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PE-078-05

PE 78-5

PRELIMINARY REPORT OF OPERATIONS OF THE NABESNA MINING CORPORATION, 1933 TO SEPTEMBER 6, 1936. KX 78-3 78-26 78-27

Operations of the Nabesna Mining Corporation, together with detail geological sketches are complete and given in reports of the Mining Department for the biennium 1930-1931 and in Mining Investigations Report ending March 31, 1933. The geological features of the district have been described by Moffit and Knopf, "Mineral Resources of the Nabesna-White River District, Alaska," U. S. G. S. Bull. 417.

This report gives an account of operations during the years 1934, 1935 and to date of visit by writer September 6, 1936. Operations for 1934 and 1935 are taken from annual reports of the company for these years.

Operations in 1934:

The operations within the mine for the year of 1934 consisted mainly of a development program. This program was limited due to limited air supply from the portable 3-cylinder Worthington compressor driven by a 60 H. P. Continental motor, with a capacity of 280 cu. ft. During the year another 120 foot capacity Worthington Portable Compressor was installed that helped air conditions. A total of 1,868' of underground work was completed during the year. This work consisted mainly of driving a lower tunnel, known as the 650 level, a distance of 1,010'. A stope raise was put up 28' on this level. Due to the plunge of the orebodies to the north and the sloping of the mountain to the south, made this long drift tunnel necessary to reach the ore zone on this level. 830' of stope raise was completed on the 250 level. Diamond drilling to the extent of 585' was accomplished intermittently during the year by a small Sullivan air drill owned and operated by the company. A 950' 2-bucket gravity tram was completed with upper and lower ore bunkers from portal of the 650' level to the mill. This tram is used to transport all ore below 250' level. All ore above is transported over the 250 level aerial tram. The upper ore bunker at 650' level portal has a capacity of 20 tons and the lower mill ore bunker, a capacity of 80 tons. Thus a total of 9,955 tons of ore was mined and trammed for the year.

The total amount of ore mined was milled during the year. The mill capacity was increased from 30 to 60 tons per day. This increase in capacity was made possible by the installation of a Marcy Ball mill grinding unit, 64½ ton capacity in place of the small Hardinge ball mill, one Dorr classifier, one Denver No. 250 Sub-A flotation cell, one 7½ K. V. A. auxiliary gas-electric unit, one diesel exhaust heat

boiler, two 6000 gallon water storage tanks, one 18' Dorr thickener and diaphragm pump for water reclamation. Due to the increasing amount of sulphides in the ore, mainly pyrite with increasing copper sulphide content, it was necessary to install another flotation unit. Sulphides were found to increase with depth in the ore below the oxidized and leached zone. The mill operated 4,090.5 hours, milled 9,955 tons which contained an average value of $32.86 per ton. A total of 329.982 tons of concentrates were produced and shipped.

Mine Camp, Nabesna Mining Corporation.

Ten new buildings, consisting of main office, mill office, three staff quarters, concentrate shed, addition to mill, combined garage and central heating plant, storage building and tailing thickener house, were built. The central heating plant is equipped with one 5000' Birchfield, low pressure, steam heating boiler, one 3 H. P. Triplex pump, 6100' of water supply pipe, 1820' steam lines, and 1500 sq. feet of radiator surface. Cordwood is used in boiler, however, it is equipped with diesel oil burner. Since winter conditions are severe with cold weather, water shortage has not permitted year-round operations of the mill. To overcome this a system of water reclamation was installed in the mill. A large natural spring was found 2500' distant that flows during winter months, a double pipe line was provided which delivers water direct to the mill by means of an electrical driven pump. As the water enters the mill, it is circulated through the water jacket of the diesel and through a waste heat boiler heated by the exhaust of the diesel. The double pipe line affords a return of hot water to the spring if necessary. This all provides a permanent all year supply of warm water for mill operations. Thus operations would have been continuous until the end of the year had not the crank shaft of the diesel mill power unit broken.

Operations in 1935:

During the year of 1935 the Nabesna Mining Corporation had a good year of operation. The tonnage mined and milled was nearly doubled over 1934 and development work and diamond drilling were considerably increased. The 350' level was opened up with drifts and ore was encountered with width from 1 to 4'. Values were reported from $20 to $100 per ton. A new milling process was worked out that included the addition of a cyanide plant and increased flotation cells. Gold bullion is to be produced from the products of the cyanide plant.

The development within the mine was carried out on three levels. 243' of drifting and 766' of stope raise was completed on the 250' level. On the 350' level, 382' of drift was driven and 124' of stope raise. A connecting raise, double compartment, manway and ore raise was completed between the 650' level and 250' level. 208' of drift was completed on the 650' level and a total of 251' of crosscut and diagonal raise. The connecting raise has a total length of 349'. This totals 2323' of underground work for the year. A total of 1045' of diamond drilling was accomplished during the year on the three working levels. A total of 16,443 tons of ore were mined and trammed to the mill.

In the mill the installed cyanide plant treated only a limited amount of concentrates and additional agitation was needed to bring this unit up to the capacity of the mill. The diesel crankshaft was replaced and the mill resumed operation on January 21, and ran nearly continuous for the year. The total 16,443 tons of ore milled were taken from the 250 level stopes with the exception of 200 tons from the 350' level. The average value of the ore per ton for the year averaged $19.52 per ton. Thus a gross production for bullion and concentrates was estimated at $257,492.95. Of this $21,497.83 in cyanide concentrates were stored for retreatment. Additional flotation was installed, which consisted of 6 Fagergren flotation cells in a new mill addition 40x12" in dimension. A second well was dug and an electric pump installed for surplus winter water supply.

Supplies and equipment were freighted from Valdez and Chitina to the amount of 701 tons by trucks. The average cost was $21.54 per ton, or 10.1 cents per ton mile. A total of 415 tons of concentrates were freighted out and shipped to the smelter. These had a gross average value of $485.77 per ton. The total cost of production including all expenses, supplies, repairs, salaries, smelting, depreciation, insurance, development, amortization, etc., amounted to $212,164.48 for the year.

