

Gold Run 20-year Mining Plan of Operation Chisana Mining District, Alaska February, 2017

Vern Fiehler
POB CZN
Tok AK 99780
CZN phone 734-1234
Cell 907-789-1085
vernfiebler@gmail.com

TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
LIST OF FIGURES	3
LIST OF TABLES	4
APPENDICES	4
PART I. INTRODUCTORY INFORMATION.....	5
I. A. National Park Service System Unit	5
I. B. Mining Claim Information.....	5
I. C. Mining Claim Location	6
PART II. ACCESS	9
II. A. Access Map.....	9
II. B. Proposed Method of Access	9
II. C. Proposed Dates of Access.....	11
II. D. Proposed Construction of Access	11
PART III. USE OF WATER.....	12
III. A. Water sources and water quantity	12
III. B. Permits	13
PART IV. PLAN OF OPERATIONS.....	14
IV. A. Names and Addresses	14
IV. B. Proposed Area of Operation	14
IV. C. Equipment to be Used.....	18
IV. D. Proposed Operations.....	20
IV. E. Nature and Extent of Known Deposit.....	23
IV. F. Reclamation Plan.....	26
IV. G. Compliance with other regulations	27
IV. H. Environmental Report.....	28
IV. I. Relationship to NPS Planning	28
IV. J. Additional Information	29

LIST OF FIGURES

Figure 1. Location of the Chisana Mining District within WRST.....	5
Figure 2. Location of Gold Run claim group in relation to other claims in the Gold Hill Study Area, to Chisana, and to nearby airstrips. Inset of location in Wrangell-St. Elias National Park and Preserve (dark green polygon). North is up.	7
Figure 3. Gold Run claim group boundary (red polygon) overlaid on a USGS 1:63k topographic map. Inset shows location of map on the Gold Hill Study Area shown in the previous figure. North is up.....	8
Figure 4. Overview of access routes to the Gold Run claim group (brown hatched polygon). Pink dashed lines show two alternate winter routes from Chisana (yellow star) to the claims. Summer access from the Chicken Creek strip (blue hexagon) follows path of the last ~1.5 miles of the winter route. All routes follow traditional trails. Green outline shows boundary of Gold Hill study area; Inset of location in Wrangell-St. Elias National Park and Preserve (dark green polygon). North is up.	9
Figure 5. Detail map of Gold Run claim group, showing claim boundaries, creek names, primary proximal access route from Chicken Creek, locations of support camp elements, disturbed ground and streambeds, and existing structures. Note in legend that north is not up in this map.	15
Figure 6. The "skid" shack and adjacent shed on Gold Run Creek, circa June 2014.	16
Figure 7. Bank failure adjacent to the skid shack, circa June 2014.	17
Figure 8. The flat bench camp area (foreground) just downstream of the skid shack and adjacent shed (visible in right background). This bench will be the site of the miner's main seasonal camp. The skid shack will be moved to a site higher above stream level than this bench.....	17
Figure 9. Five inch suction dredge comparable to the one proposed for use at Gold Run.	19
Figure 10. Highbanker comparable to the one proposed for use at Gold Run.....	19
Figure 11. Gold Bug 2 metal detector comparable to the one proposed for use at Gold Run.	19
Figure 12. Gold dredge set up at junction of Glacier and Gold Run Creeks.	21
Figure 13. BLM using highbanker (right) on Gold Run Creek in 2012.	22
Figure 14. Glacial outwash deposit near Gold Runs Below claim. Photo courtesy John Hoppe / BLM.	25

Figure 15. Interbedded graywacke and mudstone on Gold Run Creek. Photo courtesy John Hoppe / BLM.	25
--	----

LIST OF TABLES

Table 1. Gold Run claim group claims, location notices, and legal descriptions.	6
Table 2. Water quantity and quality data for Gold Run and nearby Chavolda Creeks.....	12

APPENDICES

Appendix A. Supplemental Claim Information Statement

Appendix B. BLM case file abstracts for Gold Runs Below and Jay #2 and #3 claims

Appendix C. Cumulative Impacts of Mining Final Environmental Impact Statement for Wrangell St. Elias National Park and Preserve and the Record of Decision (1990).

Appendix D. Chisana-Gold Hill Landscape Report (Feldman 1998)

PART I. INTRODUCTORY INFORMATION

The claim holder, Vern Fiehler, wishes to extract the mineral resource from the Gold Run claim block within disturbed riparian areas of upper Glacier Creek. Mr. Fiehler owns the claims and the claims are located within the Wrangell-St. Elias National Park and Preserve.

A Mining Plan of Operation is required by the National Park Service to adequately evaluate the impact the proposed mining operations will have on the protection, preservation, and public use of the resources and values of the Wrangell-St. Elias National Park and Preserve. An approved Mining Plan of Operation is required by the regulations at Title 36 of the Code of Federal Regulations Part 9, Subpart A, January 26, 1977.

The purpose of this Mining Plan of Operation is to fulfill the requirement of the National Park Service and allow Mr. Fiehler access to his claims to beneficially extract the mineral resource in a method that minimizes to the extent possible the environmental impact of the operations.

I. A. National Park Service System Unit

The Gold Run mining claims are located in the Chisana Mining District, approximately 5 miles east of the Chisana townsite and in the Preserve portion of Wrangell-St. Elias National Park and Preserve (WRST; Figure 1).



Figure 1. Location of the Chisana Mining District within WRST.

I. B. Mining Claim Information

The Gold Run claim group proposed for mining in this plan consists of three unpatented placer claims: Gold Runs Below, Jay #3, and Jay #2. The BLM location numbers, dates, serial numbers, and legal descriptions are shown in Table 1. The Gold Runs Below claim was located on 30

September 1973 and Location Notice was filed 3 July 1979. The Jay #2 and Jay #3 claims were located on 28 July 1973 and Location Notice was filed 13 July 1979.

Based on the BLM records (Case File Abstracts contained in the appendix of this document), interests in all three claims were transferred from Ivan Thorall to Dippel on 31 July 1982, from Dippel to Larson, Moody, and McCuddy on 7 August 1987, all interests from Larson and McCuddy to partner Moody on 7 August 1987, half-interest from Moody to Martin on 28 March 1988, from Moody and Martin to S. Hall on 21 October 2008, from S. Hall to L. Hall on 16 September 2011, and from L. Hall to Mr. Fiehler on 6 June 2012. Claim maintenance fees have been paid through 2015. The corners are monumented with steel fenceposts.

Table 1. Gold Run claim group claims, location notices, and legal descriptions.

Claim	Location Date	Case Serial #	Legal description
Gold Runs Below	September 30, 1973	AKAA-026817	20 ac in the SE 1/4 of Section 15, Township 4N, Range 19E, Copper River Meridian
Jay #2	July 28, 1973	AKAA-027060	20 ac in the NW 1/4 of Section 15, Township 4N, Range 19E, Copper River Meridian
Jay #3	July 28, 1973	AKAA-027061	2 ac in the NE ¼, and 18 acres in the SE ¼, of Section 15, Township 4N, Range 19E, Copper River Meridian

I. C. Mining Claim Location

The subject federal placer mining claims are located in the Gold Hill area, in the Chisana (local pronunciation “Shu-shana”) Mining District, approximately 60 miles south of Northway, Alaska and 30 miles west of the Canadian Border, in the foothills south of the Nutzotin mountains (Figure 2). All the waters draining from the Gold hill area are part of the headwaters of the Chisana River. Chavolda (Wilson) Creek borders the north side of Gold Hill, Chathenda (Johnson) Creek borders the south side, and Bonanza Creek borders the east side. The Gold Run claims are on Glacier Creek and its tributary, Gold Run Creek (Figure 3). Glacier Creek flows northwest into Chavolda (Wilson) Creek. For the legal description of lands involved see Table 1 and the BLM Case File Abstracts in the appendix.

