



Finding of No Significant Impact

Shamrock Group Mining Plan of Operations

July 2013

Recommended:  7-11-2013
Superintendent, Wrangell-St. Elias National Park and Preserve Date

Approved:  7/22/2013
Regional Director, Alaska Date

FINDING OF NO SIGNIFICANT IMPACT

Shamrock Group Mining Plan of Operations

June, 2013

The National Park Service (NPS) prepared an environmental assessment (EA) to evaluate a mining plan of operations (MPO) which was submitted by Thomas and Kathryn Lamal (Lamal) for the purpose of conducting a suction dredge placer gold mining operation on the Shamrock Group unpatented mining claims located in the Gold Hill area within the preserve of Wrangell St. Elias National Park and Preserve (WRST). Lamal, the claimant and operator of the claims, submitted a Mining Plan of Operations (MPO) in November 2012 after consultation with NPS Geologists, as required by Title 36 of the Code of Federal Regulations (CFR), Part 9A, Section 9.9, detailing their proposed means and methods. Lamal also submitted a SF-299 application in February 2013 for ANILCA 1110(b) access to the Shamrock Group.

The mineral rights to the Shamrock Group claims (Shamrock #AA0026813 and Tony M #AA0026810) are owned by the Lamals. The EA examined and analyzed the proposed mining operations and reasonable alternatives to ensure that it satisfies the requirements of 36 CFR 9.10, and would not injure or adversely affect federally owned land. The NPS has selected Alternative 2 (the Proposed Action with Stipulations), to issue an authorization for the proposed mining operations on the Shamrock Group claims with NPS stipulations to protect resources.

A Right-of-Way Certificate of Access (RWCA) has been issued to the Lamals. The RWCA includes the terms and conditions for use of motorized equipment along a bladed route that serves as an existing ORV trail between Chicken Airstrip and the Shamrock claims. Environmental effects related to access are covered in the 2007 "Established and Maintainable Access to Inholdings Programmatic Plan and Environmental Assessment". NEPA compliance for the Lamal's access is documented in a 2013 Categorical Exclusion tiered to the 2007 document.

ALTERNATIVES

This EA provided an overview of the proposed project and analyzed two alternatives and their impacts on the environment: Alternative 1, the No Action Alternative, and Alternative 2, the Proposed Action with NPS stipulations.

Alternative 1: No Action Alternative

Under the No Action alternative, The NPS Alaska Regional Director would not approve the operator's proposed mining plan of operations. As a result, authorized mining would not occur on the Shamrock and Tony M placer claims at Gold Hill.

Alternative 2 (Proposed Action with Stipulations) Authorize Proposed Mining Operations On The Shamrock Groups Small Claims With National Park Service Stipulations

Under this alternative, the NPS Alaska Regional Director would approve the operator's mining plan of operations (MPO) on the Shamrock Group unpatented placer claims. This authorization would include NPS stipulations for resource protection. These stipulations would constitute a mitigation plan designed

to minimize and/or prevent potential environmental impacts to park resources and values and would be conditions to the authorization of the mine.

The proposed placer mining activities would consist of suction dredge mining operations, highbanker mining operations and the use of a metal detector for exploration and nugget detection. Proposed mining operations would occur for at least 6 years and would likely continue for the next 10 years or more. The operations would start in early June each year and may continue until September 30 depending upon weather conditions.

Using an average active channel width of 15 feet, the operators propose to dredge up to 15 linear feet of channel each day that the dredge is operated. They estimate that the dredge would be operated 30 days per season and that over the life of the plan the entire active channel within the boundary of the claims would be dredged. This may take up to ten years or more. The estimated annual disturbance from suction dredge operations is up to 6,750 square feet, resulting in approximately 1.5 acres over ten years. The operator anticipates utilizing the highbanker at 5 to 10 sites each year. Each highbanker mine site footprint would generally be less than 100 square feet with an estimated annual surface impact of less than 500 square feet.

Most of the proposed mining operations will be confined to areas that have been previously mined and/or directly impacted by past mining activities.