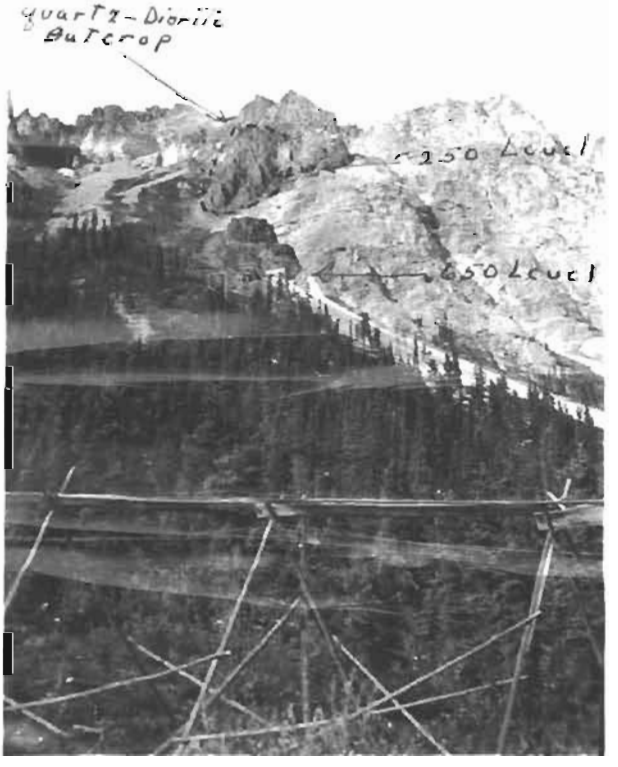
Operations in 1936:

This year operations fell below expectations due to many causes and unforeseen events. New equipment was installed which limited operations during the summer. Development in the mine was held back due to limited mill capacity during installation and to a very small scale after the first of August, at which date the bearings of the large Worthington compressor burnt out. Increased mill capacity was delayed awaiting arrival of a Dorrco filter at which plant in the States a strike was on during most of the summer. This held the cyanide plant to a small capacity of 5 to 10 tons daily, with which the capacity would have been 25 tons daily.

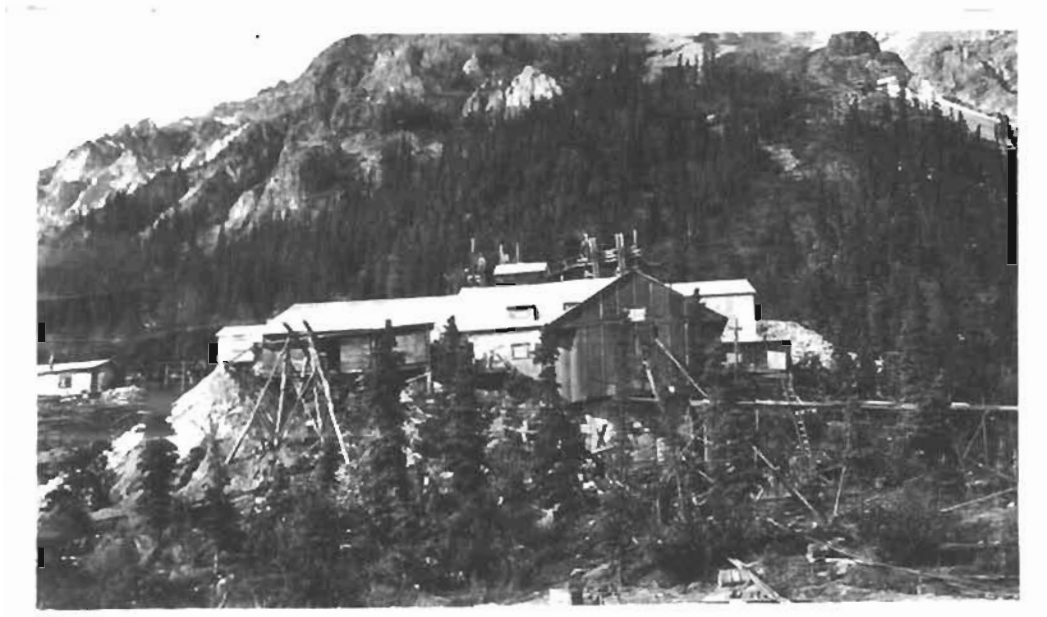
Development work in the mine has been continuous and has consisted of opening up intermediate levels between 350' and 650' levels. These new levels were the 450' and 550 levels. Small stations were cut on these levels and drifting was carried on both north and south from the 650 - 250' raise. Above the old 100' level, 2 men have been engaged in driving a tunnel at 4,200 elevation along a diorite-limestone contact in search of orebodies. At the date of visit no ore had been encountered on this short tunnel. From the mined stopes above the 250' level considerable muck has fallen down into the chutes from frozen areas that have thawed during the summer. This muck was discovered to contain sufficient gold values to mill with the newly installed cyanide plant. Since the closing down of the mill in May a total of 5 tons has been cyanided daily and the source has been this fine material from the stope and tailing dump. This small operation has been mainly an experiment to test out the cyanide process. Some development work was carried out on the 350' level until total workings on this level consist of a 400' drift south with one chute raise and small stope. Nearly 500' of drift north of 650 raise, was driven and at a point 300' north an adit to the outside in a small gulch was driven. Diamond drilling has followed development and the contact is drilled at intervals in search of ore. South of 650 raise ore was encountered in the drift. This south ore shows more sphalerite and chalcopyrite than is characteristic of the ore in other places. This more basic ore was reported as containing lower gold values. Good ore was encountered on this level 300' north of 650 raise. On the 450' level about 40' north of 650 raise 8' of $10 to $16 per ton ore was crosscut. From this a drift was extended 400' and at 300' north a small bunch of pyrite and magnetite of low gold values were found. A raise was started here to connect up with the ore at this point below the 350 level. The south drift was extended 110'. Some small bunches of pyrite were found that assay $5 to $6 in gold. At a point 42' south of 650 raise, the only development within the mine was in operation at date of visit. This consisted of two shifts per 24 hours in driving a raise. This raise was up 20' and will encounter ore

on the bottom of 350 level above this point. On the 550' level the contact of diorite and limestone was but 35' from the 650 raise and 8' of $16 to $20 per ton ore was crosscut. This ore should connect with the same on the 450' level. A raise is to be put through on this ore as soon as conditions permit. Also drifting north is to be continued as only 50' of drift was completed to date of August 1 when crankshaft broke in large compressor. No drifting has been started south.

