

Report on the
MOSCOW - MOHAWK GROUP
LARDEAU MINING DIVISION
BRITISH COLUMBIA, CANADA
By: Newton W. Emmens, 1928
Presented by: G.D. Humphrey
July 11, 1960

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REPORT

ON THE

MOSCOW-MOHAWK GROUP

LANSAN MINING DIVISION

WEST KOOTENAY DISTRICT

BRITISH COLUMBIA

CANADA

By

Horton W. Emery,
Mining Engineer.

1928

W. H. H. H. H.
Mineral Engineer
217 East Street
Vancouver, Canada
November 15, 1918

The Board of Directors,
Lardner Mine Exploration Ltd.,
Vancouver, B. C.

Gentlemen:

In accordance with your instructions I proceeded to Lardner, in the Lardner Mining Area of British Columbia, for the purpose of examining your MOSCOW-SHANK GROUP, and beg to hand you herewith my detailed report thereon, together with the photographs and maps illustrative thereof.

The property comprising the MOSCOW-SHANK GROUP consists of five mineral claims, two of which have been Crown granted, and three of which are held by location under the provisions of the Mineral Act of British Columbia. The claims extend from the valley of Poole creek in a southerly direction for a distance of 700 feet and in a northerly for about 300 feet. They are distant from the town of Caribou three miles and are connected therewith by a good pack-trail which follows along the valley of Poole creek.

Caribou is reached within twenty-four hours of leaving Vancouver, the route being by Canadian Pacific train to Arrowhead, thence by steamer to Beaton and from there by auto-stage. There is a daily (except Sunday) train and boat service.

There are three known veins on the MOSCOW-SHANK GROUP, namely, the Moscow-Shank, the Fresno, and the Graphite. These veins occur along lines of fissuring in the containing rocks, which fissures are persistent over long distances. The ore occurs as shoots in these fissures and consists of pyrite, galena, and zinc-blende in a quartz gangue.

Development work consists of open cuts and adits, which latter were covered and inaccessible at the time of the writer's visit, on the Graphite vein, and adits on the Moscow-Shank and the Fresno veins. No ore of commercial value

has been, as yet, discovered in the principal veins, although there is good reason to expect the finding of payable ore should therein when the vein is systematically prospected. In both the ~~lower~~-~~main~~, and the Fresno veins good ore has been found, assays:- 15 to 20 ounces silver; 5 to 1½ lead; 20 to 30% zinc over within of twelve to thirty inches in width, and selected samples of clean galena assays:- Gold 0.1 ounces; Silver 50.7 ounces; Lead 65.3% while selected samples of clean zinc-blebs, assays:- Gold, a trace; Silver, a trace; Zinc 62.0%.

While, owing to the limited amount of development work that has been done, there is no ore that can be classed as "Positive" ore, that is ore which is exposed by mine workings in such a way that it can be measured and sampled on all sides, there is ore which can be classed as "Probable ore", amounting to some 435 tons, and in addition, having due regard to the geological conditions under which the ore occurs and what has been found to exist in other mines in the same mineral belt, there is every reason to expect that a sufficient tonnage of payable ore will be found to justify the installation of an adequate mining and milling plant and to yield a satisfactory profit on the capital expended.

The ore can be mined to a considerable depth by means of adits (tunnels) driven into the steep mountain-side from the creek level, thus avoiding the expense of hoisting ore and of pumping the water. There is ample timber on the ground for all purposes, and water power can be obtained from Pools and Whack creeks sufficient for mining and milling. There is a good mill-site, and camp-site, on the slides where the buildings will be safe from snow-slides.

The climatic conditions are good, there being no excess of heat in summer or cold in winter. The snow-fall is quite deep but it does not interfere with continuous operation when the mine is properly opened up and provided with the necessary buildings for the men and equipment.

The Moscow-Idaho Group cannot yet be classed as a mine, but it is certainly a good prospect well worth development with every indication of its proving a profitable venture. There are three ore-bearing veins known to exist and the problem is to find the payable ore shoots therein with the smallest expenditure of capital and within the shortest space of time. In the opinion of the writer, this can best be accomplished by making a geophysical survey of the three veins for the purpose of mapping the greatest mineralized areas and then proving their values by means of the diamond drill, preparatory to driving adits and crosscuts to open up and explore the ore bodies thus indicated. By this method both time and expense will be saved and the writer unhesitatingly recommends that such a survey be made at the earliest possible date.