PUBLIC INVOLVEMENT

The NPS published a "Notice of Availability" for the Shamrock Group Mining Plan of Operations in the Federal Register on February 27, 2013 (Volume 78, No. 39, Page 13379). The EA was placed on the NPS Planning, Environment and Public Comment (PEPC) website on May 30, 2013, where it was available for public review and comment through July 3, 2013. Notice of the EA's availability was published in two local newspapers (Tok and Glennallen), and e-mailed to 159 individuals. Hard copies of the EA were sent directly to adjacent landowners, the State of Alaska ANILCA Coordinator's Office, National Parks Conservation Association, and the Alaska Miners Association.

Seven comments were received. Responses to substantive comments are in Attachment A. The NPS received seven public comments. Four were from private individuals, one was from the State of Alaska, ANILCA Implementation Program, and two were from Alaska state senators (Coghill and Huggins). All but one individual comment were generally supportive of the mining operations with stipulations. The one opposing individual comment was not substantive.

DECISION

The NPS selected Alternative 2 (Proposed Action with Stipulations), which provides for the NPS Alaska Regional Director's approval of the operator's mining plan of operations (MPO) on the Shamrock Group unpatented placer claims. This authorization will include NPS stipulations for resource protection. These stipulations will constitute a mitigation plan designed to minimize and/or prevent potential environmental impacts to park resources and values and will be conditions to the authorization of the mine.

Mitigating Measures

Mitigation Measures adopted as part of the selected alternative describe actions to avoid or reduce impacts to soils and water quality, cultural resources, floodplains and wetlands, and aquatic resources. Generally, the stipulations cover the following:

- Annual reporting requirements.
- Conditions for All Terrain Vehicle (ATV) use in support of mining operations.
- Fuel storage conditions.
- Conditions for protection of water quality.
- Conditions for protection of cultural resources.
- Reclamation requirements and conditions.
- Conditions for protection of wildlife.

A complete description of stipulations is provided in Attachment C.

Rationale for the Decision

Selecting Alternative 2 to approve this mining plan of operations fulfills the requirements of Title 36 CFR 9A and is consistent with the Mining in the Parks Act of 1976 because it will not constitute a nuisance in the vicinity of the operations or significantly affect federally owned lands. It is also consistent with the “Interim Operations” described in the 1990 Wrangell-St. Elias National Park and Preserve Final Environmental Impact Statement Cumulative Impacts to Mining Record of Decision (Mining ROD), which states “absent the acquisition of mining interests and the funds, all plan of operations approved under Title 36 CFR 9A will be approved.”

Alternative 2 will result in no significant adverse impacts to natural or cultural resources. Placer mining carried out as described in the Mining Plan of Operations and subject to NPS stipulations is not inconsistent with management of the area as part of the Chisana-Gold Hill Historic District, which is listed in the National Register of Historic Places. The mining operations will result in minor direct and indirect impacts to floodplains, vegetation, wetlands, visitor use and experience, visual resources, water and aquatic resources, and wildlife. Mining operations will result in positive impacts to cultural resources. Few public comments on the EA were received, and most comments supported Alternative 2.

The environmentally preferred alternative (No Action) was not selected because 1) approval of this plan of operations with mitigation measures to minimize effects to park resources does not result in any significant affect to park resources and values; and 2) it would be inconsistent with the 1990 Mining ROD.

Significance Criteria

The selected alternative will not have a significant effect on the human environment. This conclusion is based on the following examination the significance criteria define in 40 CFR Section 1508.27

(1) Impact that 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.

The mining operations will result in minor direct and indirect impacts to floodplains, vegetation, wetlands, visitor use and experience, visual resources, water and aquatic resources, and wildlife. Mining

operations will result in positive impacts to cultural resources. The selected alternative will not result in the impairment of any resources that fulfill specific purposes identified in the parks enabling legislation or that are key to its natural or cultural integrity (See Attachment B, Determination of Non-Impairment).

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

The selected alternative will not have any significant effect on public safety.