The 650' or lowest level in the mine has a total length of 1500'. 1200' of this length extends from 650' raise to adit south and 300' extends north of the raise. No ore was encountered along this drift and the north section is 30' off the contact which was drilled and no ore was encountered. The 650 raise extends to 250' level and has a total length of 468' on a 58° incline. One notable feature of this level is that in certain areas along the contact the quartz diorite is considerably altered and mineralized. Several samples assayed as high as $5 per ton in gold. This gold is associated with pyrite and appears to be free. With improved milling conditions and lower costs of milling and mining this may in the future be a source of ore in this mine.



Showing 250 & 650 Aerial Tram Stations and Outline of Quartz Diorite Stock in Carboniferous Limestone, Nabesna Mine.



Nabesna Mill, September 6, 1936.

Since the closing down of the mill on May 15 the mill has operated only as an experimentation to test out the cyanide process on the heavy sulphide ore. Sloughed ore in the 250 level stopes which contained a small amount of iron oxides and the tails of former production, which were pumped with a Worthington centrifugal pump, were milled. The capacity of the plant was limited to 5 tons per 24 hours, awaiting arrival of a Dorrco filter. A new caterpillar diesel power unit was installed in the mill. This runs a 60 K. V. A. generator. A low compression (12 to 15 lbs.) Ingersoll compressor, single 5x8", was installed for air lifts. A thickener tank 10' x 18' was built this year and two sand filters. Considerable equipment was added to the machine shop. The assay office was further equipped to assay for copper. Thus a total of $30,000 was spent for equipment and installation, mainly milling equipment. This brings the milling processes to a combination of three, developed as a result of the more basic ore in depth and making for a much better recovery. A capacity of fifty tons is hoped to be maintained during the remainder of the year. The complete milling processes are outlined on accompanying flow sheet. As such, the ore is run through a 7x10" Blake crusher by gravity from the ore bins above. This feeds the 64½-ton Marcy ball mill and all the products are fed directly to a Denver unit cell. The concentrates from this cell are fed to a conditioner and onto two 28" Fagergren copper cleaner cells. From the first cell a copper-gold shipping concentrate is made that averages $500 per ton. The middlings from the second cell are returned to conditioner and the tails are run to thickener for the cyanide process. The tails from the Denver cell are fed into a Dorr F Simplex classifier from which the underflow is fed to a Triplex Plato sand table which makes a $1000 per ton gold shipping concentrate. The tails from the table are fed into an

Esperanza drag classifier. The overflow is led to the thickener of the cyanide plant, and the underflow is returned to the Marcy mill for regrinding. The overflow of the Dorr classifier is fed to four 36" Fagergren cells. The concentrate of first cell is fed to circuit from concentrates of Denver unit cell to the copper cleaners. The concentrate of the three remaining cells is fed to cyanide circuit and the tails are led to waste. Thus the products from the Esperanza classifier, overflow, the concentrates from three of Fagergren cells and the tails from the copper cleaner cells are thickened in the 8'x18' thickener tank. Here the pulp is thickened, the clear water is returned to the mill circuit and re-used. The thickened pulp is led to three Dorr 8'x10' agitators. Thus 25 tons are treated 24 to 30 hours. The product passed through a Dorr thickener 8x12' onto a Dorrco filter 4x8' and the cake product is taken for waste. The clear liquid is fed to zinc boxes where gold is precipitated on zinc strips from which gold bullion is the final product after elimination of the zinc with acid. Since these processes are in experimentation percentages of recovery from the present mine ore are not known. A recovery was reported from the tailings which were reported to average about $14 gold, 8 oz. silver and .35 per cent copper per ton, or 90% recovery. Sixty-five per cent was through 200 mesh. The gold is mainly with the pyrite. The tailings run 25% sulphides. The installation of the cyanide plant is to meet the problem of a more complex ore found in depth. Both chalcopyrite and sphalerite appear to be increasing in amounts in the sulphide ore and a lowering of gold values were reported. The increase in the price of copper will increase the value of the copper concentrates.

Geological conditions show good prospects for further ore possibilities in several places in the vicinity of the diorite-limestone contact. If the milling costs are lowered as expected some areas of the mineralized diorite may be mined for ore. Full capacity for the mill from the mine is expected before the end of this year.

PE-078-05

DEPARTMENT OF MINES
RECEIVED
FEB - 4 19
JUNEAU, ALASKA

NABESNA MINING
CORPORATION

January 1, 1937

Quarterly report to stockholders on operations at Nabesna Mine from October 1 to December 31, 1936.

MINE WORK:

Lineal feet stope raise driven (250 level)	50
Lineal feet tunnel driven (350 level)	98
Lineal feet stope raise driven (350 level)	95
Lineal feet tunnel driven (450 level)	50
Lineal feet stope raise driven (450 level)	295
Lineal feet tunnel driven (550 level)	20
Lineal feet stope raise driven (550 level)	162
Total lineal feet underground work	770
Lineal feet diamond drill holes put in	272
Tons ore mined and trammed to mill	2393

NOTED
FEB 4 - '37
B. E. SEDWALT
Commissioner of Mines

MILL OPERATION AND ESTIMATED PRODUCTION:

Total number hours mill operated	1316.5
Total number tons mine ore treated	2393
Tons tails	1670.23
Average value per ton tails	$1.35
Average value per ton ore treated (heads)	$22.10
Recovery	95.72%
Tons shipping concentrates produced	49.71
Average value per ton shipping concentrates produced	$647.34
Gross value shipping concentrates	$32,179.10
Tons cyaniding concentrates produced	673.06
Average value per ton of cyaniding concentrates produced	$27.40
Gross value cyaniding concentrates	$18,443.88
Gross value mill production from mine ore	$50,622.98
Bullion shipped to mint from cyaniding concentrates	$4,769.47
Estimated gold precipitate, from cyaniding concentrates, on hand	$2,381.26

GENERAL:

The equipment for the cyanide unit of the mill, shipment of which was so long delayed from the factories, was finally received and has been installed and placed into operation. The mill resumed production on mine ore late in October. The ore first to be treated was from tonnage accumulated the past summer from development and preparatory mining work and stored in the mine and ore bunkers. This accumulated development ore was comparatively low grade. It was November twentieth that treatment of regular run of mine ore from our stope mining was begun and from then on to end of the quarter the production of shipping concentrates and bullion have averaged over eight hundred dollars per day and the mill heads close to $30.00 per ton. In addition to the shipping products made a considerable tonnage of concentrates were produced and stored for treatment later in the cyanide plant.

