

# PLACER GOLD EXPLORATION REPORT FILED FOR ASSESSMENT WORK

## 2016 SURFICIAL GEOLOGY AND PLACER GOLD SAMPLING PROGRAM REED-KELLI CREEK PLACER CLAIM GROUP GW01054

Whitehorse Mining Division

Donjek River Reed Creek Area

Map Sheet 115G12 UTM Zone 7 Nad 83

61°33' N Latitude, 139°37' W Longitude

Report by: G.Gutrath, Geologist Peng.



Energy, Mines and Resources

### Claim Status Report

22 November 2016

Claim Name and Nbr.	Grant No.	Expiry Date	Registered Owner	% Owned	Excess NTS #'s	Grouping	Permit
KELLY 1 - 4	P 26618 - P 26621	2023/01/01	Kristy Roberts Kelli J. Tremblay	50.00 50.00	1 115G12		C1P00017, C1P00018, C1P00040
KELLY 5 - 9	P 26622 - P 26626	2023/01/01	Kristy Roberts Kelli J. Tremblay	50.00 50.00	0 115G12		C1P00017, C1P00018, C1P00040
KRISTY 1 - 3	P 22984 - P 22986	2022/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040
KRISTY 4 - 8	P 22987 - P 22991	2023/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040
TERRY 1	P 23369	2023/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040
TERRY 2 - 3	P 23611 - P 23612	2023/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040
TERRY 4	P 25671	2023/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040

## INTRODUCTION

This report is written on behalf of the claim owners listed in Appendix C.

The time spent on the property and the cost of the program is outlined in Appendix B.

The writer carried out geological mapping and sampling programs on the property in 2011 and 2013. This work continued in 2014 and at the request of the placer claim owners an evaluation of the placer gold potential was undertaken at the start of the 2014 program. In 2015 a surficial geological mapping program combined with pan sampling was carried out on the Kelli 1 – 9 placer claims. In 2016, two bulldozer trenches were excavated to expose a portion of the 1980's placer mine cut where the valley widens at the mouth of Reed-Kelli Creek. The bedrock-gravel interface was sampled using a portable hand operated small sluice. The recovered gold and black sand concentrate per sample location was dried on site and then transferred to labeled plastic bags. The gold was later separated from the black sand concentrate and weighed.

The writer was ably assisted in the field by Mr. Fred Erler who was very helpful in carrying out a large portion of the on-site placer gold sampling program.

Mr. Lorne Smith, Mr. Denis Dixon of Burwash Landing, and Mrs. Louise Bouvier of Destruction Bay provided transportation and logistical support for the field program.

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## LOCATION

The Reed-Kelli Creek Placer Claim Group #GW01054 (the "Kelli Placer Group") is located in the southwest Yukon Territory on the northeast facing slope of the Kluane Range. The Kelli Placer Group covers a northerly flowing tributary of Reed Creek that continues westerly along the south edge of the Kluane Range that borders the north-easterly trending Shakwak Trench. Over a distance of 7 km Reed Creek joins the Donjek River, a major 3 km wide, northerly flowing, braided glacial stream. The Kelli Placer Group is within the Kluane Game Sanctuary that is a buffer wildlife protected area between the Kluane National Park to the southeast and the Alaska Highway to the north. The Kelli Placer Group is located on NTS Map 115G/12. The centre of the Kelli Placer Group is approximately at UTM Coordinate 682400 N / 573000 E Zone 7, NAD 83.

## PHYSIOGRAPHY

The Kelli Placer Group is centred on a north-northeasterly flowing tributary of Reed Creek (Reed-Kelli Creek) that starts at the north boundary of the Kelli Quartz claim Group (*Fig. 4*) at an elevation of 2,600 feet (792 m). The placer claims start upstream 2 kilometres at the Terry 4 claim at an elevation of 2,925 feet (892 m). The most southerly claim is the Kelli 9 covering the Reed-Kelli Creek Forks at an elevation of 4,100 feet (1,250 m). The camp and helicopter pad are located on the stream outwash boulder-gravel fan at an elevation of 3,083 feet (940 m). From the camp going upstream it is 420 m to the start of the creek canyon. From the start of the canyon the stream gradient increases from +6° to +15° over a distance of 800 m to the upstream end of the Upper Canyon (Map 1). From the south end of the very steep walled (+20° to +45°) stream canyon the valley widens and the stream gradient drops to +5° to +7° over the next 1 km to the south boundary of the Kelli Placer Group. The stream valley is bounded by northerly trending ridges that reach an elevation of 5,500 ft. (1,675 m). The Kelli 1 to 9 placer claims cover the area on Kelli Creek from the south end of the Upper Canyon to the Forks, a distance of 1.4 kilometres.

From the Lower to the Upper Canyon the stream occupies a distinct steep walled "V" shaped valley that has not been subjected to glaciations. Upstream from the Upper Canyon the valley widens and at the forks, there is thick section of outwash, poorly sorted glacial cobble boulder till on both sides of the creek. The entire area would have been covered by glacial ice during the last ice age and glacial till has been reported along the top of the canyon wall. The present shape of the Shakwak Trench has been formed by glaciations resulting in a series of north-westerly trending features such as the elongate lakes and drainage pattern in the Shakwak Trench. This period of glaciations would also have truncated the northerly trending "V" shaped valleys along the northeasterly facing Kluane Range in the general Kelli Placer Group area.

Vegetation in the Kelli Placer Group area is controlled primarily by elevation and by permafrost. In the permafrost areas at lower elevations along the Shakwak Trench stunted black spruce predominates. As one goes up the stream valley to the camp along the outwash fan there are tall spruce reaching 0.6 m in diameter that are commonly indicative of thawed ground. Both sides of the fan are bordered by muskeg with thick moss and stunted black spruce indicating permafrost. Going up the creek through the Lower to Upper Canyons, if the walls are not steep with barren outcrop and active talus, the slopes are covered by almost impenetrable alder. Alder continues to

predominate on both sides of the valley to an elevation of 3,800 ft (1,158 m) to 4,000 ft (1,220 m) and is replaced by willow and scattered stands of stunted black spruce. At the 4,500 ft (1,370 m) elevation scattered willow and grass forms a classic alpine environment.

## **CLIMATE**

The climate of the Kelli Placer Group area is affected by three dominant physiographic features. To the west lies the St. Elias Mountains occupied in part by the largest non-polar continental ice field in the world with elevations ranging up to (Mt. Logan) 5,959 m (19,550 ft). The Kelli Placer Group area is located on the east flank (lee side) of this mountain range and is protected from the direct effect of the coastal weather. However, coastal weather can reach the Kelli Placer Group area by the Chatham Strait in Alaska and continuing northwestward along the low lying valleys that occupy the Denali Fault/Shakwak Trench and continuing into Alaska. In turn this long lineament can funnel northern storms southeastward into the Reed Creek – Kluane Lake area. The narrow Shakwak Trench is bordered to the northeast in the Kluane Lake area by the Ruby Range and the Yukon Plateau highlands, a dry climatic belt with record setting low temperatures (Snag) in the winter.

The climatic data for the Kluane Lake – Reed Creek area is based on information from the Environment Canada Weather Station at Burwash Landing.