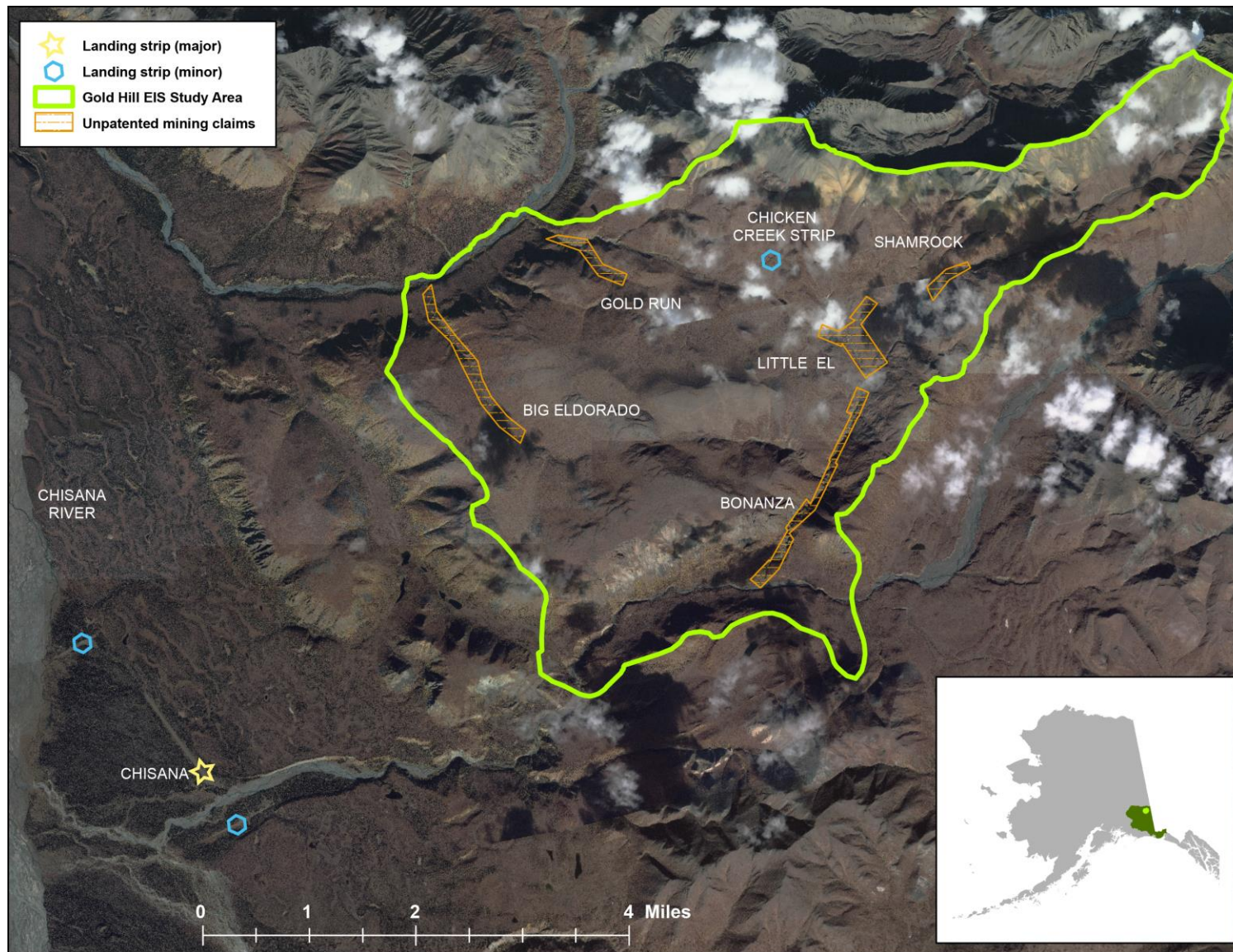


Figure 2. Location of Gold Run claim group in relation to other claims in the Gold Hill Study Area, to Chisana, and to nearby airstrips. Inset of location in Wrangell-St. Elias National Park and Preserve (dark green polygon). North is up.

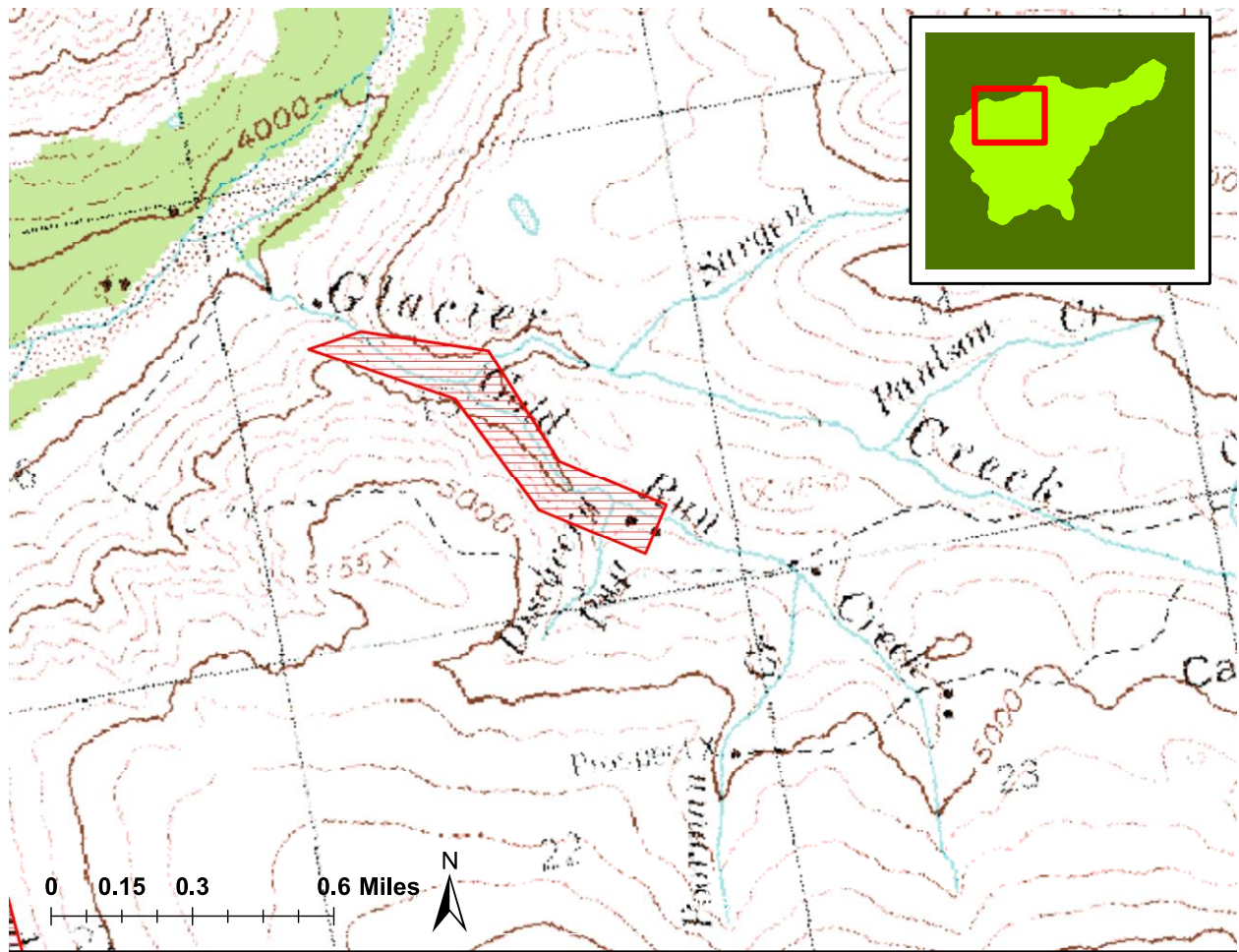


Figure 3. Gold Run claim group boundary (red polygon) overlaid on a USGS 1:63k topographic map. Inset shows location of map on the Gold Hill Study Area shown in the previous figure. North is up.