The 2393 tons of ore mined and delivered to the mill came almost entirely from the stopes below 250 level, some stoping being done at depths down to the 550 level.

The cyanide unit of the mill is in operation but is not making the recovery of values that should be made. The Dorr Company, the principal makers of the equipment, have agreed to send one of their service engineers to Nabesna Mine as soon as transportation is available to check over the equipment. It is probable that only minor new equipment and alterations will be required to put the unit into an efficient working condition.

During this quarter underground mining work consisted of preparatory and stope mining and development work. Several new stopes have been opened up on the levels below 350, some of which are showing up high grade ore, assays of $70.00 per ton being quite common. An ore body was driven into in extending the 350 drift further into the mountain, this ore was 1½ to 3 feet wide and assays have an average value of $36.00 per ton. The 450 level drift is being driven ahead in ore several feet wide that assays from a few dollars to over $40.00 per ton. In the stopes ore widths running from 2 to 6 feet with occasional widths of over 12 feet are being mined. Our mine work to date indicates the continuing of the ore bodies along the contact ore zone deeper into the mountain and the persistence of good ore values at depths below our present stope workings.

The highway to Chitina is still passable for trucks and concentrates produced are being hauled to Chitina for shipment over the railroad to Cordova and by the first available boat from there to the Tacoma Smelter.

Respectfully submitted,

Carl F. Whitham,
President and General Manager

DEPARTMENT OF MINES
RECEIVED
OCT 1 J 1937
JUNEAU, ALASKA

NABESNA MINING CORPORATION

October 1, 1937

Quarterly report to stockholders on operations at Nabesna Mine from July 1, to and including September 30, 1937.

MINE WORK:

Lineal feet cross cut driven, 250 level	45
Lineal feet drift driven, 350 level	81
Lineal feet drift driven, 450 level	141
Lineal feet drift driven, 550 level	97
Lineal feet stope raise driven, 450 level	146
Lineal feet drift driven, Nugget Vein	143
Total lineal feet underground work	653
Lineal feet diamond drill holes put in	247

MILL OPERATION AND ESTIMATED PRODUCTION:

Total hours operated	1831.00
Total number tons tailings retreated	5232.00
Average value per ton of tailings retreated	$16.02
Gross value tailings retreated	$83,816.64
Recovery, Mill	84.03%
Tons shipping concentrates produced	144.47
Average value per ton shipping concentrates	$250.98
Gross value shipping concentrates	$36,259.08
Tons cyaniding concentrates produced	2270.57
Average value per ton cyaniding concentrates	$15.05
Gross value cyaniding concentrates	$34,172.08
Gross value mill production	$70,431.16
Bullion produced from cyaniding concentrates	$8,972.21
Average overall recovery, mill and cyanide plant	53.96%

NOTED
OCT 19 '37
R. D. STEWART
Commissioner of Mines

GENERAL:

The mill and cyanide plant during this quarter were kept in steady operation, with the exception of the short time needed for maintenance and new installation work. Tailings were the material treated in the mill producing concentrates for shipment to the smelter and gold bullion from the cyanide unit. Average tonnage handled per twenty four hour day was 68.6 tons at an average cost of about $3.60 per ton for treatment and handling.

Two Wallace low head type super-agitators have been installed and were placed in operation October first. These agitators are more certain and intensive in their operation than those we have previously been using and a better per cent of recovery is expected to be made in the cyanide plant. Treatment of stored tailings has been discontinued and the mill and cyanide plant began operation on mine run ore October first.

During the past summer while the mill has been operating exclusively retreating stored tailings mine activity has been entirely on development and preparatory mining work. The Nugget Vein Tunnel has been extended an additional 143 feet. Ore of good value being encountered at a vertical depth, below the surface outcropping, of 150 feet. Assays of a few dollars to over $60.00 per ton being had quite frequently. While no large sized ore bodies have been encountered in the work so far done in the Nugget Vein Tunnel the fact that good value ore with workable stoping widths has been found at that depth is very encouraging. A cross cut drift now driven 45 feet has been started from the 250 foot level. This cross cut will tap the Nugget Vein Region at a depth below the surface outcroppings in that section at about 400 vertical feet. The 350, 450, 550 drifts have been extended further to the North, deeper into White Mountain. Ore was driven into on the 450 level carrying good values. A stope raise has been put up on this ore body to the 350 level above. Ore several feet wide carrying values of $40.00 and better to the ton were opened up in the drift and stope raise.

Supplies and equipment needed during the winter are now stored at the mine and with the addition of further diesel oil, now being truck freighted in, we will have supplies on hand for mine and mill sufficient to carry on work well towards May first of next year when further supplies can be freighted in efficiently.

Mine and mill equipment are in good serviceable working order and the general condition for steady winter operation is as good or better than it has been at any previous years time.

Respectfully submitted,

Carl F. Whitham,
President and General Manager

NABESNA MINING
CORPORATION

January 1, 1938

Quarterly report to stockholders on operations at Nabesna Mine from October 1 to December 31, 1937.