### **Temperature**

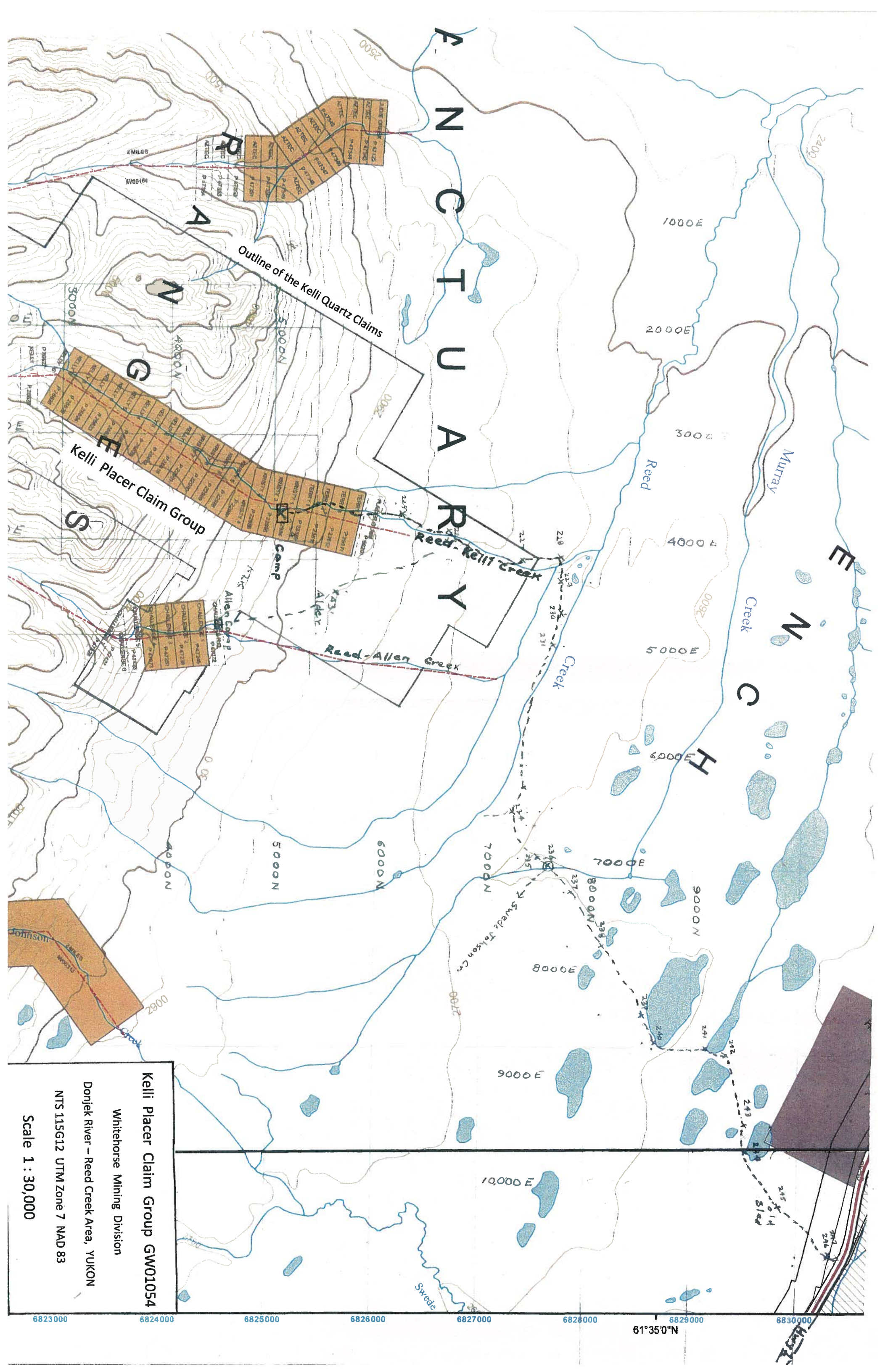
The daily average temperature for the coldest month, December, is -19.8°C and the warmest month, July, is 12.8°C. The extreme maximum was recorded in June, 1969 at +31.7°C and the extreme minimum was at -55°C recorded in 1968.

### **Precipitation**

During the 2016 exploration program the weather was very good for carrying out the field work with little rain and no frost. This was a marked improvement over 2015.

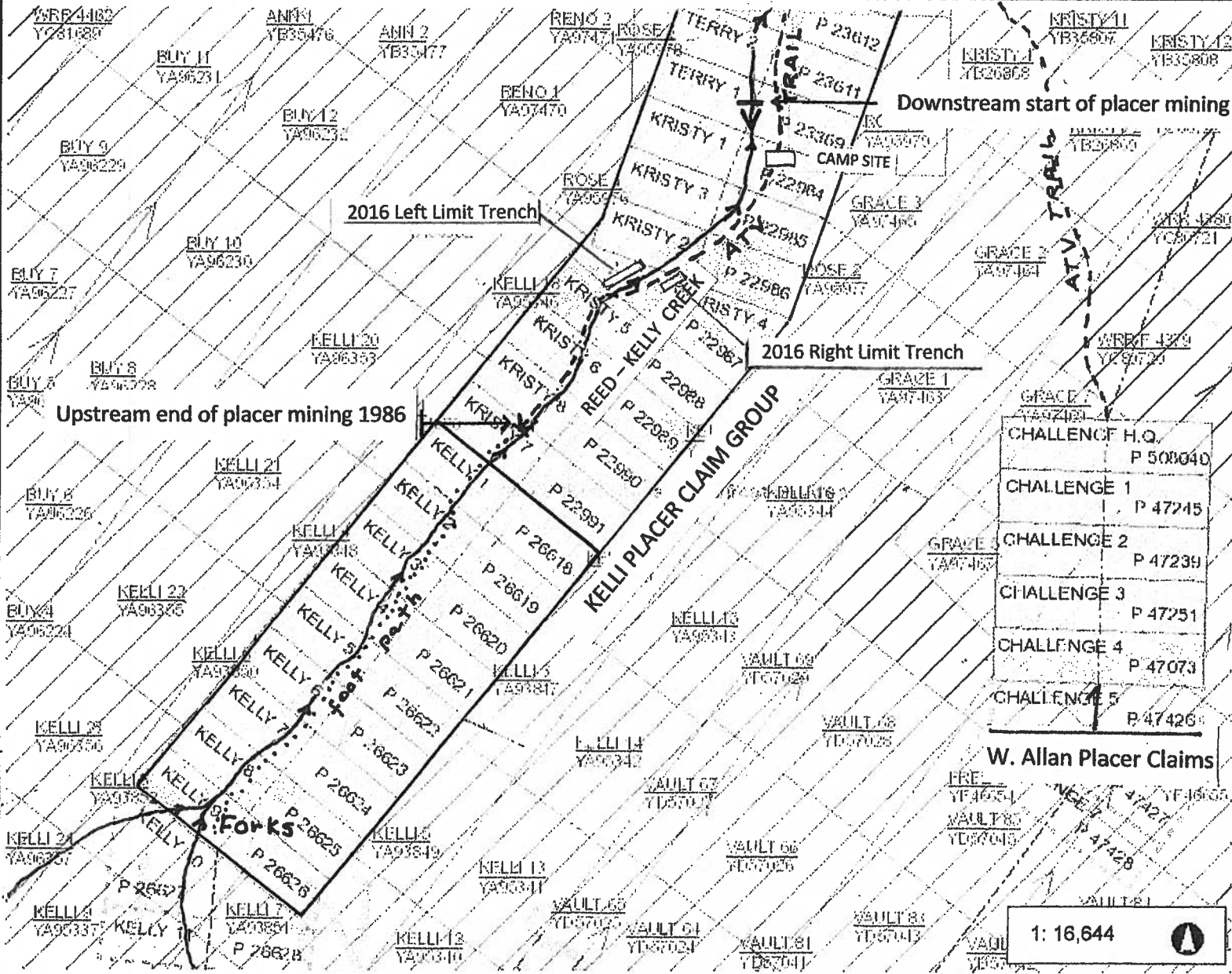
The total average rainfall is 19 cm falling between May and September. The extreme daily rainfall was 3.84 cm in 1968. The maximum average snow depth for February is 18 cm. The extreme snow depth was 104 cm in 1967.

