

RED JACKET MINE
JOSEPHINE CO., OR

CHARLES D. SNYDER.

REPORT

April 29, 1935

P R E L I M I N A R Y
R E P O R T
R E D J A C K E T M I N E

OBJECTIVE:

The purpose of this report is to acquaint the reader with the geographical, topographical, geological, petrological, mineralogical conditions and other items of interest and indications of the Red Jacket Mine.

GEOGRAPHICAL LOCATION:

The property is located in the unorganized Granite Hill Mining District, Josephine County, Oregon, approximately nine miles by road in a north-easterly direction from Grants Pass, Oregon, the County Seat of Josephine County, a fair-size city on the Southern Pacific Railroad. The Red Jacket Claim being the East one-half of the N. E. $\frac{1}{4}$ of the N. E. $\frac{1}{4}$ of Section 34, the Red Jacket No.-1 and No.-2 being the N. W. $\frac{1}{4}$ of the N. W. $\frac{1}{4}$ of Section 35; all claims being in Township 35 South Range 5, West of the Willamette Meridian on Louse Creek Watershed in the Grants Pass Quadrangle, and particularly upon the South Fork of Louse Creek. The property consists of Five Claims and a Fraction, Two Claims and Fractions just located are in Section 34. These claims will be known as Red Jacket No-3, - No-4, - No-5. The last claims located are standard locations, that is, 600 x 1500 feet, while Fraction claims are 60 feet by 1500 feet, a strip lying along the west side of full claims. The old claims are 660 x 1320 feet in size.

TRANSPORTATION:

There is a good road from Grants Pass most of the way to the mine; the last three miles is a good summer road, and with a little repairing will be in excellent shape. The road is supposed to be cared for by the County, and they promise that when activity has been shown they will at once start repairing this road to make it a satisfactory one. However, trucks can be used on road at this time, and will undertake deliveries at the usual mileage truck ton haul rate.

TOPOGRAPHIC:

The region is one of steep contours characteristic of the west slope of the Siskiyou Mountains, and is a succession of flat top ridges that slope to the westward, separated by steep canyons that have eroded in places many hundred feet deep to rivers and creek beds below.

The altitude of the upper sections of the Red Jacket Mining property is 3229', or the very highest point of westward claim, while the highest point on the Red Jacket Claim is 2600', and the lowest point on the property where No. 14 tunnel is located is 2250'. The following altitudes will give one a reference as to the working locations; Old working shaft, 2269'; Portal of present tunnel, 2200'; Discovery Shaft, 2550'. These measurements give backs on the veins cut by the No. 14 tunnel in vertical height of 350 feet, all in the oxide zone.

The South Fork of Louse Creek courses the property through the Red Jacket Claim and Red Jacket No. 1, at an angle of about 55 degrees, or from one corner of the claim to the other. The west side of the property lies about 400 feet above the creek, while the east side lies about 200 feet above the creek. The Red Jacket Claim lies on the east slope of the ridge running northerly and southerly, with its Northeast corner having an elevation of around 2450', and this corner lies about 200 feet northwest from Discovery shaft and where the hill breaks off northerly, with the Red Jacket No. 1 and No. 2 having an elevation of 2100', on the north end boundary to 2600 feet on the south boundary end. This ridge runs east and westward.

GENERAL GEOLOGY:

In the Grants Pass Quadrangle, igneous rocks are abundant and cover a greater area than the sedimentary rocks. They are of great variety in compositions, texture and mode of occurrence, including such varieties as greenstone, serpentine, granodiorite, dacite, porphyry and augite and andesite; some phonolite occurs as well. Greenstones variety are widespread of several different kinds, all effusive and intrusive, but for the most part they agree in being much altered pyroxene rocks, greenish in color from the presence of chlorite and green hornblend. The effusive volcanic greenstone are rich in pyroxene, would state basaltic. Of the greenstone the most important from a standpoint of ore deposits are the diorites. These intrusions are in large masses and also in dikes; they contain considerable hornblend, some pyroxene and chlorite. In places these deposits of diorite have been changed to quartz diorite due to the intrusions of quartz in the shear zones. It is in these diorite deposits that the chief ore deposits are found.

