

Yukon Placer Database Operations Report



Field Name: Fraser & Close, 1979-1998

Last Update: 25-Mar-2004

Status: Recent Producer 1978-present

Stream: Hunker: a tributary of Klondike

Map Sheet(s): 1150/15

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Operators

Name	From (Date)	To (Date)	Comment
Joey Fraser	1998/01/01	1998/12/31	
Douglas Fraser	1998/01/01	1998/12/31	
Ian Fraser	1985/01/01	1998/12/31	
A. Close	1979/01/01	1984/12/31	

Owners

Name	From (Date)	To (Date)	Comment
Joey Fraser	1998/01/01	1998/12/31	
Douglas Fraser	1998/01/01	1998/12/31	
Ian Fraser	1985/01/01	1998/12/31	
Jack Fraser	1979/01/01	2003/12/31	
A. Close	1979/01/01	1984/12/31	

General Location

In 1979, the property was located on a low left limit bench along Hunker Creek, approximately 750 metres (2,500 feet) downstream from the mouth of Gold Bottom Creek. In 1985, the operation was located on a left limit terrace, midway between Gold Bottom and Not Much Gold Creeks. In 1991, the operation was moved from the creek ground to Temperance Hill.

The work area in 1998 was located on the left limit of Hunker Creek approximately a quarter of a mile upstream from the tributary to Not Much Gold.

Location Details

Date:	Latitude			Longitude			Elevation (feet)	Distance from Mouth (feet)
	Deg	Min	Sec	Deg	Min	Sec		
2003/01/01	63	58	7	138	58	49		
1998/01/01	63	58	0	138	58	0		
1997/01/01	63	58	0	138	58	0		
1995/01/01	63	58	0	138	58	0		
1993/01/01	63	58	0	138	57	0		
1991/01/01	63	58	0	138	57	0		
1990/01/01	63	58	0	138	58	0		
1985/01/01	63	59	0	138	58	0		
1979/01/01	63	58	0	138	59	0		

Water Licence(s)

Number	Comments
PM02-271	
PM96-066	Expired: 2001/10/31
PM90-048	
PM88-031	

Water Licence(s)

Number	Comments
PM93-075	

Work History

1979- Mr. Fraser and Mr. Close began work on this property.

1980- A cut approximately 15 metres (50 feet) wide and 30 metres (100 feet) long was made.

1982- Two people began a second operation approximately 150 metres (500 feet) downstream from the original workings on this property.

1983-1984- Mr. Fraser and Mr. Close and two other people did hydraulic stripping. No production or gold recovery figures were given.

1985- One sidehill cut was mined into a face 400 feet long and 100 feet back yielding approximately 8,000 cubic yards of pay from an excavation of roughly 40,000 cubic yards. The entire gravel section along with 1 to 2 feet, and sometimes up to 5 feet of decomposed bedrock was sluiced.

1986- A cut 300 feet long, and 107 feet deep into the hill, was developed. This yielded approximately 9,000 cubic yards of pay from this 40,000 cubic yard cut.

1987- No data was given.

1988- Approximately 4,300 cubic yards of pay was processed from a sidehill cut, measuring 300 by 60 feet. The volume of this excavation was estimated to be 25,000 cubic yards.

1989- One cut 300 feet long by 40 feet was sluiced. Some of it was put aside and sluiced in the following year.

1990- The operation continued into the hillside. 3 family members worked fulltime and one other worked part time. One cut the same size as in 1989 was sluiced as well and the left overs from 1989.

1991- One large cut 200 by 300 feet was sluiced in 2 parts.

1992- two cuts were mined this year. A 385 by 75 feet was sluiced, and a 350 by 60 feet was stripped. Only half of the second cut was sluiced before winter arrived.

Jack and Ian Fraser ran this operation with their families. Cuts on Temperance Hill averaged 400 feet long by 100 feet wide. One cut and part of another were mined in 1993, and a cut was mined in 1994 before moving into the valley to try the historic dredge tailings. After 37 hours of sluicing the tailings were not considered viable at that location.

1995- Jack and Ian Fraser mined on Temperance Hill for the first part of this year then moved to Hunker Creek and sluiced the dredge tailings. Three to 4 people ran the operation. Two cuts approximately 300 feet long by 75 feet wide by 15 feet deep were mined.