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

This selected alternative will not significantly impact any rare or unique resources or values. This alternative is not inconsistent with the listed status of the Chisana Historic Mining Landscape on the National Register of Historic Places.

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

The selected alternative will result in no significant negative effects on the human environment, and neither the content nor the number of comments received during the 30-day comment period indicate a high level of controversy exists.

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

The selected alternative is not known to include any unique or unknown risk nor is it likely to result in any highly uncertain impacts to the human environment.

(6) The degree to which the action may establish a precedent of future actions with significance effects or represents a decision in principle about a future consideration.

Under the terms and conditions specified in this environmental assessment, this selected alternative will not establish a precedent for future actions with significant effects nor will it represent a decision in principle about any future consideration.

(7) Whether the action is related to other actions with individually insignificant but cumulatively significant impacts on the environment. Significance cannot be avoided by terming an action temporary or by breaking it down into small component parts.

The environmental effects of other reasonably foreseeable mining operations in the area are discussed in the cumulative effects analyses of the environmental assessment. Past mining activities in the project area has had minor to moderate impacts on floodplains, soils, vegetation, wetlands, and water and aquatic resources. The selected alternative will have additional minor negative impacts on floodplains, soils, vegetation, wetlands, and water and aquatic resources. The cumulative effects of these past and proposed mining activities will not result in significantly adverse impacts to the environment.

(8) Degree to which the action may adversely affect districts, sites, highways, structures or objects listed in 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 selected alternative will not adversely affect cultural resources within the Chisana-Gold Hill Historic District, which is listed in the National Register of Historic Places. Mining has had and will continue to have moderate impacts to the landscape. These impacts created and are in keeping with the historic character of the landscape.

(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.

Implementation of the selected alternative will not affect any known endangered or threatened species or its habitat adversely.

(10) Whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.

This action complies with the Endangered Species Act, the National Historic Preservation Act and Executive Orders 11988, 11900, and 12898. There will be no significant restriction of subsistence activities as documented by the ANILCA Title VIII, Section 810(a) summary evaluation and findings. No federal, state or local laws or requirements imposed for the protection of the environment will be violated by implementing this action.

FINDINGS

The levels of adverse impacts to park resources anticipated from the selected alternative will not result in an impairment of park resources that fulfill specific purposes identified in the establishing legislation or that are key to the natural or cultural integrity of the park.

The selected alternative complies with the Endangered Species Act, the National Historic Preservation Act, and Executive Orders 11988 and 11990 for floodplains and wetlands. There will be no restriction of subsistence activities as documented by the Alaska National Interest Lands Conservation Act, Title VIII, Section 810(a) Summary Evaluation and Findings.

The National Park Service has determined that the selected alternative does not constitute a major federal action significantly affecting the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement is not needed and will not be prepared for this project.

ATTACHMENT A

NPS Response to Public Comments For the Shamrock Mining Plan of Operations Environmental Assessment

This attachment amends the subject environmental assessment (EA) and provides NPS responses to public comments. A substantive comment is defined as one which leads the NPS to: (1) modify an alternative, including the proposed action; (2) develop and evaluate an alternative not previously given serious consideration; (3) supplement, improve, or modify the environmental analysis; (4) make factual corrections; (5) explain why comments do not warrant further agency response (CEQ NEPA Regulations 1503.4).

NPS RESPONSE TO PUBLIC COMMENTS

The comments are paraphrased and the NPS responses follow. These questions did not change the EA conclusions about the effects of the proposed action or other alternatives.

Comment 1 (State of Alaska, ANILCA Implementation Program): We appreciate the EA indicates the proposed MPO must also comply with state regulations. We request the applicant be advised to contact the Alaska Department of Environmental Conservation prior to the start of operations to obtain the appropriate wastewater discharge permit.

NPS response: Appendix E of the Shamrock Mining Plan of Operations EA (Proposed Conditions to Attach to Authorization to Mine on Shamrock Group) states "The operator shall obtain all necessary State of Alaska and Federal permits prior to commencing operations, and keep them current during the life of the operation." The operator is aware of these conditions and Alaska Department of Environmental Conservation requirements. See page 26 of the EA for a discussion of the proposed size of the suction dredge hose relative to State requirements.