Serpentine for the most part occurs in great masses clearly cutting the greenstone and diorite and in cases even the granodiorite. It is composed for the most part of olivine with considerable pyroxene, usually enstatite with small amounts of chromite and magnetite. In some cases show transition to gabbro as if derived from olivine gabbro. The serpentine do not appear to have any definite influence on the mineralization. The serpentines occurred after the greenstone and diorite for the most part, but some dikes like intrusions have occurred after the granodiorite.

The granodiorite is granular in texture and includes rocks which vary considerably in composition. These rocks are composed chiefly of plagioclase, quartz, hornblende and mica. The color

varies, but in this district is of greenish grey color due to the large amount of chlorite and green hornblend. Granodiorite generally occurs in masses many miles in extent and form the backbone of the Siskiyou Mountains. Mines are not common in these areas, except in the case of the Granite Hill Mine and the rich lenses in the northern portion of the Riddle Quadrangle.

The Dacite Porphyries are thought to be closely related genetically to the granodiorites. They occur in dikes cutting all formations. The porphyritic structures are prominent, being due to the conspicuous crystals of plagioclase, rounded grains of quartz and rather lath-like crystals of hornblend. The groundmass is more siliceous, composed chiefly of quartz and feldspar. The latest rocks are those of the augite andesite intrusions, a dark colored rock in the form of small dikes cutting through greenstone and the granodiorite.

The geology of this property is similar to that of the quadrangle. The main intrusions being diorite and granodiorite. On the west boundary, greenstone occurs chiefly of the gabbro type. The Red Jacket Claim is entirely diorite with the contact between it and the granodiorite along the east boundary; this intrusion is about 400 feet wide and the remainder of the property being diorite. Mineralization has been discovered in the granodiorite.

ORE DEPOSITS:

The diverse stresses and consequent earth movements involved in the development of the Klamath Mountains have resulted in wide spread crushing and shearing, but although fissuring has been general to a great extent throughout the areas, in this particular case the fracturing of the diorite has formed a series of shear-zones, into which the gold bearing quartz has been distributed. These shear zones vary in width from a few feet up to 70 and 100 feet, and in length from a few hundred feet up to in some cases 4000 and 5000 feet.

The vein filling consists mainly of quartz, which is usually of a milky-white color, to a light blue in color; calcite is commonly associated with the quartz, and in cases appear alone in the fissures. The subordinate minerals are pyrite, some arsenopyrite, chalcopyrite and pyrrhotite. A study of the filling of veins in different rocks suggest that the nature of the country rock had little or no influence upon the content of the veins and stringers. The gold is present both as free gold and also associated with the sulphides.

It is to be noted that there are two depositions of mineralization in these diorite deposits, the first occurred at the time of the intrusion; this is especially noticeable at this property, the sulphides of the first mineralization being of a dull appearance and usually flat with irregular outlines. Some gold is found associated with these sulphides, in some cases to the amount of \$1.65 per ton.

The second mineralization occurred after the intrusions of the granodiorite. In this case the sulphides are bright and usually assume crystal form. During this deposition the mineralization penetrated the diorite to considerable extent; in cases the diorite has been absorbed by the intruding quartz, giving in some cases the form of quartz-diorite. Again inclusion of the diorite are found in the quartz. At places the veins of white quartz are found as wide as four feet, but as a rule not of great length of definite course, which is indicative of shear zone formations, again they vary from this width to knife blade formations, or stringers and again no evidence can be seen as to their existence. The general mineralization of this property is not confined to white quartz, the entire shear zone for its full width being mineralized. This fact has been definitely proved in the mines adjacent to this property, with its characteristic shear-zones, which as a rule show little or no white quartz and yet average over the full width of the shear-zone from a few dollars to \$12.00 per ton. The shear-zone on this property is identical to that of the adjacent properties. It should be noted at this time where the greater widths of white quartz are found the relative values across the quartz diorite are higher, but that of the white quartz lower.

There appears to be a pronounced vein of white quartz carrying copper in the form of chalcopyrite and bornite to the extent of one-half of 1%. This vein has not as yet been uncovered on the surface, but in tunnel No. 13 must have cut this vein, as evidenced by this ore found on the dump. Also stated by some of the former men employed on the mine that this vein was cross-cut and was eight feet wide where crosscut and averaged \$16.00 in gold at that time. The sulphide concentrates are exceptionally heavy in this ore.