Pending the making of such a geophysical survey, it is recommended:-

1. That a crosscut be driven westerly from the face of the Moscow adit for a distance of 50 feet, or less if ore be sooner found. The object of this crosscut is to explore the fissure upon which the adit was started, and which was left after the first 50 feet had been driven.
2. Sink a winze to a depth of 50 feet on the ore showing in the floor of the Moscow adit, beneath the raise.
3. Clean out the old Fresno adit - that is the second working on the Hoback claim, on the south side of Peale creek, above the Moscow-Idaho bridge - and drive in another 50 to 100 feet.

In order to do this preliminary work it is recommended that the sum of \$10,000 be provided and it is believed that such a sum judiciously expended in the work as outlined above will result in the opening up of sufficient ore to justify an ambitious mining program and the adequate equipment of the property.

For detailed information, upon which the foregoing is based,
you are referred to the accompanying report, attached to and made a part
hereof.

Respectfully submitted,

(Signed) Weston W. Evans
Mining Engineer.

REPORT
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Mecow-Nohawk buildings and camp site, showing portal of adit, and timber.	1a
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MAPS

Map of claims, and key map	In pocket
Plan of Mecow adit	In pocket

PROPERTY and LOCATION

The property comprising the HESLOW-WONNACK group consists of the following mineral claims:-

WONNACK Lot No 4571
HESLOW Lot No 4500

both of which are Crown granted, and the

HAMILTON
HAMPTON
AMBASSADOR

mineral claims which are not yet Crown granted, but are held by location under the terms and provisions of the "Mineral Act" of British Columbia. All requirements of the Act have been complied with and the claims are in good standing, with titles in good order.

The HESLOW-WONNACK group is situated on the south slope of Lexington mountain at the junction of Wonnack with Poole creek. The claims extend from the level of Poole creek, southward for some 700 feet and northward from the creek for about 3600 feet to an elevation of approximately 5000 feet above sea level or 2200 feet above Poole creek. It is in what has been designated as the "Central Mineral Belt" of the Lardeau Mining Division of the West Kootenay District, Province of British Columbia, Canada. Their location with respect to the neighbouring mines and claims, and to the established lines of communication is well shown on the accompanying map.

ACCESSIBILITY

From Vancouver the property can be reached by noon of the second day after leaving the city.

The Canadian Pacific Railroad Company operates trains as far as Arrowhead, a town at the junction of the Columbia river with the Upper Arrow Lake, which lake is really only a widening of the river. From Arrowhead, a

Blacksmith shop

Wagon cabin

Portal of adit

Camp at Messee-Rohank Group
on north side of Poole creek.

small steamer connects with the town of Boston at the head of the Northeast Arm of Arrow Lake, from which place an auto-stage is operated to Casborne, a distance of five miles.

From Casborne to the MUSCOGEE-MEHAUK mines, on the banks of Poole creek near the mouth of Mehauk creek, a distance of three miles, there is a good pack-trail that follows along the north bank of Poole creek. This trail at the present time is in good condition for the use of pack animals, and with a comparatively small expenditure in widening the existing trail and in cutting down some of the grades can be made such that tractors, with trailers, may be economically operated between the wagon road at Casborne and the property for the transportation of ores and supplies.

At Casborne there is a hotel and store at which supplies can be purchased in small quantities, but it will be found more advantageous to purchase all needed supplies for extensive operations "on the outside" and to ship them to Boston where they can be picked up and transported to the scene of operations.

There is a daily mail service (except on Sundays) to Boston, the nearest post office to the property, but mail intended for Casborne and the mines in that vicinity is usually given to the proprietor of the hotel at Casborne and taken there by him, so that in effect there is a daily mail service to Casborne even though there be no official post office at that place. However, when the mines are operating and the population justifies, this state of affairs will be remedied and a post office will be established at Casborne.

There is a long distance telephone line between Boston and Arrowhead, which line will be extended to Casborne so soon as its construction is warranted.

TOPOGRAPHY

The Lardens Mining Division is situated in one of the most rugged and picturesque sections of the Salkirk Range, the higher peaks of which rise to

altitudes of 3,000 to 9,500 feet and are crowned by glaciers and snow-fields.

