NI 43-101 Technical Exploration Report

Billali Mine, New Mexico

Report Date: December 9, 2011
Effective Date: December 9, 2011

Report Prepared for Billali Mine, LLC

P. O. Box 207
Duncan, AZ 85534

Report Prepared by

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Signed by Qualified Persons:

Jan C. Rasmussen, Ph.D., R.G., RM SME

Summary (Item 1)

Property Description and Ownership

The Billali mine is a lode mining claim patented in 1899 and now owned by the Billali Mine LLC. The Billali mine is an advanced stage, epithermal, silver-gold quartz vein prospect with minor past production. The mine is located in the northwest end of the Steeple Rock mining district of western New Mexico and adjacent Arizona.

The Billali mine project is located in westernmost New Mexico, in the Summit Mountains, Grant County. It is approximately 35 mi (55 km) east of Safford, Arizona, and is approximately 15 mi (25 km) northeast of Duncan, Arizona. The location of the Billali mine adit is approximately latitude 32º53‘04.91” N and longitude 108º59‘01.59” W, elevation 5,343 ft. The claim has a cadastral location of SE ¼ and SW ¼, Section 26, Township 16 South (T16S), Range 21 West (R21W), New Mexico Meridians.

Ownership

The Billali mine is a patented lode mining claim owned by the Billali Mine LLC. The three managers and owners are Mr. Leslie H. Billingsley, Mr. Richard O. Billingsley, and Mr. Joy J. Merz, P.O. Box 207, Duncan, AZ 85534.

Geology and Mineralization

The geology of the Steeple Rock mining district is well known as Tertiary-age epithermal silver-gold mineralization associated with northwest-trending quartz veins and silicification along faults. The silver-gold mineralization is related to a Tertiary-age volcanic-intrusive complex.

Three quartz veins carrying silver and gold mineralization run the length of the Billali patented lode mining claim. The same quartz vein that is currently being mined for silver and gold at the adjacent Summit mine continues into the Billali patented claim. These mineralized quartz structures are the target of the Billali mine plan.

Exploration Status

An area-wide exploration program was conducted between 1990 and 1992 by Nova Gold and Biron Bay, which were Canadian junior mining companies. Six of the 28 drill holes from 1991 (B-91-1, B-91-5, B-91-15, B-91-16, B-91-20, and B-91-22) intersected between 3 to 15 feet intervals of silver and gold mineralization in quartz veins on the Billali claim, grading between 1.17 and 23.86 oz/ton silver and between 0.10 to 0.52 oz/ton gold. These quartz veins vary between 10 to 50 feet wide, strike N45ºW and dip northeast at 75º to 80º. Similar silver-gold mineralization at the adjacent Summit mine extends for lengths of 100 to over 230 feet along the quartz veins.

Development and Operations

The mining permit approved by the Mining and Minerals Division (MMD) of the New Mexico Energy, Minerals and Natural Resources Department (Permit No. GR058MN) calls for a maximum surface disturbance of 2 acres. As the Billali mine will be an underground mine, with all ore removed to an offsite milling facility, this maximum disturbance is achievable.

The mine plan includes driving a decline at a minus 20% grade from the surface near the Hoover Tunnel at the north end of the Billali claim to a point between the two highest grade intercepts on the 5,100 ft level, as intersected in Biron Bay‟s drill holes B-90-21 and B-91-20. Then drifts will be driven along the strike of the quartz veins and vertical raises will be driven to explore the extent of the silver-gold mineralization. All of the required mine equipment is currently present at the Billali mine, with some additional equipment stored in Duncan, Arizona. The operation is currently removing waste rock in the 10 ft by 10 ft decline to a depth of approximately 120 ft. This non-ore waste rock removed from the decline will be used to build a road to the escape shaft, as approved by the MMD.

The expected production rate at the Billali mine, once the mineralized zones are reached, is for 100 tons of ore per day. This ore will be trucked to and milled and sized at a facility in Duncan or Lordsburg or sold directly as smelter flux to the smelters at Hayden (ASARCO) or Miami (Freeport McMoRan Copper & Gold, Inc.), Arizona. Smelters generally pay 80 to 92% of the value of the contained precious metals.

Mineral Resource and Reserve Estimate

There is no current NI-43-101 compliant mineral resource or reserve estimate for the Billali mine. The historical mineral resource and reserve estimate reported in Section 6.0 (History) should not be relied upon as it has not been verified or classified according to CIM or SME resource/reserve categories by a Qualified Person. However, a resource calculation by MPH, a respected Canadian consulting firm, reported that, based on the historical drilling on the Billali claim by Biron Bay from 1990-1992, the Billali mine could produce over 219,000 tons of ore averaging 12.8 ounces of silver per ton and 0.244 ounces of gold per ton.

Conclusions and Recommendations

The author concludes that the advanced-stage exploration and development concept of Billali Mine LLC is appropriate for the Billali mine. The concept for parallel quartz veins containing silver and gold values has been demonstrated by the Biron Bay drilling in 1990-1992 on the Billali claim. The available geological, structural, geophysical, and drill assay data, and the similarity of the Billali to the adjacent Summit mine are evidence for the potential for gold-silver-quartz structures on the Billali patented claim.

The compilation of available data has been conducted in accordance with acceptable industry procedures. The presence of epithermal silver-gold deposits has been documented at the Billali mine and nearby Summit mine. The results of the assays at several of the drill holes drilled by Biron Bay confirmed the presence of the silver- and gold-bearing quartz veins on the Billali claim and indicated the potential for additional silver-gold mineralization at depth.

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Appendices

1 Introduction (Item 2)

This section describes for whom the technical report was prepared and the purpose of the report (Section 1.1), the qualifications and responsibilities of the author, Dr. Rasmussen (Section 1.2), the personal inspection of the property and data files (Section 1.2.1), and the sources of information and data contained in the report (Section 1.3.1).

1.1 Terms of Reference and Purpose of the Report

Billali Mine, LLC (Billali), of Duncan, Arizona, has engaged Dr. Jan Rasmussen to prepare this technical report in anticipation of raising funds for the exploration program and future work. Billali requested that an independent qualified person prepare a technical report that is in the format of and complies with the standards of a Canadian National Instrument (NI) 43-101 Technical Report.

Dr. Rasmussen prepared this Technical Report in accordance with industry accepted CIM "Best Practices and Reporting Guidelines," the revised regulations in NI 43-101 (Standards of Disclosure For Mineral Projects) and Companion Policy 43-101CP of the Canadian Securities Administrators, and CIM Definition Standards for Mineral Resources and Mineral Reserves (CIM, April 2011). The report is also designed to follow guidance established by the United States Securities and Exchange Commission (SEC), which regulates the reporting of exploration results, resources and reserves by organizations, individuals or companies ("entities") subject to the filing and reporting requirements of the SEC. "Decisions as to when and what information should be publicly reported are the sole responsibility of the entity owning the information, and are subject to SEC rules and regulations (SME, 2007)." Guidance on reporting exploration results, resources, and reserves per requirements of the SEC are summarized in the 2007 SME Guide (SME, 2007).

This Technical Report provides a: (1) review of the historical data and the previous exploration and mining activities conducted in the Billali mine area, (2) discussion of the geology of the potential ore deposit and the deposit model, and (3) presentation of the recommendations by Dr. Rasmussen to explore for mineral resources that are compliant with Canadian NI 43-101 and SEC guidelines.

1.2 Qualifications of Consultants

The examination of the Billali data files and writing the report on the Billali property was performed by Dr. Jan Rasmussen. The author is a Qualified Persons that is independent of Billali, per requirements of Section 1.4 of NI 43-101.

Jan C. Rasmussen, R.G., Ph.D., RM SME

Jan Rasmussen is a consulting geologist, with 37 years of experience in mineral and energy resource exploration, environmental management, and project recommendations and reports, including more than 5 years of experience with the geology of precious and base metals, industrial minerals, energy resources, and uranium exploration. She has a Ph.D. in Economic Geology, is a Registered Geologist in Arizona and an SME Registered Professional Member. She is a Qualified Person for this Technical Report, and is responsible for writing the report.

1.2.1 Details of Inspection

Jan Rasmussen, the Qualified Person signatory to this Technical Report, and Mr. Joy Merz visited the property on October 31, 2011. A tour was made of the Billali area, located in the Steeple Rock mining district, and nearby mines in New Mexico. Historically, silver and gold mineralization cropped out at the surface at numerous localities in the Steeple Rock district, and historic shafts, adits, and open pits are abundant in the district. The nearby underground Summit mine and the underground working at Billali were examined, as were surface developments at the client"s Billali project area. The site visit permitted examination of accessible and representative outcrops, equipment, adits, and mine dumps with exposures of mineralized rock, as well as project samples.

1.3 Reliance on Other Experts (Item 3)

The author, as a Qualified Person, has examined exploration data from the Billali mine files, theses and dissertations on the Steeple Rock mining district, and publications by State and Federal geological surveys. The author has relied on that basic data to support the statements and opinions presented in this Technical Report.

In the opinion of the author, the available data are present in sufficient detail to prepare this exploration technical report and are generally correlative, credible, and verifiable. The project data are a reasonable representation of the Billali project. Any statements in this report related to deficiency of information are directed at information that, in the opinion of the authors, has been lost during transfer of property files, or is information that is recommended to be acquired.

The author has relied upon the land status information from the owners, Leslie H. Billingsley, Richard O. Billingsley, and Joy J. Merz, of Duncan, Arizona, for the land tenure and land title in New Mexico. The author has relied on the owners for information about the ownership and current land status (Section 4) of the Billali mine project.

1.3.1 Sources of Information and Extent of Reliance

This report is based on the following information:

- Personal inspection of Billali mine data on the project and surrounding areas;
- Updated land ownership and other information provided by the owners of Billali mine;
- Digital databases, images, maps, and unpublished reports provided by Billali; and
- Additional publicly available information obtained from public domain sources.

The author is not an insider, associate, or affiliate of Billali. The results of this Technical Report are not dependent upon any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings between Billali and the author. The author will be paid a fee for her work in accordance with normal professional consulting practice.

The author‟s statements and conclusions in this report are based on the information available at the time of the report. It is to be expected that new data and test results may change some interpretations, conclusions, and recommendations going forward.

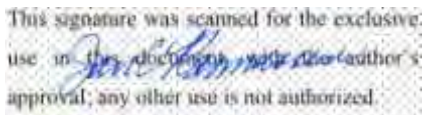
Numerous sources of information were used in the preparation of this Technical Report. These include numerous historical documents in digital, scanned, or hard-copy from the owners, the New Mexico Department of Mines and Mineral Resources, the New Mexico Geological Society, the U.S. Geological Survey (USGS), dissertations by various authors on the Steeple Rock mining district, or downloaded from the Internet. Other sources of information were from the authors‟ personal libraries, the Science Library at the University of Arizona, and files at the Arizona Department of Mines and Mineral Resources (now the Arizona Geological Survey) in Phoenix. The documents are enumerated in Section 25 (References) and in the various chapters where they are cited.

1.4 Effective Date

The date of this report is December 9, 2011. The effective date is December 9, 2011.

The undersigned prepared the report entitled "NI 43-101 Technical Exploration Report, Billali Mine, New Mexico”. The format and content of the report is intended to conform to Form 43-101F1 of the National Instrument of the Canadian Securities Administrators.

Signed and sealed



QP1 Jan C. Rasmussen, Ph.D., RM SME

1.5 Units of Measure

The following list of conversions is provided for the convenience of readers more familiar with the metric system. All dollar amounts used in this report are US$.

LINEAR MEASURE

1 foot (ft) = 0.3048 meters

1 mile (mi) = 5,280 ft = 1.6093 kilometers

AREA MEASURE

1 acre = 0.4047 hectares

1 square mile = 640 acres = 259 hectares

WEIGHT

1 short ton (T) = 2000 pounds (lb) = 0.9072 metric tons (tonnes (t))

1 pound (lb) = 16 ounces (oz) = 0.4536 kilograms (kg) = 14.583 troy ounces

ANALYTICAL VALUES

gram/tonne = 1.0 ppm = 0.02917 oz

Troy/short ton = 0.03215 oz Troy/tonne

oz Troy/tonne (oz/t) = 31.1035 grams/tonne (g/t)

oz Troy/short ton (oz/T) = 34.2857 grams/tonne (g/t)

1.6 Acronyms and Technical Terms

Acronyms and technical terms are provided in Section 25.

2 Property Description and Location (Item 4)

This section describes the Billali mine property and the location in New Mexico, U.S.A.

2.1 Property Description and Location

The Billali mine is a patented mining claim on an advanced stage, epithermal, silver-gold vein prospect with past production. The mine is located in the northwest end of the Steeple Rock mining district of western New Mexico and adjacent Arizona (Figure 2-1).

The Billali mine project is located in westernmost New Mexico, in the Summit Mountains, Grant County. It is approximately 30 miles (48 km) north-northwest of Lordsburg, is 90 miles (145 km) west of Silver City New Mexico. The Billali is about 35 mi (55 km) east of Safford, Arizona, and is 15 mi (25 km) northeast of Duncan, Arizona (Figure 2-2). The location of the Billali mine adit is approximately latitude 32º53‟04.91" N and longitude 108º59‟01.59" W, elevation 5,343 ft. The claim has a cadastral location of SE ¼ and SW ¼, Section 26, Township 16 South (T16S), Range 21 West (R21W), New Mexico Meridians.

The Steeple Rock district includes parts of Townships 15, 16, 17 South, and Ranges 20 and 21 West near the Arizona line. Previously used names for the district include Black Mountain, Carlisle, Mayflower, and Twin Peak Mountain (File and Northrup, 1966). Similar mining districts were delineated by Keith and others (1983) adjacent to the Steeple Rock district as the Twin Peaks and Bitter Creek districts (Figure 2-3).

The Billali is on the Steeple Rock, U. S. Geological Survey (USGS) 15‟‟ and the Crookson Peak 7 ½‟‟ quadrangle (Figure 2-2). The Billali mine is incorrectly located and spelled on this quadrangle map, as it is between the Summit mine to the south and the Norman Banks mine to the north, as shown correctly on the map of mines in the Steeple Rock mining district (Figure 2-4).

2.2 Mineral Titles

The Billali patented lode mining claim is owned as private property by Billali Mine, LLC (the company). The company is an Arizona limited liability company, incorporated in Tucson, Arizona, and approved by the Arizona Corporation Commission on March 30, 2010. The three owners of the Billali claim are Mr. Leslie H. Billingsley, Mr. Richard O. Billingsley, and Mr. Joy J. Merz, P.O. Box 207, Duncan, AZ 85534. The owners of the Billali each contributed their one-third interest in the claim to the Billali Mine, LLC, and they are the owners/managers of the company.

The Billali lode mining claim was patented in 1899 as Surveyor General Lot No. 1021, by the Steeple Rock Development Company, as entered and paid on February 13, 1899, to the General Land Office of the United States according to the plat and field notes of Survey and Certificate No. 612 at the Las Cruces Land Office in the Territory of New Mexico. The patent was signed by President William McKinley‟s Secretary F.M. McKean and C.H. Brush, Recorder of the General Land Office. The certified copy patent was filed for record May 26, 1914, by E.B. Venable, County Clerk on pages 565-567 (Appendix B).

The Billali patented mining claim measures approximately 1,200 feet long by 400 feet wide, and covers an area of 11.597 acres. This is smaller than the 20 acres allowed by the General Mining Law of 1872, so it may have been placed between other existing claims. As the company owns the Billali patented lode mining claim, the Billali Mine LLC owns the surface and mineral rights.

According to the owners/managers, the claim is listed on the Grant County Recorder‟s office under File 1231, page 4383, 199405870 100394, and is listed as owner‟s number 0022514 and property number #3 122 095 290 412. The 2011 tax bill for the Billali Mine LLC indicates that the parcel number 3122095290412 (Billali Mineral Survey 1021) is located in portions of the SE¼ and SW¼ of Section 26, T16S, R21W, Section 26, T16S, R21W, Grant County, New Mexico.

It is outside the scope of this report to review the status of all mining claims and mineral titles. However, a copy of the 2008 land holdings around the Summit mine shows the presence of the Billali patented claim (Figure 2-5). The land status information is not required to complete the recommended next step, which is an exploration assessment and suggestions for further exploration on the Billali patented mining claim.

2.2.1 Nature and Extent of Issuer's Interest

Billali Mine, LLC owns the surface and mineral content of the Billali lode mining claim, because the process of becoming a patented claim converts mining claims to private property.

2.3 Royalties, Agreements and Encumbrances

There are no royalty agreements or encumbrances on the Billali patented lode mining claim (Merz, personal communication, October 2011). The author has not independently verified the validity of the mining claim, their ownership, or the history of the land tenure in years past.

2.4 Environmental Liabilities and Permitting

This section addresses environmental liabilities and applicable permits relevant to this exploration project.

2.4.1 Environmental Liabilities

Existing environmental liabilities are not described in the project files. The brief site visit indicated the presence of prospect pits, mine shafts, adits, and drill sites. No waste disposal issues were noted on the site. A more detailed survey may identify presence of additional open shafts, prospect pits, or adits. Access roads and open mine shafts and adits were largely left un-reclaimed in the Steeple Rock mining district, which was the standard industry practice at the time. These are not considered to be environmental liabilities.

No environmental hazards were observed, and the State of New Mexico has not made any declaration of environmental liability for any area on or adjacent to the claim. The Billali claim is not adjacent to any Wilderness Study Area, Wilderness Area, Wildlife Refuge, or any State of New Mexico or federally mandated protection area.

2.4.2 Required Permits

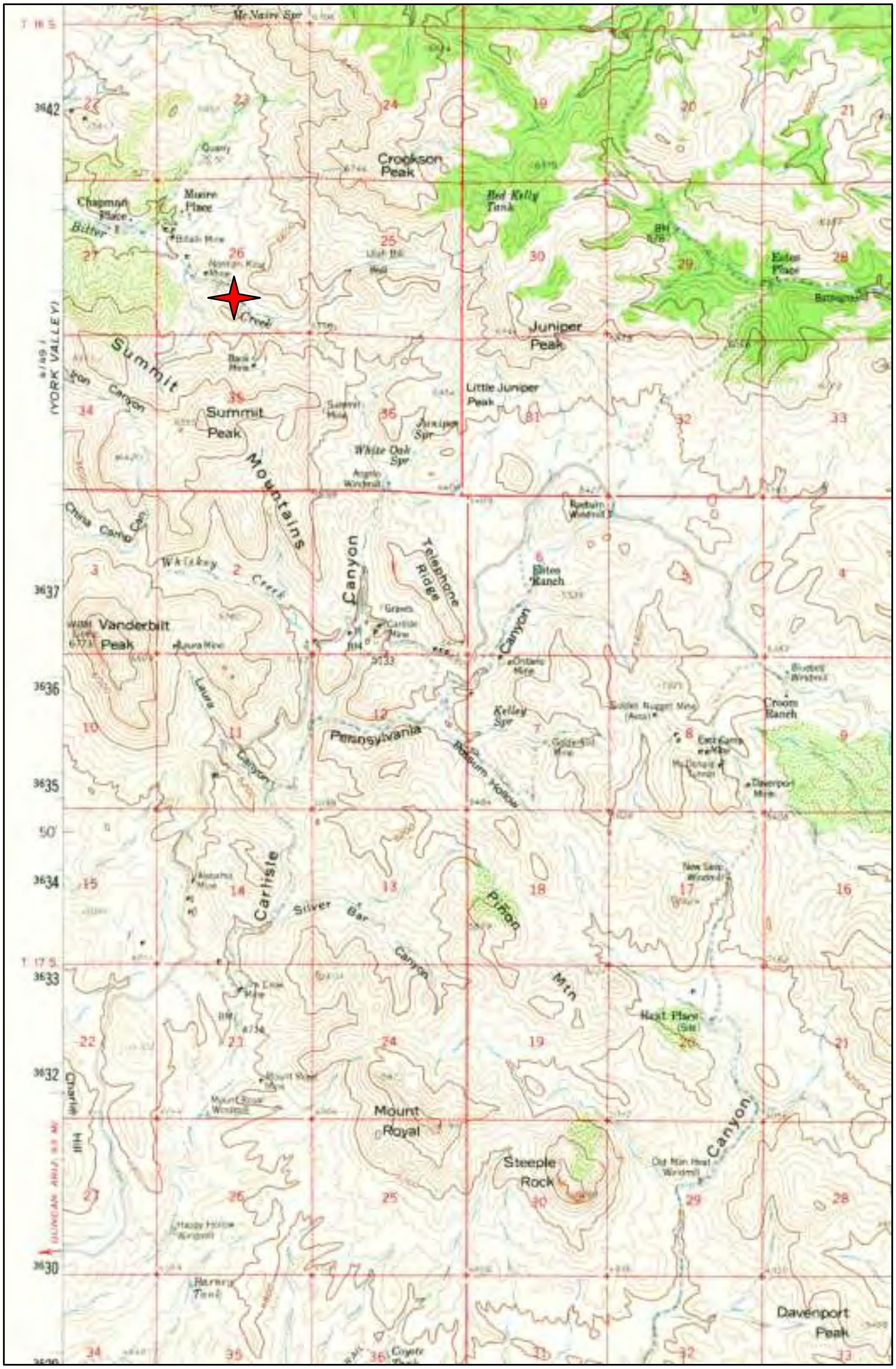
The Federal government has granted New Mexico authority to oversee water and air quality through state regulations that must meet Federal standards. The Director of the Mining and Minerals Division of the Energy, Minerals and Natural Resources Department of the State of New Mexico granted the Billali Mine operating permit number GR058MN on November 12, 2009 (Appendix C). This permit states that the permittee is authorized to conduct mining and reclamation operations on a maximum of 2 acres on the Billali mine property. The Secretary of the New Mexico Environment Department provided a written determination, dated October 26, 2009, stating that the operation is likely to have minimal environmental impact.

It is outside the scope of this report to review the status of all applicable agreements and permits. These permits are not required to complete the recommended next step, which is an exploration assessment and preparation of a related budget.

2.5 Other Significant Factors and Risks

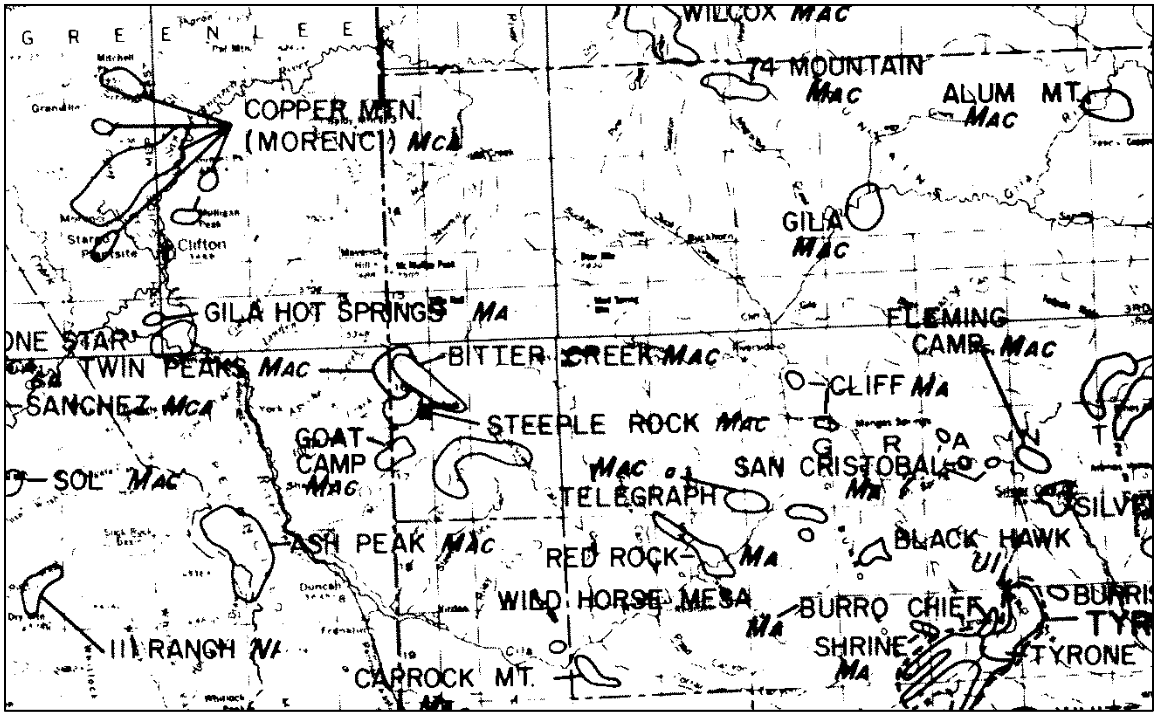
The road to Billali Mine is secured by a locked gate and the adit to the Billali decline and the Hoover tunnel are secured by locked steel doors (Figure 2-6). This security gate was observed during the recent site visit. Threatened and/or endangered plant or animal species, cultural resources or historic artifacts may be present on the site. These may require mitigation, if they are present. These factors were outside the scope of this report to review.

Figure 2-1 General location of Billali mine, New Mexico



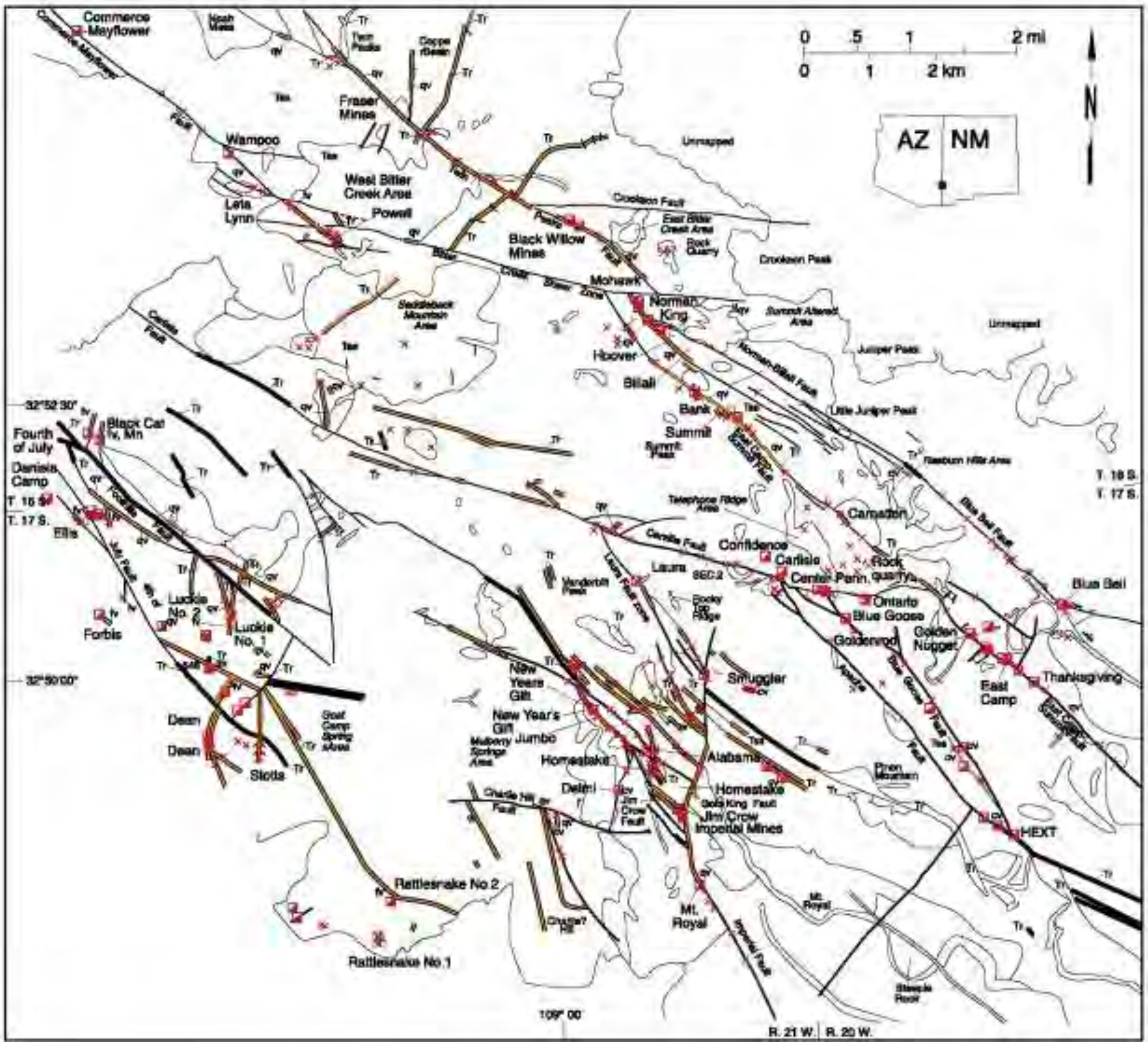
Source: U.S. Geological Survey (2011) Crookson Peak quadrangle. Note: Topographic map mislabeled the Billali mine, as it is between the Norman King and Summit mines.