1996- More dredge tailings were sluiced along with 2 left limit cuts just upstream of the main camp. The dredge tailings were stripped to see what was at the bottom. A cut 300 feet long by 80 feet wide by 30 feet deep was mined. The two cuts along the left limit that were mined measured 300 feet long by 150 feet wide by 6 feet deep and 300 by 80 by 8 feet.

1997-1998 - This operation downsized considerably. Only Jack and Ian Fraser performed some work, with Ian Fraser's sons, Douglas and Joey, pinch-hitting on occasion. Sluicing of stockpiled material and mining a small cut was the only activity this season. No further mining has occurred to date.

Production

Year	Stripped	Sluiced
1988	20700 cubic yards	4300 cubic yards
1986	31000 cubic yards	9000 cubic yards
1985	32000 cubic yards	8000 cubic yards

Equipment

In 1979, two D4 Caterpillar bulldozers were used to mine the property. Water under pressure was used to wash down the black muck.

In 1982, a D6 Caterpillar bulldozer was put in place of a D4 bulldozer.

In 1983, one monitor was set up at the base of the hill. The operators found that the set-up they had used in prior years, with monitors at the top of the hill, was more effective. A sluice run set up at bedrock level was located immediately downstream of the hydraulicking, so that all effluent from the stripping passed through it before leaving the bench. Water for stripping was pumped from a small pond by a 6-inch pump powered by a 4 cylinder GM 4031C diesel engine. The Caterpillar D6C bulldozer was used to push the material in the cut to a stockpile near the sluice plant, and the D4 bulldozer was used to feed the material to the sluice plant. The sluice plant was fed at a rate of 30 cubic yards per hour. It consisted of a dump box 12 feet wide and 18 feet long, and a single run sluice 24 inches wide and 30 feet long. The sluice run was lined with punch plate, expanded metal and matting, and set at a gradient of 1 1/2 inches to the foot. Water for sluicing was provided at a rate of 800 to 1,000 igpm by a 4 by 5 inch pump powered by a 6 cylinder diesel engine.

In 1984, two monitors using approximately 1,100 igpm of water were set up at the base of the hill to do stripping. The sluice run was changed to 48 inches wide and 24 feet long. It used approximately 1,300 igpm of water.

In 1985, the operation relied on hydraulic monitoring for stripping frozen muck. Two units were used, reportedly consuming 1,000 igpm each, supplied by a 6 by 6 pump driven by a GMC 4031C diesel. Pay was bulldozed from the exposed cut to the sluice assembly by a D6C Caterpillar bulldozer, while a D4 Caterpillar bulldozer fed the plant. The sluicing plant consisted of an 18 by 12 foot dump box and a single 24 by 4 foot sluice run. The run was lined for the first 8 feet with punch plate over expanded metal and matting, with 3-inch riffles in the remainder. The plant was fed at a rate of 30 cubic yards per hour, with an estimated 1,300 igpm from the same pump that was used for monitoring earlier in the season.

In 1986, the sluice plant was changed in hopes for better recovery. No description was given.

In 1988, the D4 Caterpillar was eliminated. An instream reservoir acted as the water source from 1985 to 1988. Effluent traveled through a 1000-foot long drain, into a 500 by 150 foot settling pond towards the middle of the valley. Reportedly, however, most of the settling occurred in the drain.

In 1989, a Caterpillar 950 loader was acquired. The plant consisted of a 22 by 7 foot dump box ahead of a 24 by 4 foot single sluice run. The lower two-thirds of the dump box contained various sized and types of punch plate overlaying expanded metal. The first 8 feet of the sluice run was lined with punch plate over a 1-inch "undercurrent", overlaying a double layer of expanded metal, on top of Nomad matting. The lower 16 feet contained 3 inch angle iron riffles. This plant was fed at an approximately rate of 40 cubic yards per hour. A 10 by 12 inch pump powered by a Caterpillar D6 engine provided the 1,300 igpm sluice water.

Through 1989/1990, they had a similar setup as in previous years. Water was pumped from a pump pond on Hunker Creek to the Hydraulic monitor or the sluice box. A 10 by 8 inch Monarch pump powered by a 471 GM diesel engine supplied the water. A bedrock drain approximately 800 feet long serves as a pre-settling pond and removes most of the larger settleable solids. A downstream settling pond 150 by 1100 feet provided final effluent treatment prior to outflow back into Hunker Creek. This large out-of-stream settling pond handles the effluent from both the monitoring and the sluicing.

