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**Subject:** ARO Letter - Lodestar Mining and Exploration DN - Appeal #02-01-00-0004 - Gallatin NF

**To:** Appeal Deciding Officer

This is my recommendation on disposition of the appeal filed by Roger Flynn and Jeffrey Parsons on behalf of the Cottonwood Resource Council and the Northern Plains Resource Council protesting the Lodestar Mining and Exploration Decision Notice (DN) on the Gallatin National Forest.

The District Ranger's decision provides for Lodestar Mining and Exploration to develop one adit and a waste rock storage area, use of the Placer Gulch Trail and Iron Mountain Road, 2,050 feet of temporary realignment of Placer Gulch Trail #256, a trailhead parking area, and development of a loading facility at the junction of the Placer Gulch Trail and Iron Mountain Road.

My review was conducted pursuant to, and in accordance with, 36 CFR 215.19 to ensure the analysis and decision are in compliance with applicable laws, regulations, policy, and orders. The appeal record, including the appellants' objections and recommended changes, has been thoroughly reviewed. Although I may not have listed each specific issue, I have considered all the issues raised in the appeal and believe they are adequately addressed below.

The appellants allege violations of the National Environmental Policy Act (NEPA), the National Forest Management Act (NFMA), the 1872 Mining Law, and the Clean Water Act. The appellants request a remand of the DN. An informal meeting was held but no resolution of the issues was reached.

## **ISSUE REVIEW**

### **Issue I. The Forest Service cannot approve activities located off valid mining claims under the Mining Law of 1872 and Part 228 regulations.**

**Response:** The 1897 Organic Act authorized the Secretary of Interior (now, the Secretary of Agriculture) to manage the forest reserves and their use by the public. At 16 U.S.C. 479, the Act states, "Nor shall anything herein prohibit any person from entering upon such national forests for all proper and lawful purposes, including that of prospecting, locating, and developing the mineral resources thereof: Such persons must comply with the rules and regulations covering such national forests." On National Forest System lands open to entry and mining claim location under the 1872 Mining Law, the 1897 Organic Act therefore affirmed the public's right to enter, search for, and develop mineral resources. It also authorized the Forest Service to approve and regulate all activities related to prospecting, locating, and developing mineral resources. Nothing



in the Act restricted this authority to activities only on valid claims. In fact, the Act specifically refers to prospecting, which occurs prior to establishing a valid claim.

The 1955 Surface Resources Act, also known as the Multiple Use Mining Act and Public Law 167, (30 USC 612) gave additional authority to the Forest Service to regulate all activities related to mining. Among other things, the 1955 Act recognized that prospecting is a reasonably necessary activity under the 1872 Act, and further provided that mining claims shall not be used prior to issuance of patent for any purposes other than prospecting, mining or processing operations, and uses reasonably incident thereto.

The courts have repeatedly affirmed Forest Service authority based on the 1897 and 1955 Acts to reasonably regulate prospecting and exploration activities. *U.S. v. Richardson*, 599 F.2d 290 (9<sup>th</sup> Cir. 1979); *U.S. v. Doremus*, 888 F.2d 630 (9<sup>th</sup> Cir. 1989). In *U.S. v. Weiss*, 642 F.2d 296 (9<sup>th</sup> Cir. 1981), the Court also cautioned the Forest Service that there are limits to its authority: “While prospecting, locating, and developing of mineral resources in the national forests may not be prohibited nor so unreasonably circumscribed as to amount to a prohibition, the Secretary (of Agriculture) may adopt reasonable rules and regulations which do not impermissibly encroach upon the right to the use and enjoyment of placer claims for mining purposes.”

Long standing case law confirms an operator’s rights to go on the public lands for prospecting, exploration, and other locatable mineral operations, and that as a practical matter, necessary occupation and use of the public lands is part of these operations. In *Union Oil Co. V. Smith*, 249 U.S. 337, 346 (1919), the U.S. Supreme Court held that 30 U.S.C. 22 (i.e., the 1872 Mining Law):

...extends an express invitation to all qualified persons to explore the lands of the United States for valuable mineral deposits, and this and the following sections hold out to one who succeeds in making discovery the promise of a full reward. Those who, being qualified, proceed in good faith to make such explorations and enter peaceably upon vacant lands of the United States for that purpose are not treated as mere trespassers, but as licensees or tenants at will. For since, as a practical matter, exploration must precede the discovery of minerals and some occupation of the land ordinarily is necessary for adequate and systematic exploration, legal recognition of pedis possessio of a bona fide and qualified prospector is universally regarded as a necessity. (Emphasis in original.)

