STATE OF COLORADO

Russell - DNR, Elliott <elliott.russell@state.co.us>

Q2 NEPA documents for review

1 message

Titterington, Amy J -FS <amyjtitterington@fs.fed.us> Fri, Dec 1, 2017 at 1:35 PM
To: "gpollack1100@gmail.com" <gpollack1100@gmail.com>
Cc: "Russell - DNR, Elliott" <elliott.russell@state.co.us>, "williamsd@co.teller.co.us" <williamsd@co.teller.co.us>

Gary,

Attached are the Environmental Assessment, Decision Notice and FONSI (Finding of No Significant Impact), Design Criteria, and a copy of your original MPO. Please review the Design Criteria and let me know if you have any questions. If you agree to abide by the DC, please sign on page 6 and return to the address below.

I will put a hard copy in the mail for your wet signature on Monday.

Thanks!

Amy Titterington, P.G., CMA I
Geologist

USDA Forest Service

Pike/ San Isabel National Forests, South Park Ranger District

p: 719-836-3871
f: 719-836-3875
amyjtitterington@fs.fed.us

320 Highway 285/ PO Box 219

Fairplay, CO 80440
www.fs.fed.us

Caring for the land and serving people

4 attachments

Pollack_MPOSubmittal_051517.pdf
4022K

Design Criteria for Q2 Mine Plan of Operations_112917.pdf
62K

Q2_DNFONSI_FINAL_112917.pdf
1698K

Q2EA_FINAL_112817.pdf
3251K

USDA

United States Department of Agriculture

Forest Service

November 2017

Environmental Assessment

Mine Plan of Operations – Q2

South Park Ranger District, Pike National Forest
Teller County, Colorado

Township 11 South, Range 71 West, 6th Principal Meridian, Colorado

Responsible Official:
Josh Voorhis, District Ranger
320 Highway 285, Fairplay, CO 80440
719-836-2031
jvoorhis@fs.fed.us

For Information Contact:
Amy Titterington, Geologist
320 Highway 285, Fairplay, CO 80440
719-836-3871
amyjtitterington@fs.fed.us

Compliance and assignment of responsibility: Amy Titterington, Geologist

Monitoring and assignment of responsibility: Amy Titterington, Geologist

Review:

Prepared by: _____ **11/28/2017**

Amy Titterington DATE
Geologist
Project Lead

Table of Contents

SUMMARY

The Pike National Forest is processing a Mine Plan of Operations (MPO) to explore for and mine pegmatite gemstones on the Q2 unpatented mining claim in the Crystal Creek area, near Lake George, Colorado. The project area is located approximately 5 miles northeast of Lake George, in the Lower Lake George watershed within the South Park Ranger District, Pike National Forest, Teller County, Colorado.

The MPO was submitted in compliance with Forest Service mineral regulations at 36 CFR 228A, which are tiered to United States mining laws that confer a statutory right to prospect and mine on lands open to operations under those laws. In accordance with these laws and regulations, the Forest Service needs to conduct the appropriate level of environmental analysis in order to provide for approval of the Operator's MPO.

The Proposed Action would disturb 1.0 acre of land located in portions of Section 27, Township 11 South, Range 71 West, 6th Principal Meridian, Colorado.

The Proposed Action is to approve the proponent's MPO, as modified by the site-specific design criteria described in this Environmental Assessment (EA) to protect surface resources and ensure complete reclamation of the site. These design criteria refine the Operator's plan. In addition to the Proposed Action, a "No Mining" alternative was analyzed.

Based upon the effects of the Proposed Action, the responsible official would decide if it provides adequate protection of the environment, while recognizing the proponent's right to explore and mine. Approval is contingent upon the proponent's incorporation of the project design criteria into his MPO, Forest Service receipt of a bond for reclamation of all disturbances that may occur under the approved Plan, and compliance with all applicable local, state and federal laws and regulations.

CHAPTER 1 - INTRODUCTION

1.1 Document Structure

The Forest Service has prepared this Environmental Assessment in compliance with the National Environmental Policy Act (NEPA) and other relevant Federal and State laws and regulations. This Environmental Assessment discloses the direct, indirect, and cumulative environmental impacts that would result from the Proposed Action and alternatives. The document is organized into five parts:

- *Introduction:* The section includes information on the history of the project proposal, the purpose of and need for the project, and the agency's proposal for achieving that purpose and need. This section also details how the Forest Service informed the public of the proposal and how the public responded.
- *Description of the Alternatives, including the Proposed Action:* This section provides a description of the agency's Proposed Action and the No Mining alternative. It also includes Project Design Criteria and Project Monitoring requirements.
- *Environmental Consequences:* This section describes the environmental effects of implementing the Proposed Action and the No Mining alternative. This analysis is organized by resource area.
- *Agencies and Persons Consulted:* This section provides a list of preparers and agencies consulted during the development of the environmental assessment.
- *Appendices:* The appendices provide more detailed information to support the analyses presented in the EA.

Additional documentation, including more detailed analyses of project-area resources, may be found in the project planning record located at the South Park Ranger District Office in Fairplay, Colorado.

1.2 Project Description

Gary Pollack (the Operator) of Spring Hill, FL has submitted a Plan to explore for and mine pegmatite gemstones on the Q2 unpatented mining claim in the Crystal Creek Mining Area (CCMA), located northeast of Lake George, Colorado. The project would occur on National Forest System lands managed by the South Park Ranger District, Pike National Forest, on lands open to mineral entry under the 1872 Mining Law, as amended. The area proposed for exploration and mining is 1.0 acre in size and is located in portions of T.11S, R.71W, Section 27, 6th Principal Meridian; Teller County, Colorado.

Primary access to the site is from Teller County Road 51 (Cedar Mountain Road), to Forest Service Road (FSR) 897 to FSR 220, to a non-system access road approximately 250' in length. The project will not require the construction of any new access roads. Mining equipment will include one Case 580 Super 'K' backhoe with a two-foot bucket, and various hand tools. Excavations will total no more than 60' x 75' in dimension, and each excavation will be fully reclaimed before a new excavation is opened. Mechanized equipment will be used for 2 – 5 days per season.

Figure 1 – Vicinity Map

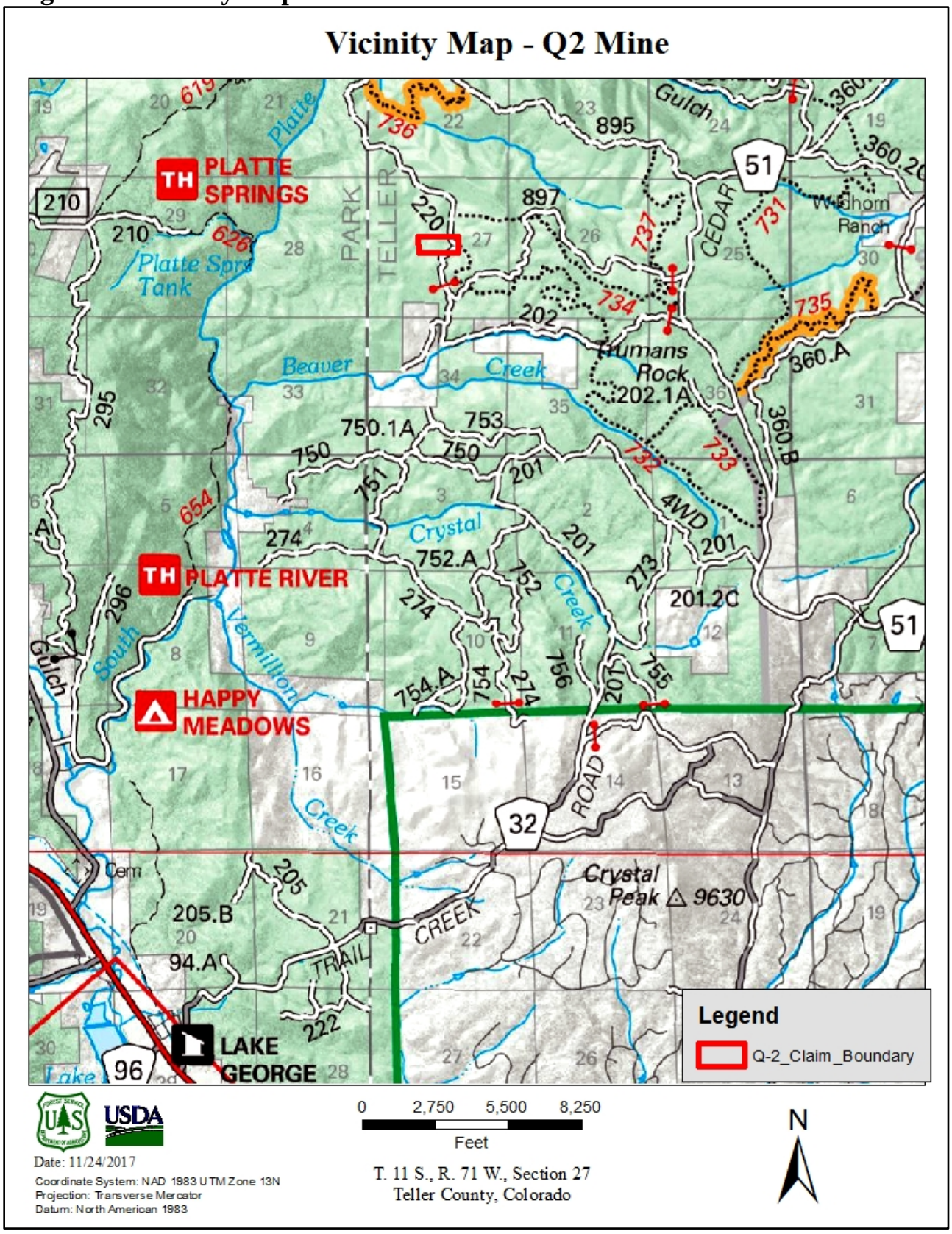
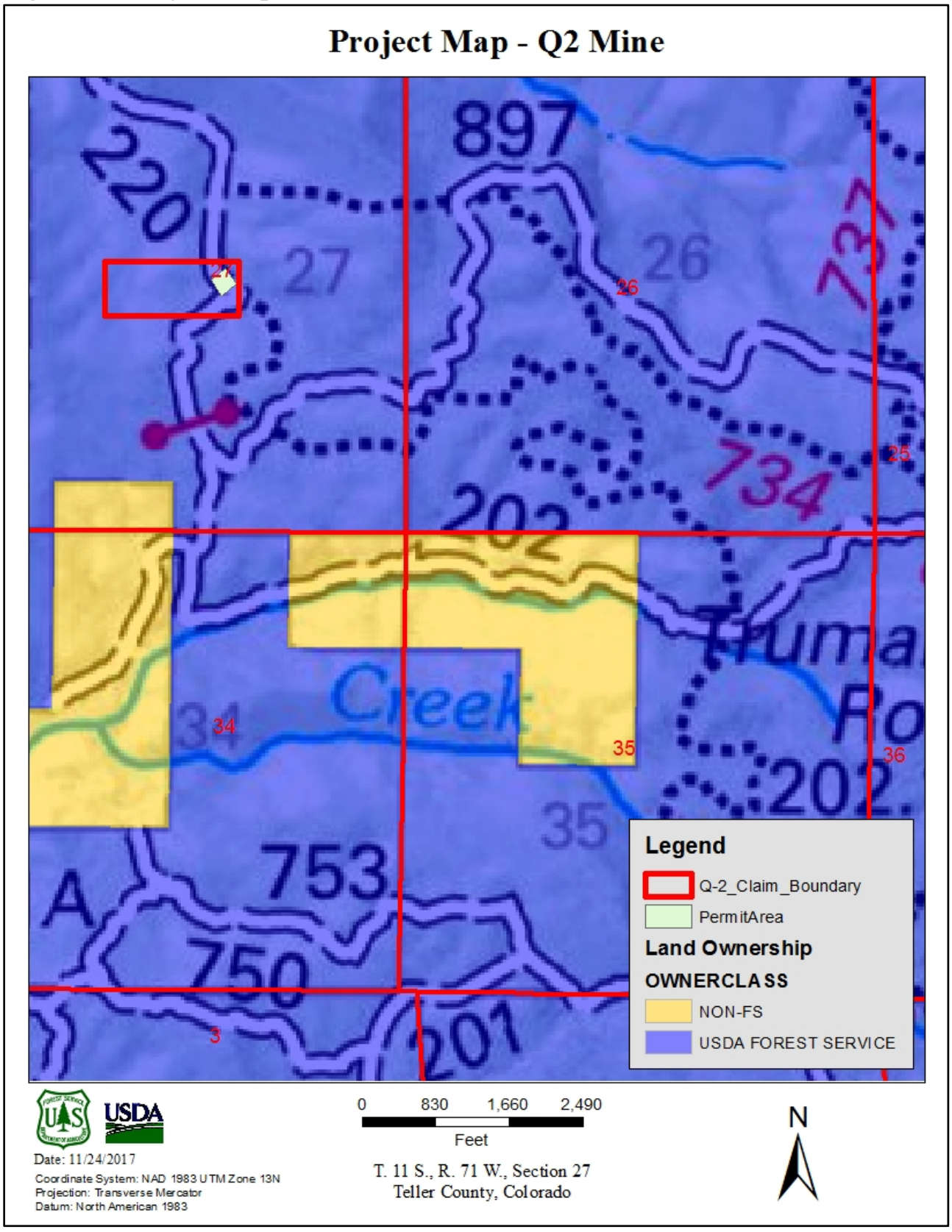


Figure 2 – Project Map



1.3 Purpose and Need for Action

The need for the Forest Service to take action now is to respond to the claimant's legitimate request to explore for and mine minerals on National Forest System lands, by conducting an environmental analysis for the submitted MPO(36 CFR 228.4(f)). The purpose of this analysis is to provide for approval of a MPO to explore for and mine locatable minerals, as required by Forest Service mining regulations located in the Code of Federal Regulations, Title 36, Part 228, Subpart A (36 CFR 228A). This action would also meet the goal outlined in the Pike and San Isabel National Forests Land and Resource Management Plan, Rocky Mountain Region (USDA Forest Service, 1984), to encourage the legitimate exploration and extraction of locatable minerals from National Forest lands while maintaining or improving other resource values.

This analysis serves to document how the Forest Service would protect surface resources, in accordance with Forest Service minerals regulations (36 CFR 228.8) and all other applicable laws and regulations, when the District Ranger takes the action of approving the MPO(36 CFR 228.5), as amended by the project design criteria itemized in this environmental analysis.

1.4 Forest Service Minerals Laws and Regulations

Forest Service policy in Title 36 Code of Federal Regulations Part 228 (36 CFR 228.1) states that use of the surface of National Forest System lands in connection with operations authorized by the United States mining laws (30 U.S.C. 21–54) shall be conducted so as to minimize adverse environmental impacts on National Forest System surface resources. While Federal law permits mining operations on National Forest lands; it also charges the agency with the prevention of unnecessary destruction of Forest lands and regulation of occupancy and use of the surface for purposes reasonably incident to prospecting, mining, or processing, primarily under the Organic Act of 1897 and the Surface Resources Act of 1955.

1.5 Forest Service Manual Direction

Relevant policy in the Minerals and Geology Manual (FSM 2802) states that the Forest Service would:

1. Encourage and facilitate the orderly exploration and development of mineral and energy resources on National Forest System lands to maintain a viable, healthy minerals industry, and

2. Ensure that exploration, development, and production of mineral and energy resources are conducted in an environmentally sound manner.

1.6 Forest Plan and Travel Plan

The project area is covered by a **2A** management prescription. This prescription provides opportunities for semi-primitive motorized recreation, such as snowmobiling, four-wheel driving, and motorcycling, both on and off roads and trails. Range resource management provides sustained forest yield.

While the prescription places an emphasis on management of one or several Forest resources, it also promotes other activities that are designed to achieve the goals and objectives established by the Forest Land and Resource Management Plan (FLRMP). Forest goals encourage the:

1) Administration of areas with producing sites and known reserves with consideration of ongoing and potential mineral activities;

2) Avoidance and minimization of capital investments, such as developed recreation, in or adjacent to areas with known reserves and alienated mineral rights;
3) Consideration of only surface resource programs compatible with mineral activities in areas of actively producing sites or areas containing known reserves; and
4) Performance of site-specific mineral evaluations prior to making substantial capital investments, in areas of high to moderate potential for valuable mineral (III-52).
5) Mining is generally compatible with the overall management emphasis for this area. Standards and guidelines in the Forest Plan require reclamation of disturbed lands after mining (III-53).

A portion of the primary access to be used by the Operator is through private property, which is not subject to USFS regulations.

1.7 Decision Framework

Given the purpose and need, the deciding official reviews the Proposed Action and the No Mining alternative in order to make the following decisions:

- Whether or not additional project design criteria and monitoring are needed to provide for adequate protection of surface resources and the environment.
- Whether or not to prepare an Environmental Impact Statement.

