Annual report for Full Metal Minerals Inc. on the Moore Creek prospect, Alaska.

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2. Summary

2006 was the first year of a Full Metal Minerals exploration program at Moore Creek. Claims were staked in February and a modest, one month reconnaissance exploration program started in June.

The objective was to assess the property as part of an evaluation of Kuskokwim Basin gold mineralization. Moore Creek contains a historic placer gold deposit that is still being mined, albeit at a small scale, and has several known prospects on the claim block. However there has never been a systematic evaluation of the property, nor to the author's knowledge has there ever been any drilling on the property.

Work consisted of high density reconnaissance soil sampling and prospecting in an approximate 3 mile radius from the base camp utilizing four wheeler access routes. The principal focus was the Broken Shovel prospect and ridge areas west of the camp. A helicopter was mobilized to the property for one week at the end of the month, allowing the remaining drainages to be sampled. Detailed mapping and sampling of trenches at the Broken Shovel prospect was completed. A suite of gold grains from placer workings were collected from six areas in Moore Creek to test whether the individual pups contained distinct gold grain compositions.

The results of this work show that the Moore Creek claim block has several areas of either anomalous soil or stream geochemistry deserving of follow-up work. The gold grain composition study showed extreme trace element compositions suggesting mineralization at Moore Creek has similarities to other deposits in the Kuskokwim region, notably the giant Donlin Creek deposit. A single apatite fission track analysis was completed to constrain the uplift history and reveals that Moore Creek is an old placer deposit (>47 Ma) and that likely exposure levels at the surface are still quite high in a potential mineralizing system.

Follow-up work at Moore Creek is recommended. The highest priority target remains the Broken Shovel area, where deeper trenching or test-pits at and below Broken Shovel are required. Two other anomalies warrant further hand dug soil sampling and prospecting. All follow-up work could be accomplished without helicopter support if need be, although additional heavy equipment (ideally a tracked excavator) for the trenching at Broken Shovel would greatly advance the project.

3. Introduction

The Moore Creek property consists of 225 claims held collectively by FMM and Moore Creek LLC. This report was prepared for both parties and presents the results of field work performed in 2006 on the property and in the surrounding area. The purpose of the report is to provide a summary of work performed, and a presentation and discussion of results with recommendations for further work.
The source of information for this report is primarily the results of this year's work and the observations of the author, however it has been augmented by historical data provided by the claim owners on the placer mining and ownership history.

A small program was started at Moore Creek in 2006 with a total of approximately 81 man-days spent on the project. Personnel consisted of Nicholas Van Wyck, Ben Siwiec and Jet Tasker. Lodging and food was provided by Moore Creek LLC at their camp. Transportation support was primarily on 4 wheelers rented from the property owners which allowed access to approximately one quarter of the property. A helicopter was mobilized to Moore Creek on June 27 and departed on July 4th to assist in sampling the rest of the claim block area.

4. Property Description and Location

Moore Creek is an historic producing gold placer property located approximately 86 km west of McGrath, near the headwaters of Moore Creek. The project area is entirely contained within the Iditarod C-3 quadrangle. Moore Creek Mining LLC (MCM) owns 16 160 acre (1/4 section) claims and four 40 acre claims over the placer property, to which was added in early 2006, an additional 205 1/4 section claims by FMM. The total area under claim totals 35,520 acres. The location of the claims is shown in Figure 1. The claims were staked on open State lands in 2006 using standard industry practices and the property boundaries are based on registered mining claims provided by the State of Alaska. The surrounding property is all State of Alaska conveyed land.