The main mineralization is of a single source and formed at the same time and associated only with the igneous rocks, and due entirely to the intrusion of the granodiorite. It is to be noted that the solutions which caused this mineralization are the same that deposited the ores of mercury, antimony and other high temperature minerals. Mercury is found both as a native and as a sulphide upon the property. It can be expected from this condition that the mineralization will go to great depths.

The lower reaches of the zone of oxidization is in general less than 100 feet below the surface, but in the white quartz to nearly 200 feet. The general strike of the shear-zone as noted, is N. 10 degrees West and dips about 63 degrees to the West; the width averages about fifty feet.

FAVORABLE STRUCTURE FEATURES:

In these veins that have been productive there are certain structural features which appear to be generally associated with High Grade shoots, and within such favorable areas there are close guides furnished by mineralogy of the veins.

The gold reached its present position later than the crystallization of the quartz and diorites. It is my belief that the major control of the deposition of the gold in the high grade shoots lay in the presence of the vein of conditions which favored the local shattering of the quartz and consequently ready entrance of the solution that deposited the gold. It is a well recognized fact that any irregularity of the vein is favorable indication. Such irregularities may be caused by change in strike and dip, sudden swelling in the vein, junction of vein or split in the vein, "the same thing looked at from opposite point of view" and minor faults. These stresses that cause shearing along and in the vein were operative during as well as before and after the stage of mineralization in which the gold was deposited. Where the veins follow straight courses, shearing has for the most part taken place along the walls rather than within the veins. The most favorable location for fracturing of the quartz are natural where some initial irregularity of the vein tender to favor later fracture. The most reliable mineralogical guide is the actual presence of free gold throughout, though not necessary in amounts sufficient to make even milling ore. In a shoot of high grade ore there is commonly one direction in which the change to barren quartz is not as sharp as in the other so that the ore body has "atail" consisting of quartz from which a little free gold can be panned, therefore, quartz that show even small "prospects" may indicate the proximity of "high grade" ore.

A mill is a valuable adjunct to developing and prospecting (with proper flow sheet) it would be proper and right to mill all quartz and diorite however small, mined in the course of development work and whenever there is an increase no matter how slight in the gold recovery, working faces are to be carefully investigated. The production from the low grade quartz, not necessary profitable in itself, may furnish a considerable fraction of the total production.

The question most frequently asked by interested parties in a district -- Will the ores continue in depth? The gold has been deposited from hypogenic solution and is in no way dependent upon the present surface or the surface as it existed prior to the outflow of the lava and there is no reason to anticipate impoverishment in depth on this account.

The veins in this district are considered to have been formed at about the end of the Upper Jurassic time and various lines of evidence lead to the conclusion that the depth of formation was at least 10,000 feet and may have been much more or greater.

The reverse faults of two systems, which seem to be the sites of most of the veins are considered to be auxiliary to the major reverse fault that border the district. The later reverse movement along the vein which continued during the whole period of ore deposition may have been partly caused by progressive serpentinization of the basic intrusives. There must have been a compression in addition to the pressure due to weight of overlying rocks, but it is possible that the actual deposition of minerals took place during intervals of relaxation.

TIMBER:

There is ample timber of virgin and second growth on the claims for all mining and domestic purposes. The timber consists of Red Fir in the most part, some sugar pine, oak and various species.

WATER:

The South Fork of Louse Creek affords considerable water during the most part of the year. It has never been known to be dry, and with a dam built at the upper end of the property and a core wall built on bed rock to head off all seepage, there will be sufficient water for all milling and mining purposes. There will be considerable water in the mine proper and will require pumping when mining is pursued by shaft and sinking operations. There is a ditch on the property at this time, that was built by the old timers as a placer ditch with some work this could put in shape and water delivered from other creeks if necessary.

POWER:

It was stated to me that the Power Company would build a line into the Ida and Red Jacket mines for \$3,000.00, the expense to be born by both parties, and while I cannot state the exact price per K.W.H. or Horse Power, yet I know it was very low.

However, I would recommend using Diesel engines at this time and at a later date consider Electric Power.

HISTORY:

The history of this property is worthy of attention as the record to date taken from all available sources gives the production of quartz and placer at about \$175,000.00. These following records have been obtained from various sources, both individuals and State records, and appear to be correct.

The only mining carried out to date has been from the free milling quartz; no attempt has been made at any time to mill or save the sulphide concentrates.

