IR 195-27

SUMMARY REPORT OF MINING INVESTIGATIONS IN THE FAIRBANKS, FORTYMILE, KUIK AND KENAI PRECINCTS TO THE COMMISSIONER OF MINES, TERRITORIAL DEPARTMENT OF MINES, AND ITINERARY OF J. C. ROEHM, ASSOCIATE ENGINEER
September 1 to 30, Inclusive

September 1. Ruby to Fairbanks.

September 2-7. At Fairbanks.

September 8. Fairbanks to Walker Fork, Canyon Creek.

In flying from Fairbanks to Walker Fork most of the operations in the Goodpaster were seen from the air. Considerable work has been done with bulldozer, trenching on the Tibbets lode property on Tibbs Creek, a tributary of the Goodpaster River. Tibbets was reported to have definitely dropped his option on this property, which is owned by William Eisenminger. E. N. Patty has an option for the McRae interests and has been doing considerable work of a prospect nature under the direction of Bruce Thomas. The mill was operated for a short time and a small production was reported. A small amount of a good grade of ore was found. A crew of five men were employed.

From the air the vein shows up by a straight line of cuts across the top of the mountain from the Tibbs Creek slope to the Goodpaster slope. Other than the cuts, the vein does not appear to follow any structural weakness that should be visible. The formation from the air appeared to be all granite.

Branden and associates have a bulldozer and hydraulic operation on Pine Creek on the Charles Fowler ground. This is the first season for this operation and from the air very little ground appeared to have been worked.

Shields is operating a bulldozer and hydraulic on No Grub Creek, one-half mile up from the mouth.

J. Hajdukovich is starting to mine this season with a bulldozer and hydraulic on Central Creek, a tributary of the Goodpaster River. He has five men employed.

In flying over Caribou Creek, held last year by W. W. Johnson, there appeared to be no activity.

The mining operations in the Fortymile district total sixteen. These include two operating dredges, six bulldozer and hydraulic operations, seven hydraulic and groundsluicing operations and one drift mine operation. There are a total of four dredges in the district, two of which, the Alaska Gold Dredging Corporation and Walkers Fork Gold Corporation, are inactive.

The freighting costs in this district have been lowered within the last two years due to the building of the 14 miles of road from the boundary west past Walker Fork to Jack Wade Creek. The truck rate from Dawson to the end of the road ranges from three to three and one-half cents per pound. Thus the total rate from Seattle via Dawson averages seven and six-tenths cents per pound. The airplane rate from Fairbanks is ten cents per pound. Diesel oil costs range from 50 cents at Walker Fork to 70 cents per gallon at Chicken. Machinery rate per ton ranges from one hundred to one hundred and twenty dollars via Dawson. The wage rate in the district ranges from 70 cents to $1 an hour with board. Twelve-hour shifts are worked on the dredges, with ten hours on all others except thawing which is reduced to nine hours. The average dredging season is 120 days and other operations range around 100 days. This season the first heavy freeze came on September 15 which closed the Boundary dredge and most all hydraulic operations.

September 8-9. The Boundary Dredging Company is operating on Canyon Creek, one and one-half miles down from the head and ten miles up from the mouth. This is two miles north of the Walker Fork airfield via road built down Canyon Creek. The company owns a total of 45 claims on the creek and the dredge is operating on Slimgood claim No. 1, directly opposite Arkansas Gulch. The dredge began operations on August 25 and closed October 5, 1938 and dredged 800 linear feet. This year the dredge started on June 9 and closed on September 15, making a total of 3,200 linear feet or approximately 220,000 yards. This is a W. W. Johnson dredge, two and five-eighths cubic foot buckets with a rated capacity of 2,000 yards daily. The actual capacity under the present operating conditions is 1,500 cubic yards. Originally, this was an all-electric dredge, used in California and converted to diesel power for Alaskan use.

The pay on Canyon Creek thus far determined ranges in width from 250 feet below at the starting point to 150 feet at the present site. The average depth is 10 feet, after 4 feet of muck and moss has been stripped. This 10 feet of gravels range from medium to fine and are distinctly stream laid. They are permanently frozen and from seven to eight hundred points are used for thawing. The bedrock is mainly Birch Creek schists with occasional granitic dikes. The grade of the creek is two and one-half per cent, and the volume of water is small. The stripping is done with bulldozer. Thawing has not been as successful as expected and as a result the dredge has been crowding the point men.

The cost of thawing has not been determined, while the actual cost of dredging has been estimated at 45 cents per yard. Values were reported as ranging from seventy-five cents to one dollar per yard. The lower ground on Canyon Creek was reported to run less and further drilling is to be done on this ground this winter. The drill is at present operating above the dredge. The gold ranges from well worn to rough and shows a tendency to be flat. Nuggets are few, with the largest of two dollar value. The fineness is 750 and the associated heavy minerals include magnetite, garnet, and a little cinnabar.

The company employs 28 men, 10 of which operate the dredge. Donald Steel is engineer in charge. Most of the dredge crew are California labor, while most of the thawing crew are local men.

The Monarch Mining Company is operating a hydraulic and bulldozer on Baby Creek and Squaw Gulch, a tributary of Canyon Creek, five miles below the Boundary dredge. This is on the Olaf Berg ground and the operators are C. Ruth, J. McDonald and Murphy. They have been preparing ground all season, and to date no mining has been done. They have five men employed.

The Acme Mining Company, which last year was diamond drilling on the Sulzer property in the White River district, has transferred its activities and are now engaged in shaft sinking with five men on Owl Creek. They also hold several claims on Cherry and Liberty creeks, all tributaries of Walker Fork. This company is under the direction of Mr. Symmes and Sam Gamblin.

Tom Baker is prospecting on Dewey Creek, a tributary of Liberty Creek.

Fred Ayres is prospecting at the mouth of Steel Creek.

Gene Dougherty is prospecting on Steel Creek proper.

John Ostergard is groundsluicing on Napoleon Creek.

Mrs. J. E. Roberts is mining with two men employed on Franklin Gulch, on the south fork of the Fortymile.

A Mr. Amber has been prospecting Lee Ryan's ground on Twelve Mile Creek.

Mr. Carlson is groundsluicing on Moore Creek, a tributary of the Fortymile below Steel Creek.

F. Wellman and C. Peterson have been prospecting on Twelve Mile Creek, and were reported to have found pay.

B. Swartz and Stevens are prospecting on Atwater Bar on the south fork of the Fortymile.

Otto Jorsted, Geo. Robinson and Eno Kainder are prospecting on Rainbow Bar on the Fortymile, one mile below Uhler Creek.

September 10. The operations of the Central Development Company were visited on upper Jack Wade Creek, 10 miles above the mouth. The mining is on the Charles Martin ground opposite Robinson Gulch. The company holds 12 claims. Harold Schmit is in charge. This is a bulldozer and hydraulic operation with one caterpillar and bulldozer in cut, with hydraulic moving material into boxes set on bedrock and one bulldozer stacking tailings. A caterpillar pumping plant is used for the hydraulic, while all gravity water is used for thawing with giants.

