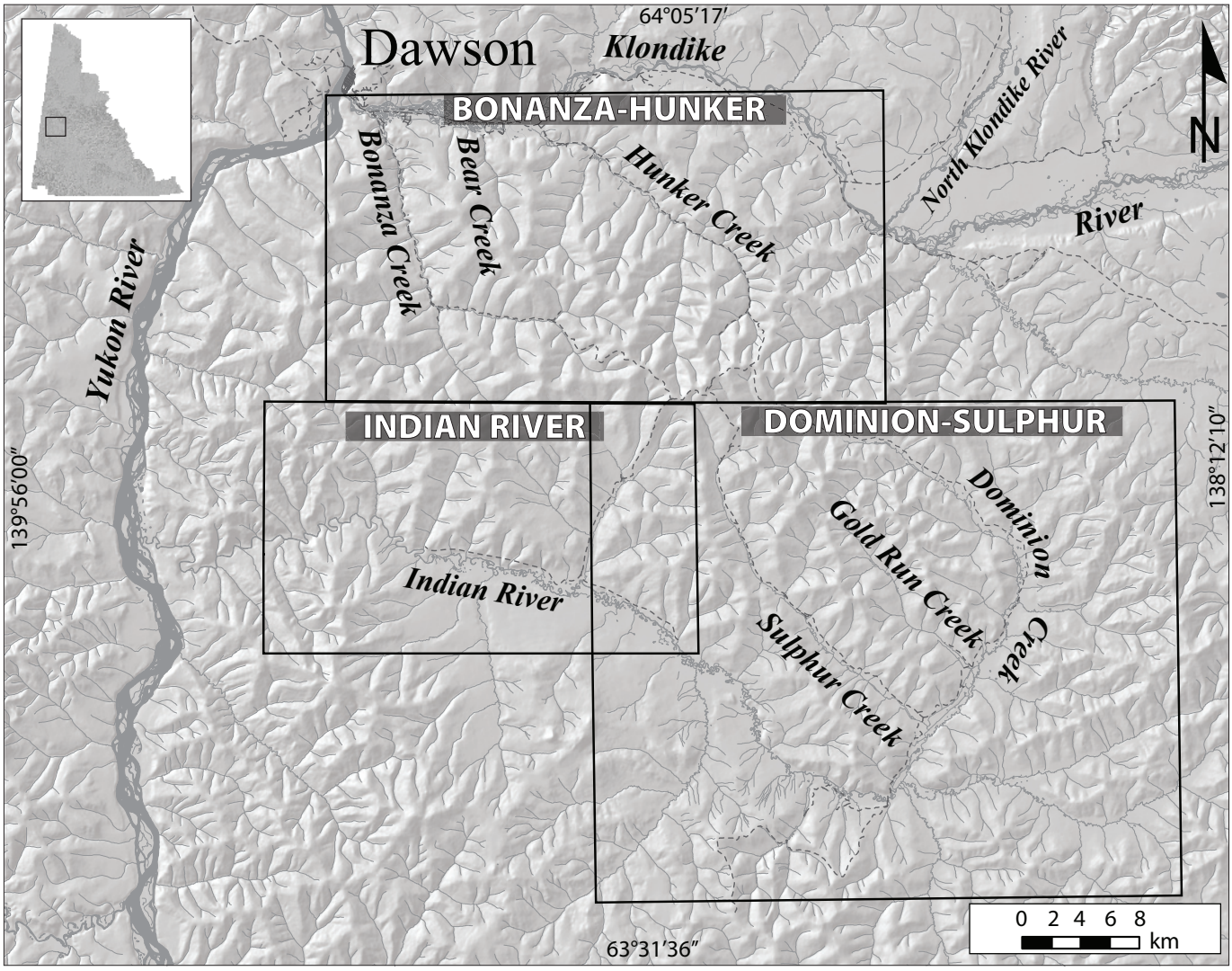
KLONDIKE PLACER AREAS

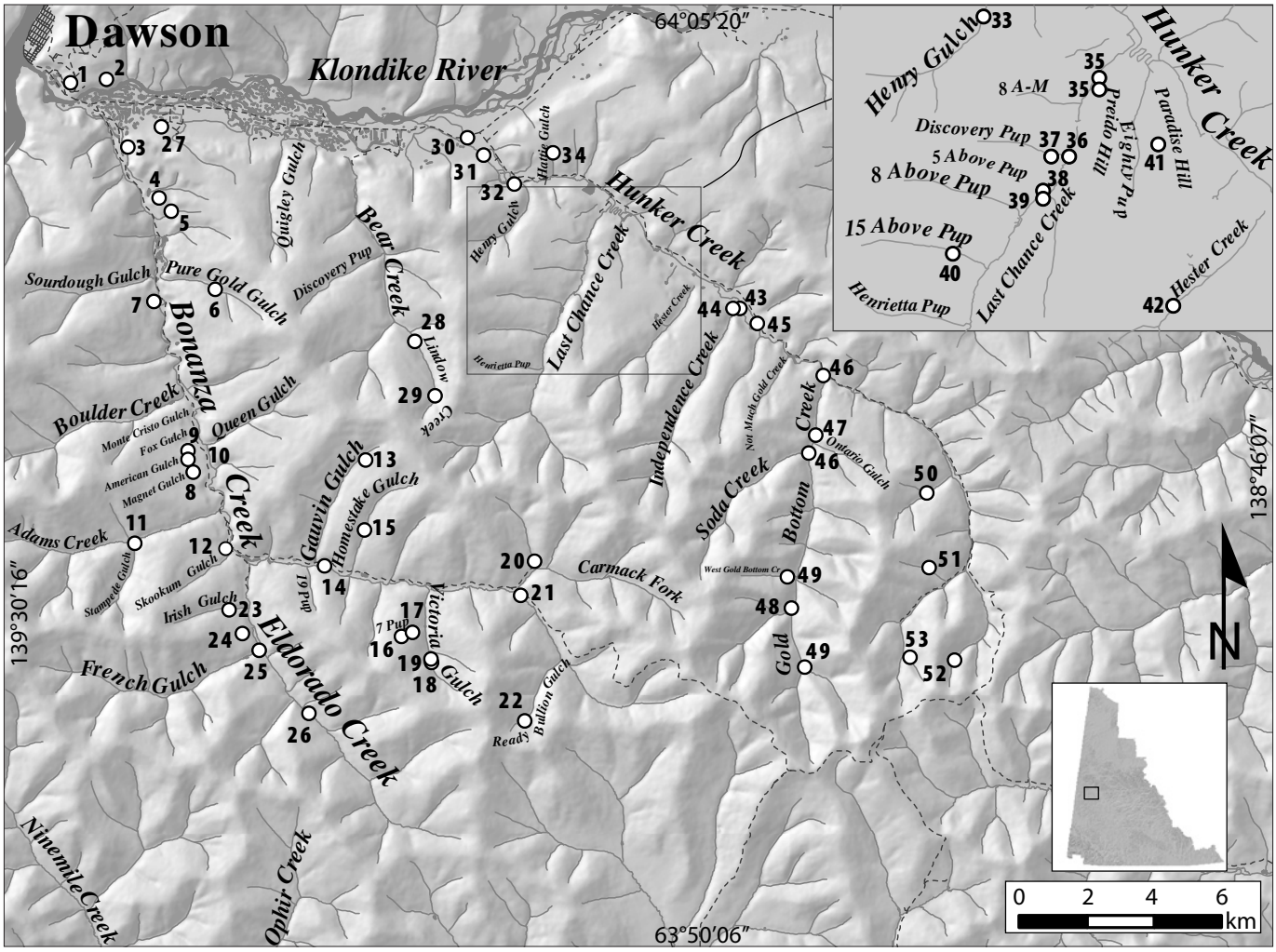
SITES 1-90



Inset maps are shown on pages following.

KLONDIKE:
BONANZA-HUNKER
PLACER AREA

SITES 1-53



LEGEND

1.....Carey
2.....Olson/Klippert
3.....Creaven
4.....Nicholson
5.....Coles
6.....Lanzinger
7.....Kohlman Explorations Ltd.
8.....LaBonte
9.....Jackson, D.
10.....Trudeau/Berglund
11.....Evans
12.....Daunt
13.....Roberts, W.
14.....Knutson
15.....McInroe
16.....Bryde
17.....Kissler/Jackson
18.....Laurenson
19.....6077 Yukon Ltd. - Victoria Gulch
20.....6077 Yukon Ltd. - Carmack Fork
21.....Maller
22.....Fournier
23.....Beron Placers Co. Ltd. - Irish Gulch
24.....Beron Placers Co. Ltd. - Eldorado
25.....Archibald
26.....Perunovic/Hinnek/Rauguth
27.....Crawford
28.....Hawker
29.....Roberts, A.
30.....Farley's Machine Inc.
31.....T.D. Oilfield Services Ltd.
32.....Henry Gulch Placers - Henry Gulch
33.....Gillespie
34.....Gould, P.
35.....Henry Gulch Placers - Last Chance
36.....Favron Enterprises Ltd.
37.....Last Chance Placers Ltd. - Discovery Pup
38.....Gritzka/Last Chance Placers Ltd.
39.....Last Chance Placers Ltd.- Last Chance
40.....Last Chance Placers Ltd. - 15 Pup
41.....Tamarack Inc.
42.....The Nugget Factory Inc.
43.....Levesque
44.....Kosuta
45.....Gould, D.
46.....Mogul Gold Placers Ltd.
47.....Pay Streak Placers
48.....Jackson, K.
49.....Aimola
50.....Grew Creek Ventures Ltd.
51.....Ahnert
52.....Laurenson
53.....McMahon

KLONDIKE RIVER, a tributary of Yukon River

116B/3 2005: 64°02'50"N, 139°24'48"W

Darrell Carey, Michelle Carey
Water license: PM98-047 (2010)
Exploration (2003-2005) **Operation no. 1**

Location The property was located on a right-limit bench of the Klondike River.

Work History and Mining Cuts In 2002, numerous small test pits were excavated. From 2004 to 2005, Darrell and Michelle Carey worked a daily 6-hour shift test mining several pits on the property. The main cut was 70 feet long, 40 feet wide and 30 feet deep (20 x 10 x 10 m).

Equipment and Water Treatment Equipment included a Komatsu PC120 excavator, a Komatsu WA500 loader and a Kenworth KW900 dump truck. Pay was hauled to the valley for sluicing. The wash plant was hand-fed at a rate of 2 to 3 loose cubic yards per hour and included a 10-cubic-yard dump truck box over a 2-foot-wide, 25-foot-long single-run sluice lined with 2-inch angle iron riffles, astroturf and gunny sacks. Water was acquired from dredge tailings ponds and was supplied by a 4-inch Deutch pump rated at 1200 igpm. Effluent was settled in a 1000- by 300-foot (300- x 100-m) pond.

Surficial Geology and Stratigraphy The section consisted of 20 feet (6 m) of old strippings and tailings (from Djukastein 1992-1997) overlying 3 feet (1 m) of silt and 17 to 25 feet (5 to 8 m) of gravel. The lowest 2 feet (0.6 m) of gravel plus 3 to 4 feet (0.9 to 1.2 m) of bedrock were sluiced.

Bedrock Geology Bedrock is soft, graphitic quartz-mica schist, quartz-sericite schist with minor quartz veins and lenses. It is decomposed to at least 4 feet (1 m) below the surface.

KLONDIKE RIVER, a tributary of Yukon River

116B/3 2006: 64°02'52"N, 139°23'30"W

William Olson, Jr., Dan Klippert
Water license: PM04-371 (2014; Licensee: Paul O'Brien)
Active producer (2006) **Operation no. 2**

Location This operation was located on the right-limit bench of the Klondike River valley downstream from Thomas Gulch.

Work History and Mining Cuts This small-scale operation was first active in 1982. In 2006, Dan Klippert and Willy Olson Jr. tested some areas on the bench and mined a test cut.

Equipment and Water Treatment In 2006, equipment on site included a Caterpillar excavator and bulldozer, and a Komatsu PC400LC excavator. Dan Klippert's wash plant was a New Zealand trommel with a radial 15° stacker. The plant reduced the pay gravel to ¾ inch minus and fed to a sluice run 10 feet wide by 12 feet long with hydraulic riffles and specialized rubber matting. A 4- by 6-inch diesel-powered pump supplied the water.

Dan Klippert's wash plant operating on the Klondike River bench, 2006.

Surficial Geology and Stratigraphy The property lies on an intermediate level terrace above Klondike River, which has been interpreted to be early Pleistocene in age — younger than White Channel, but older than the modern streams. In 2006, the section consisted of 12 feet (4 m) of silt overlying 6 feet (2 m) of sandy gravel, 3 feet (1 m) of poorly sorted gravel and 3 feet (1 m) of grey, compact cobbly gravel on bedrock. The lowest 3 to 4 feet (0.9 to 1.2 m) of gravel was sluiced along with about a foot (0.3 m) of bedrock.

Bedrock Geology Bedrock is a rusty, blocky quartzite and schist.

Gold Characteristics Gold from this property has been reported as fine-grained and flat, with a fineness from 780 to 800.

BONANZA CREEK, a tributary of Klondike River

116B/3 2004: 64°01'48"N, 139°22'48"W

Michael F. Creaven
Water licenses: PM04-372 (2009), PM00-176 (2004)
Active producer (2004, 2006) **Operation no. 3**

Location The property was located at the lower end of Bonanza Creek, between California Gulch and Examiner Gulch on the right limit at the base of Lovett Hill.

Work History and Mining Cuts Mr. Creaven began working in the area in 1993. In 2004, Creaven mined at the base of Lovett Hill on the right limit at the valley bottom. In 2006, sluicing was conducted on the right limit of Bonanza Creek.

Equipment and Water Treatment Equipment included a Case 580 excavator/loader which was used to excavate pay gravel, feed the wash plant and remove tailings. A 4- by 8-foot screen deck classified material to ⅝-inch and fed into a 16- by 1-foot single sluice run lined with angle iron riffles. Groundwater seepage was recycled from out-of-stream ponds in mining cuts from previous operations in the area. Gold was cleaned up using a micro concentrator.

Surficial Geology and Stratigraphy The right limit of the valley was previously mined up to an exposed face of gravel and bedrock about 20 feet (6 m) deep. On the right limit of the valley bottom, pay gravel were excavated from a 20-foot (6-m) deep vertical face composed of alternating layers of black muck and gravel.

Bedrock Geology The bedrock is Klondike Schist.

Gold Characteristics The gold was reported as fine, flat and smooth, with a fineness of approximately 800.

LOVETT GULCH, a tributary of Bonanza Creek

116B/3 2005: 64°00'59"N, 139°21'43"W

Clive Nicholson

Water licenses: PM06-533 (2016), PM01-226 (2006)

Active producer (2003-2006) **Operation no. 4**

Location The property was located at the mouth of Lovett Gulch, a right-limit tributary to lower Bonanza Creek.

Work History and Mining Cuts Mr. Nicholson began mining in the area of Lovett Gulch and Trail Hill in 1973 and has mined each year since then. From 2003 to 2006, Nicholson continued mining on the first-tier bench of Lovett Gulch. The crew of four employees averaged 8 to 10 hours per day of sluicing during the season.

Equipment and Water Treatment Equipment included a Caterpillar D9 bulldozer, two Caterpillar 627 scrapers and a Caterpillar 920 loader. The wash plant was a 7-foot-diameter trommel which fed a 4- by 30-foot single sluice run lined with expanded metal riffles and Nomad matting. Processing rate was approximately 60 cubic yards per hour. Effluent was settled out-of-stream and recycled from abandoned mining cuts.

Clive Nicholson's pit on the right limit of Bonanza Creek, 2005. View looking east-southeast.

Surficial Geology and Stratigraphy The section consisted of up to 60 feet (20 m) of hydraulic tailings washed from the White Channel gravel terrace, overlying 35 to 45 feet (11 to 14 m) of original frozen muck and gravel. Pay gravel was 6 to 10 feet (2 to 3 m) deep which was sluiced along with 3 to 4 feet (0.9 to 1.2 m) of bedrock. Mammoth tusks and bones were found in the muck overburden and in frozen gravel.

