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TERRITORY OF ALASKA

DEPARTMENT OF MINES

JUNEAU, ALASKA

Report of Mining Investigations in the Aniak
and Tuluksak Districts, Bethel and Kuskokwim Precincts
August 9 - 21, 1946

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Mining operations are nearly back to pre-war levels both in number of operations and the number of men employed in the Bethel and Kuskokwim precincts. The only idle operation was the dragline of the New York-Alaska Gold Dredging Corp. on Bear Creek. The two dredges of the above company began digging at an early date this year after having been idle since 1942. A 100-day season of dredging is expected this year. Three dragline operations resumed activities this season in the above precincts. Two bulldozer-hydraulic operations and one hydraulic sum up the total of activities.

The dragline operation of the Peandori Mines on Cripple Creek below the mouth of Dome was working two shifts and mining 2000 yards daily. The company expects to clean 750,000 feet of bedrock this season. This ground was reported to run 10 cents per bedrock foot. Higher labor costs with increased costs of supplies makes the mining of this low-grade ground very doubtful. Unless a profit is made this year, mining will not be resumed next year.

Marvel Creek Mining Company is operating its dragline under the management of Charles Awe. Four men are employed and only one shift is worked which has proven very profitable. The system of mining by this company, using two bulldozers, one on each side of the cut, and pushing the material up to a hydraulic giant, thence forcing the material through the boxes with the giant and by-pass water, and then stacking tailing with dragline, has proven to be the most economical for this type of mining. Boxes are set in bedrock and wings built half way down out from the boxes allow the bulldozers to push material into the boxes without use of the hydraulic if necessary. Boulders are a problem, which congregate at the head of the boxes. The dragline is moved ahead and the boulders moved and piled on the tailing dump with the dragline bucket. A first-class and well-equipped machine shop is maintained by this company at the Marvel Creek camp. Two years of good ground has been proven under existing costs. A large yardage is known to exist on lower Marvel Creek, which was reported to average 7½ cents per bedrock foot, with an average depth of from 6 to 8 feet. This ground is too low grade to work under present operating costs.

KX-91-1

Garrison Company has resumed dragline mining on Granite Creek after having been idle since 1941. The small amount of mining that has been done on this creek has produced over $100,000. The lower section of the creek does not have sufficient drainage to allow good dragline mining. The upper portion runs onto the main granite mass, and does not contain sufficient pay. The company has leased its holdings of 27 claims to the New York-Alaska Gold Dredging Corp. at an 8% royalty. The lower ground was reported to average 20 cents per bedrock foot with a total depth of 9 feet, 2 to 3 feet of muck and 6 feet of coarse gravel. This season the company is operating two bulldozers and a dragline with a total of three men. KX-91-19

The New York-Alaska Gold Dredging Corp. has a total of 43 men employed and two dredges are being operated using the hydroelectric power. Future planning in the past by the construction of the hydroelectric plant, other construction, and applying cost reduction practices, now enable this company to operate at a profit under high labor costs. The percentages of costs show very definitely the increased cost of labor in comparison to others in comparing the years of 1946 and 1942. Labor accounts for 45% of the direct operating cost in 1946 as compared to 31% in 1942. This amounts to an increase of 31% for labor above the other costs.

Costs for power on a per-yard basis show plainly the advantage of using the hydroelectric plant. The auxiliary diesel power uses 15 drums of diesel oil per day at a cost $16 per drum when carrying the full load and not using the hydroelectric generator. On a yardage basis of 8000 yards per day for the two dredges, this involves a direct cost of 3 cents per yard for oil over and above all other costs, as compared to using the water power.

The 1946 cost distribution on a percentage basis is as follows:

	Percentage	Cost per yard
Labor	45	$0.09
Depreciation	20	.04
Power)		
Exploration)		
Insurance)		
Office & salaries)	31	.062
Taxes	4	.008
	100	$0.20

The 20 cents a yard cost could, according to the management of the company, be reduced to 14 cents with the addition of another 6½-cubic foot dredge and an additional unit to the hydroelectrical power. There is sufficient water available in the present ditch. The use of electric power in the camp for lighting, in the machine shop and other uses, reduces the maintenance costs and overhead. The use of electric power on the dredges has greatly improved safety measures by eliminating the hazards connected with operating diesel power on board. This cost of 20 cents per yard is believed to be the cheapest per-yard basis of any dredge operation in Alaska. The wages paid are among the highest, with $1.30 per hour for common labor and up to $1.90 for the highest wage.

This season the company is drilling California Creek, a tributary of the Tuluksak on the left limit above the mouth of Bear Creek. Good dredging pay has been encountered, but the ground is deeper than expected.