Figure 2-2 Location of the Billali mine



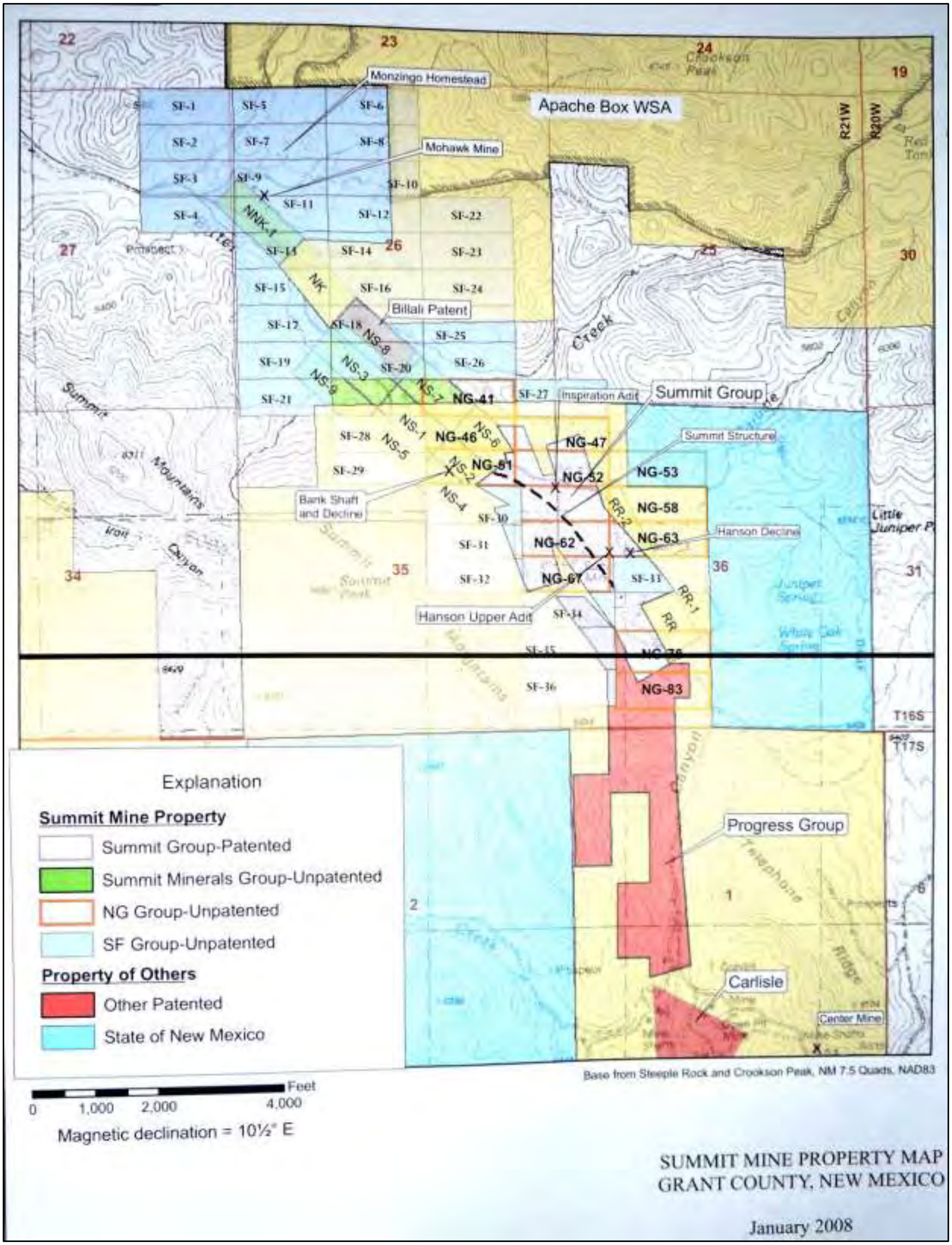
Source: Keith and others (1983)

Figure 2-3 Location of Steeple Rock and nearby mining districts



Source: McLemore (2008, Figure 2)

Figure 2-4 Mines, prospects, and major faults in the Steeple Rock district



Source: Summit mine files (2008)

Figure 2-5 Land status map of Steeple Rock district

Source: Rasmussen (2011)

Figure 2-6 Lockable gate at Billali decline

3 Accessibility, Climate, Local Resources, Infrastructure and Physiography (Item 5)

This section discusses the physical conditions of the project site, specifically the accessibility, climate, local resources, infrastructure, and physiography of the Billali mine area. None of these characteristics are likely to negatively impact the Billali mine as proposed. The project location in southwestern New Mexico has good accessibility, with access to exploration and development service companies in the state that currently support active mining operations.

3.1 Topography, Elevation and Vegetation

The Billali mine is located in the Summit Mountains in Grant County in southwestern New Mexico. The Summit Mountains are located within a transition zone between the Basin and Range Province to the south and the Colorado Plateau Province to the north. The mountain ranges in southwestern New Mexico trend generally northwest and are composed of igneous, sedimentary, and volcanic units ranging in age from Precambrian to Tertiary. Major drainages, which are ephemeral, are cut into the mountains and flow generally westward to the Gila River.

The Summit Mountains in the vicinity of the Billali mine range in elevation from approximately 6,600 ft at Summit Peak to 5,200 ft at Bitter Creek. The Billali mine adit is at an elevation of about 5,343 ft above mean sea level (Figure 3-1).

Ridges and many slopes show abundant bedrock exposures. Other slopes and valleys are typically covered by varieties of weathered bedrock and alluvium (Figure 3-2). Varieties of scrub trees variably cover slopes throughout the claim (Figure 3-3), and the gullies and stream beds are dry and gravel-filled (Figure 3-4). The vegetation in the Steeple Rock mining district is characteristic of the high desert elevations of southwestern New Mexico. The presence of small pine trees indicates natural revegetation is being re-established after logging in the 1890s through 1920s consumed the forests for steam power for the stamp mills at the Carlisle and other mines in the district. No trees in the district are suitable for mine use. Drill sites and roads exhibit slow regrowth of vegetation.

3.2 Climate and Length of Operating Season

The climate of the Billali mine is typical of a high desert area, with the region receiving occasional late summer thunderstorms, with heavy rain from time to time during otherwise hot and dry summers. In winter, access is generally not hindered by climatic conditions, although snow is common, though usually short lived. Maintenance of unpaved roads is done weekly or more often by employees of the trucking company used by the adjacent Summit mine.

Summer temperatures are warm and winter temperatures are cool. The nearest recorded climate data from Virden is incomplete and the town of Duncan, Arizona, is at a considerably lower elevation and so has warmer temperatures (average annual highs of 78.6º F and lows of 41º F), less precipitation (10.64 inches), and less snow (0.7 inches). Another nearby area, Redrock, has an average annual maximum temperature of 77ºF and an average annual minimum temperature of 41ºF, with average precipitation of 12.67 inches and 2.9 inches of snowfall. Because of the higher elevation, records from Silver City, New Mexico may be a more appropriate comparison with average maximum temperature of 69º F, average minimum temperatures of 40.1º F, 10.64 inches precipitation and 14.5 inches of snow (New Mexico Climate Center, http://weather.nmsa.edu, accessed November 2011). The Steeple Rock area as annual precipitation less than 16 inches per year (Trauger, 1972; McLemore, 1993)

3.3 Sufficiency of Surface Rights

Surface rights to the Billali project are private property, as the mine is a patented mining claim.

3.4 Accessibility and Transportation to the Property

The Billali mine is located in southwestern New Mexico, adjacent to Arizona, in a remote mining area with an established infrastructure of mine roads. Duncan, Arizona, the nearest town 15 miles (25 km) southwest of the Billali mine, has railroad access. The nearest large town is Lordsburg, New Mexico, which is approximately 30 miles (48 km) to the south-southeast. Duncan had a population of 766 in 2009. Lordsburg had a population of 2,883 in 2009 and contains retail and service suppliers, a small airport, a small municipal airport and Amtrack railroad (www.city-data.com).

The Billali mine may be reached via Interstate Highway 10 to Willcox, then north on U.S. Highway 191 to Safford, a distance of about 32 miles (Figure 2-1). From Safford, turn east on U.S. Highway 70 to Duncan, Arizona, a distance of about 36 miles; then turn northeast on Arizona highway 75 for a short distance, then drive northeast on the unpaved Carlisle Road to the Summit mine, a distance of about 16 miles (Figure 3-5). From the Summit mine, turn sharply to the west up a hill, then about 1 mile on an unpaved road to the Billali locked gate (Figure 3-6). The Billali mine portal is about 300 yards south of the gate on the Bitter Creek road up the wash (Figure 2-2).

Railroad lines available at Duncan and Lordsburg and a network of interstate highways provide excellent transportation infrastructure throughout the state. The Tucson International Airport is about 170 miles from Duncan.

Access to the Billali mine is by regular vehicles along graded dirt roads. The road between Duncan and the Summit mine is well maintained for travel by 25-ton haul trucks.

3.5 Infrastructure Availability and Sources

Services in Duncan and nearby towns are adequate to support the requirements of a mining exploration and development project. The presence of major open pit copper mines at Morenci (about 27 miles north of Duncan) and at Safford indicate the availability of mining personnel and mining services, such as drilling contractors, equipment rental and services, engineering services, and a trained labor force. The superintendent at the nearby Summit underground mine has been successful at training local labor in mine safety and procedures.

3.5.1 Power

The electrical power grid does not reach the Billali mine, but a 250 KVA diesel powered electric generator is at the surface on the property. This equipment generates sufficient electricity to run the electric power-driven equipment on the surface and underground. Gas and diesel stations are located in Duncan, Safford, and Morenci.

3.5.2 Water

No perennial streams are present in the Steeple Rock mining district, though steep-sided gulches or arroyos run in short-lived, torrential floods during the summer monsoon season. These streams generally drain westward to the Gila River. Water was intersected at a depth of 126 feet in the Norman King mine, which is about 200 yards to the north east of the Hoover adit. The depth to water in most mines and along faults varies from 2 to 73 m (7 to 240 ft) according to elevation and annual precipitation (McLemore, 1993). Chemical analyses of water samples in the district typically exceed EPA guidelines or standards for drinking water, but most of the water in the Steeple Rock district is of suitable quality for livestock, irrigation, and some industrial uses (McLemore, 1993).

Surface water is scarce and groundwater supplies are limited to streams and fractures, bedding planes and faults, so may be somewhat limited. A definitive groundwater resources investigation of the region by earlier mining companies is not known to exist, nor are published studies by the USGS.

Water supplies for development and mining would be stored in the 5,000 gallon stainless steel water tank currently at the Billali mine portal. The water would be trucked from a water source in Duncan.

3.5.3 Mining Personnel

Skilled mine workers and technical staff are available in the states of Arizona and New Mexico. Workers with experience in past mining operations and road construction are available in the vicinity. The superintendent at the nearby Summit mine has trained local labor for work in the Summit mine, which was a more successful program than hiring tramp miners.

3.5.4 Potential Areas

The Billali mine is an advanced stage exploration project. Because the material mined is expected to be milled offsite, no potential tailings are expected to be needed at the Billali mine site.

3.5.5 Potential Tailings Storage Areas

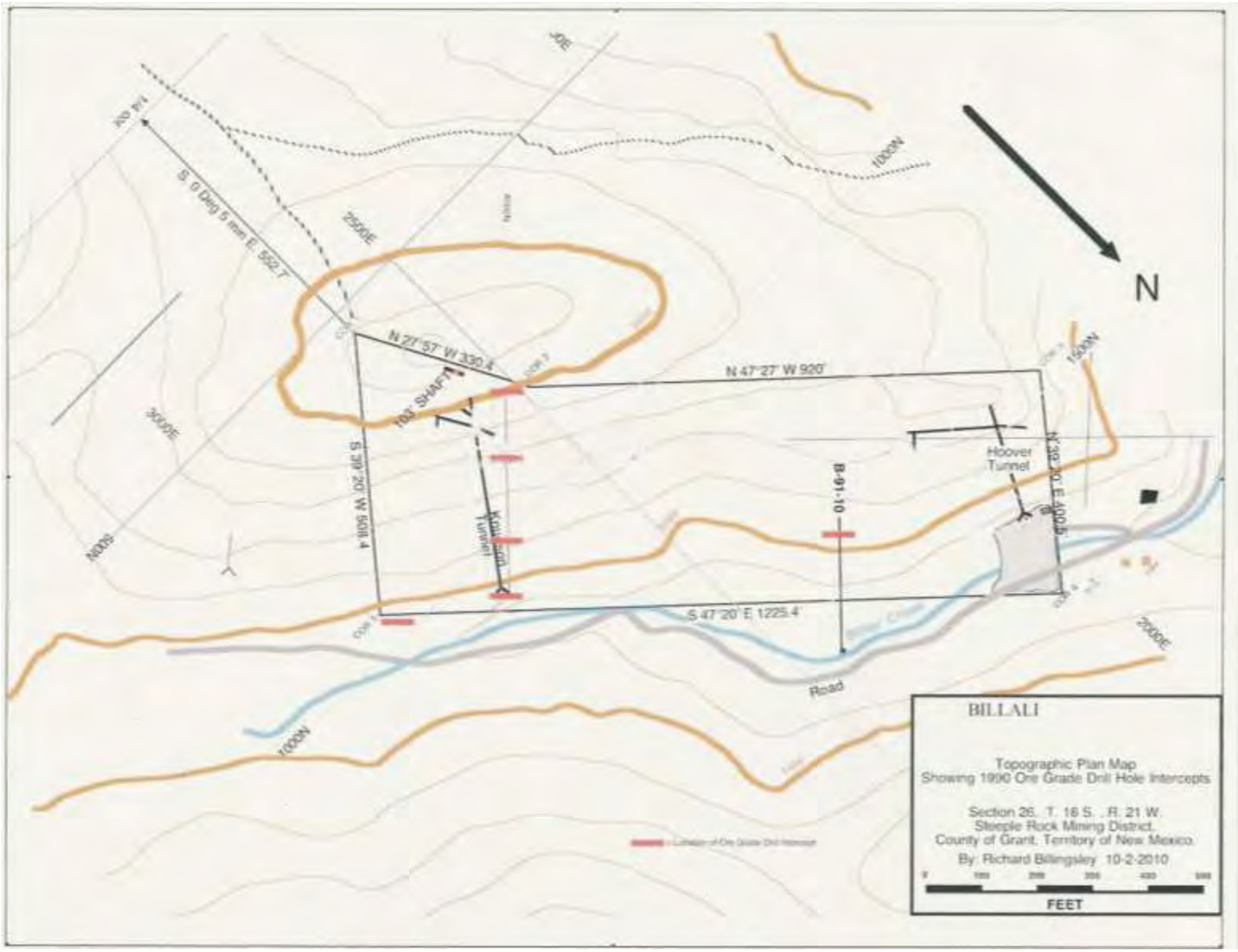
Potential tailings storage areas and processing plant sites are not allowed by the mining permit. There will be no tailings as the material will be processed offsite.

3.5.6 Potential Waste Disposal Areas

The extraction of non-ore material from the 10 ft by 10 ft Billali decline before it intersects ore is calculated to be the amount required to construct the required road to the escape shaft. This shaft is expected to be raised at the southeastern end of the Billali claim via a 10-ft diameter raise bore from the bottom end of the decline.

3.5.7 Potential Processing Plant

No processing plant is planned for the Billali mine site. Various options for milling the ore include the mill operated by the Summit mine in Lordsburg or mills at the smelter at the Freeport McMoRan Copper & Gold operation in Miami, Arizona.



Source: Billali Mine LLC prospectus (2011)

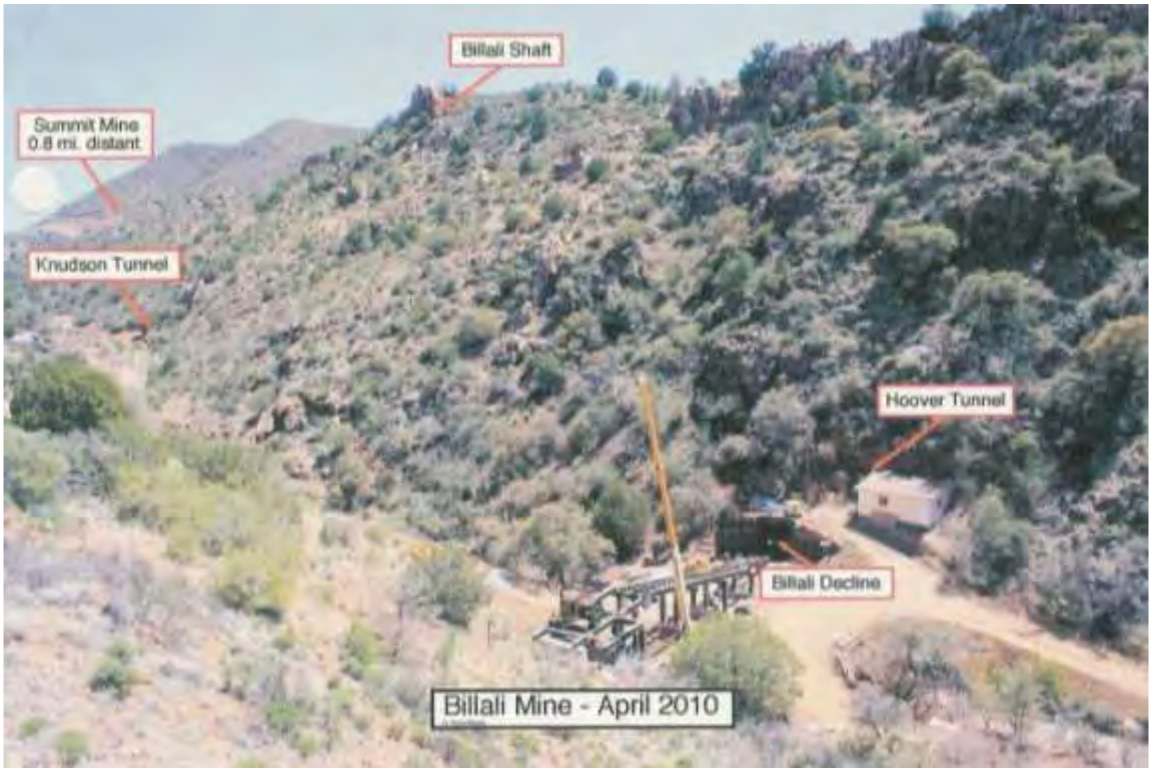
Figure 3-1 Topographic map of Billali claim

Source: Rasmussen, 2011

Figure 3-2 Typical Summit Mountains topography

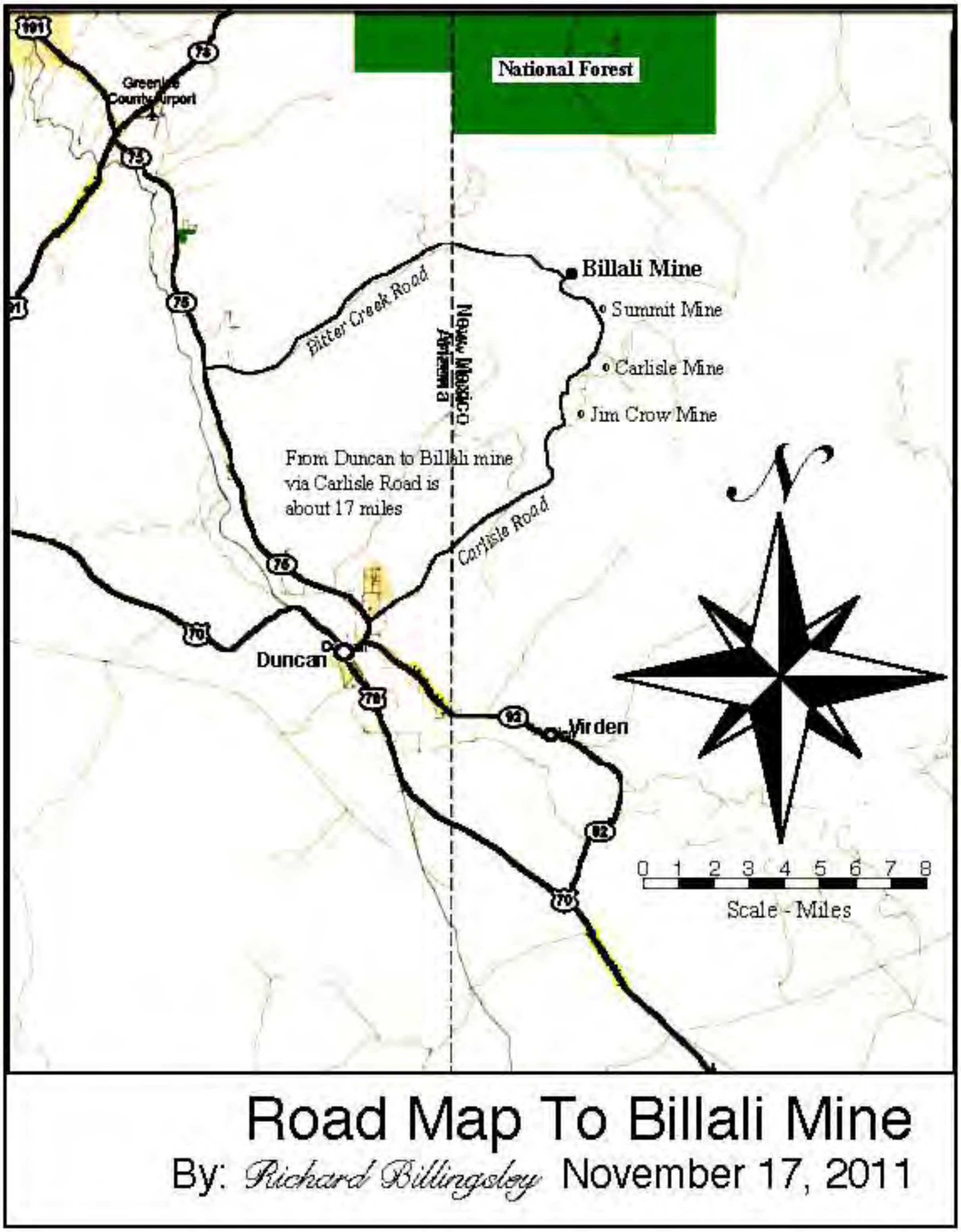
Source: Rasmussen (2011)

Figure 3-3 Bitter Creek south of Billali portal showing scrub pines



Source: Merz, 2010

Figure 3-4 Bitter Creek and the Billali mine decline and Hoover Tunnel



Source: Billingsley, 2011

Figure 3-5 Detailed access to the Billali mine

Source: Google Earth, 2011

Figure 3-6 Access to the Billali mine from the Summit mine

4 History (Item 6)

The first discoveries were made in the Steeple Rock mining district in the 1860s, but only minor prospecting continued until production began in the 1880s. The first mining claims in the Steeple Rock district were filed in 1881. By 1897, most of the mines in the district were located and operated by several different companies. Small shipments, some high grade in gold and silver, were made from many of the mines, but total production was small. Herbert Hoover worked in the district in the late 1890s as a mining engineer before becoming President of the United States (Gillerman, 1964). When the price of gold rose from $20 to $35 per ounce in 1933, many of the mines in the district were re-examined for gold potential and several mines operated over the next few years. However, the federal government closed all gold-silver mines in 1942 as a result of World War II.

Between 1880 and 1991, estimated production from the Steeple Rock district was approximately 151,000 oz gold, 3.4 oz silver, 1,200,000 pounds copper, 5,000,000 pounds lead, and 4,000,000 pounds zinc. Production at the Billali mine was estimated at approximately 5,000 tons of silver-gold ore (McLemore, 1993).

4.1 Prior Ownership and Ownership Changes

The original Billali mine claims were located by the Steeple Rock Development Company before 1899 and patented in 1899 as Surveyor General Lot No. 1021, by the Steeple Rock Development Company, as entered and paid on February 13, 1899, to the General Land Office of the United States according to the plat and field notes of Survey and Certificate No. 612 at the Las Cruces Land Office in the Territory of New Mexico. The patent was signed by President William McKinley‟s Secretary F.M. McKean and C.H. Brush, Recorder of the General Land Office. The certified copy patent was filed for record May 26, 1914, by E.B. Venable, County Clerk on pages 565-567 (Appendix B).

For several years, the Billali claim was owned by an English mining company. In the early 1900s, the Billali and several other claims in the Steeple Rock district were purchased by the Utter family from Huntington Beach, California. In 1985, the Billali and Imperial Group of claims were purchased from the Utter family by Mr. Leslie H. Billingsley, Richard O. Billingsley, and Mitchel Humphries of Duncan. Joy J. Merz acquired a full one-third interest in these claims in 1987 by purchase from Mr. Humphries.

The three owners of the Billali each contributed their one-third interest in the claim to the Billali Mine, LLC. The Billali patented lode mining claim is now owned as private property by Billali Mine, LLC, at P. O. Box 207, Duncan, Arizona 85534. The company is an Arizona limited liability company, incorporated on March 20, 2010, in Tucson, Arizona. The owners and managers of the company are Leslie Billingsley, Richard Billingsley, and Joy Merz.

4.2 Previous Exploration and Development Results

Early exploration on the Billali claim indicated sufficient gold and silver mineralization in the surface outcrops of the quartz veins for the Federal government to issue the patent to the surface and underground minerals in 1899.

The Billali Mine is located in the Steeple Rock mining district, which historically had approximately 54 named mines and prospects, including 8 in Greenlee County, Arizona, 45 in Grant County, New Mexico, and 1 in Hidalgo County, New Mexico (www.MinDat.org, 2011). The district derives its name from the prominent mountain peak, Steeple Rock, at an elevation of 6,259 ft, in the southern part of the district.

Various subdistricts are either separated or included in the Steeple Rock district. These include the Twin Peaks subdistrict in the northern part of the area (Biggerstaff, 1974, Keith and others, 1983), the Bitter Creek subdistrict along Bitter Creek (Hedlund, 1990b), the Duncan fluorspar district in the western part of the area (Hedlund, 1990b), and the Goat Camp subdistrict west of Vanderbilt Peak (Figure 2-2) (Keith and others, 1983) (Figure 2-3). As all of these subdistricts are characterized by similar geology, it is more appropriate to include all the areas in the Steeple Rock district (Figure 4-1) (McLemore, 1993).

4.2.1 Steeple Rock Mining District Exploration

The earliest mention of mining activity in the Steeple Rock district was a report of a military dispatch of troops from Ft. Thomas (near Duncan, Arizona) in 1860 to assist miners in the area from interference by Apache Indians (Russell, 1947).

The epithermal silver-gold mineralization in the Steeple Rock district was first described by Lindgren and others (1910). Government agencies (USGS and U.S. Bureau of Mines [USBM]) examined the mineralization along the Carlisle fault, including mapping, drilling, and sampling, as part of the strategic minerals evaluation during and after World War II (Johnson, 1943; Russell, 1947; Griggs and Wagner, 1966). The fluorspar deposits of the district were also investigated (Trace, 1947; Wilson, 1950; Gillerman, 1952; Williams, 1966; Rothrock and others, 1946; and McAnulty, 1978) after World War II.

Geologic mapping was conducted in the district from the 1960s through the 1990s. The state geologic map compilation (Elston, 1960; 1956, 1961) indicated the volcanic units were Cretaceous, but more recent age determinations established a mid-Tertiary age for the volcanic units (Hedlund, 1990a, 1990b, 1990c, 1993; McIntosh and others, 1990a, 1990b; Griggs and Wagner, 1966; and McLemore, 1993). Exploration for porphyry copper deposits in southwestern New Mexico prompted additional publications (Wargo, 1959; Biggerstaff, 1974; Powers, 1976; Wahl, 1980, 1983).

The reconnaissance geologic mapping of six quadrangles in southwestern New Mexico was conducted as part of the Silver City CUSMAP project. The quadrangles included the Tillie Hall Peak, Crookson Peak, Applegate Mountain, Goat Camp Spring, Steeple Rock, Walker Canyon, and part of the Canador Peak and Nichols Canyon quadrangles (Hedlund, 1990a, 1990c, 1993).

The Steeple Rock district has also been the subject of numerous theses, dissertations and reports on alteration north of the Carlisle mine (Robinson, 1984; Eimon and Bazrafshan, 1989), on fluid inclusions (Ruff, 1993 and Ruff and Norman, 1991), and on mineralization and alteration (McLemore, 1991, 1993; McLemore and Quigley, 1992; and McLemore and Clark, 1993).

Mineral resources of the Steeple Rock district are described by numerous authors (North and McLemore, 1986; Hedlund, 1990b; Sharp, 1991; Anderson, 1957; Gillerman, 1964; Hall, 1978; Richter and Lawrence, 1983; Wahl, 1983; Keith and others, 1983; North and McLemore, 1986, 1988; Richter and others, 1986; Tooker and Vercoutere, 1986; Raines, 1984; and Watts and Hassemer, 1988; Wilson and others, 1993; and McLemore, 1993, 1996). Several remote sensing studies of the Steeple Rock district identified areas of alteration (Raines, 1984; and Magee and others, 1986). Detailed geologic mapping of altered areas and veins, structural analysis, examination of drill core, petrography and mineralogy, geochemical and statistical analysis, paleomagnetic analyses, fluid inclusion analyses were conducted by McLemore (1993).

Exploration and mining activities in the Steeple Rock district are summarized in Section 7.1.1.

4.2.2 Billali Mine Exploration

Exploration at the Billali Mine was conducted in the early 1990s by two Canadian exploration and development companies. Exploration and mining activities in the vicinity of the Billali Mine are summarized in Section 7.1.2. At least 28 holes were drilled on the Billali claim by Nova Gold and Biron Bay. Of these, nine drill holes returned ore grade intercepts. Information from this drilling is discussed in Section 8.

4.3 Historic Mineral Resource and Reserve Estimates

The following statements are mentioned for historic reference only and do not imply that the author agrees with the reliability or accuracy of the statements estimating the tonnage of silver-gold mineralization remaining in the Steeple Rock mining district or the Billali mine.

There is no current NI 43-101 compliant mineral resource or mineral reserve estimate for the Steeple Rock mining district. The historical resource estimates and production stated in this section should not be relied upon as they have not been verified or classified according to current CIM or SME resource/reserve categories by a Qualified Person. While the author considers the historical information in this Technical Report to be relevant information, the author is not reporting a current mineral resource or mineral reserve for the Steeple Rock mining district.

4.3.1 Steeple Rock Mining District Resource and Reserve Estimates

Biron Bay Resources Ltd. (Toronto, Canada) announced in 1992 that they discovered along the northwest-trending East Camp-Summit fault a resource of 1.45 million tons of ore grading 0.18 oz/ton (6 ppm) gold and 10.3 oz/ton (353 ppm) silver with additional mineralized zones intercepted in drill holes (McLemore, 1993, from Biron Bay press release, May 1992).

4.3.2 Billali Mine Resource and Reserve Estimates

According to a report issued to Biron Bay‟s shareholders in 1991, Biron Bay contracted with MPH Consulting Limited (MPH), of Ontario, Canada, to provide a geophysical survey of the Billali claim and to evaluate the results of their drilling program to determine the potential tonnage and grade of mineralization. MPH is a respected Canadian mining consulting firm that is a currently operating consulting firm. Biron Bay published the results in their 1991 Annual Report. In addition, the 1990 Biron Bay Annual Report published the ore grade assays and intervals from two other drill holes. Based on the two drill holes present at the time, MPH estimated that the Billali claim could produce a minimum of 219,000 tons of ore averaging 12.8 oz/ton silver and 0.244 oz/ton gold (Billali prospectus, 2011; reported in Petroleum and Mining Review, v. 14, 1992, p. 2). A second mineralized zone was also discovered by Biron Bay, but reserves were not announced (McLemore, 1993).

As Santa Fe Gold apparently used the ore-grade drill core to run their metallurgical bench tests, none of the mineralized core is available for study or confirmation. However, the current mine superintendent at the Summit Mine, Leslie Billingsley, attests that sampling in the Summit mine at the locations of the Biron Bay drill holes at the Summit mine confirms the grade and thickness is the same or better than that reported in the Biron Bay drill holes.

There is no current NI 43-101 compliant mineral resource or mineral reserve estimate for the Billali mine. The historical resource estimates and production stated in this section should not be relied upon as they have not been verified or classified according to current CIM or SME resource/reserve categories by a Qualified Person. While the author considers the historical information in this Technical Report to be relevant information, the author is not reporting a current mineral resource or mineral reserve for the Billali Mine.

4.4 Historic Production

An estimated $10,000,000 worth of metals were produced from the Steeple Rock district in New Mexico between 1880 and 1991 (McLemore, 2000). In addition, approximately 11,000 short tons of fluorspar were produced from the Mohawk, Powell, Leta Lynn, and other mines (Hedlund, 1990b). An additional 2,000 short tons of ore containing 74,500 lbs of manganese ore was produced, probably in the 1940s (McLemore, 2000).