The property was first located by W. Flem, who sank a shaft at a point (on map No. 12) where the old workings shaft is located. From this shaft he is reported to have taken out \$10,000 and continued to work the shaft until he sold the property to M. Hull at the time that Hull purchased the entire Granite Hill properties on Louse Creek. Hull first worked the placer on the South Fork of Louse Creek, taking out \$65,000 in 65 days, which in itself is quite a record. He later drove a tunnel (No. 6) which was driven in on an 8" stringer of Oxide Quartz. He first hauled the ore to the 2 stamp mill he had erected on the Granite Hill Mine, but later erected an arrastra on the South Fork. This tunnel is stated to have produced \$5,000.00. Hull sold his entire holdings to the Oregon Gold Mining Company for \$90,000.00 in cash, and this sale included the Red Jacket property.

The Oregon Gold Mining Company continued the Flem shaft to a depth of 147 feet and from the shaft hauled ore to their mill at the Granite Hill Mine. It is stated that they took out some \$35,000.00 from the Red Jacket property. In talking with Mr. Roberts he states that the vein they worked consisted of white quartz of an average width of 24" and that all stoping was done to the south of the shaft. He also stated that the ore from the foot of the shaft when they quit plated \$35.00 (old price) per ton in free gold, which is exceptionally high-grade.

The Oregon Gold Mining Company closed their plant at the Granite Hill about 1915, due as stated by men working there, to too much water which drowned them out.

No conclusive evidence could be obtained as to who drove the so-called Hull tunnel, but it must be the one referred to in the State Bulletin as having produced under the Oregon Gold Mining Company regime \$62,000.00. This tunnel was not driven by Hull and yet shows on the patent map made at the time the property was owned by the Oregon Gold Mining Company, so in all probability the above is correct.

Later, Dorham obtained a lease upon the Red Jacket and worked it at various places without any assistance. He is reported to have taken out from an open cut (No. 3) \$600.00 out of ten tons of ore. He also opened tunnel No. 6 and took out about \$100.00. This ore he milled in the old arrastras. Dorham left the property about 1927, and from that date the property has been idle. About 1931, Bradley purchased the property from the County, and did some work upon the claims, and later in 1933 sold the property to the present owners.

ORE RESERVES:

Ore reserves according to the development work done upon this property can be estimated somewhat. Most of the workings are now opened up, and what have not been opened up are being carried to a completion, and in due time it will be very easy to make complete estimates as to tonnage in and along the entire vein series. The dump and various shaft tunnels all show ore. The average backs from the tunnel workings average about 200 feet, the shear zone can be traced on the surface for about 2000 feet, the average width found about 50 feet. Using these figures gives a tonnage of about 700,000 tons of milling ore. The above is purely an approximation and will act as a guide only, but I am safe in saying that there is better than 200,000 tons of ore that will mill around \$20.00 per ton, and this takes in nothing but the true vein width and length for a distance of 920 feet, which can be tested and which has been tested and shows the following results:

(1) Discovery Shaft now partially filled, but showing quartz stringers in face of cave, which assay from \$30.00 to \$70.00, average 4". Width of face 20 feet with average assay of \$10.00

(2) Two open cuts showing considerable quartz, not assayed, showing that the shear zone at this point is at least 70 feet wide.

