Ruby Mine Property

Sierra County California

Summary Report

Prepared for

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RUBY MINE PROPERTY SUMMARY REPORT

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1.0 EXECUTIVE SUMMARY

1.1 Ruby Mine Gold Deposits and Infrastructure

The Ruby Mine is a well-known, historic underground gold mine that is located in the northern segment of California's famous Mother Lode Gold Belt in the Alleghany Mining District of Sierra County, California. The Alleghany District was the most famous high-grade gold district in the state, and might now be considered the most attractive part of the Mother Lode for gold exploration and mining in northern California. The property comprises approximately 1,700 acres of patented subsurface mineral rights and unpatented mineral lode and placer claims.

The Ruby Mine is unique because it contains both placer and lode gold deposits. Most historic production, modern exploration and development have been to mine the auriferous (gold-bearing) ancient river channels on the property that historically produced about 200,000 ounces of gold. Historical production from the area's placer channels have run as high as 100,000 ounces of gold per mile of channel, and at the Ruby Mine from three to five miles of channels remain to be mined. Recent estimates by geologists suggest a conservative target of 150,000 ounces for the placer gold that may remain in eight river channels.

The river channels in the Ruby Mine were considered some of the highest grade placer gold deposits in the region due to the occurrence of large nuggets. A 201 ounce nugget was recovered in 1891 and nuggets up to 45 ounces were not uncommon. Close to 1,000 ounces of the 58,000 ounces produced from the Ruby Mine placer deposits in 1937-1942 consisted of nuggets three ounces and larger in size, which was nearly two percent of the placer gold recovered during that period. The sediments in these ancient channels are firmly consolidated conglomerates.

Mother Lode gold quartz veins also exist in the Ruby Mine adjacent to the placer gold deposits and are thought to be the source of the large gold nuggets recovered from the placer channels, as the quartz veins eroded and deposited gold into the streams. These veins had limited production of approximately 1,625 ounces of gold and are another attractive exploration target. An example is the "Line of Coarse Gold" in the Old Ruby Workings. This was a quartz vein about 400 feet in length associated with concentrations of large placer nuggets that was noted and documented on the Ruby Mine maps in the 1890's. The 201 ounce nugget was recovered at the upstream end of this structure. There are six known vein systems in the workings of the Ruby Mine.

The Ruby Mine is fully permitted for underground exploration and placer gold mining and an operation could be started rapidly. Both placer and lode processing plants are onsite. It has an approved reclamation plan and financial assurances of $174,000 are in place and current. The property also has the accessory permits needed for operation and for the disposal of placer mill tailings.

1.2 Placer Mining Method and Proposed Mine Plan

The historic mining method used at the Ruby Mine for underground placer mining was termed Drift Mining. A tunnel or shaft was driven to the ore deposit, which was a layer of consolidated sediments that had been deposited in an ancient river millions of years ago during the Tertiary geologic period and subsequently buried by deposition of volcanic sediments. The miners then tunneled or "drifted" along the bottom of the river channel and mined the placer gold.

The placer gravels at Ruby Mine are firmly compacted conglomerates that support underground mining. The mine has rehabilitated underground and surface infrastructures—including both a recently-upgraded placer washing plant and a 50-ton-per-day gold-quartz mill—and permits to operate.

A mining plan proposal (T.M. DeGrio, 2017) was prepared for Ruby Gold, Inc. to begin placer gold mining. The plan estimates the startup capital required for the project to be $1.4 million, and targets the production rate to result in approximately 10,000 ounces of gold per year. The estimated net profit is $5 million per year beginning in year 4 and continuing through year 10. After ten years an estimated total of 367,200 tons would be mined and 71,730 ounces of gold would be produced. Total production costs are estimated to be $56.8 million, and net profit is estimated to be $42.4 million. This plan realistically takes into account the size of the Ruby Mine workings and the challenge of working through winter. It would also include an ore grade control program.

1.3 Conclusions

The Ruby Mine is a property of merit for exploration and development of lode and placer gold resources. It could be developed to meet the standards of a private company or a public company complying with National Instrument 43-101. The existing lode and placer gold resources, along with exploration targets, suggest there is potential for future mining and there can be reasonable confidence that mining will be successful. Both the lode and placer deposits appear to have relatively high gold grades, which is an important component for success.

Long term placer gold production would come from virgin channels not previously mined or partially mined. To maintain production, ongoing exploration will be needed to build resources. Also, a strict program of ore grade control will be needed when mining placer deposits.

Lode gold exploration of the exposed veins in the mine should be continued. Exploration for ore shoots should use the geological and geochemical methods and observations described in reports by Keewatin Engineering and others.

Much time and effort has been spent on geologic correlations of the various ancient river channels in the mine. Enough time and effort has been spent on these interpretations and it appears to be of no value to attempt any more such correlations. Success will depend on systematically developing the placer deposits, blocking out potential ore, and applying a strict program of sampling and grade control.

1.4 Recommendations

The Ruby Mine is an historic underground gold mine that is unique because it contains both placer and lode gold deposits. Most historic production, modern exploration and development have prioritized the auriferous (gold-bearing) ancient river channels. The Ruby Mine represents an excellent exploration and development opportunity for both lode and placer gold.

The Ruby Mine would be a suitable small mining project for a private company for several reasons. First, there will be a need for flexibility in the time and expense of meeting goals and attaining production, which can be more easily controlled by a private company. Second, the gold resources would not have to meet specific standards or be delineated years ahead of mining.

The Ruby Mine would also be a suitable project for a Canadian junior public company as an advanced exploration project. It would be considered an exploration project because the NI 43-101-compliant resources are minimal.