MINE WORK:

Lineal feet driven Nugget Cross Cut	210
Lineal feet drift driven (350 level)	93
Lineal feet stope raise driven (350 level)	60
Lineal feet stope raise driven (450 level)	226
Total lineal feet underground work	589
Tons ore mined and trammed to mill	3961

MILL OPERATION AND ESTIMATED PRODUCTION:

Total hours mill operated	1840.1
Tons mine ore treated	3961.0
Average value per ton ore treated (heads)	$19.46
Gross value ore treated	$77,081.06
Recovery, Mill	94.52%
Tons shipping concentrates produced	106.37
Average value per ton shipping concentrates	$494.49
Gross value shipping concentrates	$52,598.90
Tons cyaniding concentrates produced	1652.39
Average value per ton cyaniding concentrates	$12.26
Gross value cyaniding concentrates	$20,258.30
Gross value mill production	$72,857.20
Bullion produced from cyaniding concentrates	$5,869.40
Precipitate in process, estimated from assay	$400.00
Average overall recovery, mill and cyanide plant	76.37%

GENERAL:

A close down of the mill for eight days the latter part of November was caused by a crack breaking across the ball mill shell. This was repaired and the shell reinforced so no further trouble is expected with it. No other time was lost in mill operation this quarter except the short time needed for the usual maintenance work on the machinery and equipment.

The two new agitators placed in operation in the cyanide plant October first gave no immediate improvement in recovery. By the latter part of December, however, methods of regulating the agitators had been so perfected that a very decided increase in the cyanide plant recovery is now being made daily. The mill plant has been showing a good recovery on mine ore treated and during the cold weather worked very efficiently with ample water supply for mill use continuously available.

The 3,961 tons of ore trammed to the mill were mined from the stopes of the 350 and 450 mine levels. The ore body driven into on the 450 level, mentioned in the last quarters report, has now been further developed. Ore of good grade has been opened up with raises for more than 160 feet in height above the 450 level, raise work continuing in ore. Stopes have been started, vein widths are 2 to 5 feet and assays from samples taken across the vein show in several places over $150.00 per ton ore values.

The Nugget Cross Cut being driven from the 250 level is now in 255 feet. This cross cut is expected to cut into the Nugget Vein ore zone when driven a distance of about 350 feet further. This will allow exploration at several hundred feet depth of the several promising ore bodies that outcrop on the surface in this ore zone.

Since December sixteenth, when the railroad closed for the winter shipping concentrates produced are being stored at the mine. Shipments to the smelter will be resumed early in the spring when railroad transportation is again available. It is planned that the bullion produced from the cyanide plant will be shipped monthly by registered mail to the U. S. Governments Seattle branch of the mint.

A total of 36 men are employed in the mine, mill and other work this winter. Ample supplies and spare equipment parts are on hand to last well into the spring. Mine and mill machinery and equipment are in good efficient working condition. Steady operation and production can be expected.

Respectfully submitted,

Carl F. Whitham,
President and General Manager

NABESNA MINING
CORPORATION

April 1, 1938

Quarterly report to stockholders on operations at Nabesna Mine from January 1 to March 31, 1938.

MINE WORK:

Lineal feet driven Nugget Cross Cut	384
Lineal feet drift driven (350 level)	64
Lineal feet stope raise driven (350 level)	335
Total lineal feet underground work	783
Lineal feet diamond drill holes put in	275
Tons ore mined and trammed to mill	4064

MILL OPERATION AND ESTIMATED PRODUCTION:

Total hours mill operated	2030.00
Tons mine ore treated	4064.00
Average value per ton ore treated (heads)	$35.88
Gross value ore treated	$145,825.89
Tons shipping concentrates produced	118.68
Average value per ton shipping concentrates	$1,069.33
Gross value shipping concentrates	$126,908.14
Tons cyaniding concentrates produced	1460.15
Average value per ton cyaniding concentrates produced	$11.20
Gross value cyaniding concentrates	$16,349.90
Gross value mill production	$143,258.04
Bullion produced from cyaniding concentrates	$4,493.94
Average overall recovery, mill and cyanide plant	90.11%

GENERAL:
The mill was in steady operation during this quarter no time being lost except that required for the usual maintenance and servicing of the machinery and equipment.

The overall recovery of 90.11% made on the ore treated showed an increase of 13.74% over that made last quarter. Considering the high value of the concentrate that it is necessary to produce in order that the maximum amount of profit be received from the smelter shipments this recovery increase is very encouraging.

The 4064 tons of ore trammed to the mill were mined from the stopes of the 450 level. Number 49 Stope on this level furnished the greater portion of the ore tonnage. This is the principal stope in the new ore body mentioned in previous reports which has now been developed to a heighth of 250 feet above the 450 level, development work being continued in vein widths of 2 to 4 feet of high grade ore.

Ore has been found in the Nugget Cross Cut. Several veins from 1 to 3 feet wide carrying $20 to $25 per ton values were driven across after the drift cut into the ore zone. The Nugget Cross Cut is now in a total of 639 feet. It is estimated that about 250 feet further will be driven to entirely cross cut the ore zone. The more highly mineralized section, judging from the surface ore croppings, still remains to be driven through.

The mine now has a larger estimated ore tonnage reserve, with higher values per ton, partially blocked out and developed than was the case at this time last year.

Both mine and mill are in good efficient working condition and continued successful operation is to be expected.

Truck freighting to Chitina, for shipment to the smelter, of the 144 tons of concentrates produced and stored at the mine during the winter will be started when the highway is again open for traffic about April 15th. The railroad is also expected to be operating at about the same time.

Respectfully submitted,

Carl F. Whitham,
President and General Manager

RECEIVED
APR 15 1938
DEPARTMENT OF MINES

NABESNA MINING
CORPORATION

October 1, 1938

Quarterly report to stockholders on operations at Nabesna Mine from July 1 to September 30, 1938.

MINE WORK:

Lineal feet driven Nugget Cross Cut	21
Lineal feet drift driven (350 level)	231
Lineal feet drift driven (450 level)	102
Lineal feet drift driven (550 level)	179
Lineal feet stope raise driven (Nugget Cross Cut)	40
Lineal feet stope raise driven (550 level)	75
Total lineal feet underground work	648
Lineal feet diamond drill holes drilled	644
Tons ore mined and trammed to mill	712

MILL OPERATION AND ESTIMATED PRODUCTION:

Total hours mill operated	1847.75
Tons tailings retreated	5801.10
Average value per ton tailings retreated	$14.69
Gross value tailings retreated	$85,236.52
Tons shipping concentrates produced from retreated tailings	169.211
Gross value shipping concentrates from retreated tailings	$48,227.34
Recovery, retreated tailings	56.58%
Tons mine ore treated	712.00
Average value per ton mine ore treated	$56.51
Gross value mine ore treated	$40,237.54
Tons shipping concentrates produced from mine ore	26.107
Gross value shipping concentrates from mine ore	$38,058.58
Recovery, mine ore	94.58%
Gross mill production from mine ore and retreated tailings	$86,285.92

GENERAL:

From July 1st to September 7th the mill operated continuously, treating the tonnage of tailing stored during previous years operations. All of these have now been retreated, the comparatively low operating cost per ton has allowed a fair margin of profit to be made from them.