The mountain sides are steep, in many places precipitous, with deep narrow valleys between, and are heavily timbered with cedar, spruce, hemlock, fir and balsam to elevations of 5,500 to 6,000 feet. The underbrush to elevations of 5,500 feet is dense making travelling off the roads or trails both difficult and arduous. Above timberline the mountains are clothed with grasses and alpine varieties of flowers which add beauty and color to the landscape making it most attractive. The summits of the higher peaks consist entirely of rock and rock-debris except where buried beneath glaciers or snow-fields.

Along the valleys flow streams of water which, owing to the steep gradients of their beds, afford splendid water powers. Many of the creeks are a succession of falls and cascades for miles, often running through narrow rocky canyons that offer excellent sites for the construction of dams. Mohawk and Peole creeks are good examples of these rapidly flowing streams suitable for the generation of hydro-electric power.

The mountains are blocky masses, usually terminating in rough, narrow, serrated ridges, the sky-line of which is fairly even, but relieved in detail by a number of pinnacles and spire-like rock masses.

The topographic features are undoubtedly due to erosion by river-action in a region of uplift, but there is much evidence to show that these features have been modified by glaciers. The summits of the ridges have been bevelled off, basins and cirques scooped out, many of which latter are still occupied by ice of the residual glaciers.

The shape of the larger valleys has been changed from a V-shape to that of a steep-walled U, while the ends of the projecting ridges have been truncated. The floors of the main valleys have been deepened to a greater extent than those of the tributary valleys, so that the latter often lie above as "hanging valleys". Mohawk creek is a good example of a hanging valley.

On the 2000-2700' level there are three veins, known as the 2000-2700', the 10000 and the 20000 respectively.

The 20000-2700' vein has a strike of north 30 to 45 degrees west with a steep easterly dip. It has a well defined hanging wall and carries considerable galena, silver-lead and pyrite in a gangue of quartz with phyllite inclusions. This vein outcrops in the creek (Pools creek) and has been opened by adits both to the north and south, as described later on.

The 10000 vein has a strike of north 40 degrees west with a dip in an easterly direction of 60 degrees. It is well defined with a zone of crushed rock between it and the hanging wall. This vein crosses Pools creek a short distance east of where the 20000-2700' vein crosses and it is quite likely that additional development work will show these two to be closely connected. They were probably deposited along two parallel (more or less) breaks in the formation by the same vein making agency and it is likely that cross fissures will be found which connect the two veins and along which low bodies of some magnitude have been deposited.

The 20000 vein has an east and west strike with a dip to the north of 60 degrees. It is exposed in the bed and sides of Pools creek about a quarter of a mile above the 10000 vein, where it has a width of five feet, of quartz sparingly mineralized with pyrite and containing phyllite inclusions. The hanging wall is schist and the foot wall a graphitic phyllite from which it is separated by a wide gangue of crushed phyllite. The vein shows much evidence of movement along these walls, not only from the finely crushed rock which constitutes the gangue, but from the highly polished condition of the quartz where it lies next to the gangue. This east and west vein traverses the

probably closely associated with the quartz veins that have been developed and found to be gold bearing on the west and southwest-southwest groups of Lexington mountain above the town of Ashcroft.

DEVELOPMENT
WORK

Development work on the WEAVER-EMERSON property consists of some surface prospecting along the Graphite vein, and shallow adits on the Moscow and France veins, but insufficient work has as yet been done to either prove or disprove the existence of ore shoots of commercial value although the results are encouraging enough to justify the expenditure of additional capital in the expectation of developing bodies of ore which can be profitably worked, particularly on the French side of Fools creek.

GRAPHITE vein. As already stated this vein outcrops in the bed and on the sides of Fools creek about a quarter of a mile up creek from the France vein. Where exposed it is a strong, well defined vein of quartz sparingly mineralized with pyrite and containing inclusions of graphitic phyllite. No work has been done on it at this place but a sample taken across three feet of the more highly mineralized portion assayed:-

Gold, none

Silver 0.34 ounces.