The pay on upper Jack Wade ranges from 150 to 175 feet in width, the gravels average between eight and nine feet in thickness and are covered with an average of ten feet of muck. All are permanently frozen. The gravels are medium with some rocks and contain considerable granite sand. The bedrock is various schists and uneven as to hardness. The gold is mostly on top of bedrock.

Last year a total of 130,000 bedrock feet were mined and this season between 165,000 and 175,000 is expected. The ground was reported averaging from 35 to 45 cents per bedrock foot. The gold is variable in fineness. Its character is rounded and smooth varying from nuggets to fine and has a flat nature. Small amounts of cinnabar, garnets and barite are found in the concentrates.

The company operates two 10-hour shifts and seven men are employed. Operation first started in May, 1938 and this year mining started on June 6.

Oliver and Dodson started a bulldozer and hydraulic operation on Jack Wade Creek above the Central Development. They have two International tractors with bulldozers and have spent most of the season thawing ground. They hold forty claims on Jack Wade and upper tributaries. Conditions are much the same as at the Central Development Company operation. Only a little mining has been done to date and this has not been very successful. The ground is spotty. Ten men are employed and two 10-hour shifts are worked.

September 11. The North American Mines, Inc. started dredging on June 23 this season with a total of 30 men employed. The average seasonal production is 300,000 yards, at a total cost of 35.8 cents per yard. The values were reported ranging from 35 to 40 cents per yard.

Two 12-hour shifts are worked on the dredge and two 10-hour shifts at thawing. Eighteen men are employed thawing, with 900 points. The cost of thawing amounts to 10 cents per yard. The wage scale ranges from 70 cents to $1 an hour with board.

The company holds a total of 32 claims, 29 of which are leased. The claims extend from No. 7 below Lower Discovery to No. 11 above Lower Discovery. The average depth to bedrock is 12 feet and an average log consists of three feet of muck, six to eight feet of gravels and one and a half feet of bedrock. The bedrock consists of schists, both hard and soft, containing granite and basaltic dikes.

The gold varies from fine to nuggets up to four ounces, all well worn and rounded. All nuggets from one clean-up were smooth, rounded and well worn, a characteristic feature in this district. The pay on this creek is not uniform, but confined to certain sections of the stream bed. While definite proof is lacking regarding the occurrence of the pay in concentrated areas up and down the creek, it is believed that the present creek gold has been lowered by the creek cutting sections of the old channels, which exist more or less parallel and above the present creek channel. Barren or low pay areas in the present creek channel, correspond to sections where the pay is still intact in the old channels on the benches. In other words, the present concentration of gold on Wade Creek represents an advanced stage, from evenly distributed gold along a stream course, to gold concentrated in small localized areas, as a result of the present stream cutting portions of the older stream. This evidence of stream erosion, the causes of which relate back to various geological processes, is characteristic of the larger streams and rivers in this district. Thus the use of aerial photography could be used to great advantage in placer mining in this district.

The cost of freight has been reduced some in this district, and the c ontributing factors have been the new air fields at Walker Fork, two fields on Jack Wade Creek, Franklin Creek, Steel Creek and Chicken, and the 14 miles of truck road built from the Canadian boundary to Jack Wade Creek, and connecting with the Canadian road to Dawson. Diesel oil costs, delivered via Dawson, $28.20 per barrel, while gasoline costs 70 cents per gallon. Wood cut on the creek costs $16.40 per cord.

The old Risdon steam dredge has been partly replaced with oil with the addition of an 80 H. P. Washington Iron Works diesel which operates the pumps. All other power is furnished with steam, and the general condition of the dredge is poor. Its capacity is 2,300 yards daily and it has four cubic-foot buckets. Five and one-half cords of wood is burned daily. The boiler on this dredge shows water leaks around the bottom, and appears to be none too safe. The diesel engine operates the large centrifugal pump with a belt drive, and neither belt nor pulleys are guarded. The platform above the lower end of the trommel screen is not guarded, and it is very possible for a workman to fall a distance of eight feet down onto the stacker belt. Guard rails are lacking around the two steam winches. The present wooden guard rails around the tumbler shaft gears are loose and very weak. On the floor deck there has been installed a two-cylinder Worthington compressor, run by a Briggs-Stratton gas engine. The exhaust of this small gas engine is inside, and no measure has been taken to pipe it outside. Another bad feature of this dredge, which accounted for a broken leg during the date of visit, is the various anchorage cables. This dredge does not have a spud, and is controlled mainly from a head line cable, anchored 500 feet ahead of the dredge, and side cables. These cables have a tendency to snag and when they let go, the force is great and the sweep is over several feet. Any one walking within the range of sweep of any of these cables takes a chance of breaking one or both legs. This happened to Agnar Mikkelse, resident of Dawson, freighter to Jack Wade Creek, on the eve of September 10. He and Whitney, manager, for the company left the dredge at dark, and crossed over the head line cable. They had crossed the cable a distance of 20 feet, when it let go and struck both of them from behind, breaking Mikkelse's leg at the ankle at two places. Whitney was also thrown several feet, but escaped serious injury. The injured was sent to the Fairbanks hospital next day via plane.

E. Johansen and Steve Cox are operating a pumping plant and hydraulic on a bench claim on the right limit of Chicken Creek two miles above the mouth, and one-half mile below the town of Chicken. They own three bench claims; namely, Agnes, Nova and Gigie. These are alongside of creek claims Nos. 8, 9, 10 and 11 below Discovery. They are operating two nozzles, one in the cut and one for tailings, and water is furnished by an Allis Chalmers pump, 8x10", driven by an auto motor. This season they have mined two cuts, totaling 13,000 bedrock feet. The gravels range from six to eight feet in thickness and are covered with four feet of muck. They consist of mixed wash creek gravels, medium to fine, and contain considerable granite sands. The bedrock is mainly Tertiary sediments of a shaly nature and soft. Both gravels and muck are frozen. The ground was reported ranging from 40 to 50 cents per bedrock foot.

H. Eckstrom and H. J. Farley are drift-mining on Frank Barret's ground on Chicken Creek, one-half mile north of Chicken. Barret owns three bench claims and one creek claim, No. five and one-half below Discovery. Drift-mining was started on the first of May this year. They have mined 1,000 to 1,200 bedrock feet, but have not sluiced their dump. The shaft is 28 feet deep and the bedrock varies from shale to coal, varieties of Tertiary sediments, and is uneven. Six feet of gravels are mined on bedrock, with the pay reported to average $1 per bedrock foot. They operate a steam boiler and hoist, and use steam for thawing.