Burwash Landing is at an elevation of 807 m (2,647 ft) and the Kelli Placer Group has an elevation ranging from 1,067 m (3,500 ft) to 1,372 m (4,500 ft). The higher elevation will result in a moderate lower average temperature and a higher average level of precipitation than Burwash Landing.



**Kelli Placer Claim Group GW01054**  
 Whitehorse Mining Division  
 Donjek River – Reed Creek Area, YUKON  
 NTS 115G12 UTM Zone 7 NAD 83  
 Scale 1 : 30,000

6823000 6824000 6825000 6826000 6827000 6828000 6829000 6830000  
 61°35'0"N



**Legend**

- New Placer Claims
- Placer Claims (50K)
  - Active and Pending
  - Expired
- Prospecting Leases
  - Active and Pending
  - Expired
- Adjoin Placer
- Placer Mining Land Use Permi
  - Class 3
  - Class 4
- Placer Baselines (unsurveyed)
- Placer Baselines (surveyed)
- New Quartz Claims
- Quartz Claims (50K)
  - Active and Pending
  - Expired
- Quartz Leases (50K)
- Adjoin Quartz
- Quartz Mining Land Use Perm
  - Class 3
  - Class 4
- Quartz Staking Direction
- Coal Exploration License
  - Active and Pending
  - Expired
- Coal Mining Lease
  - Active and Pending

CHALLENGE H.O.	P 508040
CHALLENGE 1	P 47245
CHALLENGE 2	P 47239
CHALLENGE 3	P 47251
CHALLENGE 4	P 47073
CHALLENGE 5	P 47426

**W. Allan Placer Claims**

1: 16,644

0.8 0 0.42 0.8 Kilometers

Yukon Albers  
Produced from: Yukon Mining Viewer

This map is a user generated static output from an Internet mapping site and is for reference only. Data layers that appear on this map may or may not be accurate, current, or otherwise reliable. THIS MAP IS NOT TO BE USED FOR NAVIGATION.  
Date Printed: 28-Jun-2015

**Notes**  
Location of 2016 Trenching

## ACCESS

The general Kelli Placer Group area via the paved Alaska Highway is 340 km west from Whitehorse, or 170 km from Haines Junction, the local service centre. From the Alaska Highway looking due south the camp on the Kelli Placer Group is visible over a distance of 7 km. The start of the winter haul road and the summer ATV trail leaves the Alaska Highway at UTM coordinate 580651 E / 6830392 N and goes south-easterly for a distance of 10 km crossing the Shakwak Trench through continuous swamp, bypassing a number of small lakes and crossing 3 small streams to reach the start of the trail on the gravel fan leading to the camp. An Argo and two ATVs made the trip to the camp from the Alaska Highway in three hours.

From the camp upstream to the mouth of the Lower Canyon the road is in good condition and is accessible by ATV to Upper Canyon. There are a few small washouts and talus slides but the base of the road is in good condition.

The construction of the road up the canyons was a remarkable achievement undertaken by Darrel Duensing. A D9H bulldozer was used to push large (up to 3 m diameter) round granite boulders in a row to form the outer base wall of the road. A front-end loader then carried tailings from the sluice plant to fill behind the boulders and the canyon wall. Since 1986, when upstream mining ceased, there have been numerous flash floods through the narrow canyon but regardless the road has remained intact. The bigger program with road access through the canyon is the continuous down slope migration of talus boulders across the road. The talus can be easily removed by a small bulldozer.

Helicopter service is available from Haines Junction with a suitable staging area on the Alaska Highway at Mile 1118. There is a good helicopter pad at the campsite.

## HISTORY

The history of the property has been reviewed in detail in the 2012 Geological Report by the writer. However, it is repeated below in this report because so much of the history pertains to placer gold mining.

The Kelli Claim Group covering the northerly flowing tributary of Reed Creek is reported by Trevor Bremner, Ministry of Mines, Geologist in Yukon Exploration 1990 (INAC 1991, p 60-64) to have been placer mined between 1935 and 1939. Between 1983 and 1988 Dublin Gulch Placers, headed by Darrel Duensing, placer mined the creek and reported production of 1,275 oz of gold. Darrel Duensing also estimated production of 725 oz of gold for the 1935 to 1939 period.

Dr. Jennifer Getsinger in her report on the Kelli Property, October 1998 detailed under History, information provided by the late Larry Tremblay. Mr. Tremblay was a biologist who worked for Parks Canada and was based at Haines Junction. During his tenure with Parks Canada he became very familiar with the Kluane National Park and the people who lived and worked in the southwest Yukon Territory. Mr. Tremblay's overview of the local history in the Kluane Range was recorded by Dr. Getsinger as follows:

“In addition to the literature search, some information was gathered by talking to Larry Tremblay (pers. comm., August 1998), about what he knew about the history of mining on the Kelli property. He had heard some of the history from another person who used to work the claims in the 1950’s. Jack Lemoygen, from Teslin, staked this creek for placer in 1952, and said you could walk into four tunnels then. He claimed that the California man who owned the placer claim in the 1930’s paid his workers bonuses of 52 oz of gold a year, so they must have been doing well. There were up to a half a dozen Swedes working there for several years, and they were quite private about what they were doing, not local, and paid well not to talk to other locals. Other local hearsay reported by Larry Tremblay includes stories from Harry Frome over at Arch Creek, from old Frank with the packhorses, or about the Jacquot brothers, who used to supply grubstakes for prospectors in the Klauane Ranges, and who lived at Burwash Landing. Mr. Tremblay himself, as an experienced biologist, did a dendrochronologic (tree-ring dating) study of the ruins of three old cabins (one of which was 40 feet long) found near his present camp site, and determined that they were built of logs from trees that were cut down in the periods 1904-1915, and 1928-1935. He said there would have been no reason to build such substantial residences in that area if the occupants were merely hunting, rather than mining. One remnant corner of an old log cabin was observed during our August 1998 field visit across the creek from the trailer camp, up in an area of birch and alder forest on an old alluvial surface; unfortunately that area has been largely covered by bulldozed gravel from more recent placer workings. Many trenches, holes, workings, and old adits have been found in the area of Reed-Kelli Creek, more easily identifiable in 1985 when Tremblay and Duensing first began working there, although some were already caved in and inaccessible. It is difficult to tell how old various trenches would have been, due to the massive rearrangement of loose materials in the canyon by bulldozing and a flood in the late 1980’s. Larry Tremblay is certain that the “old timers” who worked this creek were not only placer mining but investigating bedrock occurrences of gold as well as copper, during the 1930’s. He said they took out particularly the green mariposite rock, and piled up wall rock slabs at the portals of their underground workings; he said the old short-handled shovels he found supported the idea of underground workings as well. It is presumed from this type of information that there must have been enough gold to provide not only grub but profits for all of these men. It is also rumored that one of the reasons that the government reports are so uninformative about this area is that the records of the Whitehorse mining recorder’s office were transferred at some time to Dawson, and subsequently were lost in a flood or some other natural disaster. It also appears to be commonplace that placer miners report less productivity to the government that they may have actually taken home in the form of gold nuggets. For instance, the 2000 oz said to have been reported by Darrel Duensing by Bremner (1991) as coming out of the Kelli claims area in the 1930’s and 1980’s, was re-estimated by both Larry Tremblay and Darrel Duensing in August 1998 to have been at least 3000 oz or more, only counting what came out in their own tenure of the 1980’s and 90’s. (This may have included some of the takings of a family from Arizona, a grandfather, father, and son team, who did placer assessment work on the property in 1982, including two nuggets of over 1 oz gold each).”

In 2004 Mr. Tremblay carried out a diamond drilling program at the start of the Lower Canyon. Five BQ holes were drilled totaling 305 m. This program is reviewed in this report and is summarized in Appendix F, 2004 Diamond Drilling Program.