Underground mining of the placer gold deposits should be based on the Ruby Mining Plan developed by DECONCO (T.M. DeGrio 2017). This plan realistically limits production to the size of the existing workings and considers winter weather.

Prior companies have spent a lot of time and funds on re-timbering and rehabilitating underground workings. In areas of heavy ground where continuous access is needed, it may be best for long-term stability to supplement the timber ground support with something stronger such as steel sets and concrete.

2.0 INTRODUCTION

The Ruby Mine property is an advanced stage gold property located in northern California. It is unique because it contains both placer and lode gold deposits. Most historic production, modern exploration and mine development have targeted the auriferous (gold-bearing) ancient river channels that were deposited during the Tertiary geological period. These river channels were some of the highest grade placer gold occurrences in the region, and were the source of a large and very valuable gold nugget collection. The Ruby Mine placer deposits reportedly produced over 200,000 ounces of gold (Keewatin 1992).

Lode gold quartz veins also exist underground but have had limited development and production. A small amount of exploration and mining has occurred on these veins, and they remain attractive exploration targets.

This report has been prepared by Robert C. Pease, a Professional Geologist and independent consultant who has an extensive background in Mother Lode geology applied to lode gold and placer gold deposits in northern California. This report was prepared for Ruby Gold Inc., the owners of the Ruby Mine property.

Mr. Pease is familiar with the property, having visited the Ruby Mine in the year 1991 while managing another company. At that time he toured the property with geologists from Keewatin Engineering while they were working on that and other properties in the Alleghany Mining District, and reviewed data over a period of several weeks for the purpose of conducting gold exploration on the property.

Mr. Pease has 15 years of professional experience in the placer gold deposits of the Ancestral Yuba River, having worked at San Juan Ridge Mine and Yuba-Placer Gold Company. His duties included geology mapping, surface drilling and sampling, channel sampling, resource estimation, ore grade control, and project management.

Terms including “resources”, “reserves” or “mineralization”, used in this report follow the standards of practice published by the Canadian Institute of Mining (CIM) as part of National Instrument 43-101 (NI 43-101).

3.0 PROPERTY LOCATION & DESCRIPTION

3.1 Location and Description

The Ruby Mine property is located four miles north of the town of Alleghany and two miles south of Downieville, in Sierra County California. The property comprises approximately 1,700 acres of patented subsurface mineral rights and unpatented mineral placer and lode

claims. The unpatented claims are under the jurisdiction of the Bureau of Land Management (BLM) and a list is shown in the Table following this report.

The mine's surface facilities are located on Tahoe National Forest lands, and the primary mine permit is a Plan of Operations issued and administered by the U. S. Forest Service (USFS). Sierra County and USFS share in the responsibility for mine site reclamation, and Sierra County is the lead agency for other matters. The property is owned by Ruby Gold, Inc., of Nevada City, California.

The mine is fully permitted for underground exploration and placer gold mining and milling. Both placer and lode processing plants are onsite, although the lode mill is not currently permitted to operate. The property has an approved reclamation plan and financial assurances totalling $174,000 are in place and current. The property also has the accessory permits needed for operation and for the disposal of placer mill tailings.

The Ruby Mine is situated in the northern segment of the famous Mother Lode Gold Belt of California (see Figure 1). The property is in the Alleghany Mining District, which, according to Clark (1970), was the most famous high-grade gold mining district in the state. In 1940 the California State Mineralogist observed that in 1939 the Ruby Mine "was the most productive drift placer in the state." Because of increasing population and competing land uses that have occurred over time, the Alleghany District might now be considered the most attractive part of the Mother Lode for gold exploration and mining, which would also make it one of the best areas in all of northern California.

3.2 Accessibility and Climate

The Ruby Mine is located in the Sierra Nevada foothills of Northern California. It is approximately 100 miles northeast of Sacramento and four miles north of the town of Alleghany. The nearest significant town is Nevada City, which is about 40 miles away. To access the property from Nevada City travel north on State Highway 49 and east on Ridge Road and Pliocene Ridge Road near Alleghany and onto Forest Route 30. The property is also accessible from Downieville via the Galloway Road.

The mine facilities are at an elevation between 4,700 feet and 5,300 feet above mean sea level and the area receives between 53-70 inches of precipitation annually, including up to 90 inches of snow.

The region is within the Tahoe National Forest and has forest vegetation including pine, cedar, fir, madrone, and oak trees, plus Manzanita and other shrubs. Rock Creek is the main perennial stream that flows through the property, with tributary perennial and annual streams feeding into it.