1.8 Public Involvement

A Legal Notice and Comment document was posted in the publication of record on September 1, 2017, and a description of the proposal with a request for comments was provided to local and State agencies.

No letters of comment were received in response to the 30-day Legal Notice and Comment, published in the *Fairplay Flume* on September 1, 2017, nor from local and State Agencies.

1.9 Issues

The Forest Service identified issues to be analyzed in depth. Issues serve to highlight effects or unintended consequences that may occur from the Proposed Action and alternatives, giving opportunities during the analysis to reduce adverse effects and compare trade-offs for the decision maker and public to understand.

Although the interdisciplinary team and public identified no issues that would drive the development of additional alternatives, based on public input and specialist review of the project, the Forest Service identified potential resource concerns, which were addressed through project design and in the analyses that support this EA.

CHAPTER 2 – PROPOSED ACTION AND ALTERNATIVES

This section describes and compares the alternatives considered for the Q2 Plan of Operations. This section also presents the alternatives in comparative form, defining the differences between the two

alternatives, and providing a clear basis for choice among options by the decision maker and the public. Some of the information used to compare the alternatives is based upon the design of the alternative and some of the information is based upon the environmental, social and economic effects of implementing each alternative.

2.1 Proposed Action

The action proposed by the Forest Service to meet the purpose and need is to process and approve the proponent's MPO to explore and mine for pegmatite gemstones in Crystal Creek, and if necessary, apply project design criteria to protect forest resources. This analysis is required, prior to approving the proponent's Plan of Operations. Other requirements for approval would include formal incorporation of the design criteria itemized in this document into the Plan and posting of a performance bond calculated by the Forest Service to insure the costs of reclamation. Implementation would also include Forest Service administration of the operation in accordance with regulations at 36 CFR 228.7-228.8.

This analysis and the attendant decision apply to the Operator's May 15, 2017 proposal, as amended by the design criteria herein. If the proponent intends to use other methods or plans additional activities, the operator is required to submit a revised, supplemental, or new MPO and the proposed operations would be reviewed with additional site-specific analysis and public scoping. A separate decision and approval may be required.

2.2 Alternatives

2.2.1 Alternative 1

No Mining (No Action)

Under the No Mining alternative, current management plans would continue to guide management of the project area but the Forest Service would not process the Plan and no mining operations would be allowed. Historic activities, past occurrences and ongoing and currently authorized actions that have taken place and/or would occur under this alternative are described below. This action would violate the claimant's statutory right to prospect and mine on lands open to operations under the 1872 Mining Law, as amended. Therefore, this alternative was used only for comparison of effects between the Proposed Action and No Mining.

2.2.2 Alternative 2

The Proposed Action

The Proposed Action is to conditionally approve Mr. Pollack's Plan for the Q2 Mine, provided it includes the design criteria and project monitoring requirements specified below. Figures 1 and 2 are maps of the project vicinity and proposed operating area.

2.2.2.1 Plan of Operations

The Plan of Operations, as submitted by the proponent, entails the following activities:

Access to Site:

The mining operation may be accessed on existing routes, Teller County Road 51 (Cedar Mountain Road) to FSR 897 to FSR 220 to a non-system access road, approximately 250' feet in length.

Mining on FS land:

Activities proposed are those associated with pegmatite gemstone mining. The project will consist of 1.0 acre of disturbance over the life of the Plan. Each excavation will have maximum dimensions of approximately 60' x 75', and will not exceed 20 feet in depth. Each excavation will be fully reclaimed before a new excavation is opened.

These areas will be prospected by excavating pits or trenches depending on size and direction of the vein. During excavation, the first 24" of top soil will be piled in designated areas and covered with certified weed-free mulch. Stockpiles will be no larger than 10 feet in height to minimize erosion. Topsoil will be reused during final reclamation. All waste rock will be piled in designated areas and used for backfill upon completion of excavations.

Minimal vegetation and tree clearing is required and will be done with a chainsaw. Equipment use is estimated for 2 - 5 days per season.

Active trenches and pits, over 3 feet in depth, will be fully fenced with high visibility fencing, and will include an easily accessible exit ramp.

At the close of each mining season, before winter precipitation prevents site access, pits would be refilled, graded and re-contoured, and reseeded to Forest Service reclamation standards with erosion control measures being implemented as needed. Human waste and garbage would be removed from National Forest.

The site would be monitored annually for weed infestation with implementation of weed control as recommended by the South Park Ranger District staff.

Reclamation:

The primary goal of the final reclamation is to return the site to a stable, self-sustaining native vegetative mode, where appropriate, which will support wildlife habitat and recreation use with minimal risk to the health and safety of the public and a minimum of maintenance demand. The USFS will inspect and monitor the earthwork and revegetation process to ensure it is successful.

Timing and duration:

The operator does not desire nor have the ability to operate during months of snow. This limits operation to approximately late April or early May through approximately November of any year. Variations would occur depending on snow loads and operating periods may be longer or shorter than described above but generally are confined to the spring, summer and fall seasons. No nighttime operations have been requested. Proposed beginning date is May of 2018 with anticipation of operating 5 years, with reclamation completed by 2023.

2.2.2.2 Project Design Criteria

The Forest Service developed the project design criteria to address resource concerns. The proponent

must incorporate these items into the MPO in order to receive approval. These requirements are deemed reasonable and necessary measures to minimize the potential for adverse environmental impacts on surface resources managed by the Forest Service.

Administration and General Site Requirements

1. The bond for this operation must be posted prior to commencing any exploration activities. The amount of bond would be calculated to ensure full reclamation and revegetation of areas disturbed by the exploration activity.
2. The Operator shall arrange for the FS to inspect any mining-relate equipment, prior to it entering NFS lands at the beginning of each operational period, in order to prevent the spread of noxious weeds and their seeds.
3. The Operator will dispose of camper holding tank contents (if applicable) at an offsite facility or provide a temporary self-contained portable toilet.
4. In the event previously unidentified cultural or paleontological materials are discovered during project implementation, all work will cease until a qualified archaeologist is contacted and the need for further investigation and consultation determined.
5. Operations may be suspended and/or changed if the FS administrator determines that they are not compliant with this decision, the approved Plan, applicable laws or regulations, or that resource conditions have changed. Operations may resume after compliance items have been resolved between the Forest Service, the Operator, and appropriate regulatory agencies.
6. The operator is required to be consistent with Teller County building and sanitation code requirements, with CDRMS permitting requirements, and with the Colorado Department of Public Health and Environment requirements.

   These requirements include, but are not limited to state water rights permit, state water discharge permit, county conditional use permit and all necessary building permits. These conditions are included in the approved Plan of Operations. If the operator does not comply with these conditions, he/she will be in noncompliance with the USFS regulations and appropriate action would be taken at that time.

Access

7. Access routes will be confined to the existing non-system road unless otherwise approved by the Forest Service Minerals Specialist. This road will be decommissioned during final reclamation.

Noxious Weeds

8. Apply Forest Service approved native seed mix for reclamation practices.
9. Protocols for noxious weed management should include the monitoring and treatment of noxious weeds every year during the life of the mine. Treatment should occur along roads and access roads to reduce the threat of inadvertent distribution.
10. As a standard operating procedure, the Operator should treat noxious weed occurrences as soon as they are identified, and cooperate with the Forest Service to inventory, monitor, and control noxious weeds/undesirable plants within areas of disturbance until release of all bond monies.
11. Establish effective ground cover on disturbed sites to prevent accelerated on-site soil loss. Restore ground cover using certified native plants as practicable to meet revegetation requirements. Avoid

persistent or invasive exotic plants.

12. To further minimize the spread of noxious weeds and their seeds, equipment should be washed thoroughly, especially the undercarriage, to eliminate undesirable or noxious weed seeds potentially carried from previous jobs. Washing should occur at the closest facility available, prior to entry onto NFS lands.

13. At the end of the mine life during the mine reclamation period, revegetated areas should be monitored for the presence of plants on the Colorado State Noxious Weed list for a period of five years. A and B list species from the Colorado State Noxious Weed list (Appendix A) will be eradicated prior to bond release.

Timber

14. To the best ability of the Operator, reclaim site to pre-disturbance conditions as listed in the reclamation plan and bond. If at any time deleterious effects occur to multiple trees or larger swathes of existing vegetation please contact Silviculture / Timber management for further consultation.

15. In regards for timber removal, if necessary, all trees to be removed will need to be identified by the Claimant and agreed upon by a USFS Minerals Specialist. Timber specialists will be notified of the agreed upon trees for removal and an inventory will be made. This will allow the Timber Program of Work to account for the volume removed. According to FS handbook / manual the Claimant has the right to free use of timber:

    2813.13b - Claims Validated Subsequent to Act of 1955

    Such claims which otherwise come under Title 30, United States Code, Section 612 (30 U.S.C. 612) carry the same surface rights as those described in section 2812, except for the following modifications:

    1. Right to occupancy and use necessary for prospecting, mining, and processing, but not the exclusive right to the surface. Lands containing such claims are subject to the rights of the United States to manage and dispose of the vegetative resources, to manage other resources except locatable minerals, and to the right of the United States, its permittees and licensees, to use so much of the surface area necessary for such purposes and for access to adjacent lands.

    2. Right to cut timber on the claim for mining uses and for necessary clearing, except that timber cut in the process of necessary clearing cannot be sold by the claimant. The United States has the right to dispose of timber and other vegetative resources.

    3. Right to additional timber required for mining purposes, if timber was removed from the claim by the Forest Service after claim location. The quantity and kind of timber to be provided, free of charge from the nearest available source which is ready for harvesting, will be substantially equivalent to that previously removed from the claim.

    The Claimant must gather a 2400-1 permit from the South Park Ranger District and follow aforementioned protocol to use the identified timber for removal. Please contact Pike National Forest Timber Staff, if any further questions arise.

Water Quality/ Soils

16. Avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources caused by physical and chemical pollutants during minerals exploration activities.
17. Monitor restored ground to ensure no rills or gullies are forming and that no invasive plant species are present.
18. Install contour berms and trenches around vehicle service and refueling areas, chemical storage and use areas, and waste dumps to fully contain spills. Use liners as needed to prevent seepage to groundwater.
19. Reclaim each mining area when its use ends, using certified local native plants as available; avoid persistent or invasive exotic species. Stabilize waste dumps and tailings in non-use periods to prevent wind and water erosion.
20. Reclaim and stabilize facilities, disturbed areas, surface water diversion structures, and transport and storage areas before the end of seasonal shutdown so that they will function as designed to prevent adverse impacts to surface water from erosion and sedimentation.
21. Back-fill and re-contour disturbed areas, including exploratory trenches, pits, or holes to the original contour, where practicable, or to an acceptable post-mining contour that blends with the surrounding topography to re-establish surface and subsurface hydrologic pathways to the extent practicable.
22. Report spills and take appropriate clean-up actions in accordance with applicable state and federal laws, rules and regulations. Contaminated soil and other material shall be removed from NFS lands and disposed of in a manner according to state and federal laws, rules, and regulations.
23. Limit the amount of exposed or disturbed soil at any one time to the minimum necessary for efficient operations during minerals production activities. Stabilize mined areas and surface disturbance activities as soon as practicable before moving and opening new areas.
24. Clearly delineate the geographic limits of the area to be cleared.
25. Conduct extraction activities in such a manner as to minimize the potential for slope failures, limit slope steepness and length, limit disturbed areas to those actively used for extraction, retain existing vegetation as long as possible, and allow for progressive reclamation of the site where practicable.

Wildlife - Terrestrial

26. Existing roads would be used for most operations, and if new roads are determined to be necessary for operations in the MPO, they would be required to be obliterated and reseeded (final reclamation) according to USFS standards.
27. Trees removed should be limited and would be approved by the Forest Service prior to their removal to ensure tree conservation.
28. Trees should not be removed May 15 – July 15 to protect sensitive and migratory birds.
29. Mining activities would not occur in historic mine shafts or adits. If mining activities are proposed in adits or shafts, they would have to first be surveyed for the presence of bats by qualified personnel.
30. Biological surveys should be carried out, using standard protocols recommended by the USFS,

for northern goshawk, bald eagle, golden eagle, peregrine falcon and other raptor species prior to project activities.

31. If mining operations are planned in wetland or riparian areas, another BAE would be required and surveys for amphibian species would need to be completed prior to project implementation.
32. Where goshawk or other raptor nests are present, no heavy equipment operations would take place between March 1 and September 30 within a 0.5 mile radius of the nest.
33. Within 650-foot radius of an identified active goshawk nest, no mining activity (including the use of hand tools and occupancy) or vegetation removal would occur at any time.
34. Appropriate reclamation practices and erosion protection measures would be carried out in order to limit the impacts to soil, water and amphibian species.
35. If any nest or den site or migratory bird, threatened, endangered or sensitive (TES) species is located or observed during implementation of the project, the wildlife biologist will be notified and any appropriate conservation measures (for example, timing restrictions or buffer zones) will be put in place

Reclamation

The operator'(s) agree to complete the following reclamation measures:

36. Within the one year expiration of this authorization, the operator will commence final reclamation.
37. Remove all materials and return the mining area to the original natural contours. This includes all excavation cuts.
38. Silt fences or other erosion control will be utilized to prevent off-site sediment transport.
39. Straw waddles must be certified weed-free (shredded aspen fill recommended).
40. Water bars may be required on slopes and access road to control erosion.
41. Slash should be scattered and/ or piled, or used in erosion control on slopes.
42. Any erosion control blankets must be 100% natural fiber (i.e. no monofilament) and certified weed-free.
43. Reclamation will be monitored by the operator, USFS personnel, and State of Colorado (DRMS) inspectors on an as needed basis.
44. All non-system access roads will be ripped, re-contoured, graded, and seeded at the end of operations.
45. The road and site will be seeded with USFS-approved seed mixtures, as needed.
46. Re-vegetation will not be complete until at least 50% plant re-growth has been established; when compared to adjacent undisturbed areas.
47. Top soil must be saved and used to cover all disturbed areas.
48. Return large rocks, boulders, and logs to their original (general) position.
49. The U.S. Forest Service may require additional reclamation measures if needed.
50. Remove all trash off of Forest Service Lands.

51. Remove all structures (fences, signs) from Forest Service Lands.
52. Complete all reclamation within one year of the end of the operating plan.
53. Refund of any reclamation bond is contingent upon the success of reclamation.

2.2.2.3 Project Monitoring

The Forest Plan requires monitoring of activities in riparian areas to ensure management objectives are met. In accordance with the FS minerals regulations that require compliance inspections, and based on potential effects, the interdisciplinary team developed the following monitoring requirements to minimize the project's potential adverse effects.

1. The FS Minerals Administrator would monitor the operation to ensure that the project is completed as designed.

CHAPTER 3 –ENVIRONMENTAL CONSEQUENCES

This section summarizes the physical, biological, social and economic environments of the affected area and the potential changes to those environments due to implementation of the alternatives. It also presents the scientific and analytical basis for comparison of alternatives presented in the chart above.

3.1 Introduction/ Background

Crystal Creek Mining Area. The Crystal Creek Mining Area (CCMA) is a renowned source for a variety of locatable minerals that are sold as specimens to mineral collectors and mineral dealers. Specimen quality crystals of smoky quartz, amazonite, fluorite, goethite, hematite, albite, Macanite and microcline occur in small cavities or pockets within quartz and pegmatite veins hosted by Precambrian-age Pikes Peak granite. Large or high quality specimens from Crystal Creek are displayed in numerous museums around the nation, and in many private and public collections. Miners continue to make crystal discoveries in the area. Even after a century of mining, the Crystal Creek area is a world class producer of valuable locatable minerals. Discoveries have been made recently, including the 2015 discovery of the Icon Pocket (Amazonite and Smoky Quartz) on the Glacier Peak claim block.

The CCMA covers approximately 5,000 acres of surface area on the Pike National Forest and surrounding private lands. Crystal mining in this area dates back to the 1800's. There is widespread but largely unobtrusive evidence of historic hand and mechanized digging operations in the form of shallow trenches, open dig sites, and spoil piles. Many old dig sites have naturally revegetated over time.

This operation will occur within the boundaries of one 20-acre lode claim which is one of 100 or more mining claims on NFS land in the approximately 5,000-acres of the CCMA. An exact count of current or past claim numbers is not available because claims are constantly being relinquished and new claims are being filed. Most of the other mining operations in the area involve small, shallow dig sites with hand tools and/or the use of mechanized equipment for short periods of time. This work is generally conducted on weekends during the summer months. Most of the claimants live within a half-day drive of the area, and sometimes camp for a few days on their claims during favorable weather conditions.

No claimants in the Crystal Creek area live on their unpatented mining claims for periods greater than 60 days.