A larger and more efficient jaw crusher was installed, worn ball mill liners replaced and a general reconditioning and repair of the mill and equipment has been made placing it in condition for continuous winter service. It is planned that the milling of mine ore which was begun September 17th, will be continued throughout the winter with every expectation that the general average of mill production and per cent of recovery will approximate closely the daily average that has been made during the last two weeks of September.

Ore mined and trammed to the mill came mostly from the stope in the upward extension of the 49 ore body above 350 level with a minor part of the ore tonnage from the development work being done on the 550 level. Additional high grade ore has been blocked out in the 49 ore body with widths of 3 to 5 feet averaging about $50 per ton. On the 550 level a stope raise now 75 feet up is being driven in ore several feet wide. This raise will connect with the 45 stope ore body on the 450 level. The ore being blocked out by this stope raise is of milling grade value and will add considerable tonnage to the mine ore reserves. Further exploration and development work has been done on the ore showings found while driving the Nugget Cross Cut. These ore bodies have fair values but are small in size and the tonnage to be mined from them will be limited. They occur in the diorite and garnetite rocks and our experience has shown that ore bodies in these rock formations are not of such important size as those occuring at the contact of the lime and dioritic rocks. The Nugget Cross Cut will, this winter, be driven the several hundred feet further to the massive lime-diorite contact along which promising surface ore croppings have been found.

All the concentrates produced last winter and stored at the mine have now been shipped to the smelter. Shipment of concentrates now being produced will continue as long as transportation to the coast is available either over the highway to Valdez or the railroad from Chitina to Cordova which is expected to remain open until about November 1st. The supplies and equipment needed to continue operating through the winter and until June 15th next year, most of which are now on hand, will have been freighted in and stored at the mine camp before the Valdez Summitt closes about October 15th.

Respectfully submitted,

Carl F. Whitham,
President and General Manager

OCT 17 1938
M. D. STEWART
Commissioner of Mines

DEPARTMENT OF MINES
RECEIVED
JAN 2 4 1939
JUNEAU, ALASKA

NABESNA MINING CORPORATION

January 1, 1939

Quarterly report to stockholders on operations at Nabesna Mine from October 1, to and including December 31, 1938.

MINE WORK:

Lineal feet drift driven, Nugget Cross Cut	165
Lineal feet drift driven, 350 level	404
Lineal feet drift driven, 550 level	20
Lineal feet stope raise driven, 550 level	45
Lineal feet stope raise driven, 650 level	126
Total lineal feet underground work	760
Lineal feet diamond drill holes put in	271
Tons ore mined and trammed to the mill	4385

MILL OPERATION & ESTIMATED PRODUCTION:

Total hours operated	2112.75
Tons mine ore treated	4385.00
Average value per ton of mine ore treated	$37.87
Gross value of mine ore treated	$166,051.60
Tons shipping concentrates produced	138.506
Average value per ton of shipping concentrates	$1,137.60
Gross value of shipping concentrates produced	$157,564.96
Mill recovery	94.89%

GENERAL:

Mill operation and production continued steadily during this quarter, all equipment and machines working efficiently. Water supply delivered to the mill by the winter pump plant system was more than ample for mill use and available at all times.

The flow sheet now being used in mill operation is giving satisfactory recovery on the ore being treated. A gold pyrite concentrate having an average value of about $2,000.00 per ton is produced from the Deister Plat-O Table for shipment. A gold copper pyrite concentrate is produced from the seven flotation cells used. The first five of these seven cells are used to make a rougher concentrate and this product is put through the remaining two cells and further cleaned and concentrated to produce a final flotation concentrate for shipment having an average value of about $250.00 per ton. Concentrates produced during the winter are being stored at the mine. They will be shipped to the smelter when the Valdez Summit becomes open for traffic to the coast in the spring.

The 4,385 tons of ore trammed to the mill was mined from the #49 stope above 450 level, and from the newly opened up #53 stope between 550 and 450 levels. A vein 3 feet wide of medium value grade of ore was driven into while extending the Nugget Cross Cut drift, that is evidently the downward extension of the 49 ore body has been found on the 550 level, located by diamond drilling. The drill holes show low grade ore, widths of two to four feet. The 550 drift is now being extended to open up and develop this ore. Indications are that with further development the same high grade ore values that are found in portions of the 49 ore body above the 450 level will also be found on the 550 level.

The new electric driven compressor installed at the portal of the 650 level tunnel a few months ago was, on January 3, 1939, destroyed by fire. The gasoline driven compressor formerly used, which had been overhauled, reconditioned and kept on hand in case of any emergency, was placed in service and mining operations and development work is being continued as usual. A small decrease in the amount of development work accomplished will be the only effect on the general operation caused by the loss of the new compressor.

Both mine and mill are in good winter working condition and continuous operation can be expected to continue during the remaining winter months.

Respectfully submitted,

Carl F. Whitham,
President and General Manager

DEPARTMENT OF MINES
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MAY - 1 1939
JUNEAU, ALASKA

NABESNA MINING CORPORATION

April 1, 1939

Quarterly report to stockholders on operations at Nabesna Mine from January 1, to and including March 31, 1939.