This outcrop is on the Schenk claim. On the Moscow claim the vein has been opened by two or three crosscuts at an elevation of approximately 550 feet above the level of Fools creek. At the time of the writer's visit these old crosscuts were caved and inaccessible, but judging from the material lying on the old dumps nothing of importance was found, as aside from the graphitic phyllite there was only a small amount of mineralized (with pyrite) quartz in evidence. There has not been work enough done on this vein thus far to prove either that it does or does not contain valuable ore shoots.

This vein is a fine silver vein, about 1/2 inch wide, and is
this vein is a fine silver vein, about 1/2 inch wide, and is
degrees east with a steep westerly dip. The vein is well defined and
the mineralization consists of galena, zinc-blende and pyrite in a quartz gangue.
It has a width of a few inches to four feet and has been opened by a surface cut
and short adit (about 10 feet) on the south bank of the creek about 15 feet
above water level.

Sample of galena from the outcrop just above low water mark taken
over a width of eight inches assayed:-

Silver 29.9 ounces Lead 37.5%

A sample of zinc-blende taken across thirteen inches from the same outcrop,
assayed:-

Gold 0.25 ounces Silver 4.9 ounces Zinc 8.3%

In the cut and adit the vein narrows up and contains less galena
and blende at the face where a sample taken over a width of eleven inches,
assayed:-

Silver 1.0 ounce Lead 0.9% Zinc 0.3%

Back from the face of this adit, about 10 feet, there is a size showing of ore
on the west side from which picked samples of galena and zinc blende
were taken to ascertain their respective metallic content with the following
results:-

Clean galena assayed:-

Gold 0.1 ounces. Silver 50.7 ounces Lead 65.3%

Clean zinc-blende, assayed:

Gold trace. Silver trace. Zinc 62.8%

On the N. side of the creek this vein has been opened by an adit
205 feet long. This adit started on the "chick vein" but, at a distance of 50

fast to the portal, we turned off to the right following "vein" and it encountered a well defined vein 20 feet further on, which vein was then drifted also to the present face. Where this vein was encountered (110 feet in from the portal) there was a streak of ore twelve inches wide extending along the level for a few feet. A raise was put up on this ore for 20 feet and the ore broken in doing the work is stored near the portal of the adit. An average sample of this ore assayed:-

Silver 20.6 ounces. Lead 12.0% Zinc 24.9%

In the floor of the drift, beneath the raise, a sample taken over a width of four inches, assayed:-

Silver 15.4 ounces. Lead 14.7% Zinc 22.4%

The writer is of the opinion that this ore and the vein followed by the adit from the raise to the present face is not that of the Moscow (Moscow-Mohawk) vein, but is probably that along which the Fresno vein is formed, the Moscow fissure having been left where the adit makes its first turn, 50 feet in from the portal. A crosscut to the west of 150 feet will determine this and should be done.

In addition to exploring the fissure along which the Moscow vein is formed, the adit was intended to explore the Graphite vein at depth, but as will be seen by the "Plan of the Moscow adit" it will take 500 feet of a crosscut from the present face in order to reach that objective. If the adit be continued along the fissure it has been following for the last 100 feet the distance yet to be driven in order to reach the Graphite vein will be considerably greater because of the angle of approach.

With the limited amount of knowledge we now have regarding the occurrence of commercial ore bodies in the Graphite vein it does not appear to be good mining to drive such a long distance on the mere chance of finding

payable are in an excellent point of view, showing the vein.

The crosscut to the eastward, shown on the plan, is in phyllite and shows nothing of importance.

FRESNO vein. This vein outcrops in Toole creek and on the south side thereof where it has been opened by a cut and adit made many years ago. The vein is well defined, of quartz mineralized with galena, zinc-blende and pyrite and has a width of from one to five feet. Its strike is north 43 degrees west and its dip 80 degrees to the east, which is about the same strike and dip as that of the wall now being followed by the Moscow adit. A sample of ore taken across a width of thirty inches in the old workings on this Fresno vein, assayed:-

Silver 15.9 ounces. Lead 5.2% Zinc 36.1%

ORE RESERVES

In estimating ore reserves it is customary to divide them into three classes, namely - **POSITIVE ore**, **PROBABLE ore** and **POSSIBLE ore**; the definitions of which, as used by the writer, are as follows:-

POSITIVE ORE. That block of ore which has been proved to exist by being opened either by two levels with connecting raises or by a level and surface outcrop with a raise from the level to the surface. A block of ground so developed affords access to the ore on all sides so that it can be accurately measured and sampled at not less than five foot intervals giving the data to estimate the tonnage and the average value of the block.