The law provides that discovery of a valuable mineral deposit within the limits of a mining claim located on public lands in conformance with state and Federal statutes validates the claim and the locator acquires an exclusive possessory interest in the claim that may be asserted against the U.S., as well as third parties. Prior to discovery under the mining law, the doctrine of pedis possessio applies. That is, as long as a miner is actively seeking a discovery, a mining claim will hold against adverse locators or the general public, although such a claim would not constitute a possessory right against the U.S., who would continue to hold superior title (Maley, 1994). However, in order to prospect, explore, and make a discovery of a valuable mineral deposit or

establish valid mining claims, miners have a right under both the 1872 Mining Law and the 1897 Organic Act to enter upon national forests and to conduct upon those lands reasonable activities to prospect and explore for mineral resources (30 U.S.C. 22, 16 U.S.C. 479, 30 U.S.C. 612). See also *Davis v. Nelson*, 329 F.2d 840 (9<sup>th</sup> Cir. 1964).

That miners have some rights to conduct reasonably necessary excavations and disturbances prior to making a discovery and establishing a valid claim is also supported by the fact that the mining law at 30 U.S.C. 27 specifically provided miners one means of conducting exclusive exploration prior to staking any mining claims. By staking a tunnel site, the locator obtains the exclusive right to drive a tunnel, prospect 3,000 feet along the line of the tunnel, and through the subsequent staking of lode mining claims, to obtain a possessory right to 1,500 feet of any blind lodes cut, discovered, or intersected by the tunnel. The tunnel site provision of the 1872 Mining Law would be nullified if it did not include the right to use unclaimed National Forest System lands in order to excavate the tunnel and store the resulting rock material somewhere on the surface.

The statutory language in the 1897 Organic Act and the 1955 Surface Resources Act, as well as the 1872 Mining Law, demonstrates these laws recognized that mining progresses through several logical stages which may include prospecting, exploration, development, production, and reclamation and abandonment. Some of these terms referring to the different stages that mining operations may progress through have been defined in case law (Maley, 1994):

In *U.S. v. New Mexico Mines, Inc.*, 3 IBLA 101 (1971), the Board offered the following definitions for "exploration," "discovery" and "development:"

"Exploration," within this context, is the process of searching for a valuable mineral deposit. The finding of mineralization of sufficient value to encourage further exploration does not successfully conclude the exploratory process or constitute a discovery.

"Discovery," to paraphrase the definition in *Castle v. Womble*, occurs upon the finding of a mineral deposit revealed to be of sufficient qualitative and quantitative value to warrant the expenditure of effort to develop a mine in the reasonable anticipation that a profitable mining operation will result.

"Development" refers to the physical work incident to the excavation of a mine for the extraction of the mineral values discovered. After discovery, certain exploratory activities incident to the actual production of the minerals are regarded as "development" rather than as "exploration." These would include the blocking out of the orebody, testing for engineering feasibility, determining the strike and dip of the vein beyond the extent of the qualifying knowledge, and related activities.

In *U.S. v. Lundy*, A-30724 (June 30, 1967), specific examples of exploration work are discussed by the Secretary of Interior:

There is a clear distinction between "exploration" and "development" as they relate to discovery under the mining laws. The separate stages of mining activity serve as a basis for determining what further mining activity a prudent man would be justified in undertaking. Exploration work includes such activities as geophysical or geochemical prospecting, diamond drilling, sinking an exploratory shaft or driving an exploratory adit. It is that work which is done prior to a discovery in an effort to determine whether the land is valuable for minerals. When inherently valuable minerals are found, it is often necessary to do further exploratory work to determine whether a valuable mineral deposit exists, i.e., whether the minerals exist in such quality and quantity that there is a reasonable prospect of success in developing a paying mine.

A comprehensive discussion and definition of all stages of mining activities and the related nature and extent of the mineral resource identified at each stage can also be found in the Forest Service publication, "Anatomy of a Mine from Prospect to Production" (Rev. 1995) and Forest Service Manual R1 Supplement 2800-92-2. In summary, all of the mining activity stages conducted under the 1872 Mining Law of looking for mineral reserves (prospecting and exploration), and of removing discovered mineral reserves (development and production) by their very nature involve digging some type of hole in the ground (tunnels, shafts, pits, trenches, drill holes, etc.) and placing on the surface the rock material that came out of the hole.