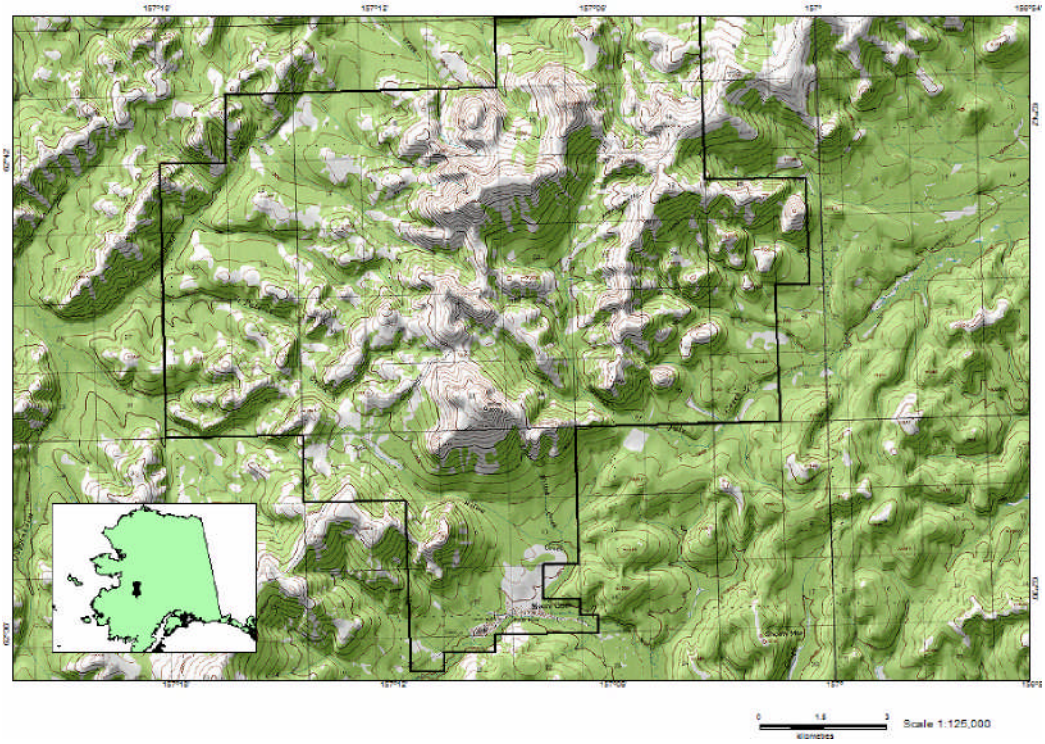


Figure 1 :Location of Moore Creek property claim outline.

Full Metal has an Option to acquire a 100% interest in the Property by incurring a total of US$1,000,000 in exploration expenditures over four years (US$50,000 first year), annual escalating cash payments to MCM from US$25,000 in the first year to $50,000 per year until 2016, with a one time cash payment of $US650,000 upon entry into a Mining Lease after Feb 1, 2011. If Full Metal exercises the Option, it agrees to pay MCM a 1.5% NSR on all commercial mineral production.

Mineral rights in this part of Alaska are administered by the State of Alaska. Annual mining claim rents vary according to claim size and age and are due September 1 and payable by November 30 of each year for State mining claims. For all 1/4 section claims the annual rental amount is $100/year for the first five years, $220/year for the second five years and $520/year thereafter. Total 2006 rent paid on the Moore Creek block of claims was $22,200. Claim rentals are paid in addition to annual work commitment on State mining claims. Total annual work commitment at Moore Creek ($400 per 160 acre claim unit) is approximately $88,800. Amounts spent in excess of these levels are bankable on State mining claims for up to four years into the future. The Moore Creek claims are in good standing until September 1, 2006 at which point annual rents of $22,200 become due and payable for the period September 1, 2006 through September 1, 2007. All State of Alaska mining claims are subject to a production royalty of 3% of net income from a mining operation beginning 3.5 years after commencement of commercial production. None of the claims covering the project has been surveyed by a registered land or mineral surveyor and there are no State or federal laws or regulations requiring such surveying. Additional permits for future work will be acquired from the Alaska Department of Natural Resources and other state and federal regulatory agencies on an as-needed basis.

There are no known environmental liabilities associated with the property. The property has a long history of placer mining dating from 1930's onwards. As a result there is the usual collection of old mining equipment, placer tailings, empty fuel barrels and abandoned cabins typical of dozens of other sites in Alaska.

5. Accessibility, Climate, Local Resources, Infrastructure and Physiography

Moore Creek is located in the Innoko Mining District in West Central Alaska. Vegetation covers about 95% of the property, consisting of black spruce, alder and willow brush, mosses, lichens, sedges and grasses. The property is typified by moderate to steep relief, with elevation ranging from 274 m (above sea level), to 920 m at local hilltops.

The property is located within a sub-arctic environment, experiencing short, mild summers and long, frigid winters and occurs within a zone of intermittent permafrost.

The operating season for placer mining and lode mineral exploration typically lasts from late May to late September.

Access to the area is by commercial fixed-wing aircraft to McGrath and local bush taxi to the Moore Creek airstrip. The closest large airstrip is at Flat, which can support C- 130 sized aircraft, located 24 miles southwest of Moore Creek. Moore Creek itself has an expanding airstrip that at the start of 2006 had approximately 1700 foot usable runway, but by the end of the year was approaching 3,000 foot. It is expected that the runway will in the future be expanded again to accommodate DC-4 and DC-6 sized aircraft.

Buildings and infrastructure are limited at present at Moore Creek. Historical cabins from the 1950's(?) are still standing with newer additions and temporary cook tents. Very limited permanent fuel storage facilities exist. There is a working D- 9 dozer and miscellaneous four wheelers for local transportation.

Limited lode mining has occurred in the area, the most significant being the Nixon Fork Mine located 140 km to the northeast, which has operated intermittently since the 1920's and has just reopened. Novagold/Barrick's Donlin Creek deposit, located 90 km to the southwest, is currently undergoing a feasibility study. If commercial production is achieved at Donlin Creek, supporting infrastructure would likely have a positive effect on future mining operations at Moore Creek.

Rock exposure is limited to isolated outcrops. Rubble crop, talus cover, and vegetation are extensive. In most upland areas, a relatively thin overburden permits rapid determination of representative sub-surface lithologies using soil pits less than 3 feet deep. On lower slopes, increased depth and persistence of frozen soils (especially on north facing slopes) makes this more difficult.

6. Geological Setting

The regional geology of the Iditarod quadrangle has been compiled at 1:250,000-scale mineral assessment publication by the Federal geological survey (Miller and others, 2005). The most detailed published geologic map covering the property is the 1:63,360-scale Iditarod C3 quadrangle map (Bundtzen and others, 1988) produced by the Alaska State Geological Survey and available in an electronic format via the internet. In the geological descriptions below almost all of the details are derived from this geologic map and report. Field work in 2006 indicate that this map is an excellent reference for the local geology.

