

K. Malone MR 195-

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Alaska Office of Mineral Resources
Trip Report
Yearly Mineral Industry Survey
K. Malone, Project Coordinator
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The annual survey trip to gather information on the State's mineral industries and on economic conditions covered Anchorage, Palmer, Dillingham, Goodnews Bay, Nyaq, McGrath, Flat, Nome, Fairbanks, Chicken, and Fort Greely. Mr. J. P. Ryan, Commodity Specialist, nonferrous metals (WO) accompanied the writer on the trip.

At Anchorage, Don Bruce, geologist for the State Division of Mines, gave information on the oil and gas industry. Bruce sees no great problem in maintaining the Turnagain Arm crossing of the Kenai-Anchorage natural gas line. Coal interests, fighting the conversion to gas of Anchorage military bases, had published photos showing apparently extensive damage to the line from sea and tide action. The intent was to promote the idea of questionable dependability of gas for military use. Bruce feels the problem was exaggerated, and while sea action may at times be severe, maintenance of service will not be difficult. He is of the opinion the military will go to gas at Richardson and Elmendorf.

~~Marathon~~ Oil (Ohio Oil) is still studying the feasibility of shipments of L.P.G. to the Orient. A recent meeting was held in Anchorage with Japanese representatives. At this point in the study, shipments of L.P.G. to Japan seem to be feasible if contractual and financing problems can be handled. Present consumption of gas in the Anchorage area, including the Sterling well serving the town of Kenai, is $2\frac{1}{2}$ million cu ft per day, and is largely commercial.

The Swanson River field now has 50 producing wells. Only one rig is drilling at Swanson with five wells remaining to be drilled or about 9 months to complete the development drilling. One or two step-outs may be drilled and any success in these could prolong the development phase. Standard is converting three wells in the Soldatna Creek unit for repressuring the field and expects to be operating the repressuring system by the end of October. They will start at 25 million ft³/day and step up to 75 million. There is a possibility Standard may have to buy gas for the repressuring from Union-Marathon's Kenai unit. Standard's Kenai oil refinery is slated for completion in spring 1963. No further word has been had on Western Frontier's proposed refinery. Plans apparently have been suspended, or the proposal may be dead because of Standard's move.

In oil exploration, five field parties worked the Alaska Peninsula in 1962, three the Cook Inlet area, three the Porcupine-Kandik basin, one Southeastern, one the Tanana area, and two the Arctic Slope. Texaco and Standard were on the Slope which Bruce

thinks has the greatest potential in any part of the United States. Twenty-five exploratory wells have been spudded or completed, for in 1962, with another five probably to be spudded over the balance of the year. If there is no new oil discovery this year, exploratory wells may drop to 10 in 1963. Slim-hole drilling for depths to 7,000 ft is proving out in Alaska. A 5,600-ft hole in the Sterling unit cost \$60,000 including roads, site preparation, mobilization and demobilization. Regular development drilling at Swanson River has been running about \$33/ft; isolated wild cat costs in Alaska run \$100 to 105/ft. Costs of attempts to control the blowout on Pan American's Middle Ground Shoal - State 1 was \$1.5 million.

Martin Jasper, State Division of Mines mining engineer stationed at Anchorage, gave information on South Central and Southwestern Alaska. Interest in Alaska's gold resources seems to be increasing with more of the field men of some of the larger companies inquiring about gold properties. Fremont has the offshore placer permits at Goodnews Bay. This is a development rather than an operating company, which has been associated with Newmont Exploration on the Brady Glacier nickel property in Southeastern. It is made up of some of the large independent iron operators from the Duluth area. W. S. Moore is managing partner. Fremont had 11 men and 2 helicopters at Goodnews on geomorphology and general geophysics. They plan more regional reconnaissance work, detailed geophysical tests (sparker), and drilling if warranted on the offshore placers next season. Virgil Mann of the University of North Carolina is the geologist for the company. Mann, whom we contacted in Fairbanks, stated that Newmont Exploration plans to patent the Brady Glacier deposit this fall. Even for an outfit like Newmont it may be a case of easier said than done.