PART II. ACCESS

II. A. Access Map

Proposed summer and winter access routes are shown in Figure 4 and further described below.

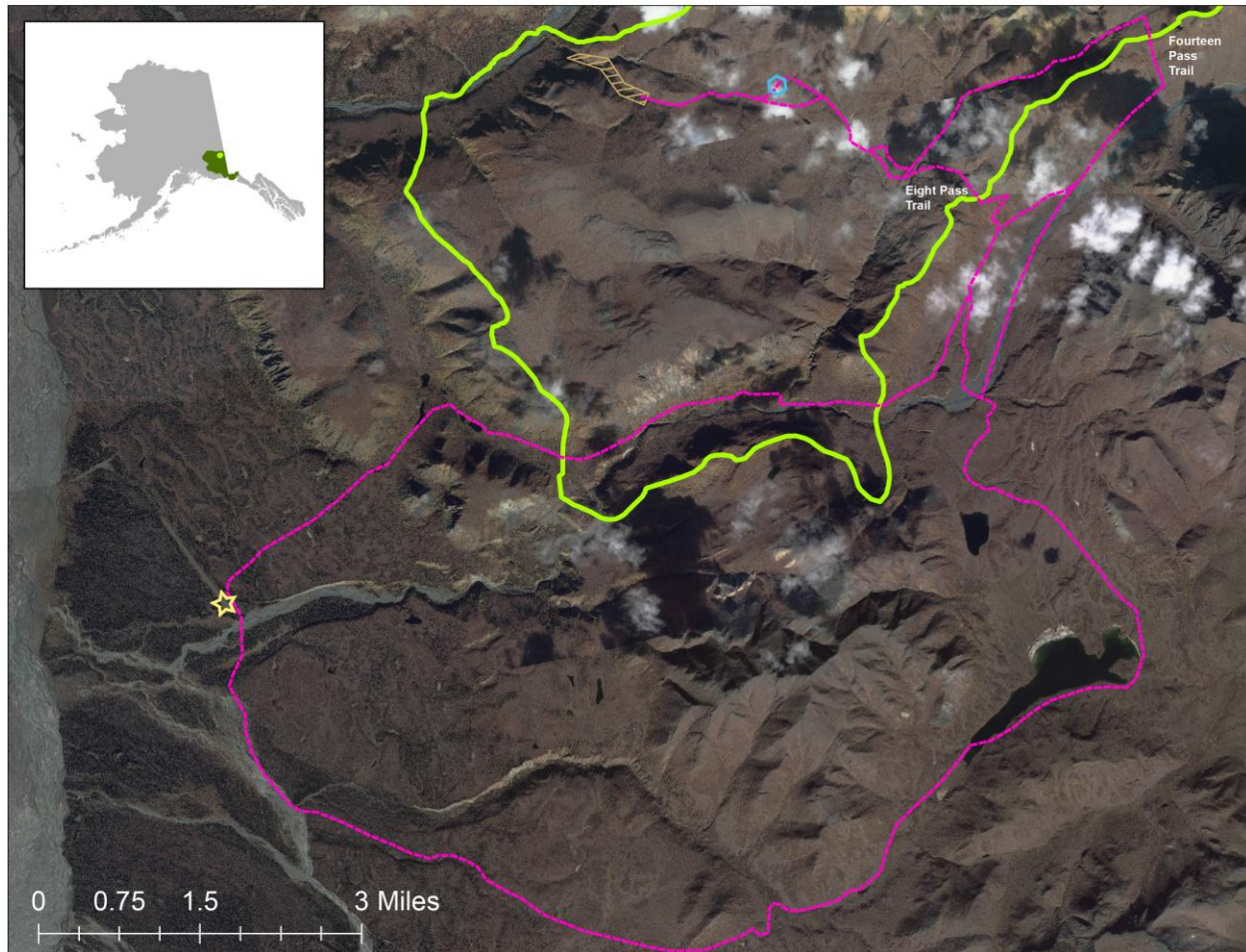


Figure 4. Overview of access routes to the Gold Run claim group (brown hatched polygon). Pink dashed lines show two alternate winter routes from Chisana (yellow star) to the claims. Summer access from the Chicken Creek strip (blue hexagon) follows path of the last ~1.5 miles of the winter route. All routes follow traditional trails. Green outline shows boundary of Gold Hill study area; Inset of location in Wrangell-St. Elias National Park and Preserve (dark green polygon). North is up.

II. B. Proposed Method of Access

In summer, subject to the definition in the next section, access to the mining claims will consist of using fixed-wing aircraft to access the Chicken Strip (Figure 4) and then ATV from there to the claims. The aircraft will be a small fixed-wing on tundra tires (Bellanca 7GCBC with weight

~1150 lb. empty and 1650 lb. gross, or Cessna 185 with weight ~1800 lb. empty and 3450 lb. gross, or similar). Some maintenance on the airstrip may be required, and will be done, as needed using any one or more of the following methods:

- Brush may be trimmed and removed from the envelope adjacent to airstrip, and also the tiedown area, so that it does not hinder safe landings and take offs.
- The airstrip may be smoothed and graded for safety purposes using a tire, chain, or welded steel sledge drum behind an ATV.

An ATV, usually pulling a wheeled trailer, is already located at the claim and will be used to transport equipment, supplies, materials, fuel, and personnel over a distance of ~1.5 miles between Chicken Creek Airstrip and the Gold Run support camp. The ATV will be a 4-wheeled Honda Rancher or similar, with approximate weight of 600 lbs. Travel with ATV would be confined to the existing trail alignment between Chicken Creek Airstrip and the Gold Run claim. No maintenance of the existing alignment is expected other than light brushing, as needed.

In winter, subject to the definition in the next section, access will be via snowmachine from Chisana. The snowmachine used will be a Polaris RMK or Yamaha Bravo or similar, with up to 20 gallon fuel capacity and a weight of approximately 300 lbs. A sled will be towed by the snow machine. The sled will typically be plastic, and will weigh approximately 50 pounds unloaded.

Winter travel will be done using historical established routes, trails, and accessible river and creek bottoms. The two primary routes shown in Figure 4 include a southern route which from Chisana uses Geohenda (Trail) Creek to access uplands that lead to upper Bryan Creek, and from there traverses Beaver Lake and Little Beaver Lake to access upper Chathenda (Johnson) Creek. It then crosses a pass into upper Bonanza Creek, drops from there to Little Eldorado Creek, and then climbs over a low pass to the Chicken Creek Strip and from there to the claims. The northern route follows Red Hill Creek to Alder Gulch, and from there enters Chathenda (Johnson) Creek to join the southern route, except for an alternate, more westerly pass over to Bonanza Creek. The southern route passes through designated park wilderness. Either route may be used for snowmachine operations.

Equipment to be hauled to the claims, aside from consumable supplies, will be minimal. Most mining equipment, as described below (suction dredge, highbanker, etc.) is already located at the claims, as are durable camp supplies such as tents, cots, and kitchen gear. It is anticipated that these items will continue to be stored on site and will only be removed at the cessation of mining activities, or in the event the equipment requires repair or replacement. Replacement gear, as well as unexpected additions of new equipment, will be hauled in as needed utilizing the means described above. Perishable supplies and fuels will primarily be transported in summer, and will be transferred immediately upon arrival at the claims into Interagency Grizzly Bear Committee-approved bearproof containers or bearproof buildings. Winter hauling will primarily occur only for the purpose of hauling lumber and other building materials if for repair of the skid-shack, and/or for hauling of fuel. The operator will carry the fuel in 5 gallon plastic jerry cans and

transfer them at the camp to puncture resistant metal containers (55 gallon drums) and will have spill containment devices and absorbent mats available at all times.