In 2005 a trenching program using a Cobra Drill and dynamite was carried out in the Middle Canyon in the area of the “old timers’ workings”.

It was reported to the writer that limited placer mining was carried out between the camp and the start of the Lower Canyon in 2004 and possibly 2005 using a backhoe, bulldozer and a sluice plant.

There is very little known about possible historic placer mining or prospecting in the section of Reed-Kelli Creek from the Upper Canyon to the Forks. Larry Tremblay had compiled two maps of this section on two different scales that have been combined on one map at a scale of 1:5000 to provide some insight into the work carried out on the southern part of the creek. With regards to the placer most of the description notes are regarding bulldozer trenches, depth to bedrock and bedrock geology. There is also information as to bedrock sample analysis as well as geochemical silt and soil sample results taken in the area.

## **REGIONAL GEOLOGY**

The Kluane Range forms the northeast margin of the St. Elias Mountains that border the southwestern edge of the Coast Belt. They are within the northern extension of the Insular Belt in the southwestern Yukon Territory and are largely to the southwest of the Denali Fault System. The St. Elias Mountains are predominantly underlain by Alexander Terrane consisting of a thick sequence of mainly layered Paleozoic strata. During the late Triassic there was widespread metamorphism and deformation. The property area is located within a Wrangalia segment (WZ) between Alexander Terrane and the Denali Fault. The segment (WZ) may have been moved northeast of the Alexander Terrane by large dextral displacements along the Denali Fault (Campbell and Dodds, 1983). In the Kelli Placer Group area the Denali Fault occupies the Shakwak Trench. The Wrangalia Terrane to the southwest of the Shakwak Trench in the Quill Creek – Donjek River area has been intruded by granitic to ultramafic bodies. The best known ultramafic intrusion in this area is the Quill Creek complex of Cretaceous age that hosts a nickel-copper massive sulfide deposit with PGE values.

In the Kelli Placer Group area of the Kluane Range the predominant rocks are Permian Pennsylvanian andesites covered by shales and thin bedded limestone. These units are repeated by a complex series of faults. Oligocene dikes in the area have been sheared indicating that the faulting is Tertiary or younger (T. Bremner, 1990).

## **PROPERTY GEOLOGY**

### **General**

The property geology is detailed in the 2014 Placer Gold Exploration Report and a more detailed geological description is given in the 2015 Geological and Geochemical Report that has been filed as assessment work on the Kelli Quartz Claims Group.

The following is a brief summary of the property geology.

## Statigraphy

The layered rocks exposed from the camp area upstream to the Middle Canyon (Geology Map 1 1:1000, 2013) are divided into four units designated **pc** (phyllitic carbonate), **gs** (greenstone/meta volcanic), **gs (fp)** (subvolcanic greenstone and/or an intrusive feldspar porphyry), and **bgpl** (black graphitic phyllite with interbedded limestone). These units have been interpreted as being Pennsylvanian to Permian in age and part of the Skolai Group. The writer divided the **gs** unit into **gs** and **gs(fp)** to differentiate the marked contrast between the two units:

**gs** dark brown andesite often foliated to a chloritic schist, highly fractured with pyrite content from 1% to 10%, pyrrhotite trace to 1% and magnetite 1%. Widely spaced, flat pyritic quartz veins of variable width cut across the unit.

**gs(fp)** grey, possibly subvolcanic fine-grained to porphyritic andesite or intrusive with blocky, coarse fracturing with pyrite, less than 1%.

The **bgpl** unit is the principal unit downstream from the Lower Canyon to the campsite.

## Intrusive Rocks

The layered rocks are intruded by dikes and sills of Oligocene to Miocene age (date of 23 Ma, ref. Bremner, 1991). Both Getsinger and Bremner agree that this intrusive is a feldspar hornblende porphyry. The writer mapped the intrusives as two separate rock types.

**dd** light orange weathering dacite dike, fine grained to aphanitic with an absence of porphyritic texture. In the fresh, fine grained dacite crystalline hornblende “blades” make up 1% to 2% of the ground mass

**fp** light grey subhedral medium grained feldspar phenocrysts in an aphanitic to fine grained feldspar rich ground mass

## Structure

The regional structure within the Kluane Range is northwest trending subparallel to the Denali Fault/Shakwak Trench. The deformation folds are F1 structures, often overturned subparallel to the regional northwest structure. The F1 structures are in turn modified by secondary crenulations, drag folding, fractures, veins, joints and warping.

A good example of deformation and associated regional metamorphism referred to as F1 folding is defined by subhorizontal mullion structures in phyllitic carbonate rocks located to the west of the “Old Timers’ Workings C” at the sound end of the Upper Canyon. These F1 folds exposed in outcrop in the creek appear to have been uplifted along the creek axis resulting in closely spaced, narrow north-northwest fractures commonly filled by white carbonate minerals. The narrow, irregular dacite dikes in the creek have also followed this axis. In addition, the uplift along the creek axis created a zone of structural-erosional weakness that is important in the formation of the creek ‘V’ shaped valley. (There is no obvious fault/shear zone structure related to the creek axis.) This fracturing along this north-

northeast axis may also account for the trend of the dacite dikes intruding the **gs(fp)** unit in the Middle Canyon. This north-northeast trend is almost at right angles to the northwest strike of the dacite dike swarm in the Lower Canyon that parallels the regional northwesterly trend of the Denali Fault.

Dr. Getsinger suggests that the stratigraphic package underlying the Kelli Property lies within the upper limb of a large recumbent fold. This interpretation would result in the stratigraphy being reversed from the norm with the youngest rocks (**bgpl**) in the Lower Canyon and the older rocks (**pc**) being in the Upper Canyon. However, these rocks are so interfolded and structurally complex that this interpretation can only be considered speculative until a more detailed study is undertaken.

Fault contacts are used somewhat liberally as there were no actual offsets noted. Erosional zones of weakness, such as sharp gullies in most cases, indicate shearing and a possible fault but offsets within the Kelli-Reed Creek Canyon were not noted. In units that have been intensely folded there are numerous examples of fracturing of more brittle units such as dacite dikes and quartz veins.

There are two structural features that were noted by Dr. Getsinger and are shown on Maps 1 and 2 as Structure 1 and Structure 2. Structure 1 was also reviewed in considerable detail by Larry Tremblay in his reports on the Kelli Property

Structure 1 is the northwesterly trending swarm of dacite dikes intruding graphitic argillaceous schist intercalated with limestone beds and meta-volcanics in the Lower Canyon. This structure was considered by Larry Tremblay to be very favourable geology for gold mineralization and the 2004 drilling program was carried out to test this section.

Structure 1 forms a sharp bend in the creek which is referred to as a “kink” by Tremblay. What is of particular significance is the repetition of this “kink” in creek valleys both to the northwest and southeast of Kelli-Reed Creek in approximately the same location along the north flank of the Kluane Range. In addition, placer gold has been found in these creeks in the proximity of the “kink” structure.

Structure 2 is defined by two tributary stream channels that enter Reed-Kelli Creek at the south end of the Upper Canyon. They define a prominent lineament that can be easily traced on the 1:50,000 topographic map and air photographs. The structure crosses the creek in the outcrop area of highly lineated fold noses with a classic mullion structure. There is no evidence of a fault structure crossing the creek.

Dr. Getsinger infers that the structure may be a hinge zone of large scale regional folds. Since there is no obvious fault gouge the topographic expression may result from the weathering of the erosionally weak phyllitic carbonate. This structure also marks the south end (upstream) of the Reed-Kelli Creek canyon and the continuation of a much broader and lower gradient creek valley.