According to Jasper, Newmont didn't get much of a look at the Hayes Glacier moly prospect west of Anchorage last season. Besides bucking a late spring and equipment too light for the job, Newmont had a stiff payment due in August of last year before they had enough data to go on. They dropped the option, terms of which are said still to be rough, and presumably are ready to prospect further if a better deal can be had. Humble Oil has surveyed and applied for patent on the Kemuk Mt. iron deposit near Dillingham. Humble is said to be trying to interest an iron operator to take over rather than operate the property itself. Only assessment work was done this season. Hanna apparently has no interest in the Tuxedni Bay iron. American Metals-Climax switched their field man to Hudson Mt., Smithers, B.C. and are doing no field work in Alaska this season. Trans World Resources, now called Dynamics Research, has 2 KIAM drills on Slate Creek, 30 miles east of Paxson, testing gold placers. Red Devil (hg) is making application for an OME loan on a \$0.5 million exploration project. Ray Wolfe (president) advised Jasper that without OME assistance, Red Devil will shut

down.

A Canadian mining group has optioned the Spirit Mountain nickel prospect on Canyon Creek in the Copper River region. Jasper had no data on what work was done. Winters of Phelps Dodge took a look at Spirit Mt.; he is limiting his prospecting to Cu-Ni although he did look at one iron property. Paul Omlin of Castle Mt. Coal is still working the old Premier property at Moose Creek, but is making no sales. He is stockpiling the coal, planning to bid on F.Y. 1964 military contracts. Columbia Iron is doing some underground exploration at the Beluga River coal field. They are driving in unaltered coal to get a test sample. Fulton of Newmont was at the Emerick Ni property at Rainbow Mt., Delta River district. Jasper describes the Emerick as having terrific Ni values but with ore in very small pods and complex faulting. Ni-Cu ratio is 3-1. At Anchorage Bear Creek Mining Co. is rumored about to come through with a large payment on the Kobuk copper in Northwestern. Au, Ag, radioactives and others are said to equal Cu values. No data has been released but Kobuk seems to be promising for an operation. Jasper thinks the cutoff is 3 percent Cu. This seems high as Chadwick put grade needed at 50 percent more than stateside which would be 1-1½ percent. Bear Creek had 18 men staking for 8 to 10 days on the Lost River (Seward Peninsula) beryllium strike. At least one party in Fairbanks claims Bear Creek missed the main outcrops. No brick is being made at Anchorage. The Atlas Brick operation was not able to make a brick that would stand up. Apparently the local Anchorage clays won't give bricks of sufficient strength and clay from Sheep Mt. is too expensive. A Japanese field party looked at Pilgrim's Stampede antimony. The mine was ice-filled at the time so they saw very little. Pilgrim is doing some surface prospecting and rehabilitation, but is not mining.

Chuck Herbert advised us that Newmont is giving up on the Emerick Ni. The disseminated ore runs up to 1.5 percent Ni, but there is no volume of ore. Some extremely high grade ore pods were encountered, however. Herbert was a consultant for Newmont on the Emerick examination. He has an examination scheduled for Tom Slick (Slick Oil Co.) on the McClaren River Cu and one on a new discovery by Fred Penryjohn on the West Fork of the McClaren. Herbert discussed with us some of the data available and the problems involved in working the offshore Au placers at Nome. Nome Gold Coast, Inc. has permits from the present beach to 1½ miles offshore. The Shell Oil holdings lie beyond Gold Coast's ground. Herbert thinks Gold Coast has the more promising ground. Dredging appears to be feasible although storms will be a problem and provision will have to be made to avoid dilution from tailings moved about by tides and currents. Some of Shells ground at 3 miles out is 300 ft deep and will need other than a bucket-line dredge. The inshore placers are 18 to 20

ft thick with about 10 ft of water overlaying them. Herbert stated that Marsden dredged (Au) at 40 to 50 ft depths for up to a mile offshore in the Philippines before World War II. As far as he knows, the operation was never written up. Herbert confirmed Jasper's observation on increased interest in lode gold. Some of the larger companies which formerly had no interest in gold are now inquiring about the big, low-grade deposits. In Fairbank Arnold Nordale has put together a number of the small Fairbanks lode gold properties and is trying to raise capital to get a consolidated operation underway.