In 1991, a D8 Cat bulldozer was used to strip ground, stockpile the paygravels, feed the sluice plant, and clean the pre-settling pond. A 22-foot by 7 foot dump box fed a conventional single sluice run 24 by 4 feet. The sluice plant had been tested on the creek ground and had worked well, but leaner pay on Temperance Hill required a greater feed rate.

In 1992, a 950 loader was used to feed the shaker plant in 1992 and remove and stack the coarse tailings. A new wash plant was built this year. A 5-foot by 14-foot double screen deck classified the pay to 2 inch minus on the upper screen, and 1 inch minus with the lower screen. The pay was then washed in an 8 by 22 foot single sluice run. The first 4 feet of the run used expanded metal and 1 1/4 inch riffles along with matting. The next 8 feet were lined with matting and expanded metal only. Two feet of slick plate was used with the last 6 feet, which was lined with matting and 1 1/4 inch riffles. The processing rate increased from 28 to 48 cubic yards per hour with the screen deck in 1992, and the amount of water needed for sluicing decreased from 1500 igpm to 1000 igpm. Water was pumped from an instream pump pond on Hunker Creek up to Temperance Hill with a 6 by 6 inch high-pressure pump. The water was lifted 300 feet high and contained in a series of four settling/recycling ponds, with

an average size of 160 by 70 feet. No discharge occurred and make-up water was required 30% of the sluicing time. In 1993, a D8 Caterpillar bulldozer was used to strip waste gravel and stockpile pay gravel. A 950 Caterpillar loader fed the sluice plant and removed tailings. A D6 bulldozer was available for smaller jobs when needed. All three pieces of equipment were used for restoration work. A 5-foot by 14-foot double deck screen plant classified the pay to one inch minus. The pay was spread into an 8 foot by 22-foot sluice box divided into four runs. The first four feet of the run used 1.25-inch angle iron riffles, the next 12 feet was lined with heavy expanded metal, and the last six feet used the 1.25-inch angle iron riffles. Nomad matting lined all the sluice runs. A six-inch high-pressure pump supplied 600 igpm to the reservoirs on Temperance Hill. Another six-inch pump was used for recirculation on the bench. Approximately 40 cubic yards per hour was sluiced using 1200 igpm. Water was pumped from an instream pump pond on Hunker Creek to Temperance Hill, a lift of 300 feet. The water was then recirculated in a series of 3 to five settling ponds. Make-up water was required approximately 35% of the sluicing time once the ponds were full. No effluent discharge occurred from Temperance Hill. An instream reservoir was used for sluicing the dredge tailings late in 1994. The effluent was treated in out-of-stream settling ponds with all discharge by seepage through the dredge tailings.

In 1995, two Caterpillar D8H bulldozers, a Caterpillar D6 bulldozer and a Caterpillar 950 loader were used in 1995. A Caterpillar 225 excavator was acquired for the 1996 season to get to the bottom of the dredge tailings and to strip the side pay. A 5-foot by 14-foot double deck screen plant classified the pay to 1 inch minus. The classified pay was spread onto an 8 foot wide by 22-foot long sluice box that was divided onto 4 runs. The first 4 feet of the run used 1 1/4 inch angle iron riffles. The next 12 feet were lined with heavy expanded metal and the last 6 feet used 1 1/4 inch angle iron riffles. Nomad matting was used down the entire length. An 8-inch by 6-inch pump powered by a 471 Cummings and an 8-inch by 6-inch pump powered by a 671 Cummings supplied water for sluicing in 1995. A 4-inch by 6 inch Gorman Rupp trash pump was added in 1996. Approximately 1500 igpm was needed to sluice 45 cubic yards per hour. Water was pumped from instream pump ponds on Hunker Creek to the wash plant. The effluent was treated in out of stream ponds prior to discharge back to Hunker Creek.

1998 - The Caterpillar 225 excavator was used to strip and feed the sluice plant. A 950 Caterpillar loader hauled material away from cut. A D8H Caterpillar bulldozer was employed in various functions including reclamation. The wash plant in use at this time was a 14 by 5-foot double deck screening unit which classified the pay to 9-inch minus, after which it was fed into an 8 by 22-foot long sluice box divided into four runs. One and one-quarter inch angle iron riffles were installed in the first 4 feet of the runs. Heavy expanded metal lined the next 12 feet, followed by 6 feet of the original 1 1/4 -inch riffles. The sluice runs were lined for their entire length with Nomad matting. Water for sluicing was supplied by an 8 by 6-inch Monarch pump, powered by a 671 Cummings diesel engine, capable of 1500 igpm, which processed about 40 cubic yards per hour. Out-of-stream pump ponds were created from old mining cuts on Hunker Creek to supply the wash plant. Effluent was treated in out-of-stream settling ponds with no discharge to the creek.