PROBABLE ORE. This is ore that has been opened on two sides, by levels, a level and a raise or winze, a level and surface, and the extension of the ore beyond a block of positive ore in the direction of the strike and dip of the ore sheet where all the workings, defining such a block, are in ore.

POSITIVE ore. This is ore which it is reasonable to expect will be found and was available for extraction by the development work, the extension of known ore shafts beyond the zone of positive and probable ore, and ore which is indicated by geological information or by the results of geophysical surveying. It is at best only a rough estimate, often based on a general knowledge of the behavior of ore bodies in other mines having a similar occurrence and similar geological conditions and is always subject to revision as development work proceeds and additional data becomes available.

From the account given in this report of the development work done it will be apparent that there is no tonnage of POSITIVE ore as yet opened up on the property and that the tonnage of PROBABLE ore is that which is exposed in the raise from the Moscow adit and that which lies between the low water mark in Poole creek and the faces of the old workings on the Shhawk claim on the Shhawk and Fresno veins. These tonnages are about as follows:-

Moscow raise: ore streak, 20 feet by 30 feet by $\frac{1}{4}$ feet, at 10 cubic feet to the ton = 60 tons, the average content of which may be placed at 17 ounces silver; 20% (400 pounds) lead and 2½% (480 pounds) of zinc to the ton, which, at the present prices of the contained metals and allowing for concentration and smelter losses, has a value of gross value of \$27.48 per ton.

Shhawk vein on south side of creek: block 15 feet by 100 feet by 1 foot = 150 tons that will probably average 12 ounces silver, 15% (300 pounds) lead and 20% (400 pounds) zinc to the ton having a gross value, after allowing for concentration and smelter losses, of \$20.96 per ton.

Fresno vein on south side of the creek: block 15 feet by 100 feet by $\frac{1}{2}$ feet = 22½ tons that should average 12 ounces silver; 4½% (90 pounds) lead, and 30% (600 pounds) zinc to the ton having a gross value, after allowing for concentration and smelting losses, of \$38.58 per ton.

This gives a total gross value to the PROBABLE ore of \$3,973.30.

With regard to the PROBABLE ore tonnage it is very difficult to give any figures which mean anything, because of the extremely limited amount of development work that has as yet been done, but it may be stated that having regard to the geological formation in which the ore occurs and what has been found in other mines in the district which are in the same general mineral belt, there is every reason to expect that sufficient tonnage of payable ore will be developed to justify the installation of an adequate milling plant and to yield a satisfactory profit on the capital expenditure.

ORE TREATMENT

At the present time, because of the lack of tonnage of ore actually developed in the mine, it is a little premature to say much about the correct method of treatment, but from the nature of such ore as has been found and from what is known of the ores found elsewhere in the same mineralized area and in a similar geologic formation it may be stated that there is no difficulty in making a satisfactory separation of the several metallic minerals by selective flotation.

A mill therefore, to treat this ore, would probably consist of a crushing plant, coarse concentration, re-grinding of the tailings and flotation. The concentrates produced would be shipped to the smelter of the Consolidated Mining & Smelting Company, of Canada, Limited, at Tadoussac, E. C. where they would find a ready market.

When the time comes to provide the requisite milling plant it will be the part of wisdom to ship 30 or 40 tons to some ore testing plant where proper experiments can be made and the most efficient "flow sheet" worked out, and where also the plans and specifications for the mill can be prepared.

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MINING PROSPECTS
IN THE MOUNTAIN DISTRICTS

The claims comprising the Meesew-Mohawk group, situated as they are on the steep hill sides forming the north and south sides of the Peole creek valley, afford the opportunity of mining the ore bodies by means of adits (tunnels), thus not only avoiding the expense of hoisting the ore through shafts, but saving the heavy cost of pumping water from the mine, a not inconsiderable item in the Lardeau where the ground contains much water.

In the vicinity of the present Meesew cabin there is a good site for whatever plant may be found necessary to install for the economic mining and milling of the ore, and, as will be seen from the photographs accompanying this report, there is ample timber for all purposes.