The South Park Ranger District office maintains approximately 22 Notices of Intent within the Crystal Creek area. Though most Notices of Intent are filed for one to three claims, some operators have multiple claims. Many of the Notices of Intent are submitted annually and some of the Notices of Intent are filed by different individuals for the same claim or overlapping claims. Therefore, this number is a reflection of *potential* operators within the Crystal Creek area. Most of these operators conduct hand-digging on weekends and are not considered to cause significant damage to surface resources. Notices of Intent are acknowledged when there is no use of mechanized equipment, tree falling, establishing new access routes or roads, constructing any structure or facility or placing signage other than corner post identification. A reclamation bond is not required for this level of use.

An approved MPO is required for use of mechanical equipment or any mining activity that may cause significant disturbance. There are currently 16 POs authorized, and 6 pending POs, in the Crystal Creek area. Some of these operations occasionally remove trees in the process of opening excavation dig sites. These trees are limited in number, usually 2-5 trees per claim. The expected mechanical disturbance is approximately 1.0 acres per year, plus use of existing non-system roads and the construction of approximately 0.1 miles of temporary access. Current operators are required to perform reclamation work on their claims.

Reclamation bonds are required to insure that dig sites and temporary access roads will be reclaimed to Forest Service standards.

Q2 Mining Operations. This is the first mine MPO that the operator has submitted for the Q2 unpatented mining claim. The operator will need to submit a Reclamation Permit and a financial warranty to the State of Colorado, Division of Reclamation, Mining, and Safety (DRMS), and a Conditional Use Permit with Teller County, before his operations will be approved.

3.1.1 Interdisciplinary Team Review

The following table is provided as a mechanism for resource staff review, to identify those resource values with issues or potential impacts from the proposed action and/or alternatives. Those resources identified in the table as potentially impacted will be brought forward for analysis.

Resource	**Date Reviewed**	**Initials**	**Resource Status**	**Rationale for Dismissal from Analysis**
Air Quality and Climate* *Project Lead*	11/17/2017	AJT	PNI	Appropriate design features are incorporated into the PO to eliminate impacts.
Cultural, Historic & Paleontological Resources* *Julie Bell*	06/05/2017	JB	PNI	See Section 3.3

Environmental Justice *Project Lead*	11/17/2017	AJT	NP	No minority or low-income groups would be disproportionately affected by health or environmental effects.
Fish Habitat* *Kristen Meyer*	07/06/2017	KEM	NP	Resource not present within the PO area.
Floodplains* *Leah Shipstead*	05/22/2017	LLS	NP	Resource not present within the PO area.
Forest Management* *Cory Ashby*	07/10/2017	CA	NP	See Section 3.6
Fuels/ Fire Management *Mike Hessler*	05/16/2017	EMH	NP	There are no impacts to Fire and Fuels Management
Geology/ Minerals *Amy Titterington*	11/17/2017	AJT	PNI	Geologic and mineral resources would be directly impacted; however, impacts would be minor due to the limited size of the operations and the amount of material removed.
Grazing/ Rangeland *Sheila Lamb*	08/15/2017	AJT	NP	Currently there are no active Grazing Allotments in the Crystal Creek Area.
Lands & Realty *Janine Prout*	06/21/2017	JP	NP	PO area is not identified for sale/ disposal. All new disturbances would be within proponent's mining claim. No rights-of-way are required.
Law Enforcement *Project Lead*	11/17/2017	AJT	NP	No law enforcement issues are associated with this action.
Migratory Birds* *Kristen Meyer*	07/06/2017	KEM	PNI	No tree removal will be allowed during nesting periods.
Noise *Project Lead*	11/17/2017	AJT	PNI	The proposed PO is approximately 5 miles from the nearest population center; therefore, ambient noise will have little to no effect on local residents.
Noxious Weeds *Sheila Lamb*	05/16/2017	SJL	PI	See Section 3.4
Public Health &	11/17/2017	AJT	PNI	Resource would not be affected

Safety *Project Lead*				by the proposal. Operations would be conducted under MSHA and OSHA regulations with the implementation of a Health and Safety Plan.
Recreation *Joseph Carlson*	07/09/2017	JC	PNI	Neither recreation activities, nor access will be impacted by the proposed action. A gate will be used on the non-system road to limit motorized public access to the site.
Socioeconomics *Project Lead*	11/17/2017	AJT	NP	Mining of this area will not likely provide any additional revenue for the local economy.
Soils *Leah Shipstead*	09/23/2017	LLS	PI	See Section 3.8
T & E Species* *Kristen Meyer*	07/06/2017	KEM	PNI	See Section 3.5
Travel Management *Joseph Carlson*	07/09/2017	AJD	PNI	The operator is using a non-system access route that is not open to the general public. It will be gated at the forest boundary to limit motorized access to authorized operators.
Vegetation *Sheila Lamb*	05/16/2017	SJL	PI	See Section 3.4
Visual Resources *Project Lead*	11/17/2017	AJT	PI	See Section 3.7
Wastes Hazardous or Solid* *Project Lead*	11/17/2017	AJT	PNI	Appropriate design features are incorporated into the mine MPO to eliminate impacts.
Water Quality Surface and Ground* *Leah Shipstead*	05/23/2017	LLS	PNI	See Section 3.8. No adverse impacts to water quality are expected due to the limited size and location of the operations.
Wetlands and Riparian* *Leah Shipstead*	05/23/2017	LLS	NP	Resource not present within PO boundaries.
Wilderness, WSAs, Wild & Scenic Rivers	11/23/2017	AJT	NP	Resource not present within PO boundaries.

Project Lead				
Wilderness Characteristics *Project Lead*	11/23/2017	AJT	NP	Resource not present within PO boundaries.
Wildlife Aquatic *Kristen Meyer*	07/06/2017	KEM	NP	Resource not present within PO boundaries.
Wildlife Terrestrial *Kristen Meyer*	07/06/2017	KEM	PI	See Section 3.5.1

*Consideration Required by Law or Executive Order

NP = Not Present PNI = Present, Not Impacted PI = Present and/ or Impacted

The impacted resources brought forward for analysis include:

- Access and Public Safety
- Heritage and Cultural Resources
- Noxious Weeds
- Threatened, Endangered, or Proposed Wildlife and Plant Species
- Timber Resources
- Visual Resources
- Water Quality and Soils

3.2 Access and Public Safety

The proposed mining operation is in Management Area 2A of the Forest Plan, which has an emphasis for semi-primitive motorized recreation. The 1-acre operation does not conflict with public access, including semi-primitive motorized recreation. Mining is generally compatible with the overall management emphasis for this area. Under federal law, the public has a right to cross and use the surface of unpatented mining claims as long as they do not interfere with mining operations. The public would be allowed to access the claims by foot (using existing NFS trails). Public vehicular use on non-system access roads, along with mineral entry, however, would not be authorized. Access to the site is through a non-system road, approximately 250' in length. There are approximately 0.04 miles of non-system roads within the project area and 3.75 miles of roads per square mile within the local watershed, which currently exceeds the Forest Plan standards and guidelines of two miles of road per square mile in Management Area 2A. A gate will be installed at the forest boundary to limit public access to the site.

There are several dig sites that could remain open at the end of the operating season, which could be potentially dangerous to the general public who might wander into the area. Currently the dig sites are not uniformly marked, flagged or fenced.

Environmental Consequences:

Proposed Action

Direct and Indirect Impacts: Project design criteria implemented would improve public safety above current levels. While the number of open dig sites would increase, all dig sites would be flagged or fenced, thereby maintaining or increasing the level of public safety. Mechanized equipment such as a backhoe would be in operation up to 5 days per year. In addition to the equipment operator, at least one other worker would be required to on site to provide for public safety during equipment operation.

Since current road density exceeding Forest Plan standards is not a result of the Proposed Action, it is out of the scope of this project. The roads created for mining access are temporary in nature and would be rehabilitated by the operator or the Forest Service via a reclamation bond. Therefore, there is no long-term increase in the road density in the Crystal Creek area as a result of this project. Additionally, the Forest Service would require the operator to reclaim existing non-system roads within the project area that are directly used for mining access, which would decrease the long-term road density within the project area.

No Action Alternative: None. With the no action alternative, temporary access roads would not be created, nor would new dig sites be opened.

3.3 Heritage and Cultural Resources

In accordance with Section 106 of the National Historic Preservation Act and the Forest Plan, the Q2 Project was analyzed for potential impacts to significant heritage resources. An inventory was conducted and nothing of cultural significance was found. The State Historic Preservation Officer (SHPO) concurs with this determination (Cultural Resource Inventory Report in file).

Environmental Consequences:

Proposed Action

Direct and Indirect Impacts: None. Based on the cultural inventory that was completed on June 5, 2017, no culturally significant resources are present within the boundaries of the Q2 unpatented mining claim.

No Action Alternative: None. With the no action alternative neither cultural resources in the PO area would be directly impacted by mining operations.

3.4 Noxious Weeds

The vegetation in Crystal Creek is dominated by open grasslands consisting of fescue (*Festuca spp.*), blue grama (*Bouteloua gracilis*), mountain muhly (*Muhlenbergia montana*), bluegrass (*Poa spp.*) and other species such as fringed sage/prairie sagewort (*Artemisia frigida*), soapweed yucca (*Yucca glauca*), currant (*Ribes spp.*) and mountain ball cactus (*Pediocactus simpsonii*). The ponderosa pine/Douglas-fir (*Pinus ponderosa/Pseudotsuga menziesii*) forest type of varying age classes is also common along with the ponderosa pine savanna vegetation type. Aspen (*Populus tremuloides*) saplings are becoming more established and other species, such as common juniper (*Juniperus communis*), kinnikinnick (*Arctostaphylos uva-ursi*), wild rose (*Rosa woodsii*), and a mixture of native grasses are growing into the understory of the remaining forest. Many of the south-facing slopes contain mountain

mahogany (*Cercocarpus montanus*) with dispersed ponderosa pine and grasses.

Environmental Consequences:

Proposed Action

Direct and Indirect Impacts: Direct effects of the proposed action include (a) transmission of new species of noxious weeds into the project area through weed seeds or reproductive propagules carried on vehicles and equipment, (2) movement of existing noxious weeds into the project area and (3) the soil disturbance created by project activities. Indirect and cumulative effects involve the ecological burden placed on native plant communities, impacts to resources dependent on healthy, functional native plant communities (Botany/ Weeds Specialist Report).

Prevention is the most effective and least expensive method of weed management. Careful adherence to equipment washing, best management practices, and bonding for control of noxious weeds in the affected portion of the project area would acceptably reduce this risk (BAE for Crystal Creek Mining Area (CCMA)).

No Action Alternative: None. With the no action alternative, natural resources in the PO area would not be directly impacted by mining operations.

3.5 Threatened, Endangered, Proposed, and Sensitive Wildlife and Plant Species

3.5.1 Wildlife. In 2012, a Programmatic Biological Assessment (BAE) was completed for all mining activities of this type within Crystal Creek (USFS 2012). Informal consultation was completed with a signed letter from the USFWS stating their concurrence that activities within the CCMA "**may affect, but is not likely to adversely affect**" Mexican spotted owl. There is no designated critical habitat within the area analyzed under the BAE, nor on this claim.

The BAE document included all projects with up to 1 acre of surface disturbance at a given point in time, and 5 acres or less of surface disturbance over all for projects lasting 5 years or less and thus fits within the scope of this mining plan within the analysis area (CCMA). Species life histories, habitat assessments, and effects are all covered in the BAE (USFS 2012).

The BAE and MPO(PoO) proposal were reviewed to determine if the analysis of effects to *federally listed Threatened or Endangered* species, or Regional Forester's *Sensitive* species (TES) for this particular PoO would fit within the scope of the programmatic BAE (see Table 1 in Appendix B). This process includes ensuring that the list of species selected in the BAE is consistent with the species identified in the current *U.S. Fish and Wildlife Service, Endangered, Threatened, Proposed, and Candidate Species List* using the Information for Planning and Conservation (IPAC) website (https://ecos.fws.gov/ipac/; official list requested on November 20, 2017); the R2 Regional Forester's Sensitive Species List, dated June 29th, 2017 (FSM 2672.43 and 2672.11 - Exhibit 01, R2 Supplement 2600-2017-1); Rocky Mountain Region Endangered, Threatened, Proposed and Sensitive Species list, dated October 10th, 20167; Threatened, Endangered and Sensitive Species of the Pike & San Isabel National Forests and Comanche & Cimarron National Grasslands list (Ryke et al. 2003) were used to identify species which presently inhabit, have the potential to occur (i.e. presence of suitable habitat),

or have a historical range that includes the PSICC (Appendix B - Table 1).

Providing that the Operator follows all of the "Project Design Requirements given in the programmatic BAE (USFS 2012) and the design measures of fencing their pits and others listed in the MPO submitted to the Forest Service, the proposed project is well within the scope and the BAE is an adequate form of analysis for this project.

There are no streams, wetlands or riparian areas within the unpatented mining claim boundaries. The claim consists primarily of ponderosa pine with some aspen.

Two new wildlife species (insects) were recently added to the R2 Sensitive Species list (monarch butterfly and western bumblebee). New ground disturbance within the excavation areas, topsoil piling, and new road construction may remove some flowering plants, but would only remove a very insignificant amount compared to the surrounding area. There is no milk weed in the project area, which is a requirement for monarch reproduction. Although it is possible that these species may occasionally pass through or use this area, there would not be a significant change in the availability of flowering plants or trees. There would be no effect to monarch butterflies and western bumblebees as a result of the project, due to the fact that habitat used by these species will not be altered and the likelihood of these species being present within the project site is highly unlikely.

Mining activities within this mining claim and the scope of this BAE ***may impact individuals, but is not likely to cause a trend towards federal listing or loss of viability*** of fringed myotis (*Myotis thysanodes*), hoary bat (*Lasiurus cinereus*), Townsend's big-eared bat (*Corynorhinus townsendii*), peregrine falcon (*Falco peregrinus anatum*), bald eagle (*Haliaeetus leucocephalus*), flammulated owl (*Otus flammeolus*), northern goshawk (*Accipiter gentilis*), olive-sided flycatcher (*Contopus cooperi*), monarch butterfly, and western bumblebee. For this project, there would be ***no effect*** to northern leopard frog (*Lithobates pipiens*) and boreal toad (*Anaxyrus boreas boreas*) populations as there is no habitat for these species in the project area.

Providing the Forest Service standard requirements provided for mining activities are followed, the impacts to sensitive species would be limited.

Environmental Consequences:

Proposed Action

Direct and Indirect Impacts to Wildlife: The scale for determining cumulative effects to wildlife species is determined by the scale used in the BAE (USFS 2012), which includes the entire Crystal Creek Mining Area (see map in BAE).

Cumulative actions that open up or remove mature or old-growth forests, including logging, wildfire, road or site construction that result in fragmentation of the forest, can alter wildlife habitat significantly depending on the scale. Human activity, such as hiking, shooting, and off-road vehicle activity, in or near nesting, roosting, or foraging sites may result in abandonment of an area. These activities could also indirectly affect habitat parameters from trampling, vegetation removal, or increased fire risk.

Cumulative effects on special status wildlife species would mostly be due to past, present, and reasonably forseeable mining activities within the CCMA. Some larger mining operations, such as

Smoky Hawk, Godsend, and Two Point Claims are a few examples of larger mine operations within the area and have removed a minimum of one acre of trees cumulatively. Future mining operations will continue to remove more trees throughout the CCMA.

Although some habitat may have been lost due to past timber harvesting, and the Hayman Fire, the proposed mining activities are not likely to contribute significantly to cumulative effects on special status species within the CCMA. Forests within the area are likely to be in varying stages of regeneration and succession due to the Hayman Fire. Activity and noise generated from all of these activities may have the potential to displace wildlife species, but should fluctuate and change with location and intensity throughout the area over time and should no impact populations as a whole unless significant increases in mining activity (amount and length of time) and recreation occur.

No Action Alternative: None. With the no action alternative, natural resources in the PO area would not be directly impacted by mining operations.

3.5.2 Plants. The Regional Forester has identified sensitive species for Region 2, and the Pike and San Isabel National Forests, and Cimarron and Comanche National Grasslands has further refined this list, to include only those species with the potential to occur within its administrative boundaries.

Federally listed endangered, threatened or proposed species, and Regional Forester Sensitive Species (RFSS) can be found in Table 1 of Appendix B. Following review of the Colorado Natural Heritage Program Database (2017) and available Forest information, I have determined that there are no documented occurrences of any federally endangered, threatened or proposed species, or any RFSS within the proposed project area, and there is no habitat for any of these species; or if species or their habitat is present, it would not be affected by project implementation.

Because there are no records or habitat for any federally endangered, threatened or proposed species, the proposed project will have no effect, direct, indirect or cumulative, on these species. Similarly, since there are no records of any RFSS, the proposed project will have no impacts, direct, indirect or cumulative, on these species.

Environmental Consequences:

Proposed Action

Direct and Indirect Impacts to Plants: Because there are no records or habitat for any federally endangered, threatened or proposed species, the proposed project will have no effect, direct, indirect or cumulative, on these species. Similarly, since there are no records of any RFSS, the proposed project will have no impacts, direct, indirect or cumulative, on these species.