The appeal places great emphasis on a March 25, 1999, letter to Battle Mountain Gold Company (BMG) from U.S. Department of Agriculture and Interior officials regarding BMG's proposed Crown Jewel project in Washington State. Appellants argue that this letter applies to the Lodestar situation and limits the Forest Service's ability to regulate mining activities under 36 CFR 228 Subpart A. The facts do not support this assertion. That letter is limited to the Crown Jewel situation. The letter did not purport to change long standing existing national Forest Service policy and interpretation of its regulations. In addition, if the letter had been intended to change Forest Service interpretation and application of its regulations, the authorized officials would have either transmitted the March 25 letter to the Forest Service with written instructions on its general application, or have formally issued a manual directive to the Forest Service to change its interpretation and application of 36 CFR 228 Subpart A. Neither of those occurred. This Region has never received formal or informal instructions from U.S.D.A. or the Forest Service Chief to change current procedures and adopt the interpretation appellants assert for processing proposed operations under 36 CFR 228 Subpart A.

Regardless, a letter cannot supersede the clear language of the regulations, which have the force and effect of law. At 36 CFR 228.3(a), the regulations explicitly define operations to which they apply as all activities on or off mining claims:

*Operations.* All functions, work, and activities in connection with prospecting, exploration, development, mining, or processing of mineral resources and all uses reasonably incident thereto, including roads and other means of access on lands subject to

the regulations in this part, regardless of whether said operations take place on or off mining claims. (Emphasis added.)

Formal national Forest Service policy and direction to the Regions is stated in the Forest Service Manual. The Manual at 2817.03 states current national direction in regard to the issue raised by appellants. It reinforces the application of the regulations to activities on or off mining claims and the right of the public to prospect and explore for valuable minerals:

The regulations at 36 CFR 228 Subpart A apply to all unpatented millsites, tunnel sites, and mining claims, including those not subject to 30 U.S.C. 612, and to activities, primarily prospecting, which may be conducted under the mining laws but not on claims.

The statutory right of the public to prospect, develop, and mine valuable minerals and to obtain a patent shall be fully honored and protected.

This same issue of the proper application of the locatable mineral regulations 36 CFR 228 Subpart A versus the special use regulations at 36 CFR 251 was the subject of the 1984 *U.S. v. Craig* decision (CR 81-0184, CR 82-8-H) in the United States District Court for the District of Montana, Helena Division. In that case, which was under appeal from a Magistrate's decision, Judge Battin cited the language from 36 CFR 228.3(a), above, and ruled those regulations apply on or off mining claims. In *U.S. v. Craig*, Judge Battin also noted that not only are the 36 CFR 228 A regulations comprehensive in covering all mining related activities, the 36 CFR 251 regulations specifically except their application to mineral operations, and provide at 36 CFR 251.50:

“[a]ll use of National Forest System land, . . . except those provided for in the regulations governing . . . minerals and mineral materials . . . are ‘special uses’ and must be authorized . . .”

In this decision, Judge Battin went on to say:

“A system other than use permits has been established for minerals and mineral materials. That system of regulation is found in 36 C.F.R., Part 252 (now 228). When the statute and the regulations give miners a statutory right to go upon and use the open public domain for purposes of mineral exploration and development, Forest Service officials may not unreasonably restrict that right by applying general Forest Service regulations and a permit system.”

As indicated by the language at 36 CFR 228.3, the Forest Service should consider whether the activities proposed by an operator constitute use of the national forests for purposes reasonably incidental to and required for the particular stage of mining activity in which the operator is legitimately engaged (30 U.S.C. 612). This is an important aspect of the law because it provides the Forest Service with authority to require plans of operations and regulate activities that create significant resource disturbance; regulate activities that occur at all stages of an operation

(prospecting, exploration, development, etc.); and regulate activities whether on or off mining claims, and whether the miner has made a discovery of a valuable mineral deposit or not.

The 1955 Act at 30 U.S.C. 612 provided that except to the extent required for prospecting, mining or processing operations and uses reasonably incident thereto, no operator of an unpatented mining claim on a national forest shall sever, remove, or use any vegetative or other surface resources (emphasis added). In the 1979 case *United States v. Richardson*, 599 F.2d 294, the Ninth Circuit Court of Appeals affirmed the clear intent of the 1955 Act, and held that the Secretary of Agriculture, operating through the U.S. Forest Service, has authority under the 1897 and 1955 Acts to regulate mining activities. This includes consideration of whether activities are required for and reasonably incident to prospecting, mining or processing operations.

For a use to be required for mineral operations or reasonably incidental to it, the type and level of use must be justified as being appropriate to the stage of mining activity in which the operation is legitimately engaged (i.e., prospecting, exploration, development, production, abandonment, or reclamation). In turn, the determination of whether the stage of mining activity (and the related use the operator has proposed) is required, justified, and appropriate, must be based on the nature and extent of the mineral resource present. Generally, the more information that has been gathered about the quality and quantity of a mineral resource and the closer an operator comes to delineating mineable reserves, the more advanced is the stage of mining activity and use and the more extensive are the surface impacts that may be reasonable and justified.