September 12. The Lucky Strike lode group of claims is located three and one-half miles due west of Chicken on the north bank of the Mosquito Fork of the Fortymile River. This is an old prospect discovered in 1900 by Olaf Tweiden and sold to Mr. Cameron. The latter held the property for several years and did all of the development, and it has since been known as the Cameron prospect. F. Barret and P. Glasgow staked six claims on this prospect in 1937 and have held it since.

The development work consists of five short shafts, two tunnels, and numerous rock cuts. The veins are exposed along a 600-foot bluff of the river, and several exposures were observed. The shafts on top of the bluff are at an elevation of 2,300 feet and the tunnels are 1900 and 1825 feet, respectively. A total of five veins were noted and these are known as the A, B, C. D. and E. veins. These are parallel veins striking N. 60° W. to N. 70° W. and dipping 75-80° NE.

The geology on the claim group is complex, consisting of a Tertiary complex of sediments and intrusives underlain by an older granite showing various phases from a dark gray granite to lighter porphyritic types. The Tertiary sediments consist of sandstone, and various shales, and the intrusives ranging from basaltic dikes to sills of acidic origin. Evidence is that part of the Tertiary intrusives have invaded the Tertiary sediments, while the older granitic mass has been invaded by both the Tertiary intrusives and porphyry dikes of undetermined age. The veins are best exposed in the older granite, but were found invading both the Tertiary sediments and intrusives. These veins probably invaded the coal series of Tertiary age, which existed in the shales above the sandstone strata, and which has since been eroded away in the present vicinity of the veins. The veins as observed in the older granite show considerable alteration of their walls and consist mainly of quartz and rock mineral alterations. The veins in the vicinity of the small dacite and hornblendite dikes, were not seen due to overburden. However, these veins were found cutting the larger Tertiary sills, with considerable alteration. From the appearance of the mineralization in the vein, which is slight, consisting of pyrite and chalcopyrite with

The Purdy Bros. are operating opposite the Purdy & Lysell operation on Myers Fork on claim No. 2 above the mouth. They are thawing with hydraulic, and hydraulicking into boxes and bulldozing tailings. This was the first season that a bulldozer was used, and a bedrock drain was dug with bulldozer to Chicken Creek. They have mined to date only one cut, 160x50 feet, starting on July 20. They employ three men.

September 14. Geo. Lysell and W. R. Kirkpatrick have a lease and option on twelve claims on Lost Chicken Hill, operated last year by J. Dodson and associates. They are bulldozing and groundsluicing into boxes. They also have three nozzles which are used during periods of good water supply. They are reworking old tailings and have cleaned 30,000 to 40,000 bedrock feet. The pay is variable and reported as one dollar a bedrock foot in the virgin portions. They have four men employed.

Paul Glasgow is still retaining his 160-acre coal lease, west of Chicken. He has a 300-foot tunnel in on a 9-foot coal bed, from which he has mined 1,600 tons. He is prepared to start mining at any time, and a few tons are mined each fall for fuel. He will give a contract price of three dollars a ton at the mine for amounts over five thousand tons. The coal furnished the Alaska Gold Dredging Corp. was furnished at a price of $4.25 per ton. This coal vein strikes east-west and dips 8° north. It is covered with 30 feet of shale, which could be stripped for a long distance following the strike of the outcrop if a large supply was in immediate demand. For analysis of this coal see U. S. G. S. Bull. 872, "Yukon-Tanana Region" by J. B. Mertie, Jr., pp. 262-263.

The Berry Dredging Company had an option on the Walker Fork dredge and 13 association claims on Walker Fork and 8 claims on Cherry Creek. They were reported to have drilled a few holes this season and then to have dropped the option.

The Fairbanks Department of the U. S. S. R. & M. Company has secured an option on the Alaska Gold Dredging Corp. holdings at Chicken and are drilling two shifts with a Hillman 5-inch drill. These holdings consist of the dredge, 16 claims on Chicken Creek, 30 claims on the Mosquito Fork, and 11 claims on the South Fork. They have six men employed.

The results of this drilling, if successful and the option is taken up, is the most favorable development in the Fortymile district. The people in the district are all of the opinion that if this operation goes ahead, it will mean a form of cheaper transportation for the district. On Chicken Creek alone, there was reported to exist one and a half million yards that has been drilled and averages 87 cents per yard. The company is drilling below the dredge on the South Fork.

alteration products, the values are apparently low. It was reported that Cameron found some dark colored ore well up on the river bank, which assayed over $13,000 per ton, and most of his efforts over the several years were an attempt to locate this high grade ore.

Samples JCR. 732-749, inclusive, and sample 751 were all taken from this group. Several specimens for slides of vein material, dikes and intrusives were taken.

September 13. Wm. Meldrum is operating with hydraulic and bull- 22-23
dozer on Discovery claim on Chicken Creek below the mouth of Stonehouse Creek. He holds a total of five creek claims and one bench claim. A total of six to ten thousand bedrock feet is cleaned per season from May until September on ground that averages one dollar per bedrock foot. Eight feet of gravels are mined which are covered with twelve feet of frozen muck. The gold is mainly on bedrock and coarse with well worn nuggets up to one ounce in size. A total of three men are employed.

M. J. Atwood is groundsluicing on a high bench on the left limit of Stonehouse Creek, one mile up from the mouth. This operation started this year in July and to date a total of 2,000 bedrock feet has been cleaned with the ground running 50 cents per yard. The gravels range from one to thirty feet in depth and are covered with eighteen inches of muck. They consist mainly of granite pebbles and rocks with considerable granite sand. The bedrock is schisted sediments.

Frank Barret is shoveling-in on claim No. 5 above the mouth on 22-6
Stonehouse Creek. He has cleaned eight hundred feet of bedrock this year. His ground runs 19 feet in depth consisting of 3 feet of muck, 12 feet of coarse unsorted gravel, and 4 feet of fine water laid gravel on top of bedrock. The gold is mainly in bedrock, and the gravels are groundsluiced off. It ranges from fine to coarse. Barret owns eight claims on the creek.

A. Johnson is groundsluicing on a bench on the right limit of Chicken Creek on claim No. 2 below Discovery. He has cleaned only a few bedrock feet this season.

Purdy & Lysell are operating a hydraulic on the left limit of 26 125
Myers Fork, on a bench opposite creek claims Nos. 1 and 2. They have cleaned three cuts each amounting to 5,000 bedrock feet on ground that averages 12 feet in depth and was reported averaging one dollar per bedrock foot. They use two nozzles and due to uneven bedrock, do considerable shoveling-in off bedrock. The bedrock is decomposed basic lava. Two men are hired.