4.4.1 Steeple Rock Mining District Production

The earliest production reported from the Steeple Rock district occurred in 1880 when a 20-stamp amalgamating mill was erected at the Carlisle mine. Known and estimated production from the Steeple Rock district is summarized in Table 4-1 (McLemore, 1993). Production from the Steeple Rock mining district between 1880 and 1991 was estimated to be approximately 151,000 oz gold, 3,400,000 oz silver, 1,200,000 pounds copper, 5,000,000 pounds lead, and 4,000,000 pounds zinc (Table 4-1) (McLemore, 1993). In addition, approximately 11,000 tons of fluorspar were produced from the Mohawk, Powell, Leta Lynn, and other mines (McAnulty, 1978; Richter and Lawrence, 1983; Hedlund, 1990b). In the Goat Camp Springs area, 2,000 tons of ore containing 74,500 lbs of manganese were produced probably in the 1940s (McLemore, 1993). The Center mine owned by Mount Royal Mining Company was operating in the district in 1993 (McLemore, 1993).

Several episodes of milling activity occurred in the Steeple Rock district (Gundiler, 2000, from which the following is quoted).

> "At the Carlisle mine, the largest producer in the district, a 20-stamp mill was built 1880. Gold was recovered by amalgamation. In 1886, high-grade gold-silver ore was exhausted and only 10 stamps were operating. The Carlisle Gold Mining Company Ltd. of London, England, acquired the property and enlarged the mill to 60 stamps (Anon., 1888). An average of 170 short tons of ore was processed daily, mostly from the second (300-ft level). Water for the mill was pumped from the third (400-ft) level; more water was encountered when the shaft reached the 500-fr level.
>
> Ore was hoisted through the three-compartment shaft and dumped directly into three jaw crushers from the ore cars. Crushed ore was stored in three ore bins, one for each set of 20 stamps. The ore was ground in a mortar by stamps. Stamps, weighing 850 lbs each, were lifted 10.5 in. by cams keyed to a camshaft and dropped into the mortar, at 90 drops/minute. There was a set of five stamps to a mortar, called a battery, and two batteries to a camshaft. Capacity per stamp was 2-4 short tons of ore in a 24-hr period.
>
> One to two ounces of mercury was added to the mortars per ounce of gold in the ore. Gold particles were freed from the gangue minerals during crushing and grinding, and formed a superficial alloy with mercury. Ground ore was continuously washed off the mortars through punched-plate screens and (gold-mercury) amalgam was recovered from the pulp on amalgamation plates and mercury traps. The amalgamation process thus recovered 86% of gold assay values.
>
> Amalgamation tailings were fed into the gravity concentration circuit to recover the remaining gold and silver associated with sulfide minerals. The gravity circuit was composed of 36 Frue vanners arranged in three rows. Vanners were like short belt conveyors, slightly inclined, swaying back and forth horizontally. Light gangue minerals were washed downward with water, while the heavy minerals were carried upstream toward the discharge end. Concentrate production averaged 18 short tons per day when all 60 stamps were running. …. Initially, the concentrates were shipped to Socorro, New Mexico, and Pueblo, Colorado smelters. The company later decided to install a smelter at the site and several thousand short tons of concentrates were stockpiled. The smelter started in March 1888. Sulfide concentrates were first roasted in four rotary roasters, 6-7 ft in diameter, and 16-18 ft long. Eight tons of concentrate were charged to each and roasted for 36 hrs, consuming 6-7 cords of wood in the process, at $6.50 a cord. In all, 25 cords of wood were required per day, 15 cords for steam engine boilers for hoist and mill, and 10 cords for the roasters (Anon, 1888)." Overall, smelting of mixed lead-zinc concentrates at the site was not successful (Gundiler, 2000).

During the war period of 1914 to 1920, high metal prices sustained production from the Steeple Rock district. The Steeple Rock Development Company consolidated several claims and milled much of the ore at the Carlisle mill. A 100-short ton per day flotation mill was erected in 1916 to process the Carlisle mill tailings, producing bulk flotation concentrates. In 1927, United Metals Corporation dewatered the Carlisle mine, sunk a winze from the 600- to the 700-ft level and drifted on this level. However, the company did not produce any ore and in 1930, the mine was again allowed to flood (Gundiler, 2000). Between 1936 and 1941, Veta Mines Inc., and in 1941 and 1942, Southwest Minerals Company, operated the mine and treated the ore and old mill tailings in their 100-ton per day selective flotation mill in Duncan, Arizona (Gillerman, 1964)

4.4.2 Billali Mine Production

Up to 5,000 tons of ore may have been produced from surface outcrops of quartz veins on the Billali claim in the early 1900s (McLemore, 1993). There is currently no access to the small open cut workings near the high part of the hill on the Billali claim (Merz, personal communication).

Total production from the Norman King, Billali, and Hoover mines since 1919 was approximately 4,120 tons grading 0.19 oz/ton (6.5 ppm) gold and 12 oz/ton (411 ppm) silver (Table 4-2), although production before 1919 is unknown (McLemore, 1993), based on unpublished data in files at the New Mexico Bureau of Mines and Mineral Resources. Common errors on maps and in older literature are the placement the Billali mine north of the Norman King, where the Mohawk mine is located, and also misspelling the mine name as Bilalli or Billalli. The Billali mine is south of the Norman King mine.

Table 4-1 Production from the Steeple Rock mining district, 1880-1991

Year	Ore (short tons)	Silver (oz)	Gold (oz)	Copper (lbs)	Lead (lbs)	Zinc (lbs)
1880-1897	112,000	1,618,000	102,000			
1904	4					
1905-1906	Not reported					
1907	1,000	15,150	750			
1908	750	17,000	375			
1909	65	1,410	17	770	9,140	
1910	Not reported					
1911	224	5,902	143			
1912	269	5,157	402	3,706	950	
1913	381	1,453	417	7,602	7,914	
1914	41	88	42	1,342		
1915	295	11,031	229	7,276	3,000	
1916	165	3,491	124	17,500	6,753	
1917	5,202	10,642	88	68,502	617,989	139,490
1918	82	999	39	10,677	6,775	
1919	228	3,817	27	11,027	157,812	
1920	2,111	3,566	642	5,837	36,937	
1921	91	2,363	45		1,000	
1922	Not reported					
1923	36	1,685	23		286	
1924-1927	Not reported					
1928	23	130		1,132		
1929	Not reported					
1930	50	891	15	121	23	
1931	Not reported					
1932	19	780	13	21	152	
1933	5	94	2	31	216	
1934	1,617	21,141	421	1,700	500	
1935	1,377	19,470	407	2,200		
1936	3,777	54,173	850	5,600	300	
1937	16,147	200,863	5,552	57,550	68,175	55,000
1938	14,740	239,119	5,687	33,300	38,500	
1939	12,772	237,030	4,487	13,000	19,000	
1940	22,915	216,374	5,414	20,900	74,000	
1941	39,018	252,509	6,685	53,200	226,000	
1942	9,426	60,220	1,390	29,000	86,700	
1943	11,645	20,870	250	202,800	683,000	703,500
1944	15,460	21,181	295	210,800	838,500	944,000
1945	19,366	25,494	963	232,200	1,079,500	1,156,400
1946	9,535	8,797	408	87,800	405,200	328,800

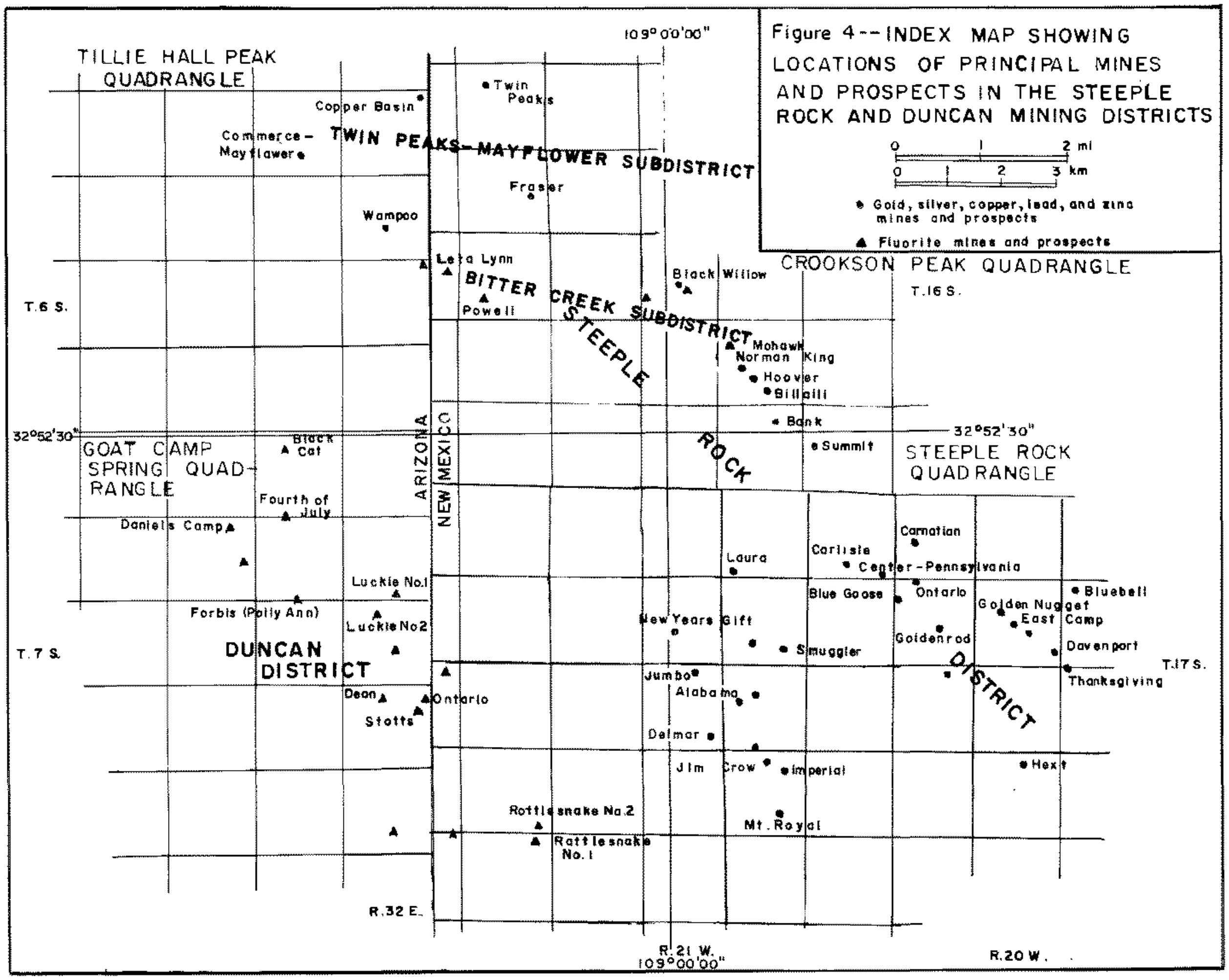
Year	Ore (short tons)	Silver (oz)	Gold (oz)	Copper (lbs)	Lead (lbs)	Zinc (lbs)
1947	1,348	1,010	61	10,500	42,800	40,800
1948	428	1,735	149	2,000	3,000	2,000
1949	347	1,409	101	2,000	3,000	3,000
1950	855	11,004	259	1,300	1,700	
1951	2,288	11,259	271	19,700	36,400	36,700
1954	104	52	8	500	1,400	
1955	2,619	28,410	376	2,900		300
1956	1,979	11,345	186	1,644	5	
1957	115	680	10	169	239	
1974-1991	55,000	226,000	12,000	40	90,000	
Twin Peaks, AZ						
1906-1970	2,000	10,500	500	15,000	17,000	
TOTAL	**367,919**	**3,384,294**	**152,123**	**1,141,347**	**4,563,866**	**3,409,990**

Source: McLemore (1993)

Table 4-2 Production grades from the Billali mine, 1935 – 1940

Year	Ore (short tons)	Silver (oz/ton)	Calculated silver (ton)	Gold (oz/ton)	Calculated gold (ton)	Copper (%)
1935	136	11.3	1,536.8	0.18	276.62	0.001
1936	211	15.1	3,186.1	0.22	700.94	0.002
1940	63	4.8	302.4	0.11	33.26	--
Total	410	12.2	5,002	0.19	950.38	0.002

Source: McLemore (1993)



Source: Hedlund (1990a)

Figure 4-1 Index map of principal mines and prospects in Steeple Rock and Duncan mining districts

5 Geological Setting and Mineralization (Item 7)

The geology of southwestern New Mexico, the Steeple Rock mining district, and the Billali mine are discussed in this section. The geology at the Billali project is very complex, with numerous episodes of faulting, volcanic activity, and intrusions. The main mineralization-related events consist of Tertiary-aged, silver-gold mineralization in and adjacent to quartz veins.

5.1 Regional, Local and Property Geology

The geologic history of southwestern New Mexico reflects the plate tectonic setting of the southwestern United States. Numerous orogenic (mountain building) episodes that created structural zones of weakness and brought mineralization (Table 5-1) were driven by the position of the area on the leading edge of a continent during the Mesozoic and Cenozoic eras. In this position, western North America was subjected to volcanism and plutonism that rose from the plate that was being subducted under the southwestward advancing continent.

5.1.1 Regional Steeple Rock District Geology

The regional geology of southern Arizona and New Mexico and local Steeple Rock mining district geology are discussed in this section. The silver-gold mineralization is related to a mid-Tertiary volcanic-intrusive system and associated faulting.

The ages of rocks in the Steeple Rock district are entirely of Tertiary age. However, structural zones of weakness inherited from earlier orogenic episodes are used by the mineralizing solutions that brought the silver-gold and quartz veins.

Historical Geology

The oldest rocks in the vicinity of the Summit Mountains are Proterozoic granite. The Proterozoic Eon (Late Precambrian) orogenic events included the Mazatzal orogeny, which was active between 1,675 and 1,625 Ma (Conway and Silver, 1989) and “anorogenic” granite intrusions (Anderson, 1989) about 1,450-1,400 Ma (Karlstrom and Bowring, 1988; Stacey and Hedlund, 1983). However, there is abundant evidence that these and related granitic rocks were emplaced as part of a east-northeast-trending arc system on the southeast side of the American continent (Swan and Keith, 1986). This episode of magmatism and tectonics is important to the later mineralization throughout Arizona and New Mexico because of the imposed structurally weak zones in a west-northwest (WNW) to west direction that was used by later mineralizing solutions. These WNW-striking zones were characterized by left-slip displacements in the Texas Zone (Swan and Keith, 1986). A subordinate set of northeast-striking shear zones may have developed at the same time in the Precambrian. Both these Precambrian directions of structural weakness were used by the mineralizing solutions in the Steeple Rock district.

The southwestern United States was on the trailing edge of the North American continent during the Paleozoic, and therefore experienced passive margin or miogeoclinal sedimentation of sandstone, shale, and limestone. These rocks were eroded from the Steeple Rock area before deposition of the Tertiary volcanic rocks.

After the major continent-continent collision of North America, Europe, and Africa created the supercontinent Pangea and the Appalachian-Ouachita Mountains, the tectonic plates were forced to reorganize. As Pangea began to split apart, separating the eastern North American plate apart from Africa, the western coast of North America became the leading edge of the northwestward moving North American continent. The resulting subduction of the northeast-dipping Farallon oceanic plate under the North American plate caused volcanism and accompanying mineralization throughout the western U.S. in several orogenic pulses. These include the Jurassic-age Nevadan orogeny (205-145

Ma), the Cretaceous-age Sevier orogeny (140-89 Ma), the Cretaceous-Tertiary-age Laramide orogeny (89-56 Ma), the mid-Tertiary-age Galiuro orogeny (mid-Tertiary orogeny) (43-15 Ma), and the San Andreas orogeny (Basin and Range Disturbance) (14-0 Ma).

The mid-Tertiary orogeny was subdivided into three phases as the subducting slab became steeper and the magmatic arc moved from the east to the west, in the reverse pattern from the Laramide (Keith and Wilt, 1985). The following descriptions are excerpted from that paper.

The Galiuro (mid-Tertiary) orogeny is subdivided into early, middle, and late phases. The volcanics and sediments of the early phase of the Galiuro orogeny were deposited in local basins containing minor volcanics, local conglomerates and lacustrine deposits of carbonates and gypsum and clay, with minor uranium, secondary copper, and industrial mineral deposits. The middle phase of the Galiuro orogeny consists of widespread volcanism and stocks of calc-alkalic and later alkali-calcic chemistry. The earlier calc-alkalic phase contains epithermal gold-copper veins associated with microdiorite dike swarms. The later alkali-calcic phase contains silver-gold-lead-zinc quartz veins, skarns, and replacements in contact zones of stocks and small batholiths, frequently associated with large caldera systems. The latest phase of the Galiuro orogeny consists of coarse clastics and local volcanics and stocks of quartz-alkalic magma chemistry, associated with large, low-angle, normal, detachment faults.

The San Andreas orogeny, formerly called the Basin and Range Disturbance, is the result of the subducting Farallon slab being cut off by the strike-slip action on the San Andreas fault/transform boundary. As the underlying slab continued to descend and was missing in places, the overlying slab foundered and parts sank along steep normal faults creating the Basin and Range topographic province. This break-up allowed the intrusion of mantle basalt, which is largely devoid of mineralization, although some industrial minerals were deposited in the basins.

The San Andreas orogeny was defined by Keith and Wilt (1985) and was divided into two major assemblages based on whether a given area was being affected by transpressive tectonism or extension. Rocks and structures in areas affected by transpression were referred to the Transverse Range assemblage, whereas rocks and structures formed in extensional strain domains were assigned to the Basin and Range assemblage.

Steeple Rock District Stratigraphy

The Proterozoic granite in the Summit Mountains consists of small outcrops of coarse-grained, equigranular, locally porphyritic granite at Canador Peak (Morrison, 1965; McLemore, 1993).This granite is similar to the granite in the Burro Mountains that was dated as 1445-1600 Ma (Hewitt, 1959; Stacey and Hedlund, 1983; McLemore, 1993; McLemore and McKee, 1988a, 1988b).

In the Steeple Rock area, Cretaceous sedimentary rocks include the Beartooth Quartzite sandstone and orthoquartzite (Morrison, 1965), the overlying Colorado Formation of shallow marine sedimentary rocks (Hedlund, 1990b; Morrison, 1965) that were probably deposited in back-arc basins of the Sevier orogeny. The Virden Formation of nonmarine fluvial clastic rocks of Late Cretaceous and Paleocene age was probably part of the Laramide orogeny. Most of the Steeple Rock area was part of the Burro uplift throughout most of the Paleozoic and Mesozoic, so the rocks of these ages were either not deposited or were very thin, probably less than 500 meters thick (McLemore, 1993).

Rocks exposed in the Steeple Rock district consist of a complex sequence of Oligocene to Miocene (34-27 Ma) andesitic, basaltic andesitic, and dacitic lavas interbedded with andesitic to dacitic tuffs, sandstones, volcanic breccias, and rhyolite ash-flow tuffs. These rocks were subsequently intruded by rhyolite plugs, dikes, and domes (33 and 28-17 Ma) (Figure 5-1) (Hedlund, 1990a; McLemore, 1993).

Tertiary volcanic activity began in the Summit Mountains about 40 to 36 Ma with the eruption of andesite and was followed by the eruption of episodic bimodal silicic and basaltic andesite from 36 to 24 Ma (Cather and others, 1987; Marvin and others, 1987, 1988; McIntosh and others, 1990a; McLemore, 1993). These were followed by the eruption of rhyolitic ignimbrite as ash flow tuff sheets from the Mogollon-Datil volcanic field calderas outside the district (McIntosh, 1991; McIntosh and others, 1990a, 1992a).

The oldest Tertiary rocks crop out in the southern part of the district and the rocks become younger to the north and northeast (Figure 5-2) (McLemore, 1993; Hedlund, 1990a, 1990b, 1990c, 1993; Ratte and Hedlund, 1981; Biggerstaff, 1974). Successive periods of basaltic andesite to andesite to dacite that were several thousand feet thick were interrupted by the intrusion of rhyolites or the deposition of ash-flow tuff sheets that serve as stratigraphic markers.

In the Steeple Rock district, the oldest rocks of the Galiuro orogeny consist of the volcanic rocks of Steeple Rock, which range in age from 34 to 33 Ma (McLemore, 1993). This unit includes the andesite of Mt. Royal (Tam), ash-flow tuff of Steeple Rock (Tst), older sedimentary rocks (Tsed1), rhyolite of Steeple Rock (Trs), rhyodacite of Mt. Royal (Trd) (Hedlund, 1990b; McLemore, 1993). These rock units are shown on the geologic map. This unit is unconformably overlain by the Summit Mountain formation (Tss), which is the unit exposed at the Billali mine and which is described under that section.

The main Tertiary units in the Steeple Rock district are the dacite porphyry (or dacitic and andesitic rocks) of Summit Mountain (called the Summit Mountain formation) and the basaltic and andesitic rocks of Dark Thunder Canyon (called the Dark Thunder Canyon formation) (Hedlund, 1990b; McLemore, 1993, units in parentheses). The stratigraphy is shown diagrammatically on Figure 5-3.

The Summit Mountain formation is the most economically important unit in the Steeple Rock district because it is the predominant host of epithermal mineralization and alteration (McLemore, 1993). The age dates on this unit generally range from 32 to 31 Ma (Table 5-2). The Summit Mountain formation (Figure 5-4) consists of lava flows, breccias, and volcaniclastic sedimentary rocks. In nearby areas, the unit unconformably overlies the rhyodacite of Mt. Royal and the rhyolite of Steeple Rock. It is unconformably overlain in other areas by Bloodgood Canyon Tuff, younger ash-flow tuffs, or Dark Thunder Canyon formation. The thickness of the unit is uncertain because of faulting and varies between 457 m, 700 m, and 610 m.

In the Steeple Rock district, the Summit Mountain formation consists of andesite and dacite lava flows (Tss), volcaniclastic sedimentary rocks (Tsed), intrusive andesite (Tv), altered tuff, sediments and andesite undifferentiated (Tas) (Figure 5-5 with legend on Figure 5-6) (McLemore, 1993). The andesite and dacite lava flows (Tss) occur at the Billali mine and are described below. The volcaniclastic sedimentary rocks (Tsed) include volcanic breccias to andesitic-dacitic tuffs to sandstones to siltstones and rare mudstones. These rocks are various shades of purple, red, gray, green, white to brown, are thin- to medium-bedded, locally laminated or crossbedded, poorly sorted. The fragments consist of angular to subangular lithic fragments of andesite, andesite porphyry, rhyolite, and breccia, but no mineralized fragments, which indicates deposition prior to mineralization (McLemore, 1993). The altered tuff, sediments and andesite undifferentiated (Tas) occur near or at the Billali mine and are described below.

In the southern part of the Steeple Rock district, a tuff correlated with the Davis Canyon Tuff (Tdc?) is a distinctive outflow sheet derived from the Bursum caldera in the Mogollon Mountains, northeast of the district. This tuff was dated by $^{40}Ar/^{39}Ar$ at 29.01 ± 0.11 Ma (McIntosh and others, 1990a, 1990b; McLemore, 1993).

The Bloodgood Canyon Tuff (Tbg) unconformably overlies either volcaniclastic sedimentary rocks, andesites and dacites of the Summit Mountain formation or rocks of the Davis Canyon Tuff. The Bloodgood Canyon Tuff is unconformably overlain by basaltic andesites of the Dark Thunder Canyon formation. The Tuff ranges from less than a meter to 75 m locally and is characterized by a reversed-polarity paleomagnetic signature that is distinct from other tuffs in the region. The Bloodgood Canyon Tuff is an outflow sheet from the Bursum caldera in the Mogollon Mountains and is dated by $^{40}Ar/^{39}Ar$ as 28.05 ± 0.01 Ma (McIntosh and others, 1990a, 1990b; McLemore, 1993).

The Dark Thunder Canyon formation (Tbd) consists of multiple lava flows of gray, brown, purple, or red, porphyritic amygdaloidal andesitic to basaltic andesite with interbedded younger ash-flow tuffs (McLemore, 1993). Other names for this unit include the amygdaloidal andesitic basalt (Griggs and Wagner, 19566), andesitic basalt (Biggerstaff, 1974), basaltic and andesitic rocks of Dark Thunder Canyon (Hedlund, 1990a, 1990c, 1993). The unit is characterized by abundant vesicles or amygdules that are typically filled with quartz, calcite, and thomsonite. The unit unconformably overlies Bloodgood Canyon Tuff or Summit Mountain formation and is unconformably overlain by lava flows of Crookson Peak (McLemore, 1993).

Additional Tertiary volcanic units in the Steeple Rock district include the younger ash-flow tuffs, lava flows of Crookson Peak (Tlc), rhyolite of Willow Creek (Twd), and rhyolite flows and/or domes (Twr) dated at 25.3 ± 0.10 Ma (McLemore, 1993).

Intrusive rocks in the Steeple Rock district include numerous dikes, plugs, and domes composed of diabase, quartz monzonite, rhyolite and rhyodacite. Most of these intrude faults and most are younger than 27 Ma (McLemore, 1993). An age date from a rhyolite dome west of Saddle Back Mountain was 25.3 ± 0.10 (McLemore, 1993). Some of the named units include the Apache Box rhyolite complex, Vanderbilt Peak rhyolite complex (Tr), Piñon Mountains rhyolite (Tr), and Twin Peaks rhyolite (Tr) (McLemore, 1993).

Quaternary units on the geologic map include the Gila Group (QTg) of poorly bedded, moderately indurated, poorly sorted, fanglomerate of Miocene to Pleistocene in age; alluvial-fan deposits (Qaf); and alluvial gravels (Qal) in arroyos and streams (McLemore, 1993).

Steeple Rock Structure

The prominent structural trend in the Summit Mountains is northwest, which is parallel to the Texas Zone of Wertz (1970a, 1970b; Lowell, 1974; Chapin and others, 1978; and Muehlberger, 1980). The Steeple Rock district is located on the northeastern edge of the Texas Zone, which extends from Trans-Pecos Texas northwestward into Arizona. It is a prominent, 80-150 km wide zone that is defined by west-northwest structural features.

Faulting and tilting of the volcanic rocks in the Steeple Rock district produced a series of half-grabens and horsts (Figure 5-7) with a district-wide, regional northwest strike, bedding planes and foliation (flow foliation of flattened vesicles or pumice fragments and alignment of phenocrysts) that dip northeast at 10 to 35º. Rhyolite dikes, plugs, and domes were emplaced along some of the faults and subsequently cut by other faults (McLemore, 1993). Most faults in the Steeple Rock district are high-angle and well exposed as they are filled with quartz veins and/or silicified, brecciated country rock (Table 5-3). The four principal fault trends are northwest, north, west-northwest, and northeast. The northwest-trending faults are the most prominent and most numerous. The northwest trend is also reflected in the aeromagnetic and Bouguer gravity data (Wynn, 1981; Klein, 1987), suggesting that deep-seated, regional northwest-trending structural features exist (McLemore, 1993). Most of the northwest-trending faults are characterized by quartz veins, silicified wall rock, and/or rhyolite dikes that form prominent outcrops.

The East Camp-Twin Peaks fault system is one of the most prominent fault systems in the district (Figure 5-8). The fault begins near Blue Creek and can be traced as one or more parallel to subparallel faults for approximately 30 km to the northwest. The fault system strikes N50-55oW and has numerous local variations, and typically dips steeply to the northeast, but locally to the southwest. It is downthrown to the northeast. Throughout most of its length, the fault is silicified, forms prominent outcrops, and is mineralized with numerous mines along the fault (McLemore, 1993). The fault typically exceeds 9 m in width and at the Summit mine is 45 m wide at the surface. A large displacement of possibly 420 m is suggested (Hedlund, 1990a) and may be right-lateral strike with a separation of about 150-200 m north of Bitter Creek where the fault offsets a rhyolite dike. The fault is older than the youngest rhyolite intrusives and quartz veins, as it cuts the Dark Thunder Canyon formation, the Summit Mountain formation, and a younger ash-flow tuff (McLemore, 1993). The Blue Bell fault merges with the East Camp-Twin Peaks fault near the Norman King mine. The East Camp-Twin Peaks fault system is cut by a shear zone near the Bank mine and the Bitter Creek shear zone. The Bitter Creek shear zone is west-northwest-trending. Both shear zones have greatly influenced the distribution of mineralization. More details about this fault are included in the discussion of structures at the Billali mine. Other northwest-trending faults include the Blue Bell fault, Blue Goose fault, Apache fault, Laura fault zone, Jim Crow-Gold King-New Years Gift fault zone, Commerce-Mayflower fault, Foothills fault zone, and Fourth of July fault (McLemore, 1993).

Few faults in the district are north-trending faults, which include the Alabama fault and Imperial fault. West-northwest-trending faults and shear zones include the Carlisle fault, Bank shear zone, and Bitter Creek shear zone, as well as the Crookson fault, and Charlie Hill fault. Northeast-trending faults are extremely rare (McLemore, 1993).

5.1.2 Billali Property Geology

The Billali mine contains three quartz veins that run the length of the claim and that trend N45ºW, dip 75-80º northeast, and vary from 10 to 50 feet wide. The quartz structures are cut by longitudinal and transverse faults, fractures, and fissure zones. The adjoining rock is andesitic and dacitic volcanics. The mineralization at the adjoining Summit mine continues along strike into the Billali claim and is generally consistent along the footwall of the quartz veins, with some lower grade material on the hanging wall, and with some erratic and spotty mineralized areas. Gold and silver ore at the Summit is frequently associated with dark, fine-grained sulfide minerals that are probably galena, sphalerite, or chalcocite. At the Summit mine, this material contains approximately 0.1 oz/ton gold and 4 to 10 oz/ton silver. Biron Bay‟s drill intercepts on the Billali claim were generally about 15 to 20% higher grade than those on the Summit claims.

Billali Stratigraphy

The host rock exposed at the Billali mine is the Summit Mountain formation (Tss) as described by McLemore (1993). This unit was referred to as the purple andesite porphyry by Griggs and Wagner 1966) and Biggerstaff (1974) and as the dacite (or dacite porphyry) of Summit Mountain by Hedlund (1990a, 1990b, 1990c, 1993). Drill holes along the East Camp-Summit and Norman King-Billali faults are as much as 518 m deep and remain within the Summit Mountain formation (McLemore, 1993).

The andesite and dacite lava flows (Tss) are predominantly andesites, andesite porphyries, and less common dacites. Quartz is rarely present as a primary mineral, as the small "phenocrysts" of quartz that are up to 5 mm in diameter, are infilling of vugs or amygdules (McLemore, 1993). The lava flows are purple, gray, red, brown, or black and are typically porphyritic, thin bedded to massive, and locally contain small vesicles or amygdules. The flows are heterogeneous, which differs from the older andesite of Mt. Royal and the younger Dark Thunder Canyon formation. The flows typically contain up to 20% phenocrysts of plagioclase (oligoclase to andesine, Hedlund, 1990a, 1993), hornblende, biotite, pyroxene, and magnetite. Accessory minerals include apatite, titanite, zircon, quartz, and possibly olivine (McLemore, 1993).

The altered tuff, sediments and andesite undifferentiated (Tas) occur near or at the Billali mine and occur near the top of the Summit Mountain formation. These rocks are silicified and altered to clay and are typically white, maroon, variegated gray, purple, brown, and red. They were probably originally andesites, sedimentary rocks, and ash-flow tuffs.