Comment 2 (Made by both Alaska State Senators Coghill and Huggins): I have reviewed the proposed conditions in Alternative 2. I encourage NPS officials to consider the options that are the least restrictive to mining operations while still reasonably maintaining the purpose and goal of the NPS.

NPS response: The stipulations (shown as Appendix E of the EA and as Attachment C of this FONSI) were developed to satisfy the requirements of 36 CFR 9.10 to ensure that mining activities would not injure or adversely affect federally owned land. Stipulations were developed in consultation with the operators. Relative to water quality, the stipulations are consistent with State of Alaska Department of Environmental Conservation standards.

ATTACHMENT B

Determination of Non-Impairment

A determination of non-impairment is made for each of the resource impact topics carried forward and analyzed in the environmental assessment for the preferred alternative. The park's 2010 Foundation Statement was used as a basis for determining if a resource is:

- Necessary to fulfill specific purposes identified in the establishing legislation or proclamation of the park, or
- Key to the natural or cultural integrity of the park or to opportunities for enjoyment of the park, or
- Identified in the park's general management plan or other relevant NPS planning documents as being of significance.

Impairment determinations are not necessary for visitor services, visitor experience, economic environment, safety, and park operations, because impairment findings relate back to park resources and values. These impact areas are not generally considered to be park resources or values according to the Organic Act, and cannot be impaired the same way that an action can impair park resources or values.

Cultural Resources

Protection of cultural resources is not specifically identified as one of the park's purposes in the establishing legislation of the park. The park's general management plan does identify cultural resources as a significant resource and protection of cultural resources would be key to the natural or cultural integrity of the park.

Active mining on the scale proposed would not alter the integrity of the landscape of the historic district. The Cultural Landscape Report proposed active mining as a suitable treatment for these claims, with the caveat that it not destroy, degrade, or alter the landscape, structures or artifacts. The proposed uses and repairs of the structures, if done with in-kind materials, would be a moderately positive, long-term impact that would help retain the structures on the landscape. Alternative 2 would result in direct and cumulative, long-term positive impacts to cultural resources and would not result in impairment to cultural resources.

Soils

Management for healthy soils is not identified as a specific purpose in the establishing legislation of the park and soils are not specifically identified in the park's general management plan as being of significance. Soils are a key component to "continuous intact ecological communities that create visually diverse scenery largely unaffected by humans," which is identified as a significance statement for Wrangell-St. Elias National Park and Preserve.

Alternative 2 would result in negligible direct and indirect negative impacts to local soils. Combined with the cumulative impacts of past and reasonably foreseeable actions, this would result in a minor impact to area soils and would not result in impairment.

Vegetation

Management for vegetation is not specifically identified as a purpose in the establishing legislation of the park and vegetation is not specifically identified in the park's general management plan as being of significance. Vegetation is a key component to "continuous intact ecological communities that create visually diverse scenery largely unaffected by humans," which is identified as a significance statement for Wrangell-St. Elias National Park and Preserve.

Alternative 2 would result in minor direct and indirect impacts to vegetation. Combined with the minor cumulative impacts from past, present, and reasonably foreseeable actions, this would result in a minor impact to area vegetation and would not result in impairment.

Wetlands

Management for wetlands is not specifically identified as a purpose in the establishing legislation of the park and vegetation is not specifically identified in the park's general management plan as being of significance. Wetlands are a key component to "continuous intact ecological communities that create visually diverse scenery largely unaffected by humans," which is identified as a significance statement for Wrangell-St. Elias National Park and Preserve.

Alternative 2 would result in minor direct and indirect impacts to wetlands, in particular the riverine wetlands within the stream bed. Combined with minor impacts from past, present and reasonably foreseeable activities, there would be a minor impact to wetlands that would not degrade the natural and beneficial ecological, social/cultural, or other functions and values of wetlands. Alternative 2 would not result in impairment of wetlands.