Bedrock Geology The bedrock is chloritic quartzite and schist.

Gold Characteristics The gold recovered was flat and dull with a fineness of 795.

TRAIL GULCH, a tributary of Bonanza Creek

116B/3 2005: 64°00'46"N, 139°21'18"W

Tim Coles
Water license: PM01-258 (2012)
Active producer (2005-2006) **Operation no. 5**

Location The operation was located approximately half-way up Trail Gulch.

Work History and Mining Cuts Mr. Coles moved equipment here from his Upper Dominion Creek property and mined in 2005 and 2006.

Surficial Geology and Stratigraphy The section consisted of a large thickness of hydraulically washed White Channel gravel tailings over black muck and virgin gulch gravel.

Bedrock Geology Bedrock in this area is Klondike Schist.

PURE GOLD GULCH, a tributary of Bonanza Creek

1150/14 2003: 63°59'31"N, 139°19'48"W

Max Lanzinger, Vince Young
Water license: PM01-252 (2007, Licensee: Vince Young)
Active producer (2003) **Operation no. 6**

Location The operation was located on Pure Gold Gulch, a tributary of Bonanza Creek.

Work History and Mining Cuts This operation was first active in 2002, when some stripping and sluicing was done. In 2003, the property was leased to a third party. A pit was excavated at the top end of the property and some sluicing was conducted.

Bedrock Geology Bedrock is mapped as Klondike Schist.

BONANZA CREEK, a tributary of Klondike River

1150/14 2005: 63°59'21"N, 139°22'00"W

Kohlman Explorations Ltd., Leo Twordik, Cam Arkinstall, Steve Van Bibber
Water licenses: PM99-087 (2009)
Active producer (2003-2006) **Operation no. 7**

Location The property was located along the left limit of Bonanza Creek.

Work History and Mining Cuts Leo Twordik began mining on Bonanza Creek in 1983. In 2003, Mr. Twordik and Mr. Arkinstall mined a small cut along the left limit. In 2005, the operation was at the mouth of Sourdough Gulch. In 2006, Steve Van Bibber was working with Mr. Twordik.

Tim Cole's operation on Trail Gulch, 2006.

Kohlman Explorations Ltd.'s Bonanza Creek operation.

Equipment and Water Treatment Equipment included a Fiat Allis 41 bulldozer, a John Deere 890 excavator, a Lieb Herr 981 excavator, a Terex 50-ton rock truck and a Hough 120 loader. The wash plant was a 6.5- by 40-foot trommel which classified to ½ inch, over four 16-foot-wide oscillating sluice runs. An 8- by 10-inch Paco water pump powered by a Cummins 195 diesel engine provided approximately 2500 igpm which was used to process from 150 up to 200 cubic yards per hour. Water was pumped directly from Bonanza Creek and was settled in two large out-of-stream ponds in old mining cuts with seepage discharge only.

Surficial Geology and Stratigraphy The section generally consisted of 50 feet (15 m) of frozen overburden overlying 16 feet (5 m) of pay gravel along the left limit, while the centre of the valley was covered with dredge tailings with localized remnant pay pockets in bedrock.

Bedrock Geology The bedrock at this site is Klondike Schist.

Gold Characteristics Gold was reported as mostly fine grained with some flakes and small nuggets. The fineness was 780.

BONANZA CREEK, a tributary of Klondike River

1150/14 2005: 63°56'59"N, 139°20'55"W

Ralph LaBonte
Water license: PM02-298 (2013)
Active producer (2003-2006) **Operation no. 8**

Location This operation was located on the left limit on a White Channel terrace. Sluicing occurred in the Bonanza valley in 2003 to 2005, but was moved to the bench in 2006.

Work History and Mining Cuts The operators sluiced 6 to 8 hours per day with two employees. The cuts were located on the left-limit bench of Bonanza Creek in the vicinity of Fox Gulch and the sluicing operation occurred in the Bonanza valley. In 2006, the sluicing operation was moved up onto the left-limit bench at the base of the White Channel deposit. The operation used total recycle with no discharge and used only make-up water from Bonanza Creek.

Ralph LaBonte sluicing on Bonanza Creek.

Equipment and Water Treatment A Caterpillar 235 excavator was used to load a dump truck which took the material to the sluice box in the Bonanza valley. The operation used an in-stream reservoir pond located in Bonanza Creek above Claim 33, and out-of-stream settling ponds in the dredge tailings, with no surface discharge to Bonanza Creek.

Bedrock Geology The bedrock at this site is sericite and chlorite schist.

BONANZA CREEK, a tributary of Klondike River

1150/14 2004: 63°56'51"N, 139°20'56"W

Doug Jackson
Water license: PM03-344 (2009)
Active producer (2004-2006) **Operation no. 9**

Location The operation was located on American Hill on the left limit of Bonanza Creek.

Work History and Mining Cuts Each season from 2004 to 2006, Mr. Jackson worked a daily 12-hour shift alone. In 2004, he processed a 60- by 80-foot (20- x 25-m) cut, in 2005, he mined a 100- by 80-foot (30- x 25-m) cut, and in 2006, he mined a 150- by 80-foot cut (45- x 25-m).

Equipment and Water Treatment Equipment included Caterpillar D824 and D4 bulldozers, a Bucyrus Erie 20-ton trackhoe, a Caterpillar 966 loader and a Clark 125 loader. The wash plant included a trommel with a 5-foot-diameter barrel and a 4- by 10-foot single screen deck over 4- by 10-foot sluice runs lined with expanded metal and Nomad matting. Water was acquired from Bonanza Creek and supplied by a Chrysler-powered 5- by 6-inch Ajax pump rated at 1400 igpm. Effluent was settled out-of-stream and 100% recycled from a 200- by 200-foot (60- x 60-m) pond. Clean-ups were done with a rocker/shaker box and Diester table.

Surficial Geology and Stratigraphy The section consisted of 80 feet (20 m) of White Channel gravel on bedrock, on the bench above Bonanza Creek valley. The bottom 4 to 6 feet (1 to 2 m) of gravel and 2 to 4 feet (0.6 to 1 m) of bedrock were sluiced.

Bedrock Geology Bedrock is Klondike Schist.

Gold Characteristics Gold recovered was fine-grained and silver-gold in colour with a fineness of 800.

BONANZA CREEK, a tributary of Klondike River

1150/14 2005: 63°56'39"N, 139°20'45"W

Roland Berglund, Daniel B. Trudeau
Water license: PM02-300 (2013, Licensee: Roland Berglund)
Active producer (2003-2006) **Operation no. 10**

Location This operation was located on Magnet Hill on the left limit of Bonanza Creek.

Work History and Mining Cuts Mechanical stripping and settling pond construction occurred on the property in 2002, with some sluicing of stockpiled material. Mining of the bench gravel deposits took place during the 2003 to 2006 seasons.

Equipment and Water Treatment The equipment consisted of Caterpillar D8 and D9 bulldozers for stripping and general purposes, a Caterpillar 988F loader to feed the sluice plant, and a Samsung 280 excavator for loading the 15-cubic-yard Mack dump truck. The wash plant included a 12- by 12-foot grizzly over a 4-foot-diameter trommel. Material screened to ½-inch minus fed to 4 by 6 feet of sluice runs lined with Hungarian riffles. Tailings were stacked by a 2- by 30-foot conveyor. A Deutz-diesel powered 6- by 6-inch Monarch pump rated at 800 igpm supplied water for the plant from an in-stream reservoir. Effluent was 50% recycled from four out-of-stream settling ponds. Gold was cleaned up using a jig, a long tom and a vibrating gold table.

Surficial Geology and Stratigraphy In 2002, stockpiled gravel was sluiced. In the 2003 to 2006 seasons, White Channel gravel was mined on the bench.

Bedrock Geology Bedrock is Klondike Schist.

Trudeau and Berglund's operation, Bonanza Creek.

STAMPEDE GULCH, a tributary of Adams Gulch

1150/14 2005: 63°55'33"N, 139°22'55"W

John Evans, Steve Van Bibber
Water licenses: PM03-329 (2008), PM02-274 (2007)
Active producer (2003-2006) **Operation no. 11**

Location The operation was located at the mouth of Stampede Gulch, a tributary to Adams Gulch.

Work History and Mining Cuts A small amount of stripping occurred at the downstream boundary of the property in 2003. In 2005, mining took place at the mouth of Stampede Gulch. In 2006, exploration drilling and trenching was conducted upstream on Adams Gulch.

Equipment and Water Treatment In 2004, a three-person operation established an out-of-stream recycle system with no discharge.

Surficial Geology and Stratigraphy From 12 to 15 feet (4 to 5 m) of black muck was overlying 4 to 6 feet (1 to 2 m) of angular gravel on bedrock. All of the gravel was sluiced.

Bedrock Geology Bedrock is muscovite schist.

SKOOKUM GULCH, a tributary of Bonanza Creek

1150/14 2003: 63°55'10"N, 139°19'55"W

Ivan Daunt
Water license: PM04-409 (2015)
Active producer (2003-2006) **Operation no. 12**

Location This operation was located along the left limit of Bonanza Creek, at the mouth of Skookum Gulch immediately below Grand Forks.

Work History and Mining Cuts Work at this operation began in 1983 and the gulch has been mined nearly every year since then. In 2003, mining continued, but in 2004, only stripping and pond construction were done. The property was inactive in 2005, but a limited amount of mining was done in 2006.

Equipment and Water Treatment The equipment included a Komatsu bulldozer (Caterpillar D6 equivalent), a Caterpillar 951 crawler loader and a Caterpillar 966B loader. The plant was a small hopper over a 5- by 12-foot shaking screen deck which classified pay gravel to ¾ inch. A single sluice run was 3 feet wide by 20 feet long with angle iron riffles over a plastic mat. A 6- by 6-inch Monarch pump, powered by a Perkins V8 diesel engine, delivered about 1200 igpm of water which was used to process up to 40 yards per hour. In 2006, a water intake pump with a metal gate in Bonanza Creek was being used for make-up water only. Two recycle/settling ponds were located in-stream on Big Skookum Gulch with bedrock spillways.

Surficial Geology and Stratigraphy Frozen black muck overburden, with evidence of old mining shafts, was 25 to 30 feet (7 to 9 m) deep. Pay gravel varied from 3 to 6 feet (0.9 to 2 m) deep and were up to 20 feet (6 m) wide in the gulch bottom. All gravel plus 2 to 3 feet (0.6 to 1 m) of broken bedrock were sluiced. One main cut in the valley bottom centre averaged about 30 feet wide by 15 feet deep (10 x 5 m) and was progressively worked upstream by 75 to 100 feet per season (20 x 30 m).

Bedrock Geology The bedrock is composed of green, decomposed muscovite schist.

Gold Characteristics Gold was reported as rough and angular with attached quartz, and a fineness of approximately 660.

GAUVIN GULCH, a tributary of Upper Bonanza Creek

1150/14 2003: 63°56'46"N, 139°14'34"W

Wallace L. (Red) Roberts
Water license: PM02-286 (2008)
Active producer (2003-2006) **Operation no. 13**

Location This operation was located on upper Gauvin Gulch about 2.5 miles (4 km) upstream from its confluence with Upper Bonanza Creek.

Work History and Mining Cuts The property was tested in 1996 and 1997, and mining began in 1998. From 2003 to 2006, Mr. Roberts worked a daily 8- to 10-hour shift. Over this time he processed a cut 150 feet long by 100 feet wide (50 x 30 m) which varied in depth between 10 and 30 feet (3 and 10 m).

Equipment and Water Treatment From 2003 to 2006 equipment included a TD8 International bulldozer, a 721 BobCat, a Case 480E excavator, a Terex 71-51 loader, a Ford 15-cubic-yard-capacity dump truck and a Bucyrus-Erie 22B dragline. A Case 220B excavator was purchased in 2006. The Case 480E excavator fed the wash plant, while the TD8 International bulldozer was used to scrape pay from the cut bank. The 721 BobCat was used for small reclamation jobs. The dump truck was used to remove tailings after they were dried out and stacked against the hillside. The wash plant was fed at a rate of 12 to 15 loose cubic yards per hour and consisted of a single screen deck over a single run sluice 20 feet long and 2 feet wide, lined with hydraulic riffles. Water for the sluice was pumped by a Deutz-powered 4-inch Gorman Rupp pump. Cross-valley dams were built to capture run-off which was used for sluicing. Effluent was settled into an upper pond, which was regularly bailed out with the Bucyrus-Erie dragline. The second pond further settled material and the lower pond was a reservoir out of which water was pumped back up the hill to the sluice. Clean-ups were done with a 5-foot-diameter gold wheel once or twice a month.

Surficial Geology and Stratigraphy In the gulch, frozen overburden varied from 25 up to 50 feet (10 to 20 m) deep on top of only 4 to 6 feet (1 to 2 m) of gravel.

Gravel was mixed with some clay. All gravel plus 1 foot (0.3 m) of decomposed bedrock were sluiced. From 2003 to 2006, the mining exposure consisted of a buried alluvial terrace which was cut by the gulch. It was comprised of a coarse gravel layer 10 to 30 feet (3 to 10 m) thick, with large rounded quartz boulders up to 6 feet (2 m) in diameter. All of the gravel was sluiced.

Bedrock Geology Bedrock at this site is a wavy quartz-sericite schist. Bedrock slabs were found in the rust-coloured gravel at all levels.

Gold Characteristics From 2003 to 2006, the gold was described as coarse-grained, with a fineness of 664.

Red Roberts' operation on Gauvin Gulch, 2006.

Marty Knutson's operation, Upper Bonanza Creek, 2006.

UPPER BONANZA CREEK, a tributary of Bonanza

1150/14 2006: 63°55'07"N, 139°16'08"W

Marty Knutson
Water license: PM04-433 (2015, Licensee: Martin Knutson)
Active producer (2005-2006) **Operation no. 14**

Location The operation was located on Upper Bonanza Creek between Homestake and Gauvin Gulch.

Work History and Mining Cuts In 2005, Marty Knutson and his crew began mining in the centre and on the right limit of the Upper Bonanza Creek valley. In 2006, the operation continued to mine in the valley and a cut was opened up downstream on the left limit.

Equipment and Water Treatment Equipment included a Nodwell-mounted 6-inch auger drill, a Caterpillar 225 excavator, a Caterpillar 235 excavator, two Caterpillar D9 bulldozers and two Caterpillar rock trucks. The wash plant was a single deck offset shaker with ¾-inch punch plate and a 30-inch by 30-foot stacker for coarse tailings. Boil boxes captured coarse gold, while two 8-foot sluice runs with expanded metal, hydraulic riffles and Nomad matting captured the smaller fractions. Approximately 90 loose cubic yards per hour were processed. Sluicing occurred with in-stream settling of effluent and out-of-stream settling for mining pit dewatering. A diversion channel was built in the valley centre with three large boulder drop structures.

Surficial Geology and Stratigraphy The valley and right-limit cuts consisted of virgin gravel missed by the dredge, oldtimers' tailings and dredge slickings. The left-limit cut included a low terrace on bedrock with angular gravel.

Bedrock Geology Bedrock is a blocky quartzose schist on the left limit, and a decomposed chlorite schist on the right limit.

HOMESTAKE GULCH, a tributary of Upper Bonanza

1150/14 2006: 63°55'40"N, 139°14'41"W

Dave McInroe, Lawrence Beyer
Water license: PM03-306 (2013, Licensee: Lawrence Beyer)
Active producer (2006) **Operation no. 15**

Location The operation was located on Homestake Gulch.

Work History and Mining Cuts In 2006, Dave McInroe set up an operation under Lawrence Beyer's water license, working a daily 8-hour shift alone. He mined a 50- by 400-foot (10- x 100-m) cut.

Equipment and Water Treatment Equipment included a Kobelco 250 excavator for stripping the ground and feeding the plant. The wash plant, fed at 65 loose cubic yards per hour, was a

land-based trommel with sluice runs 7 feet wide and 8 feet long, lined with hydraulic riffles, expanded metal and Nomad matting. Water was acquired from Homestake Gulch and supplied by a Perkins-powered 5- by 4-inch Ajax pump rated at 700 igpm. Effluent water was 100% recycled. Clean-ups were done with a long tom and gold wheel.