The northwest-trending structures were either in left slip or reverse slip. If the faults were in left slip, any deflection to an east-trending strike would produce high grade veins. If the faults were in reverse slip, any flattening of the dip would produce high grade veins (S.B. Keith, personal communication, 2011).

Billali Structure

The Billali, Norman King, and Hoover mines occur along the Norman King-Billali fault in Section 26, T16S, R21W (Figure 5-2). The Norman King-Billali fault strikes northwest, dips 70º northeast, and consists of a series of quartz veins that bifurcate and pinch and swell along strike. The entire zone is several tens of meters thick (Figure 5-8).

The East Camp-Summit fault is the southeasternmost segment of the East Camp-Twin Peaks fault system and is represented by numerous mines with significant production. These mines include the Thanksgiving, Davenport, McDonald, East Camp, Gold Nugget, Summit (currently producing), and Bank mines. It is mineralized along most of the strike length (McLemore, 1993).

The middle segment of the East Camp-Twin Peaks fault system is the Norman King-Billali fault, which is a prominent, quartz filled zone. This segment is mineralized along its entire length, from the Bank shear zone to the Bitter Creek shear zone. It consists of numerous mines including the Billali, Hoover Tunnel, Norman King, and Mohawk mines. North of the Mohawk mine, the Norman King-Billali fault is offset by the Bitter Creek shear zone (McLemore, 1993).

North of the Bitter Creek shear zone, the Twin Peaks fault is silicified and mineralized along strike, but it rarely exceeds 6 m in length. The Fraser and Black Willow mines occur along this fault segment, but production is not as significant as that from mines south of Bitter Creek (McLemore, 1993).

North of the Bank shear zone, the East Camp-Twin Peaks fault system consists of a wide zone with three major faults. The middle and most prominent fault is the Norman King-Billali fault. The southwestern fault is poorly exposed, is less than 1 m wide, and is only locally silicified and filled with quartz. All of the past production from mines between the Bank and Bitter Creek shear zones has been from mines that occur along the Norman King-Billali fault (McLemore, 1993).

5.2 Significant Mineralized Zones

5.2.1 Steeple Rock Mineralization

Mineralization in the Steeple Rock district is the result of epithermal vein deposits inserted into the structural zones of weakness, primarily in the northwest to west-northwest directions, with some northeast-trending cross faults. Five types of mineral deposits occur in the Steeple Rock district: (1) base-metal veins with considerable gold and silver (5-20% base-metal sulfides), (2) precious-metal veins (<1% base-metal sulfides), (3) copper silver veins (low gold), (4) fluorite veins, and (5) manganese veins (McLemore, 1993).

The massive silica/chert zones in the Steeple Rock district are characterized by fine- to medium-grained, massive locally brecciated quartz and/or chert, with not relict textures preserved. Hydrothermal brecciation and hydrofracturing are common and suggestive of hydrothermal eruptions. The massive silica/chert zones consist of quartz with minor amounts of kaolinite, hematite, alunite, pyrophyllite, pyrite, and anatase. Some areas contain high gold anomalies (McLemore, 1993).

The alteration and mineralization in the Steeple Rock district occurred as a result of cyclic volcanic activity and subsequent development of local hydrothermal systems in areas of high heat flow. The alteration and mineralization were probably episodic, waning and migrating from one locality to another. Mineralization is located along regional structures (McLemore, 1993).

The vein deposits in the Steeple Rock district occur exclusively along faults and fractures within fault zone. Some vein deposits occur along, and cut across, rhyolite dikes and plugs that are intruded along faults. The veins typically form prominent outcrops and are bifurcating, sinuous, and pinch and swell along strike. Complex vein textures, especially brecciation and rhythmic layering are typically associated with high metal concentrations (McLemore, 1993). The five types of vein deposits include base metal (±silver-gold), gold-silver (±base metals), copper-silver, fluorite, and manganese veins. Only the gold-silver veins are discussed in this report.

The precious metal veins in the Steeple Rock district consist of gold and silver with local but minor sulfides (less than 1%) as pyrite, galena, sphalerite, and chalcopyrite disseminated in a gangue of quartz, calcite, chlorite, illite/smectite, rare adularia, epidote, and additional accessory minerals. The veins are predominantly quartz and quartz breccias and occur along the northwest-trending faults, although they may occur along any fault trace. They grade along strike locally with the base-metal veins, fluorite veins, and copper-silver veins. Base-metal sulfides occur at depth in many of the depots, but total base metals rarely exceed 1-3% (McLemore, 1993).

The best gold-silver values occur in complex veins that are banded, rhythmically layered, and brecciated. At least three periods of brecciation and cementation by silica have occurred in many areas. Gold and silver occur in stage 2 and locally in stage 3. Lattice textures are locally common. A yellow to yellow-green staining of mottramite [$(Cu,Zn)Pb(VO_4)(OH)$] or mimetite [$Pb_5(AsO_4,PO_4)_3Cl$] is characteristic of higher values of gold and silver. Sulfides tend to occur in streaks or thin zones of disseminated sulfides and give the quartz a bluish or black tint. Distinction between mineralized veins and barren veins is difficult and confirmed only by fire assays (McLemore, 1993).

Other minor ore minerals and secondary minerals observed in the Steeple Rock district include anglesite [$PbSO_4$], azurite [$Cu(OH)_2CO_3)_2$], bornite [$Cu5FeS_4$], cerussite [$PbCO_3$], chalcanthite [$CuSO_4.5H_2O$], chalcocite [Cu_2S], chrysocolla [$(Cu,Al)_2H_2Si_2O_5(OH)_4.nH_2O$], covellite [CuS], cuprite [Cu_2O], malachite [$Cu_2(OH)_2(CO_3)$], manganese oxides, mimetite [$Pb_5(AsO_4),PO_4)_3Cl$], mottramite [$(Cu,Zn)Pb(VO_4)(OH)$], nantokite [CuCl], pseudomalachite [$Cu5(PO_4)_2(OH)_4.H_2O$], tennantite [$(Cu,Ag,Zn,Fe)_{12}(As,Sb)_4S_{13}$], tetrahedrite? [$(Cu,Fe)_{12}Sb_4S_{13}$], and wulfenite [$PbMoO_4$] (McLemore, 1993).

Gangue mineralogy in the Steeple Rock district includes quartz [SiO2], calcite [$CaCO_3$], pyrite [FeS_2], adularia [$KAlSi_3O_8$], clays, fluorite [CaF_2], manganese, titanium, and iron oxides. Other minor gangue minerals include aragonite [$CaCO_3$], dolomite [$CaMg(CO_3)_2$], jarosite [$KFe_3(OH)_6(SO_4)_2$], marcasite [FeS_2], pyrrhotite [$Fe_{1-x}S$], and rhodochrosite [$MnCO_3$] (McLemore, 1993). Quartz is the most common mineral in the Steeple Rock district and is the only mineral phase deposited throughout all periods of alteration and mineralization. White, coarse-grained, and barren quartz veins are referred to as buck or bull quartz and rarely contain any impurities. Buck quartz may overlie rich gold-silver deposits, such as along the East Camp fault. Comb quartz, consisting of large, euhedral white to colorless to purple (amethyst) quartz is typically barren of metal values in the Steeple Rock district. Spider quartz veinlets, also barren, commonly cut white to gray to green chalcedonic to microcrystalline quarts which is also barren of mineralization (McLemore, 1993).

Recrystallized chalcedony or amorphous silica occurs also as small turbid, spheroidal fragments interstitial to vein quartz and is locally associated with gold and silver assays. Gold and silver in the Steeple Rock district is typically associated with banded (crustiform and colloform) rhythmically layered, and breccia quartz, although quartz veins displaying these textures may occasionally be barren of gold and silver. Banded and rhythmically layered quartz consists of hundreds of thin bands or layers of quartz interlayered with thin black bands or streaks of sulfides (pyrite, galena, chalcopyrite, and/or sphalerite). Veins displaying this texture typically carry gold and silver. Multiple periods of brecciation, cementation by quartz, and rebrecciation are characteristic of the gold, silver, and base-metal veins in the Steeple Rock district. The best grades appear to occur in areas of greatest textural complexity where multiple generations of quartz, chalcedony, and other minerals were deposited. Most quartz is white to colorless, although local staining and dissolution of impurities or fluid inclusions may alter colorless quartz to shades of brown and black. Amethyst quartz (purple) is locally common and is found in both barren and mineralized veins. Bladed quartz, pseudomorphed after bladed calcite, forming a lattice texture is also common locally, especially along the East Camp-Summit fault (McLemore, 1993).

Calcite ($CaCO_3$) is variable in distribution in the Steeple Rock district. Large, white to colorless to tan, bladed calcite occurs along the East Camp-Summit, Bluebell, and Norman King-Billali faults. Bladed calcite is commonly replaced by quartz. These indicate an epithermal origin (McLemore, 1993).

The veins in the Steeple Rock district are enriched in silica (>75%) and provide excellent silica flux for local smelters. Impurities such as aluminum, antimony, arsenic, mercury, bismuth, and cadmium are typically below the limits set by the local smelters. However, fluorine and calcium concentrations are variable and may exceed local smelter limits (McLemore, 1993).

Blind ore shoots are common. They do not crop out at the surface, but are parallel to outcropping gold-silver veins. Many ore shoots in the Steeple Rock district do not crop out at the surface.

The age of alteration and mineralization is not certain, but is based on a few age dates and field relationships. One age data of a quartz-alunite sample from Saddleback Mountain of acid-sulfate altered Summit Mountain formation is reported as 31.3 Ma (Hedlund, 1993) and represents a maximum age of the acid-sulfate alteration and of the upper flows of the Summit Mountain formation. An additional age date of a relatively unaltered andesite from the Summit Mountain formation is also reported as 31.3 Ma (Hedlund, 1993). The Steeple Rock district has both neutral pH and acid-sulfate alteration occurring at approximately 31-28 Ma, followed by younger epithermal vein mineralization at about 28 Ma or younger (McLemore and others, 2000).

Epithermal veins fill faults that cut the Tertiary volcanics in the Steeple Rock district, the youngest of which are lava flows of Crookson Peak dated as 27.6 Ma (Hedlund, 1990c). Wahl (1983) reports that adularia from the East Camp vein has an age date of 18 Ma.

Known epithermal mineralization occurs along prominent silicified and brecciated faults. Precious and base metals occur in banded and rhythmically layered and brecciated quartz within aggregates or thin black bands or streaks of sulfides. The best ore shoots occur at inflections of strike and dip of the fault, especially at the intersection of cross faults. Ore occurs below and within zones of boiling as evidenced by bladed calcite and bladed quartz pseudomorphed after calcite. Mineralized veins consist of high gold and silver values. Regional structures probably controlled magmatic and volcanic activity and subsequent migration of hydrothermal fluids. Regional features, such as the Texas zone represent deep crustal flaws and acted as conduits for and controlled magma migration, heat flow, and subsequent hydrothermal fluids (McLemore, 1993).

Precious Metal Ore Mineralogy

Native gold is reported from numerous base-metal and gold-silver veins from throughout the district (Lindgren and others, 1910; Griggs and Wagner, 1966; Gillerman, 1964; McLemore, 1993). Most of the gold may be in electrum, the natural occurring alloy of gold and silver that by definition contains more than 20% silver. Gold occurs as submicroscopic to rare visible flakes disseminated in complex quartz breccias. Typically gold is difficult to detect except by fire assay or X-ray fluorescence (XRF). Native gold or electrum was observed disseminated with fine-grained sulfides and disseminated in “blue” quartz in drill hole J87-3 at the Jim Crow-Imperial mines. It is associated with high gold assays (up to 2.2 oz/ton gold). Gold is found in complexly brecciated quartz veins. Gold and silver are strongly correlated in most deposit, but are not correlated with other elements. Gold may be sporadically distributed within individual veins, making grade control challenging (McLemore, 1993).

Silver is typically more abundant than gold in the vein deposits of the Steeple Rock district, but identification of silver minerals is difficult because of their small size. Silver also occurs in electrum, in concentrations much less than gold. Native silver is reported at the Ontario mine (Griggs and Wagner, 1966). Silver occurs as argentite [Ag_2S] (Lindgren and others, 1910; Gillerman, 1964), but inverts to acanthite at room temperature. Cerargyrite (chlorargyrite) [AgCl] is reported from the district (Gillerman, 1964), and occurs as an alteration product at the Carlisle mine where it occurs as intergrowths with chalcopyrite, secondary copper minerals, and acanthite. Baum also reports silver occurring with tetrahedrite or other sulfosalts in the Carlisle and East Camp veins. High silver values typically occur in complexly brecciated quartz veins, probably as fine disseminations or thin streaks of sulfides. Many samples coated or stained with mottramite or mimetite contain high values of gold and silver (McLemore, 1993).

5.2.2 Summit Mineralization

The Summit group of claims is summarized here because the Summit vein continues along strike into the Billali patented claim (Figure 5-9). The Summit group includes the mines and prospects along the Summit vein in sections 25 and 26, T16S, R21W, from the Angello windmill (north of Telephone Ridge) northwestward to, and including, the National Bank (Bank, Smith) mine. This group consists of ten patented claims and numerous unpatented claims. In 1988, Nova Gold Resources Inc. began exploration of the Summit mine area. Biron Bay Resources, Ltd. became a partner in 1989 and up to 120 drill holes were drilled between 1988 and 1993 (McLemore, 1993). Reserves were estimated at 1,450,000 tons of ore averaging 0.179 oz/ton (6.1 ppm) gold and 10.26 oz/ton (352 ppm) silver (Petroleum and Mining Review, v. 14, 1992, p. 2).

The Summit vein lies along the East Camp-Summit fault that strikes N40ºW and dips 70-85º northeast (Figure 5-8). Host rocks are andesite and dacites of the Summit Mountain formation. Sericite and chlorite occur along the Summit vein with erratic but strong silicification. Acid-sulfate alteration occurs east of the Summit mine and at the Bank mine. The vein ranges in width from 6.0 to 30.5 m. Prominent quartz and quartz-calcite veins crop out. Calcite is more abundant near the top and decreases with depth, but is still present at depth in drill cores. Trace base-metal sulfides occur at depth. The vein consists predominantly of quartz that is generally brecciated and recemented. Comb, cockade, lattice, and drusy quartz are common. Large blocks of sericitized and silicified country rock are common in the vein. Manganese and iron oxides are locally abundant. Other gangue minerals include illite/sericite, chlorite, adularia, pyrite, kaolinite, and smectite. Gold occurs as native gold, electrum, and is also associated with pyrite. Silver occurs as electrum, argentojarosite, tetrahedrite, and similar sulfosalts, and is associated with iron and manganese oxides, and native silver. Acanthite is probably also present. High gold and silver assays are locally associated with mottramite or mimetite (McLemore, 1993).

The Summit and Apex mines were sampled in 1921 and assays of 28 samples from the Summit adit averaged 0.0755 oz/ton (2.6 ppm) gold and 4.03 oz/ton (138 ppm) silver. The higher values were from the center of the vein (McLemore, 1993).

Acid sulfate alteration occurs along some of the ridges west of the Summit mine and elsewhere along the East Camp-Summit and Twin Peaks faults. Biron Bay Resources Inc. drilled numerous diamond drill holes along the East Camp-Summit fault, some of which have penetrated the acid-sulfate alteration. The altered rocks were originally andesites and tuffs of the Summit Mountain formation. The massive silica/chert zone occurs as small outcrops that form the caps of the ridges and is surrounded by silicified and clay zones (Figure 5-9) (McLemore, 1993).

5.2.3 Billali Mineralization

Three main quartz structures strike roughly parallel to the long axis of the Billali claim (Figure 5-9, Figure 5-10). They strike N45ºW and dip steeply (75º to 85º) northeast and are from 6 or 7 feet wide to 25 or 30 feet wide. The quartz structures are not uniformly mineralized, but the same types of mineralization in the Summit mine usually continue with ore grade mineralization for several hundred feet in all directions along the structure (up, down, to the right and left sides). The mineralization associated with the quartz structures usually occurs associated with some dark, fine-grained sulfide mineralization.

The Norman King-Billali fault consists of silicified country rock, quartz, some calcite, rare fluorite, pyrite, and traces of thin streaks of microscopic sulfides (galena, sphalerite, and chalcopyrite). Bladed calcite (lattice texture is present locally, but in concentrations less than found at the Summit mine. Only trace amounts of fluorite occur at the Billali mine and fluorite is absent in drill core of holes beneath these zones. Two deep drill holes (M91-3 and M91-4 (McLemore, 1993) consist of deep intervals below the veins of silicified porphyritic andesite containing disseminated galena, sphalerite, chalcopyrite, and pyrite. The sulfides have replaced feldspar phenocrysts. Host rocks are andesites of the Summit Mountain formation. Alteration includes sericitic, chloritic, and silicification (McLemore, 1993).

Gold and silver assays along the Norman King-Billali fault are sporadic. Production grades range from 0 to 8.4 oz/ton (0-288 ppm) gold and 3 to 433 oz/ton (103-14,846 ppm) silver. The higher grade shipments were most likely hand-sorted ore. Copper content rarely exceeds 0.3% and lead content is also low (less than 0.005%). Silica is typically high (76-87% SiO_2) (McLemore, 1993).

The Norman King, Billali, and Hoover mines occur along the Norman King-Billali fault in section 26, T16S, R21W. The area consists of numerous pits, adits and shafts. The deepest shaft if the Norman King mine, which is 152 m deep. A plan of the Hoover and Billali adits is shown in Figure 5-11. The Norman claim was located in 1883 by B.V. Steed and F. L. Heft and a patent plat was prepared in 1885 (mineral survey #515), but the application was not completed. The Norman claim was located as the Norman King claim in 1900 by O.V. Ward. The Billali claim was also staked in the 1880s (McLemore, 1993).

The Bank, Hoover tunnel, and Billali mine are located in the Bitter Creek area. The Bank mine is northwest of the Summit mine, about halfway between it and the Norman King. It is a few hundred feet southwest of the East Camp fault on a parallel vein. The Hoover tunnel, named after former president Herbert Hoover, who worked in the Steeple Rock district as a young mining engineer in the late 1890s, is about 1,500 feet southeast of the Norman King. The tunnel extends from the canyon of Bitter Creek southwest for 500 to 600 feet to the vein (Gillerman, 1964). The portal of the Hoover tunnel is on the Billali claim. The Billali mine is near the face (end) of the Knudsen tunnel. It was a small mine, a vertical shaft about 103 feet deep, with no extensive workings (Figure 5-11 (McLemore, 1993).

The Norman King-Billali fault strikes northwest, dips 70º northeast, and consists of a series of quartz veins that bifurcate and pinch and swell along strike. The entire zone is several tens of meters thick and consists of silicified country rock, quartz, some calcite, rare fluorite, pyrite, and traces of thin streaks of microscopic sulfides (galena, sphalerite, and chalcopyrite). Bladed calcite (lattice texture) is present locally in concentrations much less than those at the at the Summit mine. Two deep drill holes (M91-3, M91-4) consist of deep intervals below the veins of silicified porphyritic andesite containing disseminated galena, sphalerite, chalcopyrite, and pyrite. The sulfides have replaced feldspar phenocrysts. Host rocks are andesites of the Summit Mountain formation. Alteration includes sericitic, chloritic, and silicification (McLemore, 1993).

Ore Mineralogy

At the Summit vein, gold occurs in two associations: (1) electrum (with as much as 37% silver content) occurs with silver sulfides, and (2) native gold (with low silver) occurs with pyrite or iron oxides and in quartz-carbonate veins (McLemore, 1993). Ultra-fine (<5 µm) native silver was found with iron and manganese oxides and as argentojarosite [$AgFe_3(SO_4)_2(OH)_6$] at the Summit vein

(McLemore, 1993). The presence of gray sulfides (Figure 5-12) from the active face at the Summit mine (Figure 5-13) frequently, but not always) coincides with higher values of gold and silver.

Ore is commonly associated with inflections and changes in strike and dip of the faults. Some ore shoots, especially in the East Camp area, are indicated at the surface by pods of barren, white quartz (Figure 5-14), which were referred to as quartz blowouts by early miners (Griggs and Wagner, 1966; Gillerman, 1964; McLemore, 1993).

Table 5-1 Geologic events in southwestern New Mexico

Source: Keith and Wilt (1985, 1986), MagmaChem reports

Orogeny	Orogenic Phase	Phase Name	Age (Ma)	Sedimentation	Magmatism	Magma-Chem Alkalinity	Structures	Resources
Basin & Range			13-0	clastics & evaporites in grabens	alkaline anhydrous basaltic volcanism		N-S trending horsts & grabens, bounded by steep normal faults	sand & gravel, salt, zeolites, cinders, gypsum
mid-Tertiary	Late	Whipple	18-13	coarse to fine clastics, megabreccia blocks	alkalic hydrous volcanics & local epizonal stocks	MQA	low-angle normal detachment faults, SSE-trending folds, NW striking thrusts & reverse faults	Cu-Au-Ag in veins, replacement lenses & in detachment faults, epithermal Au-Ag veins, hotspring Mn & U
	Middle	Galiuro Datil facies	28-18	local clastics interfinger with volcanics	alkali-calcic hydrous ignimbritic volcanics & epizonal plutons	MAC	broad NW-trending folds; NW- and NE-trending dikes	Pb-Zn-Ag +/- F in veins, replacements, epithermal Ag, hotspring Mn
	Middle	Galiuro South Mountain facies	30-22	local clastics interfinger with volcanics	calc-alkalic hydrous volcanics & epizonal plutons	MCA	broad NW-trending folds, NW-trending dikes, minor NE-trending dikes	Au +/- Cu-W veins & disseminated deposits
	Early	Mineta	38-28	coarse & fine clastics & evaporites in lake beds	rare volcanics, mostly within 'volcanic gap"		local broad basins; possibly with WNW trend; reverse faults	U, clay, exotic Cu
Laramide	Late	Wilderness	55-43	none	widespread, 2-mica, garnet-muscovite granitoid stocks, batholithic sills, aplo-pegmatite dikes, peraluminous, calc-alkalic	PCA	SW-directed, low-angle thrusts widespread, shallowly dipping mylonitic zones, general SW shear	mesothermal, Pb-Zn-Ag veins, minor Cu-Au veins, Au in quartz veins, kyanite, tungsten
	Middle	Morenci	65-55	none	calc-alkalic hydrous, numerous epizonal stocks & small batholiths, local sporadically preserved volcanics, widespread regional NE to ENE-striking dike swarms	MCA	widespread NE- to ENE-striking regional dike swarms between E-W to ENE striking structural elements of the Texas Zone that moved in left-slip	large disseminated porphyry Cu systems, locally containing skarns & veins; Cu-Zn-Ag veins; Pb-Zn-Ag veins, skarns or replacement marginal to plutons; Cu-Zn skarns adjacent to epizonal porphyritic plutons; composite, epigenetic, mesothermal, zoned disseminated porphyry Cu systems, with several zones in a large system
	Early	Tombstone	85-65	continental clastics; large exotic blocks interbedded volcani-clastics	alkali-calcic, hydrous plutonism & pyroclastics, volcanism, some epizonal quartz monzonite porphyritic stocks; lower= andesite dacite breccia; upper= dacite-rhyolite ignimbrite flows & ash flows	MAC	NW-striking, NE-directed folds & thrusts with 1-10 km shortening	mesothermal, Pb-Zn-Ag veins & replacement deposits
	Earliest	Hillsboro	89-85	coarse continental clastics; generally lacking volcanic components, except in upper parts; angular unconformity over mid-Cretaceous; accumulated in E-W trending basins adjacent to block uplifts; conglomerate & alluvial fans	quartz alkalic hydrous, volcanics 7 small stocks, small volcanic centers, small epizonal porphyritic stocks; volcanics highly brecciated; latites & monzonites	MQA	E-W block uplifts; E-W to WNW-ESE striking high-angle reverse faults (60 degrees) with shortening 5-7 km vertical throw, 1-3 km horizontal throw; bidirectional transport N- or S-directed or NNE= or SSW-directed either side of block uplifts	epigentic Cu-Au hydrothermal
Sevier	Late	-	105-89	Bisbee Group clastics - regression	none			
	Middle	-	120-105	Bisbee Group clastics, limestone	none		gentle NE-striking basin for transgressive seaway	limestone
	Early	-	145-120		volcanic pause			
Nevadan	Late	-	160-145	Lower Glance Conglomerate	Mt. Wrightson Volcanics,	MCA	WNW Texas zones as shear zones	
	Middle	-	205-160	Eolian ss intercalated with volcanics	Canelo Hills volcanics; plutonic rocks	MQA	WNW-striking Texas zones as grabens	porphyry Cu-Au at Bisbee, Gleeson
	Early	-	230-205	continental red beds (ss, sh)				
Passive margin		-	542-205	marine limestone, sandstone, shale, dolomite	none	none	Broad basins and transgressive seaways	Limestone

Table 5-2 Age of the Summit Mountain formation

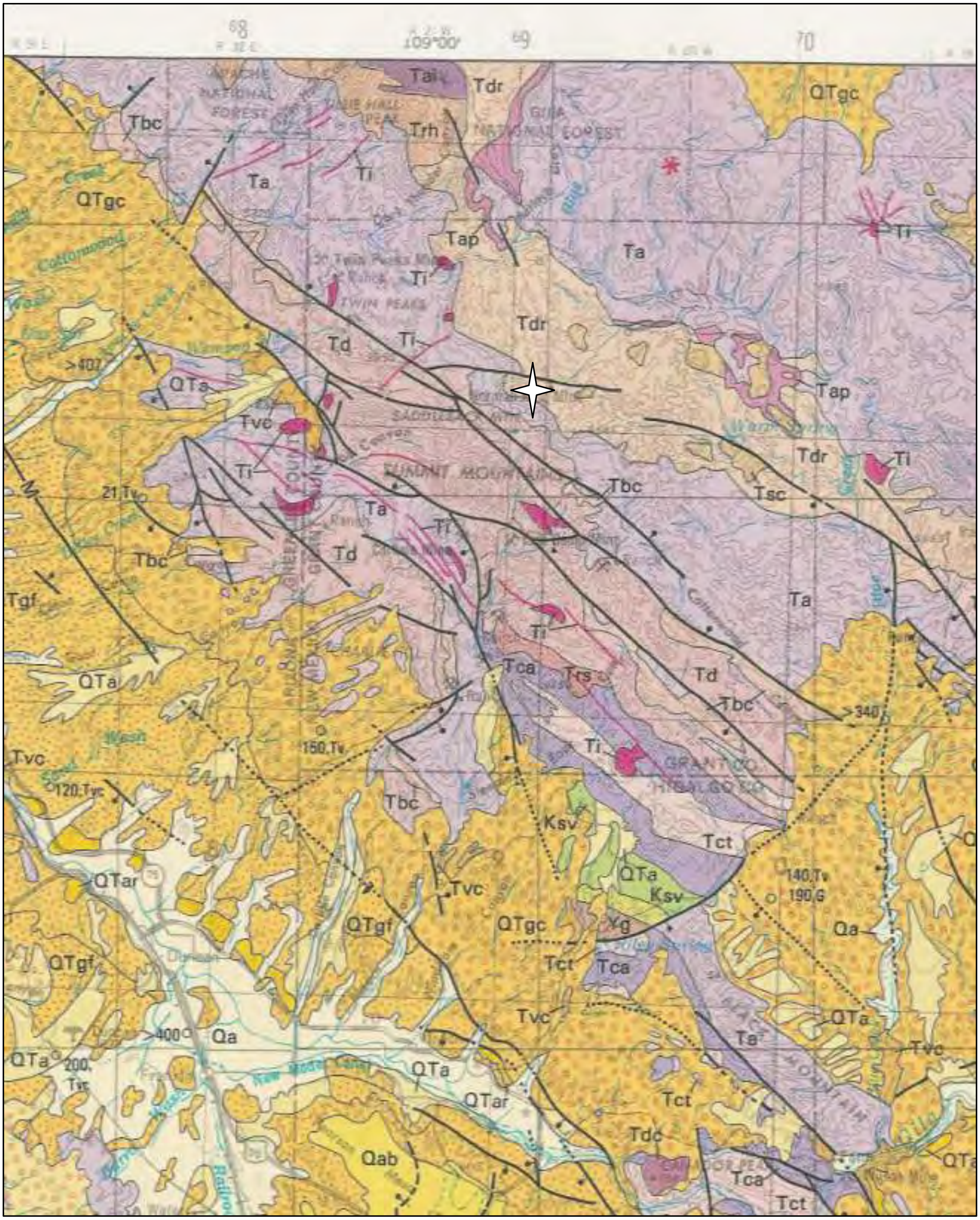
Source: McLemore, 1993

Unit	Location	Age (Ma)	Method	Reference
Andesite, Summit Mountain formation	Sec. 27, T17S, R21W	22.6 ± 0.8	K-Ar, whole rock	Marvin and others (1987, #66); Hedlund (1990b)
Andesite, Summit Mountain formation	Sec. 17, T16S, R21W	31.3 ± 2.2	K-Ar, hornblende	Hedlund (1993)
Altered andesite, Summit Mountain formation	Sec. 29, T16S, R21W	31.3 ± 1.1	K-Ar, quartz-alunite	Marvin and others (1987, #175); Hedlund (1993)