## **Metamorphism**

From the mapping program and examination of hand specimens the metamorphism extends to the development of sericite and chlorite indicating lower green schist facies.

Although there are numerous intrusive dike contacts metamorphism is very limited to hornfels with minor epidote.

Regional metamorphism is earlier than the quartz veins cutting the gs meta-volcanics and is also earlier than the intrusion of the feldspar porphyry and dacite dikes.

There is a host of metamorphic rock types ranging from black graphitic phyllite, interbedded with the massive impure marble, meta-volcanic chlorite schist and limey black graphitic schist all in the Lower Canyon. Thin, discontinuous quartz veining is a common byproduct of the intense "squeezing" of the graphitic phyllite in the Lower Canyon and continuing to the north in outcrop bordering the outwash gravel fan.

## **2015 PAN SAMPLING EXPLORATION PROGRAM**

The 2015 Placer-Surficial Geological Program was carried out after a geological mapping, rock, soil and silt sampling program that focused on the Middle Canyon of Reed-Kelli Creek. The focus of the placer-surficial geological mapping program was on the Kelli 1 to 9 placer claims that cover the area between the Upper Canyon and the Forks. The field work was a careful search for historic workings within the stream channel. This work would have been done during the 1980s consisting primarily of bulldozer trenches attempting to reach bedrock and evaluate the placer gold concentrated on the bedrock-gravel interface. These bulldozer trenches are located on Larry Tremblay's map. However, the locations were not surveyed by GPS making it difficult to pinpoint the sites. The bigger problem is the flash floods that quickly erode the trenched material and fill the pits. The results of the 2015 program are detailed in the 2015 Surficial Geology and Pan Sampling Report dated June 10, 2016.

## **2016 PLACER EXPLORATION PROGRAM**

### **General**

The placer gold colour count is based on a chart (*Appendix \_D\_*) used by the 'panner' on a 1973 Churn Drill Program, managed by the writer at Mills-Twin Creek in Alaska. The chart was originally utilized by the Yukon Dredging Company in California where the 'panner' had worked. The original chart had the actual gold particles and weights noted. The weights are quite arbitrary but the shape and diameter of the gold particles gives some discipline in recording the 'colour' count.

The 2015 recording of the volume of black sand as to volume in a teaspoon (tsp.) was again an arbitrary measurement. However, better placer gold values are normally associated with a greater volume of black sand, coarseness of the black sand and associated high specific gravity minerals such as hematite, cassiterite, garnet, etc. These mineral assemblages indicate that the sample has been collected from the gravel-bedrock interface.

The black heavy mineral concentrate referred to in the pan sampling program is a mix of fine grained magnetite and lesser pyrite as well as rounded hematite 'balls'. This assemblage is similar to the black heavy mineral concentrates found in the 2016 placer sampling program.

The one mineral combination not seen in any of the 2015 pan samples is a white, fine grained often 'tear' dropped shaped quartz-carbonate particle. This mineral effervesces in dilute hydrochloric acid. Larry Tremblay stated in his reporting that it was a typical (essential) mineral found in the better grade placer gold concentrate. These quartz-carbonate particles along with hematite, magnetite and pyrite were found in all the 'heavy' 2016 concentrates.

### **2016 Bulldozer Trenching and Sampling**

The 2016 program consisted of two bulldozer trenches dug to expose the bedrock-gravel contact along the edge of the 1980's placer mining cuts. The trenching was carried out just downstream from the outlet of the Lower Canyon. It was reported that the grade of the gravels mined in this area were particularly high grade. Numerous pan samples taken by the writer had been processed from this area but the results were negative with regards to 'high grade' values with only an indication of a few small trace to #3 gold particles per pan.

#### **Bulldozer Trench Dimensions**

##### Left Limit Trench

80 metres by 1.5 metres by 1.5 metres = 180 cubic metres

262 feet by 4.9 feet by 4.9 feet = 6,291 cubic feet = 232.98 cubic yards

##### Right Limit Trench

20 metres by 1.5 metres by 1.5 metres = 45 cubic metres

66 feet by 4.9 feet by 4.9 feet = 1,585 cubic feet = 68.7 cubic yards

Both trenches were reclaimed as well as the road access.

#### **Sampling Method**

The samples were collected from the bedrock-gravel interface where most of the placer gold is concentrated. A small shovel was used to dig along this contact and feed a sample processing sluice measuring 15 inches (.38 m) wide by 30 inches (0.76 m) long with a feed-screen hopper (*Photo 1*). A 1.5 inch pump with a screened intake provided the water to wash the sample over the expanded metal riffles. The high specific gravity minerals and gold are captured on a fine ribbed mat. The mat is then washed in a tub and the material panned to produce a high specific mineral-gold concentrate (*Photo 3*). This product is then dried and bagged and taken out to a lab where the gold is separated and weighed.

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The limited size of the sample unit resulted in this phase of the program taking longer than expected.

## Sample Results

### Right Limit Bulldozer Trench

#### Sample 1 (*Photo 1 and 2*)

Dimensions of sampled volume of gravel: 8 feet (2.43 m) long by 1 foot (0.30 m) deep by 2 feet (.61 m) high

Bedrock area sampled: 8 square feet (0.74 square metres)

Volume sampled: 16 cubic feet (0.59 cubic yards or 0.45 cubic metres)

Crude weight of gold recovered: 6.0 grams at 83% fine gold equals **4.98 grams**

Gold grade per square foot: 0.62 grams

Gold grade per square foot at gold price of \$50 per gram: **\$31.00**

(Very coarse gold nuggets with medium grained gold in the #2 small to #1 small. Very little fine grained gold. Large quantity of black mineral concentrate, fine to coarse grained.)

#### Sample 2

Dimensions of sampled volume of gravel: 8 feet (2.43 m) long by 2 feet (0.60 m) deep by 2 feet (.60 m) high

Bedrock area sampled: 16 square feet (1.48 square metres)

Volume sampled: 32 cubic feet (1.18 cubic yards or 0.91 cubic metres)

Crude weight of gold recovered: 2.29 grams at 83% fine gold equals **1.90 grams**

Gold grade per square foot: 0.12 grams

Gold grade per square foot at gold price of \$50 per gram: **\$6.00**

(Similar to Sample 1 just not as many coarse nuggets).

#### Sample 3

Dimensions of sampled volume of gravel: 8 feet (2.43 m) long by 2 feet (0.60 m) deep by 2 feet (.60 m) high

Bedrock area sampled: 16 square feet (1.48 square metres)

Volume sampled: 32 cubic feet (1.18 cubic yards or 0.91 cubic metres)



**Photo 1: On site sampling unit at Right Limit Trench**

**Photo 2: Fred Erler holding pan with Sample I concentrate, Right Limit Trench**





**Photo 3**

**Course – thick nuggets and black mineral concentrate, Right Limit Sample 1**

Crude weight of gold recovered: 4.19 grams at 83% fine gold equals **3.48 grams**

Gold grade per square foot: 0.22 grams

Gold grade per square foot at gold price of \$50 per gram: **\$11.00**

(Coarse nugget gold with little fine gold. Large volume of black heavy mineral concentrate with 1 piece of native copper / 0.3 mm x 0.2 mm and flat).

#### Sample 4

Dimensions of sampled volume of gravel: 8 feet (2.43 m) long by 2 feet (0.60 m) deep by 2 feet (.60 m) high

Bedrock area sampled: 16 square feet (1.48 square metres)

Volume sampled: 32 cubic feet (1.18 cubic yards or 0.91 cubic metres)

Crude weight of gold recovered: 0.9 grams at 83% fine gold equals **0.67 grams**

Gold grade per square foot: 0.04 grams

Gold grade per square foot at gold price of \$50 per gram: **\$2.00**

(Less coarse gold, very little fine gold and with a large volume of heavy black mineral concentrate).