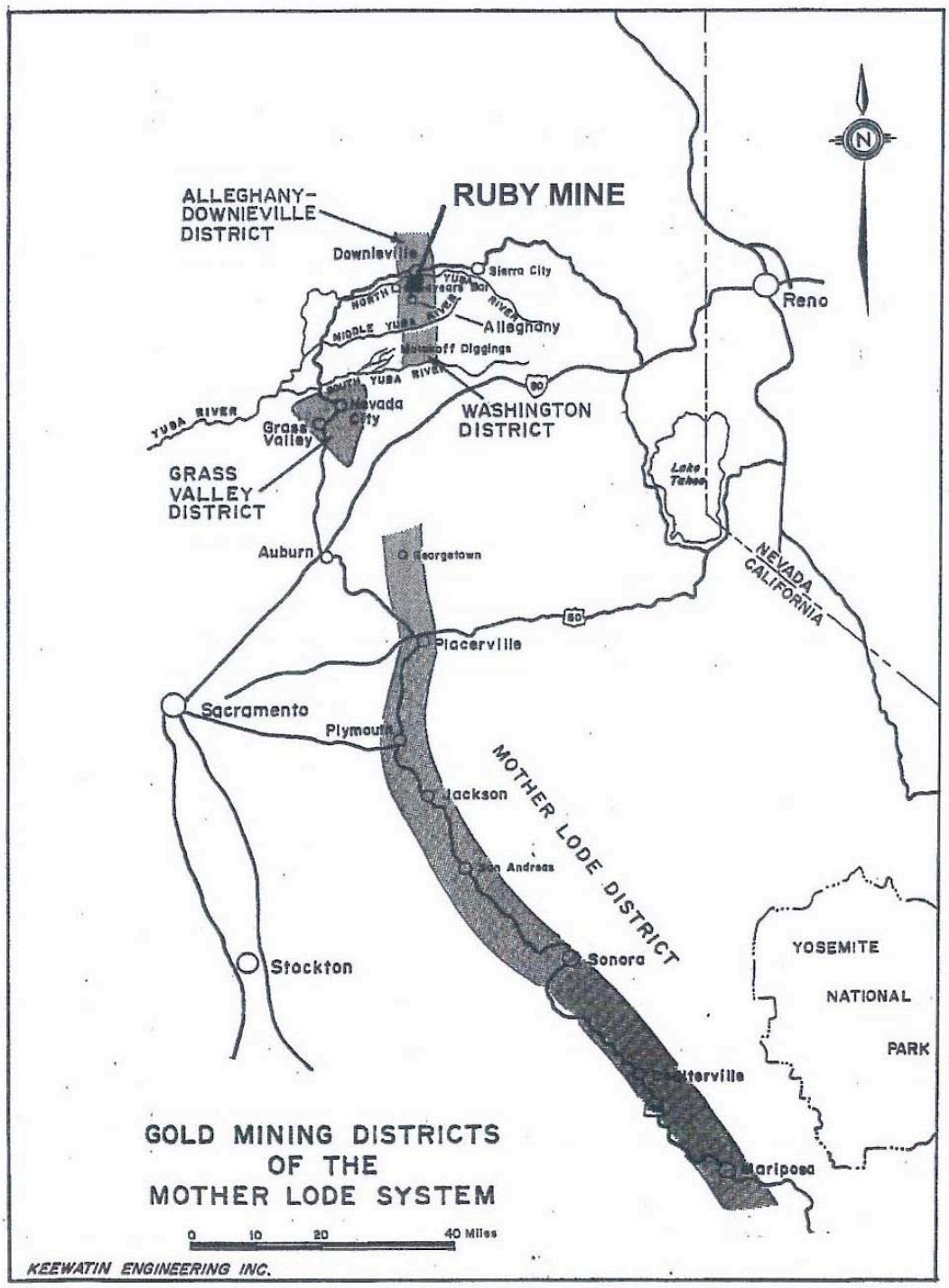

Figure 1:

Location map of Ruby Mine in northern California in relation to the Mother Lode Gold Belt

4.0 HISTORY OF EXPLORATION AND DEVELOPMENT

Ruby Gold Inc. has a very comprehensive collection of historic data from the various companies that have explored and operated the Ruby Mine property, amounting to several hundred maps, reports, production records and field notes. Review of this information shows that modern exploration of the property has progressed in the normal stages necessary to prepare a property for mining. Those stages are regional, district-wide, property-wide and mine-level exploration. It has taken many years to reach the current stage, but that is because small companies with limited sources of funding have attempted to advance the project, often repeating work that had been done previously.

The Ruby Mine has had five main episodes of exploration and development since it was discovered in the 1850s:

4.1 Early History

The auriferous (gold-bearing) placer deposits in the Alleghany and Downieville mining districts were discovered in the 1850's and in another ten years placer mining had advanced to the Ruby Mine property. Underground exploration and mining of the placer deposits continued from 1880 through 1940, along with exploration of lode gold veins. The best estimates of historical production (Keewatin, 1992; Henkle and Associates, 2013; Clifton, 2014) suggest that the Ruby Mine produced over 200,000 ounces of gold. Clark (1970) characterized the Ruby Mine as one of the largest producers in the Alleghany Mining District.

Initial exploration involved tunneling through barren bedrock to intersect a buried river channel and then mining that placer gold deposit. This underground mining method was known as drift mining. The underground mine workings were periodically surveyed and tied to a local property grid, and mine maps were prepared.

The C.L. Best Company operated the Ruby property in the 1930's and early 1940's, under the supervision of L.L. Huelsdonk. It was during this period that modern exploration techniques were used to define the Black Channel exploration target, which included defining a surface drilling target using seismic refraction surveying, and then conducting the surface drilling to locate the channel. The channel was then accessed underground and drifted in upstream and downstream directions. Upstream drifting resulted in the discovery of the very rich gravels in the Big Bend area. According to Keewatin Engineering (1992) exploration under Huelsdonk was very successful, and resulted in approximately 58,000 ounces of gold being recovered. It was during Best Company ownership (in the 1930's) that a rare and valuable collection of almost 1,000 ounces of large placer gold nuggets as large as "fist-sized" (Clark, 1970) was mined from the rich sediments of the

Tertiary river channels within the Ruby Mine. Best's operation was abruptly ended in October 1942 by War Production Board Order L-208.

While drift mining the channel gravels, several Mother Lode quartz veins were discovered underlying the placer deposits. Of these, most exploration was done on the Wolf Vein, but not much mining occurred. C. L. Best reportedly had planned to return to the lode targets after the placer channels were mined out.