Table 5-3 Faults in the vicinity of the Billali mine

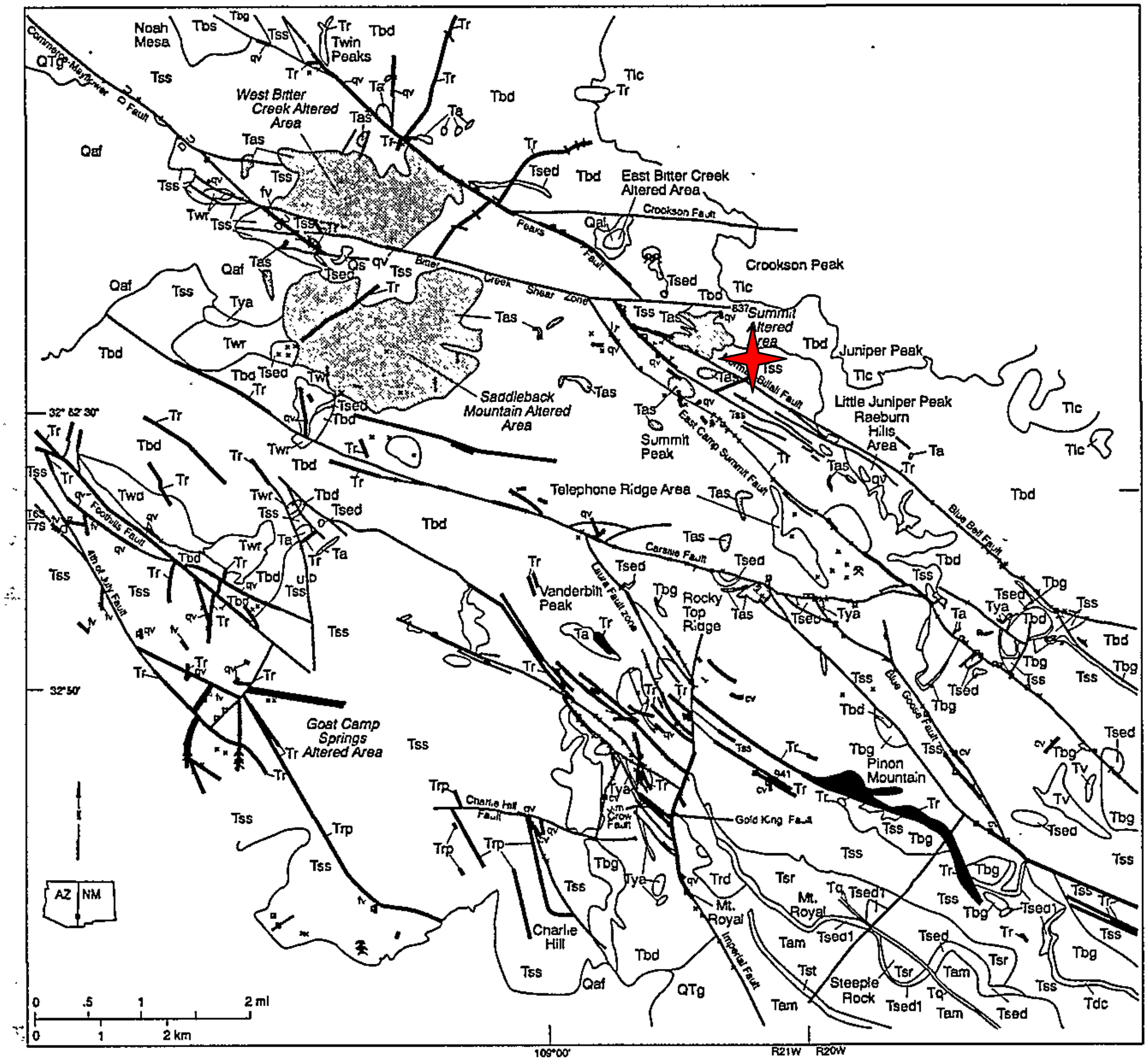
Source: McLemore, 1993

Fault segments	Average strike	Average dip	Displace-ment (m)	Downthrown	Known mineralization	Hosts rhyolite dikes, plugs	Comments
East Camp-Summit Norman King-Billali Twin Peaks	N50-55ºW	Steep NE to SW	90-427	NE	yes	yes	Summit Mountain formation against Dark Thunder Canyon. Also offsets acid-sulfate altered rocks.
Bank shear zone	?	?	?	?	no	no	Obscured by acid-sulfate alteration
Bank shear zone north	N10 W to N20 W	steep	?	?	yes	no	
Bitter Creek shear zone several subparallel segments	W to NW	Steep?	?	N	yes	no	Offsets rhyolite dikes and fluorite veins and East Camp-Twin Peaks fault



Source: Drewes and others (1981); Td = Oligocene dacite & latite; Ta = Miocene & Oligocene andesite

Figure 5-1 Geologic map of part of the Silver City 1 x 2 quadrangle



Quaternary-Pliocene rocks

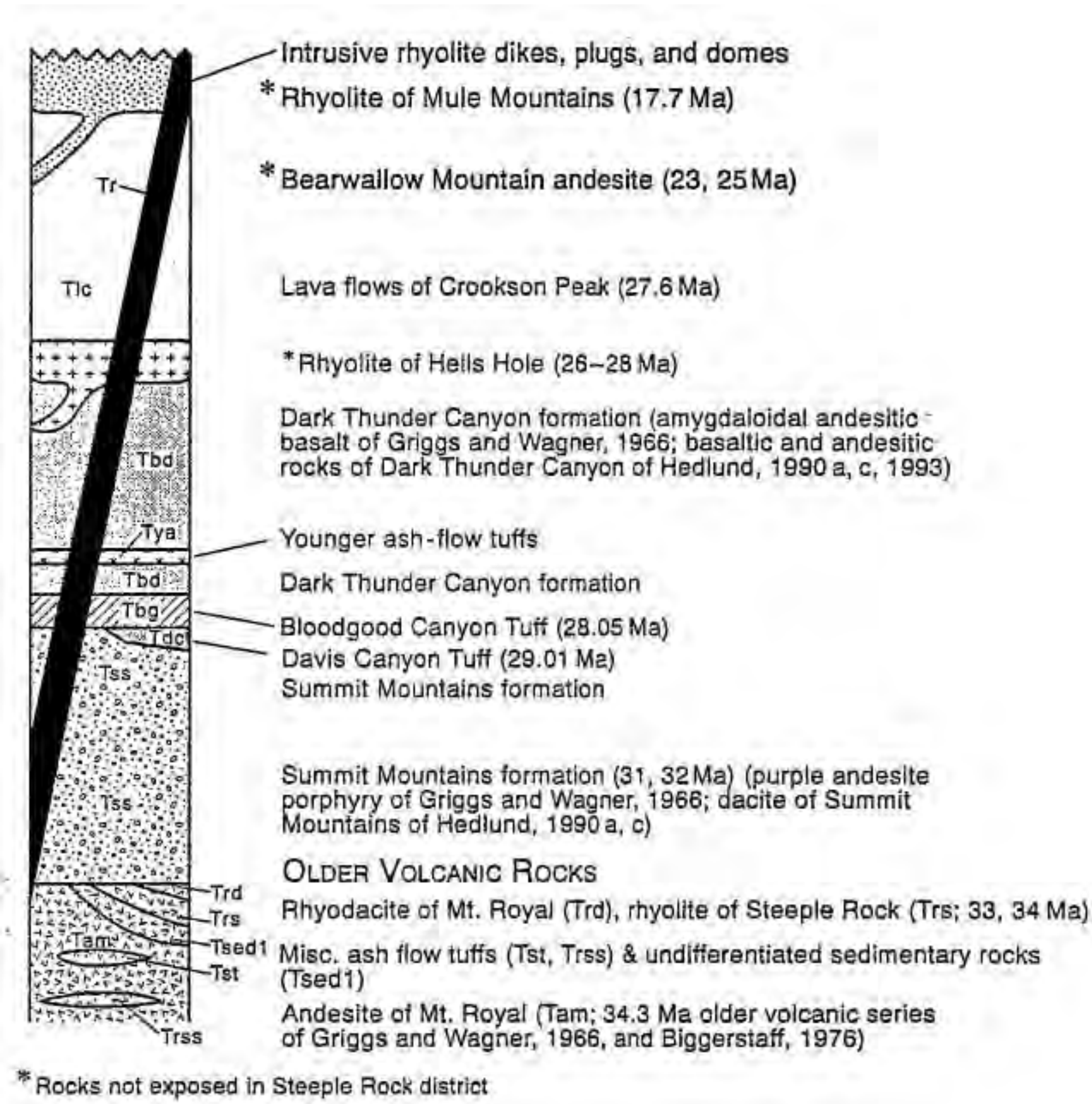
- Qaf - Alluvial fan deposits
- Qs - Spring deposit
- Qtg - Gila Group

Oligocene-Miocene rocks

- Tr,Trp - Intrusive rhyolite dikes, plugs and sills
- Tq - Quartz Monzonite dike
- Td - Diabase dike
- Twr - Rhyolite flows and/or domes
- Twd - Rhyodacite of Willow Creek
- Tlc - Lava flows of Crookson Creek
- Tbd - Dark Thunder Canyon Formation
- Ta,Tya - Younger ash-flow tuffs
- Tbg - Bloodgood Canyon Tuff
- Tas - Altered rocks
- Tss - Summit Mountain formation
- Tsed - Undifferentiated sedimentary rocks
- Trd - Rhyodacite of Mt.Royal
- Tam - Andesite of Mt. Royal

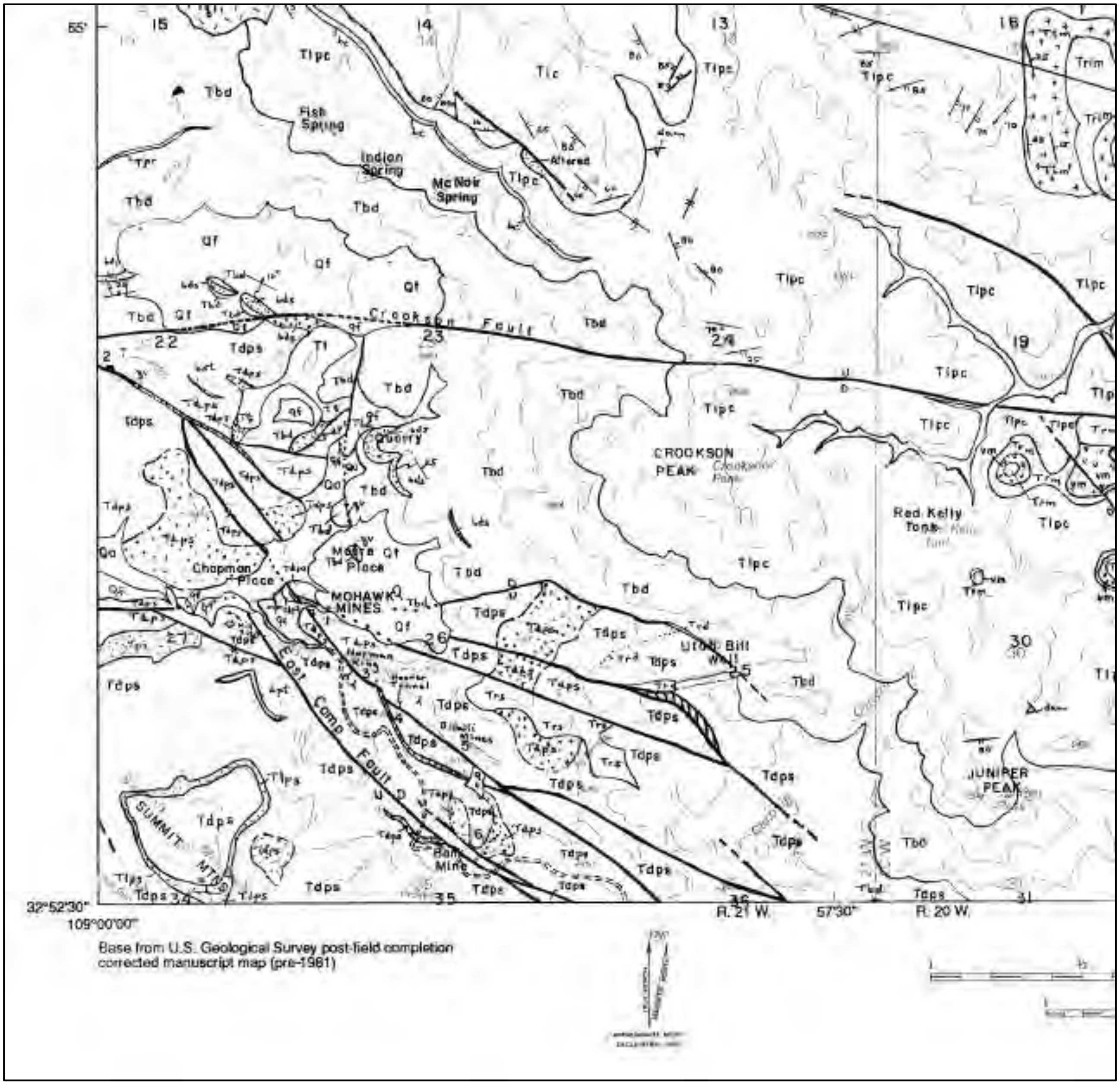
Source: McLemore (1993)

Figure 5-2 Geologic map of Steeple Rock mining district



Source: McLemore (1993); modified after Hedlund (1990a, 1990b, 1990c; 1993)

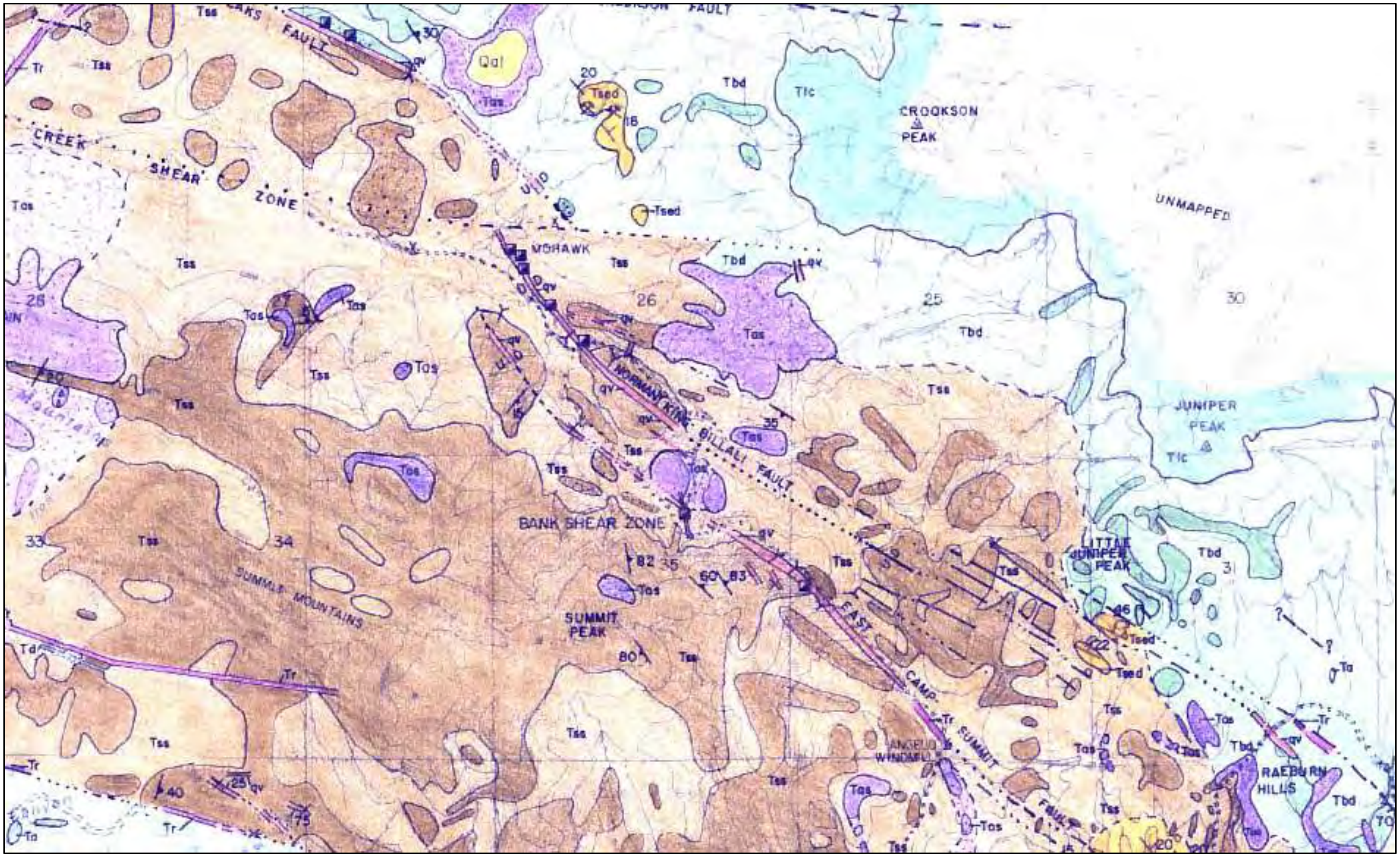
Figure 5-3 Stratigraphy of the Summit Mountains



Tdps **Dacite of Summit Mountain (Oligocene)**--Medium-gray, pale-purplish-gray, pale-red dacitic porphyry flows containing 15-25 percent phenocrysts: 10-15 percent calcic oligoclase-sodic andesine (An_{28-37}), 1-3 percent biotite, and 0-4 percent oxyhornblende. Accessory minerals are clinopyroxene, calcite, iron oxides, white mica, and quartz. The groundmass is felted to pilotaxitic. In the vicinity of Chapman Place and along the East Camp fault, the dacite porphyry is highly silicified and locally kaolinized. In the adjacent Tillie Hall Peak quadrangle, a hornblende concentrate from the dacite yielded a K-Ar age of 31.3±2.2 m.y. (M. Shafiqullah, written commun., 1980). Unit may be as much as 2,000 ft (610 m) thick

Source: Hedlund (1990a, 1990b, 1990c; 1993)

Figure 5-4 Geologic map of part of the Crookson Peak quadrangle

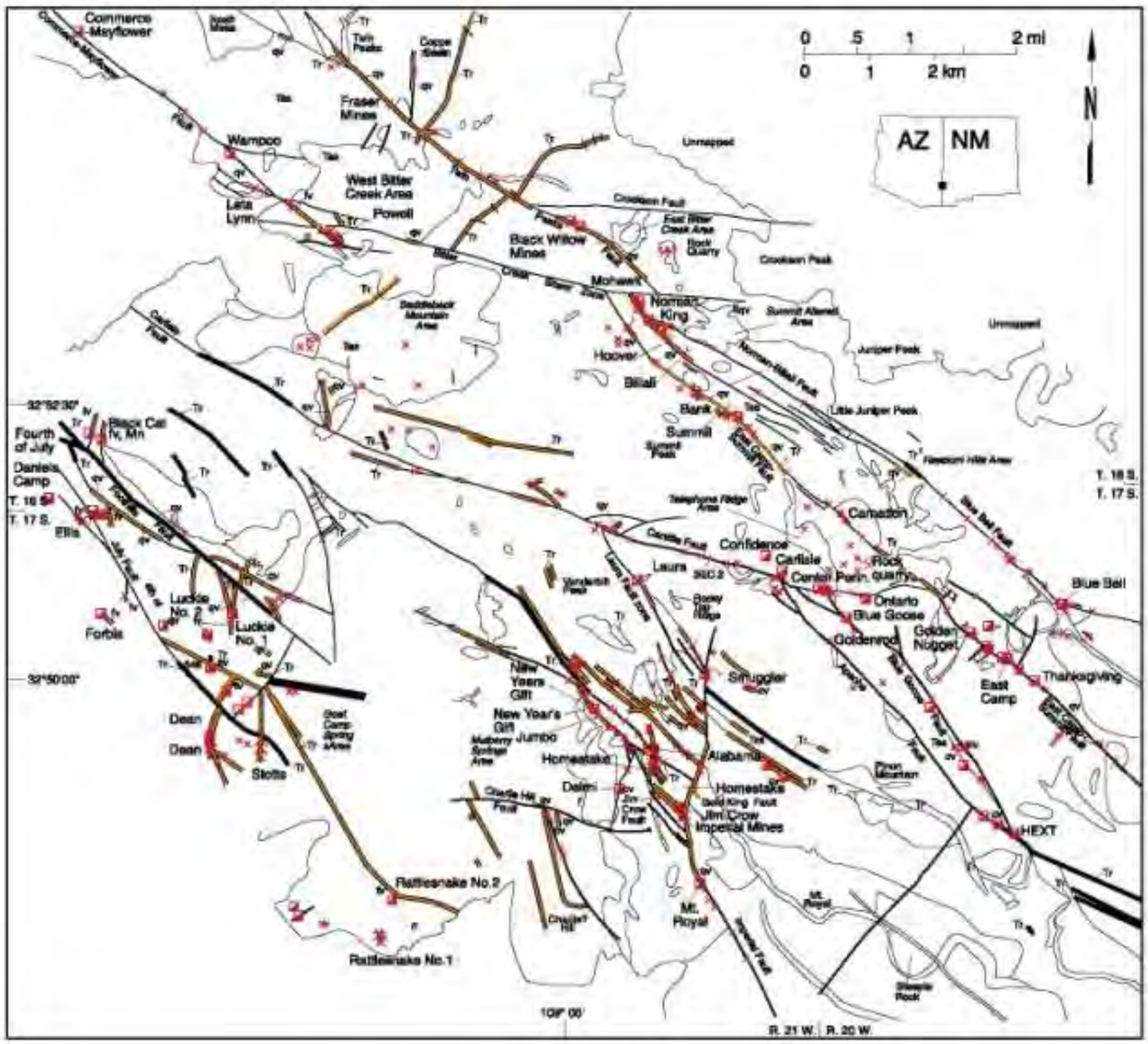


Source: McLemore (1993)

Figure 5-5 Geologic map of the Summit Mountains

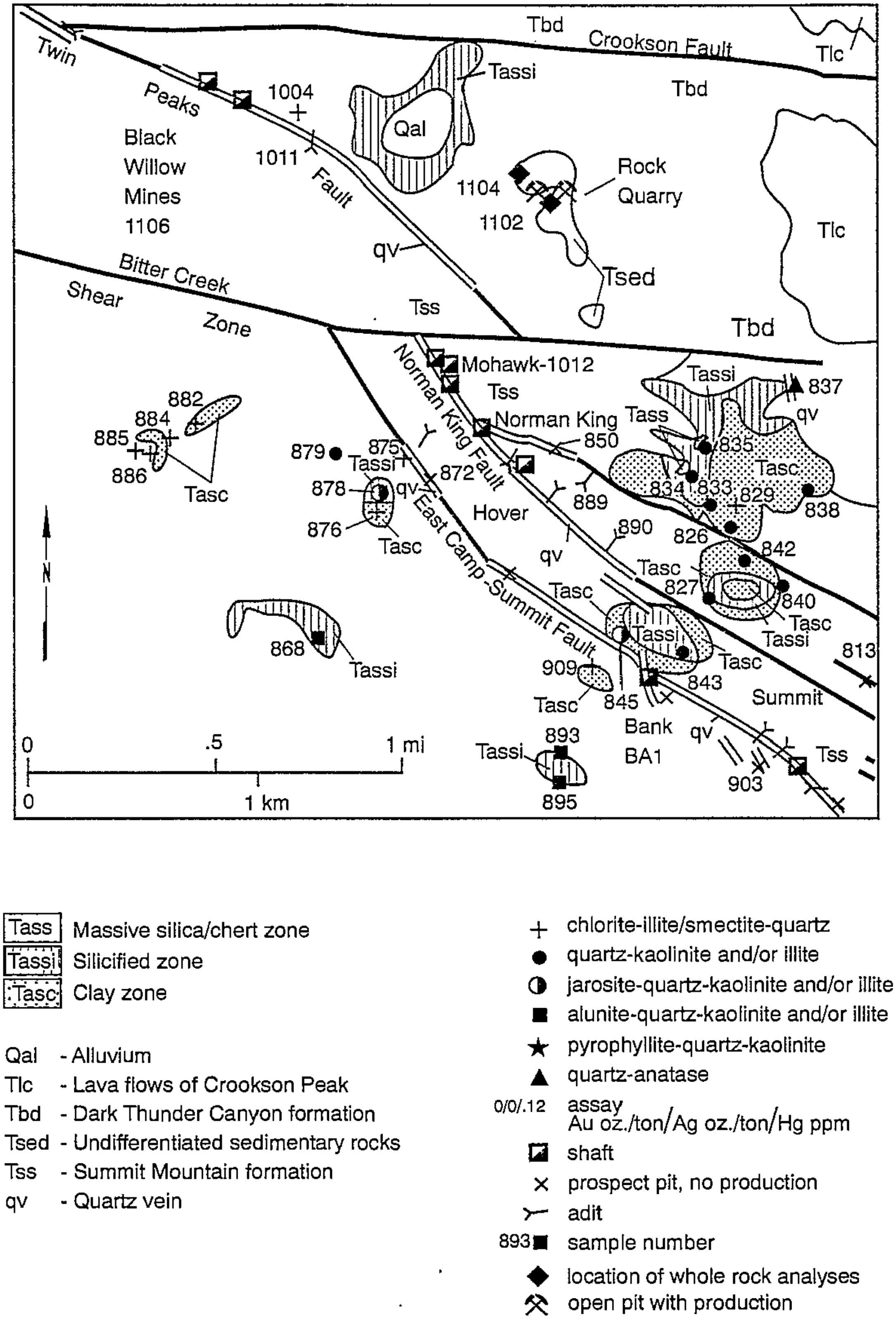
Source: McLemore (1993)

Figure 5-6 Legend for geologic map of Summit Mountains area



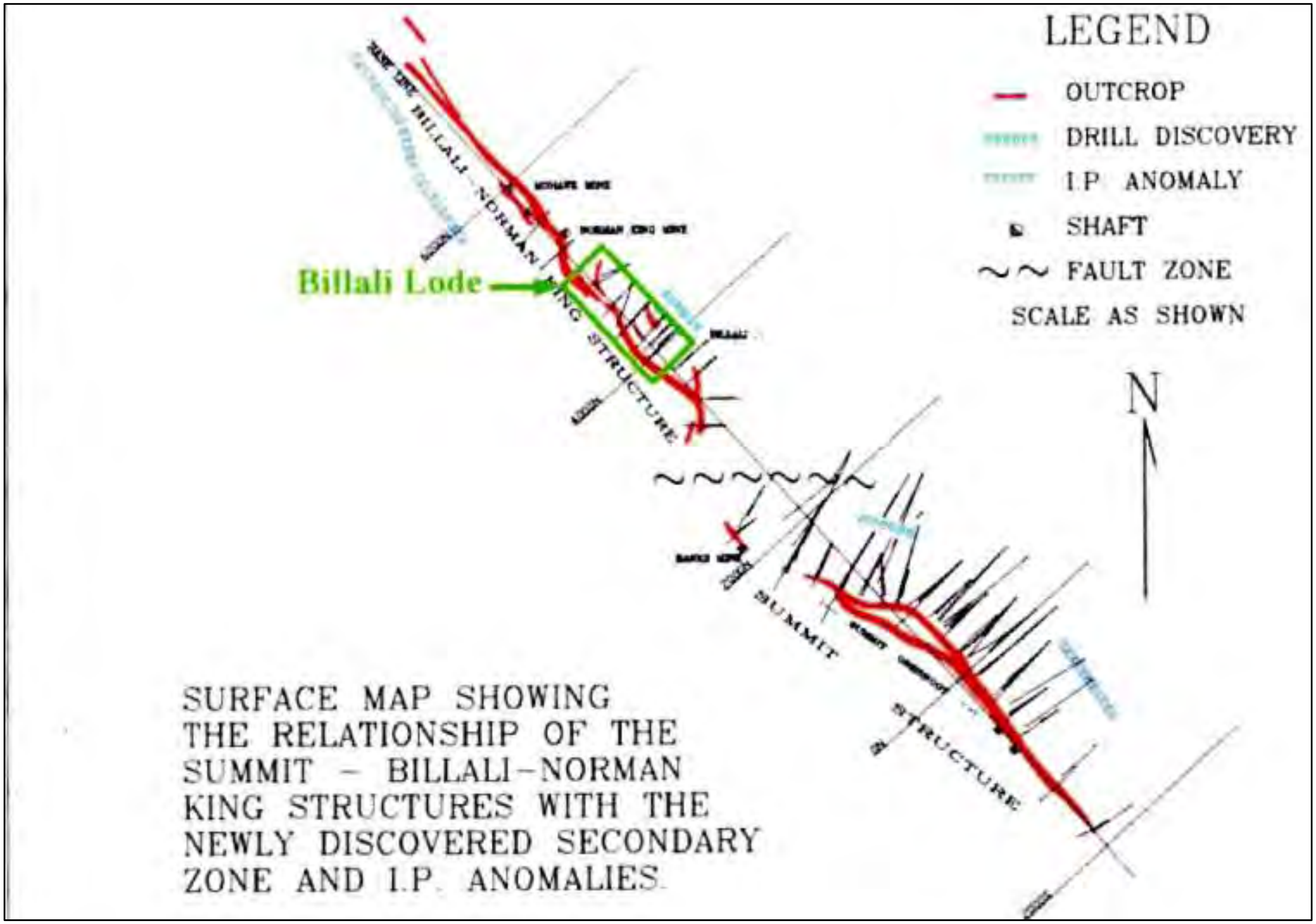
Source: McLemore (2000)

Figure 5-7 Major faults, mines, and prospects in the Steeple Rock district



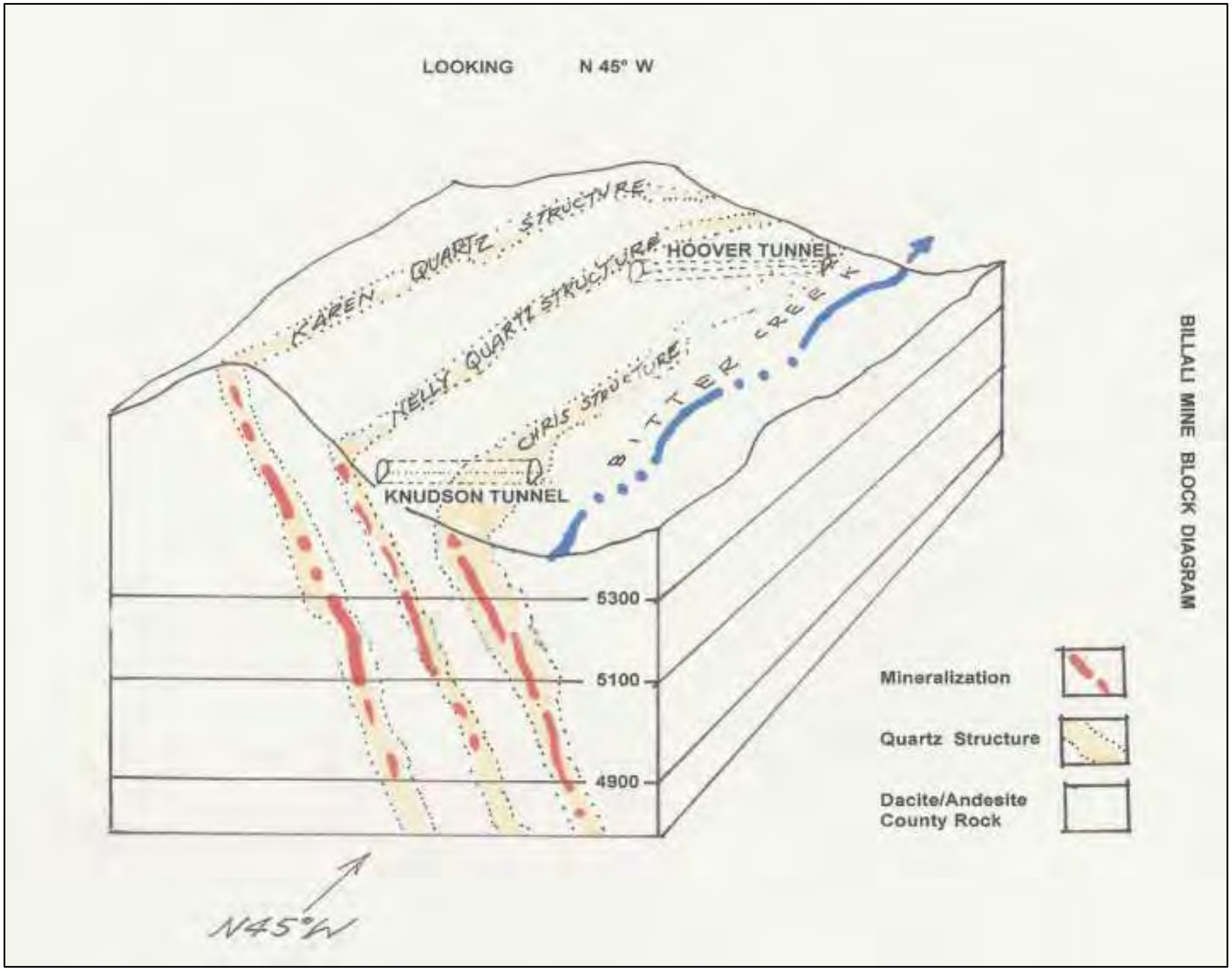
Source: McLemore (1993)