No Action Alternative: None. With the no action alternative, natural resources in the PO area would not be directly impacted by mining operations.

3.6 Timber Resources

The area has not been harvested for commercial forest products in approximately 50 years. Recent product removal is limited to small amounts of fuelwood, Christmas trees, and live transplants. Under the 1872 mining law, miners are allowed to cut and use timber at no charge, provided the use is incident to the mining operation. Court cases have determined that this includes use of firewood on the claim.

The primary tree type in the area is ponderosa pine with some aspen. Engelmann spruce (*Picea engelmannii*) occurs along the edges of the riparian areas of Crystal Creek. The proposed area will be converted to non-forested for the foreseeable future.

Environmental Consequences:

Proposed Action

Direct and Indirect Impacts: This action may have cumulative impacts to soil compaction, as it disallows fine root growth and future recruitment of vegetation, soil deposition, and may contribute to additional runoff and subsequent erosional issues. Additionally, it may have damaging impacts to future forest growth that could result in micro-scale cover type changes.

No Action Alternative: None. With the no action alternative, timber resources in the PO area would not be directly impacted by mining operations.

3.7 Visual Resource Management

The project area is in Management 2A of the Forest Plan. Visual resources are managed so that management activities are not evident or remain visually subordinate. The Forest Plan standards and guidelines for this management area expect management activities in these areas to not exceed an Adopted Visual Quality Objective of Partial Retention. Partial retention refers to landscapes with moderate scenic integrity where the valued landscape character "appears slightly altered." Noticeable deviations must remain visually subordinate to the landscape character being viewed.

Past management activities such as historical changes caused by early mining are present in the Crystal Creek area that are not visually subordinate but appear to have evolved to their present state through natural processes. Management activities should be designed to provide a visually appealing landscape and increase vegetation diversity in selected areas. Landscape rehabilitation is used to restore landscapes to a desirable visual quality.

Environmental Consequences:

Proposed Action

Direct and Indirect Impacts: The extent of unreclaimed mining disturbances from historic operations is approximately one percent (1%) of the CCMA. The cumulative disturbance of the Proposed Action is approximately 1 acres in the 5,000 acre CCMA, which is less than one-hundredth of one percent (0.001%) disturbance. Additionally, project design criteria will include reclamation requirements and standard practices such as recontouring the natural landscape and applying native plants revegetation practices, which meet the Adopted Visual Quality Objective of Partial Retention for this area.

No Action Alternative: None. With the no action alternative, visual resources in the PO area would not be directly impacted by mining operations.

3.8 Water Quality and Soils

Climate: The climatic zone within the project area is dry montane that ranges from 8,500 to 9,000 feet in elevation. Total annual precipitation is 16 inches, 65 percent of which usually falls in April through September. Average seasonal snowfall is about 66 inches. Snowfall begins in late September and

snow packs on northern exposures generally disappearing by mid-May. Temperature averages 29ºF in the winter and 64ºF degrees in the summer. The prevailing wind is from the south and average wind speed is highest during the spring.

Landform: The proposed mining operation would occur predominantly on north aspects since the principal ridges in the project area are generally oriented east-west. The terrain is steep to moderately steep mountain slopes. Soil development and productivity is generally higher along the drainages and the few gently sloping landforms of the area.

Water: The project area occurs within the Lower Lake George Composite watershed, which is a class three watershed that is subject to the state anti-degradation policy, which ensures beneficial uses are maintained and protected. No perennial or ephemeral streams are present within the project area. However, some ephemeral drainages may carry surface water during periods of rapid spring snow melt and mid-summer high intensity rain storms.

Soils: The majority (approximately 90 percent) of the project area is mantled in shallow, somewhat excessively drained soils formed in material weathered from Pikes Peak granite. These decomposed granitic soils of mountainsides and ridges exhibit little evidence of soil development and are low in productivity. Inclusions of rock outcrop make up 10 to15 percent of these upland map units. Soil texture of the mineral surface is a gravelly coarse sandy loam. Lack of development, coarse texture and inherently long, steep slopes are factors which make these soils very susceptible to water erosion. (NRCS, 2017)

Environmental Consequences:

Proposed Action

Direct and Indirect Impacts: Within the 1-acre project area, a maximum of 0.1 acres of soil from the dig sites will be displaced per year. No temporary roads would be created over the five year period. The direct effects of temporary roads and dig sites could include increased runoff due to soil compaction, and increased erosion and sediment production.

The magnitude of effects to the soil resource is dependent upon slope steepness and the kind, amount and location of surface and vegetation disturbance. Project design criteria are intended to address these soil factors and minimize soil erosion and sediment impacts to streams. To reduce project-caused erosion rates by 75 percent within the first year of disturbance, soil and overburden piles will be placed immediately upslope of all dig sites. Where slopes exceed 10 percent, sediment fence will be installed to specification around the downslope ends of these piles preventing soil loss and sediment impacts to streams. To expedite effective reclamation, topsoil (including any and all surface organic matter) will be segregated from general overburden. Topsoil piles will be clearly labeled to eliminate the possibility of confusion with general overburden piles during reclamation. Temporary roads will be designed to take advantage of existing travel ways to the greatest extent feasible. Water bars will be constructed according to Forest Service standards at specified intervals based on slope steepness. New road construction will be designed to maximize buffer distance to streams.

Project design criteria will require the closing of all temporary access roads within the project area. Gates and signs at the entrance to all existing non-system access roads will decrease public vehicular use within the project area. Additionally, design criteria such as required engineer specifications (Appendix I) on currently unmaintained, existing access roads would decrease runoff and erosion on existing roads within the project area.

No Action Alternative: There would be no effects on water quality or soils from the No Action Alternative. The site would remain as it currently is.

3.9 Cumulative Effects Summary

3.9.1 Introduction

As required under NEPA and the regulations implementing NEPA, this section analyzes potential cumulative impacts from past, present, and reasonably foreseeable future actions (RFFA's) combined with the proposal within the area analyzed. A cumulative impact is defined as "the impact which results from the incremental impacts of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of which agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 Code of Federal Regulations 1508.7).

Potential cumulative impacts are assessed at the resource level. The cumulative effects analysis area (CEAA) for past, present, and RFFA's that may generate cumulative impacts varies depending on the resource under consideration. Past, present, and RFFA's are analyzed to the extent that they are relevant and useful in analyzing whether the reasonably foreseeable effects of the Proposed Action and Alternatives may have an additive and significant relationship to those effects.

The CEAA for this proposal is limited to within a one mile radius of the forest (southern claim) boundary. This buffer zone includes portions of Sections 21, 22, 23, 26, 27, 28, 33, 34, and 35, T. 11 S., R. 71 W., 6th Principal Meridian, on the Q2 (CMC 251951) lode claim (Appendix C – Figure 1 CEAA Buffer Map). The effects would not extend outside the area because the proposed mining activity would be conducted at such a small scale that none of the effects described below extend beyond the immediate area described.

3.9.2 Past Present and Reasonably Foreseeable Future Actions (RFFA's)

Past and Present Actions

The Crystal Creek Mining District, the area locally known as Crystal Creek, has been mined for pegmatite gemstones since the 1800's. Abundant information is available about the production history of the mines in the CCMA, and the landscape remains scarred from past mining activities with exposed pits, waste rock piles, and numerous two-track roads winding up and down the slopes.

The CCMA is one of several mineral collecting areas within the Pikes Peak batholith of south-central Colorado, which covers approximately 1,200 square miles. The CCMA itself covers 5,000 acres, or 0.65% of the batholith; therefore, the effects of mining pegmatite gemstones to the area's mineral resources are negligible.

Cattle grazing, hunting, and dispersed recreational activities may also have occurred in the Crystal Creek area in the past.

The BLM LR2000 database was used to query the past and present mineral exploration or mining activities (active mining claims, closed mining claims) that have been approved in the CEAA. Since 1976, 72 lode claims have been filed in the CEAA. Currently, there are 43 active lode claims, 22 acknowledged notices of intent, 16 authorized POs, and 6 pending POs, totaling 52.6 acres of authorized disturbance. No mining activities are currently occurring at the proposed PO site.

Dispersed recreation also occurs near this site. General activities include: rock hounding, hunting, off-highway vehicle (OHV) use, and camping. This area is designated as "limited to designated roads and trails" for travel management, although the USFS permits non-commercial and commercial recreation events through its Special Use Permit program. Although most vehicle use occurs on existing two-track trails and dirt roads, OHV use is permitted. Actual number of users per day or per year is not available, but the intensity of recreational use is generally concentrated outside the claim boundaries. Most recreation use occurs during the spring, summer, and fall, and is associated with recreational activities.

Reasonably Foreseeable Future Actions

Mining has occurred in the district for the past 150 years and it would be reasonable to believe mining will continue for many more generations to come.

Hunting and dispersed recreational activities are likely to continue in the future.

3.9.3 Cumulative Impacts Conclusion

Cumulative impacts of the proposal in combination with the past, present, and RFFA's may involve short-term effects to soils, vegetation cover, and wildlife, through habitat loss. Successful revegetation, as proposed, should offset the short-term displacement to wildlife, and non-listed special status species in the long-term.

CHAPTER 4 - CONSULTATION AND COORDINATION

A complete list of individuals, organizations, and agencies contacted about this project is located in the project file. The Forest Service consulted directly with the following Forest Service specialists, local, State and federal agencies, and non-Forest Service persons during the development of this environmental assessment:

4.1 ID Team Members:

Amy Titterington, Geologist and Team Leader
Leah Shipstead, Hydrologist
Julie Bell, Archaeologist
Sheila Lamb, Botany/ Noxious Weed/ Range Specialist
Kristen Meyer, Wildlife Biologist
Cory Ashby, Forester/ Silviculture
Joe Carlson, Recreation

4.2 Federal, State, and local Agencies:

Colorado Division of Reclamation, Mining, and Safety (DRMS)
Colorado Parks and Wildlife (CPW)
Colorado State Historic Preservation Office (SHPO)
Teller County Planning Department
U.S. Fish and Wildlife Service (USFWS)

4.3 References

Colorado Natural Heritage Program. 2017. *Biodiversity tracking and conservation system*. [DVD] Colorado State University, Fort Collins, CO.

https://www.colorado.gov/pacific/agconservation/noxious-weed-species

Forest Service (USFS). 2012. Crystal Creek Area Unpatented Mining Claims: Programmatic Biological Assessment and Evaluation for Special Status Wildlife, Fish, and Plant Resources. USDA, Forest Service, Pike National Forest, South Park Ranger District. July 2, 2012.

FSM 2672.43 and 2672.11, Exhibit 01. 2017. R2 Supplement No.: 2600-2017-1. Forest Service Manual 2600 – Wildlife, Fish, and Sensitive Plant Habitat Management, Chapter 2670 - Threatened, Endangered, and Sensitive Plants and Animals, Rocky Mountain Region (Region 2), Denver, CO. 23 pp.

Ryke, N., S. Olson, T. Wagner, and M. Elson. 2003. Threatened, Endangered, and Sensitve of the Pike & San Isabel National Forests & Comanche & Cimarron National Grasslands. 35 pp.

U.S. Fish and Wildlife Service. 2017. Information for Planning and Conservation (IPAC). (https://ecos.fws.gov/ipac/) (Accessed: May 3, 2017).

Tweto, O. 1979. *Geologic map of Colorado.* USDI United States Geological Survey. Prepared in cooperation with the Geological Survey of Colorado. 1:500,000 scale.

Wrigley, M. J. (2012, June). *Threatened, Endangered, and Forest Service Sensitive Species on the Pike.*

https://reports.blm.gov/reports.cfm?application=LR2000

CHAPTER 5 - Appendices

5.1 Appendix A – Colorado State Noxious Weed List, effective March 31, 2017

List A Species (25)

Common	*Scientific*
African rue	*(Peganum harmala)*
Bohemian knotweed	*(Polygonum x bohemicum)*
Camelthorn	*(Alhagi maurorum)*
Common crupina	*(Crupina vulgaris)*
Cypress spurge	*(Euphorbia cyparissias)*
Dyer's woad	*(Isatis tinctoria)*
Elongated mustard	*(Brassica elongata)*
Flowering rush	*(Butomus umbellatus)*
Giant knotweed	*(Polygonum sachalinense)*
Giant reed	*(Arundo donax)*
Giant salvinia	*(Salvinia molesta)*
Hairy willow-herb	*(Epilobium hirsutum)*
Hydrilla	*(Hydrilla verticillata)*
Japanese knotweed	*(Polygonum cuspidatum)*
Meadow knapweed	*(Centaurea nigrescens)*
Mediterranean sage	*(Salvia aethiopis)*
Medusahead	*(Taeniatherum caput-medusae)*
Myrtle spurge	*(Euphorbia myrsinites)*
Orange hawkweed	*(Hieracium aurantiacum)*
Parrotfeather	*(Myriophyllum aquaticum)*
Purple loosestrife	*(Lythrum salicaria)*
Rush skeletonweed	*(Chondrilla juncea)*
Squarrose knapweed	*(Centaurea virgata)*
Tansy ragwort	*(Senecio jacobaea)*
Yellow starthistle	*(Centaurea solstitialis)*

List B Species (40)

Common	*Scientific*
Absinth wormwood	*(Artemisia absinthium)*
Black henbane	*(Hyoscyamus niger)*
Bull thistle	*(Cirsium vulgare)*
Bouncingbet	*(Saponaria officinalis)*
Canada thistle	*(Cirsium arvense)*
Chinese clematis	*(Clematis orientalis)*
Common tansy	*(Tanacetum vulgare)*
Common teasel	*(Dipsacus fullonum)*
Corn chamomile	*(Anthemis arvensis)*
Cutleaf teasel	*(Dipsacus laciniatus)*
Dalmatian toadflax, broad-leaved	*(Linaria dalmatica)*
Dalmatian toadflax, narrow-leaved	*(Linaria genistifolia)*
Dame’s rocket	*(Hesperis matronalis)*
Diffuse knapweed	*(Centaurea diffusa)*
Eurasian watermilfoil	*(Myriophyllum spicatum)*
Hoary cress	*(Cardaria draba)*
Houndstongue	*(Cynoglossum officinale)*
Jointed goatgrass	*(Aegilops cylindrica)*
Leafy spurge	*(Euphorbia esula)*

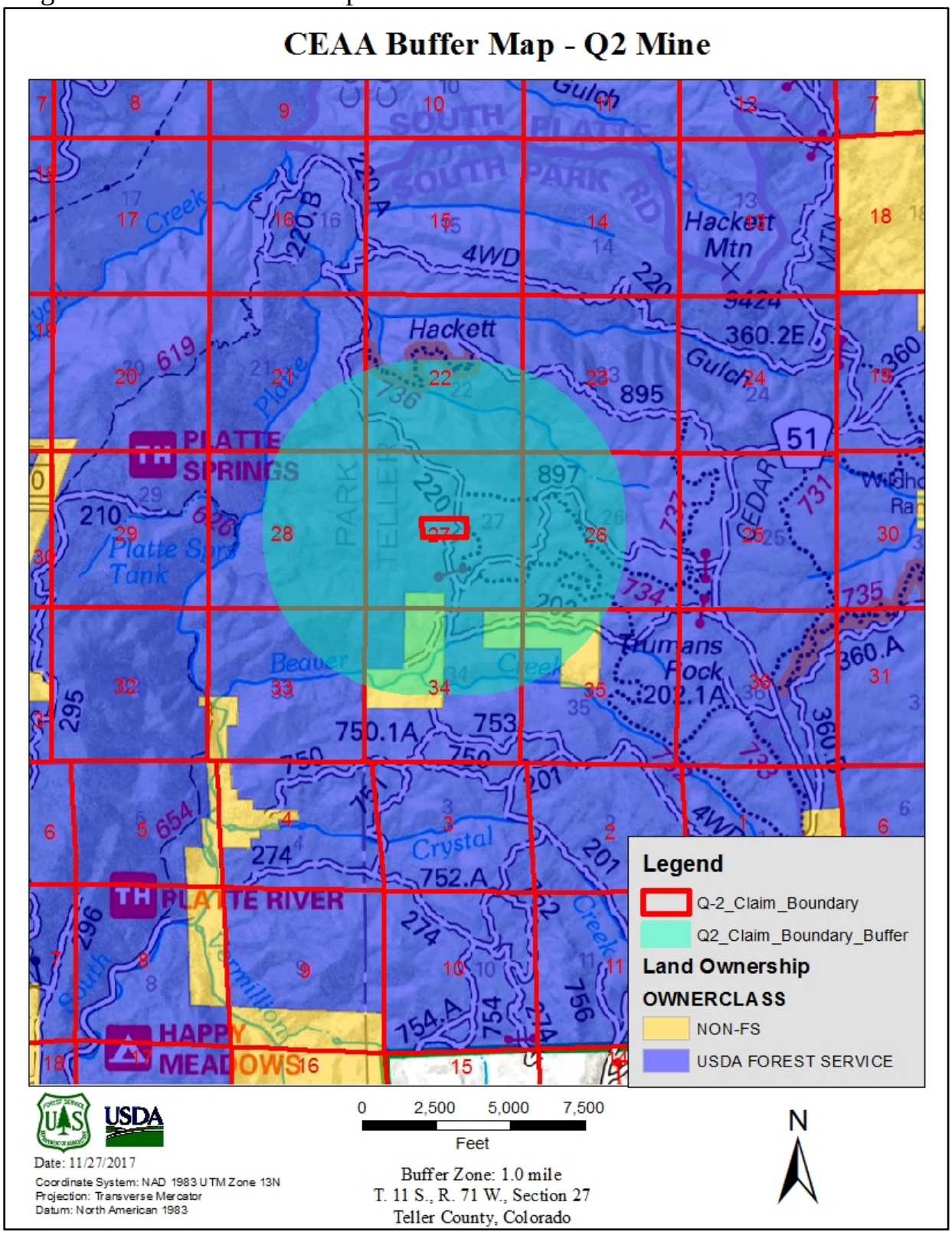
Mayweed chamomile	*(Anthemis cotula)*
Moth mullein	*(Verbascum blattaria)*
Milk thistle	*(Carduus nutans)*
Oxeye daisy	*(Leucanthemum vulgare)*
Perennial pepperweed	*(Lepidium latifolium)*
Plumeless thistle	*(Carduus acanthoides)*
Russian knapweed	*(Acroptilon repens)*
Russian-olive	*(Elaeagnus angustifolia)*
Salt cedar	*(Tamarix chinensis, T. parviflora, and T. ramosissima)*
Scentless chamomile	*(Tripleurospermum perforata)*
Scotch thistle	*(Onopordum acanthium, O. tauricum)*
Spotted knapweed	*(Centaurea stoebe)*
Spotted x diffuse knapweed hybrid	*(Centaurea x psammogena = C. stoebe x C. diffusa)*
Sulfur cinquefoil	*(Potentilla recta)*
Wild caraway	*(Carum carvi)*
Yellow nutsedge	*(Cyperus esculentus)*
Yellow toadflax	*(Linaria vulgaris)*
Yellow x Dalmatian toadflax hybrid	*(Linaria vulgaris x L. dalmatica)*