4.2 Ruby Gold, Inc. (Ruby Development Company)

Following World War II, the Ruby Mine property remained largely idle. It was purchased by Ruby Development Company ("RDC") in 1966, which owned it primarily as a gold-in-the-ground investment and leased the mine out from time-to-time. Work accomplished during this period included extensive construction of surface facilities, rehabilitation and upgrading of underground workings and mine exploration of the lode veins and auriferous gold deposits.

RDC formed Ruby Gold, Inc. ("RGI"), in 2007 and subsequently moved the Plan of Operations and other operating permits into this new corporate entity. In 2011, North Bay Resources, Inc., described below, purchased both the Ruby Mine and RGI. In the process, RGI, as a wholly-owned subsidiary of North Bay, became the owner of the Ruby Mine.

4.3 Alhambra Mines Inc.

From 1978 to 1986 Rio Rico Mines followed by Alhambra Mines Inc. leased the Ruby Mine property. Alhambra's major accomplishments included the construction of buildings at the Ruby Portal Area, building a modern placer washing plant, and rehabilitating the Ruby Tunnel and Best Raise so as to access the Black Channel in the Big Bend area. Alhambra also drove the Chinaman Chute incline raise and took a modern, rubber-tired LHD into the channel workings. Alhambra did little actual mining, however, and confined its activities to previously-mined areas of the mine.

During this period Henkle and Associates (1983) conducted the first comprehensive geological study of the buried river channels within the mine, which included geological mapping, sampling, interpretation of the ancient river systems, and writing a report for Alhambra Mines. This important study produced base maps of the underground mine workings that are still in use plus an understanding of the auriferous fluvial deposits. They also mapped and sampled the quartz veins in the mine and summarized the results in the same report.

This report identified eight headings within the Black Channel and Lawry Channel mine workings plus two headings in the Bald Mountain Channel workings that would lead into unmined placer gravels, and recommended that future placer gold production target those headings. In addition, four lode veins were targeted for exploration. Of the four, the Chinaman Chute and Big Bend vein complexes were felt to have the best potential for ore shoots. It was concluded that the most reasonable approach for development of the Ruby Mine would be to mine both the placer and lode deposits.

4.4 Brush Creek Mining and Development Company, Inc.

Brush Creek Mining and Development Company Inc. (BCMD) explored and operated the Ruby Mine property under a lease from 1990 until 1998. Much of the current understanding of the bedrock geology and the ancestral river channels of the Alleghany District and the Ruby Mine can be credited to BCMD.

In 1990 BCMD contracted Keewatin Engineering Inc. of Vancouver, B.C. Canada, to conduct a comprehensive two-year geologic study of BCMD-controlled properties in the Alleghany Mining District, which included the Ruby Mine property. This massive effort began with district-wide geological mapping, utilizing modern plate tectonic theory applied to structurally controlled rock formations and gold mineralization of the Mother Lode. It also included detailed geologic mapping, geochemical surveying, and interpretations of vein systems plus mapping of the auriferous river channels on BCMD properties in the Alleghany District.

At the Ruby Mine property Keewatin mapped the geology in detail, produced maps of the vein systems and the ancient river channels that cross the property. The Keewatin study also defined placer and lode exploration targets, and included a proposal for underground development of the placer deposits.

The results were described in a Phase I report (1991) and a Phase II report (1992). Keewatin's maps were used as the base for many of the resource projections, conclusions and recommendations of Henkle and Associates (2013) resource report.

During this same time period, BCMD conducted work on site at the Ruby Mine. BCMD restored and extended underground workings in the lode veins and placer channels, upgraded the placer washing plant, and constructed a new hard rock mill for lode ore processing. BCMD continued with sampling and small scale mining of the placer gold deposits and lode veins. Other work included surveying the underground workings, developing maps of the underground workings, and maintaining daily milling records during mining. BCMD also prepared several sample maps of the Black Channel and Lawry Shaft areas.

4.5 North Bay Resources Inc.

The most current exploration and development of the Ruby Mine property was conducted by North Bay Resources Inc. from 2010-2014. Preliminary assessments began in 2010 for North Bay by Geologist Gary Clifton, which was before North Bay purchased the property (see Figure 2). After acquiring the property in 2011, North Bay conducted exploration and development work, significant underground mine rehabilitation, and small-scale mining of placer gold deposits. All work was concentrated within the previously-mined Ruby Mine workings on the ancient river channels that were accessible from the Ruby Tunnel.

Exploration tasks included a 2000-foot underground drilling and sampling program to explore for more channels—the Cincinnati Channel being the primary target—above the Ruby Tunnel, a gravity geophysical survey, geological interpretations, and mine planning in preparation for placer gold production. As part of their work, North Bay contracted Henkle and Associates (2013) to assess the lode and placer gold resources and write a report in compliance with Canadian Institute of Mining (CIM) standards per NI 43-101. North Bay also began using 3-D mine modeling computer software to visualize and understand the relationships between the various channels.

North Bay's mine construction work included rehabilitation of the Ruby Adit and Ruby Tunnel, upgrading electrical facilities and the placer gold processing plant, installation of underground utilities, and partial construction of the Big Bend By-Pass Raise for use as an escape way and air pass (DeGrio, 2017). The mine permits were brought up to date and the surface and underground facilities brought into compliance with current safety standards. Also, the Black Channel workings downstream of Big Bend were made accessible.

In October 2014 North Bay stopped work due to lack of funding. On December 31, 2016 Sierra Gold LLC of Grass Valley, California, became the owner of Ruby Gold, Inc., and the Ruby Mine.

Figure 2:

Taking samples of the compacted ancient river conglomerates in the Lawry Shaft area of the Ruby Mine. Average gold grade from this sampling program was 0.30 opt. Note the various sizes of rock clasts. The contact with foliated bedrock is at chest height. Also note the minimal ground support needed to keep the drift open. Photo by Ruby Gold Inc.