MINE OPERATIONS:

Lineal feet drift driven, Nugget workings	370
Lineal feet drift driven, 350 level	92
Lineal feet drift driven, 550 level	83
Lineal feet stope raise driven, 550 level	160
Total lineal feet underground work	705
Lineal feet diamond drill holes put in	724
Tons ore mined and trammed to mill	3812

MILL OPERATION AND ESTIMATED PRODUCTION:

Total hours operated	2031.50
Tons mine ore treated	3812.00
Average value per ton of mine ore treated	$17.88
Gross value of mine ore treated	$68,159.95
Tons shipping concentrates produced	91.01
Average value per ton of shipping concentrates	$688.37
Gross value of shipping concentrates produced	$62,648.19
Mill recovery	91.91%

GENERAL:

During this quarter Nabesna Mill was in operation and production steadily from the first of the year until March 29th when the mill was closed down to undergo the annual general overhaul and reconditioning of the machinery. About thirty days will be required to complete this general overhaul of equipment and the mill is expected to be operating again by May first. The wearing parts of the ball mill, flotation cells and classifier will be replaced and together with any of the other equipment requiring attention will be put into efficient working condition enabling the maximum percent of recovery to be made on ore milled.

The 3,812 tons of ore mined and treated in the mill principally came from the stopes on the 450 and 550 mine levels with only a few included tons from the development workings being carried ahead in the Nugget Crosscut. A raise now nearly completed is being driven from the 550 up to the 450 level. This raise will open up for stope mining the downward extension of the 49 ore body at and below the 450 level. The developed tonnage remaining to be mined in the 49 ore body, it is expected, will average lower grade in value per ton than the ore previously mined from this stope.

The Nugget Crosscut has now been completed through to the surface on the Southern slope of White Mountain. This opening to the surface makes excellent ventilation in the Nugget workings and development work is now being done on some of the ore veins found while putting in the crosscut. A drift already in over 70 feet is being driven along one of these veins. The ore averages slightly less than two feet in width and assays show gold values that average $38.00 per ton. The drift on the 350 mine level has now been driven a total of 700 feet to the North along the contact ore zone beyond the 49 ore body. No ore carrying sufficient values to be profitably mined has been found so far in this extension of the 350 drift beyond #49. Owing to the irregularity of the contact which is much more broken and uneven in this section, than elsewhere in the mine, it was impossible to follow the contact with the drift, except in a general way. Diamond drilling is now being done to the side of the drift, to accurately explore the contact for ore bodies along this 700 feet.

The Valdez Summit is expected to be open for truck travel by June first and shipments of concentrates to the smelter will then begin. There is now a total of 170 tons, dry net weight, of concentrates stored at Nabesna Mine having a total gross value of approximately $150,000.00. A new compressor of larger capacity, to replace the one destroyed by fire last January, has been ordered. This will probably be installed and operating by the fifteenth of June. Truck freighting in from Valdez of the supplies and equipment needed for mine and mill operation will be carried ahead throughout the summer.

Respectfully submitted,

Carl F. Whitham,
President and General Manager

Nabesna Mine Office
Nabesna, Alaska

DEPARTMENT OF MINES
RECEIVED
JUL 10 1939
JUNEAU, ALASKA

NABESNA MINING CORPORATION

July 1, 1939

Quarterly report to stockholders on operations at Nabesna Mine from April 1 to and including June 30, 1939.

MINE WORK:

Lineal feet drift driven, Nugget Workings	80
Lineal feet raise driven, Nugget Workings	85
Lineal feet drift driven, 350 level North Drift	251
Lineal feet raise driven, 350 level North Drift	92
Total lineal feet underground work	508
Lineal feet diamond drill holes put in	935
Tons ore mined and trammed to mill	1217

MILL OPERATION AND ESTIMATED PRODUCTION:

Total hours operated	951.75
Tons mine ore treated	1217.00
Average value per ton	$18.67
Gross value of mine ore treated	$22,719.51
Tons shipping concentrates produced from mine ore	44.73
Average value per ton	$430.14
Gross value of shipping concentrates from mine ore	$19,240.74
Mill recovery of mine ore	84.69%
Tons tailings retreated	729.60
Average value per ton	$12.59
Gross value tailings retreated	$9,185.67
Tons shipping concentrates produced from retreated tailings	21.78
Average value per ton	$253.24
Gross value of shipping concentrates from retreated tailings	$5,515.58
Mill recovery of retreated tailings	60.05%
Total gross value of shipping concentrates produced this quarter	$24,756.32

GENERAL:

Early in June the corporation was fortunate in obtaining the services of Mr. Ira B. Joralemon, well known capable mining engineer and geologist, to make an examination and report on Nabesna Mine. From his study of the geology and the occurrence of the ore deposits of Nabesna Mine, Mr. Joralemon outlined a very comprehensive plan for the future development and exploration of the mine which is now being carried out. It will take about a years work to fully complete the mine development and exploration program as outlined.

During the past two quarters of the year mine development work was curtailed by the loss of the electric driven air compressor destroyed by fire last January to a much greater extent than had been originally planned. The air available from the old gasoline driven compressor, that was put into service, was but little more than sufficient to furnish the air needed for drilling and breaking ore in the stopes to keep the mill in steady operation and very little new ore was developed during this time of forced limitation of development work. The ore reserves previously blocked out ready for mining were drawn upon for milling purposes until the point of ore reserve depletion was nearly reached.

It is hoped that following the present adopted plan of development and exploration that ore reserves will again be accumulated sufficient to justify putting the mill into operation and production by about this coming first of October. It may, however be advisable, in order to more nearly obtain the full benefit of the reduced mining costs that will result from the full completion of the development program, to continue the mine work for a greater length of time before placing the mill again into operation.

A good sized body of ore has been driven into in the extension to the North of the 350 foot level drift. The body of ore cut with the drift is between 8 and 10 feet wide and carries values averaging about $12.00 per ton. It is being further developed by a stope raise now up over 30 feet in solid ore of about the same value per ton. This ore body, where driven into on the 350 level is over 400 vertical feet below the surface and from all appearances is a good strong ore shoot which as further development on it is done may well be expected to show sections of higher grade ore.

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The 1217 tons of mine ore treated in the mill this quarter was mined from stopes on the 350 level and from the lower portion of the 49 ore body stope on 450 level. A small tonnage of tailings was also retreated in the mill, this being the final remaining tonnage of the tailings stored from previous years mill operations that show sufficient values to be profitable retreated in the mill at this time.

A substantial compressor building 18 feet by 24 feet in size has been built at the portal of the 650 tunnel and the new electric driven compressor installed in it. This new compressor is fitted with a larger size motor and will furnish a greater amount of air for drill use than the compressor destroyed by fire early in the year, which it replaces.