In both Peole and Mohawk creeks sufficient water can be obtained for power and milling purposes by the installation of the necessary dams and pipe-lines.

While the present trail is only suitable for pack animals, it will be a comparatively easy and inexpensive matter to widen it, and cut down the grade in two or three steep places, so that tractors can be operated over it and there will be no difficulty in using the road all the year round as there are no snow-slides to bother.

The climatic conditions are good with neither extremes of heat in summer nor of cold in winter. The snow-fall is quite deep but does not interfere with work being carried on throughout the winter when the work is being done underground and proper living quarters are provided. The tractor can easily keep the road open without any difficulty.

At the present time there are two cabins on the property with sufficient accommodation for six men. There is also a blacksmith shop together with sundry tools, steel, track in the Meesew adit, ore car, etc.,

Looking up Mahant creek from the
Hessow camp-site, on the north side
of Peale creek.

sufficient for a small crew of men doing the work by hand.

In order to expedite development work it would be advisable to install an air compressor capable of supplying air for two small drills operating simultaneously, together with the requisite steel, drill-sharpening tools, etc. for its efficient operation. This machine could be driven either by water-power obtained from the creeks or by a crude-oil engine, whichever was considered the most economical to install and operate. In all probability a water operated machine will prove to be the least expensive as the water can be obtained from Mahank creek with a short pipe line, as will be noted from the photograph of Mahank creek presented herewith.

MINING and MILLING COSTS

A good class of miners and laborers is obtainable in the district at approximately the same wage scale as is prevalent in the Blackan, namely:-

MINERS	\$5.00 per day of 8 hours
HICKERS and LABORERS	\$4.50 per day of 8 hours
BLACKSMITHS	5.50 ditto
TIMBERSMEN	5.50 ditto

The cost of underground work depends to a great extent on the facilities provided, but the following may be taken as a guide:-

DRIFTING and CROSSCUTTING	\$12 to \$17 per foot
Raising	10 to 15 " "
Sinking (winzes) by hand	20 to 30 " "

Wherever possible it is a good policy in development work to have it done by contract at an agreed price per foot. In this case the mine-owner provides the contractor with all necessary tools, track, cars, air-pipe, etc., and sharpens the caps, light in the workings, does such timbering as is necessary, lays the track and puts up the air-pipe.

The per ton cost of mining and milling is a variable amount which

should be estimated. The amount of dead work, the grade of the ore, the amount of dead ground to be mined, and the distance the ore has to be hauled. The ratio of dead work to the ore tonnage, the distance from the mine to the mill and the daily tonnage put through the mill are also important factors that have to be taken into consideration.

As a general thing it may be stated that the greater the daily tonnage handled the lower will be the per ton cost because of the fixed charges - such as superintendence, office expenses, etc. - which do not increase proportionately as the output of the mine becomes greater. In the case under consideration with a plant handling 50 tons of ore per day the mining and milling costs will probably be found to be between \$7 and \$10 per ton.

MARKETING OF THE ORE

The ultimate value of an enterprise is its earning power and the profits that it returns upon the capital expended. In other lines of business this matter is given due and careful consideration, but in the case of mining, particularly those in which lead, zinc, and copper are the chief products, not only is little consideration given to such an important matter but a wrong basis is used in arriving at the value of the ore.

In the majority of cases the values of the ores, as given in the reports and other literature issued by some Companies are based on a recovery of 100% of each of the metals contained in the ore, as shown by assay, at the New York prices for such metals. This, unfortunately, is a very long way from the truth because, not only is there always a loss of metal in the concentration plant and in the smelting, but the New York prices are NOT used as a basis of settlement in the case of lead and zinc.

In British Columbia the nearest smelter to which ore and concentrates

can be seen from the list on page 10, in that of the Consolidated Mining & Reclamation Company, at Jackson, and their schedule for silver-lead, zinc ores is as follows:-

Pay for 95% of the silver contained in the ore, as shown by assay, at the New York quotation for foreign silver.

Pay for 92 1/2% of the lead as determined by dry assay, at the London, England, quotation for soft Spanish lead, converted into Canadian currency, less 1 1/2 cents per pound.

When ores shipped as "lead-ore" contain zinc, a penalty of 30 cents for each lb of such zinc will be charged.