However, it should be noted that an operator might legitimately propose the same or similar activities at several stages of operations. That is, depending upon a number of factors, such as the geologic setting, the past activities at a site, and the nature of the mineralization, it may be necessary and reasonable under the circumstances to drive mine openings, sink shafts, dig trenches, and generate mine waste and place it upon the surface as part of exploration, development, or production stages. Each of these situations must be evaluated on its own merits. In all instances, however, operations must minimize adverse environmental impacts by avoiding unnecessary and unreasonable destruction of surface resources to be reasonably incidental to mining activities and in compliance with 30 U.S.C. 612 and 36 CFR 228 A [Forest Service Manual (FSM) 2817, FSM R1 Supplement 2800-92-2].

Our responsibilities as required under 36 CFR 228.5(a) are to analyze a proposal and consider, "...the economics of the operation along with other factors in determining the reasonableness of the requirements for resource protection." This is consistent with 30 U.S.C. 612 and *U.S. v. Richardson (supra)*. To require an operator to prove he or she has a discovery and established a valid claim prior to the Forest Service approving surface disturbance on lands open to mineral entry under the mining laws would nullify the intent of the laws to allow prospecting and exploration.

Appellants' legal theory that mining operations under the 1872 Mining Law can only occur on valid mining claims would require an operator to prove he has established a discovery and a valid mining claim before the Forest Service authorizes him to conduct operations, even if those

proposed operations may be reasonably necessary to prospect, explore, make a discovery, and establish a valid claim. In other words, it would result in an absurd Catch-22 situation where a miner would be prohibited from prospecting or exploring for valuable minerals until he can prove he has already found them. Except in special circumstance where the Forest Service may need to establish clear title to the lands involved (e.g. in wilderness areas and other withdrawn areas, in land adjustment cases where the lands are segregated, or in mineral patent applications), there is no legal requirement or land management need for the Forest Service to conduct validity determinations on unpatented mining claims.

In considering Lodestar's proposed operations, the legal standard the Forest Service must apply is not to insure that all of Lodestar's operations occur only on valid mining claims that have been perfected under the 1872 Mining Law, but rather to insure that Lodestar's proposed activities are required for and reasonably incidental to prospecting, mining, or processing operations under the 1955 Surface Resource Act (30 U.S.C. 612) and the 1872 Mining Law. The appeal record indicates the Acting District Ranger applied the proper standard in reaching her decision.

The Ranger directed that a Forest Service expert (a Certified Mineral Examiner) complete a Surface Use Determination (SUD) report to analyze the reasonableness of Mr. Northcutt's proposal and provided recommendations (Doc. 227). The examiner concluded Lodestar's proposed excavation of Adit 2 is within the late stage of exploration or early stage of development of a mining operation, and recommended that the District Ranger approve the operation with certain conditions. The Acting District Ranger followed established Forest Service procedures and directives in her consideration of the SUD report and other relevant information in the record, and in reaching her decision that the proposed operation was reasonable.

**Issue II. The Forest Service violated numerous requirements of the National Environmental Policy Act (NEPA). The Forest Service failed to take a "Hard Look" at, and failed to provide sufficient scientific basis for its analysis of potential environmental impacts from the Lodestar Project.**

**Contention 1. The agency failed to adequately address all of the environmental impacts and scientific uncertainty associated with the potential for polluted water drainage from the mine.**

**Response:** The DN/FONSI and EA both state that groundwater is not expected to be a problem (Vol. 1, Doc. 2, pp. 11 and 12; and Doc. 4, pp. I-7 and II-7). No point source discharge is expected. Environmental effects associated with polluted water drainage from the mine and water quality concerns are addressed in the EA (Vol. 1, Doc. 4, pp. IV-7 and 10-12). Refer to Montana Department of Environmental Quality (MDEQ) report (Vol. 4, Doc. 229) and Specialist reports (Vol. 4, Doc. 234 and 246) for discussion on potential for water drainage and cumulative effects analysis specific to water quality issues. Water quality samples were taken by MDEQ and Mr. Northcutt (Vol. 4, Doc. 229; Vol. 2, Doc. 60, 61, and 63) to be used as baseline data for water quality. Additional supporting information can be found in the project file (Vol. 5, Doc. 269, 271, 273, 274, and 282).