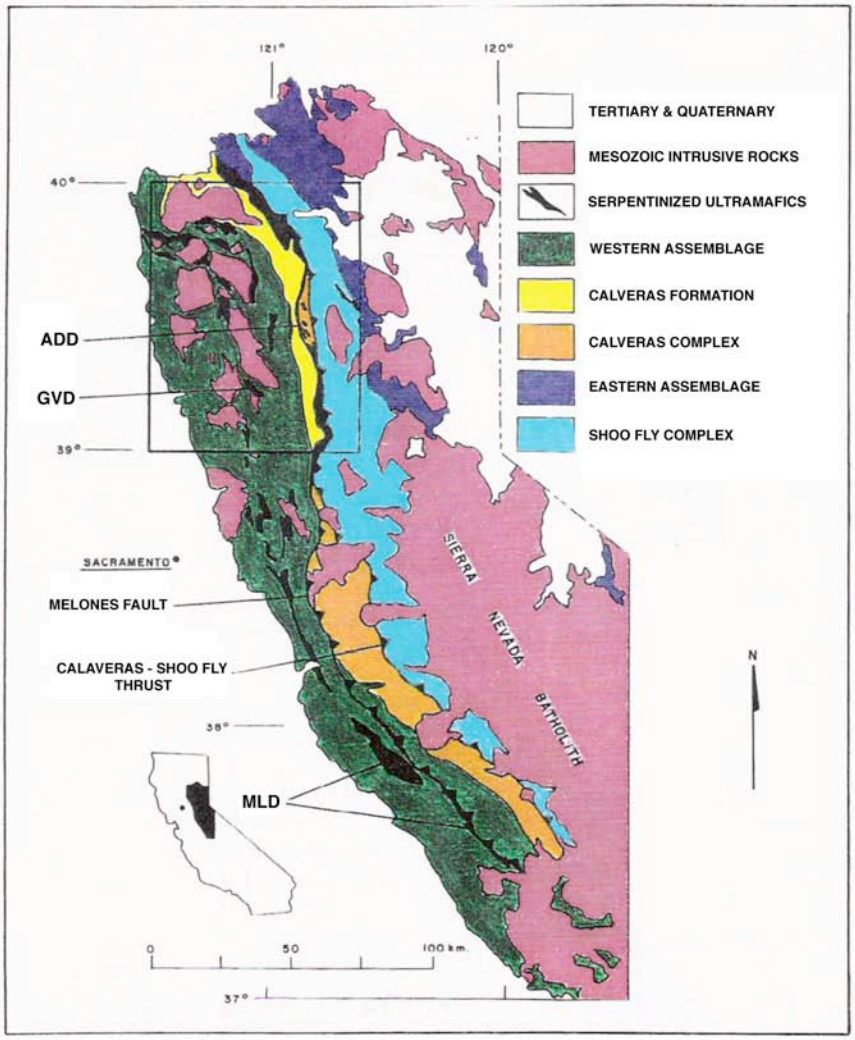

FIGURE 3 : SIERRA FOOTHILLS METAMORPHIC BELT

ADD : Alleghany - Downieville District
GVD : Grass Valley District
MLD : Mother Lode District

Figure 3

Figure 3:

Regional geology map of the northern segment of the Mother Lode, with the Alleghany-Downieville Mining Districts (ADD) noted (after Keewatin Engineering, 1992)

5.0 GEOLOGIC SETTING

5.1 Regional Geology

The geology of the Alleghany and Downieville mining districts was first mapped in detail by Ferguson and Gannett (1932) for the U. S. Geological Survey. It was mapped again in 1991-1992 by Keewatin Engineering of Canada (see Figure 3). Keewatin's geologists applied modern interpretations of lithologic units, tectonic and structural settings, resulting in an excellent and very comprehensive modern geological survey of the property holdings of Brush Creek Mining and Development Company (which included Ruby Mine) situated within the Alleghany and Downieville mining districts. Keewatin's mapping can still be used as the foundation for future geological work in the region. Recent refinements to the ages of gold deposition and regional tectonic activity that includes Sierra County have been made by Marsh, et al (2008).

From 1849 to 1947 more than 12 million ounces was recovered from placer deposits in the Alleghany and Downieville districts. In addition, the districts produced over two million ounces of lode gold, with the future potential remaining largely untested because (1) production for the most part was from relatively shallow mine workings (Keewatin, 1991) and (2) large prospective areas of the districts are covered by thick lava cappings that make surface exploration difficult and costly. Both lode and placer gold deposits have been important to the economies of the Alleghany and Downieville mining districts. Attention has been given to the role of the district's bonanza-type quartz veins in enriching the exceptionally rich placer channel deposits and, conversely, in the placers providing markers for finding important lode ore shoots (Alling 1914, Ferguson 1913).

The Ruby Mine and the Alleghany Mining District are situated in the northern segment of the Sierra Nevada Foothills Metamorphic Belt, a regional north-northwest oriented zone of metamorphic rocks that averages 50 miles in width and extends for 320 miles along the western slope of the Sierra Nevada mountain range. These rocks were originally deposited as sediments during the Proterozoic, Paleozoic and early Mesozoic eras. When combined with regional faulting between 197-177 million years ago and again at 145-124 million years ago, the result was a very complex series of metamorphic rocks. Granitic intrusions and more deformation followed, resulting in the plumbing system of fractured rock that channelled mineralizing fluids and resulted in gold deposition.