When zinc ore or zinc concentrates are shipped and contain 50% or over metallic zinc, that metal will be paid for on a basis of 85% as shown by the assay, at the London, England, quotations for zinc, converted into Canadian currency, less 2 1/2 cents per pound.

In arriving at the value of the ore as set forth on page 10 of this report, the following basis was used:-

After allowing for milling AND smelting losses it is estimated that a recovery of 80% of the silver and of the lead, as shown by assay, will be made.

In a like manner it is estimated that a recovery of 70% of the zinc, as shown by assay, will be made.

The price for silver has been taken at 90 cents per oz.

The price for lead has been taken at \$22:0:0 per long ton (2240 pounds), which at 44.86 exchange, less 1 1/2 cents per pound, makes the price actually received from the smelter for the lead, 38 cents per pound.

The price paid for the zinc has been taken at \$24:0:0 per long ton (2240 pounds), which at 44.86 exchange, less the smelter deduction, makes the price actually received by the shipper, 2 1/2 cents per pound for the zinc.

By the time your mine is ready to ship ore in quantity it is pre-

value that will have to be paid and that demand a higher price than at the present time, but it is also likely that the basis of settlement will be changed in favor of the shipper owing to improvements in smelting operations and a higher recovery of the ores used.

It is also probable that other mines will be operating in the same district making steady shipments of ore to Yafanac, and that better provisions will be made for the handling of such shipments from Boston to the smelter which will result in lowering the freight costs.

RECOMMENDATIONS

From what has been stated it will be evident that while the Hessew-Schank group cannot be classed as a "mine" at the present time it is a prospect well worth systematic development.

There are three well defined ore-bearing fissures on the property, in two of which some good ore has been found and in the third of which - the Graphite vein - it is reasonable to expect that profitable ore shoots exist. The problem is to find these ore shoots with the least amount of work and in the shortest time.

In the opinion of the writer this can be best accomplished by having a geophysical survey made, by the radiare or some other equally satisfactory method, along these veins for the purpose of mapping the areas of greatest mineralization, and then to prove the same by means of diamond drilling preparatory to driving of adits or crosscuts necessary to open up and explore the ore bodies indicated by such survey. The writer unhesitatingly recommends that such a survey be made at the earliest possible moment.

Pending such survey, it is advised:-

1. That a crosscut be driven west from the face of the Hessew

with a view to the possibility of ore in
the area. The plan is to cut
the shaft down to the level of the
old shaft which the shaft was started and which
was 200 feet deep. The shaft was 20 feet in diameter.

1. Dig a shaft 20 feet in diameter in the floor
of the shaft beneath the shaft.
2. Clean out the old frame shaft - that is the second
workings of the shaft plain on the south side of
Fossil creek, above the Hecow-shank bridge and drive
in another 50 or 100 feet on that vein.

The information obtained from doing this work, especially the
valuable data from the geophysical survey, will give a far better idea as to
the ore possibilities that is obtainable now and will enable a plan of
development to be laid out that should result in opening up ore bodies of
sufficient commercial value to justify the capital expenditure necessary to
place the mine on a producing basis, as there is little doubt, in the opinion
of the writer, as to the existence of such ore bodies.

Respectfully submitted,

(Signed) Newton W. Evans
Mining Engineer.

Vancouver, B. C.
November 15, 1928

G. S. ELDRIDGE & CO.

Provincial Assayers, Analytical and Consulting Chemists
Metallurgists and Cement Inspectors