Moore Creek is located in the central Kuskokwim mineral belt, a regional scale northeast-trending belt of precious metal-enriched polymetallic deposits associated with Late Cretaceous-early Tertiary igneous complexes. Identified gold resources in the belt include Donlin Creek (23 M oz), and Vinasale Mountain (1 M oz), both hosted in Late Cretaceous-early Tertiary igneous complexes. Regional geologic mapping places Moore Creek on the Iditarod-Nixon Fork Fault – a major dextral strike-slip structure that offsets the basin to the northeast. Significant placer gold deposits occur at Flat (Otter Creek) to the 24 miles to the southwest and Ganes Creek 37 miles to the northeast. Further along strike of the Iditarod-Nixon Fork Fault is the Nixon Fork gold mine, which reopened in 2006 to develop a resource of approximately 200,000 oz of Au.

The Kuskokwim basin is a flysch-filled successor basin formed on top of crust recently accreted to Alaska during the early Mesozoic. The Kuskokwim shares many similarities with the thick flysch basins now exposed in the northern Talkeetna Mountains and extending down the current axis of the Alaska Range to the Iliamna region. The Kuskokwim basin was filled during Middle to Late Cretaceous times. In certain parts of the basin, such as at Moore Creek, Kuskokwim Group sediments are overlain conformably by volcanic rocks. Following this and likely contemporaneous with basin inversion, folding and faulting, mafic to felsic Late Cretaceous and Tertiary stocks, dikes and dike swarms were emplaced.

On the claim block the oldest unit exposed some 5 mile to the northwest of Moore Creek are small exposures of Paleozoic(?) clastic and calcareous basement locally brought up along the fault strands. Similar exposures are scattered along the trace of the Iditarod-Nixon Fork Fault elsewhere.

There are few stratigraphic markers in the Kuskokwim Group, but exposures in the study area south of the Iditarod-Nixon Fork Fault, the Kuskokwim Group sediments are perhaps older than those north of the fault. This is suggested by three observations; first regional measurements by the USGS (Miller and others, 2005) show higher vitrinite reflectance data approximately correlative with maximum thermal temperatures on the order of 250 to 350° C south of the fault. Secondly, there are no exposures of volcanic rocks known to dominate the upper parts of the section south of the fault. Finally, fission track data collected during this investigation indicate uplift has occurred along the

northern side of the fault. Good exposures of Kuskokwim sediments are exposed in camp at Moore Creek beneath the placer pay streaks.

Overlying the Kuskokwim in apparent conformable contact is a section of felsic and volcanic rocks. These are considered correlative with the base of the Beaver Mountain volcano-plutonic complex, which is well exposed to the northeast. These are one of several volcanic centers developed towards the end of Kuskokwim sedimentation throughout the basin. Compositionally they are calc-alkalic and have been related to north-dipping subduction beneath the Kuskokwim basin (Moll-Stalcup, 1994). A younger intrusive suite of monzonite is also present at Moore Creek considered correlative with a suite of similar intrusive rocks present throughout the Kuskokwim basin and associated with gold mineralization. Near the Broken Shovel prospect, one of these intrusive has been dated by K-Ar methods on biotite at 69.8±2.1 Ma, which is a typical age reported elsewhere for this intrusive suite.

There are however some complications with the extant geochronology data. One published whole rock K-Ar age for fresh olivine augite basalt mapped as unit TKvm (part of the volcanic section at the top of the Kuskokwim Group) returns an anomalously young age of 58.1±1.9 Ma. This unit is mapped as being intruded by the Broken Shovel monzonite described above.

6.1. Fission Track data

A single 1 kg sample of the Broken Shovel monzonite was collected from a trench exposure and submitted for apatite fission track analysis. The results are included as appendix A. The results are quite unequivocal and significant. Fission track data is useful to constrain the timing of uplift or cooling. The fission tracks form at a constant rate due to the decay of uranium, such that the density of tracks is a function of age. The length of tracks provide a control on the rate of uplift. In apatite (the mineral utilized in this study) at temperatures greater than 100° C, the tracks are annealed from the crystal lattice. As soon as the sample passes cools below 100° C, the tracks remain in the apatite crystal lattice. In the sample from the Broken Shovel the average age of all tracks is measured to be 52.7±2.5 Ma – not a geologically significant age, but is a minimum age and in accord with the K-Ar age of at 69.8±2.1 Ma. Of importance are the distributions of track lengths which all cluster at 15.02±0.09 µm. If the sample had cooled slowly, then there would be a wide distribution of track lengths, which is not the case. The only explanation for these data are a rapid cooling i.e. uplift. The analyst who collected and modeled the data indicate that the uplift must have been completed by 47 Ma. Because the gold in Moore Creek placer is likely derived form the erosion associated with this uplift, this indicates that the Moore Creek placer formed at this time too.

The amount of uplift can only be constrained if the depth of emplacement is known independently. At Moore Creek the emplacement depth of the Broken Shovel monzonite is unknown, but the association with volcanic rocks, and the degree of metamorphism in the Kuskokwim Group sediments suggests that the monzonite was not intruded at great depths.

7. Mineralization

The most obvious indications of mineralization at Moore Creek is the placer gold deposit that to date has produced over 50,000 oz of gold. However known lode sources responsible for this mineralization have not yet been identified, although several possible prospects exist within and adjacent to the claim block.