The bedrock geology of the Ruby Mine property includes fractured metamorphic and igneous rocks and faults. The metamorphic rocks include argillite, slate, metachert, mafic metavolcanics and serpentinite, according to Keewatin Engineering (1991). The main fault on the property is the Melones Fault Zone. The Melones Fault Zone is a regional fault structure that extends for approximately 160 miles in length (Henkle and Associates, 2013). In the Alleghany and Downieville districts, Keewatin (1991) identified two branches

of the Melones Fault—western and eastern—and described splay faults that were associated with the regional structures. The importance of these faults and fractured metamorphic rocks is that Mother Lode quartz veins formed on these structural contacts that contained gold. The Mother Lode is a gold-rich metallogenic province over 100 miles in length that is directly associated with the Bear Mountain and Melones fault zones (Marsh et al, 2008).

A long erosional period occurred in the Paleocene and Eocene epochs early in the Cenozoic Era from 66-56 million years ago. Rivers flowed from western Nevada westward into an ocean basin where the Sacramento Valley is now located (Yeend, 1972). Rapid down-cutting caused erosion of vein gold from bedrock into the river channels.

Deposition of the first (primary) auriferous river sediments during the Early Eocene (about 50 million years ago) are known to be pre-volcanic and are part of the ancestral Yuba River. Ferguson and Gannett (1932) noted that these ancient rivers were southward-flowing streams. At the end of the Eocene (34 million years ago), eruptions of volcanic ash and lahars blocked the river channels and forced the rivers to develop new courses. Younger channels cut through or buried older ones, which in some cases caused placer gold to be eroded from the older channels and re-deposited in the younger ones. These younger river channels were termed intervolcanic and were determined to be Miocene age (Ferguson and Gannett, 1932). These channels were locally gold-bearing, but were generally not as rich as the primary rivers (Henkle and Associates (2013).

The Tertiary river sediments were overlain by a thick and very wide-ranging sequence of Miocene and Pliocene volcanic mudflows (lahars). In some places these volcanic sediments were over 200 feet thick. A few deposits of Pleistocene age olivine basalt flows also exist in the region. Tectonic uplift occurred in Late Pliocene and established the modern drainage system.

5.2 Property Geology and Gold Deposits

Detailed studies of the Ruby Mine property geology and lode and placer gold mineralization were conducted by Henkle and Associates (1983), Keewatin Engineering (1991 and 1992) and North Bay Resources (see Clifton's internal reports 2010-2014).

5.2.1 Lode Gold Deposits

Gold-bearing quartz veins on the Ruby Mine property are within the famous Mother Lode Gold Belt, a major regional gold-rich province (Keewatin Engineering, 1991). The lode gold deposits within this province are complex structurally-controlled gold-quartz vein systems hosted within metamorphic rocks, and located in second and third order faults of the Melones and Bear Mountain fault zones (Marsh et al, 2008). Mesozoic aged batholiths

and plutons of dominantly granodioritic composition subsequently intruded the basement rocks and brought in mineralizing fluids that contained gold.

Two unique features of Mother Lode veins are the occurrences of high grade ore shoots, which are pipe-shaped zones of high grade gold deposited within the white quartz veins, and veins that extend to depths of more than a thousand feet. Ages of mineralization in the Alleghany District ranged from 104 to 127 million years ago (Marsh et al, 2008), placing it in the Early to Middle Cretaceous Period.

5.2.2 Placer Gold Deposits

The Tertiary placer gold deposits at the Ruby Mine property are very high grade buried channels. The mine has been particularly noted for the occurrence of large gold nuggets. The sediments have become tightly compacted and contain various sizes of rock fragments as large as boulders. Gold can be contained in the small gravel and sand fractions. The deposits have been mapped and mined, and the locations are known on the property.

The oldest ancestral river channels in the region are the early Eocene (45-56 million years ago) placer deposits of the Ancestral Yuba River (Keewatin Engineering, 1991). These primary channels contained the most gold. Second order intervolcanic streams developed above and eroded through the primary channels. They also contained gold, and some was high grade. In all, four ancient rivers crossed the Ruby Mine property. The younger rivers incised older channels in several locations on the property, picked up gold from the older channels, transported and deposited it in the second order channel sediments. The cycle repeated with more volcanic activity occurring in the region, followed by more rivers being formed, which formed a third set of channels on the Ruby Mine property. A fourth set of channels later developed following another period of geologic activity (Keewatin Engineering, 1992). One of these channels is located on the property.

Erosion of the younger Tertiary volcanic sediments occurred during the Tertiary and Quaternary periods, and some of those rock units were eroded away, exposing the Eocene river gravels.

6.0 EXPLORATION

The two types of gold mineralization that exist for exploration are placer gold deposits and gold-bearing quartz veins. At the Ruby Mine property the buried placer deposits have been the most important gold producers, but both the placer and lode gold deposits have exploration potential. Because ore shoots in the area are known to extend to great depths,

it has been observed that the lode gold deposits offer the most important long term potential for the mine.

6.1 Tertiary Gold Bearing Placer Deposits

The placer deposits at the Ruby Mine are considered high priority exploration targets. There are eight known Tertiary Channels which are known to be in the Ruby Mine or elsewhere on the property (Henkle and Associates, 2013). Historic records indicate that from 340,500 to 390,500 ounces of gold were produced from the Tertiary channels on and near the Ruby property.

6.1.1 Bald Mountain (Old Ruby) Channel

The Bald Mountain Channel, also known as the Old Ruby Channel where it occurs in the Ruby Mine, is the oldest auriferous fluvial deposit at the Ruby Mine and produced the most gold on the property (more than 150,000 ounces). It was a main tributary to the Ancestral Yuba River, and the channel traversed the Ruby property over a distance of 4,800 feet (Frederking, 2017). The average gold tenor of the Bald Mountain Gravels was 0.133 oz/ton, but it is mostly mined out on the Ruby Mine property. Limited sampling had the same tenor, according to Keewatin Engineering (1991).