Figure 5-8 Geology and alteration of the Summit area



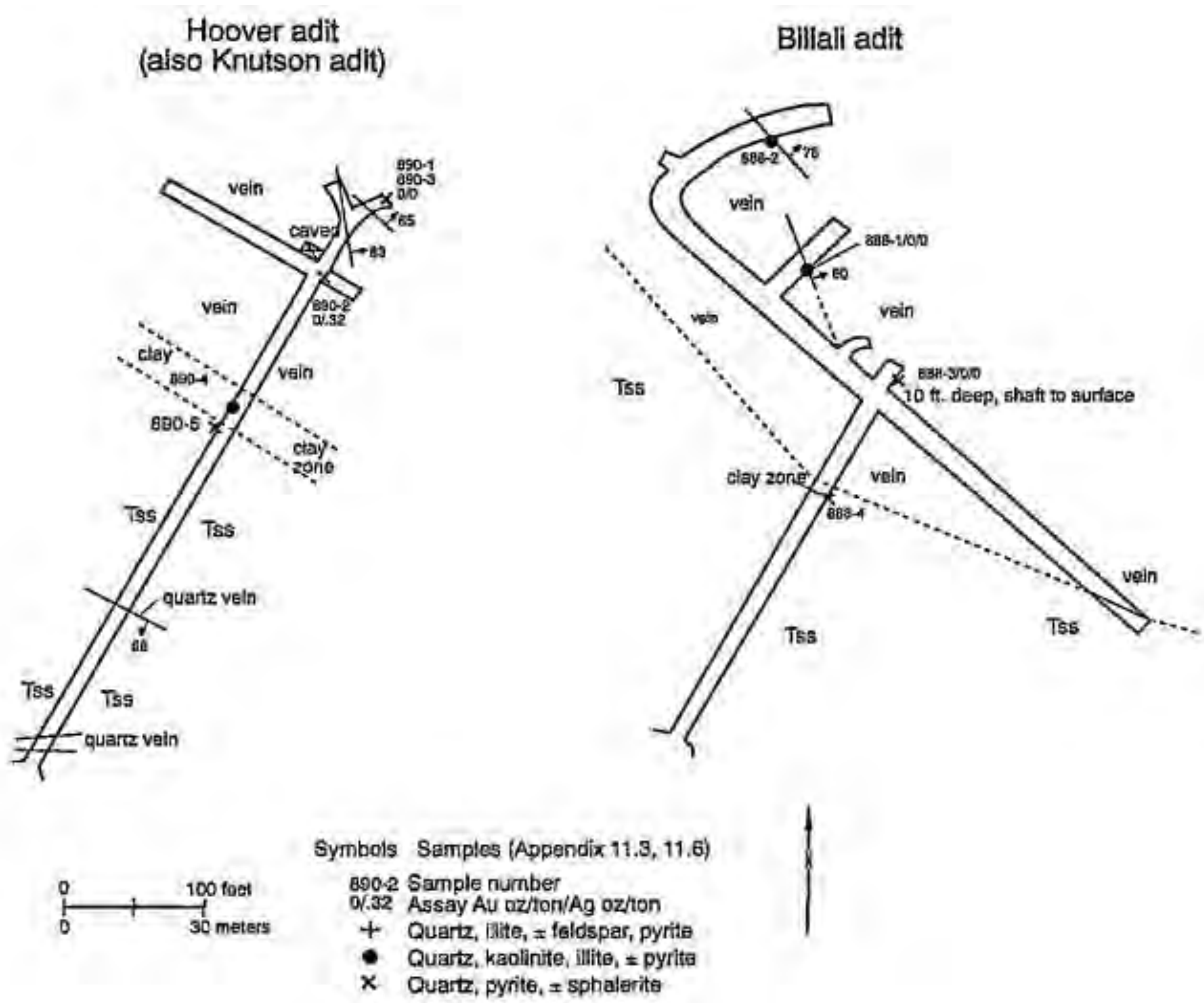
Source: Biron Bay Annual Report (1991)

Figure 5-9 Index map showing Billali-Summit-Norman King structures



Source: Merz (2011)

Figure 5-10 Block diagram of Billali quartz veins



Source: McLemore (1993)

Figure 5-11 Geology of the Hoover and Knudson adits

Source: Rasmussen photo, October 31, 2011; note gray sulfides indicating presence of silver-gold ore

Figure 5-12 Mineralized sample from the active face at the Summit mine

Source: Rasmussen photo, October 31, 2011; note yellow brown limonitic staining of the quartz structure

Figure 5-13 Active face of the silver-gold-quartz structure underground at the Summit mine

Source: Rasmussen photo, October 31, 2011; note yellow brown limonitic staining of the quartz structure

Figure 5-14 Quartz structure at the surface on the Billali patented claim

6 Deposit Type (Item 8)

The deposits in the Steeple Rock district are epithermal precious metal veins, also called quartz-adularia and quartz-alunite (Cox and Singer, 1986, model #25). The Steeple Rock district has characteristics of both low-sulfidation and high-sulfidation deposits (McLemore, 1993).

6.1 Mineral Deposit Models

6.1.1 Epithermal Mineral Deposits

The mines in the Steeple Rock district are classified as epithermal mineral deposits. Lindgren (1922, 1933) defined the term "epithermal" to include a broad range of deposits that formed by ascending waters at shallow to moderate depths (<1,500 m) and low to moderate temperatures (50º – 200º C), and that are typically associated with intrusive and/or volcanic rocks. Based on fluid inclusion and isotopic data, it is now generally accepted that epithermal deposits were formed at slightly higher temperatures (50º to 300º C) and relatively low pressures (a few hundred bars) (McLemore, 1993).

Epithermal mineral deposits occur in structurally complex tectonic settings that provide an excellent plumbing system for circulation of hydrothermal fluids. Typical epithermal deposits occur as siliceous vein fillings, breccia pipes, disseminations, and replacement deposits in intermediate to silicic volcanic and volcaniclastic rocks. Common ore textures characteristic of epithermal deposits include: open-space and cavity filling, drusy cavities, comb structures, crustification, colloform banding, brecciation (typically multistage), replacement, lattice (quartz pseudomorphs after bladed calcite), and irregular sheeting (Buchanan, 1981; Dowling and Morrison, 1989; McLemore, 1993).

Based on mineralogy and associated alteration, Hayba and others (1985) classified volcanic-hosted epithermal deposits into two classes: adularia-sericite and acid-sulfate. The acid-sulfate class was modified by Berger and Henley (1989) to be consistent with mineralogical names as alunite-kaolinite ± pyrophyllite). The Cox and Singer (1986) model #25 names these as quartz-adularia (= adularia-sericite) and quartz-alunite (= alunite-kaolinite). Because many of these minerals are too fine-grained to be identified in the field, White and Hedenquist (1990) modified these names to low sulfidation and high sulfidation.

6.1.2 USGS Model - Type # 25c

The Steeple Rock district is listed as a Tertiary epithermal precious- and base-metal vein district associated with volcanic rocks in Mosier and others (1986) or Model 25 in Cox and Singer (1986). Epithermal veins are further subdivided into several types, with the Comstock epithermal veins (Model 25c) having the closest similarity to the Steeple Rock veins (Mosier and others, *in* Cox and Singer, 1986).

Berger and Henley (1989) describe additional details of the gold-silver-base metal epithermal deposits and include a diagram of the typical alteration in these veins (Figure 6-1). "There is a general decrease in precious-metal values downward on the vein and a general concomitant increase in base-metals. A major change in mineralogy occurs in the vein where there are warps in the fault surface or abrupt changes in strike or intersections with other faults. Hanging wall brecciation is common, as are hanging wall splays in the fault system in these places. These are the loci of the very high-grade bonanza ores and/or low-grade, large-tonnage stockwork and disseminated ores."

The description of USGS Model 25c (Comstock epithermal veins) includes mineralogy of gold, electrum, silver sulfosalts, and argentite in vuggy quartz-adularia veins hosted by felsic to intermediate volcanic rocks (Mosier and others, 1986). The deposits are associated with through-going fracture systems, major normal faults, fractures related to doming, ring fracture zones, or joints. The textures include banded veins, open space filling, lamellar quartz, and stockwork.

The description of USGS Model 25 in general fits the Steeple Rock veins (Mosier, Menzie, and Kleinhampl, 1986). "The districts are precious- and base-metal-rich veins, stockworks, and breccias that occur in through-going fracture systems within mainly intermediate to felsic subaerial volcanic rocks. For such deposits, mineralization is thought to have been emplaced at depths less than 1,000 m and at temperatures below 300ºC. The principal ore minerals are electrum, tellurides, argentite, native gold and silver, base metal sulfides, and sulfosalts. The principal gangue minerals are quartz, chalcedony, opal, adularia, alunite, calcite, chlorite, pyrite, and Arsenopyrite. Ore textures typically include drusy cavities, crustification, comb structures, colloform structures, and brecciation."

6.1.3 Canadian Model – Epithermal Gold Deposits Type 15.1

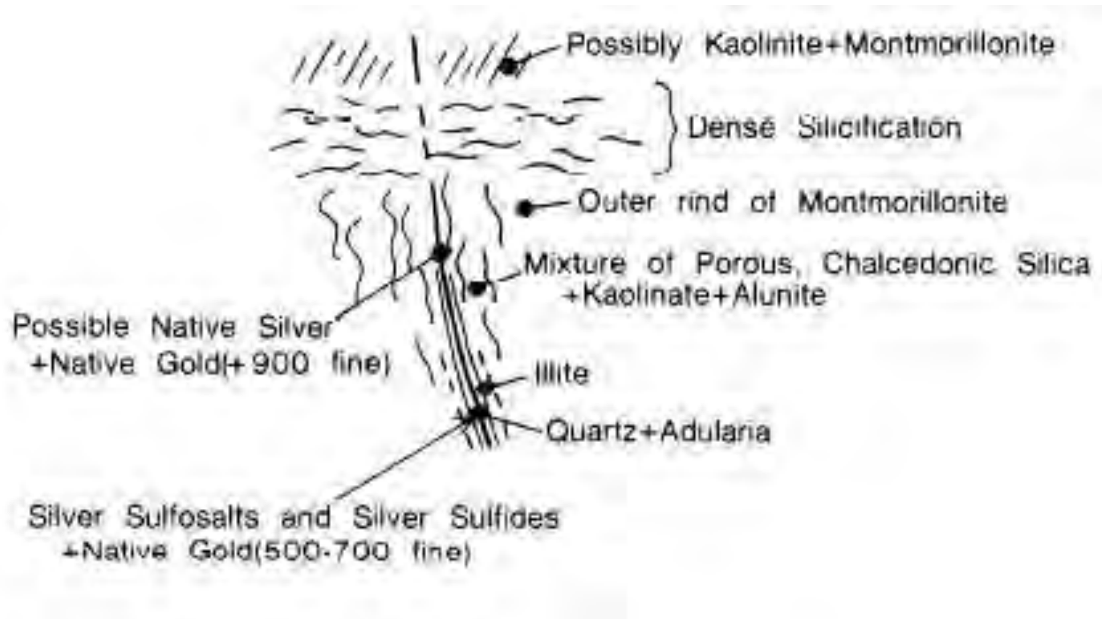
Epithermal gold (± silver) deposits (Model 15.1) are generally fault controlled and occur in volcanic or other rocks associated with base metal sulfides in very low concentrations (Taylor, 1996). The deposits may be of similar age (generally Tertiary) to their host rocks where these are volcanic. The deposits comprise veins and/or related mineralized breccia and wall rock. They are generally related to steep normal faults that control the emplacement of dikes, veins, and breccia zones. Permeable zones can form along irregularities in fault planes, such as vertically-plunging ore zones in faults with strike-slip motion, and horizontal ore zones in dip-slip faults. Silicified rocks are common in epithermal deposits.

6.1.4 Alkali-calcic Oxidized, MagmaChem Model - Type MAC-18

In the MagmaChem classification, the Steeple Rock mineralization is classified as metaluminous, alkali-calcic or Model MAC18 (Keith, 2003). The MAC18 class is called the Escalante type or alkali-calcic silver (manganese) epithermal veins. These are epithermal, quartz-Ag(Au) veins with Pb-Zn(Cu) Mn-Ge, ± F, Ba, Mo, pyrite-alunite ± amethyst/barite veins in or near hypabyssal oxidized biotite quartz latite/rhyolite porphyry intrusions. Wulfenite is locally abundant in supergene zones. Mn is present as manganese oxides (pyrolusite/manganite/wad) compared to other MAC models. This class is associated with silicic differentiates of subaerial hypabyssal hydrous hornblende-bearing subvolcanic monzo-dioritic intrusions in and along strike-slip faults within transpressive domains of alkali-calcic portions of magmatic arcs emplaced into oxidized, tectonically mature crust (Keith, 2003).

6.2 Application of Deposit Model

The Billali mine has the characteristics of low sulfidation (adularia-sericite; quartz-adularia) epithermal deposits. It is associated with a structurally complex area of major regional faults with acid to intermediate fluids, with mineralization that is slightly later than the host rock ages, with production of gold, silver, and variable base metals. Mineralogy in the low sulfidation systems includes argentite, tetrahedrite, tennantite, silver, gold, and some base-metal sulfides, with chlorite present, possibly some selenides, common manganese minerals, no bismuthinite, a lower sulfide mineral assemblage, and common chalcedony, adularia, and minor alunite and pyrophyllite. Alteration includes extensive propylitic with sericitic to argillic with supergene alunite and kaolinite and abundant adularia (McLemore, 1993).



Source: Berger and Henley (1989)

Figure 6-1 Schematic drawing of upper part of an epithermal vein system

7 Exploration (Item 9)

Extensive exploration has been conducted in the Steeple Rock mining district since 1990. The work included geologic mapping, geophysical surveys, and exploration drilling.

7.1 Relevant Exploration Work

The most recent exploration in the Steeple Rock district was conducted by Biron Bay in 1991. Based on this work, Santa Fe Gold Corporation of Albuquerque, New Mexico, acquired the Summit property in 2006 and opened the Summit mine in 2008, stockpiling ore for completion of the mill in 2010. It continues producing quartz containing gold and silver values and sells the product for flux for copper smelters in Arizona, receiving credits for the precious metals.

7.1.1 Steeple Rock District Exploration

Exploration and mining activities in the Steeple Rock district were summarized by Hedlund (1990a). Precious and base metal mine exploration and mining activities are reproduced Table 7-1 and fluorspar mining activities are in Table 7-2. Starting in the 1970s as a result of the rising prices of precious metals, exploration for gold and silver increased in the Steeple Rock district, with additional exploration drilling and some production, mainly for silica flux with high gold and silver credits.

Production and exploration between 1947 and 1980 were minor. In 1954, Kennecott Co., presumably looking for porphyry copper deposits, drilled a hole in the Bitter Creek altered area (Bitter Creek #1, sec. 20, T16S, R21W) to a depth of 762 m (Hedlund, 1990b; Powers, 1976; McLemore, 1993). Exploration drilling occurred periodically throughout the district from 1950 to 1980 (Hedlund, 1990b). Douglas Hansen rehabilitated and intermittently shipped ore from the Summit, Center, Bank, Laura, Carlisle, and East Camp mines in 1975-1990 (McLemore, 1993).

Exploration intensified in the 1980s and 1990s, but not much production has occurred. Superior Mining Division drilled in the Bitter Creek altered area (Sec. 27, T16S, R21W) to 274 m. Impala Resources Ltd. (Canada) drilled at East Camp in 1986. Inspiration Mining Co., Phelps Dodge Inc., Hecla mining Co., St. Cloud Mining Co., Noranda Exploration, Inc., and Pioneer Nuclear Corp. also had exploration projects in the district in the 1980s. Reasons for and results of these programs are largely unknown, but did not result in any mining or announcement of major discoveries. Dresser industries, Inc. drilled ant the Center and East Camp mines, with unknown results except at the Center mine where production began in 1987 by R and B Mining Co. The mine has produced silica flux with significant gold and silver from 1987 (McLemore, 1993).

Companies with active exploration in the 1990s included Great Lakes Exploration Co. drilling at the Alabama mine in 1991, and Biron Bay Resources Ltd. drilling along the Summit vein as part of their joint venture agreement with Nova Gold Resources Ltd. Weaco Exploration Ltd. drilled in the fall of 1991 at the Carlisle mine and nearby areas (McLemore, 1993). Biron Bay drilled over 200 holes on the Summit mine and adjacent claims.

7.1.2 Billali Mine Exploration

In 1990, the Billali claim was leased from the owners, along with several square miles of many other claims in a large area surrounding the Summit mine, by Nova Gold Resources Ltd. They had such complete claim control coverage that their drill program could be based on geologic targets without regard to claim ownership. After more than a year of drilling, Nova Gold developed funding problems and they subleased the entire leased area to Biron Bay Resources Ltd. (Biron Bay), of Toronto, Canada.

Each of these companies conducted exploration, including drilling and sample assay of the recovered drill core. In spite of specific contractual agreements that required the Canadian exploration companies to provide copies of assays from the sampling and drill holes, no information was provided to the claim owners. However, a considerable amount of information has been gathered from their annual reports to stockholders and from the data files of MPH. At least 28 holes were drilled on the Billali claim by Nova Gold and Biron Bay. Of these, nine drill holes returned ore grade intercepts (Appendix E).

Biron Bay reported "discovery of a high grade gold-silver mineralization structural target" on the Billali. "This new high grade zone is near surface and hosted by stockworked quartz stringers and veinlets. Potential for bulk mining of near surface deposit is highly indicated" (Biron Bay Resources Ltd. annual report, 1991).

7.2 Surveys and Investigations

Numerous studies of the Steeple Rock district were conducted by the U.S. Geological Survey (USGS) in the 1990s, as described in the History section (Section 4.2). Bouguer gravity surveys (Figure 7-1), aeromagnetic anomalies (Figure 7-2), and magnetic surveys (Figure 7-3) were conducted as part of the USGS investigation of the Silver City 1º by 2º quadrangle. These regional surveys are generally too broad in scale to be useful in exploration for productive precious metal veins.

According to the Biron Bay 1991 annual report,

> "The infill drilling along the Billali-Norman King structure resulted in the discovery of a mineralized structure with higher grade and better continuity than the main target. Prior to the 1991 program, the main target was the outcropping Billali-Norman King structure wherein an inferred reserve of 219,000 tons averaging 0.244 ounce per ton gold and 12.8 ounces per ton silver was announced in the December 12, 1990 report. In the current program, the new zone was discovered only when, because of topographic constraints, it was decided to drill a vertical hole to test the main target at depth. The hole, however, started hitting very gold gold-silver bearing base metal sulfides mineralization starting from 252 feet to 315 feet from collar and again at 395 feet to 407 feet. Unfortunately, the hole encountered a void at 454 feet, causing excessive hole deviation and thus forcing abandonment. A second hole (B-91-16) wa collared from the same pad at 85o to compensate for the lost hole. This subsequent hole confirmed the high grade gold-silver zone when it intersected gold sulfide mineralization from 232 feet to 246.5 feet from collar. B-91-16 was bottomed at 971 feet after it passed through the down dip extension of the Billali-Norman King main structure at depth (assays for these are still pending).
>
> Figure 2 (Figure 8-3) is a section showing the correlation of the discovery and confirmation holes defining the new zone in relation to the Billali main target.
>
> Following are the Billali discovery and confirmation holes" (Table 7-3).
>
> "Biron Bay commissioned MPH consulting Limited to conduct IP Mise-a-la-masse and surface dipole-dipole geophysical survey in the project. The Mise-a-la-masse successfully confirmed lateral continuity of the Summit ore shoot. To date a strike length of approximately 2000 feet and vertical extent of 1000 feet is indicated by the combined drilling and IP results."

Biron Bay Resources Ltd. reported on the geophysical survey results in their 1991 annual report.

> "The IP geophysical anomaly trend (low resistivity) was found southeast of the Summit ore shoot. This trend correlates with an outcropping quartz vein with limonitic staining found approximately 1300 feet west of the Summit ore shoot. This was not drill explored before."

Biron Bay also reported on geophysical results from the Billali claim.

"IP geophysical anomaly trend (high chargeability and low resistivity) approximately 500 feet west of the still unexplored portion of the Billali-Norman King outcropping quartz vein structure."

7.3 Sampling Methods and Quality

Information about sampling methods and quality are not currently available. Many samples were collected in the district and are described by McLemore (1993). Those samples examined by McLemore from the Summit mine vicinity, including the Billali mine, are described in Appendix C.

7.4 Significant Results and Interpretation

The exploration drilling program by Biron Bay in the vicinity of the Summit and Billali mines indicated the presence of ore grade precious metal in numerous drill holes. The Summit mine is currently economically producing quartz containing gold and silver values for smelter flux. The quartz veins on the Summit claims continue along strike into the Billali claim. The Biron Bay drilling intersected precious metal mineralization in several drill holes on the Billali claim, as described in the Drilling section (Section 8).

Table 7-1 Exploration activities in the Steeple Rock district

Period	Activity	Company or Agency	Production
1880-1897	Carlisle mine	Golden Leaf Mining Co., Steeple Rock Development Ct., Laura Consolidated Co.	$5,000,000 silver
1914-1936	Jim Crow – Imperial mines - mining	N.A.	$ 98,000 precious metals
1914-1939	Mount Royal mine – mining	N.A.	N.A.
1914-1942	Laura mine – mining	N.A.	N.A.
1919-1921	Norman King, Billali, Hoover Tunnel - mining	N.A.	$63,200 precious metals
1927	Black Willow mine	N.A.	N.A.
1927	Carlisle mine – 3 drill holes	United Metals Corp.	N.A.
1933-1942	East Camp Group - mining	East Camp Exploration Syndicate	$1,400,000 precious metals
1936	Carlisle Group - drilling	Cactus Mining Co.	Nil
1942-1945	East Camp Group	East Camp Exploration Co.	21,500 tons of ore
1942-1946	Carlisle Group - mining	Carlisle Development Co.	Base metals mined
1943-1944	Carlisle Group – 14 drill holes (8 U.G, 6 surface)	USGS, USBM	
1954	Bitter Creek drill hole (SW¼, SE ¼, S20, T16S, R21W, 2,447 ft deep	Kennecott Co.	Nil
1959, 1960	Carnation mine - drilling		Nil
1965	East Camp vein - drilling	Banner Mining Co.	Nil
1973	East Camp Group – mining, heap leaching	Mount Royal Mining Co.	Nil
1973	Twin Peaks Mines – drilling (2,000 ft coring)	Mineral Economics Corp, Fraser-Martin Mines, Inc.	Nil
1970-1974	Mount Royal mine - mining		N.A.
1975-1977	Summit and Center mines	D. Hansen, Dresser Industries	Nil
1977-1979	Center mine – mining, 5 drill holes	Dresser Industries Inc.	At least 10,000 tons ore
1978, 1979, 1996	Bank and Laura mines, rehabilitated in 1978	Douglas Hansen	N.A.
1978-1985	Summit mine - mining	Summit Minerals Inc.	N.A.
1982, 1983	Imperial mine - mining	Gold King – Imperial Mining Co.	N.A.
1979	Bitter Creek drill hole SE¼, NE¼, S27, T16S, R21W, 900 ft deep	Superior Mining Division	Nil
1983-1987	East Camp and Summit mines	Summit Minerals, and Sierra, El Paso (Summit)	Heap leaching attempted at East Camp mine
1985-1994	Center mine - mining	Mount Royal Mining & Exploration Co.	Ranked third in silver production for NM
1998-1999	Center mine – flotation mill	Doug Hanson	concentrates

Source: Hedlund (1990a) and Gundiler (2000)

Table 7-2 Fluorspar exploration activities in the Steeple Rock district

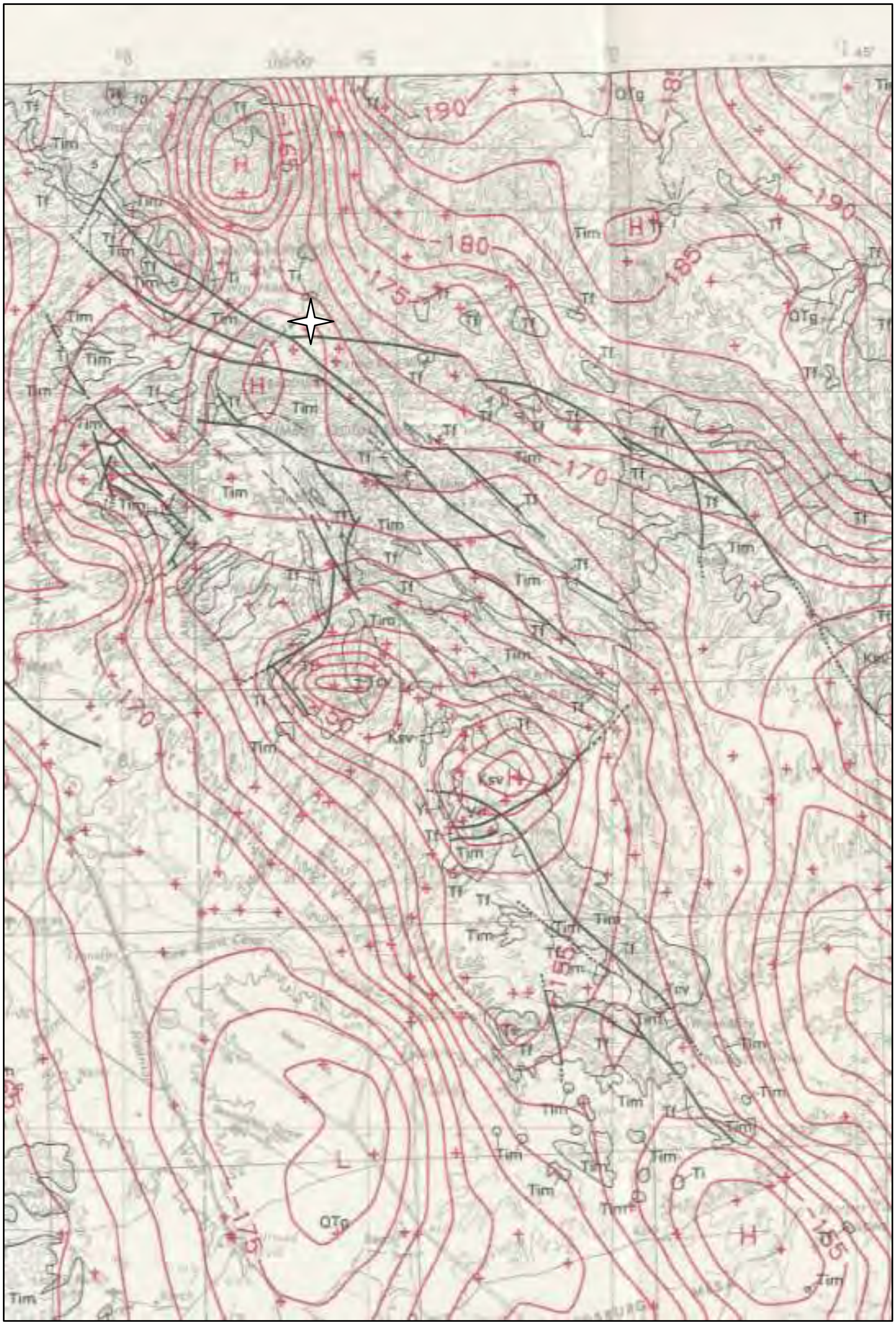
Period	Activity	Company or Agency	Production
1936-1942, 1960	Fourth of July	Southwestern Minerals Co; and R.T. Ellis Mining Co.	2,900 tons fluorspar ore
1942-1944, 1972	Mohawk mine	Southwestern Minerals Co.; and E. Belcher	6,463 tons fluorspar ore
1942, 1943	Powell mine	N.A.	115 tons fluorspar ore
1914-1944	Luckie Nos. 1	Quien Sabe Mining Co.	2,000+ tons fluorspar ore
1971, 1972	Leta Lynn	E. Belcher	3 tons fluorspar ore
1970s	Rattlesnake Group	R. Hill	120-150 tons fluorspar ore

Source: Hedlund (1990a)

Table 7-3 Billali discovery and confirmation holes

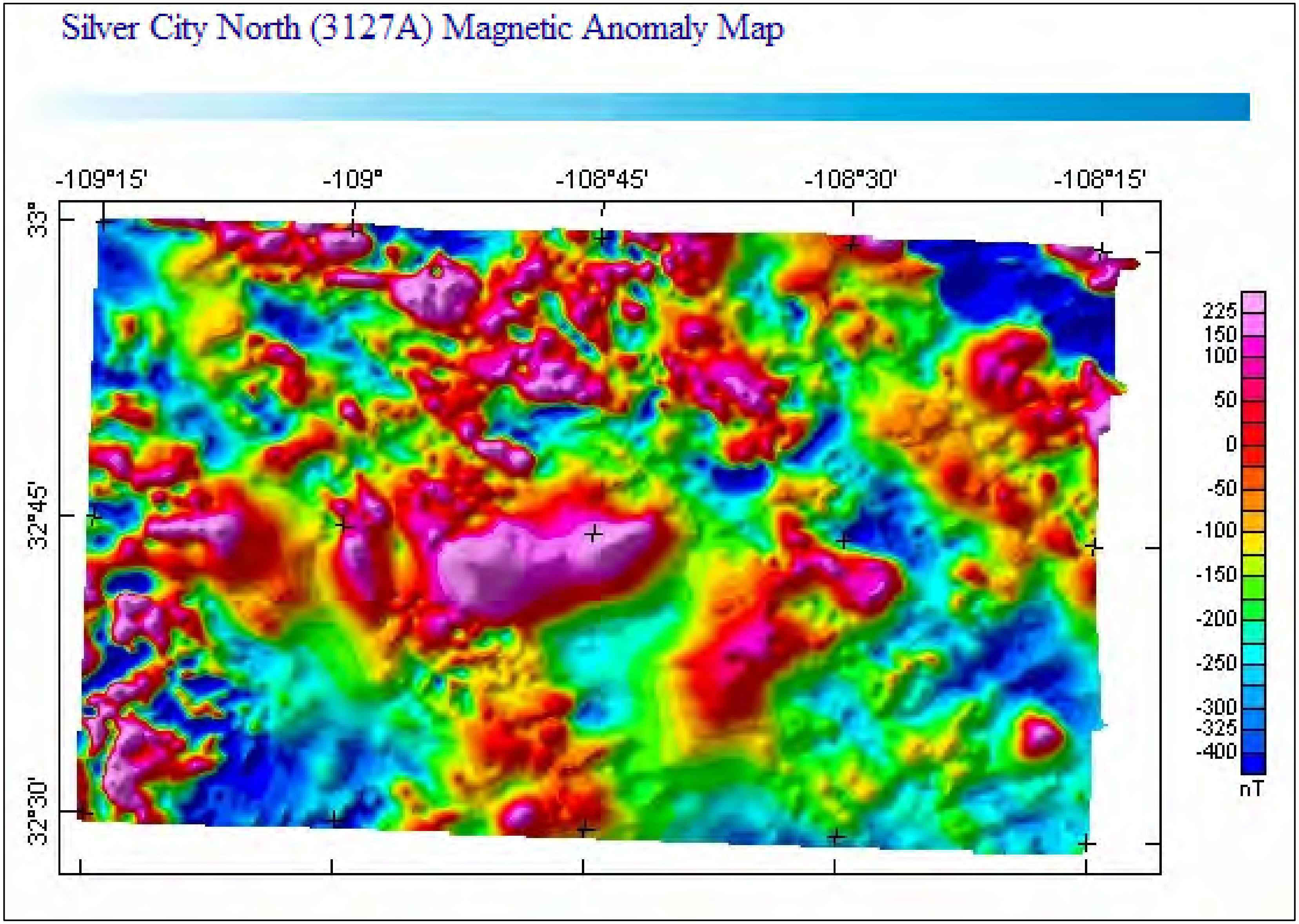
Hole No.	Width (ft)	Au (oz/ton)	Ag (oz/ton	Intervals (ft)
B-91-15	63	0.080	5.00	252-315
B-91-15 (within above)	5	0.230	12.63	252-257
B-91-15 (within above)	15	0.190	10.82	282-297
B-91-15	21	0.096	8.26	395-416
B-91-15 (within above)	9	0.156	13.96	407-416
B-91-16	14.5	0.301	21.80	232-246.5
B-91-16 (within above)	4.0	0.136	9.05	232-236.0
B-91-16 (within above)	8.5	0.448	32.93	238-246.5

Source: Biron Bay annual report (1991)



Source: Wynn (1981), Tim = Tertiary intermediate to mafic volcanic rocks

Figure 7-1 Complete Bouguer Gravity anomaly map of part of the Silver City 1º x 2º quadrangle



Source: USGS 3127A

Figure 7-2 Silver City North magnetic anomaly map

Source: Klein, 1987

Figure 7-3 Part of Silver City North aeromagnetic anomaly map

8 Drilling (Item 10)

Section 8 provides information on the type and extent of the drilling completed to date, methods used, and an interpretation of results.