The Montana Department of Environmental Quality (MDEQ) requires a Montana Pollutant Discharge Elimination System permit should storm water and point source discharge be encountered in this project (Vol. 1, Doc. 2, p. 11). Application forms for a permit can be found in the project file (Vol. 1, Doc. 13). Discussions of the requirements of a permit are found in letters from MDEQ to Lodestar Exploration and Mining and the Forest Service (Vol. 1, Doc. 17; Vol. 2, Doc. 29). Additional plans, permit applications submitted, and permits issued include a Storm Water Pollution Plan prepared for Lodestar Exploration and Mining by pH2 Environmental, Inc. (Vol. 1, Doc. 15), a Storm Water Discharge Permit issued by MDEQ (Vol. 1, Doc. 16), an air quality permit determination letter from MDEQ (Vol. 2, Doc. 27), an air quality permit application from Lodestar Exploration and Mining (Vol. 2, Doc. 28), and an air quality permit issued by MDEQ (Vol. 2, Doc. 26).

Response to Comments (Appendix B of the DN/FONSI) also address polluted water drainage concerns (pp. 38, 41, 43, and 52).

**Contention 2. The agency failed to adequately address the impacts on groundwater hydrology likely to occur as a result of the adit.**

**Response:** The groundwater environment of the project is discussed in specialists' reports in the project file (Vol. 4, Docs. 229 and 234). The EA (Vol. 1, Doc. 4, pp. IV-5 and IV-6) states that the probability of adit discharge and surface water contamination is significantly reduced with implementation of mitigation measures 4, 5, 6, 20, 28, and 29. Other discussions regarding generation of acid rock drainage (ARD) and metals contamination are pertinent to both surface and groundwater issues. The samples taken for acid-base accounting (ABA) analysis were inconclusive as to potential for acid generation potential (Vol. 4, Docs. 252 and 253).

The strongest indicator of potential for ARD and metals contamination is the observed impact from historic mining in the project area. The subject property is in the Gold Hill area of the Deer Creek mining district, which includes several old mines and prospects (Vol. 4, Doc. 227, p. 16). These old mines and prospects are located on similar deposits in the same host rock, and have not caused an environmental problem (Vol. 4, Doc. 227, pp. 15-16; Doc. 231; Doc. 253). Water samples taken in the area of historic mining generally show neutral to slightly basic pH levels (Vol. 2, Docs. 60, 61, 63; Vol. 5, Docs. 273 and 274).

**Contention 3. The agency failed to adequately address the potential for acid drainage as a result of the storage of waste rock at the mine site.**

**Response:** See Contention 2, above for discussion of ARD potential.

The DN/FONSI (Vol. 1, Doc. 2, p. 12) states acid-generating potential is not expected to be a problem at this site. The EA (Vol. 1, Doc. 4, p. IV-6) provides discussion of direct, indirect and cumulative effects and conclusions that potential adverse effects from Adit 2a discharge are expected to be minimal. These conclusions are based on the fact that Adit 2a has similar geology to the H-Adit where water drainage is occurring with a pH of 7.63. The H-Adit is located just above Placer Gulch along trail 256, approximately a half-mile to the east-southeast of Adit 2a.

(See Surface Use Determination Report, Vol. 4, Doc. 227, pp. 15-17 and Vol. 4, Doc. 229). In addition, specialist reports (Vol. 4, Docs. 252 and 253) state that although the acid base account test results are inconclusive, acid rock drainage is not expected to be a problem since sulfide material will be removed for milling and historical workings have not created a problem.

Additional information substantiating the fact that the two adits have similar geology can be found in the soils discussion in the EA (Vol. 1, Doc. 4, pp. III-1 to III-2), in a description of the geology of the area in USGS Professional Paper 1602 (Vol. 5, Doc. 302) and in the Mine Rock Guidelines, Report No. 93301 (Vol. 5, Doc. 299).

**Contention 4. The agency failed to adequately address the potential for subsidence from the underground workings.**

**Response:** Neither the interdisciplinary team members nor the public identified subsidence as an issue during the comment and review periods. Subsidence is more of a problem from underground mining of flat lying deposits such as coal, or from open stoping of wide mineralized zones. The subject deposit is a narrow (average 10 feet wide), nearly vertical mineralized shear zone (Vol. 4, Doc. 227). Mr. Northcutt proposes to backfill his workings with waste rock (EA, Vol. 1, Doc. 4, pp. II-10 to II-11). Mining of a narrow, steeply-dipping ore body with subsequent backfilling of the openings would not allow subsidence to propagate to the ground surface.