Another interesting feature about Moore Creek is the morphology and composition of the gold nuggets recovered from the placer. Although not of the size of nuggets produced from the nearby Ganes Creek placer, Moore Creek consistently produces nuggets on the size of one to five ounces. The shapes of these nuggets are quite distinctive, often with a thin silicified country rock margins enclosing a gold vein core. These have been described as "Oreo cookie" nuggets. The shapes of these nuggets and occasionally the fine crystalline habit of gold within them suggest very little mechanical abrasion and transportation.

Figure 2: Moore Creek nuggets.

The claim block encompasses seven prospects identified on the USGS maintained Alaska Resource Data File (ARDF) and six placer prospects. The lode prospects are all described as variants of polymetallic veins. Geochemically the prospects are anomalous in mercury, silver and gold. The typical alteration is chalcedonic quartz, although the Broken Shovel contains an earlier tourmaline alteration event. All of the lode prospects are hosted in volcanic and plutonic rocks.

Exploration

During 2006 exploration at Moore Creek consisted of soil sampling, gold composition analysis and a property-wide stream sediment sampling program. 350 soil samples, 164 stream silts, 30 panned con and 13 rock samples were collected and assayed. These results have been combined with public data sampling by the BLM and are included with this report. During the field work evidence of historic exploration was found. Lath marking apparent soil sampling lines was found at the Broken Shovel prospect. Possibly this data was collected by Placer Dome during the late 1990's. The results of this work is at present unknown.

The analytical protocol used for this field season was:

Soils and stream silt prep (Chemex prep code Prep-41)
Samples are to be dried and sieved through a –80 mesh.
Split the –80 fraction to 250 g pulp for analysis.

Rock Prep (Chemex code Prep-31)
Fine crush entire sample, split 250 g and pulverize to greater 85% passing 75 micron screen.

Pan con prep (Chemex code PUL-31)
Whole sample is to be dried and pulverized to pass 75 micron sieve

Rocks, pan-cons, soils and stream silts to be processed by Chemex codes:
Au-AA23 (30 g charge Fire assay with AA finish – 0.005 ppm min detection limit)
ME-MS41 (50 elements aqua regia digestion with ICP-MS and AES detection)
XRF05 (XRF on pressed pellet for Ba, Sn and W)

In general the quality of the geochemistry data is average. The crew supporting the work was inexperienced and multiple samples contained insufficient material for proper analysis. Areas around the Broken Shovel had frozen soil, which also impeded sampling. The Moore Creek area is typical of the Kuskokwim area with thin soils on the ridge areas, with thicker alder, willow and spruce covered slopes. Valleys can have frozen muck and alluvial cover. However as a rule, good soil samples can be obtained on slopes and ridgelines with a shovel or an auger. Flatter areas tend to develop muck that is difficult to penetrate with hand tools. Approximately 30% of the claim block would fall into this category.

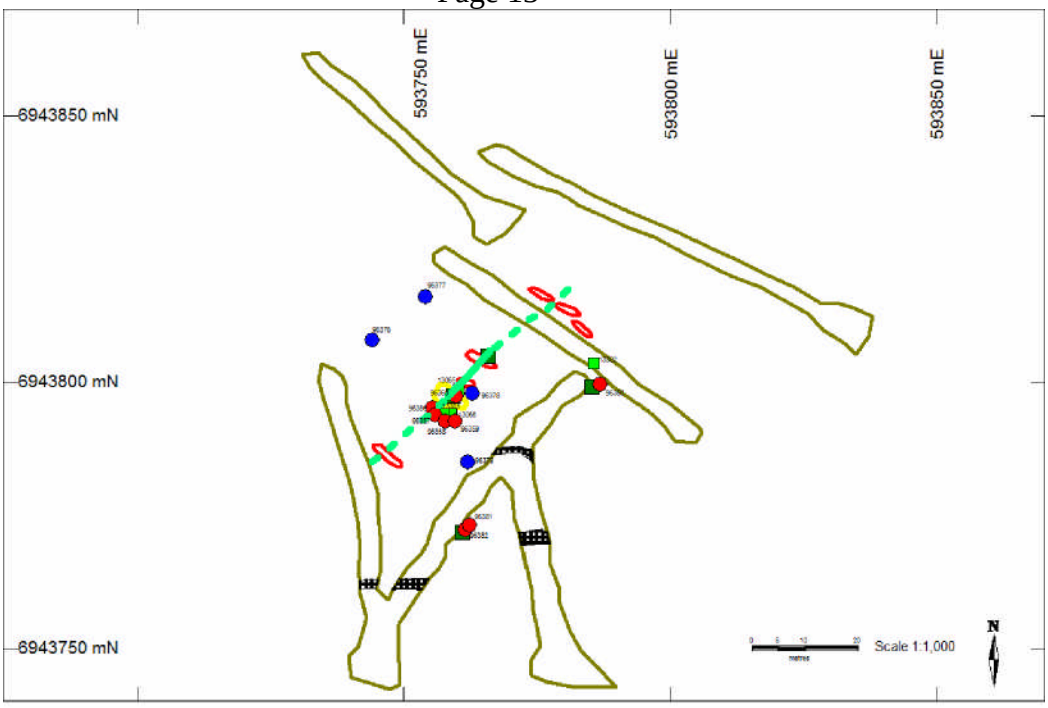
The dataset does show distinct geochemical trends. Gold is anomalous in multiple soil samples over and around the Broken Shovel prospect. Mercury is very anomalous in the volcanic rock-cored ridge northwest of Moore Creek. This is an area with sporadic

chalcedonic altered basalts but for the most part volcanic rocks are fresh and unaltered. However multiple soil samples along the ridge contain with Hg > 3 ppm. For comparison of the over 3,000 soil samples at Ganes Creek, none had Hg values greater than 2 ppm. Silver shows a similar trend to gold but is more widespread.