6.1.2 Bald Mountain Extension (Hawkeye) Channel

The Bald Mountain Extension Channel is a tributary to the Bald Mountain Channel that was discovered and mined to the north and northeast from Forest City for 1.3 miles. The last half mile was mined in what is now part of the Ruby Mine until the channel was cut off by the volcanic mudflows covering what would later become known as the “Big Bend” area of the younger and deeper Black Channel. The Big Bend is the location where most of the large nuggets in the C.L. Best gold collection were found. The tenor of the gravels was about 0.133 oz/ton (Henkle and Associates, 1983). The Bald Mountain Extension Channel could have up to 2,400 feet of unmined gravel in place on the property (Keewatin Engineering, 1992). The continuation of the channel upstream of the Big Bend Area of the Black Channel is considered an important placer exploration target.

6.1.3 Black Channel

The Black Channel, an intervolcanic channel, produced an estimated 58,000 ounces of gold between 1935 and 1942 (Keewatin Engineering, 1992). Nearly 1,000 ounces of this production was from gold nuggets three ounces and larger in size. Keewatin Engineering (1992) took 33 samples weighing 20 to 60 pounds each and estimated the average gold grade to be 0.2 opt. They also estimated a length of 3,400 feet of un-mined channel is left at the Ruby Mine.

6.1.4 Mt. Vernon Channel

The Black Channel split into two tributaries 2,000 feet northeast of the "Big Bend" near the Lawry Shaft (Keewatin Engineering, 1992). The easternmost fork is named the Mt. Vernon Channel and it has about 3,000 feet of virgin (unmined) channel present on the Ruby Mine property. Rib sampling by Clifton (2010) in an untested area of this channel averaged 0.30 opt.

6.1.5 Pilot Channel

The western-most fork of the Black Channel is named the Pilot Channel. There is about 3,250 feet of virgin channel present on the property (Keewatin Engineering, 1992). The Pilot and Mt. Vernon Channels are readily accessible from the existing Lawry Shaft facilities, making them high priority development targets.

6.1.6 Deep Rock Creek Channel

The Deep Rock Creek Channel is a third order (younger) intervolcanic channel (Pease, 2017). The unmined portion of this channel is 2,000 feet in length and located west of the Old Ruby Channel workings (Alling, 1914). It is considered a high priority exploration target.

6.1.7 Cincinnati Channel

The Cincinnati Channel is intervolcanic and was projected to cross the Ruby Tunnel in the volcanic lahars about 85 feet above the Ruby Tunnel. This projection was based on geophysics and drilling of a reverse circulation hole. Approximately 1,500 feet of partially mined and 4,500 feet of unmined channel may remain on the property (Pease, 2017).

6.1.8 Wisconsin Channel System

The Wisconsin Channel System is interpreted to be a fourth order intervolcanic channel (Keewatin Engineering, 1992), and younger than the Deep Rock Creek Channel. It outcrops northwest of the Ruby Mine portal. It would be considered a lower priority exploration target.

6.2 Mother Lode Quartz Veins

Six known vein systems exist in the workings of the Ruby Mine that are considered priority exploration targets. Of these, the Wolf Vein has had the most exploration and development. All veins have favorable geological characteristics suggesting that ore

shoots might be found nearby. Underground core drilling would be the proposed method to explore these veins.

6.2.1 Wolf Vein

The Wolf Vein is the only vein in the Ruby Mine with historical production. Approximately 1,625 ounces of gold was produced from 4,630 tons of ore for an average grade of 0.35 oz/ton, with about half being high-grade specimen gold (Pease, 2017).

6.2.2 3750 Vein

The 3750 Vein outcrops 3750 feet in from the portal of the Ruby Tunnel. Channel sampling of the vein and adjacent altered wall rock vein gave anomalous results of 0.012 oz/ton over a 1.0 ft. thickness (Keewatin Engineering, 1992).

6.2.3 Frederking (4900) Vein

The Frederking (4900) Vein is located along the Eastern Melones Fault and is an extension of the same mineralized system that produced the Cincinnati, Carson, Triple Pocket and Gold Bluff gold deposits (Keewatin Engineering, 1992, and Henkle and Associates, 1983). The vein is in contact with serpentinite on the main splay of the Eastern Melones Fault. The Carson and Cincinnati mines, and the Ireland Mine located about 1,000 feet farther east, were significant lode gold producers that have in recent years been added to the Ruby Mine land position.

6.2.4 Chinaman Chute Vein System

The Chinaman Chute Vein system and alteration zone is exposed in the workings of the Chinaman Chute ore chute. The vein system occupies a zone 120 feet wide of intense alteration associated with a clay-carbonate altered volcanic dike. Quartz veins, brecciated quartz and gouge are found in the hanging and foot walls of the dike. Anomalous gold values ranged from 0.012 opt to 0.033 opt, and 0.63 opt over a width of 3.2 feet on a separate vein where it intersects the Ruby Tunnel (Keewatin Engineering, 1992).

6.2.5 Frederking-Chinaman Chute Vein Intersection

The intersection of these two vein systems was felt to be a very prospective ore shoot target that could be tested by diamond drilling (Pease, 2017).

6.2.6 4900 Deformation Zone

Phillips Geologic Service (1999) examined the 4900 Deformation Zone within the Ruby Mine workings and felt that there was evidence for multiple stages of deformation and veining. They indicated that high-grade gold had been found in those structures.