Surficial Geology and Stratigraphy The frozen section consisted of 10 to 20 feet (3 to 6 m) of black muck overlying 2 to 6 feet (0.6 to 2 m) of gravel on bedrock. The lower 2 feet (0.6 m) of gravel plus 1 foot (0.3 m) of bedrock was sluiced.

Bedrock Geology Bedrock is Klondike Schist.

7 PUP, a tributary of Victoria Gulch

1150/14 2003: 63°53'58"N, 139°13'27"W

Jerry Bryde
Water license: PM05-486 (2011)
Active producer (2003-2006) **Operation no. 16**

Location This operation was located at upper reaches of 7 Pup, immediately below the historic Lone Star hardrock gold mine (Yukon MINFILE 115 072; Deklerk, 2006).

Work History and Mining Cuts Jerry Bryde began working on the property in 1982. For the 2003 to 2005 mining seasons, Mr. Bryde worked a daily 16-hour shift alone. For each year a cut 100 by 75 by 7 feet (30 x 20 x 2 m) was processed. In 2006, one exploration shaft was hand excavated.

Equipment and Water Treatment Between 2003 and 2005, a Caterpillar D7-3T was used for ground preparation, feeding the dump box and removing tailings, while a Caterpillar 941B loader was used for miscellaneous duties. An Insley dragline was used for cleaning the settling and recycle ponds. Approximately 20 loose cubic yards per hour were fed to the 4- by 8-foot deck which classified material to ¾ inch. Two 3- by 10-foot sluice runs included a boil box, hydraulic riffles and expanded metal and un-backed Nomad matting. Water was acquired from the Lone Star Boulder adit at a rate of 5 igpm and pumped by an Uster-powered Gorman Rupp 4- by 4-inch pump rated at 300 igpm. Effluent was settled out-of-stream and 100% recycled from a 100- by 50- by 10-foot (30- x 10- x 3-m) pond.

Surficial Geology and Stratigraphy As in previous years, from 2003 to 2006 the section was a thawed eluvial placer consisting of weathered bedrock and soil. There was no

Jerry Bryde's operation on 7 Pup, 2003

washed gravel under the 1 to 2 feet (0.3 to 0.6 m) of moss, and all of the approximately 5 feet (2 m) of poorly sorted material and weathered bedrock was gold-bearing and was sluiced.

Bedrock Geology Bedrock at this site is a slabby-weathered fractured quartz and schist with near-vertical foliation.

Gold Characteristics From 2003 to 2005, the gold was crystalline, angular, sharp and unworn with quartz attached and a fineness of 801. Abundant quartz float with visible gold was recovered. Heavy minerals included magnetite, goethite and barite.

7 PUP, a tributary of Victoria Gulch

1150/14 2003: 63°54'02"N, 139°13'03"W

Everett Kissler, Douglas Jackson
Water license: PM96-089 (2005, Licensee: Douglas Jackson)
Active producer (2003) **Operation no. 17**

Location This operation was located near the top end of 7 Pup, a left-limit tributary to Victoria Gulch on upper Bonanza Creek.

Work History and Mining Cuts Everett Kissler started this operation in 1999, taking over from Peter Bodin. One main cut near the middle of the claim was mined at a rate of about 2000 cubic yards (1500 m^3) per season. Sluicing continued through 2003, when Douglas Jackson took over the license.

Equipment and Water Treatment A Caterpillar 966 loader was used to dig pay gravel, feed the wash plant and remove tailings. A shaking screen deck about 10 by 10 feet was followed by a single sluice run, 2 feet wide by 21 feet long, with expanded metal riffles over Nomad mat. A Gorman-Rupp 4-inch water pump supplied about 400 igpm of water which was used to sluice about 25 cubic yards per hour. Surface runoff was minimal this high up on the hillside, but seepage water was recycled in two settling ponds about 50 by 50 feet (10 x 10 m) each. During 2003, this was an out-of-stream operation capturing ground water and rainfall in reservoir ponds.

Surficial Geology and Stratigraphy There was no overburden left on surface in the area of mining; surface gravel mixed with tailings from old workings occurred throughout with depths varying from 5 to 20 feet (1 to 6 m). All gravel was sluiced from surface to bedrock.

Bedrock Geology Bedrock at this site is a slabby-weathering schist with near-vertical foliation.

Gold Characteristics The gold was reported as coarse with a few small nuggets, some with silver colour, and fineness around 860.

VICTORIA GULCH, a tributary of Upper Bonanza Creek

1150/14 2006: 63°53'33"N, 139°12'25"W

Dave Laurenson , Sarah Laurenson, Vern Trainer
Water license: PM04-452 (2015, Licensee: Vern Trainer)
Active producer (2006) **Operation no. 18**

Location The operation was located adjacent to Vern Trainer's mine on 13 Pup, upper Victoria Gulch.

Work History and Mining Cuts Dave and Sarah Laurenson moved here from Little Gold Creek in 2006 to mine under Vern Trainer's water license. They worked a daily 12-hour shift and processed a cut 1000 by 50 feet (300 x 10 m).

Equipment and Water Treatment Equipment consisted of a Caterpillar D8H bulldozer equipped with a ripper and U-blade for stripping, preparing pay gravel, clearing tailings and reclamation. A Terex 72-51 loader fed the sluice plant and did miscellaneous jobs. The wash plant included a 10-yard hopper which fed into a 4-foot-wide by 14-foot-long double screen deck. The classified gravel was then washed through sluice runs totalling 7 by 21 feet, which were lined with a combination of angle iron riffles, expanded metal and Nomad matting. Tailings were stacked with a 40-foot conveyor. Water from Victoria Gulch was supplied by an English 6-cylinder diesel-powered Ford 5- by 4-inch pump rated at 1200 igpm, enough to process 100 loose cubic yards per hour. Effluent was settled out-of-stream and 100% recycled from a 400- by 200-foot (100- x 60-m) pond. Clean-ups were done with a long tom.

Surficial Geology and Stratigraphy The section had been stripped before and the depth of gravel was 25 feet (8 m). All of the gravel was sluiced.

Bedrock Geology Bedrock is Klondike Schist.

Gold Characteristics Gold was reported as coarse-grained and bright yellow. The fineness was 820.

VICTORIA GULCH, a tributary of Upper Bonanza Creek

1150/14 2006: 63°53'36"N, 139°12'26"W

6077 Yukon Ltd., Vern Trainer, Don Trainer
Water license: PM04-452 (2015)
Active producer (2006) **Operation no. 19**

Location In 2006, the operation was located at the mouth of 13 Pup on Victoria Gulch.

Work History and Mining Cuts The operators first began working in this area in 1983. In 2006, a crew of three miners and two camp personnel worked a daily 8-hour shift. A cut 1000 by 100 feet (300 x 30 m) was mined. Dave and Sarah Laurenson also mined under this license.

Equipment and Water Treatment Two Caterpillar D8 bulldozers and one Caterpillar 980 loader were used. The wash plant was a hopper-fed double screen deck over 3 sluice runs lined with angle iron riffles and expanded metal. Water was acquired from Victoria Gulch and supplied by a Perkins-powered Morris 6-inch pump rated at 1500 igpm. Effluent was settled in-stream and 100% recycled from a 60- by 150-foot (20- x 50-m) pond. Over the season, five clean-ups were done using a jig for the final concentrate.

Surficial Geology and Stratigraphy In 2006, the section was thawed in the creek, but frozen in the banks. It consisted of 2 feet (0.6 m) or more of black muck overlying slide bedrock and very little gravel. All of the chunky bedrock was sluiced.

Bedrock Geology Bedrock is blocky-weathering quartz-sericite schist and soft chlorite schist.

Gold Characteristics The gold was reported as rough with a fineness of 820.

CARMACK FORK, a tributary of Upper Bonanza Creek

1150/14 2004: 63°55'06"N, 139°08'37"W

6077 Yukon Ltd., Dave Trainer, Wayne Hawkes
Water license: PM97-055 (2005)
Active producer (2003-2004) **Operation no. 20**

Location The operation was located on Lafferty Pup, Flannery Pup and Carmack Fork.

Work History and Mining Cuts This ground was first tested in 1997 and mining began in 1998. In 2002 and 2003, Wayne Hawkes worked under a license agreement with Dave Trainer. One cut 30 by 3 by 2500 feet (10 x 1 x 800 m) was processed. The sluice plant was moved upstream above Flannery Pup with a new settling pond added. In 2004, the operation moved upstream into Flannery Pup.

Equipment and Water Treatment In 2003, Wayne Hawkes stripped ground with a Caterpillar D9 bulldozer and Dave Trainer used a 466 Koehring excavator to feed the plant. The wash plant included a 10- by 15-foot Derocker dump box which fed into a single 4- by 30-foot sluice run with oscillating angle iron riffles. A 6-inch Perkins water pump supplied about 2000 igpm which was used to sluice 100 to 150 loose cubic yards per hour. Clean-ups were conducted using a long tom. A hydraulic monitor was used to melt black muck which was settled into a large downstream pond with 2 culverts acting as spillways. Make-up water only was pumped directly from Carmack Fork and process water was recycled from within an out-of-stream 300- by 150-foot (100-x 50-m) settling pond. A creek bypass channel around the settling pond was built and maintained along the left limit of the valley bottom. In 2004, the operation had two primary in-stream recycle ponds and another larger downstream settling pond.

Surficial Geology and Stratigraphy Organic overburden, from 8 feet (2 m) deep up to 20 feet (6 m) deep, was thawed near the creek channel and frozen along the sides of the valley. Gravel layers were up to 12 feet (4 m) deep and the bottom 6 feet (2 m) of gravel plus 1 foot (0.3 m) of bedrock were sluiced.

Bedrock Geology Bedrock is chloritic quartzite and muscovite-chlorite schist.

Gold Characteristics The gold was reported as fine-grained and the fineness was 692.

UPPER BONANZA CREEK, a tributary of Bonanza

1150/14 2006: 63°54'34"N, 139°09'09"W

Allen Maller, Anita Maller
Water license: PM04-384 (2014)
Active producer (2006) **Operation no. 21**

Location The operation was located on Upper Bonanza Creek just upstream of Carmack Fork.

Work History and Mining Cuts Mr. Maller worked the operation with the help of his wife Anita. Sluicing took place approximately 4 to 6 hours per day.

Equipment and Water Treatment Equipment consisted of a Warner and Swasey H-550 backhoe, a Case 450B track loader and a Caterpillar D7 bulldozer. The wash plant consisted of an 8- by 8-foot hopper with screen deck feeding a 3- by 12-foot single run sluice lined with angle iron riffles and Nomad matting. The operation used out-of-stream recycling with seepage discharge only.

Surficial Geology and Stratigraphy The section consisted of 20 feet (6 m) of muck and silt overlying 10 feet (3 m) of gravel.

Bedrock Geology Bedrock is Klondike Schist.

READY BULLION GULCH, a tributary of Upper

1150/14 2003: 63°52'35"N, 139°09'08"W

Andre Fournier
Water license: PM03-309 (2007)
Active producer (2003-2004) **Operation no. 22**

Location This property was located on Ready Bullion Gulch, a tributary of Upper Bonanza Creek.

Work History and Mining Cuts Activity during 2003 included refurbishment of the old residence. In 2004, Mr. Fournier recovered several ounces of gold while mining.

Bedrock Geology The bedrock is fractured muscovite-quartz Klondike Schist. The bedrock surface is irregular, with prominent reefs and hollows, and slopes into the valley wall along the left limit of the creek.

Allen and Anita Maller's operation on Upper Bonanza Creek, 2006.

IRISH GULCH, a tributary of Eldorado Creek

1150/14 2005: 63°54'28"N, 139°19'36"W

Beron Placers Co. Ltd., Bern Johnson, Ron Johnson
Water licenses: PM99-137 (2005), PM95-003 (2005)
Active producer (2003-2005) **Operation no. 23**

Location Ron and Bern Johnson mined progressively upstream on Irish Gulch, starting at its confluence with the left limit of Eldorado Creek.

Work History and Mining Cuts Mining at this property began in 1998, moving upstream each season until 2000 when a right-limit bench was discovered. The bench was mined until 2002, and mining again progressed upstream on Irish Gulch each season from 2002 to 2005. Frozen overburden was stripped mechanically and hydraulically, with in-stream settling ponds in Irish Gulch, a recycle pond in Eldorado valley and final discharge to Eldorado Creek. In 2006, Beron Placers moved to a bench on the left limit of Eldorado Creek between Irish Gulch and French Gulch.

Equipment and Water Treatment Equipment included a Caterpillar D6C bulldozer which was used for stripping and a 6-inch auger drill which was used for testing. A Caterpillar D8K bulldozer was used for stripping overburden and stockpiling pay gravel, while a Caterpillar 245 excavator was used to dig pay gravel, feed the wash plant and clean out settling ponds. A Caterpillar 950 loader was used to remove tailings. The wash plant was wheel-mounted and included a 17- by 15-foot dump box and a 4- by 20-foot vibrating screen deck with four 4- by 10-foot sluice runs. These narrowed into a single sluice run 42 inches wide by 7 feet long. Tailings were stacked with a 48-inch by 50-foot conveyor. A GM 871 diesel powered 8- by 10-inch Paco water pump supplied approximately 2500 igpm which was used to sluice up to 150 loose cubic yards per hour. Water was pumped from a large reservoir/recycle pond located in the Eldorado Creek valley, uphill into Irish Gulch using 2000 feet (600 m) of 10-inch aluminum pipe. A series of cross-valley rock-filled dams created permanent in-stream settling ponds in Irish Gulch. Gold was cleaned up using a Wilfley Table.

Bern and Ron Johnson sluicing on Irish Gulch.

Surficial Geology and Stratigraphy Frozen black muck overburden increased in depth as mining progressed upstream in Irish Gulch, starting with only 10 feet (3 m) near the mouth and increasing to more than 50 feet (10 m) deep on the upper right limit of the gulch. Near the middle of the gulch about 15 feet (5 m) of black muck mixed with angular rocks covered pay gravel 3 to 5 feet (1 to 2 m) deep. Up to 3 feet (1 m) of broken bedrock was also sluiced. Pay gravel was approximately 1½ feet (0.5 m) thick, light brown and rested on chlorite schist that slopes north. The gravel was overlain by 16½ feet (5 m) of muck that contained massive ground ice and an old ice-filled adit.

Bedrock Geology Bedrock is schist.

Gold Characteristics Coarse, angular gold with numerous nuggets and fineness around 650 was recovered, as well as rounded, smooth gold with a fineness of 750.

ELDORADO CREEK, a tributary of Bonanza Creek

1150/14 2006: 63°54'05"N, 139°19'09"W

Beron Placers Co. Ltd., Ron Johnson, Bern Johnson
Water license: PM04-458 (2015)
Active producer (2006) **Operation no. 24**

Location In 2006, the operation was on a left-limit bench between Irish Gulch and French Gulch.

Work History and Mining Cuts The Johnson brothers first worked on Eldorado Creek in 1975. In 2006, they returned to the left-limit bench on Eldorado Creek and operated a daily 12- to 14-hour shift with 2 miners and 2 camp personnel. One mining cut 50 feet wide and 1000 feet (15 x 300 m) long was processed.

Equipment and Water Treatment In 2006, equipment included Caterpillar D8K and D6C bulldozers for stripping and tailings removal, a Caterpillar 245 excavator for stripping and feeding the wash plant and a Caterpillar 950 loader for removing tailings. Miscellaneous other equipment included a drill rig for testing. The wash plant was fed 150 loose cubic yards per hour, and consisted of a vibrating grizzly feeder and screen deck feeding four 4- by 14-foot sluice runs lined with 1½- and 1-inch angle iron riffles, expanded metal and Nomad matting. Tailings were stacked by a 42-inch by 50-foot conveyor. Water from Eldorado Creek was supplied by two pumps, a GMV871-powered 10- by 8-inch pump rated at 4000 igpm and a GM471-powered 8- by 6-inch pump rated at 2000 igpm. Effluent was settled

Beron Placer's mining operation on the left-limit bench of Eldorado Creek, 2006.

out-of-stream and 100% recycled from a 600- by 50-foot (200- x 15-m) pond. Clean-ups were done daily with a long tom, Wilfley table and furnace.