#### Left Limit Bulldozer Trench (Photo 4 and 5)

#### Sample 5

Dimensions of sampled volume of gravel: 11 feet (3.35 m) long by 2 feet (0.60 m) deep by 1.5 feet (0.46 m) high

Bedrock area sampled: 22 square feet (2.0 square metres)

Volume sampled: 32 cubic feet (1.18 cubic yards or 0.91 cubic metres)

Crude weight of gold recovered: 1.5 grams at 83% fine gold equals **1.25 grams**

Gold grade per square foot: 0.06 grams

Gold grade per square foot at gold price of \$50 per gram: **\$3.00**

(Note: Photo shows coarse hackly gold with large amount of black heavy mineral concentrate).



**Photo 4: 2015 bulldozer trench and 80 metre – 2016 extension on Left Limit**



**Photo 5: Bulldozer exposing bedrock-gravel contact. Note how high the bedrock is as it rises rapidly to the west marking the edge of any placer gold reserves.**

Spreading trenched material on road.



Photo 6: Bulldozer spreading trenched material on road near north end of 2016 Left Limit trench



Photo 7: Sample 5 (Left Limit Trench) showing course-hackly gold nuggets and black heavy mineral concentrate in metal gold pan.

### Sample 6

Dimensions of sampled volume of gravel: 8 feet (2.43 m) long by 1.5 feet (0.46 m) deep by 1.5 feet (.46 m) high

Bedrock area sampled: 12 square feet (1.11 square metres)

Volume sampled: 18 cubic feet (0.67 cubic yards or 0.51 cubic metres)

Crude weight of gold recovered: 0.07 grams at 83% fine gold equals **0.51 grams**

Gold grade per square foot: 0.04 grams

Gold grade per square foot at gold price of \$50 per gram: **\$0.20**

(The gold recovered was 1 coarse nugget weighing 0.6 grams and 1 small nugget (flake) for a total of 0.7 grams and there was no fine gold).

### Sample 7

Dimensions of sampled volume of gravel: 9 feet (2.74 m) long by 2 feet (0.60 m) deep by 1.5 feet (.46 m) high

Bedrock area sampled: 27 square feet (2.51 square metres)

Volume sampled: 18 cubic feet (0.40 cubic yards or 0.31 cubic metres)

Crude weight of gold recovered: 0.10 grams at 83% fine gold equals **0.083 grams**

Gold grade per square foot: 0.003 grams

Gold grade per square foot at gold price of \$50 per gram: **\$0.16**

(The gold recovered was 3 small flakes – #2 small and there was very little black sand concentrate).

Outlet of Reed – Kelli Creek at start of Lower Canyon showing outline of the 1980's placer mined area. Looking north across the Shakwak Trench to Hwy 1 at the base of the hills in the distance. 2016 and 2015 bulldozer trenching outlined and the location of the camp.

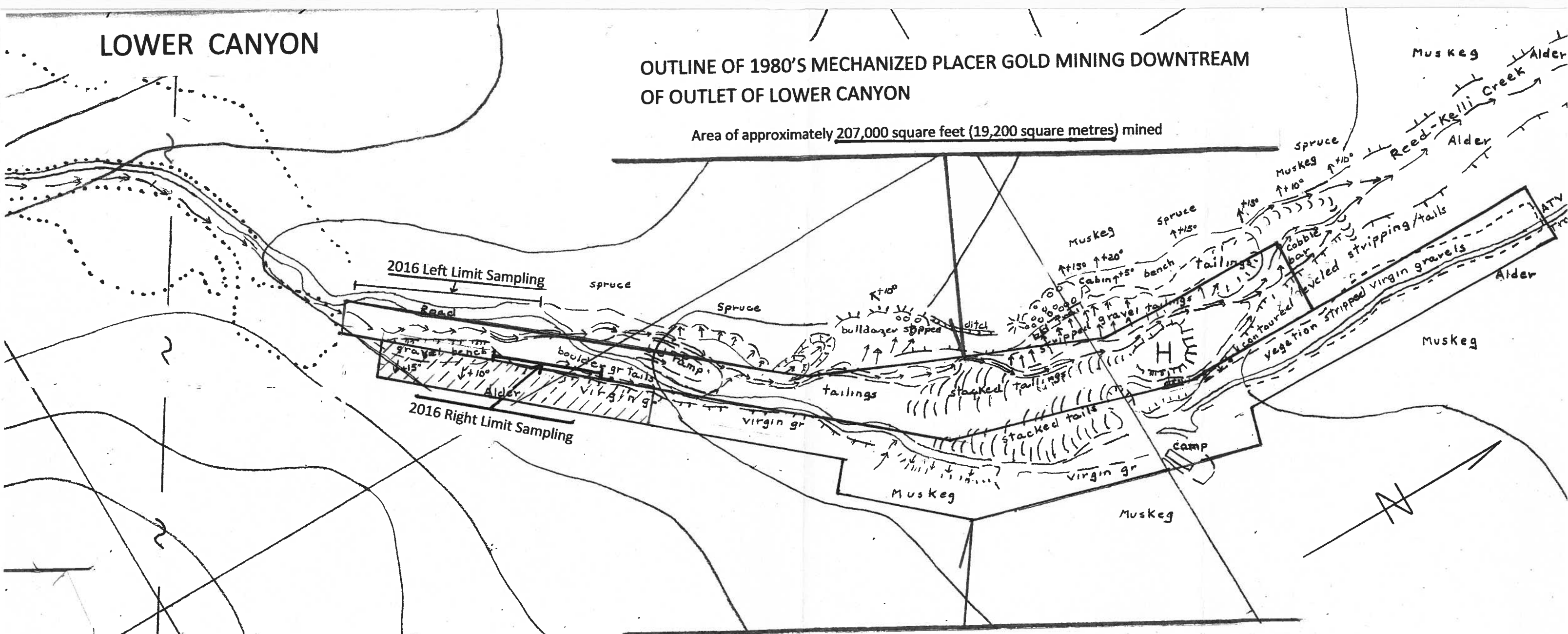


PHOTO 8

**LOWER CANYON**

**OUTLINE OF 1980'S MECHANIZED PLACER GOLD MINING DOWSTREAM OF OUTLET OF LOWER CANYON**

Area of approximately 207,000 square feet (19,200 square metres) mined



**Outline Of Historic Placer Gold Mining Areas**

and

**Areas of Potential Placer Gold Reserves**

Reed-Kelli Creek Placer Claim Group GW01054

Whitehorse Mining Division

Donjek River-Reed Creek Area

Map Sheet 115G12 UTM Zone 7 NAD 83

By: Gordon Guttrath, geologist P. Eng. Date: February 15, 2015

MAP 1

SCALE : 1:2000

**POTENTIAL NORTH TARGET AREA FOR 'SIDE PAY'- 'RIGHT LIMIT' PLACER GOLD RESERVES**

AREA OUTLINES approximately 204,000 square feet (18,950 square metres)

Area of Potential Placer Reserves

Location of 2016 Trenching and Sampling

1 : 2000

Figure 3

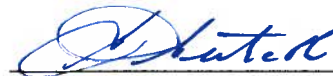
## CONCLUSIONS AND RECOMMENDATIONS

The 2014 mapping (Map 2) of the 1980's mechanized placer gold mining operation downstream from the outlet of the Lower Canyon to downstream of the camp outlined a potential placer gold reserve area of 204,000 square feet. The 2016 sampling of the Right Limit bulldozer trench produced some very high grade values per square foot sampled that range from a low of 0.04 grams to a high of 0.22 grams of fine gold per square foot. The average grade per square foot of the four samples is 0.25 grams per square foot. Unfortunately, this grade cannot be applied to the entire projected reserve area but only to a small area centered on the 2016 sampling. Because of the configuration of the Lower Canyon placer gold from that source would flow to the Right Limit where the 2016 sampling was carried out. The gold content may actually increase going upstream to the south end of the projected gold reserve area and would diminish downstream to the north.