Fairbanks Lodes —
Cleary Hill & Ne Gun
McCarthy & American Eagle

September 17. The property of the Cleary Hill Mines Company was inspected, accompanied by R. O. Jones, superintendent, and Wm. Burns. This company employs an average of 26 men and operates the entire year with one 8-hour shift daily in the mine, two 8-hour shifts in the mill during the summer months, and one shift in the winter. A new 20x36 foot bunk house with sheet metal roof and Celotex siding is under construction. Several other improvements, mainly in preparing for winter conditions, were under way. The total development work for this year consists of 600 feet of drifts and crosscuts, 400 feet of winzes and raises, and 7,389 feet of diamond drilling during last year and this year. Mining and development is mainly confined to the Wyer block of ore on the Penrose and No. 3 levels. In the No. 1 level, there are no men working, the ore is mined above and most of the stopes are caved. The raise from the Penrose level to No. 1 level is kept open. On this level a small water tank is installed to which water is pumped from six level, and this tank furnishes gravity water for the machines.

Prospecting is being carried on in the east end of the Penrose level. Soon a crosscut is to be driven to connect up with the 180-foot incline raise on the Wyer block of ore up from the main or No. 3 level and the No. 3 sub-level. This will ventilate the present workings on the Wyer ore block. Two men are mining pillars above the Penrose tunnel. Upon the mining of the pillars the stopes are allowed to cave and fill. One small winze near the east end of the level was reported down 40 feet and is filled with water.

On the sub-level, 80 feet above the 3rd level, most of the mining is being done. Most of the Wyer ore block has been mined to this sub-level, and the present stope face is 40 feet above this level.

The east end of the sub-level encounters the fault and at this point there is an accumulation of chips, powder boxes and paper, and half a box of old powder. At this same point, a miner two years ago was reported to have stepped on a nail which resulted in death due to lock jaw. This drift end apparently has not been cleaned since, and not only is a similar accident likely to occur again, but danger from both fire and an explosion exists. On the west end of this sub-level, a vertical drop of 15 feet, into which ore is dumped into a chute, is not guarded. On the main, or No. 3 level, a winze is being sunk on the ore in the Wyer block. This winze is down 40 feet, and a small blower fan is installed with a canvas air pipe, which blows air into the winze. This winze is on the vein, as is the raise above, and at a dip of 45° which makes a safe working condition. From the No. 3 level the lower levels are connected with a two-compartment winze down on a 50° incline to No. 6 level. No. 4 level is the lowest level that has an outside entrance, and No. 6 level contains total workings of 170 feet and is the only level that does not have an escapeway other than the shaft. A half-ton skip is operated in the shaft by a single-drum hoist run by a 15 H. P. motor. Five-eighths-inch cable is used, of which the first 50 feet is very rusty. Water was found dripping on the motor. There were no first-aid supplies or stretcher in the mine. Twice daily the water is pumped from the bottom of the shaft. A two-inch high pressure Gould pump forces water from 6 level to

the water tank storage on No. 1 level. A Sterling centrifugal pump with 4-inch discharge is operated by a 30-H. P. motor and pumps to 4 level.

At the present time there are no men working on the 4, 5, and 6 levels. These levels show considerable of the vein, but values were reported as low. More prospecting is to be carried on this winter on these levels. At the present rate of capacity of the mill, twelve tons daily in summer and five tons during winter months, the company has an ore supply for three years. Diamond drilling is to be resumed during the winter months.

The mill, which is on the level with No. 3 or main level, is well equipped for winter operation. It is lined with Celotex and the piped hot water from the power house adjoining furnishes ample heat. The present mill operation consists of jaw crusher operated by motor, one battery of five, 1050-pound stamps with turn table feeder and inside amalgamation. This inside amalgamation was reported as saving 85 per cent of the gold in the ore. One 5 by 20 foot amalgam plate is used below the stamps. A Denver jig was used below the plates, but this was found unsatisfactory, and has been cut out of the circuit. Two amalgam traps are below the plate and thence the flow is to a dewatering tank and thence to two Fagerson cells. The concentrates are dried in a coal furnace and sacked. The mill contains a cleanup and sampling room.

The power house adjoins the mill and contains two Washington Iron Works diesel engines, one 90 H. P. and one 100 H. P. The larger engine is direct-connected to a 100 K. W. generator and the smaller to a 60 K. W. generator. Air is furnished by a 10x10" single and a 9x8" single Ingersoll-Rand compressors. These are run by a 40 H. P. Allis Chalmers and General Electric motors. The belting is protected with guards, while the switchboard lacks a screen in front. Water is pumped from a 120-foot well in bedrock with a plunger pump driven by a $7\frac{1}{2}$ H. P. motor.

Several improvements could be made that would make safer conditions at this mine. Some have already been mentioned such as the cleaning up of the accumulation of waste, wood, chips and powder at the east end of No. 3 sub-level, protecting the hoist motor from water, and guard rails. Other factors are mentioned as noted: Eight broken drift posts and numerous broken caps were noted in the crosscut tunnel entrance on the Main or 3 level. Heavy ground was noted in several sections. Low caps make a bad tramming condition. A block system of lights is used by the trammers to tell when sections are occupied. Considerable trouble is experienced during winter from pipes freezing and tracks icing at the portal. First-aid supplies are lacking in the mine. Caps and fuse are stored in the store house with carbide and other equipment, and food supplies. This building is heated during winter months

with a wood stove. Five tons of powder is stored in the mine on the main or 3 level, 800 feet from the portal in the end of a crosscut 120 feet off the main haulage. This is located 400 feet from the nearest workman. The winter circulation is upward, and in case of an explosion the fumes would readily travel to upper levels. There are no provisions such as signs of warning, doors or locks in the vicinity of this magazine. Powder is loosely distributed about the mine, and no places are provided for the storage of small quantities.

The Hi Yu Mine has been in operation all year, while the mill has operated intermittently. Two eight-hour shifts are worked in the mine and the mill has been operating nine hours daily. A total of sixteen men are employed. This mine has four adit levels and one sub-level. The lower level is 65 feet below the mill or main level. It has a length of 1,300 feet and is not connected with the main level. This level does not contain any provision for ventilation. However, there has not been any work in this tunnel since last winter. Further work in this tunnel will require a means of ventilation. The main or mill tunnel is used to tram ore to the mill from the sub-level, vertically 116 feet above, where all the mining is being carried on at the present time. The main level has a length of nearly 3,000 feet. From the portal in 100 feet the drift is very icy, and a wooden door was found closed, cutting off circulation of air. At a point 2,000 feet in from the portal the drift makes nearly a right-angle turn to the west. On the outer curve and piled alongside of the drift and in a few feet on the extension of the drift, 24 boxes of 40 per cent Special Gelatin powder was found. Loaded ore cars are trammed daily around this curve and the powder was so piled that if a loaded car jumped the track, it would hit the powder direct. The grade of the track above the curve was steep and the curve rather sharp, making this condition very possible. A loaded car of ore would have sufficient impact to set off this powder, and the fumes would readily migrate to the stopes in which the men are working on the sub-level above. The mine foreman, John Erickson, was immediately shown this condition, and instructions were given to have the powder moved. The usual underground magazine is located in a 25-foot crosscut, 350 feet in from the portal. This magazine was partly filled with ice and a new door was needed on the outside. The main powder magazine is outside, 2,000 feet west of the mill. Primers are made on the crusher floor of the mill, where caps and fuse are stored. This room is equipped with a fire extinguisher and buckets filled with sand. Several raises extend from the main level to the intermediate or central tunnel level, and the central tunnel to the No. 1 or upper level. Two raises connect the sub-level with the main level.