Surficial Geology and Stratigraphy The section mined in 2006 on the left limit was frozen and consisted of 15 feet (5 m) of 'Klondike Wash' overlying 15 feet (5 m) of White Channel gravel on bedrock. All of the White Channel gravel and 3 feet (1 m) of bedrock were sluiced.

Bedrock Geology In 2006, the bedrock on the left limit was described as decomposed chlorite schist.

Gold Characteristics In 2006, the gold recovered from the left limit of Eldorado was crystalline with a purity of approximately 720.

FRENCH GULCH, a tributary of Eldorado Creek

1150/14 2003: 63°53'49"N, 139°18'33"W

J. Archibald
Water license: PM98-057 (2005)
Active producer (2004) **Operation no. 25**

Location The operation was located on French Gulch and just downstream of the mouth of French Gulch in the Eldorado Creek valley.

Work History and Mining Cuts James Archibald first operated in this location in 1978 and has mined nearly continuously since then. Mining cuts varied from 50 feet to 80 feet (15 to 25 m) wide by up to 500 feet (150 m) long each year. In 2004, Mr. Archibald sluiced in the Eldorado valley at the mouth of French Gulch and made cuts along the left limit of Eldorado Creek at the valley bottom.

Equipment and Water Treatment Equipment included a Caterpillar D6C bulldozer, a Caterpillar D8K bulldozer and a Caterpillar 980B loader. The wash plant consisted of a 10- by 20-foot Derocker over a single sluice run lined with angle iron riffles. Effluent was settled out-of-stream and recycled from two large settling ponds in Eldorado Creek valley at the mouth of French Gulch.

Surficial Geology and Stratigraphy Deposits along the left limit of Eldorado Creek consisted of frozen 1927-era dredge tailings up to 33 feet (10 m) thick, which covered residual virgin pay gravel with a thickness from 2 feet (0.6 m) to 15 feet (5 m) near the rim. Up to 40 feet (10 m) of White Channel gravel hydraulic tailings from operations on French Hill covered virgin gravel on the left limit of French Gulch.

Bedrock Geology Bedrock is a quartz-chlorite-sericite schist and black carbonaceous pyritic schist.

Gold Characteristics Fine-grained gold (minus 16-inch mesh) was recovered from below the dredge tailings with a fineness of approximately 710. Gold recovered from the side pay was coarser, mainly plus 16 mesh, with a fineness around 760.

ELDORADO CREEK, a tributary of Bonanza Creek

1150/14 2006: 63°52'48"N, 139°16'51"W

Ljubomir Perunovic, Walter Hinnek, Erich Rauguth
Water license: PM03-328 (2009, Licensee: Ljubomir Perunovic)
Active producer (2004-2006) **Operation no. 26**

Location The operation was located on the left and right limits of Eldorado Creek between Oro Grande and Gay Gulch.

Work History and Mining Cuts From 2004 to August 2006, Ljubomir Perunovic operated the mine with Walter Hinnek under Mr. Perunovic's water license. He mined side pay gravel, with one hired crew person on a daily 8-hour shift. In 2004, three cuts were mined: 50 by 300 feet (15 x 90 m), 40 by 300 feet (10 by 90 m), and 50 by 250 feet (15 x 80 m). In 2005, one cut 1000 by 50 feet (300 x 15 m) was mined, and in 2006, tailings and some bedrock were sluiced for a total of 6000 cubic yards (5000 m^3). In September 2006, the operation was transferred to Erich Rauguth. Mr. Rauguth continued to mine under Mr. Perunovic's water license using a crew of four miners working a daily 10-hour shift.

Equipment and Water Treatment Mr. Perunovic's equipment included a Koehring excavator, a Hitachi U14H excavator and a Caterpillar 980B loader. For stripping jobs, a Caterpillar bulldozer was hired on a casual basis. The wash plant was a single screen deck with four 8- by 2-foot sluice runs, hydraulic riffles, expanded metal and Nomad matting. Material was processed at 40 loose cubic yards per hour. Water was supplied by an 8- by 6-inch Perkins-powered pump rated at 500 igpm. Final clean-ups were done by Don and Rose Kenzie in Callison. Water was acquired from Eldorado and 50% recycled in a 400- by 50-foot (100- x

15-m) pond. Mr. Rauguth used the existing Caterpillar 980B loader and Hitachi U14H excavator when he took over the operation but added a Caterpillar D9G bulldozer. His wash plant was a single screen deck with three sluice runs lined with angle iron and hydraulic riffles, expanded metal and Coco matting. Water was acquired from Eldorado Creek and supplied by a John Deere 6- by 6-inch pump rated at 1200 igpm. Pay was processed at 80 loose cubic yards per hour. Effluent was settled in a 50- by 140-foot (15 x 40 m) pond. Clean-ups were done using a long tom, gold wheel and concentrating table.

Surficial Geology and Stratigraphy The section encountered by Mr. Perunovic was frozen on the left limit and consisted of 6 to 8 feet (2 to 3 m) of overburden overlying 3 feet (1 m) of gravel. All of the gravel plus 3 feet (1 m) of bedrock was sluiced. Mr. Rauguth stripped overburden 8 to 40 feet (3 to 10 m) thick to access mineable side pay gravel which was 20 to 40 inches (50 to 100 cm) thick. An additional 3 feet (1 m) of gravel was sluiced if the bedrock was slabby and competent. Only 2 feet (0.6 m) of bedrock was sluiced if it was decomposed clay.

Bedrock Geology Bedrock is chloritic schist.

Gold Characteristics Mr. Perunovic reported the gold as variable from coarse- to fine-grained and bright yellow in colour. The fineness was 750. Mr. Rauguth recovered coarse gold, 20 mesh and larger in size.

JACKSON HILL, a tributary of Klondike River

116B/3 2005: 64°02'06"N, 139°21'35"W

Gary Crawford, Walter Hinnek, Mike Heisey
Water license: PM02-272 (2012, Licensee: Mike Heisey)
Active producer (2005-2006) **Operation no. 27**

Location The operation was located at the base of Jackson Hill on the left limit of Klondike River.

Work History and Mining Cuts In 2005, Walter Hinnek and Gary Crawford sluiced some White Channel gravel on the bench of Jackson Hill under Mike Heisey's license. In the fall, a drill program was conducted to evaluate the grade of the buried Klondike River gravel. In 2006, a crew of five miners and one camp personnel worked a daily 12-hour shift. The operation mined virgin Klondike River gravel on the left limit of Klondike River, at the base of Jackson Hill, after stripping off hydraulic tailings and black muck. A mining cut 800 by 150 feet (200 x 50 m) with a total average depth of 75 feet (20 m) from surface was processed.

Equipment and Water Treatment In 2005, test sluicing was conducted on the Jackson Hill bench above Klondike River. Water was pumped from a dredge pond in the valley and after partial recycle on the bench the final discharge was to dredge tailings in the valley. An Ingersoll & Rand reverse circulation drill capable of drilling to 300 feet (100 m) was used for the drill program. In 2006, equipment consisted of a Caterpillar D10N bulldozer, a Caterpillar 245 excavator,

Aerial view of Perunovic's mining operation on Eldorado Creek, 2006.

a Samsung 350 excavator, a Caterpillar 988B loader, three Caterpillar 769B rock trucks and two Caterpillar D40D rock trucks. The wash plant was a 6-foot-diameter land-based trommel with two sets of sluice runs each 8 feet wide and 10 feet long, lined with expanded metal and Nomad matting. Water for the operation was acquired from dredge ponds and pumped by a V6 Jimmy-powered 10- by 8-inch Morris pump rated at 3000 igpm. Effluent was discharged to old dredge tailings and 100% recycled with seepage only to dredge ponds.

Surficial Geology and Stratigraphy The section in 2005 consisted of White Channel gravel on Jackson Hill at the bedrock contact. In 2006, the Klondike valley section on the left limit consisted of 55 feet (17 m) of hydraulic tailings overlying 20 feet (6 m) of black muck on top of 6 feet (2 m) of virgin Klondike River gravel. All of the virgin gravel plus 3 feet (1 m) of bedrock was sluiced.

Bedrock Geology The bedrock at this site is graphitic and chloritic schist.

Gary Crawford's wash plant operating on the Klondike River at the base of Jackson Hill, 2006.

Gold Characteristics Gold was reported as dark-coloured and fine-grained with very few nuggets. The purity was 790.

Gary Crawford sluicing on Jackson Hill, 2005

LINDOW CREEK, a tributary of Bear Creek

1150/14 2006: 63°58'37"N, 139°12'41"W

Frank Hawker
Water license: PM04-388 (2015)
Active producer (2006) **Operation no. 28**

Location The operation was located on Lindow Creek downstream of Alf Robert's operation.

Work History and Mining Cuts The early part of the 2006 season was spent moving equipment from Sixtymile to Lindow, and digging test holes with the excavator. When mining began, two miners and one camp person worked a daily 12-hour shift. A 350- by 75-foot (100- x 20-m) cut was processed.

Equipment and Water Treatment Equipment included a Komatsu 375 bulldozer for stripping, two Hitachi excavators (EX200 and EX300) for stripping and sluicing, and a Caterpillar D30D rock truck for hauling overburden. The wash plant was a land-based trommel with a 4-foot-diameter barrel and sluice runs lined with hydraulic riffles. Material was processed at 55 loose cubic yards per hour. Water was acquired from Lindow and Bear creeks and supplied by a Caterpillar 3208-powered 6- by 6-inch pump rated at 1200 igpm. Effluent was 50% recycled from the settling facilities.

Surficial Geology and Stratigraphy The section was frozen and consisted of 30 feet (10 m) of muck and waste gravel overlying pay gravel 1 to 2 feet (0.3 to 0.6 m) thick on bedrock. Up to 6 feet (2 m) of bedrock was sluiced along with the pay gravel.

Bedrock Geology Bedrock is Klondike Schist.

Test pit at Frank and Karen Hawker's operation on Lindow Creek.

LINDOW CREEK, a tributary of Bear Creek

1150/14 2006: 63°57'45"N, 139°12'01"W

Alfred Roberts, Marlene Roberts
Water license: PM03-334 (2008)
Active producer (2003-2006) **Operation no. 29**

Location This operation was located on upper Lindow Creek, a tributary of Bear Creek.

Work History and Mining Cuts In 2003, Alf and Marlene Roberts worked a daily 8-hour shift mainly cleaning their old site at Homestake Gulch and moving equipment to Lindow Creek. In 2004, one cut 300 feet long, 40 feet wide and 2 feet deep (90 x 10 x 1 m) was mined. In 2005, the season was spent cleaning up and digging the pre-settling pond and the sump for the main settling pond with the dragline. In 2006, two cuts were stripped, one 200 by 25 feet (60 x 8 m) and another 300 by 20 feet (90 x 6 m). Approximately 70 cubic yards (50 m^3) were sluiced.

Equipment and Water Treatment Equipment consisted of a Caterpillar D8H bulldozer with U-blade and no ripper for stripping and pushing pay, and an International 125C track loader with a 1½-cubic-yard bucket and ripper was used for loading the wash plant. A Bay City dragline with a ¾-cubic-yard bucket was brought to the site in 2005 to move overburden and clean out the settling ponds. The wash plant was a 5- by 10-foot wet double screen shaker with 2-inch openings on the top and 1-inch openings on the bottom. This fed to an 18-inch by 20-foot sluice run with Nomad matting, of which the first 12 feet was inclined at 1½ inch to 1-foot grade and lined with 4-lb expanded metal, and the last 8 feet was inclined at 3 inches to 1 foot and lined with 1-inch

Alf and Marlene Roberts operation on Lindow Creek, 2006.

Sometimes the crew is small but their contribution is great.

riffles. Water for the plant was supplied at 600 igpm by a Gorman Rupp 6-inch pump powered by a GM 353 diesel engine, enough to process 20 loose cubic yards per hour. Clean-ups were done once weekly with a wash tub, long tom and gold wheel. Water in 2004 was acquired from a 100% recycled out-of-stream pond 200 by 50 by 6 feet (60 x 15 x 2 m). In 2003 and 2005, no water was used. In 2006, water was acquired from a 50- by 100- by 6-foot (15- x 30- x 2-m) deep pump pond on the adjacent downstream claim. Effluent was settled out-of-stream and 100% recycled from a 150- by 50- by 8-foot (50- x 15- x 2-m) deep pond.

Surficial Geology and Stratigraphy There are reportedly two pay streaks on the creek, with many oldtimers' workings throughout. The top pay streak is 4 to 6 feet (1 to 2 m) above the bedrock, and the bottom one is on bedrock. The section mined in 2004 consisted of 1½ feet (0.5 m) of moss and dirt and 2 feet (0.6 m) of top soil, overlying 2 feet (0.6 m) of gravel which was the top pay streak found to be overlying a clay 'false bedrock' layer. The deeper gravel layer (the second pay streak) and bedrock had not yet been reached by the operator. The top pay gravel was sluiced. In 2006, the section was frozen on the right limit but thawed in the middle of the valley. The middle of the valley had 1 foot (0.3 m) of moss and dirt over 6 feet (2 m) of gravelly slide rock overlying 11 feet (3.4 m) of gravel. The valley side had up to 18 feet (5.5 m) of overburden. A 5-foot (1 m) thickness of gravel was sluiced. Bedrock was not reached.

Gold Characteristics Mr. Roberts recovered rough and chunky 'gulch' gold up to 10 mesh in size. The fineness was reported as 658.

HUNKER CREEK, a tributary of Klondike River

116B/3 2005: 64°01'48"N, 139°10'35"W

Farley's Machine Inc., Dave Farley, Owen McKinney
Water license: PM04-440 (2015)
Active producer (2003-2006) **Operation no. 30**

Location This operation was located at the mouth of Hunker Creek immediately next to the Klondike Highway.

Work History and Mining Cuts This operation began in 1998. Mining took place in 1999 and 2000, and in 2001 and 2002 a single cut was excavated but no sluicing occurred. During the 2003 season, a cut was stripped and pay gravel was stockpiled. In 2004, no mining activity took place, but in 2005 and 2006, a large amount of stockpiled pay gravel was sluiced.

Equipment and Water Treatment Mr. Farley's equipment included Caterpillar 235 and EL-300 excavators, a Caterpillar D8K bulldozer, a Komatsu 355 bulldozer, a Caterpillar 769 dump truck and an O&K RH-75 excavator. In 2003, a new wash plant was set up and seepage water was pumped into Hunker Creek most of the summer.

Surficial Geology and Stratigraphy The ground varied in depth, but an average of 20 feet (6 m) of silt overburden and 20 feet (6 m) of gravel was encountered. The top 14 feet (4 m) of gravel was wasted and the lower 5 feet (2 m) of gravel and 3 feet (1 m) of bedrock was sluiced. The bottom 15 feet (5 m) of the profile was found to be frozen in areas, and the water table was near the surface which required continuous dewatering.

Bedrock Geology The bedrock is graphitic schist.

Gold Characteristics The gold was reported to be 80 to 90 percent minus 10 mesh with the remainder plus 10 mesh. It was typically flat, rough and dull with a fineness of 780.

The wash plant of Farley's Machine on the Klondike River, 2004.

HUNKER CREEK, a tributary of Klondike River

116B/3 2003: 64°01'31"N, 139°10'01"W

Grew Creek Ventures, Dave Marsters, Terri Marsters
Water license: PM04-382 (2015)
Active producer (2003-2006) **Operation no. 31**

Location The operation was located close to the mouth of Hunker Creek on the left side of the valley and on the left limit of Klondike River valley.

Work History and Mining Cuts This operation was started by Mr. Doug Busat in 1996. It was acquired by Dave Marsters in 2001 and production continued. In 2003, Mr. Marsters spent time stripping and mining a cut along lower Hunker Creek. In 2004, a crew of 10 miners worked daily 12-hour shifts. Four cuts were mined with dimensions of 200 by 800 feet (60 x 200 m), 150 by 600 feet (50 x 200 m), 150 by 700 feet (50 x 200 m) and 100 by 500 feet (30 x 100 m). In 2005 and 2006, a crew of 12 miners worked 12 hours daily. A large strip was cut along the left limit of Hunker creek which continued down the left limit of the Klondike River. Four cuts were completed in 2006: cut #1 was 200 by 800 feet (60 x 200 m), cut #2 was 250 by 1200 feet (75 x 370 m), cut #3 was 200 by 1000 feet (60 x 300 m) and cut #4 was 150 by 800 feet (50 x 200 m).