At Goodnews Bay, Charles Johnson, who has been associated with the platinum operation since its inception in 1934, gave us information on current work and of the history of the placer area. The company is finishing a bench cut where recent exploration picked up about 350 ft of channel extension. The bench digging is expected to last until August, 1963 at which time they will switch over to the present channel. Currently Goodnews is digging 54 ft with a 15 ft bank. The 6½ Monighan is stripping ahead of the dredge. Both work 24 hours per day, 7 days a week. The 8 foot boat is equipped with Yuba jigs as roughers and Pan Americans as cleaners. Pulsators and cocoa-matting in the sluices act as scavengers. From the appearance of the trommel discharge, Goodnews is doing a much better washing job than at the time of the last visit. Some clay balls and mud-covered oversize were seen, but not nearly as much as previously. Before start up this season, a 10 foot section was added to the digging ladder for a net increase of 8 feet in digging depth. The extension was installed by the mine crew with tools and equipment on hand - something of an accomplishment for a small operation.

The company is preparing plans to mine the deep channel - under 170 feet of overburden. There is a possibility that some of the F.E. equipment at Nome may be moved to Platinum. Johnson was reluctant to discuss details pending negotiations. A boat capable of digging 100 feet underwater and carrying a 30 foot bank, and stripping 40 feet with the Monighan, would do the job. Johnson stated that either dredging or drifting appear feasible on this deep ground. The company also has a keen interest in further exploration for the lode source(s) of the placer platinum. Results to date have been largely negative, but much work apparently remains to be done before dropping the project. Johnson touched briefly on marketing problems and difficulties in getting reliable assays on Goodnews concentrates. He stated that among the leading U. S. assayers only Bishop and Co. and one other (not named) were able to come up with consistent, dependable assays. The unnamed company was not Ledoux.

At Nyac, Clarence Clark gave us a run-down on operations. Crowdy is putting in most of his time on the new placer operation in eastern Quebec leaving the Alaska work almost entirely to Clark. The Nyac operation has only 15 men this season and only one of the boats - the 6 footer - is in use. The 1961 powerhouse fire

completely destroyed the diesel unit and severely damaged one of the hydro units; Nyac is running on the remaining hydro plant. Clark is doing no sampling this season, directing the job from the results of previous test work. Severe winter temperatures froze much of the ground to bedrock, thus delaying startup in the spring. Clark expects to wash about the same yardage as last year, however, and looks for production to be up a bit from the better ground being worked.

At Flat, John Miscovich estimated 30 men actively placering with Fullertons, Stevens and the Miscovich dredge the major operations. Placer miners in the area are not hopeful of continuing gold mining unless there is an increase in the price of gold. Miscovich stated his dredge operation has perhaps 2 years life after this season with gold at \$35. At \$50 gold he estimates at least 15 years remaining. Some 800 Intelli-giants (invented by Miscovich) are now in use in mining, slurrying, and fire fighting applications in the United States and overseas. The Stang Corp., manufacturers of the machine, are developing a high-pressure, remote-controlled unit for use in hydraulic mining of coal. Miscovich is familiar with the Bureau's work on hydraulic mining of coal.