A speculative reserve of 150 m long by 20 m wide equals 3,000 square metres or 32,292 square feet. At the average grade of the 2016 sampling of 0.25 grams per square foot would indicate a possible reserve of 8,073 grams or 260 fine ounces of gold. This is encouraging enough to warrant an ongoing bulldozer trenching and sampling program similar to the 2016 program. This area is readily accessible with minimal trenching required.

The Left Limit bulldozer trenching and sampling indicates that no mineable reserves are left along that Limit. As can be seen in the photographs (*Photo 5*) the bedrock-gravel contact is rising quickly and the natural bank continues to rise steeply to the west. In addition, the valley-stream flow configuration favours the Right Limit for gold distribution.

Respectfully submitted,



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Gordon G. Gutrath, B.Sc., Peng..

## REFERENCES

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Dodds, C.I. and Campbell, R.B. 1992, Overview, legend and mineral deposit tabulations for *Geological Survey of Canada* Open files 2188, 2189, 2190 and 2191

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**APPENDIX A**

**STATEMENT OF QUALIFICATIONS**

**ENGINEER'S CERTIFICATE**

I, GORDON GUTRATH, of 702 – 181 Athlete's Way in the city of Vancouver in the Province of British Columbia, DO HEREBY CERTIFY:-

1. That I am a geologist with a business address of 702 – 181 Athlete's Way, Vancouver BC V5Y 0E5
2. That I am a graduate of the University of British Columbia where I obtained by B.Sc., in geological science in 1960.
3. That I am a Registered Professional Engineer in the Geological Section of the Association of Professional Engineers in the Province of British Columbia
4. That I have practiced my profession as a geologist for the past fifty-six years.

DATED at the city of Vancouver, Province of British Columbia, this 22 day of November, 2016.

  
\_\_\_\_\_  
Gordon G. Gutrath, B.Sc., P.Eng.

**APPENDIX B**

**COST OF 2016 EXPLORATION PROGRAM**

**2016 Kelli Group Placer Claims  
Sampling and Surficial Geology Mapping Program  
August 1, 2016 to August 20, 2016**

(Cost allocation of 26% is based on man days spent on placer claim exploration  
as a portion of the total Quartz-Placer Exploration Program)

**1. Mobilization and Demobilization**

Whitehorse to Destruction Bay to Hwy 1 turnout to Shakwak Trench

ATV-Argo trail to the Kelli Claim Group Camp

1 Ford 250 4 x 4 and trailer/supplies and ATV haul (22 truck days)

1 GMC ¾ ton 4 x 4 and trailer/Argo haul (4 truck days)

26 truck days @ \$50/day = \$1,300 at 26% \$ 338

**2. Living Expenses (Room and Board)**

Gordon Gutrath, Fred Erler and Lorne Smith

14 Placer exploration man days @ \$100/man day 1,400

**3. Equipment Costs**

1 – 8 wheel Argo (\$200 round/trip – Dennis Dickson, Burwash)

\$800 @ 26% \$ 208

2 – ATVs 500 cc @ \$80/day for 20 days

\$1,600 @ 26% 416

1 – D8 bulldozer trenching 12 hrs @ \$200/hour

\$2,400 @ 26% 624

D8 bulldozer road and trench reclamation 4hrs @\$200/hour 800

1 – Honda 2" pump 6 days @ \$10/day 60

2,108

**4. Contractor**

Atled Exploration Management Ltd., G. Gutrath, Project Manager,

Geologist, P.Eng., GPS survey, sample preparation, pan sampling

4 days @ \$400/day 1,600

F. Erler, assistant – sampling

6 days @ \$250/day 1,500

L. Smith, Argo and D8 operator

50 hrs @ \$30/hr = \$1,500 @ 26% 390

3,490

**6. Data Compilation and Report**

G. Gutrath, P.Eng., Geologist 1,500

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**Total** **\$ 8,836**

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## **APPENDIX C**

### **LIST OF CLAIMS, EXPIRY DATES AND OWNERS**

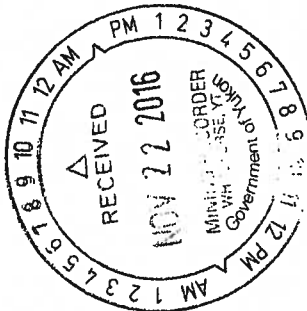
**Claim Status Report**

22 November 2016

Claim Name and Nbr.	Grant No.	Expiry Date	Registered Owner	% Owned	Excess NTS #'s	Grouping	Permit
KELLY 1 - 4	P 26618 - P 26621	2023/01/01	Kristy Roberts Kelli J. Tremblay	50.00 50.00	1 115G12		C1P00017, C1P00018, C1P00040
KELLY 5 - 9	P 26622 - P 26626	2023/01/01	Kristy Roberts Kelli J. Tremblay	50.00 50.00	0 115G12		C1P00017, C1P00018, C1P00040
KRISTY 1 - 3	P 22984 - P 22986	2022/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040
KRISTY 4 - 8	P 22987 - P 22991	2023/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040
TERRY 1	P 23369	2023/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040
TERRY 2 - 3	P 23611 - P 23612	2023/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040
TERRY 4	P 25671	2023/01/01	Kelli J. Tremblay	100.00	3 115G12		C1P00018, C1P00040

**Criteria(s) used for search:**

CLAIM DISTRICT: 1000004 CLAIM STATUS: ACTIVE & PENDING DOCUMENT NUMBER: GW01054 REGULATION TYPE: PLACER



**Left column indicator legend:**

- R - Indicates the claim is on one or more pending renewal(s).
- P - Indicates the claim is pending.

**Right column indicator legend:**

- L - Indicates the Quartz Lease.
- F - Indicates Full Quartz fraction (25+ acres)
- P - Indicates Partial Quartz fraction (<25 acres)

Total claims selected : 21

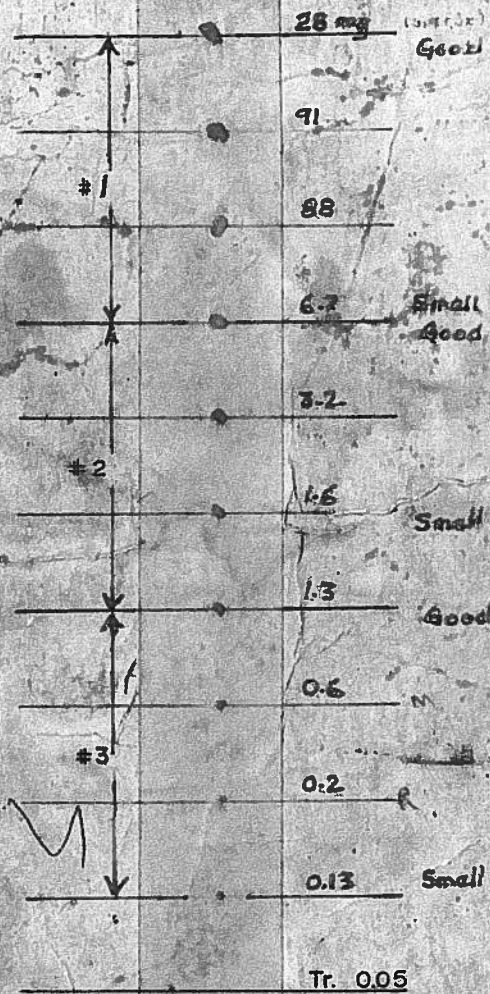
- D - Indicates Placer Discovery
- C - Indicates Placer Codiscovery
- B - Indicates Placer Fraction