Six sample sites were hand panned for gold grains for gold compositional analysis. These grains were analyzed by the UAF electron microprobe for Au, Ag and Hg ratios. The objective of this project was to document whether different drainages contain distinct gold compositions and so to assist in locating possible sources (Van Wyck and Newberry, 2006; Appendix A). The gold compositions at Moore Creek were shown to have the highest documented Hg contents in Au anywhere in the world, with Hg values (as a solid solution within the gold lattice) as high as 17 wt %. The compositional variations of gold in the feeder pups draining into Moore Creek show distinct differences between Upper Moore Creek, Nevada Gulch (draining the Broken Shovel prospect) and downstream Moore Creek. The data support a model of local derivation of gold from the foothills north of Moore Creek, with the gold content (silver leaching) decreasing downstream. The local variations suggest distinct high-grade targets in the source area. In general the gold composition data support the soil sampling data that the Broken Shovel prospect remains an area of interest.

7.1. Broken Shovel

The best exposure at any of the lode prospects are the trenches and prospect pits at Broken Shovel. A day was spent mapping these (Figure 3) and carefully picking the trench piles for hand samples. Several of these samples were highly anomalous in Au, Ag and Hg values and are considered the most likely analogs for mineralization. Six samples were sectioned for petrography.



Bulldozed trench outline

Pre-bulldozer prospect pits (hand dug)

Collapsed shaft

soil sample

rock sample

published BLM rock sample results

Broken Shovel vein structure based on float distribution. Dashed where inferred

float of vuggy silica veining +/- scorodite staining

tourmaline alteration

Samplenum	Au_ppm	Ag_ppm	Hg_ppm
96,376	0.086	0.07	0.08
96,377	0.007	0.07	0.07
96,378	0.014	0.06	0.08
96,379	0.022	0.31	0.11
96,382	0.077	17.55	1.28
96,381	0.271	33.7	2.34
96,380	0.693	3.36	1.08
13,066	1.8	514	9.46
13,301	1.305	168	4.37
13,302	0.752	15.6	1.62
13,065	0.238	21.6	1.38
96,356	0.077	12.15	1.47
96,357	0.037	1.98	0.21
96,358	3.84	1,105	24
96,359	0.028	5.85	0.69
96,360	1.06	88.2	5.19

Figure 3: Map of the Broken Shovel prospect.

There are two generations of work visible at Broken Shovel. The first work is a series of half a dozen, small hand-dug prospect pits. Based on the size of the waste material, the main pit must have extended deeper than its current exposure and is labeled on map as a collapsed shaft. These workings define an alignment of 040. Exposed in the wall of the collapsed shaft is exposed a quartz-sulphide vein with the same trend. Presumably this was the objective of the earlier prospecting.
The second generation of work are the bulldozed trenches that appear to be attempts to locate the Broken Shovel vein beyond the hand-dug prospect pits. Although the trenches extend down into fresh bedrock, there is no evidence of the vein in the trenches themselves, although careful picking through the push piles revealed the occasional vein float. Obviously veining is quite rare.

Mineralization recovered from the Broken Shovel appears to be of at least two separate types. An earlier phase is associated with the monzonite itself and appears to be a porphyry-style of mineralization with elevated copper values (e.g. sample 96359, Cu 1.09%) Possibly the tourmaline alteration mapped in the trenches is also associated with this. The second mineralization cross-cuts the Broken Shovel monzonite and is associated with the epithermal style veining exposed in the pit walls and as scattered float pieces in the dozer piles. Geochemically this event is quite distinct from the earlier with high Au, Ag, As, Pb, Sb. Table 1 lists both the public BLM sampling and last years sampling. Locations of the samples are provided in the digital data and on figure 2.

Broken Shovel hand sample and thin section descriptions

96358
hand sample
quartz vein milled sample. Dark clasts in a tan soft matrix. Leached and pock-marked on surface. Scorodite staining.
Thin section
C grained qtz, cut by fine grained cataclastic quartz with abundant shreddy sericite. Clasts monzonite heavily replaced by acicular tourmaline overgrowing igneous blue-green pleiochroic amphibole. These are the dark clasts seen in hand sample.

96382
Thin section
Monzonite cut by tourmaline alteration zone. FeOx staining adjacent to younger qtz- only vein.

96357
hand sample
strongly Feox stained milled quartz vein. K- spar on weathered surface exposures.
Thin section
Occasional qtz-rich domains containing tourmaline alteration. (were these originally monzonite clasts?) Other clasts are c quartz grains (were these earlier quartz veins?).

Matrix is milled coarse to fine grained quartz-rich and oxidized sulphides – after pyrite? Feox staining coats milled grain boundaries throughout matrix but not within the tourmaline altered clasts. An unidentified brown high relief phase, low birefringence associated with weathered sulphides.

96381
C euhedral qtz with granular milled intersertal qtz. Brown opaque alteration phase as above.
In thin section , gray, thin chalcedonic quartz veinlets cut earlier milled quartz veins and are the last event. Sulphides associated with this.