8.1 Type and Extent

Nova Gold and Biron Bay, two Canadian exploration companies, conducted drilling on the Billali claims in 1990-1992. At least 28 diamond drill holes were drilled on the Billali claim (Table 8-1, Table 8-2, Figure 8-1, Figure 8-2), as part of an approximately 200 drillhole program in the nearby areas. Nine of the Billali drillholes intersected ore grades of gold and silver (Table 8-3), as indicated in the Biron Bay Annual Report for 1991. Additional holes were drilled in 1992, but that information was not published.

8.2 Procedures

Drilling completed in 1990, 1991, and 1992 by contractors for Nova Gold and Biron Bay, consisted of at least 28 vertical and angled diamond drill core. A summary of the results of the assays and rock type were recorded. Table 8-3 summarizes the drilling information. Details of each drill hole are presented in Appendix C.

8.2.1 Drill Hole Locations and Tests

A sketch map of the drill hole locations on the Billali claim is presented as Figure 8-1. The orientations of the angled drill holes are shown graphically in Figure 8-2. A vertical cross section of some of the drill holes on the Billali claim (Figure 8-3) shows the intercepts of precious metals.

Deviation from the vertical is indicated by the East and North columns in the record of the drill holes presented in Appendix C. Survey information on the collar data for the drill holes is presented in Table 8-2. No geotechnical data is readily available

8.3 Core Handling and Logging Protocols

No information is available for core handling and logging protocols for the Biron Bay drill core.

Descriptive logs include a description of the various geological features noted during examination of core (MPH file data, 1991). The information on the rock units is included in Appendix D.

No information is available concerning geotechnical logging, video recording, magnetic susceptibility, or core storage.

8.4 Interpretation and Relevant Results

Significant intercepts of ore grade gold and silver in the drill holes on the Billali claim are shown in Table 8-3. The assay results of gold and silver are plotted as histograms in Figure 8-4 through Figure 8-15. These data were obtained from MPH Consulting and are confirmed by the published data in McLemore (1993) (who examined the core near or at the time of Biron Bay‟s drilling), reproduced in Appendix D of this report.

Table 8-1 Drill hole numbers, depths, locations, and direction

Source: MPH data files

Drill hole #	azimuth	North	Elevation	Total Depth
B-91-1	360	3770	5355	524
B-91-2	360	3770	5355	411
B-91-3	350	3770	5355	400
B-91-4	244	4200	5340	475
B-91-5	243	4200	5340	385
B-91-6	235	4200	5340	370
B-91-7	245	4200	5340	788
B-91-8	248	4600	5325	406
B-91-9	256	4600	5325	502
B-91-10	261	4600	5325	542
B-91-11	263	4600	5325	647
B-91-12	275	4101	5340	430
B-91-13	276	4102	5340	563
B-91-14	275	4099	5340	350
B-91-15	333	4033	5350	475
B-91-16	340	4040	5350	971
B-91-17	521	4021	5400	1201
B-91-18	517	4050	5400	1566
B-91-19	393	4614	5400	1004
B-91-20	380	3770	5350	904
B-91-21	461	3620	5400	1294
B-91-22	380	3770	5355	654
B-92-1	490	3620	5400	814

Table 8-2 Downhole survey data for the 1990-1991 Billali drill holes

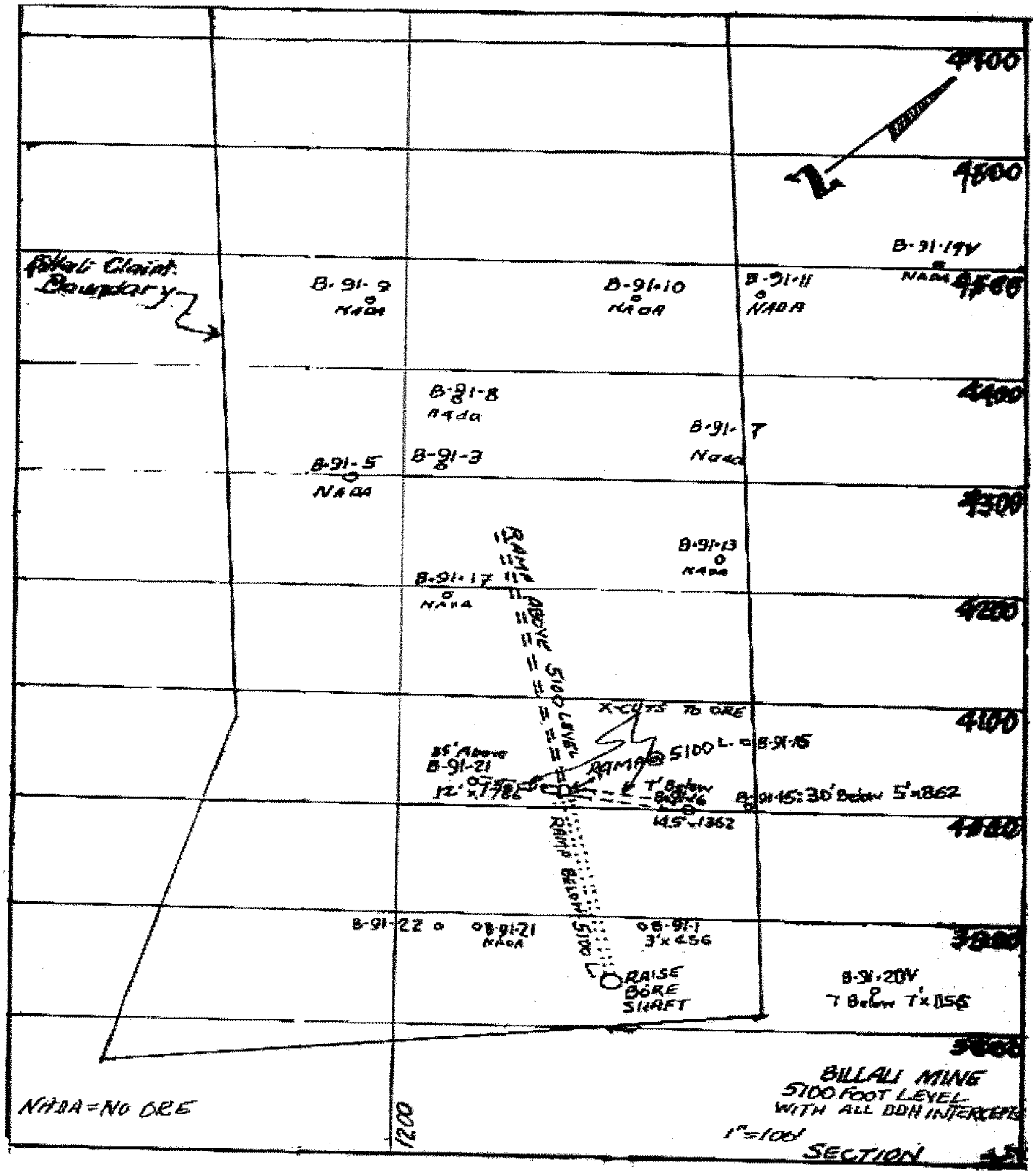
Source: MPH data files (1991)

				angle
B-91-1	0	229	271	-65
B-91-1	500	229	271	-66
B-91-2	0	228	270	-35
B-91-3	0	229	271	-5
B-91-4	0	221	263	-70
B-91-4	350	215	257	-72
B-91-5	0	221	263	-35
B-91-6	0	221	263	-8
B-91-7	0	0	42	-90
B-91-7	600	164	206	-88
B-91-8	0	200	242	-3
B-91-9	0	224	266	-35
B-91-9	350	221	263	-37.5
B-91-10	0	224	266	-64
B-91-10	400	223	265	-65
B-91-11	0	0	42	-90
B-91-12	0	226	268	-50
B-91-12	300	226	268	-51
B-91-13	0	226	268	-76
B-91-13	400	232	274	-76
B-91-14	0	226	268	-13
B-91-15	0	0	42	-90
B-91-15	475	253	295	-84
B-91-16	0	224	266	-85
B-91-17	0	238	280	-77
B-91-17	600	240	282	-79
B-91-18	0	0	42	-90
B-91-18	500	347	29	-88.2
B-91-18	1400	347	29	-88.2
B-91-19	0	0	42	-90
B-91-19	800	18	60	-89
B-91-20	0	0	42	-90
B-91-20	400	0	42	-89
B-91-20	800	0	42	-90
B-91-21	0	0	42	-90
B-91-21	600	0	42	-90
B-91-21	1100	0	42	-90
B-91-22	0	226	268	-80
B-91-22	404	226	268	-79
B-92-1	0	226	268	-76
B-92-1	600	218	260	-77

Table 8-3 Significant ore-grade drill intercepts for the 1990-1991 drill holes

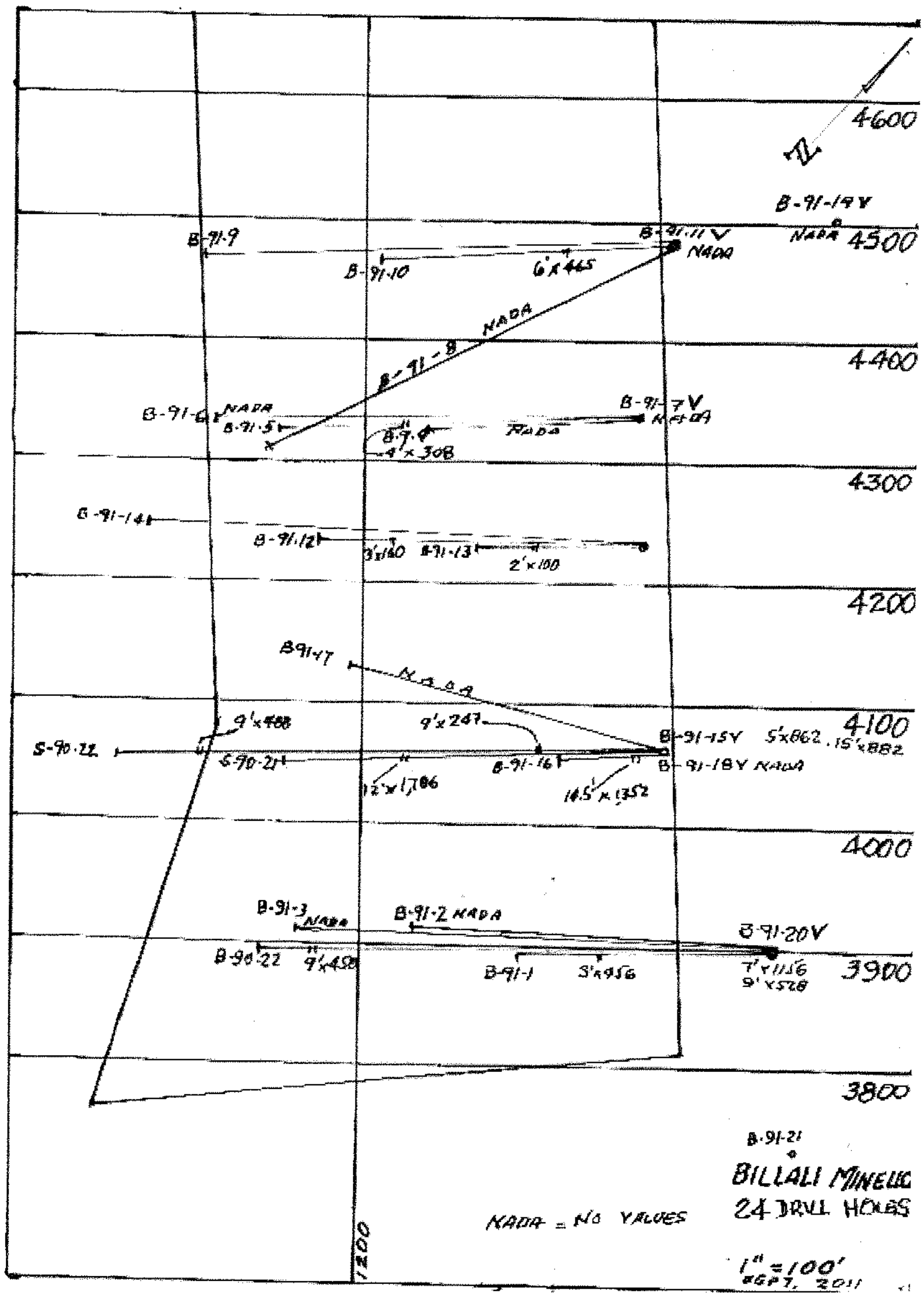
Source: MPH data files (1991); summary by Merz (2011); ** = information from Biron Bay's 1990 Annual Report

DDH#	From (ft)	To (ft)	Length (ft)	Au (oz/ton)	Ag (oz/ton)
S-90-21**	305	317	12	0.52	23.86
B-91-16	232	246.5	14.5	0.3	21.8
B-91-20	304	311	7	0.34	15.29
B-91-15	252	257	5	0.23	12.36
B-91-15	285	300	15	0.233	12.73
B-91-20	266	275	9	0.14	7.48
B-90-22**	400	409	9	0.1	7.46
B-91-1	305	308	3	0.1	7.4
B-91-10	216	222	6	0.224	1.17



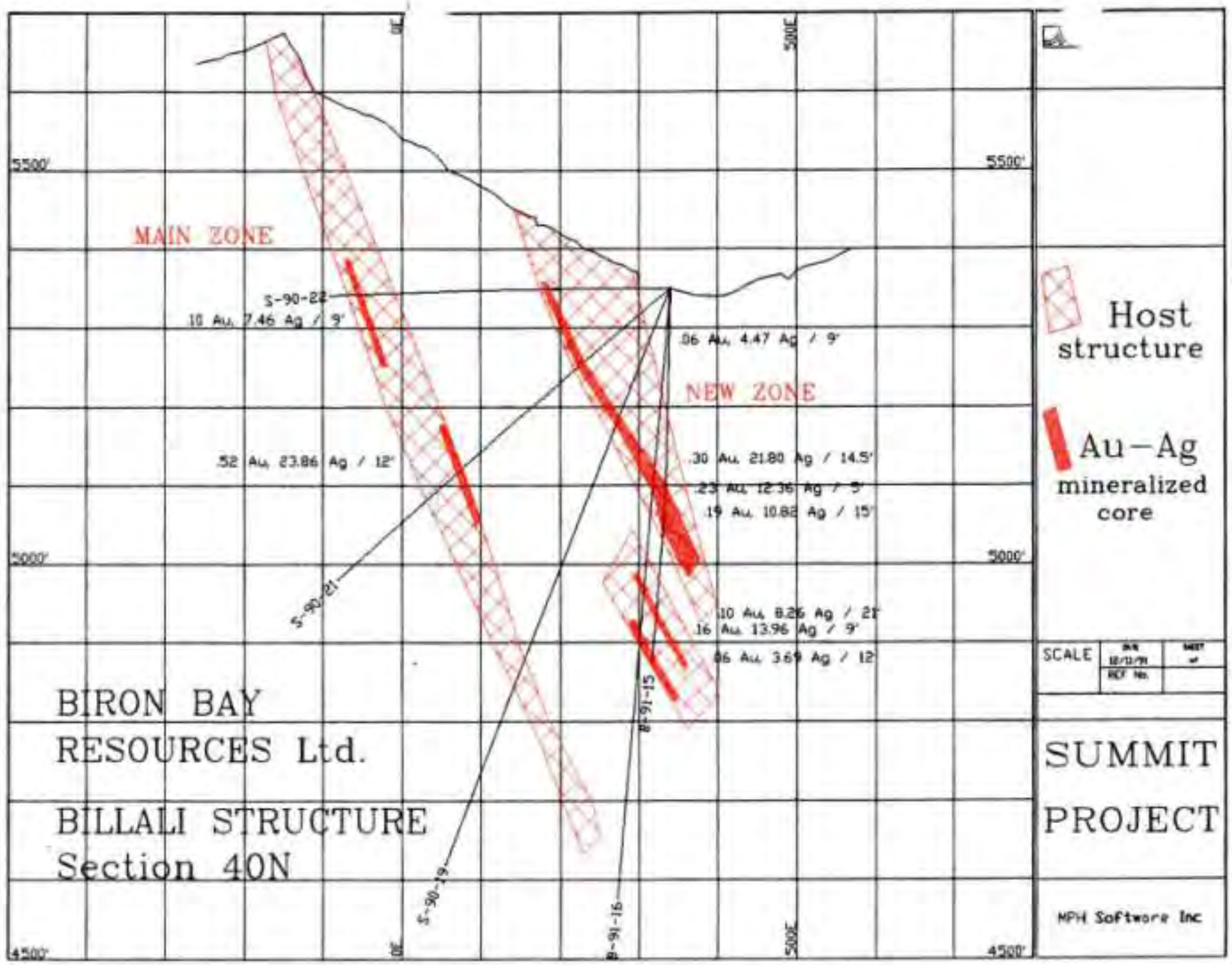
Source: Merz (2011); note NADA = no ore

Figure 8-1 Map of Biron Bay drill holes that pierced the 5100 level



Source: Merz (2011)

Figure 8-2 Map of Biron Bay drill holes showing azimuth of drill holes



Source: Biron Bay Annual Report (1991)