On the ridge on the right limit of California Creek, where the divide forms between the Tuluksak River, Robert E. Wallace of the U. S. Geological Survey found a little free gold in place. This entire ridge has been staked by the New York-Alaska Gold Dredging Corporation, which has been led to believe that this is the mother lode source for all the gold on the Tuluksak. The ridge consists of a contact of rhyolite and a granite porphyry dike. Small seams of quartz, the largest noted being one-half inch in width, occur striking across the contact at right angles to the strike of the contact and both in the porphyry and rhyolite. Occasional specks of free gold, and what is believed to be tetradymite (telluride of bismuth), can be detected in a quartz seam. These seams are unevenly distributed along this contact for two claim lengths. They extend across the contact each way and appear to die out a few feet away from the contact. They were probably formed by contraction during the cooling of the porphyry. Large flat shaped quartz crystals, together with well developed small crystals of a green mica, make up the gangue minerals. Both quartz and the mica crystals are frozen to the walls of the seams with no visible signs of alteration of the wall rock. The greater amount of the seams appear to be barren of gold and the tellurides, which is also indicated by the samples taken by Wm. Race, engineer for the company. Both quartz and mica crystals are well developed, showing very slow growth. The extreme flatness of the quartz crystals indicates lack of space in one direction which coincides with the narrowness of the seams. The lack of other metallic associations such as pyrite, etc., absence of hydrothermal alteration on the walls of the seams, and the apparent freshness of both the porphyry and the rhyolite, leads the writer to believe that the gold and tellurides are both supergene in origin in these fractures as far as investigated along this contact. Considerable prospecting and exploration is necessary before any great importance can be attached to this discovery.

Gus Wilson, Wm. Horner and associates are operating with bulldozer-hydraulic and automatic dam on the Anderson ground on Canyon Creek. It has been reported that considerable more pay ground has been discovered in this area.

John Brink is hydraulicking and using a mechanical scraper for tailings on Bear Creek, eight miles above Nyac.

On Julian Creek south of Flat, a tributary of Crooked Creek, and in the Kuskokwim precinct, Augustine was reported to be operating a hydraulic-bulldozer and hydraulic lift. He has three men employed.

A new placer discovery was made last year by Ray Peterson, Tom Saginaw and Neil Corrigal on Columbia Creek, a tributary of Bird Creek, the latter a tributary of the Kwethluk River. According to Mr. Corrigal, the pay has been found to extend for 1¼ miles, with an average width of 100 feet, the depth ranging from 13 to 15 feet. The above owners hold claims from No. 4 above to No. 15 below Discovery. The bedrock was reported to be granite sand. The gravels are reported to be fine with occasional frozen pillars contained in them. Last year the ground was leased by Lars Ostness, who gave up the lease this year after some exploration.

Another gold discovery, which became known this year, and which was made several years ago, was reported on the Kiolerulik River. Kisaralik The discovery was made just below a canyon and falls at a point where the river leaves the foothills and assumes the coastal plain grade. KK 91-22 The writer flew over the section accompanied by the manager and engineer for the New York-Alaska Gold Dredging Corp. A mineralized zone cuts across the river just above the falls. Below the falls the river runs on bedrock and is intrenched in bedrock for several feet. Gravels were noted on the benches. Winter exploration of this section is the most feasible due to the inaccessibility of this area. The Kiolerulik River in the section about the canyon and falls is as large as the Tuluksak River at Nyac. The falls appeared to have a vertical drop of 70 or 80 feet. There exists a large drainage basin above the canyon, which together with the canyon and falls, would make an ideal hydroelectric power site. (Note colored picture of this river which shows basin, the mineralized zone across the canyon, lower center, and the river upstream from the falls).

A few prospect drill holes were put down by the Goodnews Bay Mining Company on Fisher Creek, tributary of Salmon River. KK-91-16 The results are not known, however, the hole locations are in or near the present creek bed, which, due to piracy, has been withdrawn from its former course. Prior to glaciation down Salmon River valley, Fisher Creek flowed nearly due south over its entire length and emptied into Salmon above the mouth of Cripple. The mouth of Fisher was blocked during glaciation and the overflow was into a small east-west flowing creek that empties into Salmon below Cripple, and which today is occupied by Fisher Creek below the elbow. (Note map showing Fisher Creek). As a result the upper portion of Fisher was drawn to the left limit (note photo looking up Fisher Creek) and the old channel occupies a bench of the right limit. The rim rock on the right limit of the present creek shows a few feet of coarse gravel, in which coarse gold has been found. Fresh water springs were found very numerous along this limit, flowing from under these gravels.