Four short stopes are being mined on the sub-level. This level is 110 feet below the central level. The orebody has a length of 250 feet, averages 10 to 12 inches in width, and values were reported ranging from $50 to $100 per ton. An average of 15 tons is mined daily and cut and fill stoping is used. This ore is on the north vein, and the

downward extension has not been found on the main level. The north and south veins are parallel, ranging from 6 to 40 feet apart. Some ore has been mined on the south vein on the main level. This winter development will be directed to pick up the downward extension of the ore on the main level. Due to the long tram out of the main level, an electric locomotive is to be purchased for haulage. All working places were piped for water, and no dry machines were observed in the mine.

The mill is apparently operated efficiently and the present process consists of inside amalgamation in two batteries of five, 1050-pound Joshua-Hendy stamps, two double sets of 5x10 foot plates, amalgam trap and three Fagerson flotation cells. This mill has a capacity of 30 tons in 24 hours. The ore is ground to 40 mesh and a $100 concentrate is made. Adjoining the mill is the power and compressor house. There are two compressors--one an Ingersoll-Rand single 10x12", run by a 73-amp. G. E. motor, and a 3-stage Gardner-Denver run by 55-amp. G. E. motor and V-belt drive. The electric power is generated by a 480-volt, 100 K. W. G. E. generator direct connected to a 3-cylinder 165 H. P. Washington Estep diesel. The diesel oil storage tanks are only 12 feet away from the power house. More and better fire fighting equipment is needed and more precautions should be taken, as a fire during winter time would burn both mill and power plant.

The McCarthy mine has been operating continuously all year, and the mill has been milling 24 hours daily since October of last year. The average daily capacity is ten tons and an average crew of 12 men is employed. Only one shift is worked underground, six days a week. Men are all paid the same wages, $1.04 per hour without board. The company holds sixteen claims.

The total workings consist of three levels--the 55, 135 and 235-foot, and 1600 feet of drifts and crosscuts with several raises and stopes. Mining is at present confined to the 135 and 235-foot levels on an ore shoot 400 feet in length that extends through both levels. This ore shoot is on the American Eagle vein which strikes east-west and dips 70° south. The vein varies in width from a few inches to three feet and averages fourteen inches. Considerable development has been done on the Henry Ford vein, which strikes north and south. This vein is similar to the American Eagle vein in character, is banded and contains the same mineralization, but the gold content is low, averaging six dollars per ton. There are similar sections on the American Eagle vein which also contain low gold values.

The 55-foot level is the mill level tunnel through which the ore is trammed to the mill. The ground is heavy along this tunnel and large and heavy timbers are used. The ore is hoisted to this level, while the waste is hoisted to the surface. The 135-foot level has electric lights, a sump, guards at the shaft, and is a dry station in good order. A steam pump is maintained at this station for emergency. The 235-foot level is the deepest level and a fan pipe is installed in the shaft to this level with the fan, located on the surface. A Gould centrifugal pump operated by a 25 H. P. motor, pumps direct to the surface through a 2-inch line. This water is stored and used in the mill and used as a water supply during the winter season. This station is clean, in order, and has electric lights. A small powder magazine, 300 feet west of the station, is maintained in the end of a small cross-cut, and caps and fuse are kept in the same location. A dry stoper was found in the station on this level and a dry jackhammer was found in a raise above this level. Water has been piped to the working places, however, dry machines have been in recent use. The shaft has a vertical depth of 245 feet and has a 78° dip to the south. It is 12 feet in the footwall at the surface and 80 feet on the 235-foot level, as the vein dips 70° south.

The mill is well equipped for all year milling with a steam boiler for heat. The contained equipment consists of a 3/4-inch grizzly, 25-ton ore bin, 6x8" jaw crusher, and turn table feeders to two 1500-pound Fairbanks Morse (Nissen stamps). Both stamps and crusher are operated by a 15 H. P. motor. The stamps contain a 65-mesh screen, from which the flow runs over two sets of double 3x5 foot plates. Inside amalgamation collects most of the gold in the batteries. An amalgam trap is located below the plates and thence the tailings run over another set of plates to the dump outside where they are ponded. The tailings were reported as ranging from $7 to $20 per ton. The power is furnished via power line to the property and reduced to 220 volts.

The hoist house at the shaft collar contains a 2-cylinder Ledgerwood hoist which is operated by air furnished by an Ingersoll-Rand T. 40, 240 cu. ft. compressor run by a 50 H. P. G. E. motor. The company has a new electric hoist, which they intend to install this winter. In this same building, which is heated with a steam boiler, a bath house and dry room is maintained. The hoist lacks an indicator and the large gear wheel is unguarded.

The ore reserves are estimated as positive ore for two years.

September 18-20. Fairbanks to the Willow Creek district.

The Peters and Cache Creek districts were not visited this season, and most operations were reported to be about to close. The following information was obtained: The road is complete from Talkeetna to Peters Creek camp and usable via truck during dry weather. The freight rate to Peters Creek from Talkeetna is four cents a pound, and five cents to Cache Creek. The airplane rate from Anchorage is seven cents.

The Spokane Peters Creek Mining Company operated most of the season on Peters Creek, but has dismantled the washing plant, which they expect to move to Cache Creek this fall. The company had 25 men employed during the season, and was reported as having had an unprofitable season.

Al Jenkins mined with hydraulic and two men all season on Willow Creek. This operation ended with a quadruple murder.

Jack DeVault is mining with seven men employed on Camp Creek in the Fairview section.

J. Beaton has been drilling with five men employed seven miles west of Camp Creek on Sawmill Creek.

Mike Tripke is mining with eight men employed on Dutch Creek.

Hans Erickson and A. Pamiteir are prospecting at the mouth of Falls Creek.

J. Anderson and M. Carlson are hydraulicking with three men employed on upper Falls Creek.

Geo. Anderson was reported to have bought the Al Wolf ground on Spruce Creek. Also reported to have staked considerable ground on upper Spruce Creek.

J. P. Morgan is operating with hydraulic and an R. D. 2 caterpillar, on Nugget Creek with ten men employed. This operation was reported as doing exceptionally well.

J. Johansen and Ed. Johansen are operating a hydraulic plant with six men employed at the head of Bird Creek. This operation was reported as very successful this season.

C. L. Wagner started mining with hydraulic at the mouth of Bird Creek and has five men employed.

The production from this district is reported to have been considerably lower than last year, due to the poor returns of the Spokane Peters Creek Mining Company.