II. C. Proposed Dates of Access

Access to the claims changes seasonally. Most access will be during the summer mining season. Here, summer is defined as the time period beginning when the Chicken Creek airstrip is dry enough after spring snow melt to allow fixed wing aircraft landings (with wheels), *and* the access trail between the Chicken Creek airstrip and the claims is dry enough to allow equipment described in the following section to pass safely. Summer ends when snow accumulation is such that landing on wheels is not safe, and/or equipment described in the following section cannot pass over the access trail due to snow. It is anticipated that summer will be approximately late May through early September each year, but weather conditions may change this time period by as much as two weeks.

Winter is considered to be the time period when snow cover is about 9-12 inches deep, allowing safe travel by snow machine, cross country skis, or snow shoes cross country. It is not anticipated that the Chicken Creek airstrip will be utilized in the winter. There will be times in between summer and winter, as defined here, when travel to the claims is not possible.

During the summer mining season, the first trip into the claims will occur as soon as possible after conditions dry out, as described above and typically in early June. Typically, 1-2 flights per week will occur during the active mining season. These flights will be focused on picking up perishable supplies, fuel, mail, and other items from Chisana. Fuel required for mining operations will be transported in both summer and winter. In summer, it will be transported in 5 gallon containers and transferred upon arrival at the claims into a bearproof metal container (empty 55 gallon metal barrel). Each flight would be accompanied by one or more ATV trips between the airstrip and the claims.

In winter, 2-3 snowmachine trips to the claims are typically expected, subject to the snow cover constraints described above. These trips will be focused on checking the conditions of stored supplies, general maintenance of the claims, and hauling of non-perishable supplies. Prior to these trips each season, one or more partial trips may be necessary to establish a packed trail from Chisana to the claims.

II. D. Proposed Construction of Access

Other than minor maintenance described above, no construction of access roads or trails is planned.

PART III. USE OF WATER

III. A. Water sources and water quantity

All mining operations will utilize water from a combination of Glacier Creek and its tributary, Gold Run Creek. Water flow in both creeks is highly variable, and dependent largely on snowmelt and rainfall. Average stream width is typically 10-15 feet. Streambed alluvium ranges from gravel and sand to boulders up to 3 feet in diameter. The stream gradient on both streams is approximately 5%. Gold Run Creek experiences low flows in late summer that can preclude mining operations, so the general plan is to conduct mining operations on Gold Run Creek earlier in the summer, and then move downstream to the Glacier Creek confluence later in the season as water levels drop.

According to the 1990 Cumulative Impacts of Mining EIS, Gold Run Creek is a small clearwater stream with average midcourse flow of 9 cfs. It bears evidence of sporadic placer mining since the early 1900s, and nine dams remain intact on the stream from previous mining activities. Existing water quality on the Creek is within an acceptable range for the survival of aquatic life, and in 1987 it showed no detectable signs of recoverable metals or other contaminants. Available water quality information for Gold Run Creek and downstream Chavolda Creek are shown in Table 2. Aquatic invertebrates occur within the stream, but no fish are known to occur there.

Table 2. Water quantity and quality data for Gold Run and nearby Chavolda Creeks.

Location	Gold Run Creek	Chavolda Creek
Date	9/25/87	6/17/88
Flow (cfs)	1.0	51.3
Suspended solids (mg/l)	<2.0	--
Turbidity (NTU)	3.2	1.2
pH	6.6	--
Conductivity (µS/m)	29.0	187
Alkalinity (mg/l)	8.0	71
Hardness (mg/l)	<0.001	112
Arsenic (mg/l)	41.0	--
Cadmium (mg/l)	<0.02	--
Chromium	<0.03 mg/l	--
Copper	<0.01 mg/l	--
Iron	<0.03 mg/l	--
Lead	<0.08 mg/l	--
Manganese	<0.003 mg/l	--
Lead	<0.01 mg/l	--

Proposed operations dependent upon water would include a five or six inch suction dredge with an intake diameter of (5) inches, operating 8 hours or less per day, and a highbanker with a pump to feed it; in no case will non-consumptive water use exceed 30,000 gpd. Volume of water used to support highbanker operations will be dependent upon the size of the pump. Total water use is

projected to be less than 30,000 gallons per day. If more than one suction dredge is used simultaneously, dredges will be separated by no less than 1000' and shall not be used, in total, for more than 8 hours per day.

Water pumped through the dredge is returned immediately downstream at the base of the sluice box. Water from the highbanker will be discharged onto barren ground and/or floodplain and allowed to flow back into the stream channel or seep into the ground. Suction dredge and highbanker discharge waters will be discharged to the channel or ground, respectively, untreated.

Water for domestic use (cooking, drinking, and washing) will be taken out of Gold Run or Glacier Creek and hand-carried to the camp. Total usage will typically be <20 gallons per day.

III. B. Permits

A mining operation with a suction hose six inches or less in diameter, powered by an engine of 18 or fewer horsepower, is considered to be a recreational operation by the State of Alaska (11 AAC 97.100 APPLICABILITY (a)). The claimant has intentionally restricted the size of the suction dredge selected for this MPO to meet those State regulations. The claimant's intent is to not exceed, in aggregate, 30,000 gallons of non-consumptive water use per day through the dredge operations. Dredging is considered to be a non-consumptive use of water by the State of Alaska if daily throughput is less than 30,000 gallons. Any dredging operation with water through-put in excess of 30,000 gallons of water per day from a single source would require a water use authorization permit to appropriate (or certificate of appropriation) from the State of Alaska, Department of Natural Resources, Water Resources Division. If the claimant's dredging operation were to exceed a use of 30,000 gallons per day, the claimant would be required to first secure the water use authorization from the State.

The applicant will be required to acquire an APDES Small Suction Dredge General Permit, and has been in contact with the Alaska Department of Environmental Conservation about applying for this permit. He will also be required to acquire a Title 16 Fish Habitat Permit from the Alaska Department of Fish and Game, and will similarly pursue this with them directly. Finally, the applicant will acquire a state of Alaska Mining License from the Alaska Department of Revenue. NPS requires that the applicant be in possession of these and any other required permits and licenses at all times during mining operations.

PART IV. PLAN OF OPERATIONS

IV. A. Names and Addresses

The claims are owned and will be operated by Vern Fiehler. It is intended that the owner will be the operator. He may be assisted during some mining periods by up to four assistants. The only assistant authorized to act as an agent for Mr. Fiehler on the claims is his son, Levi Fiehler.

Vern Fiehler's contact information:

Vern Fiehler
POB CZN
Tok AK 99780

CZN phone 734-1234
Cell 907-789-1085

Levi Fiehler
Cell 360-713-1982

IV. B. Proposed Area of Operation

All mining and support activities will take place within the Gold Runs Below, Jay #3, and Jay #2 mining claims. Mining and support operations described below are shown in Figure 5. This MPO describes a new placer mining effort on land that has been previously mined. Within the claims, ground disturbing mining activity will be confined in all cases to areas previously disturbed by historic mining activity. These include the active submerged channels of Gold Run Creek and Glacier Creek; barren floodplains and sparsely vegetated floodplain terraces adjacent to these creeks; and floodplains, terraces, and ephemeral channels of Discovery Pup and other unnamed tributary creeks within the claim boundaries.