96359
Monzonite with coarse fresh 2nd biotite overprinting amphibole (potassic alteration). C porphyritic plag in f gr matrix qtz and kfs. Rare tourmaline. In hand sample scattered copper carbonate staining on weathered surface.

96356
Earlier amphibole in monzonite extensively overprinted by tourmaline – very spectacular replacement textures. Dark amphibole-tourmaline domains cut by coarse grained quartz veining. Last event is thin chalcedonic qtz veining cutting earlier quartz veins.

Table 1
Broken Shovel rock assays

Sample Number	Au	Ag	As	Bi	Co	Cr	Cu	Hg	Mo	Ni	Pb	Sb	U	Zn	Sn
96382	0.077	18	1120	27	0.7	7	249	1.3	1	3.3	748	223	2.7	108	15
96381	0.271	34	1190	9	0.7	20	325	2.3	0.6	4.2	90.8	80.8	2.2	43	12
96380	0.693	3	190.5	1	0.6	17	142	1.1	1	4.3	54.3	48.8	1.1	89	15
13066	1.800	514	5660	118	1.8	176	1770	9.5	3.5	9.9	8610	2610	11.8	228	51
13301	1.305	168	3650	80	0.9	102	2450	4.4	2.5	7	4930	1325	8.4	261	43
13302	0.752	16	3220	6	3.7	97	459	1.6	1.8	17.9	324	237	3.4	94	12
13065	0.238	22	1155	20	1.1	130	343	1.4	1.5	9.9	1515	183	2.8	80	34
96356	0.077	12	1530	2	1.3	36	607	1.5	2.4	9.3	671	96.7	10.1	371	18
96357	0.037	2	176.5	1	0.7	9	73	0.2	0.4	5.1	64.3	24.7	1.5	19	20
96358	3.840	1105	7740	166	0.4	12	1610	24.0	2.8	1.6	18900	6100	21.5	76	64
96359	0.028	6	222	2	16.7	156	10900	0.7	1.2	72.8	127.5	82.7	6.7	7350	9
96360	1.060	88	9970	115	1.2	14	2850	5.2	0.9	2.8	5870	1220	5	190	20

All units are in ppm.

Soil sampling at Broken Shovel indicated a widespread Au anomaly below the prospect (Figure 4). Whether this is due to down slope dispersal from the Broken Shovel or a series of related mineralized areas or a false anomaly caused by a proto-placer is not known. A modest trenching/test-pit program is recommended to address this question and is described further below.

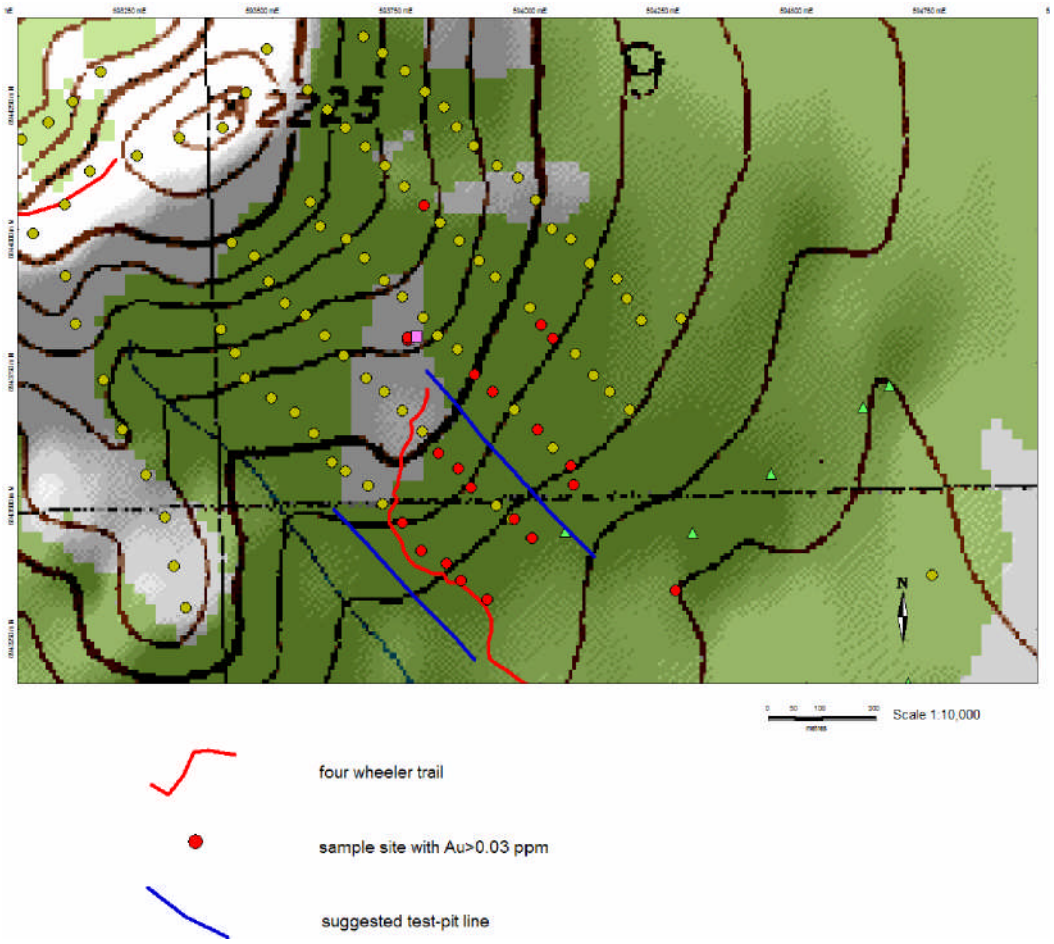


Figure 4: Broken Shovel soil lines and proposed test-pit areas

7.2. Further work

The soil and stream sediment sampling identified 3 areas requiring further follow up work.