September 20. The Willow Creek Mining district is the scene of greater activity this year than last. A greater production is in store for this year due to the expansion of the Alaska Pacific Consolidated Mining Company mill, with an additional 35-ton Marcy ball mill unit, the operation of the Lucky Shot mill to full capacity, and the persistent milling of the other productive properties. More prospectors were reported in the district this year than last, and a greater number of men are employed.

At the Lucky Shot Mine a total of 50 men are employed, 32 of which are underground. In the development efforts of last year ore was found in the west block between the 500 and 300 levels. Small portions of ore were found below the 500 level in the Lucky Shot block, under the fault to the west and above the 600 level. Work is confined to stoping at these points. A raise in the west block was driven and connected up with the 300 level which provides ventilation for the working stopes. This new ore body appears to be a faulted section of the Lucky Shot vein, which is not in a true position, and further development to the west should reveal the vein more in a normal position. The ore is of good grade, averages three feet in width and is developed for over two hundred feet.

In the War Baby mine there has been no development in the last year, however, it is pumped daily.

Below the Lucky Shot mine on Willow Creek one-half mile below the mouth of Grubstake Creek, a new placer operation known as Craigie Creek Mining Company started mining on July 15 of this year. This company holds 16 placer claims on Willow Creek and is operating on claim No. 1 Below Discovery. Harry Hill, Al Wolfe and Ed Millhoth are the operators and they have four men hired. The mining has been mainly experimental this season, with only one cut mined thus far this season. The depth to bedrock is unknown, and mining of from four to eight feet of the top gravel down to a bluish clay false bedrock is done with a three-fourths yard P. & H. power shovel. Many rocks and some boulders were encountered and the difficulty of saving the fine light gold in the washing plant has been their main problem. The gravels are unsorted with considerable mica schist sands mixed with small rocks and boulders, mainly of quartz diorite. The gold is mixed through all the gravels and there is no false bedrock concentration. Its character is fine and rough and has a tendency to be flowery and light. The concentrates contain some black sands, pyrite and small amounts of cinnabar. Besides the power shovel the company rents a caterpillar and bulldozer, operates a 9-inch Washington centrifugal pump for sluice water in the 75-foot washing plant, and a two-inch Rex pump for pressure on a small hose nozzle. Five hundred feet of pipe is used and both stripping and tailing removal are by bulldozer.

Mr. Clyde Thorpe has been doing only assessment work on his lode property on Grubstake Creek. The small mill was not operated and no men were employed.

Some prospecting for lode, consisting of tracing some high grade float, was done this season on Shorty Creek.

Gus George and his brother are prospecting for placer gold on lower Willow Creek below the Craigie Creek Mining Company. They have a small pump and are test pitting.

The Black Bros. have been doing considerable prospecting on their property east of the Gold Bullion on Craigie Creek. They have found considerable high grade float. They have a new mill building and have moved their small mill down on the valley floor. Their tram is completed. A few tons of ore was milled this spring with a production of $4,000. The small high grade vein was lost, and has not been found since.

Ed Holland and Joe Brassel are prospecting at the head of Craigie Creek and over the divide on Purches Creek.

P. Merrin and Herning have installed a 10-ton mill on Herning's property above the Black Bros. With the mill they have installed a flotation unit. This summer they have been developing only.

Al Renshaw built a camp and aerial tram from the road on Craigie Creek up to the Sheared group below the Gold Bullion. This group is held by Horning and Bartholf. Considerable tunneling was done this season, with apparently unfavorable results, as the property was dropped this fall.

On the old Prospector Property, a group of four claims owned by C. Thorpe on Craigie Creek across the valley from the Gold Bullion, H. A. Drake has started development work. He is operating as the H. A. Drake Association and has four men employed. A camp, bunk and cook house, is under construction along the road and a 2600-foot aerial tram has been completed to the tunnel under development at an elevation of 4200 feet. This is a crosscut tunnel, in only a few feet, driven to cut four parallel veins which are exposed across a distance of four hundred feet. Two veins have been partly developed. The original discovery was made on the Golden vein. This vein varies from 6 to 12 inches in width, strikes N. 78° E. and dips 36° N. into the mountain. Several cuts expose the vein and one tunnel 30 feet long has been driven on the vein. Several small quartz stringers intersect this vein. These strike N. 75° W. and dip 40° W. and are cut by the east-west veins. This vein structure appears to be jointing with very little evidence of movement. The lower vein consists of a sheared zone nearly 5 feet in width consisting of banded quartz and altered diorite. This vein strikes N. 74° E. and dips 53° N.

Assays from samples of this vein were reported as all low. The mineralization varies in the two sets of veins. The north and south veins contain pyrite with some chalcopyrite, and very low gold values. The east-west veins carry mainly pyrite and free gold. The free gold and the highest values obtained were from points of intersection of the two sets of veins. The formation is jointed quartz diorite with various lighter dike phases of apparently the same magma. The veins cut these dikes without apparent change.

KK 85-135

September 21. The workings of the Kelly Mines, Inc. were visited on Willow Creek. Underground development started last year and to date a total of 50 feet of crosscut tunnel to No. 1 vein and 40 feet of drift north and 145 feet south on the vein with two small stopes up a distance of 30 feet, comprise the total development. The vein strikes N. 10° E. and the dip is variable ranging from 35° to 62° W. At a point in the stope 29 feet above the drift level the vein is faulted--cut off by a fault that strikes N. 2° E. and which has a dip of 68° E. This fault appears to have step faulted the vein and the displacement is not known, but from the surface outcroppings of the vein the horizintal distance is not great. The fault and vein apparently intersect on strike to the west as noted from their apparent strikes. The vein decreases in dip to the south and the notable difference in dip is apparently due to this faulted condition. The vein averages 6 feet in width, but contains bands of diorite, which are more or less altered and mineralized. The quartz is banded, of a bluish to milky white nature, and contains chalcopyrite, free gold, galena, pyrite and small amounts of sphalerite.

The mill has been operating intermittently one shift at a capacity of five tons daily. Two men are employed, one in the mine and one in the mill. A new Gardner-Denver portable compressor has been purchased. Dry drilling has been done in the past, however, the present compressor has been broken all season and hand drilling has been done. This property will have a small production this season, which is the first year of production.

KK 85-15

The Jap property at the head of Willow Creek is held under lease by the Alaska Pacific Consolidated Mines, and was not active this season.

KK 85-61

The High Grade Mines Corp., located at the head of Fishhook Creek, has had five men employed on the surface all season. This work consisted mainly of opencut with bulldozer. No ore was found. This winter underground work is to start in the winze following a narrow band of reported ore.

L. Davis and J. Favien have staked several claims in the valley below the Rae Wallace. They have made some surface discoveries and expect to do some underground development this winter.

Charles Issacs has been working with one man on his property adjoining the Rae Wallace. He has discovered two new veins and was reported as having done considerable surface work.