Fullerton's operation on Flat Creek is probably as efficient as any small placer operation in the State. They are using a 4-yd P&H dragline, originally brought into the area by Sunshine Mining Co. in 1934, for stripping and mining. The dragline feeds an elevated sluice through a 6 to 8 inch grizzly. Water is pumped and recirculated from a pond fed by the creek. The sluice has cocoa matting under expanded metal lath ($1\frac{1}{2} \times 3$) and the Ogriz type sectionalized riffle. Four or five feet of gravel and 4 to 6 feet of bedrock are washed. Fullertons give capacity as 200 yds/hr and a short time check showed 180 yds, thus confirming the figure. The two brothers have one man employed to stack tails (using a D-8), hook rock on the sluice, and tend pump. The 3 man crew can wash 250,000 yds per season with direct or out-of-pocket costs of \$26,000. This is a remarkable cost for a small operation in Alaska, granting that it has no allowance for the labor of the two brothers. Equipment consists of the dragline, diesel pump, sluice, D-8, and a D-9 with hydraulic ripper for stripping and ripping bed rock. The sluice, mounted on surplus bomber wheels, is highly mobile. While at Flat, we got information on mining activity in the surrounding area; a list of active operations is appended.

At Nome, Walt Glavinovitch gave us information on U. S. Smelting's operations and showed us around on the two dredges still working. No. 6, on the Submarine Beach, was finishing up; it was shut down permanently on August 26. No. 5, on Dry Creek, is slated to finish the season and then shut down permanently. The company plans to moth-ball the specialized equip-

ment and to ship any usable gear to other company operations outside of Alaska. An agent-caretaker will sell off pipe, timber, miscellaneous hardware, and other inventory. Small scale operations are active at Deering, Cunningham Creek, Kleary Creek, Candle, and the Inmachuk River. Groth and Pearson are prospecting for extensions at the Lost River tin mine. Bear Creek Mining again had a full crew at the Kobuk copper deposit. Bear Creek also filed on some beryllium claims in the Lost River area.

At Fairbanks, Crawford of U. S. Smelting gave a run-down of his company's operations. Only two boats, one at Chatanika and one at Cripple Creek are working this year versus four last year. The 1963 season will see the end of dredging at Fairbanks according to present plans. Hog River and Chicken operations will continue beyond the Fairbanks closing. The National Aviation and Space Authority has an application for withdrawal of 9,000 acres in the Fairbanks area including some of the United States Smelting, Refining and Mining Co. mineralized ground. Crawford stated that even with a change in the gold price, the Fairbanks reserves are not large - that the best ground is worked out. A rise to \$70 would allow a substantial operation on Esther Creek and the Chatanika Valley has large reserves at a depth of 200 feet. Crawford felt that Fish and Game would probably block a Chatanika Valley operation even if a price increase made it economical. He thinks a subsidy would revive Nome immediately. Here, there is great potential with reserves barely scratched. Other placer areas on the Seward Peninsula likewise have important deposits. A build-up in gold placering activity, according to Crawford, would spur prospecting for and development of other mineral deposits on the Peninsula. Boswell, U. S. Smelting's Fairbanks manager, took us aboard No. 10 boat on Cripple Creek. This has 10 foot buckets rated 8-10,000 yd³/day and is equipped with Pan American jigs and sluices. Log washers, installed for breaking clay balls, are no longer used. The Cripple boat is digging from 55 to 72 feet below water with a 15 foot bank. They use a 12 yard Monighan to strip the upper 40-45 feet. With the Monighan stripping, and using a 36 inch conveyor to move overburden up to a mile, stripping and disposal costs are 14¢/yd³.

In discussing Shell Oil's offshore placer activities at Nome, Crawford stated Shell is reported to have outlined three offshore beaches. No other information was available.

Fred Pankratz, president of Nome Gold Coast, Inc., gave us information on his companies' Nome activities. The 17 holes drilled through the ice this past spring showed good values according to Pankratz. Two or three holes missed bedrock with the others looking very good by estimating pannings. Concentrates, however, were fire assayed rather than amalgamated, and records

were so poorly kept that locations and descriptions of samples are not known. Among 12 assays, four were over 50¢/ton with one at \$15.43. One row of holes was drilled 1,000 feet offshore from Nome to the Penny River. Depth of water was 10 feet. Drilling showed eight feet of fine sand on a six to twelve inch false clay bedrock with fine gold concentrated on the clay (\$1/yd³). Below the clay streak the material is coarser and more angular with very little gold until bedrock. Pankratz stated values are very good on the bedrock. Total depth of the underwater material is 18-20 feet. The true bedrock is schist. Nome Gold Coast planned to have drilling gear at Nome in September to drill the beach until freezeup, then drill offshore from the ice. Plans were to drill on one mile centers along the shore and 100 foot centers going offshore. They estimate about 3,000 four inch holes will be drilled in five months using five drill rigs. Drilling cost is estimated at \$225,000. The company has 36 miles along the coast out to an average of 1.5 miles offshore with a stated acreage of 40,000 (area calculates to just less than 35,000 acres).