Broken Shovel

This prospect is the primary focus for further work on account of the large Au in soil anomaly below the prospect area and the placer gold compositions from Moore Creek that point to derivation from this area.
A map of the soil lines and associated values shows (Figure 4) an increase in gold values down slope from the Broken Shovel area. On possible cause for concern is that the soil sampling is starting to sample the edge of a placer deposit. For this reason further work should use a mechanical excavator to guarantee that sampling comes from the bedrock and not from overlying alluvium. The two test pit lines are suggestions and may be modified by the project geologist. As the lines are laid out they cover approximately 900 m in length and are too long for continuous trenching. A series of carefully dug test pits would work well for the first pass. The important goal will be to get down to bedrock to sample and map that surface. Geologic mapping (Bundtzen and others, 1988) show a fault contact of monzonite and volcanic rocks with Kuskokwim Group rocks through this area. Test-pit mapping should improve the location of this contact, which should be very carefully sampled and mapped.
If the results of test-pitting in the Broken Shovel area are encouraging, this approach could be expanded along strike as needed. For this reason permit applications should be generous in proposed test-pit locations to provide flexibility.

St Patrick's Creek

A single soil sample (96418) returned Au 0.223 ppm and Ag 2 ppm from a red oxidized soil with volcanic float. This was the only anomalous value, but a series of closer spaced soil lines would effectively evaluate this area, with the objective to expand the area with anomalous gold values. This work will have to be done using shovels or augers.

Upper Moose Creek

Stream samples 97913, 97689 and 97693 were anomalous in gold and broadly drained the Upper Moose Creek area. Furthermore ground traverses on the ridges to the south were never accomplished in 2006 by an experienced geologist. The ARDF database lists two prospects in these areas (ID83 and ID89) that may be associated with the anomalous stream values.
Limited follow up is suggested by the data, but a ridge traverse from section 15 northeast to hill 2980, and traverses downhill from section 12 to the northwest should be performed.

8. Interpretation and conclusions

A good start was made on evaluating the Moore Creek property in 2006. Stream sampling over the property returned. The best prospect on the property at present is the Broken Shovel area, where soil sampling indicates anomalous gold down slope of the prospect. Rock chip sampling at the prospect and mapping suggests a likely deposit type responsible for the anomalous gold.

The placer deposit at Moore has produced over 50,000 ounces of gold which is one of the strongest arguments for gold mineralization in the area. Furthermore the distinctive "Oreo cookie" shape of the nuggets suggest local derivation. The measurements of gold composition (Appendix A) show that gold from Moore Creek has exceptionally high natural contents of Hg with the gold – up to 16 weight percent. One of the proposed explanations for the high Hg-content is the low availability of sulfur in the system. One often called-upon mechanism for gold transportation involves some sulfur-complexing agent which results in gold deposition typically within a sulphide phase or a sulphide-rich alteration system. Moore Creek is an extreme end-member low sulphidation system where gold veins are not associated with wide alteration halos, mineralizing fluids are focused into narrow vein structures, and where gold precipitates primarily as native gold.

The consequence of these observations suggest the likely target for gold mineralization are narrow, extremely high-grade gold veins. Based on the mapping done at Broken Shovel the likely orientation of these veins are northeasterly, sub parallel to the trace of the Iditarod Nixon Fork Fault. Because almost all of the lode prospects are hosted in volcanic and plutonic host rocks there may be a competency control exerted by these lithologies such that during deformation only these rigid units supported dilatent structures.

While there is no data available at present to calculate the amount of uplift and erosion that has occurred above the Broken Shovel monzonite, the fission track data does indicate that this uplift occurred before 47 Ma, which implies the age of the Moore Creek placer deposit is quite old. Furthermore samples containing high gold values recovered at the surface at Broken Shovel (for example, sample 96358) posses epithermal-style mineralization. This suggests that the uplift and erosion of material that exposed the Broken Shovel monzonite likely produced the Moore Creek placer. Furthermore it is still possible that mineralization may continue at depth beneath that exposed at the surface, and that only the upper portion of a gold mineralizing system was uplifted and eroded.

9. Recommendations

There has been sufficient encouragement from the first year of exploration at Moore Creek to warrant further follow up work. On account of the occasional frozen soil, the thick overburden and lack of outcrop a modest program of trenching is recommended below the Broken Shovel area. Objectives are to test bedrock for the presence of high-grade vein structures similar to those observed cutting the Broken Shovel. Care should be taken to evaluate whether gold values are only located in colluvial and alluvial overburden or whether values are coming from local bedrock sources. This program will require the use of heavy equipment and an operator provided by Moore Creek LLC. Trenches should be oriented as much as possible NW-SE to maximize the chance of crossing the likely orientation of high-grade veins. Trench maps and detailed sampling along bedrock exposures will help refine exploration models in subsequent years.