Equipment and Water Treatment Equipment included two Caterpillar D9H bulldozers and three Caterpillar 769C rock trucks for stripping, a Caterpillar D7G for reclamation, a Caterpillar 330L hoe for stacking pay, as well as a Caterpillar 345B excavator, a Volvo A35 truck and two Caterpillar 980C loaders for various duties. In addition, a Caterpillar D10N bulldozer, Caterpillar 980B loader and Hitachi EX450 excavator were added in 2006. The wash plant consisted of a 30-foot-long Clemro feeder with a 20-cubic-yard hopper,

T.D.Oilfield Services pit on the left limit of Klondike River at the mouth of Hunker Creek, 2003.

a Clemro 5- by 10-foot screen deck and 8 sluice runs with hydraulic riffles. Tailings were stacked by an 80-foot-long conveyor. Water was acquired from ground seepage and 100% recycled from a 500- by 1500-foot (150- x 450-m) out-of-stream pond, pumped by a Berkley 10- by 12-inch pump powered by a Caterpillar 3208 engine rated at 3000 igpm. Pay was processed at a rate of 120 loose cubic yards per hour. Clean-ups were conducted daily with a reverse drum spinner.

Surficial Geology and Stratigraphy In 2004, the stratigraphic section consisted of 10 feet (3 m) of black muck overlying 20 feet (6 m) of muddy gravel and 10 feet (3 m) of 'Klondike Wash', black cobbly gravel deposited by the ancient Klondike River. Approximately 6 feet (2 m) of the black gravel and 2 feet (1 m) of bedrock were sluiced. The section in 2006 was 50 feet (15 m) of frozen muck overburden overlying 6 feet (2 m) of the Klondike Wash gravel. All of the gravel and 2 feet (0.6 m) of bedrock were sluiced.

Bedrock Geology Bedrock is a graphitic to chloritic schist.

Gold Characteristics In 2004, the gold was reported as flat and smooth with a fineness of 750. In 2006, the gold was reported as fine-grained with a fineness of 730.

HUNKER CREEK, a tributary of Klondike River

116B/3 2006: 64°01'03"N, 139°08'57"W

Henry Gulch Placers, John Alton, Marty Knutson
Water licenses: PM04-405 (2015, Licensee: Marty Knutson),
PM04-416 (2015, Licensee: John Alton)
Active producer (2005-2006) **Operation no. 32**

Location This operation was located on the left limit approximately one mile (2 km) from the confluence with the Klondike River.

Work History and Mining Cuts This area was first tested by Henry Gulch Placers in 1997, and some testing and mining was done until 2000. In 2005, the operators returned. The season was spent cleaning up the left limit of Hunker Creek below Henry Gulch, which consisted of mining the leftovers from the dredge limit as well as previous Cat mining and oldtimers' workings. Five miners worked a daily 11-hour shift and stripped and sluiced three cuts. These measured 140 by 130 by 25 feet (45 x 40 x 8 m) or 16,851 cubic yards (12 677 m^3) and 225 by 100 by 35 feet (70 x 30 x 10 m) or 29,167 cubic yards (22 299 m^3), and 300 by 85 by 35 feet (90 x 25 x 10 m) or 33,055 cubic yards (25 272 m^3). A fourth cut measuring 400 by 150 by 65 feet (100 x 45 x 20 m) or

Hydraulic and mechanical stripping on the left limit of Hunker, Henry Gulch Placers, 2006.

144,444 cubic yards (111 435 m^3) was stripped with the hydraulic monitor. In 2006, five miners and three camp personnel worked a daily 11-hour shift. Some remnants of gravel left by the dredge on the left limit in the valley were mined, and a cut on the high left-limit bank was hydraulically monitored. In total, three cuts were mined: cut #1 was 220 by 100 feet (70 x 30 m), cut #2 was 80 by 250 feet (20 x 75 m) and cut #3 was 150 by 300 feet (50 x 100 m).

Henry Gulch Placer's wash plant operating on Hunker Creek, 2005.

Equipment and Water Treatment Equipment included Caterpillar D9H and D9G bulldozers, two Caterpillar Scrapers (631-B and 631-C), two Caterpillar D350 rock trucks, one Hitachi EX200LC excavator, a Caterpillar 235 excavator and a Caterpillar 980B loader. A Caterpillar 245 excavator used in 2005 was replaced by a Hitachi EX400 excavator in 2006. A hydraulic monitor which ran 24 hours a day was used to thaw and strip the frozen black muck on the left-limit cut after initial stripping with the Caterpillar D9H bulldozer. The thawed valley cuts were stripped with the excavators, which cast the overburden into mined-out areas. The wash plant consisted of a single deck offset shaker with ¾-inch punch plate feeding two 10-foot sluice runs with expanded metal and Nomad matting, 4 feet of hydraulic riffles and 4 boil boxes. A 50-foot-long, 30-inch-wide conveyor stacked coarse tailings. A Fairbanks Morse 10- by 8-inch pump powered by a GM 371 engine with 1500 to 2000 igpm supplied enough water to process 80 to 100 loose cubic yards of pay per hour. Effluent was treated in a 500- by 250- by 15-foot (150- x 75- x 5-m) deep out-of-stream pond, with 90% of the water recycled and make-up water supplied by a 6-inch thrash pump and inflow from Hunker Creek. The top of the box was cleaned daily and total clean-ups were done every 50 to 100 hours with a twin jig set-up.

John Alton and crew in the Hunker Creek diversion after the water was turned in. No miners were hurt in the making of this photo.

Surficial Geology and Stratigraphy In 2005 and 2006, two types of pits were excavated, thawed valley cuts and a thick frozen left-limit cut. The thawed valley cuts had a total thickness of 20 to 22 feet (6 to 7 m) and were described as having interbedded mud and gravel layers with variable grain sizes, which increasingly had large cobbles near bedrock. Many old workings and drift rooms were encountered, but very few fossil bones. On the frozen left-limit cut, the total section depth was 60 to 85 feet (20 to 25 m). Frozen interbedded layers of mud mixed with rim rock, layers of slide rock (colluvium) and very large ice seams comprised the upper 45 to 60 feet (15 to 20 m). This was overlying 6 to 12 feet (2 to 4 m) of gravel mixed with oldtimers' tailings. Many old workings and drifts were encountered in the bedrock.

Between 4 and 6 feet (1 and 2 m) of gravel and 3 to 6 feet (0.9 to 2 m) of bedrock were sluiced.

Bedrock Geology Bedrock in the valley on the left limit was described as wavy schist capped by decomposed schist. On the far left limit closer to the rim, the bedrock was described as varied with white and schistose capping layers, and large imbedded angular quartz pieces.

Gold Characteristics In 2005 and 2006, the gold varied according to location recovered. Nearer to the valley centre, a fair amount of coarse, chunky gold was recovered including some dendritic pieces and some nuggets with attached quartz. At this location, approximately 30% of the gold was plus 10 mesh, 40% was between 10 and 60 mesh, and 30% was less than 60 mesh. Closer to the left limit the gold was finer grained, with 10% greater than 10 mesh, 60% between 10 and 60 mesh, and 30% less than 60 mesh. The purity of the gold was generally 709, although closer to Henry Gulch, the fineness dropped to 699.

HENRY GULCH, a tributary of Hunker Creek

116B/3 2005: 64°00'46"N, 139°08'29"W

Rick Gillespie
Water license: PM04-377 (2009)
Active producer (2005) **Operation no. 33**

Location This operation was located on Henry Gulch, a left-limit tributary of Hunker Creek.

Work History and Mining Cuts Rick Gillespie has been working this creek since 1995, and has mined intermittently since that time. In 2005, one cut was stripped, 100 by 50 feet and 60 feet (30 x 15 x 20 m) deep, for a total of 11,111 cubic yards (8495 m^3); a small amount was sluiced.

Equipment and Water Treatment Equipment included a Caterpillar 212 excavator and a Caterpillar 320 excavator, as well as a Volvo rock truck (for hauling muck waste) and Caterpillar 966C loader. The wash plant was a 5- by 11-foot oscillating screen deck with a stacker, and the sluice run was 10 feet long and 3 feet wide, with angle iron riffles, Nomad matting and expanded metal. Water was acquired by a Detroit-powered Gorman-Rupp 6-inch pump rated at 1500 igpm, pumping from a 30- by 60- by 6-foot (10 x 20 x 2 m) deep pond which was 100% recycled. From 50 to 60 loose cubic yards per hour were processed.

Surficial Geology and Stratigraphy Approximately 50 feet (15 m) of black muck was overlying 6 to 8 feet (2 to 3 m) of gravel. All of the gravel (described as quartz-rich and 'chunky') plus 2 feet (1 m) of black slabby bedrock were sluiced.

Bedrock Geology Bedrock was generally solid and fractured and some gumbo clay was encountered. Klondike Schist occurs near the headwaters of the gulch, with Nasina quartzite outcropping lower in the valley.

Gold Characteristics Gold was reported to be coarse and ranging in fineness between 650 and 680.

HATTIE GULCH, a tributary of Hunker Creek

116B/3 2005: 64°01'31"N, 139°07'32"W

Peter Gould, John Gould, Mike Heisey
Water license: PM98-059 (2009)
Active producer (2003-2005) **Operation no. 34**

Location Hattie Gulch is a right-limit tributary of Hunker Creek which cuts Australian Hill.

Work History and Mining Cuts John, Peter, and Susan Gould first began operations here in 1989. In 2003, pay gravel was stripped and stockpiled, and some sluicing was done by Mike Heisey. In 2004, the operators stripped a deep cut along the left limit of the Hattie Gulch and conducted a drilling program to locate reserves. Some pay gravel was sluiced in 2005.

Equipment and Water Treatment Equipment included a Caterpillar D7F bulldozer which was used to strip overburden, excavate and stockpile pay gravel, and a Caterpillar 930 loader which was used to feed the wash plant and remove tailings. A P&H dragline stripped overburden. A Caterpillar rock truck was used to move overburden. Mr. Heisey's wash plant was a hopper-fed, 6-foot-diameter trommel over two 4- by 15-foot sluice runs equipped with hydraulic riffles. Effluent was recycled in out-of-stream settling ponds which were upgraded in 2003. Reservoirs were used in 2004 for sluicing.

Surficial Geology and Stratigraphy Australian Hill forms a terrace of the Tertiary 'White Channel' gravel, which is overlain in part by glaciofluvial outwash, locally referred to as Klondike Wash. In the area of Hattie Gulch, the Klondike Wash is thinner than on the Klondike River valley side, and the White Channel gravel varies from 50 to 100 feet (15 to 30 m) thick to bedrock. Pay values are in the 3 to 12 feet (1 to 4 m) of gravel above bedrock and 1 to 2 feet (0.3 to 0.6 m) of underlying bedrock, with occasional higher gold values within the White Channel gravel section. Numerous oldtimers' adits are present at the bedrock/gravel contact.

Bedrock Geology Bedrock is clay-sericite altered chloritic and graphitic schist.

Gold Characteristics Flat and coarse gold was recovered from the bedrock while fine and angular gold was recovered from the gravel. The fineness was approximately 730.

Peter Gould's operation on Hattie Gulch, 2004.

LAST CHANCE CREEK, a tributary of Hunker Creek

116B/3

2004: 64°00'15"N, 139°06'05"W
2003: 64°00'21"N, 139°06'06"W

Henry Gulch Placers, Marty Knutson, John Alton
Water license: PM99-139 (2005)
Active producer (2003-2004) **Operation no. 35**

Location This operation was located on Last Chance Creek approximately 1500 feet (500 m) upstream from the mouth.

Work History and Mining Cuts In 2003, a crew of 12 to 15 miners worked 12-hour shifts, mining four cuts under a thawed hydraulic tailings fan in the centre of the valley and one cut on the right limit in frozen virgin ground. These cuts are listed in Table 1. A total of 1040 hours were spent sluicing.

In 2004, a crew of eight miners worked 11 hours a day, mining one cut under thawed hydraulic tailings and one cut on the right limit in frozen virgin ground. The cut under the fan was 400 by 175 by 40 feet (100 x 50 x 10 m; 103,703 cubic yards; 79 286 m^3) stripped and 400 by 160 by 10 feet (100 x 50 x 3 m; 23,703 cubic yards; 18 122 m^3) sluiced. The virgin ground was 1400 by 60 by 20 feet (430 x 20 x 7 m; 62,222 cubic yards; 47 572 m^3) stripped and 1400 by 60 by 8 feet (430 x 20 x 2 m; 24,888 cubic yards; 36 371 m^3) sluiced. Final mining and reclamation of this property was completed in 2004, and the operation moved to Hunker Creek just downstream of Henry Gulch.

Equipment and Water Treatment In 2003, a large volume of hydraulic tailings was removed and underlying creek gravel was mined using equipment which included one Caterpillar D9G and two Caterpillar D9H bulldozers, one Caterpillar 621 and three Caterpillar 631 scrapers, three Caterpillar excavators (225, 235 and 245), and three Caterpillar D350 articulating rock trucks. A Fairbanks Morris 10- by 8-inch pump powered by a General Motors 371 engine supplied 2000 igpm to the wash plant which processed 90 loose cubic yards per hour. The wash plant was a single deck offset shaker with ¾-inch punch plate and a 30-inch by 50-foot stacker for coarse tailings. Four boil boxes captured coarse gold, while two 8-foot sluice runs with expanded metal, hydraulic riffles and Nomad matting captured the smaller fractions. The out-of-stream pond was 400 by 200 by 15 feet (100 x 60 x 5 m) deep and fully recycled with some make-up water supplied by the dewatering pump in the mining pit. Clean-ups were done with a twin-jig setup.

Stripping hydraulic tailings at Henry Gulch Placers' operation on Last Chance Creek, 2003.

In 2004, the equipment was the same as in 2003 except the wash plant had a 30-foot by 30-inch stacker and only 2 boil boxes.

Surficial Geology and Stratigraphy In 2003, the stratigraphic section consisted of the hydraulic tailings fan which was from 10 to 60 feet (3 to 20 m) thick, overlying 10 to 16 feet (3 to 5 m) of mud, overlying 6 to 12 feet (2 to 4 m) of gravel on bedrock. Approximately 4 feet (1 m) of gravel and 3 to 8 feet (1 to 2 m) of bedrock were sluiced, with the upper 20 to 70 feet (6 to 20 m) of mud and hydraulic tailings wasted. Oldtimers' tailings, when encountered, were also sluiced as they had good values of gold. In 2004, the valley section consisted of 30 feet (9 m) of hydraulic tailings over 10 to 16 feet (3 to 5 m) of mud and 6 to 12 feet (2 to 4 m) of gravel on bedrock. On the right limit, 10 to 12 feet (3 to 4 m) of mud overlaid 6 to 12 feet (2 to 4 m) of gravel on bedrock.

Table 1. Mining cuts at Henry Gulch Placers operation on Last Chance Creek, 2003.

cut number	feet	metres	cubic yards	m^3	stripped/sluiced
1	370 x 120 x 60	100 x 40 x 20	98,667	75 436	stripped
	340 x 100 x 10	100 x 30 x 3	12,593	9628	sluiced
2	350 x 240 x 60	100 x 70 x 20	186,667	142 717	stripped
	325 x 225 x 10	100 x 70 x 3	25,880	19 787	sluiced
3	375 x 240 x 70	114 x 73 x 20	250,000	190 000	stripped
	345 x 215 x 10	105 x 65 x 3	27,472	21 003	sluiced
4	340 x 410 x 45	100 x 120 x 14	232,333	177 631	stripped
	310 x 410 x 10	90 x 120 x 3	47,074	35 990	sluiced
right-limit cut in virgin ground	300 x 125 x 55	100 x 38 x 17	76,389	58 403	stripped
	270 x 110 x 8	82 x 33 x 2	8800	6728	sluiced
Total all five cuts			844,056	645 327	stripped
			121,819	93 137	sluiced

Approximately 4 feet (1 m) of gravel and 3 to 8 feet (1 to 2 m) of bedrock were sluiced.