If drilling proves out, Pankratz expects to get an operation underway next summer. Initially a floating plant with a dragline on the beach is planned. Beyond the reach of the dragline, a dredge-type rig, modified so that the digging ladder digs toward instead of away from the rig may be used on the ice. P&D Constructors of Fairbanks are backing the Nome venture, South American Gold and Platinum is said to have shown an interest.

At Fort Greely we had a good opportunity to see the nuclear plant as it was shut down pending major modifications in design of some elements. The Army has changed the nomenclature on this from the APFR-1 (package, portable reactor) to SM-1A (stationary, medium). The original intent for a portable plant for use at remote or isolated installations apparently had to be sacrificed for other considerations. Maximum load was given as 2,000 kw.

List of Some Alaska Mining Operators, 1962 Season

Operator	Location and Remarks
Fremont Mining Co.	Platinum (Goodnews Bay), geophysical work on offshore Pt placers.
Dynamics Research	Slate Creek (east of Paxson, Copper River) testing Au placers.
Canadian Interests	Spirit Mt. Nickel on Canyon Creek - Copper River Region.
Castle Mt. Coal Co.	Old Premier (Matanuska) stock-piling coal.
Columbia Iron Mining Co.	Beluga River coal - underground exploration.
Newmont Exploration Co.	Emerick Nickel (Rainbow Mt., Delta River district) - examination.
Earl Pilgrim	Stampede Sb (Kantishna) - exploration.
Jack Neubauer	Colorado Creek (McGrath) - 3-man Au placer operation.
Mike O'Connell	Ophir - 2-man Au placer. Bench Creek (Ruby) - 2-man Au placer.
John Miscovich	Flat (Otter Creek) - seven to eight men on old Ogriz dredge - Au.
John Stevens	Flat (Flat Creek) - three men on old North American dredge - Au.
Steuber Bros.	Moose Creek (McGrath) - 2-man Au placer operation.
Agoff and Sons	Prince Creek (Flat) - 2-man Au placer operation.
Len Zaiser	Greenstone Creek (Ruby) - 2-man placer (Au) operation.
Warren Magnuson	Gaines Creek (Ophir) - 2-man Au placer operation.

Operator	Location and Remarks
Chuck Awe	Marvel Creek (Aniak) - 2-man Au placer operation.
Tex Gates	Colorado Creek (McGrath) - 2-man Au placer operation.
Weiser	Flat Creek - lode and placer prospecting.
Doug Cope	Keary Creek (Kiana district) - 9-man dredge, Au.
Fred Weinart	Candle Creek (Seward Peninsula) - Au placer.
Archie Ferguson	Candle Creek (Seward Peninsula) - Au placer.
Grant Nelson	Deering - Au placer.
Will Foster	Cunningham Creek (Deering) - Au placer.
Jack Hoogendorn	Inmachuk River - Au placer - drift mine.
Harry Pannick	Flume Creek (Fairbanks) - Au placer.
Pete Smith	Steamboat Pup (Fairbanks) - Au placer.
Harold Hassel	Ready Bullion Creek (Fairbanks) - Au placer.
George Hellerich	Ryan lode (Fairbanks) - exploration.
Orville Dickman	Teller (Seward Peninsula) - Au placer.
Turner and Wackwitz	Cleary Creek (Fairbanks) - Au placer.
Manny Olsen	Fish Creek (Fairbanks) - Au placer.
Tony Anderson	Fox Gulch (Fairbanks) - Pb-Ag lode.