5.2 Appendix B – Federally Listed and R2 Regional Forester Sensitive Species plants

Scientific name **Common name**	**Habitat**	**Status**	**Species present?**	**Habitat present?**	**Rationale for not carrying forward in analysis**
NON-VACULAR PLANTS					
Sphagnum angustifolium Narrowleaf Peatmoss	subalpine; iron fens; saturated soils between hummocks; 9,500-11500’	RFSS	No	No	No habitat present
FERNS AND ALLIES					
Botrychium ascendens Upswept Moonwort	montane/subalpine; historically disturbed, gravelly soils	RFSS	No	No	Outside known range
MONOCOTS					
Carex diandra Lesser Panicled Sedge	montane/subalpine; fens; wet meadows; peat soils; 6000-9500’	RFSS	No	No	No habitat present
Carex livida Livid Sedge	montane/subalpine; hummocks in fens; 9000-10500’	RFSS	No	No	Outside known range
Eriophorum chamissonis Chamisso’s Cotton-grass	alpine/subalpine; graminoid dominated fens; lake margins; peat soils with open water; 9500-14000’	RFSS	No	No	No habitat present
Ptilagrostis porteri Porter’s Feathergrass	montane to alpine; on hummocks in willow carrs; fens; poorly drained wetlands; 9200-12000’	RFSS	No	No	No habitat present
DICOTS					
Braya glabella Smooth Northern-rockcress	alpine; cirques; rocky tundra; <50% vegetation cover; 11200-13500’	RFSS	No	No	No habitat present
Draba exunguiculata Clawless Draba	alpine/subalpine; tundra; cirques; barren areas among boulders; 12000-14000’	RFSS	No	No	No habitat present
Draba grayana Gray’s Draba	alpine/subalpine; tundra; cirques; moraines; talus; 11500-14500’	RFSS	No	No	No habitat present
Draba weberi Weber’s Draba	subalpine; stream sides; moss-covered rock in spruce-fir forest; 11000-11500’	RFSS 90-day positive finding	No	No	Outside known range
Parnassia kotzebuei Kotzebue’s Grass-of-Parnassus	alpine/subalpine; moist tundra; grasslands with wet rocky areas; streambanks; 10000-12500’	RFSS	No	No	Outside known range
Ranunculus grayi Ice Cold Buttercup	alpine; fell fields; scree slopes; cirques; dry rocky tundra; 11500-14500’	RFSS	No	No	No habitat present
Salix candida Silver Willow	subalpine/montane; rich fens, calcareous peat soil; 8500-10500’	RFSS	No	No	No habitat present
Xanthisma coloradoense Colorado Tansy-aster	alpine to montane; mountain park rocky outcrops; scree slopes; dry rocky tundra; 8500-12500’	RFSS	No	No	No habitat present

5.3 Appendix C – Maps

Figure 1 – CEAA Buffer Map



5.4 Appendix D – Management Requirements and Constraints

Applicable measures will be required during implementation of the Operator's May 15, 2017, Q2 Mine Plan of Operations.

I. BONDING

A bond (surety, certificate of deposit, letter of credit etc.) will be required for the operation. The amount of bond will be sufficient to allow the Forest Service to reclaim all areas disturbed by the exploration and mining activities.

Reclamation includes concurrent, seasonal, and final activities which are required to minimize surface disturbance, enhance stability, prevent erosion, and return disturbed land to a productive pre-mining condition. The standards which guide the use and release of the reclamation bond are contained in 36 CFR 228, as well as those documented in the plan of operations.

II. LOCATION AND CONSTRUCTION FACILITIES

III. CLEARING AND EXCAVATION

Leveling, excavation, or other surface disturbing work will be reviewed and approved in advance by Forest Service personnel. The goal of these requirements is to keep the extent and duration of disturbance to a minimum consistent with mining/exploration needs.

The operating season for earthwork of any kind will normally be that period after spring runoff (May to June), and before significant snow accumulations in the winter (November). Exceptions to this rule will be made on a case by case basis where it can be shown that resource damage will not occur due to incorporation of snow into earthwork, frozen ground caused by working in extremely cold temperatures, poor ground conditions and/or surface or sub-surface runoff.

A. Vegetative Clearing and Disposal

B. Topsoil Salvage

C. Erosion and Sediment Control

IV. HAZARDOUS MATERIALS

Hazardous materials are those which are toxic, ignitable, corrosive, reactive or capable of causing damage to plant or animal life. This includes fuels and lubricants as well as other chemical compounds. The objective of the following requirements is to ensure that such materials are properly transported and stored to prevent contact with the environment and that measures are in place to contain and dispose of such material in case of an accidental spill.

The Operators plan of operation must describe all potentially hazardous materials that will be used in the

operation including the type, amount, rate of use, method, size and frequency of, shipment, and type and size of onsite storage. Material Safety Data Sheets will be provided to the Forest Service by the Operator for chemicals, additives or other potentially hazardous materials used in the operation.

V. ROADS

All non-system access roads used by the operator during operations will be ripped, scarified, graded, and seeded at the end of operations.

VII. RECLAMATION

Final reclamation activities and the normal sequence in which they occur are documented in A-G below. Exceptions to this normal sequence would be for those facilities which would be used for next year's operation. Normally all areas disturbed by an operation will at a minimum be stabilized with erosion/sediment control measures and revegetated in the fall of the year in which the disturbance occurred. In all cases an annual reclamation plan update will be required which describes the reclamation status of the operation including all disturbance including unreclaimed, seasonal or final reclamation. This plan will also address all facilities and equipment left on National Forest System Land.

VIII. RESOURCE PROTECTION

A. Cultural Resources - The Operator shall not damage, alter or destroy any object of antiquity, historic structure or feature. If the Operator should discover such an object, structure, or feature, Operator will immediately suspend operations and notify the Forest Service Representative of its existence.

B. Fire and Fuels Management - Prior to burning of materials, such as road right-of-way slash, and other refuse, the Operator is required to obtain a burning permit. Approved mufflers and/or spark arrestors are required on all internal combustion engines. The Operator will be required to maintain a cache of fire-ready tools at the site(s) at all times. Tools shall be sharp, protected against rust and handles in good shape and for Fire Use Only.

C. Water - Violation of State of Colorado Water Quality Standards as a result of any activity or facility covered by this Plan shall be cause for immediate cessation of operations until successful corrective action has been taken. All diversions and water use must be authorized by the Colorado Department of Water Resources.

D. Wildlife - Observation or reports of threatened, endangered, or Forest Service sensitive plant or animal species in the vicinity of the project will be cause for development of specific mitigation measures as appropriate to avoid adverse impacts.

IX. GENERAL

The right of the public to lawfully use the land encompassed by the boundaries of the mining claims shall not be restricted or denied by the Operator. The right of the public does not include any activity

that interferes with the operation of any activity that is mineral related without the consent of the claimant.

The Operator, in the exercise of this operating plan, shall require that his employees, subleasees, contractors, subcontractors, or renters and their employees comply with all conditions of this plan.

All operations will be conducted in a safe manner.

X. INSPECTIONS

The Forest Service and the Operator will ensure that the provisions of the operating plan are being followed. The agreed upon inspection schedule should be sufficient to certify compliance.

A. Location of proposed construction.
B. Clearing, timber and slash disposal.
C. Topsoil and overburden stripping and storage.
D. Earthwork and facility construction standards. This is especially important in regard to settling ponds, diversions, dams, hazardous materials or fuel storage.
E. Seasonal shutdown to establish interim reclamation/stabilization requirements as well as any final reclamation work.
F. Operating procedures and predicted environmental impacts.
G. Removal/disposal of equipment and facilities.
H. Backfilling/recontouring and construction of sediment control.
1. Spreading of topsoil.
J. Seedbed preparation.
K. Revegetation
L. Fertilization
M. Sediment control and reclamation success criteria.

The Operators designated field representative will be familiar with all the requirements of this and previous plans and take proactive steps to ensure compliance with the plan(s). This may include the development of a check list for periodic inspections and documentation to the Forest Service Representative. This Plan of Operation and reclamation bond will be reviewed and updated annually.

5.5 Appendix E – Response to Comments

No public comments were received during the public scoping period of September 1, 2017 to October 1, 2017.

5.6 Appendix F – Monitoring Activities

The Forest Service will monitor all mining operations throughout project implementation to ensure compliance with county, state and federal laws, regulations and permits as well as this EA, Forest Land Management Program standards and guidelines, and all other relevant direction.

The following specific monitoring requirements will also be performed by the Forest Service to ensure project design and implementation is completed as planned, and that unexpected resource effects have not occurred.

Physical and Biological Elements of the Environment

Monitor all disturbed sites annually for erosion. Document amount and type of erosion occurring.

Monitor disturbed sites annually for noxious weeds.

Ensure only authorized trees have been cut down.

Use and Occupancy of the Forest

Ensure any warning or safety signs and gates authorized by the Forest Service, have been installed by the operator.

Ensure use of heavy equipment occurs only in areas approved by the Forest Service.

5.7 Appendix G – Required Seed Mixes

NATIVE SEED RECOMMENDATIONS

Include seed in bold, then choose 1-3 others to round out mix, add * if nitrogen deficient soil

DRY/HIGH ELEVATION 10,000-12,000 ft

***Bromus marginatus* var. Bromar *(porteri)* (mountain brome)**
***Elymus elymoides (Sitanion hystrix)* (bottlebrush squirreltail)**
Elymus trachycaulus ssp *trachycaulus (Agropyron trachycaulum)* (slender wheatgrass)
Elymus lanceolatus ssp *dasystachyum* var. Critana *(Agropyron dasystachyum)* (thickspike wheatgrass)
***Festuca arizonica* var. Redondo (Arizona fescue)**
Koeleria cristata (macrantha) (Junegrass)
Poa alpine (alpine bluegrass)
Poa canbyi var. Canbar (Canby bluegrass)

DRY/MID-ELEVATION 7,500-10,000 ft

***Bouteloua gracilis* var. Hachita (blue grama)**
Bromus marginatus var. Bromar *(porteri)* (Mtn brome)
***Elymus elymoides (Sitanion hystrix)* (bottlebrush squirreltail)**
***Stipa comata (Hesperostipa comata)* (needle and thread)**
Elymus trachycaulus ssp *trachycaulus (Agropyron trachycaulum)* (slender wheatgrass)
Elymus lanceolatus ssp *dasystachyum* var. Critana *(Agropyron dasystachyum)* (thickspike wheatgrass)
Festuca arizonica var. Redondo (Arizona fescue)
***Koeleria cristata (macrantha)* (junegrass)**
Poa canbyi var. Canbar (Canby bluegrass)

ALPINE

***Trisetum spicatum* (spike Trisetum)**	***cool season perennial bunchgrass***
***Dechampsia cespitosa* (tufted hairgrass)**	***cool season perennial bunchgrass***
Festuca saximontana (Rocky Mtn fescue)	*cool season perennial bunchgrass*
Poa alpine (alpine bluegrass)	*cool season perennial bunchgrass*

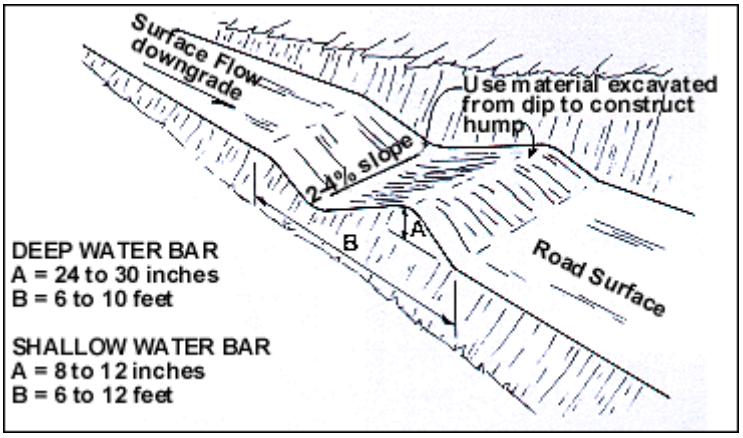
RIPARIAN

***Calamagrostis canadensis* (blue-joint reedgrass)**	***cool season pioneering sodformer***
Carex nebrascensis (Nebraska sedge)	*cool season perennial sodformer*
Carex rostrata (utriculata) (beaked sedge)	*cool season perennial sodformer*
***Dechampsia cespitosa* (tufted hairgrass)**	***cool season perennial bunchgrass***
Eleocharis palustris (creeping Spikerush)	*cool season pioneer*
Juncus arcticus (wiregrass)	*cool season perennial sodformer*

****Vicia americana* (American vetch)**	***nitrogen fixer, forb***

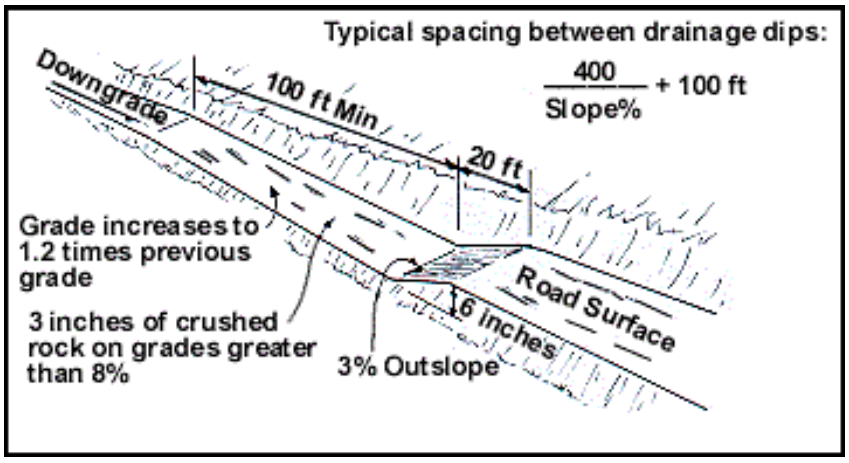
Western Native Seed
PO Box 188 Coaldale, CO 81222
719-942-3935 www.westernnativeseed.com

5.8 Appendix H – Engineering Specifications

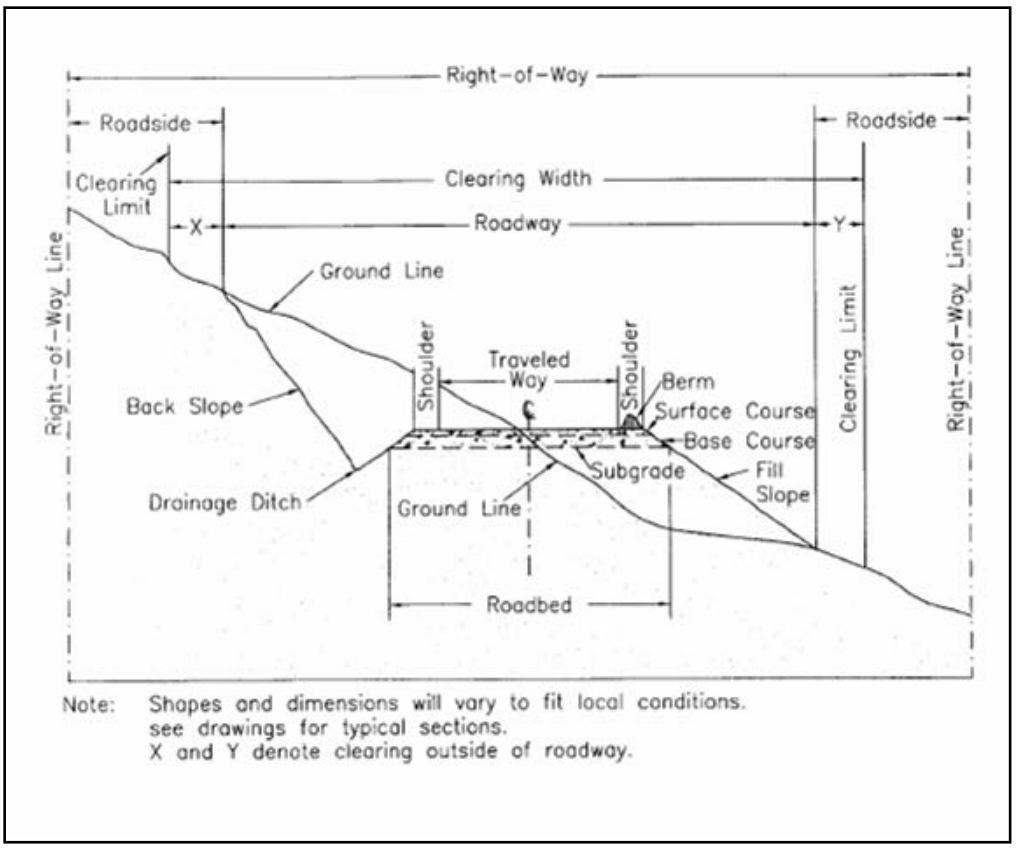


DISTANCE NEEDED BETWEEN WATER BARS	
ROAD GRADE (%)	**DISTANCE (FEET)**
2	250
5	135
10	80
15	60
20	45
25	40
30	35

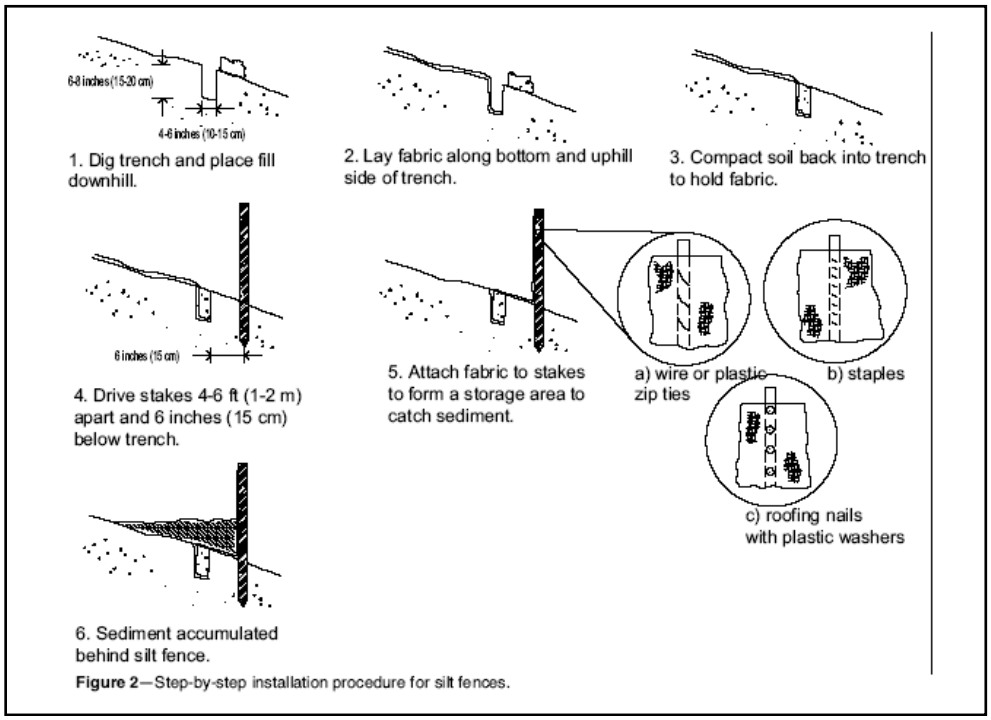
Water bars should be installed at about a 30-degree angle downslope. The outflow end of the water bar should be open to keep water from accumulating and should not flow directly into a stream, to allow the sediment to settle out of the water and to prevent erosion. Water bars are narrow structures that may be shallow or deep. Deep water bars are usually used on roads that will be closed for extended periods.



Drainage dips are broad structures used on roads with grades of 10 percent or less (Kochenderfer 1970, p. 28)
See: http://www.na.fs.fed.us/spfo/pubs/stewardship/accessroads/accessroads.htm



National Road Construction Specifications (August 1996. USDA Forest Service. EM-7720-100)



Silt Fencing: An Economic Technique for Measuring Hillslope Soil Erosion. (August 2002. USDA Forest Service. Rocky Mountain Research Station. General Technical Report RMRS-GTR-94)

DECISION NOTICE

Q2 MINE PLAN OF OPERATIONS

U.S.D.A. FOREST SERVICE

SOUTH PARK RANGER DISTRICT

PIKE AND SAN ISABEL NATIONAL FORESTS AND COMANCHE AND CIMARRON NATIONAL GRASSLANDS

TELLER COUNTY, COLORADO

BACKGROUND

The Forest Service proposes to process and approve a mine Plan of Operations submitted by Gary Pollack (claimant/ operator) on May 15, 2017, to conduct exploration, mining, and reclamation activities in the Crystal Creek area on the Q2 unpatented mining claim, found in portions of Section 27, T11S, R71W, 6th Principal Meridian, approximately 5.0 miles northeast of Lake George, in Teller County, Colorado. The mining operations may be accessed from Teller County Road (CR) 51 to Forest System Road (FSR) 897 to FSR 220, a non-system access road, approximately 0.04 miles in length, with dimensions of approximately 8 feet wide x 250 feet long (0.04 acres). No new road construction will be necessary.

This proposal entails the use of mechanized equipment and hand tools to mine approximately one (1.0) total acre of National Forest System lands over a period of 5 years. Work will consist of the excavation of 60' x 75' exploration pits or trenches, totaling approximately 1.0 acre of disturbance. Mining activities will be compliant with all other local, State and Federal regulations. Mechanized operations will occur on an intermittent basis, for approximately 5 days per season. If the operator requires more working days, the Forest Service will be notified prior to the continuation of operations.

DECISION

Based upon my review of the Q2 Mine Plan of Operations(MPO) (project) Environmental Assessment (EA), comments received from the public and internal agency specialists, and the best available scientific information, I have decided to implement the Proposed Action Alternative, which would approve the Q2 MPO for exploration and mining activities as described below pending (1) the operator incorporates the design features (criteria) into the final MPO, and (2) the operator posts an appropriate reclamation bond as approved by the FS. Operations approved by this decision will be in compliance with the rules and regulations for operations on NFS lands (36 CFR 228 Subpart A). All operations will be conducted in accordance with the design features to minimize and/ or eliminate environmental impacts on NFS surface resources (36 CFR 228.8). Approval of this MPO is consistent with 35 CFR 228.5.

Activities are authorized for up to five years from the date of signature on the MPO.

Mining on NFS lands:

Activities proposed are those associated with pegmatite gemstone mining. The project will consist of 1.0 acre of disturbance over the life of the Plan. Each excavation will have maximum dimensions of approximately 60' x 75', and will not exceed 20 feet in depth. Each excavation will be fully reclaimed before a new excavation is opened.

These areas will be prospected by excavating pits or trenches depending on size and direction of the vein. During excavation, the first 24" of top soil will be piled in designated areas and covered with certified weed-free mulch. Stockpiles will be no larger than 10 feet in height to minimize erosion. Topsoil will be reused during final reclamation. All waste rock will be piled in designated areas and used for backfill upon completion of excavations.

Minimal vegetation and tree clearing is required and will be done with a chainsaw. Equipment use is estimated for 2 - 5 days per season.

Active trenches and pits, over 3 feet in depth, will be fully fenced with high visibility fencing, and will include an easily accessible exit ramp.

At the close of each mining season, before winter precipitation prevents site access, pits would be refilled, graded and re-contoured, and reseeded to Forest Service reclamation standards with erosion control measures being implemented as needed. Human waste and garbage would be removed from National Forest.

The site would be monitored annually for weed infestation with implementation of weed control as recommended by the South Park Ranger District staff.

Reclamation:

The primary goal of the final reclamation is to return the site to a stable, self-sustaining native vegetative mode, where appropriate, which will support wildlife habitat and recreation use with minimal risk to the health and safety of the public and a minimum of maintenance demand. The USFS will inspect and monitor the earthwork and revegetation process to ensure it is successful.

Timing and duration:

The operator does not desire nor have the ability to operate during months of snow. This limits operation to approximately late April or early May through approximately November of any year. Variations would occur depending on snow loads and operating periods may be longer or shorter than described above but generally are confined to the spring, summer and fall seasons. Two to five miners would be operating during these months only during daylight hours. No nighttime operations have been requested. Proposed beginning date is May of 2018 with anticipation of operating 5 years, with reclamation completed by 2023.

Design Criteria and Best Management Practices

Design criteria and best management practices are identified and incorporated into the Proposed Action to ensure resource protection and to commit to following Forest guidance and travel management requirements. By incorporating project design criteria and best management practices into the Proposed Action, mitigation measures are not needed. The list of project design criteria, and best management practices are listed in detail in section 2.2.2.2 of the EA (pages 14-18).

Decision Rationale

The decision to implement the Q2 Mine Plan of Operations is based on Mr. Pollack's legitimate request to explore for and mine minerals on National Forest System lands. The proposed activities fall under purview of the Mining Law of 1872, as amended. The operator is entitled to conduct operations that are reasonably incidental to exploration of mineral deposits on their mining claim pursuant to applicable U.S. laws and regulations and is asserting their rights under the General Mining Law to explore for locatable minerals.

The Forest Service (FS) is required by regulation to respond to a MPO to conduct operations pursuant to the Mining Law of 1872, as amended. Under 36 CFR 228.5, the FS must determine whether to approve the MPO as proposed, or to require changes or additions deemed necessary to meet the requirements of the regulations for environmental protection set forth in 36 CFR 228.8. The FS conducts a thorough review of the environmental effects and determines if any changes or design criteria are needed to minimize resource impacts. Approval of a MPO is not a discretionary action for the FS, and the FS has authority over the surface resources only. Subsurface mineral resources are under the authority of the Bureau of Land Management (BLM).

The Q2 EA and FONSI documents the environmental analysis and conclusions upon which this decision is based.

Public Involvement

People were invited to review and comment on the proposal through a legal notice published in the September 1, 2017 issue of the Park County Republican and Fairplay Flume. The EA lists agencies and people consulted on page 27.

No comment letters were received during the public scoping period.

The issues discussed during public scoping and during IDT meetings were brought forward and considered in the design criteria of the Proposed Action. Comments and responses to the comments are available in the project administrative record.

Findings Required by Other Laws and Regulations

This decision to implement the Q2 Mine Plan of Operations is consistent with the PSICC LRMP. The project was designed in conformance with LRMP prescriptions for semi-primitive, motorized recreation areas (Management Area 2A designation). The project also conforms to standards and guidelines in the LRMP for the conservation and protection of threatened and endangered species.

I have also reviewed the environmental consequences of the Final Environmental Impact Statement for the Forest Plan and conclude that the environmental effects associated with this project are consistent with those described in the FEIS.

A Finding of No Significant Impact (FONSI) and EA were considered. I determined these actions will not have a significant effect on the quality of the human environment, and an Environmental Impact Statement (EIS) will not be prepared.

FINDING OF NO SIGNIFICANT IMPACT

The significance of environmental impacts must be considered in terms of context and intensity. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human and national), the affected region, the affected interests, and the locality. Significance varies with the setting of the proposed action. In the case of a site-specific action, significance usually depends upon the effects in the locale rather than in the world as a whole. Intensity refers to the severity or degree of impact. (40 CFR 1508.27)

As the responsible official, I am accountable for evaluating the effects of the project relative to the definition of significance established by the CEQ Regulations (40 CFR 1508.13). I have reviewed and considered the EA and documentation included in the project record, and I have determined that the Q2 Mine Plan of Operations will not have a significant effect on the quality of the human environment. As a result, no environmental impact statement will be prepared. My rationale for this finding is as follows, organized by sub-section of the CEQ definition of significance cited above.

CONTEXT

The Proposal is to explore for and mine pegmatite gemstones on the Q2 unpatented mining claim in the Crystal Creek Mining Area (CCMA), located northeast of Lake George, Colorado. The project would occur on National Forest System lands managed by the South Park Ranger District, Pike National Forest, on lands open to mineral entry under the 1872 Mining Law, as amended. The area proposed for exploration and mining is 1.0 acres in size and is located in portions of T.12S, R.71W, Section 27, 6th Principal Meridian; Teller County, Colorado.

There would be three excavation areas at the site. All mining and processing operations would occur on site. Only one pit would be open at a time. All topsoil would be stripped and stockpiled on site at a designated location. Total disturbance would be approximately 1 acre, over the life of the PO. The Plan of Operations (PO) would begin once the PO has been approved, and work is scheduled to occur annually from May through October, for a period of five years. A maximum of approximately 1500 cubic yards of material would be extracted and processed throughout the life of the PO.

Traffic at the site would consist of passenger vehicles for the operators, specifically two 4 x 4 pick-up trucks. Heavy equipment on site would consist of one Case 580 Super 'K' backhoe.

INTENSITY

Intensity is a measure of the severity, extent, or quantity of effects, and is based on information from the effects analysis of this EA. The effects of this project have been appropriately and thoroughly considered with an analysis that is responsive to concerns and issues raised by the

public and resource specialists. The agency has taken a hard look at the environmental effects using relevant scientific information and knowledge of site-specific conditions gained from field visits. My finding of no significant impact is based on the context of the project and intensity of effects using the ten factors identified in 40 CFR 1508.27(b), thus an environmental impact statement will not be prepared.

The intensity of effects was considered in terms of the following:

1. **Impacts may be both beneficial and adverse. A significant effect may exist even if the Federal agency believes that, on balance, the effect will be beneficial.**

   None of the environmental consequences discussed in detail in the EA are considered significant, nor do the consequences exceed any known threshold of significance, either beneficial or adverse. The Proposal consists of mining pegmatite gemstones, and processing material by hand washing and sorting. The Proposal may occur on up to 1.0 acre of public land over the next five years. Mine pit disturbances will be reclaimed concurrent with mining, while reclamation of the processing areas will be completed at the termination of the annual mining season.

2. **The degree to which the proposed action affects public health or safety.**

   The Proposal will not result in any impacts to public health or safety. Surface disturbing activities will be conducted in conformance with all Federal and State health and safety requirements to protect health and safety. Reclamation of mine pits will be completed concurrent with mining, while remaining disturbances will be reclaimed as soon as practicable once mining operations are complete.

3. **Unique characteristics of the geographic area, such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas.**

   The project area is located on public lands administered by the South Park Ranger District. There are no farmlands, wetlands, wild and scenic rivers, or ecologically critical areas in the project area.

4. **The degree to which the effects on the quality of the human environment are likely to be highly controversial.**

   The Proposal will not have highly controversial effects on the quality of the human or natural environment. The Proposal area is in a historically mined, non-residential area approximately 5 miles from Lake George, Colorado. Except for intermittent gemstone mining operations, the immediate area is almost uninhabited.

5. **The degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks.**

   There are no highly uncertain or unique or unknown risks in implementation of the Proposed Action.

6. **The degree to which the action may establish a precedent for future actions with significant effects, or represents a decision in principle about a future consideration.**

The Proposal would not establish a precedent for future actions with significant effects or represent a decision about a future consideration. This EA does not establish a precedent for the other assessments or authorization of other mining projects. Any future projects within the Proposal area or surrounding areas will be analyzed on their merits and implemented, or not, independently of the acceptance of the subject EA.

7. **Whether the action is related to other actions with individually insignificant but cumulatively significant impacts.**

   Past, present, and reasonably foreseeable future actions have been considered in the cumulative impacts analysis within Chapter 3 of the EA. The cumulative effects analysis examined all of the other appropriate actions and determined that the Proposal will not incrementally contribute to significant impacts on any resources that are present and may be affected by the Proposal.