Visual Resources

"To maintain unimpaired the scenic beauty and quality of high mountain peaks, foothills, glacial systems, lakes and streams, valleys, and coastal landscapes in their natural state" is identified as a park purpose. Expansive vistas and scenic wildlands are identified as significant resources that define what is most important about the park's resources and values and are tied to the park purpose. Unimpaired scenic quality is necessary to fulfill the purposes for which the park was established and is key to the natural integrity of the park.

Past and present mining has created visual impacts in the form of creek bed and riparian disturbance. More obvious visually are the historic roads (some of which have become ORV trails) and ditches. These linear features have created visual scars across the landscape. However, these are features that are important components of the cultural landscape within a National Register Historic District. As such, the visual evidence of past and present mining has a positive impact on the cultural landscape and will add to the experience of most visitors. Alternative 2 will not result in impairment to visual resources.

Water and Aquatic Resources

Water quality is not specifically identified as a purpose in the establishing legislation of the park and is not specifically identified in the park's general management plan as being of significance. Protection of fish habitat and protection of populations of fish are specifically identified as park purposes. There are no fish species present in Bonanza Creek.

The direct and indirect impacts from mining activities would be temporary and low impact on an important park resource. These would result in minor impacts to water and aquatic resources but would not result in impairment.

Wildlife

The principal wildlife concerns in the analysis area are game species; there are no federally listed threatened and endangered species present in the analysis area. Protection of habitat for, and populations of, wildlife including but not limited to caribou, brown/grizzly bears, Dall's sheep, moose, wolves, trumpeter swans and other waterfowl, is specifically identified as a park purpose. Intact native wildlife populations in associated unfragmented habitats without invasive species are all identified as significant resources tied to park purposes and values. Healthy wildlife habitat and populations are necessary to fulfill the purposes for which the park was established and are key to the natural integrity of the park.

Alternative 2 would result in minor direct and indirect impacts to wildlife resources, being of low intensity and temporary to long term duration. Combined with minor impacts resulting from past, present and reasonably foreseeable actions, Alternative 2 would result in a minor impact to wildlife and would not result in impairment.

SUMMARY

Proposed mining operations, conducted under the stipulations identified as part of Alternative 2, would not result in impacts that would constitute impairment.

ATTACHMENT C

CONDITIONS TO ATTACH TO AUTHORIZATION TO MINE ON SHAMROCK GROUP

All future plan of operation supplements, revisions, modifications and/or amendments shall be submitted, in writing, to the Superintendent for analysis and determination of appropriate action.

The operator shall notify the Superintendent, or the Superintendent's designee, prior to operations start up and end of season shut down to enable park staff to meet with the operator and conduct the required monitoring and compliance investigations.

The operator shall work with park staff in (1) documenting specific sites mined within the claims, (2) conducting field measurements to determine and verify (a) water usage, (b) volume of material processed, and (c) extent of surface area disturbed by operations, and (3) conducting trail reclamation and mitigation activities.

An annual report shall be submitted to the Superintendent by the permittee. The report shall be submitted by November 30 of the year in which operations were conducted. Authorization to continue mining operations the following year is subject to the operator's submitting an annual report. The annual report shall include, at a minimum, the following information:

- a. Beginning of season arrival date on claims.
- b. End of season departure date from claims.
- c. Mining operations startup date.
- d. Number of days dredging and highbanker was conducted.
- e. Number of days metal detector exploration was conducted.
- f. Locations where dredging operations were conducted
- g. Locations where highbanker operations were conducted.
- h. Location on claims where exploration was conducted and methods employed.
- i. Volume (cubic yardage) of material mined.
- j. Volume processed by dredge and highbanker.
- k. Total linear footage of streambed worked.
- l. Total surface area (square yardage) of streambed disturbed.
- m. Total surface area (square yardage) of floodplain and uplands disturbed.
- n. Average number of hours processing material daily.
- o. Map showing locations of areas mined and prospected (explored).
- p. Number of dams constructed.
- q. Reclamation completed in previously disturbed, unvegetated areas.
- r. Number of access trips taken by ATV
- s. Condition of and/or problems with the access route.
- t. Mitigation performed on access route.
- u. Support facilities maintenance/construction conducted.
- v. Volume of fuel used during the season.
- w. Volume and location of fuel stored on claims over the winter.
- x. Cultural resources found (description and map location) which are not on the maps provided in the environmental assessment, including items discovered during mining operations reported to the Superintendent as required under operating stipulations.\
- y. Operational changes to the approved plan of operations which occurred and may need to be considered as alterations to the plan of operations.