**Contention 5. Conclusions that fuel storage will not be necessary at the mine site and that fuel spills are not a foreseeable impact are not valid.**

**Response:** Although the interdisciplinary team members or the public never raised fuel storage as an issue during the comment and review periods, it was covered in the direct and indirect effects analysis in relation to potential affects of fuel spills on water quality (Vol. 1, Doc. 4, pp. IV-6 and IV-7). Lodestar will be restricted to Environmental Protection Agency Standards for fuel hauling and storage, and fuel will be brought in on an as-needed basis (Vol. 1, Doc. 2, p. 8, mitigation 16; Vol. 1, Doc. 4, p. II-9, mitigation 20). Also, please reference the Plan of Operations (Vol. 1, Doc. 12, p. 4) where operator has proposed to transport fuel on an as-needed basis.

Should Mr. Northcutt propose on-site fuel storage in the future, that would require new analysis and approval, separate from the present EA and DN/FONSI.

**Contention 6. The agency failed to adequately address the potential for environmental impacts resulting from the proposed use of waste rock as backfill for the mine adit.**

**Response:** The EA (Vol. 1, Doc. 4, pp. IV-4 and IV-5) provides analysis concerning closure of the adit after mining. Both the DN/FONSI (Vol. 1, Doc. 2, p. 5) and the EA (Vol. 1, Doc. 4, p. II-10) provide estimated amount of waste rock to be produced from development of Adit 2a. Again, the Forest Service had no reason to believe backfilling was an issue as there were no issues identified internally or by the public concerning backfilling.

Waste rock generated by other, historic mining activity in the area, from similar deposits in the same host rock, has not caused an environmental problem (Vol. 4, SUD, Doc. 227, pp. 15-16; Doc. 231; Doc. 253). Water samples taken in the area of historic mining generally show neutral to slightly basic pH levels (Vol. 2, Docs. 60, 61, 63; Vol. 5, Docs. 273 and 274).

Appellants state that backfilling of waste “likely requires a Class V Underground Injection Control (UIC) Permit.” Initial correspondence included an incorrect reference to the CFR’s, which was addressed in subsequent correspondence dated November 26, 2001. The corrected citation is to 40 CFR 144.6(e) and 144.81. The point to which appellants refer is actually 40 CFR 144.81(8). This citation says that the UIC permit regulations apply for “Sand backfill and other backfill wells used to inject a mixture of water and sand, mill tailings or other solids into mined out portions of subsurface mines...” Since Mr. Northcutt is proposing to mechanically replace solid mine waste into the mine openings, this subpart would not apply.

Appellants also referenced a concern whether there was sufficient data supporting assumptions that waste rock will fit adjacent to Adit 2a and whether all waste rock would fit back into Adit 2a once mining is completed. The calculated amount of room needed for waste rock storage on the surface is approximately 0.9 acres. This figure is derived from Mr. Northcutt’s letter of January 21, 2001, (Vol. 1, Doc. 018) in which he states the waste storage area will be approximately 160 feet by 250 feet; approximately 0.9 acres. This figure is also found in the Memorandum table for potential surface disturbances (Vol. 4, Doc. 262). The estimated volume of waste rock to be excavated from Adit 2a can be found in a letter sent to the Forest Service (Vol. 1, Doc. 18). In this document, Mr. Northcutt specifies approximately 14,024 tons of waste rock will be removed to access the ore body. Mr. Northcutt estimates a 40 percent swell factor between the in-place volume of the waste rock and the broken volume (Vol. 1, Doc. 18). The BLM *Handbook for Mineral Examiners*, H3890-1, Appendix IV-C, shows a swell factor for granite (closest listed rock type) of 50-80 percent. At a maximum swell factor (2,520 lbs. per loose cubic yard, *Ibid.*), the waste removed to access the ore body would represent a volume of 11,130 loose cubic yards. If the waste was placed on the area described by Mr. Northcutt and the sides sloped back at a 2.5:1 grade, a pile 10 feet high would more than accommodate the volume.

In the Plan of Operations (Vol. 1, Doc. 12, p. 2), Mr. Northcutt states that he plans to mine 50,000 to 100,000 tons of ore from the five levels, which he proposes to develop. Excavation of this volume of ore would produce a minimum open area capacity for 39,700 loose cubic yards of waste rock. In addition, the crosscut leading to the ore body would provide storage capacity for an additional 1,500 loose cubic yards of waste. The logistics of bringing solid waste rock back into all of the mined-out areas at the close of operations will be difficult and expensive. Problems include method of haulage, access into the stoped areas, and inability to place waste up to the back of the workings, but there will be more than sufficient volume in the underground workings to hold the waste. In the event that open space availability problems prevent placement of a portion of the waste rock back into the mine workings at closure, the operator will be responsible to remove excess waste rock off site (Vol. 1, Doc. 2, p. 8, mitigation 20).