Landforms

Landform	Comments
Alluvial Valley	

Surficial Geology

In 1979, the deposits present consist of up to 10.7 meters (35 feet) of ice-rich black muck overlying up to 1.5 meters (5 feet) of gravel. Several shafts and at least three old drifts from previous underground mining operations are present at this site. A thin, discontinuous layer of tailings from former hydraulic mining operations on Temperance Hill is also present.

The cuts on Temperance Hill were not frozen. A typical cut had a layer of organic reddish silt/clay at the surface with several layers of fine and coarse gravels above the bedrock. Bedrock was decomposed for a depth of 6 inches to 5 feet. The overall depth varied from 15 feet deep at the rim to 38 feet deep at the back of the cut (150 feet from the rim). The lower 4 to 5 feet of gravel and one foot of bedrock was sluiced.

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The 1990 cut consisted of 2 feet of organics overlying 60 feet of frozen black muck and slide rock from the hill above. Between 4 and 10 feet of pay gravels sits on mica schist bedrock, which tends to be soft and decomposed for about 2 feet. In some areas old timers' workings on the hill above left tailings on top of the black muck. The old timers' tailings, all the gravels and the first 2 feet of bedrock were sluiced.

In 1991 the average depth of the cuts on Temperance Hill was 32 feet. A thin vegetative layer covers 2 feet of silt and clay. Up to 30 feet of gravel was found next, with the size of gravel increasing with depth. The lower 6 feet of gravel was very heavy, with large amounts of packed sand and clayish fines. The lower 5 to 6 feet of gravel and the bedrock was sluiced. The bedrock was highly decomposed.

In 1995, the dredge completely altered the stratigraphic profile of the ground. The tailings were stacked with a maximum height of 15 feet above the creek level. Coarse tailings were encountered to 6 feet below creek level where dredge slickings were encountered until a depth of 21 feet below creek level. Mud was then found to a depth of 31 feet. Bedrock was usually encountered at 31 feet below the creek level. The dredge had completely cleaned all gravels from the bedrock. The cuts that were mined in 1996 averaged 12 feet deep with 6 feet of overburden and 4 feet of pay gravels. The lower 4 feet of gravel and usually 2 feet of bedrock were sluiced. In some areas as much as 5 feet of the bedrock needed to be sluiced.

1998 - This old dredge tailings site revealed coarse tailings 6 feet below creek level. Dredge slickings were encountered 21 feet down. The ground then turned to mud for the next 10 feet before bedrock was located. The cut mined along the left limit averaged from 4 to 20 feet deep. Moving downstream towards the settling ponds, the operators lost too much grade and found too much mud to be able to continue. The Frasers sluiced the bottom 5 feet of gravel and 2 feet of the soft unconsolidated schist typical of this area. Gravels were uniform in size with no large rocks.

Bedrock Geology

Bedrock is a decomposed quartz-sericite schist. In 1981, it was discovered that the bedrock rose from the present level of the creek, and then dropped off again leaving a bedrock ridge between Hunker Creek and a previous channel approximately 9 metres (30 feet) above the present one.

Gold Comments

In 1983, the gold recovered was very fine with less than 1% greater than 12 screen. Most of the gold was between 40 mesh and 100 mesh, and was very flat and smooth. Fineness varied from 800 to 810. In 1985, the gold was reported to be mainly fine-grained, with very little quartz attached. It was relatively flat and smooth. Fineness averaged 810 in 1985, 820 in 1986, and 810 in 1988. In 1990 the fineness was 810-820. The gold was screened to 4% greater than 10 mesh, 80% less than 10 mesh but greater than 60 mesh and 16% less than 60 mesh. The gold was flat and very little quartz occurs.

On Temperance Hill, very little coarse gold was recovered in 1991. The gold was screened in 1992 and 15% was +10 screen, 15% -10 +16, and 60% was -16 +90. The fineness was 810.

1995/1997- The gold was reported to have been a little coarser than usual in 1996. The purity is 810 fine.

1998 - Gold recovered at this site had a fineness of 800 to 810. Most of the particle size was smaller than 10 mesh minus. No coarse nuggets were recovered.

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Pictures

Title: Jack & Ian Fraser on Hunker Creek

Notes:

