward Federal Listing or cause a loss of viability to the population or species of whitebark pine, (*Pinus albicaulis*), a candidate and sensitive species. Alternative B and C would have no impact on any other candidate, proposed, or sensitive plant species.

Alternative Band C may impact individuals but would not likely contribute to a trend towards Federal Listing or cause a loss of viability to the population or species of westslope cutthroat trout.

Alternative B and C may impact individuals but would not likely contribute to a trend toward Federal Listing or cause a loss of viability to the population or species of boreal owl, fisher, northern goshawk, pileated woodpecker, wolverine, gray wolf, Townsend's big-eared bat, or Columbia spotted-frog. Alternative B and C would have no impact on white-headed woodpecker, American three-toed woodpecker, flammulated owl, great gray owl, mountain quail, rocky mountain bighorn sheep, peregrine falcon, spotted bat, greater sage grouse, southern Idaho ground squirrel, Columbian sharp-tailed grouse, bald eagle, yellow-billed cuckoo, or common loon.

2.5.6 Management Indicator Species (MIS)

Alternative A would have no direct or indirect effects on any MIS species or their habitat and would maintain the current population trend.

Alternative B and C may disturb individual pileated woodpecker during implementation (Section 3.6); however, both alternatives are expected to maintain the current population trend of this species at the Forest and Ecogroup scale.

Alternatives B and C could negatively affect bull trout individuals in the temporary to short term, followed by long term minor beneficial effects. However, the few occurrences of disturbance or mortality of individuals from increased fording are not likely to result in measurable population level effects (Section 3.4.3.1), and long term beneficial effects would be minor. Therefore, Alternative B and C would maintain the current population trend of the species at the Forest and Ecogroup scale.

2.6 Identification of the Preferred Alternative

Alternative C is the Responsible Official's preferred alternative.