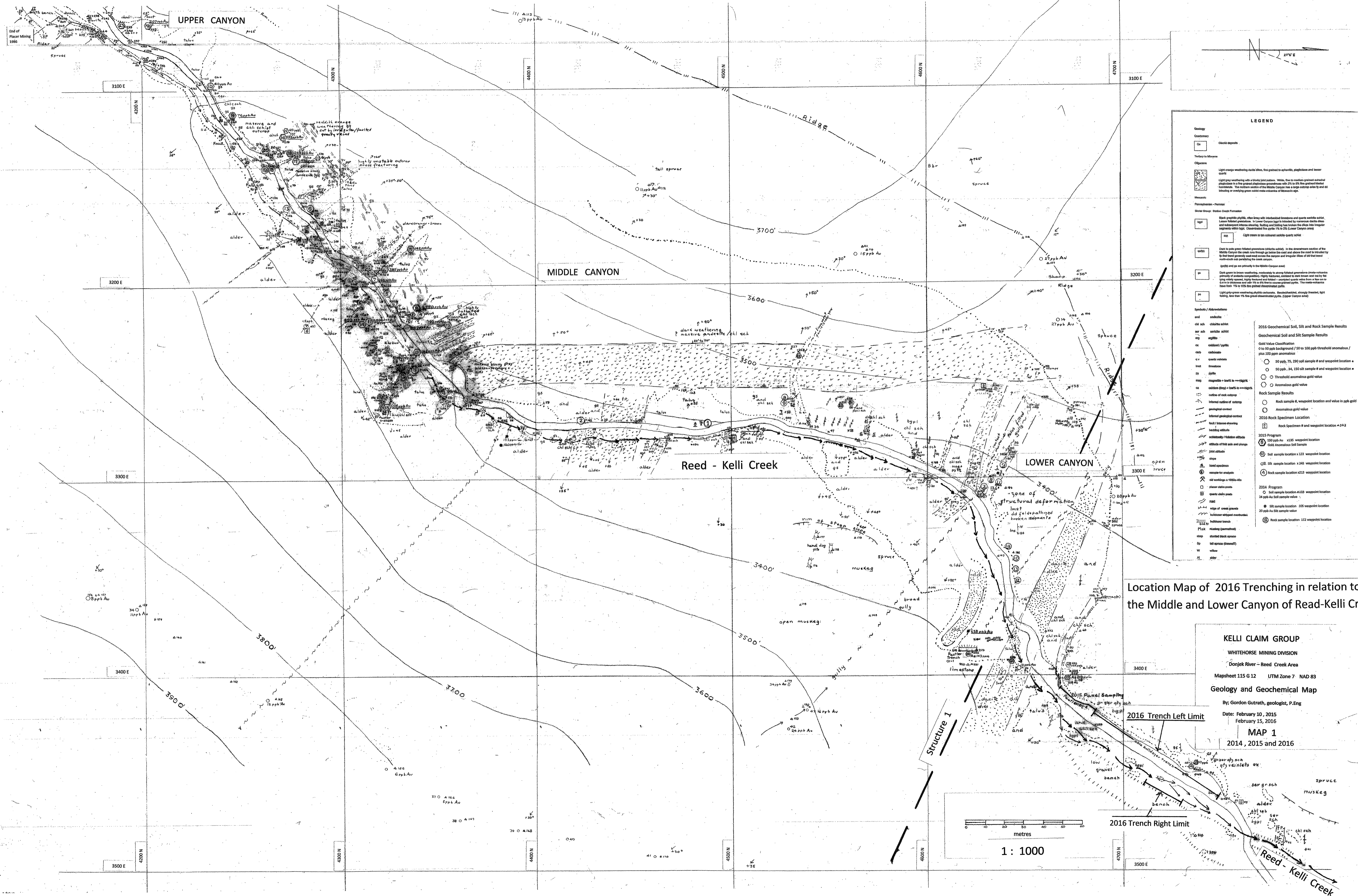
**APPENDIX D**

**COLOUR COUNT CHART**

1973

Value Estimates





### LEGEND

**Geology**

- Quaternary: Alluvial deposits
- Tertiary to Miocene:
  - Light orange weathering: talus, fine grained to siltstone, sandstone and lesser quartz
  - Light grey weathering with a blocky joint pattern: White, fine to medium grained residual (plagioclase) in a fine grained matrix (quartzite) with 2% to 5% fine grained black (biotite). The rock surface of the Middle Canyon has a large outcrop area of 100m by 100m containing or containing green solid meta-sediments of Miocene age.
- Miocene:
  - Plagioclase - Porphyry:
    - Dark greyish phyllite, often lumpy with interbedded sandstone and quartz siltstone. Lower Miocene porphyry. In Lower Canyon top 10m located by numerous dark grey and black (biotite) siltstone, sandstone and siltstone. The dark grey (biotite) porphyry is 1% to 2% (Lower Canyon area).
    - Light green to tan coloured siltstone quartz siltstone
  - Dark to pale green (fine grained) siltstone (siltstone): In the downstream section of the Middle Canyon the creek runs through a siltstone (see note) and above the road is intruded by a dark green (siltstone) and across the canyon and irregular lines of dark green north-south and parallel to the creek canyon.
  - Light green to tan coloured siltstone quartz siltstone
- Symbolic / Abbreviations and symbols:
  - old sch: chlorite schist
  - ser sch: sericite schist
  - mp: magnetite
  - ox: oxidized / pyrite
  - carb: carbonate
  - ev: quartz veins
  - int: limestone
  - py: pyrite
  - mag: magnetite + barite to +calcite
  - ca: calcite (barite) + barite to +calcite
  - outline of rock outcrop
  - inferred outline of outcrop
  - geological contact
  - inferred geological contact
  - low / medium stream
  - bedrock surface
  - streambed / talus within
  - altitude of this side and slope
  - line attribute
  - slope
  - hand specimen
  - remains for analysis
  - sliver cache points
  - quartz dike points
  - road
  - edge of creek gravels
  - tailrace outcrop overburden
  - tailrace trench
  - FLK: remaining (damaged)
  - strip: marked steel canon
  - sp: tail spruce (damaged)
  - W: water
  - AL: alder

**2016 Geochemical Soil, Silt and Rock Sample Results**

**Geochemical Soil and Silt Sample Results**

Gold Value Classification

- 0 to 50 ppb background / 50 to 100 ppb threshold anomalous / 100 to 200 ppb anomalous
- 50 ppb, 75, 250 ppb sample # and waypoint location
- 50 ppb, 34, 150 ppb sample # and waypoint location
- Threshold anomalous gold value
- Anomalous gold value

**Rock Sample Results**

- Rock sample #, waypoint location and value in ppb gold
- Anomalous gold value

**2016 Rock Specimen Location**

- Rock Specimen # and waypoint location +242

**2015 Program**

- 150 ppb Au, x135 waypoint location Gold Anomalous Soil Sample
- Soil sample location +122 waypoint location
- Silt sample location +143 waypoint location
- Rock sample location +213 waypoint location

**2014 Program**

- Soil sample location A139 waypoint location
- 10 ppb Au Soil sample value
- Silt sample location 155 waypoint location
- Rock sample location 112 waypoint location

Location Map of 2016 Trenching in relation to the Middle and Lower Canyon of Reed-Kelli Cr.

**KELLI CLAIM GROUP**  
 WHITEHORSE MINING DIVISION  
 Donjek River - Reed Creek Area  
 Mapsheet 115 G 12 UTM Zone 7 NAD 83  
 Geology and Geochemical Map  
 By: Gordon Guttrath, geologist, P.Eng  
 Date: February 10, 2015  
 February 15, 2016  
**MAP 1**  
 2014, 2015 and 2016