z. Future mining and exploration plans.

Vehicle (ATV) use shall be restricted to the single most used (disturbed) track on the existing trails. Access to the support camp from the airstrip shall not exceed 50 ATV round-trips in support of mining activities per season. Trail mitigation techniques identified by the NPS shall be conducted. A "trip" consists of one round trip (travel in both directions with one four-wheeler) with or without the trailer attached. Additional trips require prior approval, in writing, from the Superintendent.

On Shamrock Group claims vehicle (ATV) access is restricted to existing trails and to barren-disturbed areas on the floodplain.

Use of ATVs is restricted to support of mining operations. Approval from the Superintendent to use ATV for summer access to Gold Hill from Chisana along the Beaver Lake Trail is required. Recreational or other uses of ATVs is not permitted.

Modification or changes in transport vehicle or suction dredge mining equipment requires prior approval, in writing, from the Superintendent.

The suction dredge or highbanker may not be used, or setup for use, as a water jet to move gravel or other material.

Refueling of the suction dredge shall be done with the use of a large funnel and a catch pan under the fuel can.

Fuel storage sites shall be bermed and lined with an impermeable layer such as visqueen. Storage of fuels shall be confined to the support camp and not in areas subject to flooding. Sorbent pads shall be kept on site.

Fuel storage is not permitted at Chicken Creek airstrip when claimants are not at their mining claims. The maximum fuel storage amount authorized in the Gold Hill area in support mining operations is 300 gallons.

Any leakage or spillage of oil based fuels, onto the ground or into the stream, shall be reported, according to Alaska State regulations to the State of Alaska Department of Environmental Conservation and the superintendent. Immediate actions shall be taken to confine the spill to the smallest area.

Waste oil will be secured in bear resistant containers and stored on-site under the same requirements as fuel until the waste oil is transferred out of the park and properly disposed of.

Suction dredge mining operations are restricted to areas normally covered by water within the submerged portions of the active stream channel.

When feasible, wash water from the highbanker shall be discharged onto barren unvegetated areas.

Mining and exploration activities shall not cause deterioration of Bonanza Creek waters exceeding State of Alaska DEC water quality standards.

Mining operations shall be conducted to insure that vegetated areas outside the approved area of operations, areas of cultural significance, and/or stream banks are not subject to increased erosion.

If more than one suction dredge is operating simultaneously those mine sites shall be separated by a minimum of 1000 feet. Likewise the water discharged from the highbanker shall not occur within 500 feet of a suction dredge operation.

Construction of small dams to provide sufficient water depth to keep the suction dredge intake nozzle beneath the water is permitted if the dam construction does not significantly reduce water flow down stream or cause increased stream bank erosion. Maximum dam height is restricted to 2.5 feet.

Construction of water diversions are not permitted. Water pumping in support of suction dredge and/or high-banker operation is permitted as these practices essentially return water immediately to the stream and/or floodplain.

Water impoundments shall not utilize any material from historic features nor shall their construction or use impact any cultural features.

Care shall be taken during mining operations, including the moving or storage of equipment, while near or adjacent to cultural features or isolated cultural objects to insure no damage to those items would occur. Areas of cultural significance depicted, shall be avoided and no mining operations shall be conducted in those areas.