Bedrock Geology Bedrock is a mixture of volcanic andesite and sedimentary black shale.

Gold Characteristics In 2003 and 2004, the gold was 25% greater than 10-inch mesh, 25% between 10 and 60 mesh, and 50% smaller than 60 mesh. Coarse gold (greater than 14 mesh), when encountered, was commonly dendritic. The fineness was 720 to 730.

LAST CHANCE CREEK, a tributary of Hunker Creek

1150/14, 116B/3

2005: 63°59'39"N, 139°06'32"W
2003: 63°59'46"N, 139°06'34"W

Favron Enterprises Ltd., Paul Favron, Mark Favron, Guy Favron
Water license: PM04-369 (2014)
Active producer (2003-2006) **Operation no. 36**

Location This operation was located on the left limit and in the valley of Last Chance Creek.

Work History and Mining Cuts Favron Enterprises Ltd. first began working on Last Chance Creek in 2000, and mining continued through to 2006. The crew between 2003 and 2006 consisted of six miners and three camp personnel working a daily 12-hour shift. The operation continued stripping and mining in various locations between Discovery Pup and the mouth of Last Chance Creek. In 2004, black muck overburden was stockpiled on the right limit of the valley and some of Peter Erickson's pond tailings were removed at Discovery Pup in order to process underlying pay material. Some mechanical stripping was done on Last

Favron Enterprises Ltd, Last Chance Creek, 2004; view to the west.

Chance Creek downstream from the mouth of Discovery Pup. In 2005, the operators sluiced at the mouth of Discovery Pup, and stripped a long narrow left-limit cut near the mouth of Last Chance Creek. The claims at Discovery Pup were reclaimed and sold to a third party. Pay gravel was removed and stockpiled for sluicing in 2006. In 2006, pay gravel was removed from the mine pit and stockpiled, and the mine pit was then used as a recycle pond for sluicing. A 1200- by 100-foot (360- x 30-m) mining cut was processed, and a cut along the left limit of Last Chance Creek was stripped and ready for mining the following season.

Equipment and Water Treatment Equipment included Caterpillar D9L and D8K bulldozers, a Komatsu 155-3 bulldozer and a Terex 8230B bulldozer. The Caterpillars were used for stripping and all four bulldozers were used for feeding the wash plant. A Hitachi EX750 excavator was used to strip overburden and load pay. Two Terex TA40 rock trucks were used to haul overburden and pay, and a Terex TS24B scraper was used to haul and strip pay. The wash plant included a dozer-trap screened hopper over a 42-inch by 16-foot conveyor, which fed material to an elevating 36-inch by 60-foot conveyor. The second conveyor fed pay to the 5- by 10-foot double (1½-inch and ¾-inch) oscillating screen deck. Plus ¾-inch material was removed by a 36-inch by 30-foot radial stacking conveyor while minus ¾-inch material fed to six 32-inch by 16-foot sluice runs lined with angle iron riffles, expanded metal and Nomad matting. Water was acquired from Last Chance Creek and supplied by a Detroit 6V71-powered Aurora 12- by 10-inch pump rated at 3500 igpm. Effluent was 100% recycled from a 1200- by 100-foot (400- x 30-m) out-of-stream pond. Clean-ups were done with a long tom and gold wheel every 50 hours.

Surficial Geology and Stratigraphy The valley's width was approximately 400 feet (100 m). Up to 40 feet (10 m) of White Channel gravel hydraulic tailings were overlying 10 feet (3 m) of black muck and 3 to 5 feet (1 to 2 m) of well-sorted virgin creek gravel, all of which was sluiced. Up to 1 foot of clay-altered decomposed bedrock was sluiced.

Bedrock Geology Bedrock is clay-altered conglomerate and coarse sandstone.

Gold Characteristics In 2006, the gold ranged in size from fine-grained up to small nuggets. The fineness was 700.

Loading pay gravel, Favron Enterprises Ltd., 2003.

DISCOVERY PUP, a tributary of Last Chance Creek

1150/14 2006: 63°59'38"N, 139°06'53"W

Last Chance Placers Ltd., Lee Olynyk
Water license: PM04-424 (2015)
Active producer (2005-2006) **Operation no. 37**

Location This operation was located on Discovery Pup upstream from the confluence with Last Chance Creek.

Work History and Mining Cuts In 2005, three miners worked an 11-hour shift to mine a cut 200 by 60 feet (60 x 20 m), after processing stockpiled 2004 pay and a cut from 15 Above Pup. In 2006, two previously thawed cuts were hydraulically monitored and sluiced in the valley. Both cuts were on the right limit and approximately 100 by 40 feet (30 x 10 m) in size, although one cut was in the valley and one cut was on a bedrock terrace 40 feet (10 m) above the valley. The terrace cut was bulldozed into the valley for sluicing.

Equipment and Water Treatment In 2005, overburden was bladed downstream with a Caterpillar D9G bulldozer and pay material was hauled by an International Harvester Payhauler 50-ton truck a distance of 1500 feet (300 m) upstream on Last Chance Creek where it was sluiced. Water was acquired from Last Chance Creek and settled into a 200- by 300-foot (60- x 100-m), 50% recycled pond located upstream of the pump pond. In 2006, water was acquired from a large estuary pond at the mouth of Discovery Pup. This pond was also used to settle effluent with discharge back to Last Chance Creek through an intake. Other equipment on-site included a Caterpillar D8H bulldozer (used only in 2005) for stripping overburden, pushing pay and removing tailings. Two excavators (a Hitachi EX270 and Caterpillar 235) alternately stripped overburden and fed the sluice plant. Water for the wash plant was supplied by an 8- by 6-inch Allis Chambers John Deere-powered pump which supplied 2000 igpm to process 80 loose cubic yards per hour. The wash plant consisted of a 5- by 11-foot single deck oscillating screen deck with ¾-inch punch plate. Undersize material flowed to a static 4- by 6-foot tray with 1-inch angle iron riffles over Nomad matting, then to two 4- by 8-foot oscillating trays with large expanded metal over Nomad matting. The screen deck was modified from a Clinton Creek asbestos screener. Clean-ups were done every day with a long tom and gold wheel.

Surficial Geology and Stratigraphy The stratigraphic section mined in 2005 was 20 feet (6 m) of muck overlying from 5 to 10 feet (2 to 3 m) of angular cobbles interbedded with muck and sand seams. All of the gravel plus 5 feet (2 m) of bedrock was sluiced.

Gold Characteristics The gold recovered was smooth and bright with 70% coarser than 25 mesh in size. The fineness was 700.

5 ABOVE PUP, a tributary of Last Chance Creek

1150/14 2003: 63°59'20"N, 139°06'58"W

Dietmar Gritzka, Last Chance Placers Ltd.
Water license: PM04-424 (2015)
Active producer (2003) **Operation no. 38**

Location In 2003, the operators mined at the mouth of 5 Above Pup and on Gumbo Hill.

Work History and Mining Cuts Dietmar Gritzka started mining on claims 5 and 6 Above Discovery in 1998. Starting in the fall of the 2000 mining season, Last Chance Placers Ltd. took over the project with Mr. Gritzka working for them in 2001. In 2003, Last Chance Placers Ltd. mined at the mouth of 5 Above Pup and at the base of Gumbo Hill. The crew consisted of three miners working an 11-hour shift. The first mining cut was 230 by 60 feet (70 x 20 m), on the extreme limit of 5 A/D (Above Discovery) Pup where it enters Last Chance valley. The cut floor dropped 50 feet (15 m) in elevation lengthwise along 5 Above Pup over a 230-foot (70 m) horizontal distance. Stranded on the steep incline were large quartz boulders from the elevated Last Chance channel (eroded by 5 Above Pup) — oldtimers had tried to work this ground but were foiled by the steep bedrock incline. Several cuts were put in at the base of Gumbo Hill, all bladed to the wash plant at one location. A 150- by 30-foot (50- x 10-m) cut along the southern hydraulic cut wall of Joe Boyle's concession was sluiced along with three of Boyle's bedrock drains, each of which was 100 feet long and 40 feet (30 x 10 m) wide. Only the head of the drains were sluiced as they were where the most gold had been lost by Boyle.

Equipment and Water Treatment In 2003, the equipment included a Caterpillar D8H bulldozer and a Caterpillar D9G bulldozer, which were used for stripping, pushing pay and removing tailings. A Caterpillar 235 excavator was used to feed the wash plant and strip overburden. The wash plant consisted of a 5- by 11-foot single deck oscillating screen deck with ¾-inch punch plate, feeding a static 4- by 6-foot tray with 1-inch angle iron riffles over Nomad matting, then to two 4- by 8-foot oscillating trays with large expanded metal over Nomad matting. An 8- by 6-inch Allis Chalmers pump, powered by a 6-cylinder John Deere diesel engine, supplied 2000 igpm of water which was enough for the plant to process 80 loose yards of material per hour. Process water was recycled at 50% using a 200- by 200-foot (60- x 60-m) out-of-stream pond for the 5 Above Pup cut and a 200- by 300-foot (60- x 100-m) out-of-stream pond for the Gumbo Hill cuts. Clean-ups were done daily with a long tom and gold wheel.

Surficial Geology and Stratigraphy In 2003, the cut on 5 Above Pup consisted of 40 feet (10 m) of black muck over 3 feet

(0.9 m) of gravel containing rounded pebbles, cobbles and boulders up to 2 feet (0.6 m) in diameter. All of the gravel plus 4 feet (1 m) of bedrock was sluiced. The cuts at the base of Gumbo Hill consisted of 5 feet (2 m) of hydraulic tailings on top of three bedrock drains left behind by Joe Boyle's hydraulic mining operation. The heads of the drains were sluiced along with up to 3 feet (0.9 m) of bedrock.

Last Chance Placers' sluicing on Last Chance Creek, 2004.

Bedrock Geology At the mouth of 5 Above Pup, bedrock was a light grey coloured slate that broke off in thin large flat sheets. These sheets had almost no fractures and subsequently the gold could not penetrate it. Where the area had been worked by early drift miners. the bedrock was thoroughly cleaned.

Gold Characteristics In 2003, the gold (described as brought down from the elevated Last Chance Channel) was bright, angular and smooth, with a fineness of 695. A crystalline, frog-shaped nugget weighing slightly less than 2 ounces was recovered from a bedrock drain left behind by Joe Boyle's mining. This nugget normally wouldn't have been recovered by the modern miners either, if not for the fact that their screen deck had a worn-through hole of more than 1-inch-diameter which allowed the nugget to fall to the sluice rather than be screened out.

LAST CHANCE CREEK, a tributary of Hunker Creek

1150/14 2006: 63°59'16"N, 139°06'57"W

Last Chance Placers Ltd., Lee Olynyk
Water license: PM05-498 (2015)
Active producer (1993-2006) **Operation no. 39**

Location This operation was located at various places on the main valley of Last Chance Creek between 15 Above Pup and 8 A/M Pup.

Work History and Mining Cuts Last Chance Placers Ltd. began testing on Last Chance Creek and its tributaries in 1991 with mining beginning in 1993. On the main valley of Last Chance Creek in 2004, a crew of four miners worked daily 11-hour shifts to process three cuts, two in the vicinity of claim 3 A/D (Above Discovery) and one in the area of claims 6 and 7 A/D. The first cut at 3 A/D was 100 by 100 feet (30 x 30 m). Cut 2 at 6 A/D and 7 A/D was 90 feet wide and 470 feet long (25 x 140 m). Cut 3 on the left limit of Last Chance at 3 A/D was 90 feet wide, 200 feet long and 90 feet deep (25 x 60 x 25 m). Freeze-up necessitated leaving approximately 12,000 loose cubic yards of this material on the sluice ramp to be processed the following spring. In 2005 and 2006, the crew of three miners worked daily 11-hour shifts initially processing the stockpiled pay. Subsequently, a side cut on the right limit was taken out on the outer edge of an area of previous Last Chance Placers' mining. The cut was primarily on claim 7 A/D and was approximately 220 feet long and 60 feet wide (65 x 20 m). In addition, an adjoining strip approximately 180 feet long and 40 feet wide (55 x 10 m) was mined upstream to the right limit side of a cut previously taken out by Murray Crockett.

Equipment and Water Treatment Equipment included a Caterpillar 235 excavator and a Caterpillar D9G bulldozer. A Caterpillar D8H bulldozer was used in 2004 and 2005. In addition, a Hitachi EX270 excavator (equivalent to the Caterpillar 235) was purchased and an International Harvester Payhauler 50-ton rock truck was leased for hauling pay to the elevated pad to sluice. The wash plant consisted of a 5- by 11-foot single deck oscillating screen deck with ¾-inch punch plate, feeding a static 4- by 6-foot tray with 1-inch angle iron riffles over Nomad matting, then to two 4- by 8-foot oscillating trays with large expanded metal over Nomad matting. An 8- by 6-inch Allis Chalmers pump, powered by a 6-cylinder John Deere diesel engine,

supplied 2000 igpm of water which was enough for the plant to process 80 loose yards of material per hour. Water was supplied from an estuary pond on Last Chance Creek and 50 to 60% recycled in a 100- by 200-foot (30- x 60-m) out-of-stream pond near the mouth of 5 Above Pup. Clean-ups were done daily with a long tom and gold wheel.

Surficial Geology and Stratigraphy In 2004, the first section at 3 A/D was entirely thawed, and consisted of 10 feet (3 m) of muck over 7 feet (2 m) of gravel. A total of 5 feet (1.5 m) of gravel was sluiced. At 6 and 7 A/D, the section was primarily thawed and consisted of 15 feet (5 m) of tailings (from Murray Crockett's 1991-1997 operation) overlying 15 feet (5 m) of muck and 8 feet (2 m) of cobbly rounded gravel. The bottom 5 feet (1.5 m) of gravel was sluiced along with 4 feet (1 m) of gummy bedrock. Some undersize gummy tailings were resluiced as the gummy bedrock did not wash easily. The second 3 A/D cut consisted of 45 feet (15 m) of Crockett tailings overlying 35 feet (10 m) of original muck and 8 feet (2 m) of rounded gravel. The bottom 8 feet (2 m) of gravel plus 4 feet (1 m) of bedrock was sluiced. In 2006, the section consisted of 15 feet (5 m) of thawed muck overlying 4 feet (1 m) of waste gravel over 4 feet (1 m) of well-rounded cobbly pay gravel and extremely gummy bedrock. Efforts were made to mix the bedrock with the gravel to facilitate sluicing of the material. All material that was sluiced through the trays (¾-inch minus) for a distance of approximately 80 feet (25 m) downstream of the plant was excavated with the Caterpillar 235, trucked back to the plant and re-washed.

Bedrock Geology Bedrock was described as decomposed 'gumbo' graphitic black and orange schist.

Gold Characteristics The gold recovered in 2004 and 2005 was smooth and bright and fine-grained, with 90% less than 12 mesh in size. The fineness was 695. In 2006, the gold was smooth, bright and between minus 16 mesh and plus 60 mesh in size. The fineness was 700.

15 ABOVE PUP, a tributary of Last Chance Creek

1150/14 2005: 63°58'43"N, 139°08'36"W

Last Chance Placers Ltd., Lee Olynyk
Water license: PM97-052 (2005)
Active producer (2005-2006) **Operation no. 40**

Location 15 Above Pup is a left-limit tributary to Last Chance Creek. The 2005 cut was located 2000 feet (600 m) upstream from the confluence with Last Chance Creek. The 2006 cut was located 5000 feet (1500 m) upstream of the confluence with Last Chance Creek.