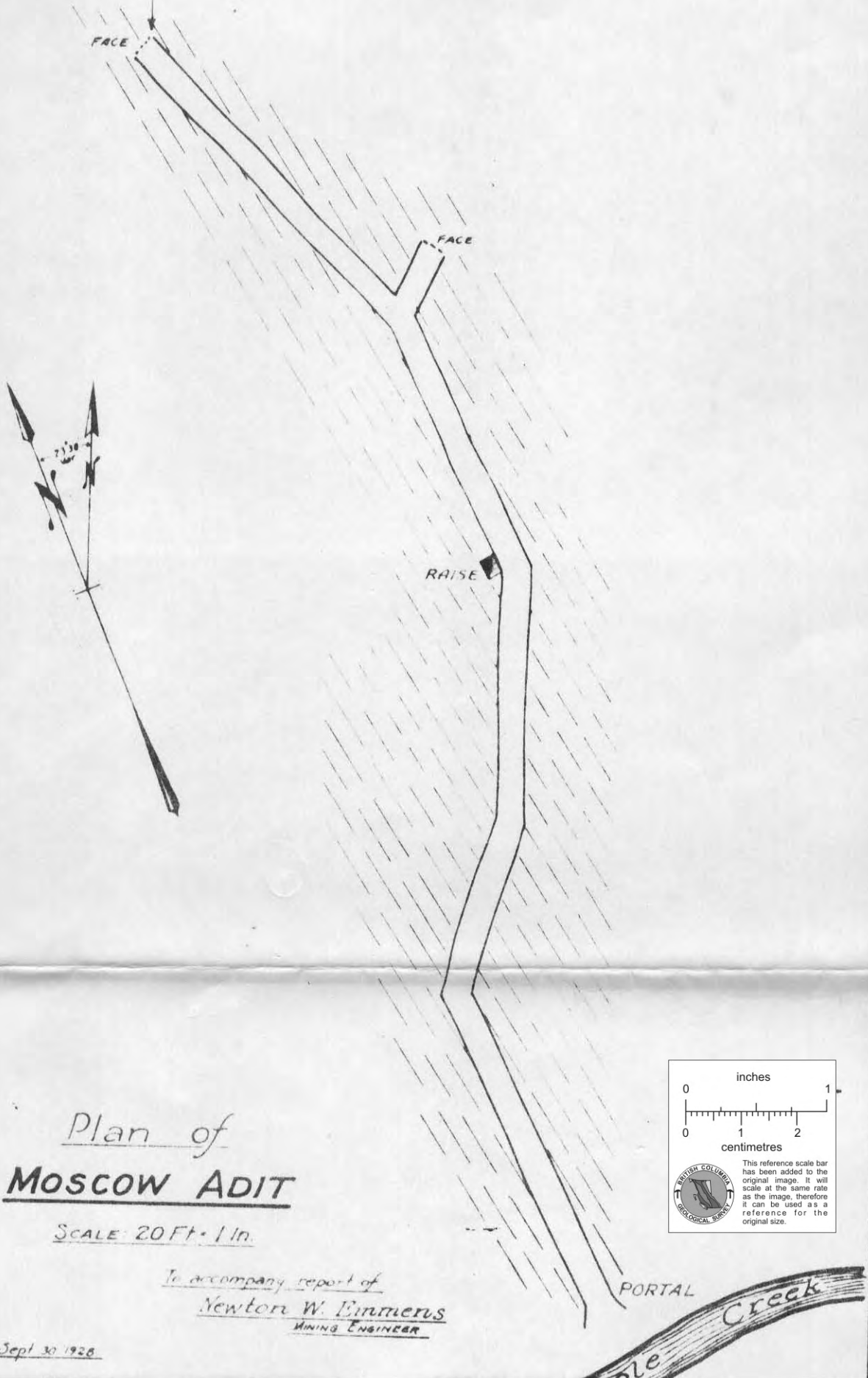
We hereby certify that the following are the results of assays
made by us upon samples of ore herein described and received from Mr.
Houston W. Emans, 15th November, 1928.

<u>Marked</u>	<u>Gold</u> Ounces per ton	<u>Silver</u> Ounces per ton	<u>Lead</u> per cent.	<u>Zinc</u> per cent.
1.		20.6	24.2	24.9
2.		15.4	14.7	22.4
3.	0.25	6.9		8.3
4.		29.9	37.5	
5.		1.0	0.9	0.1
6.		15.9	5.2	36.1

(Signed) G. S. Eldridge
Provincial Assayer

GRAPHITE VEIN

To Graphite Vein
approximately 820 ft.

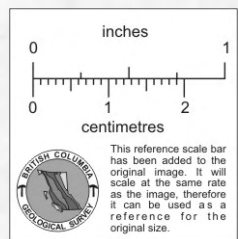


Plan of
MOSCOW ADIT

SCALE 20 Ft. = 1 In.

To accompany report of
Newton W. Finmeris
MINING ENGINEER

Sept 30 1926



PORTAL
Creek