**Contention 7. The agency failed to adequately address the potential environmental impacts associated with the use of explosives at the mine site.**

**Response:** The DN/FONSI (Vol. 1, Doc. 2, p. 13) states elevated nitrate levels in excess of state water quality standards at this site are unlikely. Although the opening sentence says that this is “because of the low likelihood of mine discharge,” the document goes on to show that even if a discharge were to occur, the distance to surface water and the presence of vegetation to utilize the nitrates should eliminate any threat of nitrate pollution. There is an anticipated slight potential for a one-time flush of nitrates from the waste rock pile with precipitation, but it is unlikely any nitrate would reach the Placer Gulch tributary because it is over 300 feet away and berms will be required to slow sedimentation and water runoff (Vol. 1, Doc. 2, p. 13). The effects analysis describing the use of explosives and nitrates can be found in the EA (Vol. 1, Doc. 4, pp. IV-10 to VI-12).

**Contention 8. The agency failed to adequately address the potential impacts relating to wildlife.**

**Response:** Potential impacts to wildlife are addressed in the Biological Assessment (BA) and Biological Evaluation (BE) (Vol. 4, Docs. 248 and 251). The BE states that the project “may adversely impact individuals or habitat, but would not likely cause a trend to federal listing or loss of viability” for boreal toads, northern leopard frog, northern goshawk and flammulated owl. The BE also states that the amount of habitat affected that may impact sensitive species is low.

As identified in the transmittal letter (p. 7), surveys for northern goshawks and flammulated owls were conducted in the project area during the field seasons of 1999 and 2001. The results were negative and both northern goshawks and flammulated owls were not detected.

The transmittal letter also explains that boreal toads and northern leopard frogs should not have been included in the recommendation to survey for animals in the BE. After numerous trips to the site and walking the small streams near the project site, the wildlife biologist determined the area was not suitable for either species and that surveys were not necessary. The impact area is dry with Douglas-fir cover types and the presence of boreal toads and/or northern leopard frogs in this type of habitat is very unlikely. The BE attached to the Decision Notice was a revised version of an earlier BE (written prior to the wildlife biologist spending enough time in the field to conclude that suitable habitat did not exist), and the need to update the recommended mitigation was overlooked.

The information in the transmittal letter regarding northern goshawks, flammulated owls, boreal toads and northern leopard frogs should have been updated in the project file. I recommend the wildlife biologist amend and update the BE to reflect the survey results for northern goshawks and flammulated owls, and the rationale for not surveying for boreal toads and northern leopard frogs.

**Issue III. The Forest Service failed to adequately analyze connected actions and potential cumulative impacts.**

**Contention 1. The mill located on private land is a connected action that was not adequately analyzed by the Forest Service, including direct, indirect, and cumulative impacts associated with the mill.**

**Response:** The EA (p. I-6) and the DN (p. 4) identify activities related to the project that will occur on private land, including the mill. Both documents explain how the mill is directly associated with the activities on National Forest System lands. They also explain how regulation of the mill on private property is the responsibility of the State of Montana. Information about the mill can be found in permits, plans, and agreements submitted by Lodestar Exploration and Mining (Vol. 1, Doc. 15 and 16; Vol. 2, Doc. 26 to 32) and in letters sent by MDEQ to Mr. Northcutt (Vol. 1, Doc. 25; Vol. 2, Doc. 55 and 62; and Vol. 5, Doc. 263 and 264).

Appendix D of the DN/FONSI provides a supplemental effects disclosure for the tailings impoundment, processing mill, and related facilities on private land (pp. 51-55). The supplemental effects disclosure discusses the roles and authorities of Lodestar Mining and Exploration, the Forest Service, the State of Montana and Sweet Grass County related to the development of the private land. The disclosure focuses on the consequences of the mill site and whether the applicant has secured the necessary State permits which will adequately maintain air and water quality, and prevent the infestation and spread of noxious weeds. It also addresses concerns about road degradation and public safety from hauling activity considered an indirect effect of approving the Plan of Operations.

**Issue IV. The Forest Service violated NEPA by not considering a reasonable range of alternatives to the proposed action.**

**Contention 1. The Purpose and Need for the proposed action is unreasonably narrow and thus violated NEPA.**

**Response:** The purpose and need for the project is discussed in the EA on pages 7 and 8. The Forest has provided information to support the stated purpose and need. The Forest Service has the responsibility to make sure activities are conducted so as to minimize adverse environmental impacts on National Forest System surface resources (36 CFR 228 Subpart A) and that the activities are reasonably incidental to the stage of the mining operations. This issue was also responded to in the Response to Comments on the EA (Vol. 1, Doc. 2, p. 42, comment 22). I find the purpose and need identified to be within the discretion of the Responsible Official.