8. **The degree to which the action may adversely affect districts, sites, highways, structures, or objects listed , or eligible for listing, in the National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.**

   The action will have no significant adverse effect on districts, sites, highways, structures, or objects listed in or eligible for listing in the National Register of Historic Places. The Heritage specialists, for the Pike National Forest, reached a finding that determined that the proposed work will not affect any site eligible for the National Register of Historic Places. The heritage specialists conducted a Class III intensive cultural resource survey on June 5, 2017 with negative findings. Thus, under a programmatic agreement with SHPO which streamlines consultation for projects with limited results will be submitted for information and filing, however no concurrence is required (Project Record, Cultural Clearance Letter). As a result of the findings from the cultural resource survey, the action will also not cause loss or destruction of significant scientific, cultural, or historical resources because they were not found to be present within the project area (See EA page 23).

9. **The degree to which the action may adversely affect an endangered or threatened species or its habitat that has been determined to be critical under the Endangered Species Act of 1973.**

   No known federally listed species under the ESA, or critical habitat for such species, have been identified within the proposal area. Because disturbances associated with the Proposal will be of limited extent, reclaimed concurrently, and dispersed throughout the project boundary, it has been determined that the Proposal will not result in substantial net loss of potential habitat and will not contribute to a loss of viability for any one special status species.

10. **Whether the action threatens to violate Federal, State, or local law or requirements imposed for the protection of the environment.**

    The action will not violate Federal, State, and local laws or requirements for the protection of the environment. Applicable laws and regulations were considered in the EA (See EA page 10). The action is consistent with the PSICC Land and Resource

Management Plan prescriptions for semi-primitive, motorized recreation areas (Management Area 2A designation). An interdisciplinary team of resource specialists from the South Park Ranger District was involved in the preparation of the EA. Consultation with local and State Agencies took place with no concerns or comments received on the Proposal. All Federal, State, and local laws will be followed under the Proposal.

After considering the effects of the actions analyzed, in terms of context and intensity, I have determined that these actions will not have a significant effect on the quality of the human environment. Therefore, an environmental impact statement will not be prepared.

OBJECTION OPPORTUNITIES

No public comments were received during the scoping period, therefore this decision is not subject to objection pursuant to 36 CFR 218.

IMPLEMENTATION DATE

This decision may be implemented any time after the date of signature.

CONTACT

For additional information concerning this decision, contact: Amy Titterington, Geologist, South Park Ranger District, PO Box 219, Fairplay, CO 80440, 719-836-3871.

Joshua S Voorhis

11/29/2017

Joshua Voorhis
South Park Ranger District, District Ranger

Date

Design Criteria for Q2 Mine Plan of Operations
November 2017

DESIGN CRITERIA

Forest Service wildlife biologist, botanist, archaeologist, geologist, hydrologist, recreation, lands, timber, wilderness, fuels, and fire specialists have reviewed the proposed project. Measures necessary to protect threatened or endangered species, Region 2 sensitive species, their habitat, or potential habitat from the effects of the proposed management actions are addressed through the development of project design criteria. Design criteria are intended to minimize the project's effects to the environment. The FS has created the following design criteria that will be required of the Operator to be incorporated into the final MPO prior to MPO approval. Specific design criteria include:

Administration and General Site Requirements

1. The bond for this operation must be posted prior to commencing any exploration activities. The amount of bond would be calculated to ensure full reclamation and revegetation of areas disturbed by the exploration activity.
2. The Operator shall arrange for the FS to inspect any mining-relate equipment, prior to it entering NFS lands at the beginning of each operational period, in order to prevent the spread of noxious weeds and their seeds.
3. The Operator will dispose of camper holding tank contents (if applicable) at an offsite facility or provide a temporary self-contained portable toilet.
4. In the event previously unidentified cultural or paleontological materials are discovered during project implementation, all work will cease until a qualified archaeologist is contacted and the need for further investigation and consultation determined.
5. Operations may be suspended and/or changed if the FS administrator determines that they are not compliant with this decision, the approved Plan, applicable laws or regulations, or that resource conditions have changed. Operations may resume after compliance items have been resolved between the Forest Service, the Operator, and appropriate regulatory agencies.
6. The operator is required to be consistent with Teller County building and sanitation code requirements, with CDRMS permitting requirements, and with the Colorado Department of Public Health and Environment requirements.

   These requirements include, but are not limited to state water rights permit, state water discharge permit, county conditional use permit and all necessary building permits. These conditions are included in the approved Plan of Operations. If the operator does not comply with these conditions, he/she will be in noncompliance with the USFS regulations and appropriate action would be taken at that time.

Access

7. Access routes will be confined to the existing non-system road unless otherwise approved by the Forest Service Minerals Specialist. This road will be decommissioned during final reclamation.

Noxious Weeds

8. Apply Forest Service approved native seed mix for reclamation practices.
9. Protocols for noxious weed management should include the monitoring and treatment of noxious weeds every year during the life of the mine. Treatment should occur along roads and access roads to reduce the threat of inadvertent distribution.
10. As a standard operating procedure, the Operator should treat noxious weed occurrences as soon as they are identified, and cooperate with the Forest Service to inventory, monitor, and control noxious weeds/undesirable plants within areas of disturbance until release of all bond monies.
11. Establish effective ground cover on disturbed sites to prevent accelerated on-site soil loss. Restore ground cover using certified native plants as practicable to meet revegetation requirements. Avoid persistent or invasive exotic plants.
12. To further minimize the spread of noxious weeds and their seeds, equipment should be washed thoroughly, especially the undercarriage, to eliminate undesirable or noxious weed seeds potentially carried from previous jobs. Washing should occur at the closest facility available, prior to entry onto NFS lands.
13. At the end of the mine life during the mine reclamation period, revegetated areas should be monitored for the presence of plants on the Colorado State Noxious Weed list for a period of five years. A and B list species from the Colorado State Noxious Weed list (Appendix A) will be eradicated prior to bond release.

Timber

14. To the best ability of the Operator, reclaim site to pre-disturbance conditions as listed in the reclamation plan and bond. If at any time deleterious effects occur to multiple trees or larger swathes of existing vegetation please contact Silviculture / Timber management for further consultation.
15. In regards for timber removal, if necessary, all trees to be removed will need to be identified by the Claimant and agreed upon by a USFS Minerals Specialist. Timber specialists will be notified of the agreed upon trees for removal and an inventory will be made. This will allow the Timber Program of Work to account for the volume removed. According to FS handbook / manual the Claimant has the right to free use of timber:

    2813.13b - Claims Validated Subsequent to Act of 1955

    Such claims which otherwise come under Title 30, United States Code, Section 612 (30 U.S.C. 612) carry the same surface rights as those described in section 2812, except for the following modifications:

    1. Right to occupancy and use necessary for prospecting, mining, and processing, but not the exclusive right to the surface. Lands containing such claims are subject to the rights of the United States to manage and dispose of the vegetative resources, to manage other resources except locatable minerals, and to the right of the United States, its permittees and licensees, to use so much of the surface area necessary for such purposes and for access to

adjacent lands.

2. Right to cut timber on the claim for mining uses and for necessary clearing, except that timber cut in the process of necessary clearing cannot be sold by the claimant. The United States has the right to dispose of timber and other vegetative resources.

3. Right to additional timber required for mining purposes, if timber was removed from the claim by the Forest Service after claim location. The quantity and kind of timber to be provided, free of charge from the nearest available source which is ready for harvesting, will be substantially equivalent to that previously removed from the claim.

The Claimant must gather a 2400-1 permit from the South Park Ranger District and follow aforementioned protocol to use the identified timber for removal. Please contact Pike National Forest Timber Staff, if any further questions arise.

Water Quality/ Soils

16. Avoid, minimize, or mitigate adverse effects to soil, water quality, and riparian resources caused by physical and chemical pollutants during minerals exploration activities.
17. Monitor restored ground to ensure no rills or gullies are forming and that no invasive plant species are present.
18. Install contour berms and trenches around vehicle service and refueling areas, chemical storage and use areas, and waste dumps to fully contain spills. Use liners as needed to prevent seepage to groundwater.
19. Reclaim each mining area when its use ends, using certified local native plants as available; avoid persistent or invasive exotic species. Stabilize waste dumps and tailings in non-use periods to prevent wind and water erosion.
20. Reclaim and stabilize facilities, disturbed areas, surface water diversion structures, and transport and storage areas before the end of seasonal shutdown so that they will function as designed to prevent adverse impacts to surface water from erosion and sedimentation.
21. Back-fill and re-contour disturbed areas, including exploratory trenches, pits, or holes to the original contour, where practicable, or to an acceptable post-mining contour that blends with the surrounding topography to re-establish surface and subsurface hydrologic pathways to the extent practicable.
22. Report spills and take appropriate clean-up actions in accordance with applicable state and federal laws, rules and regulations. Contaminated soil and other material shall be removed from NFS lands and disposed of in a manner according to state and federal laws, rules, and regulations.
23. Limit the amount of exposed or disturbed soil at any one time to the minimum necessary for efficient operations during minerals production activities. Stabilize mined areas and surface disturbance activities as soon as practicable before moving and opening new areas.
24. Clearly delineate the geographic limits of the area to be cleared.
25. Conduct extraction activities in such a manner as to minimize the potential for slope failures, limit slope steepness and length, limit disturbed areas to those actively used for extraction, retain existing vegetation as long as possible, and allow for progressive reclamation of the site where practicable.

Wildlife - Terrestrial

26. Existing roads would be used for most operations, and if new roads are determined to be necessary for operations in the MPO, they would be required to be obliterated and reseeded (final reclamation) according to USFS standards.
27. Trees removed should be limited and would be approved by the Forest Service prior to their removal to ensure tree conservation.
28. Trees should not be removed May 15 – July 15 to protect sensitive and migratory birds.
29. Mining activities would not occur in historic mine shafts or adits. If mining activities are proposed in adits or shafts, they would have to first be surveyed for the presence of bats by qualified personnel.
30. Biological surveys should be carried out, using standard protocols recommended by the USFS, for northern goshawk, bald eagle, golden eagle, peregrine falcon and other raptor species prior to project activities.
31. If mining operations are planned in wetland or riparian areas, another BAE would be required and surveys for amphibian species would need to be completed prior to project implementation.
32. Where goshawk or other raptor nests are present, no heavy equipment operations would take place between March 1 and September 30 within a 0.5 mile radius of the nest.
33. Within 650-foot radius of an identified active goshawk nest, no mining activity (including the use of hand tools and occupancy) or vegetation removal would occur at any time.
34. Appropriate reclamation practices and erosion protection measures would be carried out in order to limit the impacts to soil, water and amphibian species.
35. If any nest or den site or migratory bird, threatened, endangered or sensitive (TES) species is located or observed during implementation of the project, the wildlife biologist will be notified and any appropriate conservation measures (for example, timing restrictions or buffer zones) will be put in place

Reclamation

The operator'(s) agree to complete the following reclamation measures:

36. Within the one year expiration of this authorization, the operator will commence final reclamation.
37. Remove all materials and return the mining area to the original natural contours. This includes all excavation cuts.
38. Silt fences or other erosion control will be utilized to prevent off-site sediment transport.
39. Straw waddles must be certified weed-free (shredded aspen fill recommended).
40. Water bars may be required on slopes and access road to control erosion.
41. Slash should be scattered and/ or piled, or used in erosion control on slopes.
42. Any erosion control blankets must be 100% natural fiber (i.e. no monofilament) and

certified weed-free.

43. Reclamation will be monitored by the operator, USFS personnel, and State of Colorado (DRMS) inspectors on an as needed basis.
44. All non-system access roads will be ripped, re-contoured, graded, and seeded at the end of operations.
45. The road and site will be seeded with USFS-approved seed mixtures, as needed.
46. Re-vegetation will not be complete until at least 50% plant re-growth has been established; when compared to adjacent undisturbed areas.
47. Top soil must be saved and used to cover all disturbed areas.
48. Return large rocks, boulders, and logs to their original (general) position.
49. The U.S. Forest Service may require additional reclamation measures if needed.
50. Remove all trash off of Forest Service Lands.
51. Remove all structures (fences, signs) from Forest Service Lands.
52. Complete all reclamation within one year of the end of the operating plan.
53. Refund of any reclamation bond is contingent upon the success of reclamation.

MONITORING

- The Forest Service will monitor and assess the progress of reclamation activities, including re-vegetation and erosion control, for a minimum of three years. Dependent on the success of the second phase of reclamation, additional seeding, weed treatment, or installation of erosion control structures may occur.

THE FOLLOWING STANDARD TERMS AND CONDITIONS ARE TAKEN FROM FOREST SERVICE FORM FS -2800-5 AND ARE <u>REQUIRED</u> FOR THIS PLAN OF OPERATIONS:

- Information provided within this plan that is marked confidential will be treated in accordance with the agency's laws, rules, and regulations.
- Approval of this plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules, or regulations.
- Approval of this plan does not constitute recognition or certification of ownership to any person named as owner herein.
- Approval of this operating plan does not constitute, now or in the future, recognition or certification of the validity of any mining claim to which it may relate or to the mineral character of the land on which it lies.

I acknowledge and understand these modifications and mitigation measures. I agree to adopt them into my mining Plan of Operations and abide by them through the life of my mining operation.

_____

Operator's Signature Date

_____

District Ranger Date

USDA, Forest Service

PLAN OF OPERATIONS FOR MINING ACTIVITIES ON NATIONAL FOREST SYSTEM LANDS

FS-2800-5 (Rev. 12/11)
OMB NO. 0596-0022

USE OF THIS FORM IS OPTIONAL! 1st TIME USERS SHOULD DIRECT QUESTIONS REGARDING THIS FORM OR REGULATIONS (36 CFR 228A) TO THE FOREST SERVICE DISTRICT OFFICE NEAREST YOUR AREA OF INTEREST.

	Signature	Title	Date (mm/dd/yy)
Submitted by:	Gary W. Pollack	CLAIM OWNER	7MAR2017
Plan Received by:	Amy Ault	Geologist	5 April 2017

I. GENERAL INFORMATION

A. Name of Mine/Project: Q-2

B. Type of Operation: EXPLORATION
(lode, placer, mill, exploration, development, production, other)

C. Is this a (☐new/☐continuing) operation? *(check one)*.
If continuing a previous operation, this plan (☐replaces/☐modifies/☐supplements) a previous plan of operations. *(check one)*

D. Proposed start-up date *(mm/dd/yy)* of operation: 1 JUNE 2017

E. Expected total duration of this operation: FIVE (5) YEARS

F. If seasonal, expected date *(mm/dd/yy)* of annual reclamation/stabilization close out: 31 OCT. 2017

G Expected date *(mm/dd/yy)* for completion of all required reclamation: 31 OCT. 2023

II. PRINCIPALS

A. Name, address and phone number of operator: CELL (352) 263-5238
GARY POLLACK
11415 PALOMAR ST. SPRING HILL, FL. 34609

B. Name, address, and phone number of authorized field representative (if other than the operator). Attach authorization to act on behalf of operator.

C. Name, address and phone number of owners of the claims (if different than the operator):

(If more space is needed to fill out a block of information, use additional sheets and attach form)

D. **Name, address and phone number of any other lessees, assigns, agents, etc., and briefly describe their involvement with the operation, if applicable:**

III. PROPERTY OR AREA

(Name of claim, if applicable, and the legal land description where the operation will be located.)

MC#	Name	Section	Township	Range
251951	Q-2	27	11S	71W
251950	K-2	27	11S	71W
251949	AMAZON QUEEN	27	11S	71W
251948	AMAZON KING	27	11S	71W
255344	CHEYENNE MOUNTAIN	34	11S	71W

IV. DESCRIPTION OF THE OPERATION

A. **Access.** *Show on a map (USGS quadrangle map or a National Forest map, for example) the claim boundaries, if applicable, and all access needs such as roads and trails, on and off the claim. Specify which Forest Service roads will be used, where maintenance or reconstruction is proposed, and where new construction is necessary. For new construction, include construction specifications such as widths, grades, etc., location and size of culverts, describe maintenance plans, and the type and size of vehicles and equipment that will use the access routes.* CLAIMS ARE ACCESSED BY TURNING ONTO FOREST SERVICE ROAD #897 OFF OF CEDAR MOUNTAIN ROAD AND THEN PROCEEDING TO F.S. #220.00 NORTH APPROX. 1500' TO Q-2 MINING WHICH IS CROSSED BY F.S. 220 AT DESIGNATED POINT (SEE MAP) (ALSO SEE ATTACHED NARRATIVE)

NOTE: AT JUNCTURE OF 897/220 THERE IS AN OPEN FOREST SERVICE GATE.