W. Stroufe has ~~has~~ been prospecting in a tunnel on Furches Creek over the divide from the head of Fishhook Creek.

The Gold Cord Mine has operated all year with an average of 11 men employed. The mill has been operating two shifts all year and the treatment plant has been operating three shifts since the second of July. This plant is treating 35 tons daily with an average head of $10 per ton. A recovery of 80 to 85 per cent is made. The main mill averages from 8 to 10 tons daily.

The conditions in this mine are in such a state that mining cannot continue without serious damage to the mine and possible injuries to the men employed. In the west drift off the main crosscut level an accumulation of water two feet deep exists due to sloughing of both walls and roof. This is serious to the extent that the incline shaft down from the main crosscut level would receive considerable of the water as the only provision made for the water is two small pipes which act as a ditch to by-pass the water around the shaft. The raise to the surface in the north drift has been bulkheaded 30 feet above the main level, and a 6-inch air pipe leads down into the drift and acts as the only means of ventilation. This bulkhead also prevents an escapeway to the surface. The mine needs considerable timber and a replacement of the old timbers through the main level crosscut through the faulted area. The stopes in the north drift are stulled only and since the drift is not timbered, these are open to the top nearly 200 feet up on a 45 to 50° dip. One miner had been stoping on night shift only, and has been using a dry stoper. The face of his stope contained two bootleg holes with powder in them which had apparently been there a few days. A small stream of water from a slip on the north end of the stope would provide ample water for drilling. The new tunnel started last year below the mill lacks 100 feet of connecting up with the second level below the main level. A water line has been extended down the winze where drifting on ore was in progress. The miner reported that the old Lyner does not use water efficiently to do any good. A drift has been extended 80 feet on ore which averages 5 feet in width on this lowest level.

Since this mine was visited, it has been reported that the property has been optioned to Al. Renshaw, who has taken the mine over and expects to begin active development.

The Alaska Pacific Consolidated Mining Company has been very active all year and is carrying on a very extensive development and building program. Last year a total of 5005 feet of development work was done. This included a drift and crosscut from the main level of the Independence under the Skyscraper vein on the Martin property and a crosscut through to the Willow Creek side of the mountain, coming out on the old Brooklyn (patented) property less than 200 feet and a few feet above the Levensaler crosscut tunnel. The object of this crosscut tunnel was to connect the Martin property with the Jap property, through which the Jap property is to be worked. They apparently mistook their direction in crosscutting and came out on the Brooklyn property. The development this year will be less, however, a total of 1500 feet of diamond drilling has been done. An incline shaft was sunk on the Snowshed vein a distance of 150 feet. Considerable drifting has been done on the 900 and 1100 levels east into the Zigg ground. Faulting was encountered on both levels and some low grade ore was developed. The quartz east of the main shaft from the 1100 level contains a good width from 2 to 6 feet, however, only an occasional spot was found that contained values. The presence of a pink mineral associated with the quartz in the vein on this level appears to be a pink feldspar, which accounts for the lowering of values. Several samples for slides were taken on this level and in the stopes above to confirm the presence of this feldspar. To the west on the 1100 level, 200 feet of drifting has been done on the vein, with one small stope started. Values were found spotty in this direction, but of a higher tenor than to the north. This spring this west drift is to be extended and the shaft is to be sunk 200 feet to the 1300 level. Considerable surface stripping was done on the Independence vein, and it was traced across onto the Zigg ground, where a large fault zone was encountered, east of which the vein has not been found. Several of the surface cuts contain good values. Considerable ore has been opened up on the Independence vein on the Martin property on the 900 level. On this level on the Martin property a crosscut to the surface has been driven, and the company is engaged in building a double tram tower, with two aerial trams under construction, one to the new mill and one to the old Martin mill. Two new ore bunkers are to be built and after completion, considerable ore will be mined from this section. Most of the stoping done at the present time is between the 700 level and the surface, and above the 900 level in the Independence. Some mining is carried on at the bottom of the Snowshed shaft.

A new hoist room is being prepared at the top of the main incline winze on the 900 level. A new single drum electric drum hoist is to be installed this winter, operated by a 15 H. P. motor. Half-inch cable is to be used.

A Chicago pneumatic diamond drill operated by air has been in operation since spring. Longyear diamond bits are used. An average of 25 feet per day, or eight-hour shift is made in the quartz diorite formation.

A total of 16 men have been employed during the summer season on the Martin property in the Skyscraper workings. A new portal tunnel is being driven into the workings, since the present tunnel openings are subject to caving and portals are carried away by snow slides. No men are employed in this mine during the winter season so danger of this type of accident is nil. A total of eight tons are mined daily and trammed to the old mill. The ore in this vein is more highly leached and as a result contains more free gold than the Independence ore. Eighty per cent of the gold is reported to be free and is best adapted for milling in the old mill. A new tram tower terminal with ore bin is under construction at the new portal site.

On the Eldorado group of claims to the west of the Martin property, a new 4400-foot aerial power tram was erected last spring. A new bunk house, ore bin and tram terminal has been erected. An air line was laid to the workings. The shaft has been retimbered to the bottom of the old workings a distance of 70 feet. The 55-foot level has an 80-foot drift each way, and a few feet of drift at the bottom of the shaft comprises the development. A few tons are mined daily from the shaft and 55-foot level. A small shoot of ore was found in excavating for the bunk house. Three men have been working one shift all season.

At the main camp at the Independence a new four-story combination warehouse, garage, bunk house and school room has been erected this summer. A new manager's dwelling house 20x50 feet and containing nine rooms has been erected at a reported cost of $20,000. There are sixteen families living along the road in the vicinity of the camp, and they have erected their own dwelling houses. There are at present nine school children in the new school.

In the new mill a new Straub Kue-Ken size 30 crusher has been installed, and another 35-ton Marcy ball mill with Dorr classifier and four Denver Sub-A cells have been added. Both the Gibson and Clark-Todd amalgamators have been removed, and individual stair stepped amalgam plates have been installed. The advantage of the stair stepped amalgam plates is that each plate can be removed and dressed without stopping the mill flow and as a result no time is lost in the mill grinding. The force of gravity in the flow falling down these step terraces produces a greater impact than the amalgamators, and no power is required. The total power in the west wing of the mill building consists of a caterpillar D 13000 diesel which operates the mill with belt connection, a caterpillar D 40 which runs a 50 K. W., G. E. generator, Fairbanks Morse 20 H. P. diesel runs a small generator and machine shop, and a new 200 H. P. 6-cylinder Atlas Imperial diesel connected by a 14 ~~feet~~ V-belt drive to a new 2-cylinder Gardner Denver compressor, size 19x11x12". A new 135 H. P. Atlas Imperial has been purchased and will be installed to operate the mill in place of the caterpillar diesel. A newly equipped assay office, clean-up room, and machine shop has been added to the mill building.