- (3) An open cut from which \$600.00 was taken from 10 tons of Oxide ore. Present assay \$20.00.
- (4) A 40-foot tunnel partially caved, but can be entered. At north end a stope driven to surface, ore from this tunnel hauled to arrastra and milled. Assay of quartz stringers average \$35.00 while the old dump from same assays \$32.00.
- (5) An open cut 2 feet wide assays \$23.00.
- (6) An old tunnel driven by Hull on an 8" stringer, running from main vein in an east and west direction, from which it is reported he took five thousand dollars.
- (7) Two open cuts showing quartz.
- (8) A tunnel 35 feet long, driven in on a cross-cut, cut a stringer some 14 to 16 inches wide, and at the end of the tunnel intersects a quartz vein of some 40 inches wide, drifts were driven to the south and to the north for about fifteen feet. Intersection on vein was stoped to the surface; assays of the 40 inch vein shows \$32.00.
- (9) An open cut on a cross stringer, which pans free gold, averaging 20 cents to the pan.
- (10) An open cut which assays \$38.00 over 18 inches.
- (11) An open cut showing large quartz vein running south-west.
- (12) An old shaft, which was used by the Granite Hill Mining Company from which ore was hauled to their mill a distance of some 3,000 feet to the north. This is also the place where Flem took out his \$10,000.00. Shaft 147 feet deep, vein white quartz average 24" wide, dip 63 degrees to the west, mining was done toward the south. Quartz was reported to have plated some \$35.00 in free gold per ton. Shaft 69 feet above creek tunnel (No. 14). Water in shaft, about 100 gallons per minute.
- (13) An old tunnel driven by Granite Hill Mine, shows on patent as being 350 feet long, with cross out to shaft 90 feet. Tunnel reported by State Bulletin as having produced \$62,000.00. This tunnel is now open for 200 feet, and the assay of ore in fissure at this point shows \$15.40 in a conglomerate, and across 4 feet at shaft - \$27.80.
- (14) A tunnel which is now being opened of which no record can be found. It is now opened for 176 feet. At this point it is about 46 feet from vein. Tunnel is caved and same is being put in condition as a working tunnel to take the ores out from the north vein series. This tunnel is reported to be about 350 feet in length and cuts a back vein some 8 feet wide and assays \$16.00 in gold at the old price. The dump shows excellent quartz from this back vein.

(15) An open cut on the East contact of the granodiorite which pans free gold, some as high as 30 cents to the pan. Another vein about 4" wide we found in placer bedrock in creek striking toward main vein, shows about \$100.00 per ton gold content

There is lots of work to be done to completely explore the various veins known and of which no work has ever been done.

SUMMARY:

I firmly and conscientiously believe the Red Jacket Mine to be worthy of immediate and extensive development, and make an inviting proposition for profitable gold mining operation, and make no statement in the findings but which I firmly believe can be backed up by any one who is versed with mining experience.

The property is located in an accessible and advantageous locality, looking toward easy and profitable development. The economic resources as to timber, water, power and accessibility are exceptional.

The geology, as outlined, I consider to be favorable as to the depth and size of the ore deposit. The assays as reported herein are exceptional. BUT IT MUST BE REMEMBERED AND NOT LOST SIGHT OF THAT THESE ASSAYS ARE CHIEFLY FROM QUARTZ STRINGERS AND VEINS OF THE "FISSURE" NATURE. WHILE THE ENTIRE SHEAR ZONE SHOWS A MILLABLE ORE OF SUCH A GRADE THAT WITH PROPER METALLURGICAL TREATMENT A PROFITABLE MINING OPERATION CAN BE CARRIED TO A VERY SATISFACTORY RESULT TO ALL INTERESTED IN THE VENTURE. The ores are of a simple sulphide type amenable to either flotation, or cyanidation, or a combination of both, and of such nature as would show a high recovery.

From the economic, geologic description it can be readily seen that this property presents great possibilities, with unlimited ore reserve, with heavy mineral content, and which will make this property one of considerable size and a producer for some years to come. Also assuring satisfactory returns on the necessary capital investment.

TITLES:

The titles as to the claims of this property have not been examined by me, but have been examined by Mr. Christenson's lawyers and reported to be good and sufficient. Titles to the claims were obtained from Josephine County, after the property had reverted to the County for taxes. The original patent was granted on December 29th. 1906, to R. A. Booth, et al, under certificate No. 140, as of September 20th. 1904. Patent Number 45586. Recorded in the County Records of Josephine County, State of Oregon, in Volume 29, Pages 638 and 639. Mineral Survey #578.

CONCLUSION:

After a thorough investigation of some time on this property, I am satisfied with ample capital that this property

with efficient management, proper milling and mining machinery, scientific methods of mining, milling and recovery, these holdings will develop into mines of real merit. I am satisfied in my own mind as to the above.

There is enough work done and ore available and in sight, and what has been tested by myself and others, to prove the ore shoot of its continuity, with prospects of better ore being encountered on the northerly part of the vein and its stringers striking toward the Southeast and Southwest to justify the expenditure of moneys and the development of a mine.

There is a paying mine with large tonnage to the east of this mine about three-fourths of a mile, and its property joins this Red Jacket property.

In conclusion I will say that if one desires investment in a paying mining property, this Red Jacket Mine will fulfill every desire the small investor can hope for.

Charles D. Snyder, Scout

April 29, 1935.

MINE AND MILL EQUIPMENT, ETC.