The Valdez Summit was opened up for travel about June first and truck freighting in of supplies for this summer and for next winters operation and the hauling out of concentrates to Valdez for shipment to the smelter is being steadily carried on.

Respectfully submitted,

Carl F. Whitham,
President and General Manager

Nabesna Mine Office
Nabesna, Alaska

DEPARTMENT OF MINES
RECEIVED
JUL 23 1940
JUNEAU, ALASKA

NABESNA MINING CORPORATION

JULY 1, 1940

Quarterly report to stockholders on operations at Nabesna Mine from April 1 to and including June 30, 1940.

MINE WORK:	
Lineal feet Drift driven 350 level	100
Lineal feet Raise driven 350 level	77
Lineal feet Raise driven 450 level	15
Total lineal feet underground work	192
Lineal feet diamond drill holes put in	341
Tons ore mined and trammed to mill	714
MILL OPERATION AND ESTIMATED PRODUCTION:	
Total hours operated	397.5
Tons mine ore treated	714
Average value per ton of mine ore treated	$15.22
Gross value of mine ore treated	$10,870.38
Tons shipping concentrates produced	15.976
Average per ton of shipping concentrates	$583.43
Gross value of shipping concentrates	$9,321.40
Mill recovery	85.74%

GENERAL:

No operations were carried on at Nabesna Mine during the past winter, but work was resumed this spring when weather conditions had become more favourable. Underground, mining, developement and exploratory work was started on May 19th. The mill began operation on May 28th producing concentrates from mine ore and has continued in production since that date, operating 16 hours per day. Our main object at this time is the exploration for and the developement of new ore bodies. The work being done is along the same general plan for mine developement we adopted and were following in our work last summer. Exploration work done so far this spring with our diamond drill has shown, in a few of the drill holes, encouraging indications of ore, but no new ore bodies have as yet been opened up in our work. Some ore has been found in developement work done driving raise and drifts from ore bodies previously stope mined and represents extensions of these ore bodies. A limited tonnage only of milling grade ore is expected to be produced from these extensions of older ore bodies.

The value of concentrates produced in mill operations has so far been more than sufficient to cover all the costs of milling, mining and developement work that is being carried on. In order that all the mining equipment and facilities may be available for mine developement and exploration work, it is planned to temporarily discontinue the milling of mine ore and begin retreatment of the remaining mill tailings stored from past years of mill operations.

Thirty men are now working at Nabesna; additional men will be employed as soon as developement work progresses to the point where they can be efficiently used in speeding up and carrying on the operation.

The electric driven compressor installed last summer is giving satisfactory service and is furnishing more air and of a higher pressure quality than we have ever had available for drill work in the past.

Both the mine and mill machinery and equipment are in good efficient working condition. We have on hand an ample stock of all the major supplies needed to continue operations for several months. Concentrates produced are being truck freighted to Haines for shipment from there to the Tacoma Smelter.

Respectfully submitted

Carl F. Whitham
President and General Manager

Nabesna Mine Office
Nabesna, Alaska

NABESNA MINING CORPORATION
OCTOBER 1, 1940

Quarterly report to stockholders on operations at Nabesna Mine from July 1 to and including September 30, 1940.

MINE WORK:

Lineal feet raise driven 750 level	25
Lineal feet drift driven 350 level	31
Lineal feet raise driven 350 level	44
Lineal feet drift driven 650 level	100
Total lineal feet underground work	200
Lineal feet diamond drill holes put in	837
Tons ore mined and trammed to mill	1280

MILL OPERATION AND ESTIMATED PRODUCTION:

Total hours operated	1200
Tons mine ore treated	1280.7
Average value per ton of mine ore treated	$15.74
Gross value of mine ore treated	$20,169.06
Tons shipping concentrates produced	37.994
Average value per ton of shipping concentrates	$461.03
Gross value of shipping concentrates	$17,516.62
Mill recovery	86.85%
Tons tailings retreated	2102.4
Average value of tailings per ton	$6.33
Gross value of retreated tailings	$13,310.73
Tons shipping concentrates produced from tailings	33.41
Average value per ton of shipping concentrates	$233.95
Gross value of shipping concentrates produced	$7,817.09
Gross value of all shipping concentrates produced	$25,333.71

GENERAL:

The developement and exploration work carried on during this and the preceed- quarter was not successful in discovering ang bodies of new ore in the underground workings of the Nabesna Mine. A promising ore body which outcrops on the surface was found. It is located on the corporation's Golden Eagle lode claim #2 about one mile northerly along the base of White Mountain from the portal of the 650 level tunnel. This Golden Eagle ore body is lower in elevation than any ore previously found on White Mountain. Careful sampling and examination shows an average gold content of $32 per ton with sufficient tonnage in sight, that by a conservetive estimate, will have a total gross value in excess of $50,000. This ore body will be developed and opened up for mining by a tunnel driven below the surface outcropping. This tunnel will develope the Golden Eagle ore body at several hundred feet depth and also explore the region to the east for similar ore bodies or the continuation of the Golden Eagle Approximately 3000 feet of tractor and truck road is being constructed which will connect the proposed tunnel portal with the Nabesna highway. When this road is completed ore can be hauled by trucks the short distance to the Nabesna mill for treatment at a reasonable cost per ton.

The 1280 tons of ore milled during the quarter were mined from extensions of older stopes on the 250, 350 and 450 mine levels. As near as can be determined at this time, this is the final tonnage of ore available from these stope extensions. Mill operation was on a 16 hour day basis during the summer. The mill was closed down on September 11th and a general overhaul of the machinery and equipment was begun, new liners were placed in the ball mill and the mill conditioned for resuming of work in the coming spring. The 67 tons of concentrates produced during the summer have now been truck freighted to Valdez and shipped to the Tacoma Smelter.

The camp will be closed down for the winter about October 1st, a watchmen being left in charge. It is planned to resume work about May 1st when weather conditions are more favourable and developement work on the Golden Eagle can be carried on with greater efficiency.

Respectfully submitted
Carl F. Whitham
President and General Manager

Nabesna Mine Office
Nabesna, Alaska