The development in the mine during this season has consisted of 200 feet of development and some stoping. A drift on the 400 level was driven south off 311 winze a distance of 136 feet. Considerable faulting was encountered and the values on the vein were low. The 311 winze was sunk 35 feet on the vein below the 400-foot level and the vein pinched out. The ore has been stoped north of the 311 winze above the 400 level, and stoping is in progress below the 400 level north of the winze. This ore is limited on the north side of 311 winze since the east-west fault cuts and displaces the vein. The ore on the south side of the winze is of too low a tenor to mine. Considerable retimbering has been done in the mine in the last year, and considerable more is needed.

The conditions in the mine are not good, as the portal of No. 3 level is driven on the east-west fault and needs timber, otherwise caving will result. The drift and raise to No. 2 level was open, however, the portal of No. 2 level is partly caved. The mine is, however, under good management, and it is to be improved as soon as sufficient ore is found to maintain a ready mill supply.

The compressor and power at the mine portal have been replaced with a 60 H. P. Hercules diesel which runs a 385 cu. ft. air-cooled Worthington compressor. The building has been replaced with blacksmith shop and wash room added. This building is protected from slides with a slanted roof and it is against a low bluff. The bunk house is situated between two gulches, and is somewhat in danger of snow slides.

The mill machinery is unchanged with the lower ore bin completed. A total of 20 men are employed, five of which are employed in the mill.

Fred Johnson and associates are still operating under lease the Gold Mint mine. Two hundred tons of $40 ore was milled in May and June of this year. The lower vein workings have been abandoned. Last winter in these workings the faulted extension of the vein was followed 200 feet in the middle tunnel. The small 6-inch vein split and terminated. In this 200 feet of drift several small high grade pockets were encountered. Two raises were driven and some mining was done during the winter. Sixty feet of drift was driven in the upper tunnel. This spring a lower tunnel was driven below the upper vein workings. This was a crosscut tunnel for 90 feet, and thence 65 feet of drift, from which a 60-foot raise was driven in an effort to locate the vein. The vein has apparently been faulted and the lower extension has not been found. Stoping is in progress in No. 6 or upper tunnel of the upper workings. The vein ranges from 2 to 3 feet in width and the values are low. This block of ore is cut off to the south by a fault and the extension has not been found. Continued stoping will reach the surface, at which time the lessors expect to close this operation. A crew of 10 men have been employed.

A few tons of ore was milled from the Marion Twin property, leased and operated by Mr. Coffey and associates of Anchorage.

This season two placer operations and one lode were active in the Crow Creek area. The Erickson property was operated by Peterson & Mayfield. They worked two 10-hour shifts with 10 to 12 men. The Lindblad Mining Company worked only one shift with 6 men on the old Girdwood property, which they acquired last year. The Crow Creek Gold Corp. was reported to be operating all season with a regular crew of men.

The mining activities in the Moose Pass-Hope district, consist of six producing lode properties and five placer operations. The lode production from this district will be increased over last year. The placer production is expected to be less, since the placer operations are fewer than last year.

The largest lode production is from the Gilpatrick property, held and operated by the United Mining & Development Company. Production began on this property last year when 26 tons of ore was shipped to the Tacoma Smelter with a return of $1869. In addition, 14 tons were milled at the Oracle mine and $650 was recovered in bullion, less the concentrates. This year to date a total of 70 tons has been milled at the Oracle with a return of $5658.

A new camp and mill building have been erected on this property within the last year. An aerial gravity tram 3,000 feet in length leads from the mill to the tunnel workings.

Development work has been confined to the middle tunnel which has a length of 240 feet. Stoping was in progress on an orebody that ranges from a few inches to four feet in width. A tunnel has been started on the vein over the divide on the Summit Creek slope, and this is in a few feet. The vein is three feet wide and ten dollars per ton assays were reported. The ore mined from the middle tunnel was reported as ranging from $80 to $100 per ton.

The company owns a group of four claims which were purchased from F. Hilo for the sum of $5,000. The equipment from the old Primrose property, which operated in 1935-36, was purchased. This consists of the aerial tram, a 30-ton crusher, 25-ton counter balanced rod mill, amalgamator and 14-foot table, all Gibson make. This has been installed in the mill with a 10-ton ore bin above the crusher and an 85-ton bin below. An attempt was made to run the mill, but it was not successful, and most of the machinery is to be discarded. A new mill is to be purchased next year. Further development is to be carried on this winter. A crew of five men is employed, and Mr. Robert Hatcher is in charge.

The Oracle mine and mill have been in operation under the direction of Robert McEachern since July 23. A total of 125 tons was milled, and a total of 75 tons of broken ore remains in the stopes. At the present time ore from the Gilpatrick property is being milled. The old Spaulding airplane mill, which was used as a first grind, was taken out of the circuit, and now the ore is fed direct from the crusher bin to the Crescent mill. This mill has a rated capacity of 15 tons, while the actual capacity is 10 tons. Most of the ore was stoped above the main level, with a few tons taken above the first level. There has been no further development in the mine other than the stoping. A total of five men were employed.

George Lindsay has installed a Crescent mill on the property above the Oracle mine. He was reported to have milled 200 tons. He has three men hired.

Case and Sands have installed an arrastre above Lindsay on Summit Creek and were reported to have milled a few tons of ore this season. They have four men hired besides themselves.

The Tulare Bros. are operating a small mill on the Cal. Brosius or Crown Point property. They were reported as having six men hired.

Mr. Collins from Fairbanks has an option on the Hirshey mine. Only a little development was reported on this property this season. Apparently Collins is preparing for a resale of the property.

E. Swetmann operated his lode property on Palmer Creek with four men hired. A few small shipments of ore were made during the season.

I. Nearhouse did assessment work and milled a few hundred pounds of ore on his property on Palmer Creek.

Wyman Anderson was reported to have located a new quartz vein on the old Greek property on Falls Creek off the Seward-Moose Pass highway. He was also reported to have accomplished some underground development this season.

The Moose Pass Placers, Inc. operated this season with 10 men. The operation was moved down below last year's workings.

The Estes Bros. started a placer operation on Ground Hog Creek this season. This creek is located seven miles above Lynx Creek. Three men were engaged and since poor pay was encountered the venture was dropped.

Ted Boyd was operating alone on Lynx Creek.

Earl Clarke was reported to be operating on Resurrection Creek with dragline scraper and eight men employed.

C. Matheson and associates were hydraulicking with three men on Palmer Creek.

The Davis Bros. were hydraulicking on Bear Creek.

Oscar Dahl was drilling on Canyon Creek.

Norman Stines has a drill crew operating on the Kenai River below Cooper's Landing.

G. McCann was reported hydraulicking on Six Mile Creek below the Kenai dredge.

J. Laubscher was reported hydraulicking on Lost Creek with two men hired above Cooper's Landing.

The Associated Oil Company was reported drilling in hole No. 1 at Jute Bay with a crew of 40 men. The depth reached this fall was reported to be 5200 feet.