B. **Map, Sketch or Drawing.** *Show location and layout of the area of operation. Identify any streams, creeks or springs if known. Show the size and kind of all surface disturbances such as trenches, pits, settling ponds, stream channels and run-off diversions, waste dumps, drill pads, timber disposal or clearance, etc. Include sizes, capacities, acreage, amounts, locations, materials involved, etc.*

SEE ATTACHED SKETCH AND ACCOMPANYING MAPS.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

NARRATIVE FOR SKETCH 2-B
(CONT)

ACCESS ROAD OFF OF F.S. 220:

THIS ISN'T REALLY A ROAD BUT AN OLD TURNOUT TO AN ANCIENT (20 YEAR OLD) ROCK SURROUNDED FIRE PIT, WHICH WAS APPARENTLY A PULL OUT AND TURN AROUND SPOT BEFORE F.S. 220 GETS VERY STEEP AND TURNS INTO STRICTLY A 4-WHEEL DRIVE ROAD.

FROM THE INTERSECTION OF F.S. 220 AND THIS PULL OUT "ROAD" TO THE PROPOSED WORK AREA IS 250 FEET. THE FIRST 200 FEET HAVE REMAINED COMPLETELY UNIMPEDED AND CLEAR SINCE THE FIRE.

THE LAST 50 FEET WILL REQUIRE THE REMOVAL OF VERY FEW (2 OR 3) ASPEN SAPLINGS (3 OR 4 FEET TALL).

THE ONLY VEHICLE TO CROSS THIS AREA WILL BE THE 4WHEEL DRIVE BACKHOE AND THAT SHOULDN'T EXCEED THREE TIMES A YEAR.

PERSONAL VEHICLES WILL NOT BE USED IN THIS AREA.

NEITHER PREP WORK NOR RECLAMATION WORK IS ANTICIPITATED.

C. **Project Description.** *Describe all aspects of the operation including mining, milling, and exploration methods, materials, equipment, workforce, construction and operation schedule, power requirements, how clearing will be accomplished, topsoil stockpile, waste rock placement, tailings disposal, proposed number of drillholes and depth, depth of proposed suction dredging, and how gravels will be replaced, etc. Calculate production rates of ore. Include justification and calculations for settling pond capacities, and the size of runoff diversion channels.* EXPLORATION AND MINING WILL OCCUR FOR 180 DAYS OR LESS PER SEASON USING MECHANIZED EQUIPTMENT AND HAND TOOLS. CLEARING, IF NECESSARY WILL BE ACCOMPLISHED WITH CHAINSAW OR BACKHOE/EXCAVATOR (MUCH OF THE AREA WITHIN THE ONE ACRE PROPOSED DIG SITE IS BARE OR HAS DEAD TIMBER FROM THE HAYMAN FIRE). BACKHOE/EXCAVATOR WILL BE USED TO EXPOSE PEGMATITE STRUCTURES WHICH WILL THEN BE EXCAVATED WITH HAND TOOLS. TOPSOIL WILL BE STOCKPILED FOR LATER RECLAMATION WASTE ROCK, TAILINGS AND SLASH WILL BE STOCKPILED UNTIL SEASON (OR FINAL) RECLAMATION AND USED TO BACKFILL OPEN PITS OR TRENCHES. (CONT.)

D. **Equipment and Vehicles.** *Describe that which is proposed for use in your operation (Examples: drill, dozer, wash plant, mill, etc.). Include: sizes, capacity, frequency of use, etc.* PERSONAL VEHICLES AND A 580 SUPER 'K' CASE 4-W.D. WITH A TWO FOOT BUCKET. IF THE CASE SUPER 'K' IS LEFT OVERNIGHT, A TARP AND ABSORBENT PAD (MOVING BLANKET) WILL BE PLACED UNDER MACHINE WHILE PARKED. THE CASE WILL BE USED PRIMARILY AT THE START AND END OF EACH SEASON AND ONLY USED OCCASIONALLY IN MID SEASON. MECHANIZED EQUIPTMENT WILL BE USED FROM 2-5 DAY PER SEASON.

E. **Structures.** *Include information about fixed or portable structures or facilities planned for the operation. Show locations on the map. Include such things as living quarters, storage sheds, mill buildings, thickener tanks, fuel storage, powder magazines, pipelines, water diversions, trailers, sanitation facilities including sewage disposal, etc. Include engineering design and geotechnical information for project facilities, justification and calculations for sizing of tanks, pipelines and water diversions, etc.*

NONE ARE NECESSARY AT THIS TIME.

V. ENVIRONMENTAL PROTECTION MEASURES (SEE 36 CFR 228.8)

A. **Air Quality.** *Describe measures proposed to minimize impacts on air quality such as obtaining a burning permit for slash disposal or dust abatement on roads.*

NOTHING IS NECESSARY.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

P. 3 #C (CONT.)

ONCE THE PROJECT IS MOVING ALONG IT WILL BE A PROCESS OF DIGGING A HOLE AND BACKFILLING AS I GO.

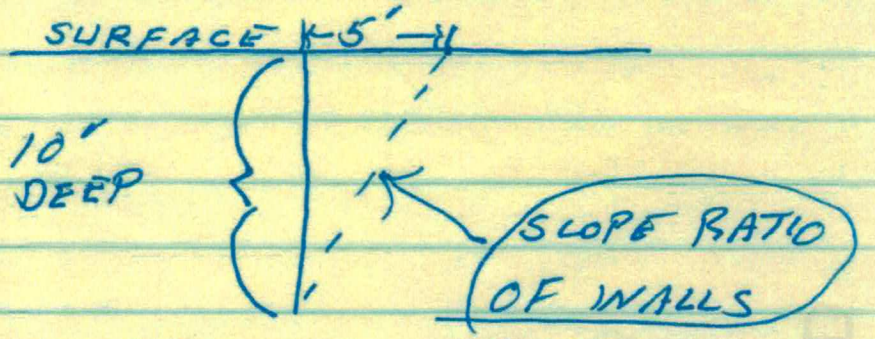
SURFACE DISTURBANCE AT ANY GIVEN TIME SHOULD NOT EXCEED 60' X 75'.

THE DEPTH WILL VARY BUT WILL NOT EXCEED 20 FEET.

IF THE DEPTH EXCEEDS 20 FEET, A MINING ENGINEER WILL BE CONSULTED.

AT A DEPTH OF TEN FEET ALL WALLS WILL BE TAPERED AT A 2:1 RATIO. THE SURFACE WILL BE ONE FOOT BACK FOR EACH TWO FEET DEEP.

E.G. A TEN FOOT WALL WILL HAVE THE TOP FIVE FEET BACK FROM THE BOTTOM.



ANY OPEN HOLES 3 FEET OR DEEPER WILL BE FENCED.

WHEN Q-2 IS FINISHED IT WILL BE RECLAIMED AND THEN I WILL MOVE ONTO ANOTHER CLAIM WHICH WILL BE DESIGNATED AT THAT TIME. ALL RECLAMATION WORK WILL ALSO RETURN ALL NATURAL CONTOURS TO EXCAVATED LAND.

P. 3 #C (CON'T PII)

BACKHOE OPERATOR - ON SITE ONLY WHEN NEEDED (BEGINNING, END, AND INTERMITTENTLY DURING SEASON). TOTAL DAYS PER SEASON ARE NOW ESTIMATED FROM 2-4 DAYS.

THIS PERSON WILL BE ON-SITE ONLY DURING DAYLIGHT HOURS.

LABORERS

MY INTENTION IS TO USE ONE HELPER PERIODICALLY AS NEEDED. AVERAGE EXPECTED WORK WEEK BEING TWO DAYS.

THIS PERSON WILL CAMP IN THE AREA FOR 6-10 NIGHTS PER MONTH.

MYSELF

MOSTLY I WILL BE WORKING ALONE WITH A COMBINATION OF IN AND OUT (DAY ONLY VISITS) AND OVERNIGHT STAYS OF 2-3 TIMES PER WEEK. I DRIVE A SELF CONTAINED VAN SO IT WILL BE MOSTLY "CAR CAMPING."

THE VAN DOES NOT HAVE TOILET FACILITIES.

ALL TRASH WILL BE IMMEDIATELY REMOVED AND ALL HUMAN WASTE WILL BE BURIED IN SCATTERED "CAT HOLES"

B. **Water Quality.** *State how applicable state and federal water quality standards will be met. Describe measures or management practices to be used to minimize water quality impacts and meet applicable standards.*

1. *State whether water is to be used in the operation, and describe the quantity, source, methods and design of diversions, storage, use, disposal, and treatment facilities. Include assumptions for sizing water conveyance or storage facilities.*
2. *Describe methods to control erosion and surface water runoff from all disturbed areas, including waste and tailings dumps.*
3. *Describe proposed surface water and groundwater quality monitoring, if required, to demonstrate compliance with federal or state water quality standards.*
4. *Describe the measures to be used to minimize potential water quality impacts during seasonal closures, or for a temporary cessation of operations.*
5. *If land application is proposed for waste water disposal, the location and operation of the land application system must be described. Also describe how vegetation, soil, and surface and groundwater quality will be protected if land application is used.*

NO WATER INVOLVED (NEITHER NATURAL SURFACE WATER, UNDERGROUND WATER OR IMPORTED WATER).

C. **Solid Wastes.** *Describe the quantity and the physical and chemical characteristics of solid waste produced by the operation. Describe how the wastes will be disposed of including location and design of facilities, or treated so as to minimize adverse impacts.*

ALL ROCKS AND DIRT TO BE REMOVED FROM HOLE ARE BASIC DECOMPOSED GRANITE OR PEGMATITE, WITH NO SULFIDE CONTAMINATION. ALL "DIRT" WILL BE PUT BACK INTO THE HOLE AT THE COMPLETION OF EACH SECTION. THERE WILL BE NO SOLID WASTE. ANY HUMAN WASTE WILL BE BURIED AND "LEAVE NO TRACE" PRINCIPALS WILL BE FOLLOWED, CAT HOLES WILL BE USED AS THERE IS NO WATER SOURCE WITHIN 200 FEET OF THIS ENTIRE AREA.

D. **Scenic Values.** *Describe protection of scenic values such as screening, slash disposal, or timely reclamation.*

AT THE END OF THE PROJECT ALL MATERIAL REMOVED TO CREATE THE HOLE WILL BE REPLACED, TOPSOIL ON TOP AND AREA WILL BE RESEEDED. IT WILL LOOK LIKE WE WERE NEVER THERE.
AS MUCH BACKFILLING AND REVEGETATION WILL BE DONE ANNUALLY AS IS CONVENIENT TO THE STATE OF PROJECT AT THAT TIME. (DEPENDING ON WHAT HAPPENS UNDERGROUND IN THE PEGMATITE).

(If more space is needed to fill out a block of information, use additional sheets and attach form)

E. **Fish and Wildlife.** *Describe measures to maintain and protect fisheries and wildlife, and their habitat (includes threatened, endangered, and sensitive species) affected by the operations.*

THIS IS IN THE HAYMAN BURN AREA. THERE ARE NO FISHERIES WITHIN MILES AND ONLY OCCASIONAL ROAMING WILDLIFE. ANY HOLES 3 FEET OR DEEPER WILL BE FENCED.

F. **Cultural Resources.** *Describe measures for protecting known historic and archeological values, or new sites in the project area.*

NO HISTORIC OR ARCHEOLOGICAL SITES OF ANY KIND IN THIS AREA HAVE BEEN FOUND OR IDENTIFIED

G. **Hazardous Substances.**

1. *Identify the type and volume of all hazardous materials and toxic substances which will be used or generated in the operations including cyanide, solvents, petroleum products, mill, process and laboratory reagents.*

THE CASE 580 SUPER 'K' WILL NOT REFILL ON SITE, IF IT EVER DOES, IT WILL BE PARKED ON TOP OF A TARP AND ABSORBENT PAD DURING THE REFILL. NO FUEL WILL BE STORED ON THE SITE. NO OTHER HAZARDOUS MATERIALS ARE ANTICIPATED.

2. *For each material or substance, describe the methods, volume, and frequency of transport (include type of containers and vehicles), procedures for use of materials or substances, methods, volume, and containers for disposal of materials and substances, security (fencing), identification (signing/labeling), or other special operations requirements necessary to conduct the proposed operations.*

3. *Describe the measures to be taken for release of a reportable quantity of a hazardous material or the release of a toxic substance. This includes plans for spill prevention, containment, notification, and cleanup.*

IN THE EVENT OF A FLUID LEAK THAT CONTACTS THE GROUND, USFS, AND CO. DRMS WILL BE NOTIFIED IN ORDER TO COMPLY WITH REQUIRED CLEAN UP PROCEDURES. FIVE GALLON BUCKETS WILL BE AVAILABLE TO REMOVE CONTAMINATED SOIL FROM SITE.

(If more space is needed to fill out a block of information, use additional sheets and attach form)

H. Reclamation. *Describe the annual and final reclamation standards based on the anticipated schedule for construction, operations, and project closure. Include such items as the removal of structures and facilities including bridges and culverts, a revegetation plan, permanent containment of mine tailings, waste, or sludges which pose a threat of a release into the environment, closing ponds and eliminating standing water, a final surface shaping plan, and post operations monitoring and maintenance plans.*

ANNUAL RECLAMATION WILL CONSIST OF BACKFILLING OF OPEN EXCAVATIONS FOR SAFETY ALONG WITH GENERAL "CLEAN-UP" FOR SCENIC VALUES. ONLY EXCAVATED AREAS WHICH BEEN EXHAUSTED OF MINERALS WILL BE COMPLETELY RECLAIMED WITH TOPSOIL AND NATIVE SEED MIX AND PLANTING OF APPROVED TREES. FINAL RECLAMATION WILL BE MONITORED FOR AT LEAST ONE YEAR.

SEE ATTACHED P. 3 #C (CON'T) BOTTOM

VI. FOREST SERVICE EVALUATION OF PLAN OF OPERATIONS

A. Required changes/modifications/special mitigation for plan of operations:

***B.* Bond.** Reclamation of all disturbances connected with this plan of operations is covered by Reclamation Performance Bond No. _____, dated (mm/dd/yy) _____, signed by _____ (Principal) and _____ (Surety), for the penal sum of _____. This Reclamation Performance Bond is a guarantee of faithful performance with the terms and conditions listed below, and with the reclamation requirements agreed upon in the plan of operations. This Reclamation Performance Bond also extends to and includes any unauthorized activities conducted in connection with this operation.

The bond amount for this Reclamation Performance Bond was based on a bond calculation worksheet. The bond amount may be adjusted during the term of this proposed plan of operations in response to changes in the operations or to changes in the economy. Both the Reclamation Performance Bond and the bond calculation worksheet are attached to and made part of this plan of operations. Acceptable bond securities (subject to change) include:

1. *Negotiable Treasury bills and notes which are unconditionally guaranteed as to both principle and interest in an amount equal at their par value to the penal sum of the bond; or*
2. *Certified or cashier's check, bank draft, Post Office money order, cash, assigned certificate of deposit, assigned savings account, blanket bond, or an irrevocable letter of credit equal to the penal sum of the bond.*

(If more space is needed to fill out a block of information, use additional sheets and attach form)

VII. TERMS AND CONDITIONS

A. If a bond is required, it must be furnished before approval of the plan of operations.

B. Information provided with this plan marked confidential will be treated in accordance with the agency's laws, rules, and regulations.

C. Approval of this plan does not constitute certification of ownership to any person named herein and/or recognition of the validity of any mining claim named herein.

D. Approval of this plan does not relieve me of my responsibility to comply with other applicable state or federal laws, rules, or regulations.

E. If previously undiscovered cultural resources (historic or prehistoric objects, artifacts, or sites) are exposed as a result of operations, those operations will not proceed until notification is received from the Authorized Officer that provisions for mitigating unforeseen impacts as required by 36 CFR 228.4(e) and 36 CFR 800 have been complied with.

F. This plan of operations has been approved for a period of _____ or until *(mm/dd/yy)* _____. A new or revised plan must be submitted in accordance with 36 CFR part 228, subpart A, if operations are to be continued after that time period.

VIII. OPERATING PLAN ACCEPTANCE

☐I/☐We have reviewed and agreed to comply with all conditions in this plan of operations including the required changes, modifications, special mitigation, and reclamation requirements.

☐I/☐We understand that the bond will not be released until the Authorized Officer in charge gives written approval.

Signature of ☐Operator (or ☐Authorized Representative) _____ (Date) *(mm/dd/yy)* _____

IX. OPERATING PLAN APPROVAL

(Name) _____ (Title) _____

Signature of (Authorized Officer) _____ (Date) *(mm/dd/yy)* _____

Burden and Non-Discrimination Statement

According to the Paperwork Reduction Act of 1995, an agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a valid OMB control number. The valid OMB control number for this information collection is 0596-0022. The time required to complete this information collection is estimated to average 12 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at 202-720-2600 (voice and TDD).

To file a complaint of discrimination, write USDA, Director, Office of Civil Rights, 1400 Independence Avenue, SW, Washington, DC 20250-9410 or call toll free (866) 632-9992 (voice). TDD users can contact USDA through local relay or the Federal relay at (800) 877-8339 (TDD) or (866) 377-8642 (relay voice). USDA is an equal opportunity provider and employer.

(If more space is needed to fill out a block of information, use additional sheets and attach form)