Concurrently follow up of the anomalous samples collected in the 2006 field season should be performed. This work should consist of expanded soil sampling, and rock chip float mapping. Two areas are indicated; upper St. Patrick's Creek and the ridges above Moose Creek. All of this work could be accomplished without helicopter support, but will necessitate some long days hiking in and out to the more remote areas. If a helicopter is available, further examination of local prospects in the ARDF compilation should be performed.

In 2006, Marti Miller and Rich Goldfarb (USGS) planned to visit the prospect as part of their regional reconnaissance program. Due to planning difficulties this was postponed until the next year. Attempts should be made to reestablish contacts with the USGS to try to reschedule them for a visit. Ideally discussions with them should include an overview of local prospects as well as a detailed examination of the Moore Creek property. One of the items to discuss with the USGS are improvements in the geochronology/stratigraphy of the volcanic rocks. One problem is the young K-Ar date of 58.1±1.9 Ma from olivine basalt just 4 km southwest of the claim block (sample 82BT277, Bundtzen and others, 1988).

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11. Appendix A (AMA Abstract)

Gold composition analysis of the Moore Creek placer deposit reveal large (>15 wt%) Hg content in gold; insights as to source and origin.

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Full Metal Minerals started a modest exploration program in 2006 in the Moore Creek area. Work consisted of stream and soil sampling, limited rock chip sampling and mapping around known prospects. In addition, a suite of panned gold flake samples were collected from several drainages feeding the main Moore Creek placer area. These samples were mounted into epoxy plugs and microprobed for their Au, Ag and Hg values for the purpose of addressing whether the gold placer deposit at Moore Creek was of a local or distal origin and to help focus target selection.

Moore Creek is an historic placer deposit located in the Iditarod 1:250,000 quadrangle, approximately 90 km southwest of McGrath and 47 km northeast of Flat. Historic gold production from 1911 to 1986 was estimated at 53,990 oz Au and 12,520 oz Ag (Bundtzen and others, 2003). Pay is from gravels that lie on weakly metamorphosed Kuskokwim Group siltstones and sandstones. Cobbles within the placer gravels are composed of basalt, the closest exposures of which are located 2.5 km to the northwest. However detailed soil sampling and prospecting has yet to find surface exposures of gold mineralization associated with these volcanic rocks.

Panned gold flake samples were collected from five sites, which correspond to samples from Upper Moore Creek (A), Six Pup (B), Nevada Gulch (C), Moore Creek (D) and Lower Moore Creek (E) below the Willow Creek confluence. Selected results are tabulated below. Probing of two Moore Creek gold nuggets has confirmed Hg contents in gold with values as high as 5.5 wt% Hg.

Table 1: Summary of Au and Hg composition values of detrital gold grains from Moore Creek.

Site	Size (microns)	Shape	# grains	Fineness (max)	Fineness (mean)	Fineness (min)	Hg wt% (max)	Hg wt% (mean)	Hg wt% (min)
A	100-400	s-r	15	762	749	727	15	5.5	1.2
B	200	s-a	13	766	748	705	9.2	3.9	0.8
C	100-300	s-a	15	764	737	681	7.3	4	1.9
D	300-500	R	15	767	733	650	17	6.6	0.6
E	200	R, f	20	844	764	721	9.2	3.4	0.5

Shape: s-r (sub-rounded), s-a (sub-angular), r (rounded), f (flattened)

Fineness is the Au fineness expressed as (wt% Au/(wt% Au + wt% Ag))*1000.

In that there are differences between the sample sites in both shape and composition, the data conform to a model indicating that the gold at Moore Creek was locally derived. It is suggested by the data that both Nevada Gulch and Six Pup contain similar sourced low-fineness Au with moderate Hg contents. Upper and Moore Creek samples are similar in having both low fineness gold and the presence of extremely high Hg contents. Finally Lower Moore Creek shows to typical Ag-leaching/increasing Au fineness expected moving away from the source area.

The extremely high Hg contents recorded in these gold grains can not be the result of anthropogenic sources, as the values were measured using a microprobe on locations within polished grains. The only other area in the Kuskokwim Basin the authors are aware of with similarly high Hg in Au values are from placers draining the giant Donlin Creek deposit located 80 km to the southwest where values ranging from 11.8 to 2.7 wt% Hg (average 5.7). Hg values of greater than 6 wt% in gold are rare in the published literature.

Explanations for the high Hg in gold values fit with a crustal-derived source of metals retorted from the Kuskokwim basin during a regional heating event (Goldfarb and others, 2005). Reducing conditions likely favor incorporation of Hg into the gold lattice, especially at lower temperatures. Variations in fluid chemistry, PT conditions are plausible explanations for the range in observed values. In support of this model, samples A and D with the highest Hg in gold values sampled drainage basins hosting high level volcanic rocks. Samples B and C were collected from drainages with plutonic rocks contained lower Hg in gold values.

The compositional data presented in this paper, together with the shapes of fine crystalline gold nuggets recovered by prospectors, all indicate a local source for the high-grade gold veins at Moore Creek. The likely location being the foothills immediately northwest of the placer workings, likely associated with structures related to the Nixon-Iditarod fault system, which would have acted as conduits for deep crustal derived fluids.

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