Utilization of the historic structures is permissible only in support of the approved mining plan of operations. Repairs and alterations to the structures shall be in keeping with the *Secretary of the Interiors Standards for the Treatment of Historic Properties* with oversight and technical assistance provided by NPS. Care shall be exercised to avoid impacts to the historic cultural features in the vicinity of the cabin area. Artifacts located at historic structures shall be left as found.

During all phases of the mining operation, all federal laws and regulations protecting cultural resources shall apply. Known cultural resources occurring within the vicinity of the claims under review shall not be altered, destroyed or collected. In the event that concealed cultural and/or scientific resources are encountered during mining operations, the Superintendent or the Superintendent's designee, shall be notified immediately. The discovery shall be left intact and steps shall be taken to protect it.

Reclamation at the end of the season shall include spreading the gravel used in dam construction, and any accumulated piles of processed gravel, on the stream bottom to eliminate any obstruction to the stream. Excavated pits shall be filled with tailings. Original stream gradients shall be reestablished. Reclamation of all dams, mined areas and prospect pits upon cessation of operations at that site and by the end of the season, is required.

Mine and prospect excavation shall be reclaimed when operations cease at that site.

All debris from the mining operation shall be removed from along the streambed each season.

Annual reclamation shall consist of:

- A.) Leveling the tailings piles to conditions that approximate the contours and slopes of the adjoining land, floodplain and stream channel. Reestablishing the original gradient of the stream in the mined areas.
- B.) Filling in pits and mine cuts/dredged areas to conditions that approximate the contours and slopes of the adjoining land, flood plain and stream channel.
- C.) Reclaiming and spreading out the gravel used in dams constructed for the purpose of operating the dredge.
- D.) Eliminating any barriers that were constructed to allow for the natural flow of water and free passage of macro and microfauna and stream biomass.
- E.) Stabilization of the tailings to prevent their erosion due to subsequent normal

occurrences, such as heavy rains or floods.

F.) Placing tailings and fine material in a manner which facilitates natural revegetation of the disturbed area.

G.) Replacing the substrate with a mix of material (gravel, rubble, and/or boulders) to form a streambed that approximates original conditions.

H.) Insuring that reclamation of disturbed areas prevents erosion of the stream bank and stabilizes the area to minimize down stream turbidity.

I.) Upon completion of dredging activities, reclamation shall insure that the channel width and depth are similar to natural conditions and allow for normal stream discharge.

Final reclamation at conclusion of approved mining operations shall consist of:

A.) Removing all equipment (four wheelers, access vehicles, mine equipment, fuel, and camp support materials) transported to the claims for the mining operation.

B.) Removing and disposing at an approved location all garbage, refuse or waste, broken or unused equipment transported to the claims in support of approved operations.

C.) Operator shall notify the NPS as to when reclamation has been or will be completed. A field inspection with the operator present shall be conducted to evaluate the completed reclamation. Failure to accomplish reclamation in accordance with the approved plan shall result in forfeiture of the performance bond.

Any large animal causing a nuisance, and/or the death of a large mammal or bird of prey occurring in the vicinity of the mine site shall be reported to the Superintendent and the Alaska Department of Fish and Game as soon as possible. All state and federal game regulations shall be adhered to.

Refuse generated by the operator and/or his employees and coworkers shall be removed from the claims and disposed of in accordance with State and Federal law. Handling and disposal of all solid waste material shall be conducted according to Alaska State Regulations.

All food, perishables, and organic trash shall be secured from bears in bear proof containers and other wildlife. Burnable trash shall be burned. Non-burnable trash shall be backhauled outside the park at the end of the season.

The operator shall obtain all necessary State of Alaska and Federal permits prior to commencing operations, and keep them current during the life of the operation.

Compliance with all State and Federal laws and regulations is required.

Authorization to continue mining operations is contingent upon Shamrock and Tony M being maintained as valid existing unpatented mining claims with the BLM.

A performance bond shall be posted and maintained with the National Park Service bonding officer at the Alaska Regional Office in the amount of \$2500 prior to the implementation of the approved mining plan of operations. The performance bond shall be increased to reflect any changes in operations or adjustments for inflation.