The miners' main camp, storage for equipment and supplies, and staging area will be located on the Gold Runs Below claim at the upstream end of the claim area (Figure 5). The "skid shack" and an adjacent shed—two existing buildings located on the southwest bank of Gold Run Creek, just upstream of its confluence with Discovery Pup Creek—will be used for equipment and supply storage and for staging mining operations (Figure 6). The operator may perform repairs and upgrades of these buildings consistent, on the exterior, with their historic setting and appearance. Such repairs would rely primarily on locally sourced spruce from a sawmill in Chisana, would be in keeping with the Secretary of the Interior Standards for the Treatment of Historic Properties, and would be managed with technical assistance and direction by NPS staff.

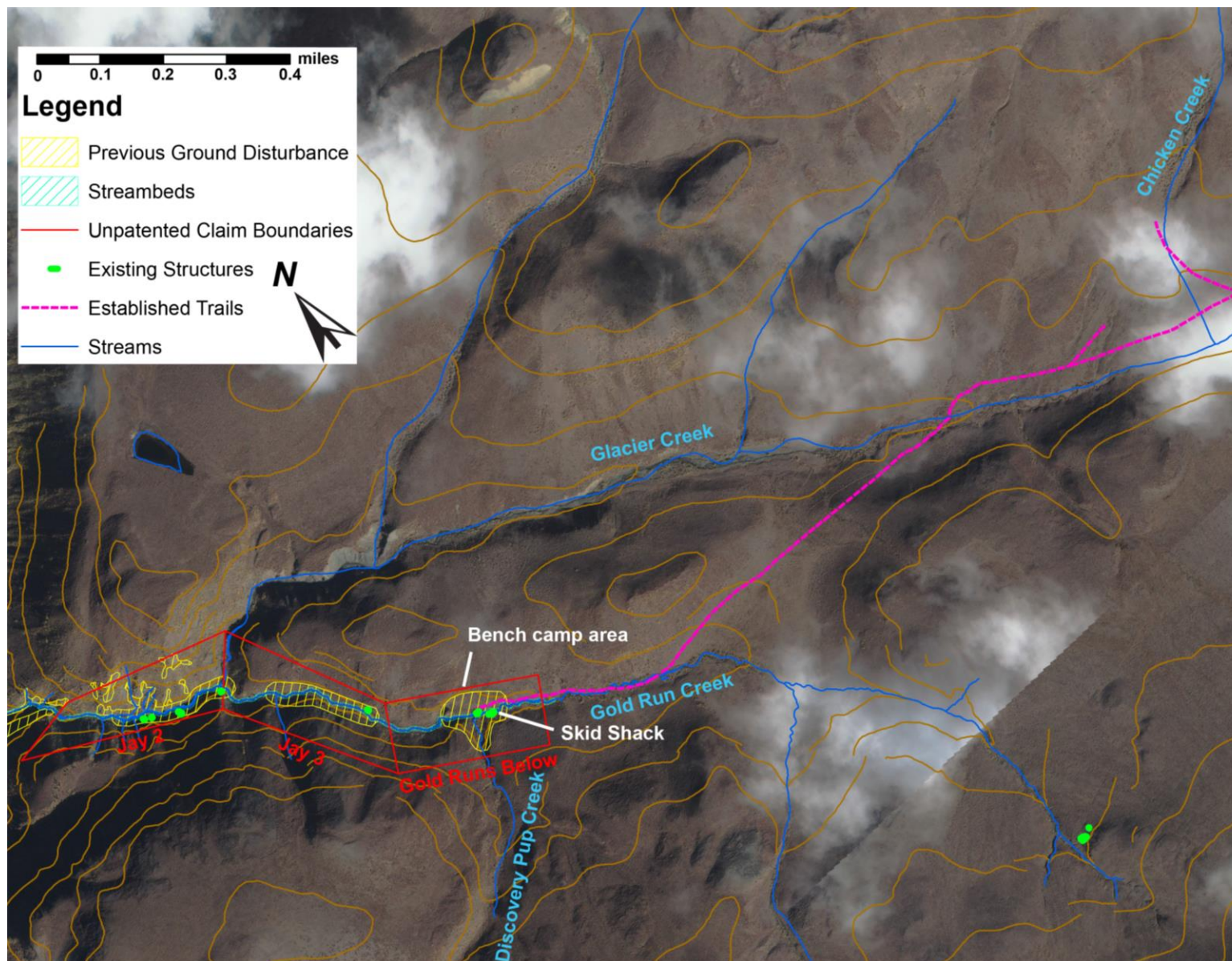


Figure 5. Detail map of Gold Run claim group, showing claim boundaries, creek names, primary proximal access route from Chicken Creek, locations of support camp elements, disturbed ground and streambeds, and existing structures. Note in legend that north is not up in this map.

Bank erosion between the skid shack and the adjacent Gold Run creekbed, if continued, may undermine the skid shack and cause it to fail structurally or fall into the creek (Figure 7). If the erosion continues, the operator may move the skid shack (which, as the name implies, can be dragged on wooden skids) to the opposite side of the creek, near to (but likely above) the flat bench described in the next paragraph. Should this action be required, the shack would be dragged across the frozen creekbed in winter, during a period of sufficient snow cover. The move would be over a straight-line distance of less than 100 yards, to an exact location selected in coordination with park archaeologists.

A flat bench across the creek and downstream from the skid shack about 100 yards (Figure 8) will be used for the miners' main camp, consisting of one or two 12'x16' wall tents, weatherports, or similar structures built on temporary tent platforms. Tents would be dismantled each season, and the tent platforms dismantled and removed at the conclusion of mining activities. All food would be secured and/or stored in bear resistant containers. An outhouse is located at the support camp. This may be relocated in the future if warranted, in consultation with NPS archaeologists and in compliance with applicable State regulations. Burnable trash would be burned in a burn barrel at the support camp. Garbage and waste oil would be flown out of the park and disposed of according to State regulations.



Figure 6. The "skid" shack and adjacent shed on Gold Run Creek, circa June 2014.



Figure 7. Bank failure adjacent to the skid shack, circa June 2014.



Figure 8. The flat bench camp area (foreground) just downstream of the skid shack and adjacent shed (visible in right background). This bench will be the site of the miner's main seasonal camp. The skid shack will be moved to a site higher above stream level than this bench.

Late in the mining season, when low water on Gold Run Creek forces mining activities downstream, to the confluence of Glacier Creek, a small tent camp will be set up on the south side of Glacier Creek, 100' downstream of its confluence with Gold Run Creek near a historic boiler (Figure 8). Access to the lower camp from the skid shack / upper camp area will be by foot; the operator does not intend to construct ATV access to the lower claims.

Besides the skid shack and adjacent shed, no other historic structures or artifacts will be used or disturbed in the course of mining activities. To the extent possible, cultural artifacts would not be disturbed during any mining operations. Any isolated artifacts lying on the ground would be temporarily moved to allow mineral extraction; these artifacts would be returned to the location they occupied prior to undertaking mining activities. Direct adverse impacts to cultural resources such as hand-stacked piles and boomer dam remnants would be avoided where possible. The claim owners would continue cooperating with the NPS to remove non-historic debris from the area.

IV. C. Equipment to be Used

Vehicles used for transportation of equipment and supplies to the claims have been described previously, and include a fixed-wing aircraft, an ATV with trailer, or a snowmachine with trailer. During the mining season, transportation within the claim will occur with the ATV/trailer, where possible, and elsewhere by foot. Fuel and fluid consumption by the ATV will be supplied in summer primarily by transport via fixed-wing aircraft to the Chicken Strip and from there by ATV to the claims. Winter fuel transportation will occur by snowmachine.

For mining operations, the primary equipment will be a 5" or maximum 6" suction dredge with maximum 5" intake nozzle, motorized pump, and sluice box (Figure 9), shovel and sluice, a highbanker with motorized pump and sluicibox (Figure 10), and a metal detector (Figure 11). Proposed operation of these items is described in the next section. This equipment is stored at the claim site when not in use and will be removed at the conclusion of the mining effort.