Permanent Mill can be built at and near portal of Number 13 tunnel.

Estimated size of mill will be 25 tons capacity in part, and part in 50 tons capacity.

Crusher for 50 tons capacity.

Marcy, Ellis or Straub 25 ton ball mill.

Feeders - Straub make.

Doorr or vibrating classifier.

Fahrenwald or Krout Flotation Machines - 25 ton capacity.

Wheeler Clean up Machine - 25 ton capacity.

Concentrator Cylinder dryer.

40 H.P. Diesel Engine.

Belts, Sharts and Pulleys.

Mill Building.

Excavating.

Hauling Machinery.

Cost approximate or above\$ 8,800.00

Mine equipment - track, cars, Compressor, Jack Hammers,
Liners, Hose wet and air, bar and arm, etc. 1,600.00

Cookhouse and Office, and other out buildings -
kitchen supplies, dishes, range, etc. 1,000.00

Truck - 1½ tons capacity. 1,000.00

Oil Tanks for Diesel Oil, Pipe for water supply,
Valves, Powder, ruse, caps, etc. 800.00

Payment on Mine up to July 1, 1935 5,000.00

Moneys on hand for wages and incidental expense
until mine is paying its own way. 3,800.00

Total \$22,000.00

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Estimated size of mill will be 25 tons capacity in part, and part in 50 tons capacity.

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INTRODUCTION: The Granite Hill Quartz Mine is a mine of considerable importance with a fine record of production located near the northerly boundary of Grants Pass quadrangle.

The mine was formerly owned by the American Goldfield Company and at that time this company owned the Red Jacket and Ida Mines.

During 1904 and 1907 this mine was reported to have produced \$65,000.00 in gold. The underground workings was reported to aggregate nearly 3,000 feet. A vertical shaft was sunk to a depth of 420 feet. The country rock through, and in which the producing fissures of quartz were found is granodiorite.

The Red Jacket and Ida Mines occur in greenstone, this mine has been reported to have good showings and gold values.

The Ida mine has the promise of being a large producer. This mine is about one mile easterly from the Granite Hill Mine.

REMARKS: There is incorporated in this report a symposium, or a collection of the opinions of several engineers on the merits of the Granite Hill mine and surrounding territory. The bringing in of producing mines is one of the most important works of the mining engineer. To do this it is necessary to estimate the prospective value, to give the developers and operators that confidence in its possibilities which will cause him to do the necessary work to prove it.

The factors entering into the evaluation of prospects have changed as development has progressed, old standards passed on experiences in other mining districts being altogether disproved or of but secondary importance.

This is geological work, rather than engineering and sampling; it requires intensive study and a background of wide experience.

The factors for evaluation are to be established by field work in the determination of:-

- (1) The nature of the outcrop and structure.
- (2) Proximity to major earth movements as indicated by faults.
- (3) Activity and contents of mineralizing Solutions.

The faults throughout this area are persistent with some length. This is a sign of profound earth movement; which extend deep to the underlying magma.

The activity of the mineralizing solution can be said to be in direct proportion to that of the post-mineral eruptives. Intense silification of the rocks and abundance of quartz veinlets is the evidence.

No single one of the factors above is sufficient to give prospective value to prospects. It requires a combination of the three. There are perfect shear zones present on the property under consideration in this report. In any examination which seeks to evaluate a prospect the engineer must do more than sample the outcrops and showings and do a little surveying.

He must study the geology of the contiguous area and have or obtain a thorough knowledge of the geology.

REMARKS: Cont.

There is a more or less regular system of quartz veins which has a north and south strike and dips into the hills.

These have been worked as quartz mines, of which Granite Hill was the principal producer, but in addition to the large veins there is a vast, complex net work of quartz stringers, lenses and pocket deposits that cover the territory.

The gradual weathering; and decomposition of the vast network of veins have been one of the chief sources of the gold found in the detrital material at Granite Hill Mining properties. (See page).

There are a number of other interesting geological features but which do not have an immediate relationship to the interpretation of this deposit, so they are not germane to this report.

I am personally satisfied that the structural condition that built out this deposit; and the richness and nearness of the sources of the gold, together with the long period on concentration and reconcentration, all indicate a great probability that this ground will be found to be far richer than the average ground that consists of the lower river deltas.

George H. MacDonald.
Engineering Geologist
and Mining Engineer

December 19, 1941.