Work History and Mining Cuts Last Chance Placers Ltd. first mined here in 1993, and also mined here from 1995 to 1999 and in 2001. In 2005, a crew of three miners worked a daily 11-hour shift, mining a cut 330 feet long and 70 feet wide (100 x 20 m). In addition, the gummy nature of the material necessitated the re-sluicing of the fines for a distance of 60 feet (20 m) below the wash plant. In 2006, an area on 15 Above Pup approximately 5000 feet (1500 m) upstream from its confluence with Last Chance Creek was prepared for sluicing. Material from the 1300- by 60-foot (400 x 20 m) cut was to be loaded into the IH Payhauler and trucked to an area approximately 1000 feet (300 m) from the mouth of 15 Above Pup for processing. Unfortunately, after just 3.5 hours of trucking and sluicing the Payhauler lost a piston and mining was halted. Operations were then moved to downstream of Discovery Pup where the operators could mine without trucking. While monitoring, a group of scientists under the guidance of Mr. Dick Mol from the Netherlands documented the event. With permission from the Yukon Heritage Branch they collected and documented all the Pleistocene bones from the cut over a period of two weeks. Mr. Mol was much regarded for his recent film production 'Raising the Mammoth', shown on Discovery Channel.

Equipment and Water Treatment A Caterpillar D8H and D9G bulldozers were used to strip overburden, push pay and remove tailings. Two excavators (a Hitachi EX270 and Caterpillar 235) alternately stripped overburden and fed the sluice plant.

In 2005, overburden was removed primarily with a monitor powered by 2 pumps in series. A vintage Caterpillar D326, a 6-cylinder stationary engine drove a high-lift Cornell 8- by 5-inch pump which delivered water to the second pump situated approximately 200 feet in elevation above. The engine was rated at 166 horsepower at 1800 rpm. The second high-lift pump was an 8- by 6-inch Allis Chambers powered by a John Deere 6-cylinder diesel engine. Over 2000 feet (600 m) of 12- and 8-inch pipeline was used to lift the water a distance of 2000 feet (600 m) to the cut, at an estimated head of 340 feet (100 m). Approximately two-thirds of the cut was stripped hydraulically, while the remainder was stripped with a combination of ripping the muck with the 235 equipped with a D8 ripper shank tool, followed by monitoring. Water for hydraulic and sluicing operations was supplied from an estuary pond at the mouth of 15 Above Pup. While sluicing, the pump engines were idled back to deliver approximately 2000 igpm to process an estimated 90 to 100 loose cubic yards of material per hour.

The wash plant was a 5- by 11-foot single deck oscillating screen deck with ¾-inch punch plate. Undersize material flowed to a static 4- by 6-foot tray with 1-inch angle iron riffles over Nomad matting, then to two 4- by 8-foot oscillating trays with large expanded metal over Nomad

matting. Water was 60% recycled from the estuary pond below. A 60- by 200-foot (20 x 60 m) in-stream settling pond situated 800 feet (250 m) from the mouth of 15 Above Pup was used to settle the effluent prior to reaching the estuary/pump pond. Clean-ups were done every day with a long tom and gold wheel.

Surficial Geology and Stratigraphy In 2005, the section consisted of 40 feet (10 m) of muck overlying 3 feet (0.9 m) of gravel. All of the gravel and 4 feet (1 m) of bedrock were sluiced. In 2006, the section was described as 20 feet (6 m) of frozen black muck over 4 feet (1 m) of 'boney', cobbly, angular pay material on bedrock. The pay was mixed with colluvium which was derived from the hill slope on the right limit. All loose material was sluiced together as it could not be separated.

One of the more interesting Pleistocene bone finds from the hydraulic monitoring work on 15 Above Pup was a femur from an American lion that the Yukon Heritage Branch had carbon dated to be 40 000 years old.

Bedrock Geology Bedrock is mapped as grey to black, fine-grained graphitic quartzite, grey micaceous quartzite and quartz muscovite schist. The bedrock encountered in 2006 was partially decomposed and partially competent but generally easy to process.

Gold Characteristics The gold in 2005 and 2006 was fine-grained and angular with a few dendritic specimens recovered. The fineness was 680 to 685.

PARADISE HILL, a tributary of Hunker Creek

1150/14, 116B/3 2006: 63°59'50"N, 139°04'49"W

Tamarack Inc., Tony Beets
Water licenses: PM02-296 (2013), PM97-029 (2003)
Active producer (2005-2006) **Operation no. 41**

Location The operation has been located on various parts of Paradise Hill and the adjacent Hunker Creek valley.

Work History and Mining Cuts Tamarack Inc. began work on the property at Paradise Hill in 1983, mining until 1986. They mined at this location again from 1989 to 1999, when they moved the operation to Indian River. The operation returned from Indian River in the fall of 2005 with a crew of eight working 12-hour shifts for five days double and ten days single. Bedrock was mined to a depth of 30 feet (10 m) on previous year's pits, including one which was 200 by 50 feet (60 x 15 m). In 2006, an area at the southwest part of the pit was opened up and mined.

Equipment and Water Treatment Three Caterpillar 657 scrapers were fed pay using a Caterpillar 245 excavator while a

Excavator loading a scraper on Tamarack Inc's Paradise Hill property, 2006.

Caterpillar D9 bulldozer was used to feed the plant and a Caterpillar 988 loader removed tailings. A second Caterpillar D9 bulldozer was kept on standby for sluicing. The wash plant was an 8-foot-diameter trommel which processed 200 loose cubic yards per hour. Water was supplied by a Crane Demming 8- by 8-inch pump powered by a Caterpillar D398 engine, pumping 3000 igpm.

Surficial Geology and Stratigraphy Paradise Hill is a terrace comprised of Tertiary 'White Channel' gravel overlain in part by pre-Reid glaciofluvial outwash, locally referred to as 'Klondike Wash'. The Klondike Wash gravel is 0 to 30 feet (0 to 9 m) thick and the White Channel gravel is between 85 and 100 feet (25 to 30 m) thick. The best gold values are in the lower 15 to 35 feet (5 to 10 m) of White Channel gravel. In 2006, a new zone on the southwest part of the hill was mined. At this location, gold values in the White Channel gravel were found both above and below a shallow-dipping thrusted slab of decomposed bedrock.

Bedrock Geology Exposed bedrock was decomposed, clay-altered, fractured graphitic to chloritic schist.

Gold Characteristics In 2005, the gold was reported to be fine-grained with a purity of 830.

HESTER CREEK, a tributary of Hunker Creek

1150/14 2003: 63°58'28"N, 139°04'12"W

The Nugget Factory Inc., Michel Filion
Water license: PM00-209 (2006)
Active producer (2003) **Operation no. 42**

Location This operation was located on Hester Creek.

Work History and Mining Cuts Mining at this operation began in 2001 at the mouth of an unnamed tributary along the left limit of Hester Creek. In 2002, the operation relocated to the

The Nugget Factory's operation on Hester Creek, 2003.

main stem of Hester Creek. In 2003, personnel included two miners and one camp cook. One cut 200 by 150 feet (60 x 45 m) was mined on the former Big Red property.

Equipment and Water Treatment Equipment in 2003 included a Link-belt 2800LC hoe, a Caterpillar 966F loader and a Caterpillar D6 bulldozer. A 6-inch pump powered by a 6-cylinder Nissan engine supplied 700 igpm to the Hall oscillating riffle plant which processed 75 loose cubic yards per hour.

Surficial Geology and Stratigraphy The stratigraphic section in 2003 consisted of 12 feet (4 m) of pay gravel on bedrock. Overburden had been previously stripped by hydraulic mining.

Bedrock Geology Bedrock is decomposed, fractured carbonaceous schist and fractured quartzite schist.

Gold Characteristics The gold was reported to be fine grained and shiny with a fineness of 680.

INDEPENDENCE CREEK, a tributary of Hunker Creek

1150/14 2003: 63°58'59"N, 139°00'59"W

Emile Levesque, Dave Brickner
Water license: PM01-244 (2007)
Active producer (2003-2006) **Operation no. 43**

Location The operation was located on Nugget Hill and at the mouth of Independence Creek.

Work History and Mining Cuts An area was bulk tested in 2002. During 2003, Levesque sluiced gravel and old tailings from the back side of Nugget Hill. In 2004, Levesque stripped a portion of Nugget Hill at the back of the previously mined area. Pay gravel was stockpiled for sluicing in 2005. In 2006, Dave Brickner set up sluicing equipment for a gravity feed system and sluiced some of the stockpiled pay gravel.

Equipment and Water Treatment The loaders were used to feed the sluice plant and for hauling pay gravel. The excavator was used to feed the sluice plant on Nugget Hill and for scraping the cut face and maintenance of drains. The bulldozer was used to scrape the cut faces and for various small jobs. The wash plant consisted of a dump box leading into a 5-foot-wide by 11-foot-long shaker screen outfitted with 1¼-inch punch plate. Sluice water at Independence Creek came from a large reservoir created by the mining done by Tony Kosuta over the last several years. A drain to old dredge tailings provided the effluent treatment. In 2003, the operation sluiced with total recycling and no discharge. Water was acquired from the gravity ditch.

Surficial Geology and Stratigraphy On the rim of Nugget Hill, the White Channel gravel thickness was from 3 to 6 feet (1 to 2 m), all of which was sluiced along with up to 2 feet (0.6 m) of decomposed bedrock.

Bedrock Geology Bedrock is slabby schist, fully decomposed and soft.

Gold Characteristics The gold varied a great deal depending on where it was mined. Gold from Hester Creek tended to be fine grained and ranged from an average purity of 650 fine to a high of 760 fine. The gold on Nugget Hill had a higher purity with an average of 820 fine. Nuggets weighing up to 1 ounce were found on Nugget Hill.

Dave Gould's operation on Hunker Creek, 2005.

HUNKER CREEK, a tributary of Klondike River

1150/14, 1150/15 2005: 63°58'44"N, 139°00'23"W

David Gould
Water license: PM04-392 (2009)
Active producer (2005-2006) **Operation no. 44**

Location From 2004 to 2006, the operation was on the right limit of Hunker Creek near the mouth of Colourado Creek.

Work History and Mining Cuts Mining claims have been in the Gould family since 1903. In this area, hydraulic mining was first conducted on Nugget Hill between Hester and Independence creeks in 1960. The property was mined intermittently over the next 40 years. In 2004, stripping took place along the right limit of Hunker Creek adjacent to Hunker Creek road. Pay gravel was then excavated and sluiced back into the mine pit. In 2005 and 2006, the operators stripped a large cut located along the right limit of Hunker Creek near the mouth of Colourado Creek, and sluiced pay back into the pit as in past years.

Equipment and Water Treatment Equipment included a Caterpillar D9 bulldozer for stripping dredge tailings and excavating pay gravel, a Caterpillar 950B loader to haul pay gravel to the wash plant and remove tailings, and a Komatsu PC220 excavator to dig pay gravel and to feed the wash plant. The wash plant was a 4-foot-diameter 20-foot-long trommel feeding a single 5- by 8-foot sluice run lined with hydraulic riffles, which processed between 25 and 60 cubic yards per hour. Mining cuts were excavated below the water table and had to be pumped out while pay gravel was stockpiled. The pits were allowed to flood and the groundwater was recycled and used to sluice the pay gravel back into the cut, with no discharge to the creek.

Surficial Geology and Stratigraphy The section in the valley consisted of coarse cobbly dredge tailings up to 10 feet (3 m) thick overlying 8 feet (2 m) of sandy gravel and 12 feet (4 m) of mud and silt on bedrock. The decomposed bedrock contained depressions with virgin gravel patches which were missed by the dredge. This bottom gravel plus 2 or 3 feet (0.6 to 1 m) of bedrock were processed. Some virgin pillars in the valley consist of 20 to 25 feet (6 to 8 m) of organic mud and sand overlying 5 feet (1.5 m) of gravel. In those areas, the bottom 3 feet (1 m) of gravel plus about 2 feet (0.6 m) of bedrock were sluiced.

Bedrock Geology Bedrock consists of carbonaceous schist.

INDEPENDENCE CREEK, a tributary of Hunker Creek

1150/14 2003: 63°58'59"N, 139°01'14"W

Anton (Tony) Kosuta, Dietmar Gritzka
Water licenses: PM03-338 (2009), PM99-098 (2004)
Active producer (2003-2004) **Operation no. 45**

Location The property was situated at the mouth of Independence Creek, a left-limit tributary of Hunker Creek.

Work History and Mining Cuts Anton Kosuta began mining this creek in 1989. In 2003, Dietmar Gritzka drilled along the right limit of Independence Creek, while Mr. Kosuta stripped upstream from where he finished in 2002. In 2004, operations continued working upstream. The large settling pond at the mouth of Independence Creek was being used as a recycling pond for sluicing.

Equipment and Water Treatment Equipment included a Caterpillar D5B bulldozer, a Caterpillar D6 bulldozer, a Caterpillar 941 track loader and a Caterpillar 930 loader. The Caterpillar D5B bulldozer and Caterpillar 941 track loader were used for most of the stripping and clearing tailings. The Caterpillar 930 loader was used for feeding the box and removing tailings.

The wash plant was an 8-foot-wide by 14-foot-long dump box over a 3-foot-wide by 24-foot-long single sluice run lined with Nomad matting and angle iron riffles. A Paco 10- by 8-inch pump powered by a Caterpillar D330 engine supplied the estimated 2000 igpm needed to process between 15 and 30 cubic yards per hour. An in-stream reservoir was constructed on Independence Creek and the water was piped to the sluice plant with a gravity system. Water was also available to be recycled from the settling facility constructed in the old mine pit at the mouth of Independence Creek. An additional settling area was constructed utilizing an area of old dredge tailings.

Surficial Geology and Stratigraphy Alternating layers of largely thawed black muck and gravel were found in all cuts. Oldtimers' tailings were found in many areas. The pay streak alternated from the right to the left limit of the valley. All of the gravel and a small amount of the bedrock were sluiced.

Bedrock Geology Bedrock was decomposed schist.

Gold Characteristics Gold was described as variable, from flat and fine to rough and rounded. The fineness varied between 750 and 817. Nuggets weighing up to ½ ounce (15 g) have been found.

GOLD BOTTOM CREEK, a tributary of Hunker Creek

1150/15 2005: 63°57'53"N, 138°58'05"W
2004: 63°56'40"N, 138°58'41"W

Mogul Gold Placers, David Millar
Water licenses: PM98-025 (2008)
Active producer (2003-2006) **Operation no. 46**

Location Mining at this operation took place on the right limit of Gold Bottom Creek opposite Soda Creek for 2003, 2004 and most of 2005, but moved to the left limit of Hunker Creek just downstream of the mouth of Gold Bottom Creek in August 2005, where mining continued in 2006. In June 2006, operations were relocated to a site upstream of the roadhouse on the left limit of Hunker Creek.

Work History and Mining Cuts Mogul Gold Placers began mining in this area in 1990. In 2003, 2004 and most of 2005, Mr. Millar with one occasional helper mined on Gold Bottom Creek opposite Soda Creek. In addition, Mr. Millar ran a panning and gold tour venture business out of an old historic roadhouse in conjunction with the mining activity. Two mine cuts were completed on Gold Bottom Creek from 2003 to mid-2005, each 250 feet (75 m) long by 30 feet (10 m) to 50 feet (15 m) wide. In August 2005, Mr. Millar remined old dredge tailings on the left limit of Hunker Creek, in a cut measuring 500 feet by 100 feet (150 x 30 m). In 2006, a crew of two miners and two camp personnel worked a daily 12-hour shift to process 7000 cubic yards (5351 m^3) of dredge tailings and an underlying cut of virgin ground 60 feet (20 m) by 100 feet (30 m).

Equipment and Water Treatment Equipment for the 2003 to 2006 seasons consisted of one Caterpillar D8H bulldozer, one Hitachi EX200 excavator and one Caterpillar 966C loader. The wash plant was a 5-foot trommel which had a 30-foot tailings stacker, a 10-foot-wide oscillating run with 4 feet of hydraulic riffles and 4 feet of expanded metal. Water was supplied from Gold Bottom and Hunker, and pumped by a Gorman Rupp, 6- by 6-inch pump powered by a Perkins 6/354 diesel capable of 600 to 1000 igpm. The processing rate was 50 loose cubic yards per hour. Effluent was settled out-of-stream in a 100- by 100-foot (30 x 30 m) pond with a return discharge to the creek and no recycling. In 2006, the operators added a Western Star dump truck with a capacity of 10 cubic yards.