Fuels for the mining effort will include gasoline for the suction dredge, high banker pumps, and ATV; propane for cooking; and potentially diesel for a small space heater. Fuel would be stored in metal or other bear-proof material containers no larger than 55 gallons. As described previously, the operator plans to haul in empty storage barrel(s) in winter, on a snowmachine, and then fill these barrels incrementally from 1 to 5 gallon containers brought in by fixed-wing/ATV in summer. It is anticipated that annual fuel consumption would be less than 100 gallons. Fuels would be stored near the sheds. Spill containment for the fuel storage area will consist of an impermeable boundary under the barrel(s) supported by a built up berm. Spill containment at the work site would consist of an impermeable metal container. All spill containment containers will be covered to prevent capture of rainwater. Refueling will occur in a variety of locations, and will at all times be accompanied by readily accessible absorbent pads and booms (for operations in/near the creek). Refueling will be done with commercially available spillproof push-button style 5-gallon or smaller containers.



Figure 9. Five inch suction dredge comparable to the one proposed for use at Gold Run.



Figure 10. Highbanker comparable to the one proposed for use at Gold Run.



Figure 11. Gold Bug 2 metal detector comparable to the one proposed for use at Gold Run.

IV. D. Proposed Operations

The proposed placer mining activities would consist of suction dredge mining operations, highbanker/slucio mining operations, and use of a metal detector for exploration and nugget detection. These are described in order below. Details regarding the support camp and fuel requirements are described in sections IV.B and IV.C, respectively, above.

Proposed mining operations would occur for at least 20 years and may continue beyond that. The present document describes a ten-year plan of operations. The operations will occur in summer, as defined previously by access conditions, and thus will generally commence in late May each year and continue until as early September, depending upon weather and flow conditions.

No explosives will be used in the course of the mining operation. No chemicals other than fuel, oils and lubricants for equipment, and soap for domestic cleaning will be used.

Suction Dredge Mining Operation Component

Surface Disturbance: Annually 900 square feet. 20 Years: approximately 0.4 acres

This component of the mining operation would be confined to areas that were previously mined and/or directly impacted by past mining activities and includes areas normally covered by water within the submerged portion of the active stream area. These areas contain minimal to no soil or vegetation. Suction dredge operations would occur in the active Gold Run and Glacier Creek stream channels and those portions of the barren floodplain during periods of inundation caused by high water or channel migration. Suction dredge mining would potentially also be undertaken in the channel portions of Discovery Pup Creek if the subject channel contains sufficient water to operate the dredge.

These operations would utilize a 5 or 6 inch dredge with a maximum 5" intake nozzle. The smaller suction dredge will be used when water flows preclude use of the 6" dredge. At present, the primary dredge is a 5" Gold Grabber Dredge with a 7HP Subaru pump, and the backup dredges are two 5" Keene dredges with 10HP Honda pumps.

For suction dredge operations, the operator will construct a small rock wall 1 to 4 feet high across the active stream channel. This creates a temporary impoundment that allows the dredge to float (Figure 12). Impoundments may in some cases be augmented by tarps placed temporarily (for no more than 1-3 days) in the stream bottom, but will never use cultural or historic materials. Creek flow will not be redirected around these pools, except as needed during high water events, and impoundments will typically be sufficiently dismantled to allow normal creek flow each evening. In no case will an impoundment be left in place longer than 7 days.



Figure 12. Gold dredge set up at junction of Glacier and Gold Run Creeks.

The miner would submerge the intake nozzle into the gravel streambed. Water and gravel would be drawn into the intake hose by the suction pump. The material would be pumped into the sluice box to separate the gold from the gravel. The processed gravel and used water would then be discharged into the impoundment/stream from the sluice box, allowing most solids to settle before being discharged into the main channel. All gravels 5 inches and smaller would be processed through the floating sluice box. Material larger than 5 inches would be moved out of the way by hand and then moved back into the dredge hole. It is anticipated that only one suction dredge would be operated at any one time, but the miner may choose to operate two suction dredges simultaneously at different locations separated by sufficient distance (>1000') in such a manner to avoid causing any compounding impacts to water quality. Cumulative hours of operation for multiple dredges will not exceed 8 hours/day.

After overburden (barren gravel/alluvium) is dredged, the operator would use hand tools (shovels, picks) to break open fractured bedrock and use the dredge to extract concentrates from the bedrock. As operations move upstream the dredge would redeposit smaller gravels over the mined bedrock surface. In this fashion, reclamation is concurrent with the operations. Further reclamation consists of breaking down or leveling any dams that were constructed to a natural/pre-mining contour and grade when the dredge is moved or at the end of the season. Any oversized rocks removed from the dredging area by hand would also be returned to the dredged area.

The approximate length of creek bed (within the claims) that would be mined in the Gold Run claims is about 2400 linear feet. It is up to 15 feet wide, but frequently narrower. The operator anticipates that up to 30 square feet can be dredged per day and there would be 30 productive suction dredging days in a season. If the average stream width is 10 feet, then it would take over 25 years to dredge all 24,000 square feet. Given that some stream sections will likely be unsuitable for mining, the operator suggests that this mining plan of operations should be authorized for 20 years. Dredging operations would be conducted by Fiehler, his son, or a designated assistant.

Highbanker Mining Operation Component

Surface Disturbance: Annually 500 square feet. 20 years: 10,000 square feet

This component of the mining operation would be confined to areas that were previously mined and/or directly impacted by past mining activities and includes barren floodplain, Gold Run/Glacier Creek sparsely vegetated floodplain terraces, side tributary draws, and gravel bars. Highbanker operation will be utilized primarily as a prospecting tool, and the applicant has no intention of utilizing the highbanker outside of the immediate streambank environment.



Figure 13. BLM using highbanker (right) on Gold Run Creek in 2012.

Unconsolidated alluvial materials would be excavated by hand using shovels and picks and then placed using hand tools into the dump box of the highbanker using shovels and buckets (Figure 13). The highbanker used is a Honcoop HP17 fed by a 2' Honda Pump. The pump would withdraw water from the nearest creek source. The highbanker system washes the material across

a sluice to separate the gold and concentrates. Washed overburden and tailings are discarded at the base of the sluice. Water from the highbanker will be discharged onto barren ground and/or floodplain and allowed to flow back into the stream channel or seep into the ground. Reclamation would consist of filling in the holes, leveling the tailings and overburden piles to a condition that approximates the pre-mining topography.

Highbanker work on these bench deposits would typically take place intermittently between dredging days, and will not be the primary constraint on the duration of the overall mining operation.

Metal Detector Component

Surface Disturbance: Annually 200 square feet. 20 years: 4000 square feet

The operator proposes to use a metal detector for the purposes of prospecting for gold nuggets and guiding highbanker operations. The detector runs on batteries and uses no fuel. Metal detector activities could occur anywhere on previously disturbed ground within the claims. Where the metal detector locates a signal, exploratory holes typically less than 1 cubic foot will be dug using shovel and pick. After removal of nuggets, or if the metal object causing the signal is not found, material will be reburied into the small excavation, and site restored to its preexisting condition. Metal detector operations result in no wastewater discharge, and will only minimally impact soils/vegetation in the previously disturbed areas to which the activity is limited.

Metal detecting work would typically take place intermittently between dredging days, and will not be the primary constraint on the duration of the overall mining operation.

IV. E. Nature and Extent of Known Deposit

Gold Run, Glacier, Poorman, and Discovery Pup Creeks have all been placer mined for gold since discoveries around 1913. Mining of these claims took place intermittently until after World War II. The northwest running Gold Run creek, along with its tributaries, cuts through a blanket of Quaternary glacial outwash up to a few hundred feet thick and into bedrock of the Nutzotin Mountains sequence. The Nutzotin Mountains sequence is a series of bedded Early Cretaceous to Jurassic deep-ocean sediments accreted onto North America as a part of the Gravina-Nutzotin terrane. The sequence is mostly mudstone and greywacke with localized beds of conglomerate, sandstone, and limestone (Richter et al, 2006).