It is very possible that a run of gold originated from Fisher Dome, which is a soda granite and similar to the Marvel Creek and Tuluksak granite. This intrusive is capped with basaltic lavas on the north and west, and Fisher Creek, which drains from the southeast off this dome, is believed to be the logical creek to receive the run of gold. Assuming the above, and with the few known prospect discoveries, the run of gold would have been prior to glaciation, as shown by evidence on Cripple, Marvel and the other creeks in the district. Hence the run of gold would have been in the old bench channel to the elbow, and then in the old channel due south to the Salmon River. Neither the bench nor the old channel has been test-pitted or drilled. A strip of timber from two to four hundred feet wide extends from Salmon River, at about the old channel location, to within a mile and a half of the head of Fisher Creek. AK91-16

Jaye Cook, who is holding several claims on Fisher Creek, accompanied the writer over the entire length of the creek, and assisted in working out these deductions.

Other granitic areas are known to exist in this region, as at the head of Salmon River, along the Kiolerulik and Kwethluk Rivers. These areas are worthy of investigation for gold placer deposits. The drainage changes, caused both by recent elevation of the land and mountain glaciation, are problems requiring detail mapping and study. Stream and residual deposits, with a possibility of elevated beach line deposits, are very possible in this lower Kuskokwim section. AK91-6+15

The granites of this section appear, as far as investigated, to be of the soda-feldspar type and very favorable for gold precipitation. The writer holds, however, that the greater portion of the gold was precipitated in the zone of free oxygen direct from the hot solutions emitting from these soda granitic intrusives, and not all worn from preexisting quartz veins.

Other favorable factors for this region are abundance of water, both for placer operation and water power, a 100-day operating season, mostly thawed gravels, and very accessible to salt water transportation. This region, providing the future is favorable for the economical mining of gold, will offer many potential opportunities for placer gold mining.

ACTIVE PLACER OPERATIONS IN THE ANIAK-TULUKSAK DISTRICT,
BETHEL AND KUSKOKWIM PRECINCTS
1 9 4 6

Name of Company	Location	Precinct	No. Men
	Dredges (2)		
New York-Alaska Gold Dredging Corp.	Nyac	Bethel	43
	Draglines		
Garrison Company	Granite Creek, Nyac	Bethel	3
Marvel Creek Mining Co.	Marvel Creek	Kuskokwim	6
Peandori Mines	Cripple Creek	"	15
	Bulldozer-Hydraulic		
Wilson & Honner	Canyon Creek	Bethel	4
Augustine	Julian Creek	Kuskokwim	3
	Hydraulic		
Brink, John	Bear Creek	Bethel	1
			75

Total operations - 7.

COSTS IN THE ANIAK-TULUKSAK DISTRICT,
BETHEL AND KUSKOKWIM PRECINCTS
1 9 4 6

Diesel oil at Bethel* - $8.00 per drum
Cordwood " " - 20.00 per cord
Coal " " - 30.00 per ton via Army.

Cripple Creek:
Diesel oil via Aniak - $18.00 per drum
Airplane fare, Bethel to Cripple - $20.00, single fare.

Marvel Creek:
Diesel oil via Aniak - $18.00 per drum
Airplane fare, Marvel to Bethel - $20.00, " "

*Price reduced ½ since installation of Standard Oil tanks--from $16 to $8.

Nyac:

Diesel oil via Tuluksak	- $16.00 per drum
Airplane fare	- 20.00, Nyac to Bethel
Air freight	- 5¢ per lb.
River freight	- $ 8.00 per ton
Cordwood	- 14.00 per cord.

Distribution of percentage costs, New York-Alaska Gold Dredging Corp.

Depreciation	20%
Taxes	4%
Labor	45% (31% in 1942)
Drilling)	
Insurance)	
Office and salary Engr. & Mgr.)	31%
	100%

1942 - Labor and expense, direct operating - 42%

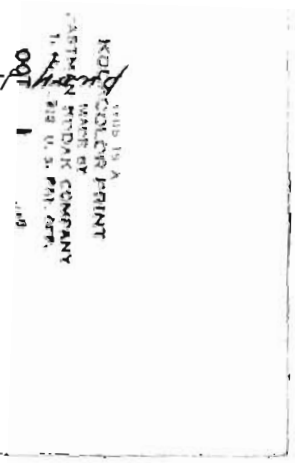
Cost per yard operating 2 and 6½ cu. ft. dredges - 20¢. Additional 6½ cu. ft. dredge with increased hydroelectric power expected to cut operating cost to 14¢ per yd.

Falls here ↑ 75-80'-

Kiscrolic River - Gmiak - Tuluksak District, Alaska.

Roll 4.

New gold discovery below canyon shown
in low center of Picture
Notched mineralized showing on
side of canyon.




Old channel
New channel

Roll 5

Look upstream from above Elbow

Fisher Creek

Arcadia-Tulukaak District

stream flows at bottom of high

ridge Left Limit

Old channel cuts through on left side

bottom.

Rocher