Surficial Geology and Stratigraphy From 2003 to 2005, the section at Gold Bottom Creek consisted of 15 feet (5 m) to 35 feet (10 m) of black muck overlying 3 feet (1 m) of gravel mixed with overburden. All of the gravel was sluiced. The section on the left limit of Hunker Creek mined in August 2005 consisted of 12 feet (4 m) of 'chunky' dredge tailings on bedrock, all of which was sluiced. In 2006, more dredge tailings were sluiced and dredge mud was stripped to reveal

Mogul Gold Placers' operation on Gold Bottom Creek, 2003.

intact virgin gravel which had been buried. This virgin ground was sluiced along with several feet of bedrock.

Bedrock Geology Bedrock was flat, blocky and decomposed with occasional deep pockets of gravel.

Gold Characteristics In the 2003 to 2005 mining seasons, the gold recovered from Gold Bottom Creek was small and flat with very few nuggets and had a fineness of 785. Over 50% of the gold was minus 30 mesh in size with very few nuggets. Hunker Creek gold recovered from dredge tailings on the left limit in August 2005 consisted of small nuggets, which ranged in fineness from 800 to 820. In 2006, the gold from the dredge tailings was very fine grained, while the virgin ground produced some nuggets. The fineness was 800.

GOLD BOTTOM CREEK, a tributary of Hunker Creek

1150/15 2005: 63°54'44"N, 138°59'36"W

Ken Jackson
Water license: PM04-455 (2015)
Exploration (2005-2006) **Operation no. 47**

Location This testing operation was located at West Gold Bottom and Gold Bottom creeks.

Work History and Mining Cuts Ken Jackson tested several areas in the first year of this water license. Some old trails were opened up for access, but no mine cuts were created. In 2006, Jackson stripped on the left limit of Gold Bottom Creek.

Equipment and Water Treatment A Heinz Werner C128 backhoe and a small Caterpillar excavator were used to dig test pits. A mobile wash plant was constructed, but test gravel was washed with a small long tom and pump. Water was obtained from Gold Bottom Creek.

Ken Jackson's wash plant, Gold Bottom Creek.

Surficial Geology and Stratigraphy The operator expected to find 20 feet (6 m) of black muck over 10 feet (3 m) of gravel on bedrock, although test pits did not reach bedrock as of the reporting date.

ONTARIO GULCH, a tributary of Gold Bottom Creek

1150/15 2005: 63°56'57"N, 138°58'25"W

Pay Streak Placers, Richard A. Semple
Water license: PM01-229 (2006)
Exploration (2003-2005) **Operation no. 48**

Location Ontario Gulch is a tributary of Gold Bottom Creek.

Work History and Mining Cuts Testing on the property first began in 1999, and stripping and drainage construction was conducted from 2000 to 2002. In 2003, an area approximately 200 by 300 feet (60 x 90 m) was stripped downstream of a left-limit tributary of Ontario Gulch. A cross-valley dam was built in the lower reaches. Activity in 2004 and 2005 was limited to testing.

Equipment and Water Treatment In 2003, equipment included a CPC Drott 40 Excavator and Caterpillar D6 bulldozer, which were used to dig settling ponds, feed the sluice box and strip the ground. A cross-valley dam was constructed downstream of the actual mine area and water was pumped up to the cut via a pipeline and an Allis-Chamber pump. A single run sluice with a hopper was used for testing the gravel. A small butterfly monitor was also used to help thaw ground.

Surficial Geology and Stratigraphy The stratigraphy was composed of 12 to 16 feet (4 to 5 m) of moss and black muck intermixed with an old forest layer about 1½ feet (0.5 m) thick. A 4- to 6-foot (1- to 2-m) angular gulch gravel layer contained some large quartz boulders. The ground was frozen.

Bedrock Geology Bedrock is blocky, green muscovite-quartz schist.

Gold Characteristics The gold recovered in testing was reported to be coarse.

GOLD BOTTOM CREEK, a tributary of Hunker Creek

1150/15 2005: 63°53'18"N, 138°59'05"W
2003: 63°54'14"N, 138°59'29"W

Sergio Aimola, Alfredo Aimola
Water license: PM03-313 (2014)
Active producer (2003-2006) **Operation no. 49**

Location Between 2003 and 2005, mining continued at two locations, on upper Gold Bottom Creek and at the confluence with Soap Creek. In 2006, the operation was relocated downstream from the confluence of Soap Creek to a location on Gold Bottom Creek approximately 0.3 miles (0.5 km) from camp.

Work History and Mining Cuts Alfredo and Sergio Aimola began mining the hillsides of Gold Bottom Creek and Gold Bottom Gulch in 1998. Between 2003 and 2005, Alfredo Aimola and his father Sergio continued to mine on upper Gold Bottom Creek and at the confluence with Soap Creek. Approximately 50,000 cubic yards (38 000 m^3) were sluiced during this period. In 2006, Alfredo Aimola worked a daily 10- to 12-hour shift alone and relocated the operation 0.3 miles (0.5 km) downstream. He mined a cut 150 by 300 feet (50 x 100 m) adjacent to Gold Bottom Creek.

Equipment and Water Treatment A Caterpillar D8K bulldozer with a U-blade and ripper and a Caterpillar 235 excavator loader were used to strip the hillsides to allow thawing of permafrost. The 235 excavator and a monitor were used to clear away the black muck which was stockpiled for reclamation. Pay was pushed by the Caterpillar D8K which was fed to the wash plant by a Caterpillar 988 loader. The wash plant included a dump box equipped with a shuffle board and conveyor belt, which was used to feed material to a trommel with ⅜-inch screen. The pay was then sluiced through two 4- by 8-foot and one 2- by 8-foot sluice runs lined with 1-inch riffles and heavy Nomad matting. A Jimmy diesel engine-powered Worthington 12- by 10-inch pump rated at 1800 igpm allowed the plant to process approximately 70-90 cubic yards per hour. Long toms and wheels were used for final clean-ups. Water for monitoring and sluicing was obtained from Gold Bottom Creek, Gold Bottom Gulch, Soap Creek and an unnamed left-limit

Alfie Aimola mining on Gold Bottom Creek — a one-person operation with three machines.

tributary, depending on location of the mine cut. In-stream settling ponds were employed at both the Soap and Gold Bottom locations. Water was acquired from pump pond reservoirs in the creek channel, and each of the ponds constructed was 100 by 150 feet (30 x 50 m). In 2006, Aimola replaced the Caterpillar 988 loader with a Caterpillar 980C loader. The wash plant processed approximately 80-90 loose cubic yards per hour. Water was acquired from Gold Bottom Creek and effluent was settled out-of-stream in a 125- by 250-foot (40 x 75 m) pond.

Surficial Geology and Stratigraphy Between 2003 and 2005, the stratigraphic section consisted of approximately 20 feet (6 m) of frozen black muck, 7 to 8 feet (2.1 to 2.4 m) of average-sized gravel and 2 to 3 feet (0.6 to 1 m) of unconsolidated flat bedrock. In places, the black muck layer increased in depth up to 40 feet (10 m), and the gravel thickness increased to 16 feet (5 m). In other places, the muck layer was 6 feet (2 m) thick, overlying a gravel layer 15 feet (5 m) thick. The pay zone was located below the water table. All of the gravel and 1 foot (0.3 m) of bedrock were sluiced. Evidence of old shafts were found in the waste section. In 2006, the thawed section consisted of 3 to 4 feet (0.9 to 1.2 m) of gravel overlying blocky schist. All of the gravel and 1 foot (0.3 m) of bedrock were sluiced.

Bedrock Geology Bedrock at this site is decomposed to blocky chlorite schist.

Gold Characteristics The gold recovered varied in size and shape from flat to round, smooth to chunky. Nuggets were recovered which tended to be round in shape and attached to quartz, from ½ ounce (15 g) to more than an ounce (30 g) in weight. Gold recovered at the 2006 location was both rough and smooth with an average fineness of 789.

MINT GULCH, a tributary of Hunker Creek

1150/15 2003: 63°55'59"N, 138°54'30"W

Grew Creek Ventures Ltd.
Water license: PM00-198 (2006)
Active producer (2003) **Operation no. 50**

Location In 2003, the operation was located at the mouth of Mint Gulch along the right limit.

Work History and Mining Cuts Work began on this property in 2001. No mining occurred under this license in 2002, but a small-scale operation continued at the mouth of Mint Gulch in 2003.

Equipment and Water Treatment Equipment consisted of a Caterpillar D8 bulldozer, a Caterpillar 988 loader and a Caterpillar 966 loader. The bulldozer was used for stripping, stockpiling and pushing pay, while the loaders were used for feeding the sluice plant and removing tailings. Hydraulic monitors were used to strip and wash the side pay cuts. The wash plant included a 10- by 12-foot dump box which fed into a 3- by 20-foot single run sluice lined with 1½-inch angle iron riffles and Nomad matting. Water was supplied by a Caterpillar engine powered at 2000 igpm, enough to process approximately 60 cubic yards per hour. Due to the narrow valley and steep gradient on Mint Gulch, the pay gravel was hauled to the mouth of Mint Gulch and sluiced using Hunker Creek water. Effluent was settled out-of-stream in old mine pits along Hunker Creek.

Surficial Geology and Stratigraphy The ground on Mint Gulch varied in depth with 6 to 40 feet (2 to 10 m) of frozen black muck overlying 3 feet (1 m) of gravel. All of the gravel and from 2 to 4 feet (0.6 to 1 m) of the bedrock were sluiced.

Bedrock Geology Bedrock at this location is slabby to decomposed schist.

Gold Characteristics Most of the gold recovered from Mint Gulch was rough with a purity of 835. Numerous nuggets weighing up to 4 ounces (120 g) have been recovered.

24 PUP, a tributary of Hunker Creek

1150/15 2005: 63°54'48"N, 138°54'31"W

Gerald Ahnert, Elizabeth Ahnert
Water licenses: PM04-379 (2015), PM00-178 (2005)
Active producer (2003-2006) **Operation no. 51**

Location This property was located 2500 feet (750 m) up 24 Pup, a small left-limit tributary to the right fork of Hunker Creek.

Work History and Mining Cuts Gerry and Elizabeth Ahnert have mined here since 1980, mining on average 300 cubic yards (200 m^3) per year. In 2003 and 2004, the Ahnerts mined at the top of the gulch where mining began approximately 25 years ago. Hand mining was conducted on pockets along the edge of the old section, at a rate of 1.5 cubic yards (1 m^3) per day. In 2005, mining continued upstream with a cut 60 by 20 by 12 feet (20 x 6 x 4 m) wasted and a cut measuring 50 by 50 feet (15 x 15 m) processed. A total of approximately 75 cubic yards (60 m^3) were sluiced in 25 hours. In 2006, a small amount of stripping was completed.

Equipment and Water Treatment In 2003 and 2004, water was 100% recycled from a 6000 gallon out-of-stream pond, using a 5.5 HP Honda 3-inch pump producing 60 igpm. A 16- by 1-foot sluiceway with Hungarian riffles and expanded metal was hand-fed at 1.5 cubic yards per day. In 2005, a 0.5-cubic-yard dump box fed a 16-foot single-run sluiceway with Hungarian riffles, expanded metal and bar riffles on Nomad matting. A 1969 John Deere 400 loader/backhoe was used for stripping and feeding the sluice box. Water was 100% recycled from a 20- by 15- by 7-foot (6- x 5- x 2-m) out-of-stream pond and pumped by a 5.5 HP Honda 3-inch pump at 300 igpm. Material was processed at 3 loose cubic yards per hour for 25 hours. A metal detector was used to check the bedrock and washed tailings for nuggets.

Surficial Geology and Stratigraphy Previous stratigraphic sections have been comprised of approximately 15 feet (5 m) of frozen muck and angular rock overlying up to 5 feet (1.5 m) of gold-bearing gravel. In 2005, the section consisted of 8 feet (2 m) of muck overlying 4 feet (1 m) of peat-like material. Alluvial gravel was almost non-existent with the dendritic gold found in cracks in the blocky bedrock.

Bedrock Geology Bedrock at this site is a mixture of decomposed schist and hard slabby quartzite.

Gold Characteristics This creek produces several types of gold, including dendritic, wire and crystalline gold. Some nuggets weighing as much as 2⅓ ounces (72 g) were reported, with 60% of the gold larger than ¼ dwt. (0.38 g). Fineness generally ranges from 827 to 845, and between 2003 and 2005 the purity of the gold was reported to be 845 fine. A nugget weighing 4 dwt. (6 g) was found in 2004 and a nugget weighing 3 dwt. (5 g) was found in 2005.

Aerial view of Gerry Ahnert's pit on 24 Pup, 2005.

HUNKER CREEK, a tributary of Klondike River

1150/15 2004: 63°53'20"N, 138°53'43"W

Dave Laurenson, Sarah Laurenson
Water licenses: PM04-383 (2009), PM05-485 (2009)
Exploration (2004-2005) **Operation no. 52**

Location The operation was located on an unnamed left-limit tributary of Hunker Creek, locally named 12 Pup.

Work History and Mining Cuts Dave and Sarah Laurenson worked a daily 12-hour shift to set up a small test-sluicing operation at the mouth of 12 Pup. A small amount of tailings were sluiced in 2004 and 2005 in a mining cut 125 by 50 feet (40 x 15 m). The operation was subsequently shut down and moved to Little Gold Creek.

Equipment and Water Treatment Equipment consisted of a Caterpillar D8H bulldozer equipped with a ripper and U-blade for stripping, preparing pay gravel, clearing tailings and reclamation. A Terex 72-51 loader fed the sluice plant and was used to complete miscellaneous jobs. The wash plant included a 10-yard hopper which fed into a 4-foot-wide by 14-foot-long double screen deck. The classified gravel was then washed through sluice runs totalling 7 by 21 feet, which were lined with a combination of angle iron riffles, expanded metal and Nomad matting. Tailings were stacked with a 40-foot conveyor. Water from Hunker Creek was supplied by an English 6-cylinder diesel-powered Ford 5- by 4-inch pump rated at 1200 igpm, enough to process 100 loose cubic yards per hour. Effluent was settled out-of-stream and 90% recycled from a 125- by 50-foot (40 x 15 m) pond. Clean-ups were done with a long tom.

Surficial Geology and Stratigraphy The ground had been previously stripped and mined and consisted of tailings. A total of 10 feet (3 m) of material was reprocessed and bedrock was not reached.

Gold Characteristics No gold was recovered.

HUNKER CREEK, a tributary of Klondike River

1150/15 2003: 63°53'24"N, 138°55'18"W

Tom McMahon
Water license: PM04-436 (2014)
Active producer (2003-2005) **Operation no. 53**

Location This operation was located on the right limit of the right fork of Hunker Creek.

Work History and Mining Cuts Tom McMahon began a small-scale operation by himself in 1996. Mr. McMahon continued stripping along the right limit, upstream from previous workings in 2002, 2003 and 2004. A new cut along the left limit was stripped in 2005.

Equipment and Water Treatment Equipment included a Gradall excavator for stripping, feeding the wash plant, handling tailings, constructing drains and the construction and maintenance of settling facilities. The wash plant was a hopper-fed New Zealand-style trommel, 3½ feet in diameter and 12 feet long, with 8 feet of ½-inch screen. Classified pay gravel flowed over two boil boxes into a 6- by 5-foot single sluice run lined with hydraulic riffles. Water was supplied by a 5-inch high pressure pump powered by a 4-cylinder Isuzu engine at 600 igpm, enough to process approximately 40 loose cubic yards per hour. Effluent was 100% recycled and settled out-of-stream along the right limit with a by-pass channel.

Surficial Geology and Stratigraphy The section varied in depth from 15 to 20 feet (4 to 6 m). Oldtimers' workings were evident. Approximately 5 feet (1.5 m) of mixed black muck and colluvium overlies 4 feet (1 m) of gravel. All of the gravel and up to 2 feet (0.6 m) of the bedrock were sluiced.

Bedrock Geology Bedrock varies from solid and fractured to fully decomposed sericite and chlorite schist.

Gold Characteristics Most of the gold was rough, dull in colour and many of the small nuggets contained quartz. The fineness was 800.

Tom McMahon's pit on Hunker Creek, 2005.