Original gold mineralization is spatially associated with a diorite intrusion exposed near the headwaters of Big Eldorado and Little Eldorado creeks. Placer gold deposition is associated with direct erosion from quartz and polymetallic veins in or surrounding the diorite. The Tertiary-aged bench gravel that caps Gold Hill contributes placer gold, through secondary

erosion, into the surrounding streams. The larger gold-bearing Tertiary unit has been eroded to its present limited extent during the series of successive glaciations which followed its deposition about 15 Ma. By the end of the last glacial period 10,000 years ago, the Gold Run drainage (and other Gold Hill drainages) had been filled with drift material deposited by the glaciers, some of which was likely derived from the auriferous Tertiary gravels (Figure 14).

On the Gold Runs Below and Jay claims, the bedrock is dominated by greywacke and mudstone that are locally hornfelsed near several small porphyritic dikes. Gold Run Creek likely follows northwest trending faults when not redirected by the glacial deposits or the small intrusives. The bedrock has a fractured texture that creates numerous traps for the dense alluvial gold (Figure 15). The entrenchment of the stream has transported, concentrated, and preserved placer gold on and in the bedrock. Gold Run creek has a narrow floodplain that likely contains gold bearing low bench gravels. Much of the historic and recent placer mining has been in the active channel and low benches. The cobble dominated gravels in the active stream are shallow and therefore amenable to hand mining and suction dredging.

The modern placer deposits have most likely developed since the end of the last glacial advance, mainly as a result of lowered stream base levels. The great mass of glacier ice which covered the entire area has cut the main Chisana valley to its current depth below the apparent Tertiary base level, resulting in a Chisana River valley that is over 2,000 feet lower than the Gold Hill peak elevation. Compounding this was isostatic rebound, or uplift of the earth's surface caused by the removal of the glacier's great weight. Taken together – the deep erosion of the main Chisana Valley and later isostatic rebound of the region – these factors promoted the rapid down-cutting of a number of Gold Hill drainages including Bonanza Creek. This downcutting helped establish the steep gradients and deep canyons observed on parts of the subject claims. It is likely that stream capture and diversion played a role in developing the current drainage pattern, which was at least partially superimposed by the glacial environment. Bedrock is only locally exposed in the channel of Gold Run and Glacier Creeks. No significant bedrock (lode) exposures of gold or other valuable minerals have been found in the lower Gold Run Creek area.

BLM representatives visited Gold Run Creek in 2012 to conduct sampling for a mineral validity examination. As of November, 2015, the examination report has not been completed. Consistent with NPS Procedures Governing Mining Claims (1988), this MPO is therefore accompanied by a Supplemental Claim Information Statement (SCIS) concerning the quantity and quality of the mineral deposit and description of any previous production, pending completion of the formal validity examination.



Figure 14. Glacial outwash deposit near Gold Runs Below claim. Photo courtesy John Hoppe / BLM.



Figure 15. Interbedded graywacke and mudstone on Gold Run Creek. Photo courtesy John Hoppe / BLM.

IV. F. Reclamation Plan

Reclamation is proposed as an ongoing process during all phases of the mining operation, as described in section IV.D. The suction dredge would return processed gravel directly to the stream as it exits the sluice. These would be leveled to approximate grade at the end of each mining day, and at the end of each summer field season the operator would level out any remaining tailings piles. There is no plan to replace topsoil in previously disturbed, barren and/or and sparsely vegetated areas that are mined.

Any dams used to enhance water depth for dredge operations would be removed, including any impermeable boundaries, and the dam sites re-contoured to approximate the original grade/topography, typically at the end of each day but in all cases at the end of each mining season. Any temporary holes or overburden stockpiles resulting from highbanker mining or excavation associated with use of the metal detector would be back-filled and/or leveled to approximate the original grade/topography. Historic dams, impoundments, and rock piles will be left in place as part of the cultural landscape.

At the end of each mining season, all landscapes impacted by suction dredge, high banker and metal detector operations will be returned to the conditions that existed prior to that year's mining activities. All non-combustible waste will be transported from the site. No food items will be left on site unless stored in metal, bearproof containers. If fuel is to be stored on site, it will be stored in secondary containment in bearproof containers.

Final reclamation at the end of approved mining operations shall consist of removing all equipment and supplies transported to the site to support authorized mining activity and removing and disposing of all garbage, refuse, and waste transported to the claims in support of authorized mining activity. Removed items shall include tent platforms, tents, and all other modern and temporary mining activity support structures. The NPS will be notified at the cessation of authorized mining activities so that an inspection can be made.

IV. G. Compliance with other regulations

The decision by the National Park Service to approve or not approve a proposed mining plan of operations on the Gold Runs Below placer claims is classified as a federal action. The issuance of a Special Use Permit for continuing operations is contingent upon review of the operator's annual report, the possession of current required permits from other federal and state agencies (i.e. Alaska Department of Environmental Conservation, Army Corps of Engineers, Alaska Department of Fish and Game), and the NPS monitoring data showing that no significant or cumulative impacts occurred. Approval to conduct mining is contingent upon compliance with all applicable State of Alaska and federal statutes and regulations.

Any change in mining plans must be submitted in writing to the park Superintendent or their delegate a year prior to changing operations. NPS personnel have access to the claims in accordance with 36 CFR 9.10 (h). Monitoring of the operation for compliance with the plan of operations and impacts to the environment are conducted by the NPS.

The applicant shall submit an annual report to the Superintendent within 60 days after the cessation of operations each year. The annual report is used in conjunction with information gathered by the NPS during monitoring and compliance investigations to determine any incremental or cumulative impacts caused by the operation. The annual report shall include, at a minimum, the following information:

1. Beginning of season arrival date on claims.
2. End of season departure date from claims.
3. Mining operations startup date.
4. Total number of operators and number of helpers who mined/ explored during the season
5. Number of days dredging was conducted.
6. Number of days exploration was conducted.
7. Claims on which dredging operations were conducted.
8. Claims on which exploration was conducted
9. Volume (cubic yardage) of material mined.
10. Volume processed by dredge.
11. Volume of oversized material moved by hand.
12. Total linear footage of stream bed worked.
13. Total surface area (square yardage) of stream bed disturbed.
14. Average number of hours processing material daily.
15. Estimated rate of water usage (gpm) while dredging.
16. Number of dams constructed.
 - lengths of dams
 - heights of dams
 - volume of material used in dams
17. Reclamation completed in previously disturbed, un-vegetated areas. Equipment removed from site.

18. Support facilities maintenance/construction conducted.
19. Volume of fuel stored on claim during the season.
20. Volume and location of fuel stored on claim over the winter.
21. Map showing locations of areas dredged for mine production and exploration.
22. Cultural resources found 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.
23. Any incidents with Wildlife (such as bears breaking into camp).
24. Operational changes to the approved plan of operations which occurred and may need to be considered as alterations to the plan of operations.
25. Future mining and exploration plans.
26. Copy of any reports filed with other agencies (e.g. EPA turbidity reports, ACE, etc.) as part of their permitting requirements.
27. Number of access trips taken by three and four- wheel ATV on each trail segment.
28. Condition of and/or problems with the access route.
29. Mitigation performed on access route.

IV. H. Environmental Report

The area to be mined by activities authorized under this plan are areas that were previously disturbed during mining activities in the area from 1913 to the present. The proposed operations will be confined to existing disturbances. During mining, any cultural remnants that are encountered will be temporarily moved, and when annual operations are complete, each cultural remnant will be replaced at or near where it was found.