**Contention 2. Even if the narrow purpose and need is reasonable, the Forest Service violated NEPA by failing to consider a reasonable range of feasible alternatives to the Proposed Action. Of particular note is the Forest Service's failure to consider in detail an alternative that would require more exploratory drilling prior to any excavation of Adit 2a.**

**Response:** The EA (pp. II-6 to II-12) identifies three alternatives analyzed in detail and three alternatives considered but eliminated from further analysis. The alternatives presented in the EA respond to the purpose and need statement, are within the management direction identified in the EA, respond to the public scoping comments, and are reasonable for this project.

Three alternatives were considered but not given detailed study in the EA (pp. II-11 to II-12). One of those alternatives was an alternative that would require more exploratory drilling prior to the development of the two adits to obtain better knowledge of the extent of the deposit. A

Surface Use Determination was completed that concluded the driving of an adit at this stage was reasonable (Vol. 4, Doc. 227, p. 5). Therefore, no further analysis was completed on this alternative. The appellants' request for an alternative that would require more exploratory drilling prior to any excavation of Adit 2a was also addressed in Response to Comments (Vol. 1, Doc. 2, p. 42, comment 22).

**Issue V. The Lodestar NEPA process violates federal law because it is based on nonexistent statutory rights.**

**Response:** See discussion under Issue 1.

**Issue VI. The discussion of the affected environment (baseline conditions) is inadequate.**

**Response:** Chapter III of the EA (pp. 1-7) discusses the affected environment, with supporting information in the specialists' reports located in the project file (Vol. 4, Doc. 227-262). Alternative 1, the No Action Alternative, also provides baseline data for comparison of the action alternatives.

**Issue VII. The Forest Service Biological Evaluation of sensitive species is arbitrary and capricious and violates NFMA.**

**Response:** Effects to Yellowstone cutthroat trout are incorporated into Chapter IV of the EA (pp. 1-7 and 10-12), with detailed documentation provided by Scot Shuler, Fisheries Biologist, in the Aquatics Input Specialist Report (Vol. 3, Doc. 246). Both documents identify the effects determination for Alternative 3 with mitigation as "May impact individuals or habitat, but will not likely result in a trend toward federal listing or reduced viability for the populations or species."

**Issue VIII. The Forest Service cannot approve a mining proposal that will violate Federal and State environmental laws.**

**Response:** Approval of a mining proposal by the Forest Service includes requirements for compliance with all applicable Federal and State environmental laws. The Clean Air Act and Clean Water Act in the State of Montana is administered by the Montana Department of Environmental Quality (MDEQ) and, as such, an air quality permit and Montana Pollutant Discharge Elimination System permit for storm water and point source discharge would be under the authority of the State of Montana (Vol. 1, Doc. 2, p. 21). The following applications for permits, plans, and/or correspondence letters can be found in the projects file: air quality permit determination letter from MDEQ (Vol. 2, Doc. 27), air quality permit application from Lodestar Exploration and Mining (Vol. 2, Doc. 28), air quality permit issued by MDEQ (Vol. 2, Doc. 26) and Storm Water Pollution Prevention Plan and Storm Water Discharge Permit authorization by MDEQ (Vol. 1, Docs. 15 and 16).

As stated in the DN/FONSI (Vol. 1, Doc. 2, pp. 11 and 12) and the EA (Vol. 1, Doc. 4, p. I-7 and II-7, mitigation measure 4) groundwater is not expected to be a problem. No point source

discharge is expected. However, Lodestar has applied for the necessary MDEQ permits even though a discharge is not anticipated (MDEQ letter to Lodestar, Vol. 1, Doc. 17). Application forms for a MDEQ permit can be found in the project file (Vol. 1, Doc. 13). Discussions of the requirements of a MDEQ permit are found in a letter from MDEQ to Forest Service (Vol. 2, Doc. 29). Response to Comments (Appendix B of DN/FONSI) concerning polluted water drainage can be found on pages 38 (comments 3 and 6), 41 (comment 19), 43 (comment 24), and 52 (paragraph 3).

#### RECOMMENDATION

I have reviewed the record for each of the contentions addressed above and have found that the analysis and decision adequately address the issues raised by the appellant. I recommend the District Ranger's decision be affirmed and the appellants' requested relief be denied.

/s/ Cindy S. Swanson  
CINDY S. SWANSON  
Appeal Reviewing Officer  
Director of Watershed, Wildlife, Fisheries and Rare Plants