6.3 Potential Sizes of Exploration Targets

Previous workers have estimated the potential size ranges of lode and placer gold exploration targets within Ruby Mine. Although not compliant with Canadian Institute of Mining (CIM) NI 43-101 standards, these estimates were the first attempts by modern (post-1970) companies to block out the most mineralized areas in the mine. The results provide useful guides for future exploration and suggest the potential size of the deposits.

The sizes of placer gold exploration targets were based on estimated ounces of gold in the sediments plus lengths of unmined river channels. The totals ranged from 200,000 ounces (Keewatin Engineering, 1992) to 148,000 ounces (Henkle and Associates, 2013). Estimates based on lengths of unmined river channels varied from 3.98 miles (Clifton, 2012) to 3.03 miles (Henkle and Associates, 2013). Assuming channel widths of 200 feet, heights of mineralized zones at three feet, and gold grades of 0.1 to 0.2 opt, the results range from 50,000 to 100,000 ounces of gold.

For lode targets the sizes were based on the amount of gold and the range was 10,000 ounces (Keewatin Engineering, 1991) to 17,875 ounces (Henkle and Associates, 1983).

6.4 Drilling

North Bay Resources conducted drilling to explore for locations of new or projected paleochannels within the Ruby Mine. Clifton (July, 2014) stated that they were successful in finding a possible channel. The results indicated that three holes penetrated fluvial sediments and that a new unmapped river terrace may have been discovered. The holes had trace amounts of placer gold.

Figure 4:

Aerial view of the Ruby Mine facilities

7.0 MINING PLAN

In 2016 DECONCO submitted a mining plan proposal to Ruby Gold, Inc, that has recently been updated (T. M. DeGrio 2017). The plan prioritizes mine construction that is needed before production of placer gold can begin. The list of tasks includes completion of the Big Bend By-Pass Raise and second exit, rehabilitation of the Lawry Shaft facilities and other surface equipment, the shaft, and underground equipment.

Following the rehabilitation and safety compliance projects gold production would come from the northern part of the Ruby Mine, specifically the Mt. Vernon and Pilot channels.

Other known exploration targets and resources would also be developed. The plan would involve drifting in the middle of the channel plus excavating crosscut drifts outward.

The startup capital required for the project is to be $1.4 million, and the planned production rate would be approximately 10,000 ounces of gold per year. The estimated net profit is $5 million per year beginning in year 4 and continuing through year 10. After ten years an estimated total of 367,200 tons would be mined and 71,730 ounces of gold would be produced. Total production costs are estimated to be $56.8 million, and net profit is estimated to be $42.4 million.

This plan takes into account the existing mine infrastructure, the size of the Ruby Mine workings and the challenges of working through winter. It would include sampling and testing for ore grade control and an ongoing program of exploration and development.

Figure 5:

Inside of the Ruby Mine mill building

Figure 6:

Inside of the Ruby Mine shop

8.0 CONCLUSIONS

The Ruby Mine is a property of merit for exploration and development of lode and placer gold resources. It could be developed to meet the standards of a private company or a public company complying with National Instrument 43-101. The existing lode and placer gold resources, along with exploration targets, suggest there is potential for future mining and there can be reasonable confidence that mining will be successful. Both the lode and placer deposits appear to have relatively high gold grades, which is an important component for success.

Long term placer gold production would come from virgin channels not previously mined or partially mined. To maintain production, ongoing exploration will be needed to build resources. Also, a strict program of ore grade control will be needed when mining placer deposits.

Lode gold exploration of the exposed veins in the mine should be continued. Exploration for ore shoots should use the geological and geochemical methods and observations described in reports by Keewatin Engineering and others.

Much time and effort has been spent on geologic correlations of the various ancient river channels in the mine. Enough time and effort has been spent on these interpretations and it appears to be of no value to attempt any more such correlations. Success will depend on systematically developing the placer deposits, blocking out potential ore, and applying a strict program of sampling and grade control.

9.0 RECOMMENDATIONS

The Ruby Mine is an historic underground gold mine that is unique because it contains both placer and lode gold deposits. Most historic production, modern exploration and development have prioritized the auriferous (gold-bearing) ancient river channels. The Ruby Mine represents an excellent exploration and development opportunity for both lode and placer gold.

The Ruby Mine would be a suitable small mining project for a private company for several reasons. First, there will be a need for flexibility in the time and expense of meeting goals and attaining production, which can be more easily controlled by a private company. Second, the gold resources would not have to meet specific standards or be delineated years ahead of mining.

The Ruby Mine would also be a suitable project for a Canadian junior public company as an advanced exploration project. It would be considered an exploration project because the NI 43-101-compliant resources are minimal.

Underground mining of the placer gold deposits should be based on the Ruby Mining Plan developed by DECONCO (T.M. DeGrio 2017). This plan realistically limits production to the size of the existing workings and considers winter weather.

Prior companies have spent a lot of time and funds on re-timbering and rehabilitating underground workings. In areas of heavy ground where continuous access is needed, it may be best for long-term stability to supplement the timber ground support with something stronger such as steel sets and concrete.

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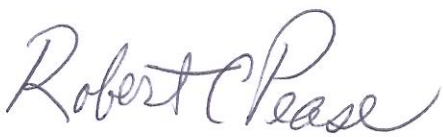
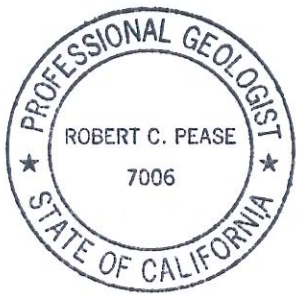
11.0 SIGNATURE

Respectfully Submitted,





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