Included in the Appendix is a summary of the Final Environmental Impact Statement (EIS) for the Wrangell St. Elias National Park and Preserve; the Affected Environment Section of the EIS for the Park Environmental and for the Chisana Study Area, and the Record of Decision resulting from the EIS. This report describes the affected environment for this mining plan.

For a complete history of mining in the Chisana District, including a summary of cultural resources in the area, refer to the National Park Service Alaska Field Area Resources Report NPS/AFARCR/CRR-96/29; A History of the Chisana Mining District, Alaska 1980-1990.

IV. I. Relationship to NPS Planning

The National Parks Service has prepared multiple mining environmental assessments (EA) related to proposed mining in the Chisana – Gold Hill Area. These environmental assessments analyzed effects on the environment and are listed below. The most important is the 1990 WRST Cumulative Impacts of Mining EIS, which explicitly considers the relationship of individual

mining plans, like this one, to broader and cumulative impacts of other activities. This and other pertinent planning documents from nearby claims are listed below.

- 1988 Moody Bonanza Claims 4-6 5yr Mining Operations EA
- 1990 WRST Cumulative Impacts of Mining EIS
- 1992-1997 Fales Big Eldorado Creek Mining Operations EA
- 1994 Supplement to Fales Big Eldorado Creek Mining Operations EA
- 1995-2000 Moody Bonanza Claims 1-6 5yr Mining Operations EA
- 2001 Fales Big Eldorado Claims Mining Operations EA
- 2001-2005 Moody Bonanza Creek Mining Plan of Operations Supplement: Regional Director's Analysis for Wrangell St. Elias National Park and Preserve and Moody Bonanza Nos 1-6 Mining Operation Extension CATEx
- 2007-2011 Moody Bonanza Creek Mining Plan of Operations 5-year extension: Regional Director's Analysis for Wrangell St. Elias National Park and Preserve and Moody Bonanza Nos 1-6 Mining Operation Extension CATEx
- 2012-2014 Chisana Mining LLC Operation Bonanza 1-6 Extension by SUP
- 2013 Lamal Shamrock Group Mining Plan of Operations EA

IV. J. Additional Information

Supplemental Claim Information Statement: See page 30.

Supplemental Claim Information Statement
in support of
Gold Run 10-year Mining Plan of Operations
Prepared by Michael Loso
Physical Scientist
Wrangell-St. Elias National Park and Preserve
February 1, 2016

Background:

NPS regulations at 36 CFR §9A contain different procedures for determining validity of unpatented claims for claims located on lands that were added to the National Park System in Alaska in 1978 by Presidential Proclamation and in 1980 by ANILCA. The National Park Service policy applicable to units outside Alaska is to conduct a validity examination of any unpatented claim for which operations are proposed. The addition of vast new areas of lands to the National Park System in Alaska, many with existing mining claims, rendered this standard difficult to achieve without causing substantial delays in the plan review process.

The NPS promulgated an emergency rule on February 27, 1979 (44 FR 11068) that amended the regulations at 36 CFR §9A and suspends in Alaska the requirement that the NPS conduct a validity examination prior to considering a proposed plan of operations. This exemption differs from the standard by which the NPS normally governs claims in the National Park System.

The procedures for administering this exemption are contained within "NPS Procedures Governing Mining Claims", prepared by the National Park Service Land Resources Division in November 1988.

Specific Guidance:

Although NPS policy and the 36 CFR §9A regulations generally prohibit approval of a proposed plan of operations for claims which have not been determined to be valid, the emergency rulemaking in 1979 established a procedure by which operators in Alaska may file a "Supplemental Claim Information Statement" (SCIS) concerning the quantity and quality of the mineral deposit and description of any previous production, *pending* a formal validity examination.

According to the notice accompanying the emergency rulemaking, the purpose of the SCIS is to assist the NPS to make a "preliminary determination ... of the claimant's apparent eligibility" to conduct the proposed operations.

The NPS preliminary determination of eligibility concerns whether the claim would

likely be found valid if a validity examination were conducted. Thus, this preliminary determination must consider such factors as whether the claim would likely pass the prudent man and the marketability test, both at the present time and at the time the lands in the claim were withdrawn.

When a preliminary review of the Supplemental Claim Information Statement indicates that the claimant is eligible, the rest of the proposed plan of operations will be reviewed in accordance with the regulations.” (44 FR 11068) The NPS continues processing the proposed plan. When a validity determination is not completed prior to plan approval, but there is a sufficient showing of probable validity to approve the plan, a diligent attempt, considering manpower and resources, will be made to pursue a validity examination as soon as possible.

When the NPS' preliminary determination of eligibility on a claim indicates probable validity, the NPS may approve operations on the claim in Alaska units prior to the results of the validity examination. Of course, the proposed plan of operations must satisfy all other requirements of the 36 CFR §9A regulations. If the NPS mineral examination or Mineral Report concludes the claim is invalid the NPS will immediately initiate contest and reject the proposed plan or revoke any approved plan of operations for that claim. In the latter case, all active operations must halt immediately (See 44 FR 11068).

No further guidance is provided for the specific format or content of the Supplementary Claim Information Statement. The November 1988 procedures document specifies that questions regarding these regulations or policies should contact the WASO Land Resources Division in Denver Colorado.

Supplementary Claim Information Statement:

This memo is written to serve as a Supplementary Claim Information Statement for the Gold Run claim group (consisting of the unpatented Gold Runs Below, Jay #2, and Jay #3 claims) in the Gold Hill area of Wrangell-St. Elias National Park and Preserve. The goal, consistent with the procedures described above, is to assist the National Park Service regional director in making a preliminary determination of the claimant, Vern Fiehler's, eligibility to conduct proposed operations on his claims.

Representatives from BLM and NPS visited the Gold Run claim group in summer 2012 for the purpose of testing the validity of the claims. They conducted placer mining tests there, collected gold samples, examined the operation, and concluded the field season with sufficient information to determine the validity of the claims. Since then, BLM's completion of the contracted task of writing a Validity Exam report has been hampered by personnel shortages, and NPS review of Vern Fiehler's MPO has been put on hold. On November 24, 2015, NPS representatives Michael Loso (WRST), Linda Stromquist

(AKRO), and Guy Adema (AKRO) met with BLM representatives John Hoppe and Joe Galluzzi at the Alaska Regional Office in downtown Anchorage. One purpose of this meeting was to discuss BLM progress and timeline for the Gold Run Validity Exam. At that time, John confirmed that the Validity Exam report is on his work calendar and will be completed sometime in the next year, with a best case scenario of completion May 2016. The remaining work is primarily to calculate resource volumes and expected costs and revenues.

John states that suction dredge samples collected in the 2012 mineral examination of the Gold Run Creek claims were similar in grade to samples collected on Little Eldorado Creek in 2010. The respective samples in the Little Eldorado Creek examination were evaluated and used to establish a discovery on those claims. The evaluation of the samples was documented in a mineral report that was signed and reviewed in 2014. In the event that any claim has a discovery but contains 10-acre parcels that are nonmineral in character (invalid parcels), John confirmed that claims could be reduced in size to 10 acres. Amendments could shrink the claims to only the active stream areas and the work proposed in the present MPO (placer mining work on previously disturbed ground) could proceed without interruption.

On the basis of these facts and conversations, and with no information available to contradict them, I conclude that the claims were likely valid at the time they were withdrawn, that a BLM-conducted Validity Exam is pending and due within the next year, and that the claims will likely be found valid when that exam is complete. The previously-described possibility that portions of the three claims could be determined to be half-valid will not affect the applicant's eligibility to conduct the proposed operations. I therefore recommend that the Regional Director treat the applicant as eligible to conduct the operations proposed in his Mining Plan of Operations, and consider approval of that MPO pending completion of the Validity Exam.