Figure 8-3 Vertical section B-B' showing drill hole intercepts

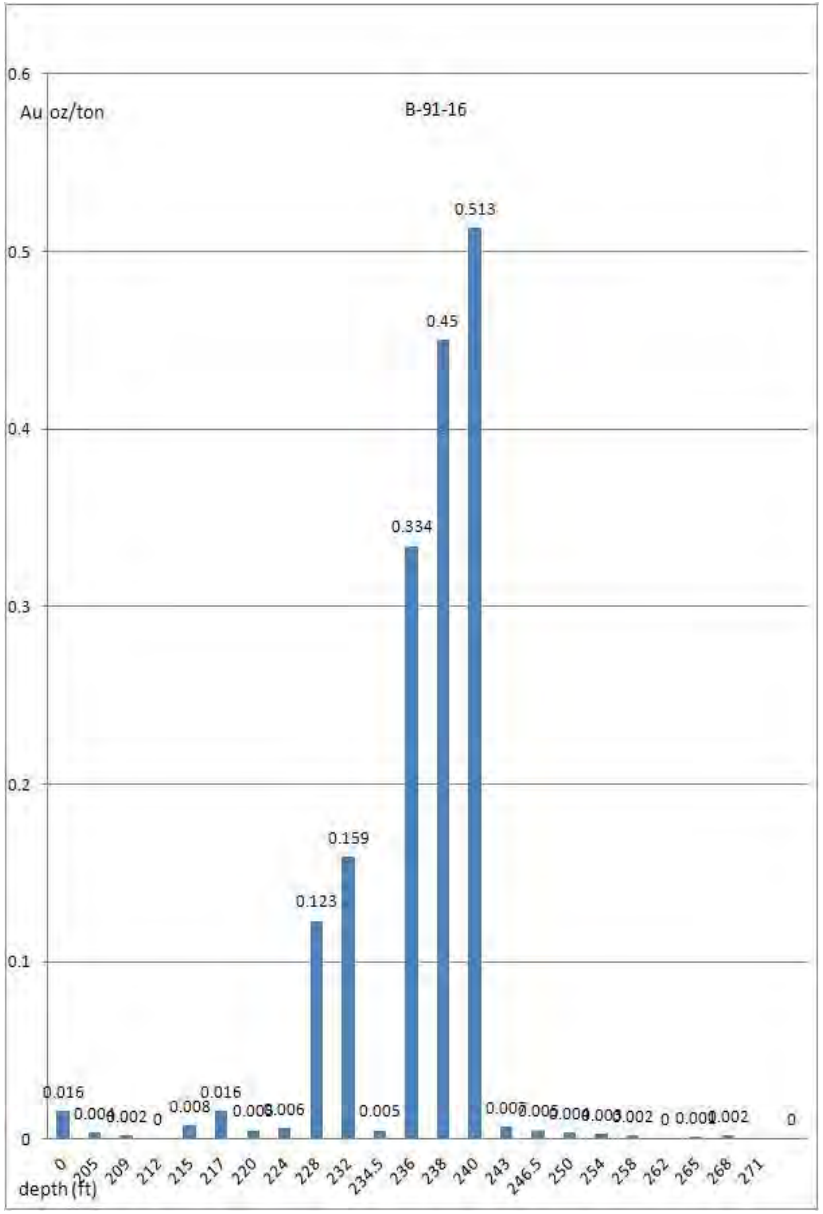


Figure 8-4 Gold (oz/ton) in drill hole B-91-16

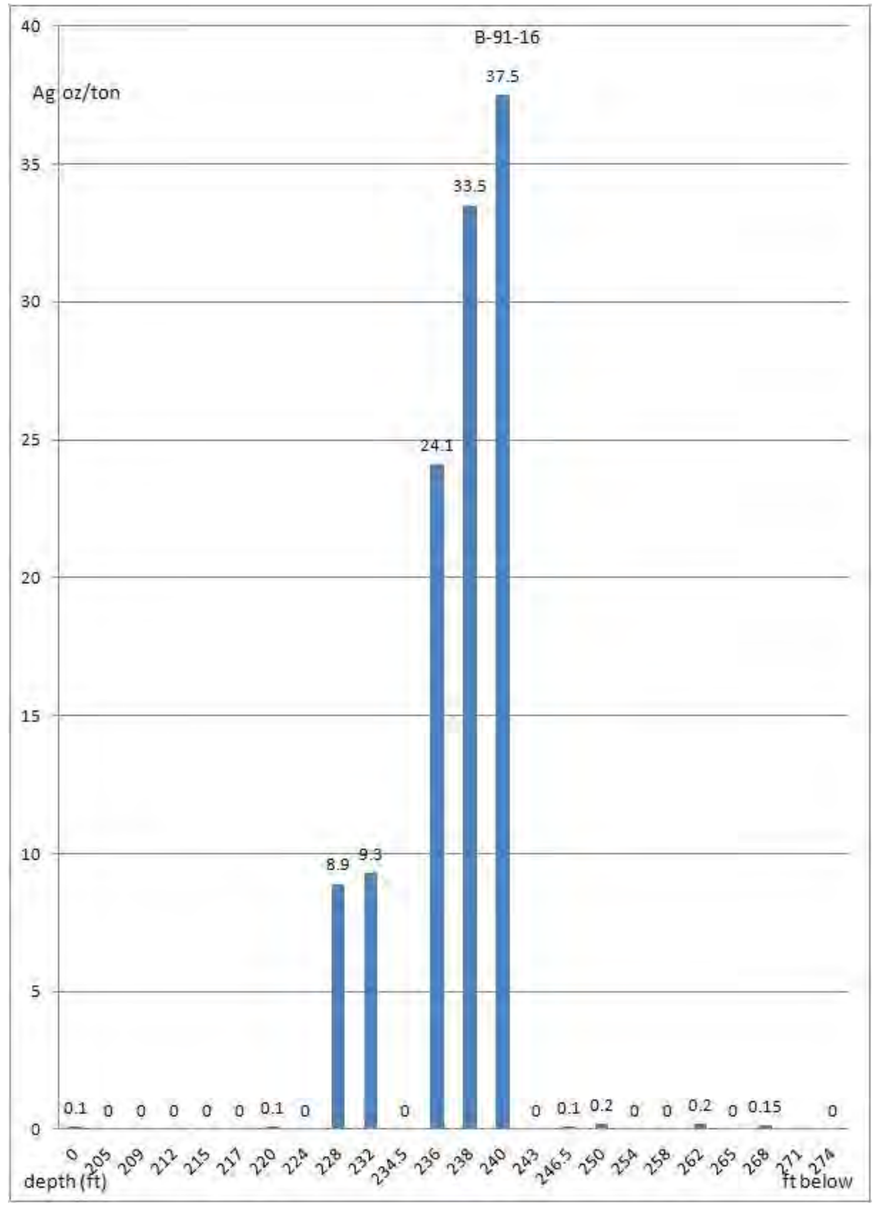


Figure 8-5Silver (oz/ton in drill hole B-91-16

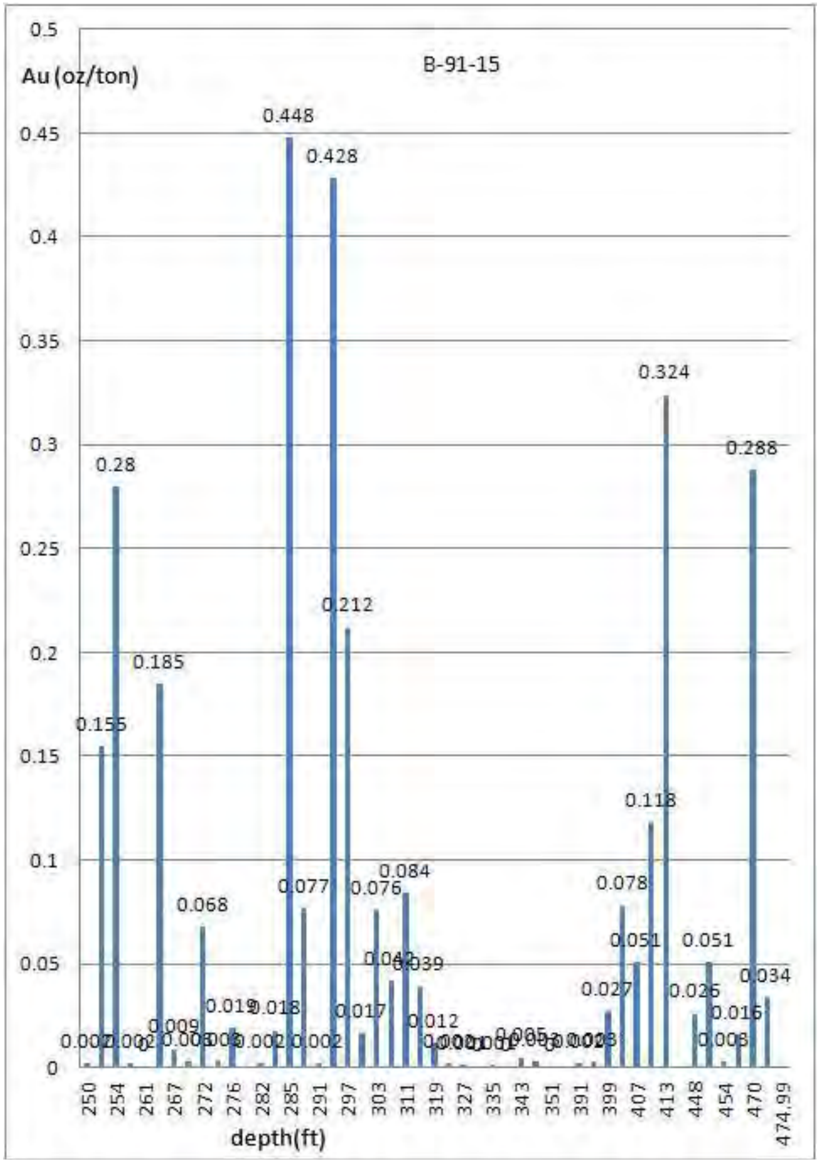


Figure 8-6 Gold (oz/ton) in drill hole B-91-15

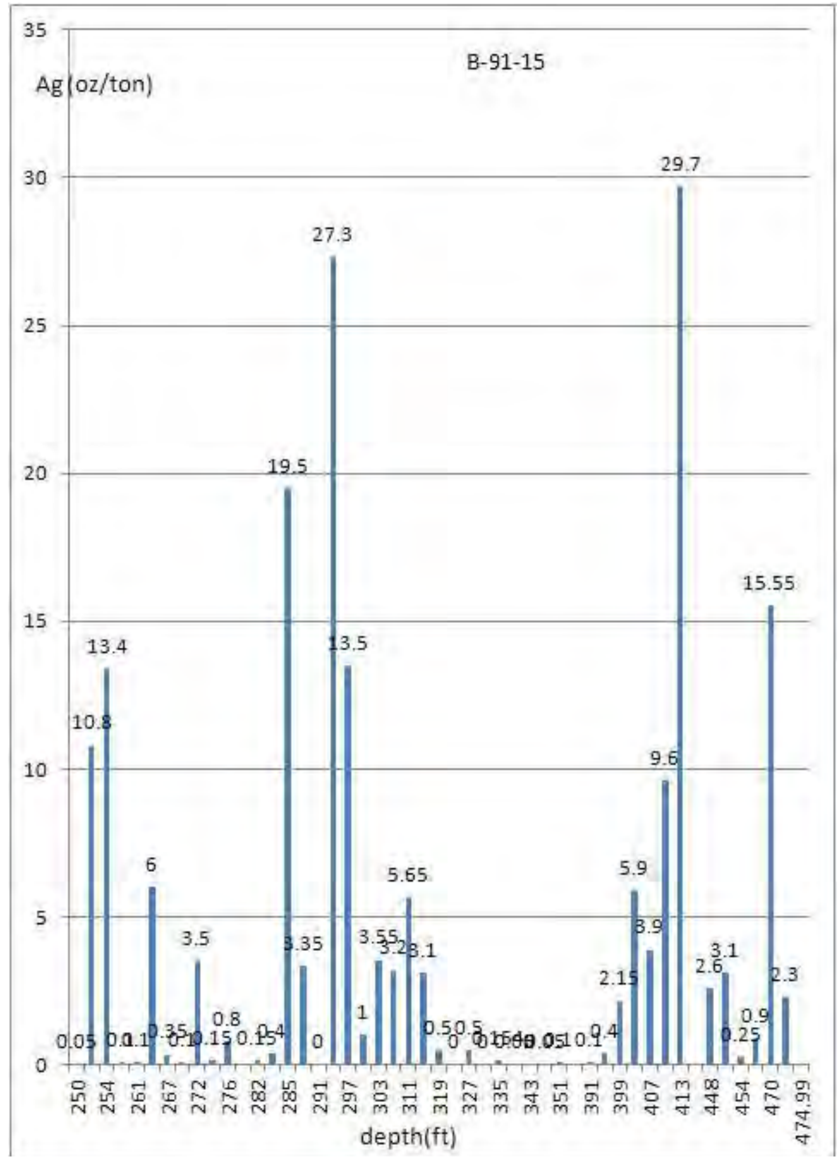


Figure 8-7 Silver (oz/ton) in drill hole B-91-15

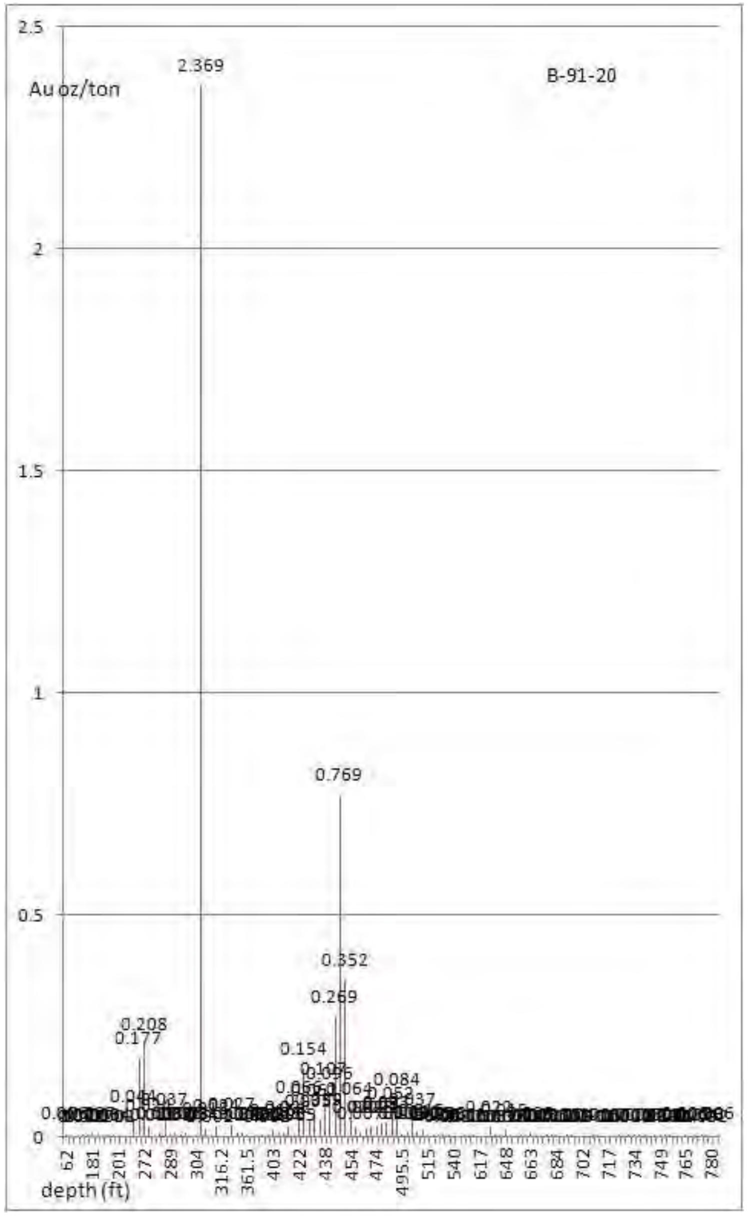


Figure 8-8 Gold (oz/ton) in drill hole B-91-20

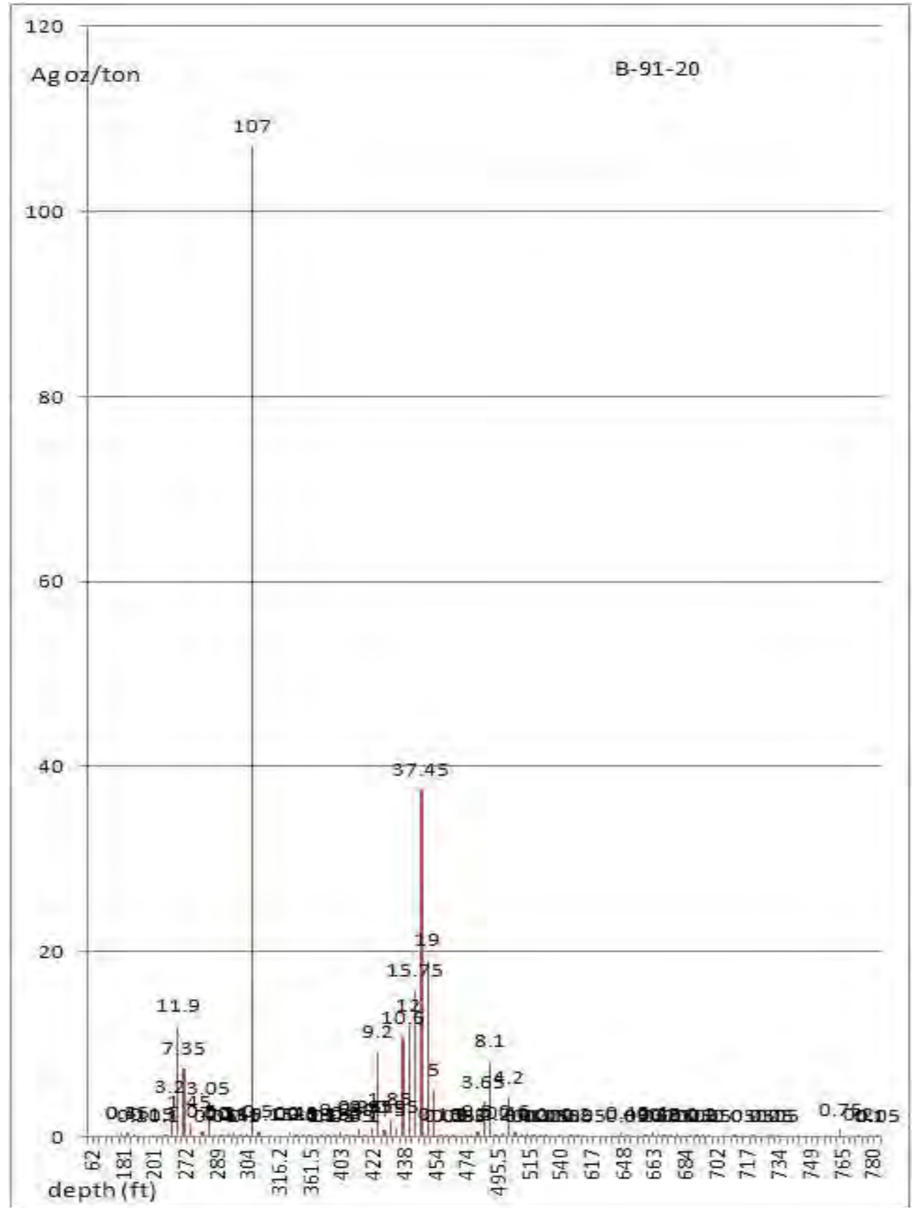


Figure 8-9 Silver (oz/ton) in drill hole B-91-20

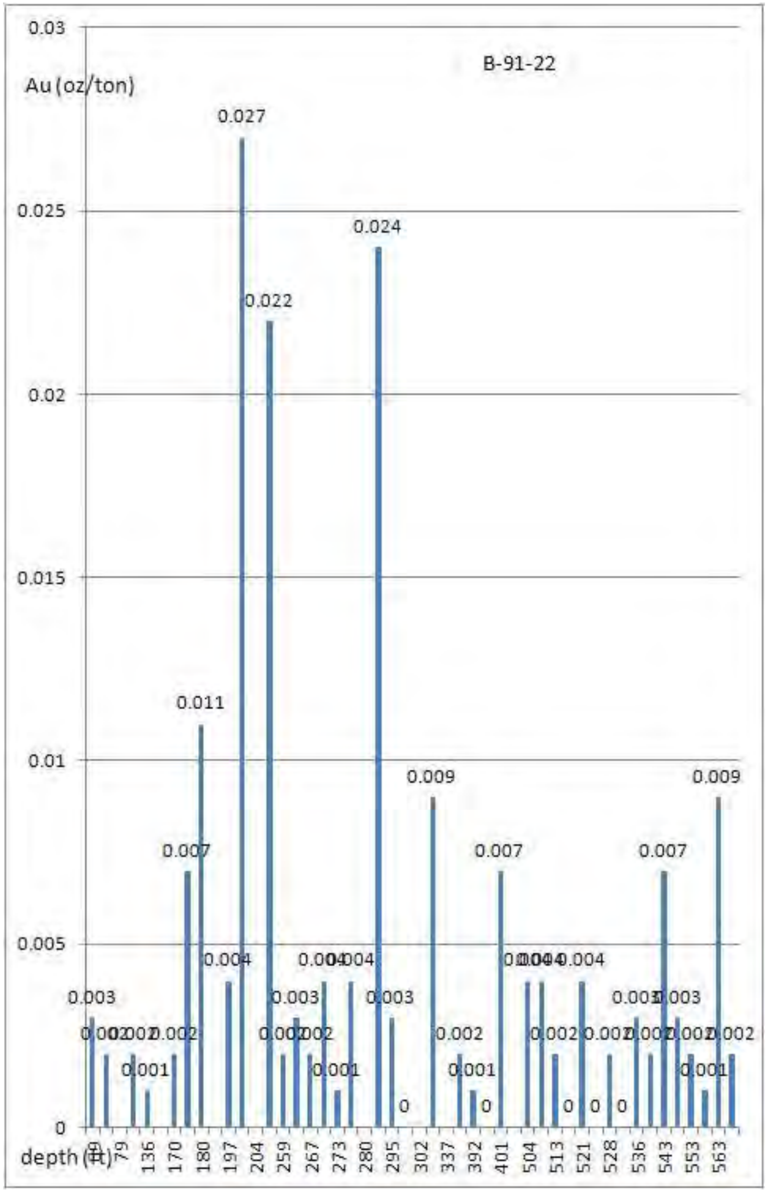


Figure 8-10 Gold (oz/ton) in drill hole B-91-22

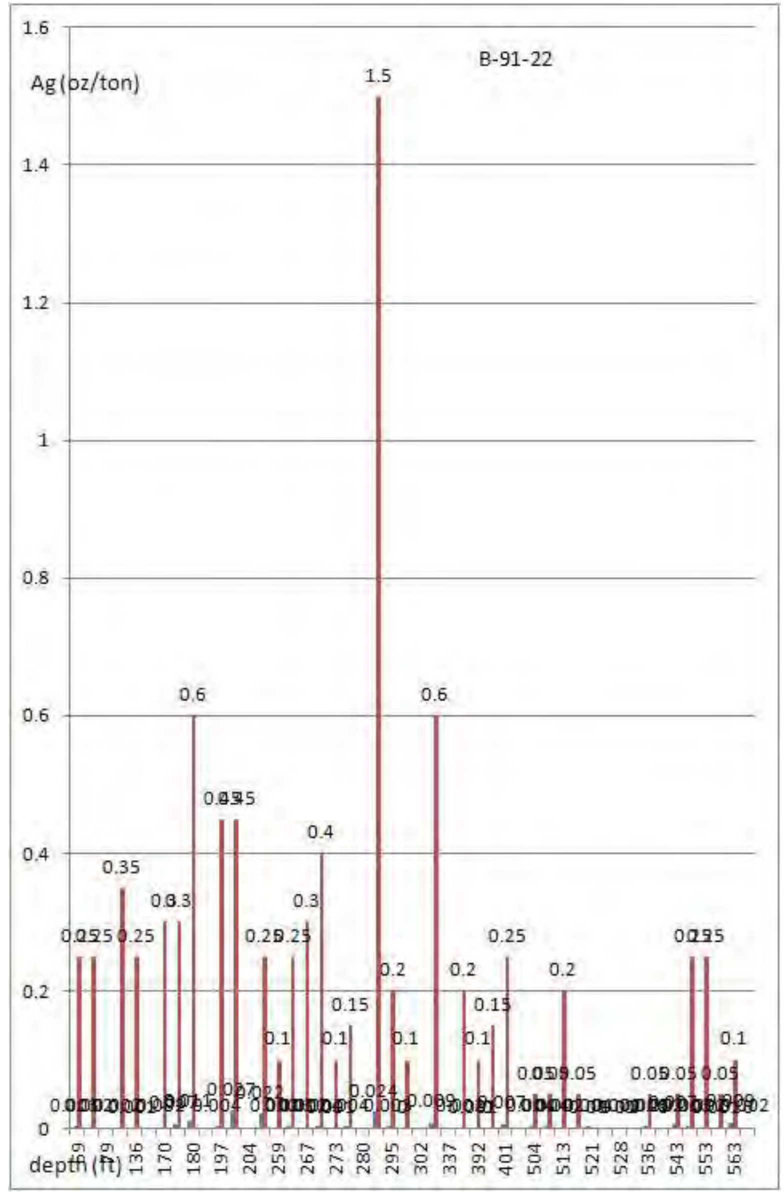


Figure 8-11 Silver (oz/ton) in drill hole B-91-22

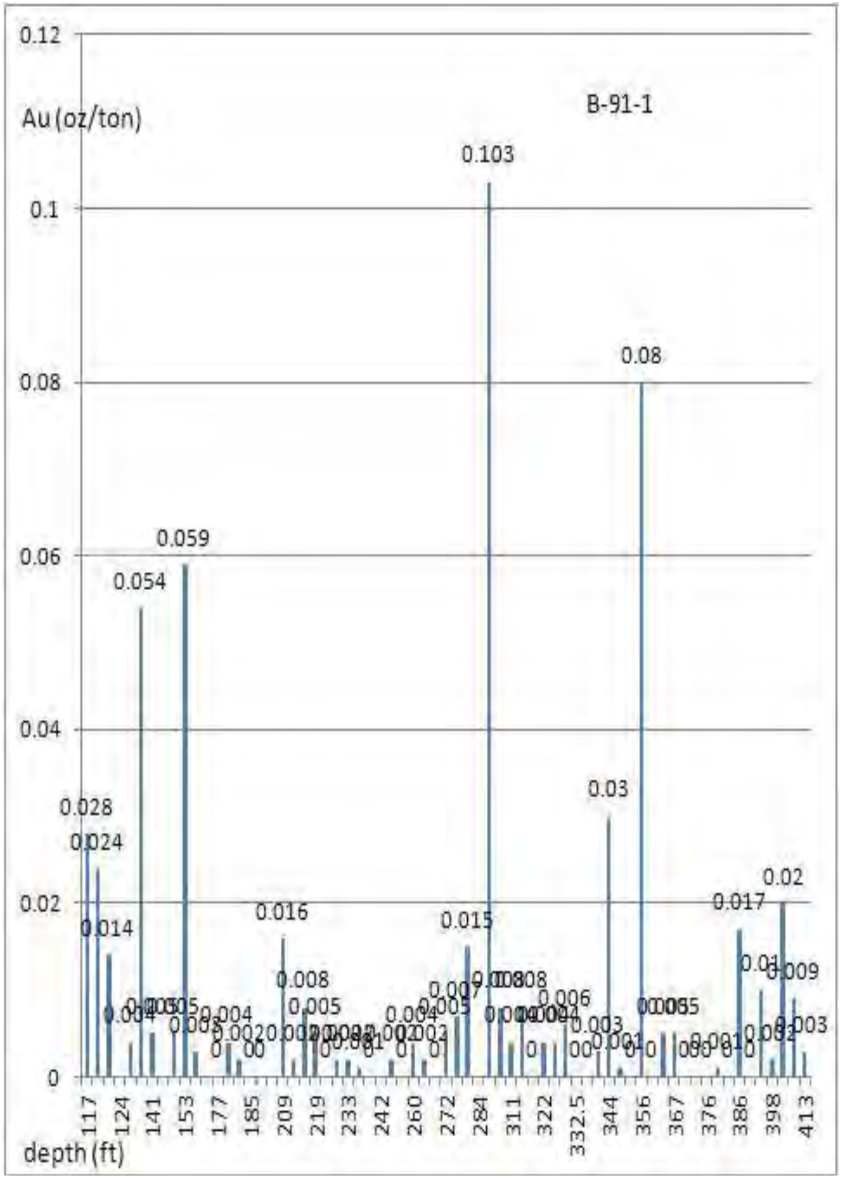


Figure 8-12 Gold (oz/ton) in drill hole B-91-1

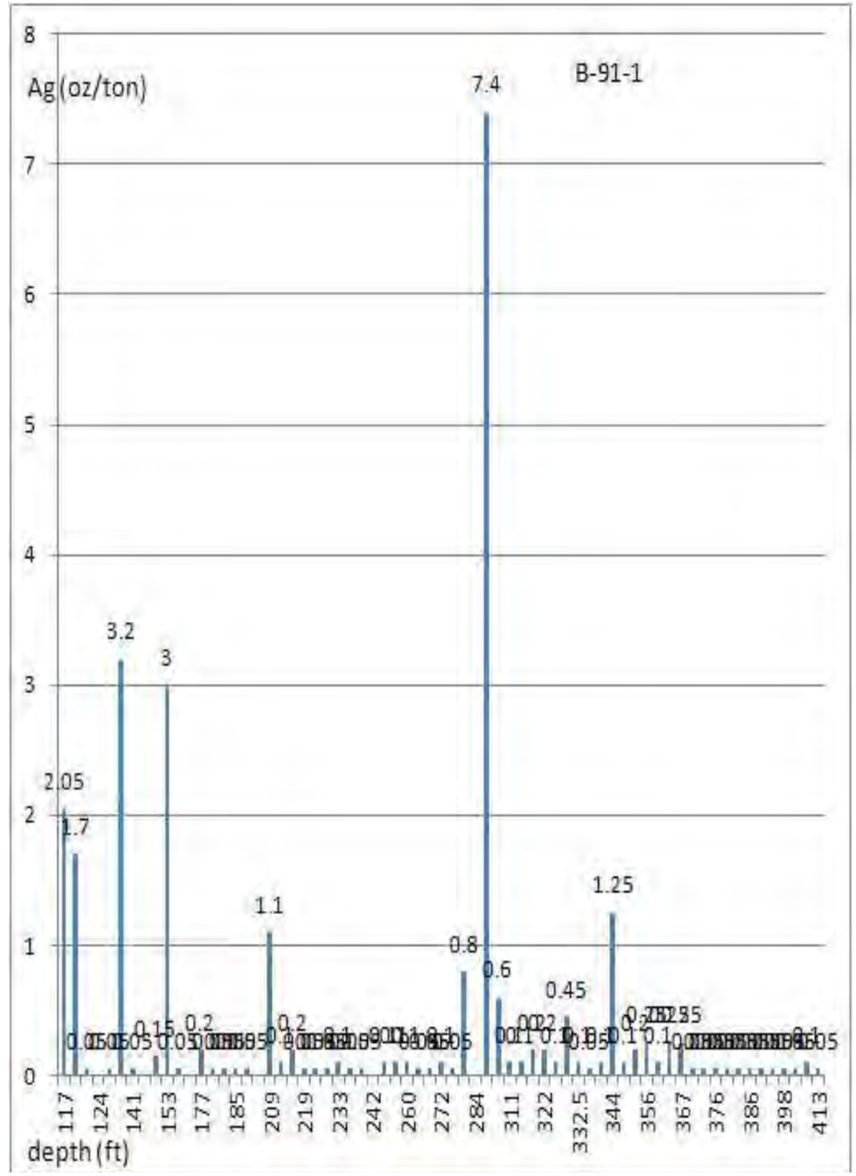


Figure 8-13 Silver (oz/ton) in drill hole B-91-1

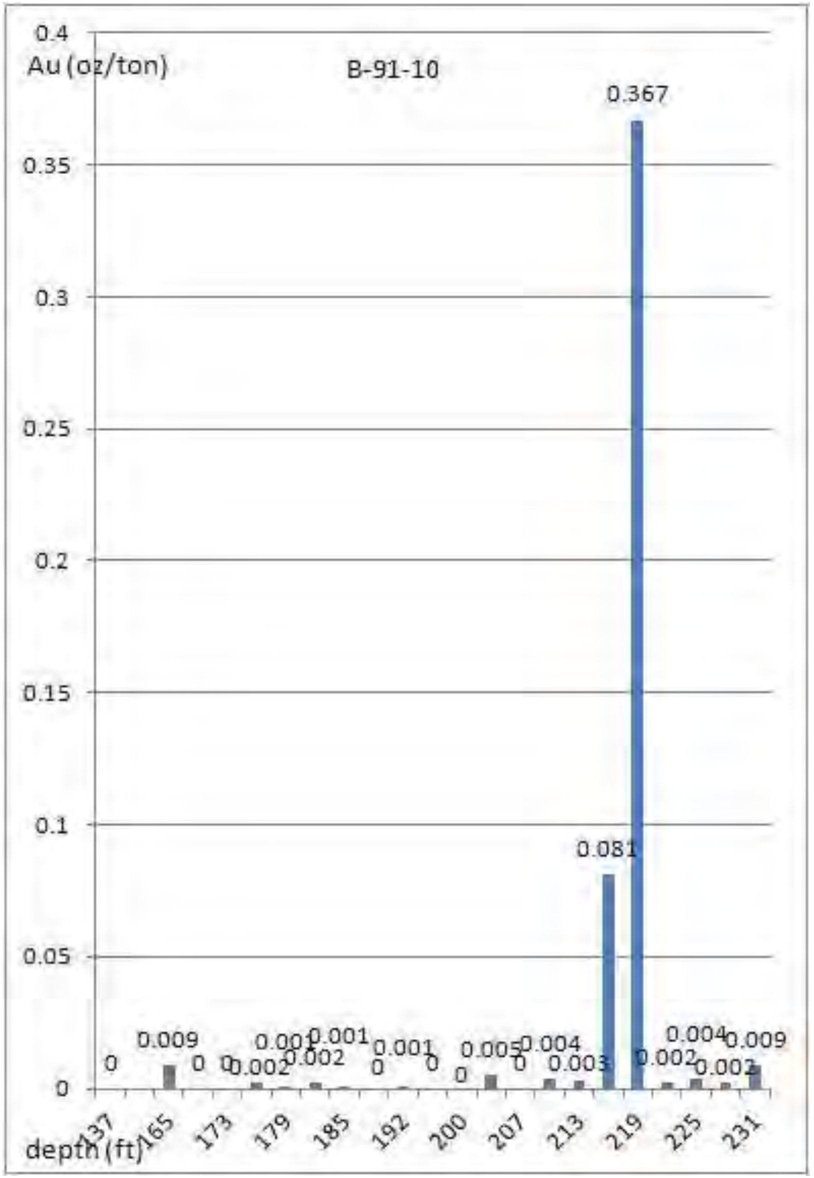


Figure 8-14 Gold (oz/ton) in drill hole B-91-10

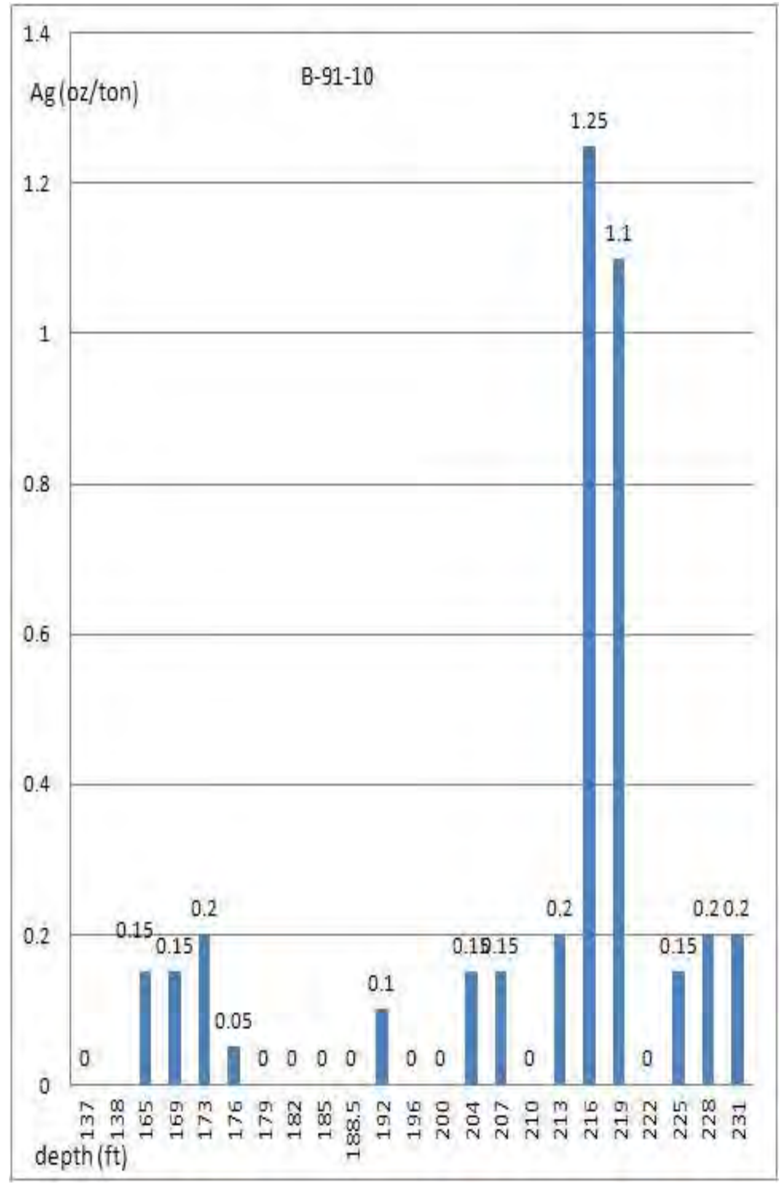


Figure 8-15 Silver (oz/ton) in drill hole B-91-10

9 Sample Preparation, Analysis and Security (Item 11)

No verifiable information is available with regard to sample preparation, analysis, and security. However, it can be assumed that the exploration companies that conducted the drilling followed standard industry procedures of the time period. The mineralized sections of core from the Biron Bay drill holes at the Summit and Billali and nearby claims are missing from the storage at the New Mexico Bureau of Mines and Mineral Resources. It is assumed that the mineralized zones were scavenged and used for metallurgical testing by Santa Fe.

9.1 Methods

As Nova Gold and Biron Bay were legitimate exploration companies in the early 1990s, it is assumed that standard industry procedures were followed.

9.2 Security Measures

Information about security measures used to secure the drill core samples is not available.

9.3 Assaying

Information about assaying procedures on the drill core samples is not available.

9.4 Sample Preparation

It is assumed that standard industry procedures for sample collection and security were followed by Nova Gold and Biron Bay in the drill sampling programs. The historic reserve estimate that was conducted by MPH, which is a respected consulting firm, was based on the drill samples. It is assumed that MPH verified the sampling procedures.

9.4.1 Laboratories

The laboratories that analyzed the drill core are not known.

9.5 QA/QC Procedures

Quality Assurance/Quality Control (QA/QC) procedures for the collection, recording, and assaying of samples is not known.

9.6 Results and QC Procedures

Results of the QC procedures on the drill core samples are not available.

9.7 Opinion on Adequacy

The author assumes that industry standard procedures of the time period (1990-1992) were followed in the drilling and sampling conducted by the Biron Bay drill program.

The author makes the following recommendations for the future:

- Standard Operating Procedures should be developed for all sampling programs to ensure that collection, handling, storage, and record-keeping methods are uniform, repeatable, and documentable. Establish procedures to ensure that sample bias and contamination do not occur;
- Due care should be taken to collect representative samples above and below the water table, where intercepted;

- Samples for assay should be digitally photographed, split or sawn, and the half-sample not analyzed should be archived. Pulps should be retained indefinitely in a dry storage location. Rejects should be retained for a period of time until all analyses have been evaluated. Rejects can be used for additional QA/QC checks by outside laboratories or for possible metallurgical and mineralogical investigations;
- Samples should be given an ambiguous sample identification number to disguise the sample location or depth. Samples should be analyzed by a certified laboratory for a minimum of total copper by atomic absorption method. Elements other than gold and silver should be analyzed for, particularly those elements that would cause a smelter to reject the material for use as flux;
- Field blanks and pulp standards (if available) should accompany each 10 samples, at a minimum. Field blanks should be prepared using inert, non-mineralized rock collected outside the area of mineralization;
- Duplicate pulp samples should be sent to an independent, certified assay laboratory at the rate of one per 20 samples for quality assurance/quality control purposes;
- For several assays, the half-samples from several intervals should be analyzed to assess homogeneity of the mineralization; and
- Assay results of duplicate samples from two laboratories should be compared to determine analytical precision.

10 Data Verification (Item 12)

Only limited data verification was performed in the field and office, and is described in this section. Historical assay data exist that are impossible to verify because the assay certificates are not available or no longer exist. These data were not used in this report.

10.1 Procedures

Data for this report have been compiled by Dr. Rasmussen, including a field visit to the Billali mine property on October 31, 2011. Data were obtained from the owners and additional data were compiled from published sources. No samples were taken in the field by the author as the return of analytical results from the laboratories generally takes two months.

During the site visit, samples of silver and gold mineralization were examined at the adjoining Summit mine in underground stopes and verified that the descriptions of the mineralization were valid. Visual inspection of alteration, rock types, and structures that crop out at the Billali mine, including the Hoover "Tunnel" (in reality an adit), were conducted at various locations on the Billali property.

Original laboratory reports from the 1990-1992 Biron Bay drilling were not available and so were not examined. Although the lease agreement between Nova Gold-Biron Bay and the current owners of the Billali claim specified that copies of all results be conveyed to the owners, this was not done. Those companies are no longer available to rectify this lack of communication of data.

Visual inspection in the field confirms the geology of the Billali property is as described in historical reports. Quartz veins are visible in outcrop. Identification of gold or silver mineralization is not possible in outcrops, as the mineralization is too fine grained to be observable, and so was not directly confirmed in the field. Also visible in the field were a significant number of historical mine roads, adits, dumps, and mine sites.

10.1.1 Summit Mine Confirmation of Drill Results

According to Mr. Leslie Billingsley, mine superintendent of the adjoining Summit mine, the drill results of the 1990-1992 Biron Bay drilling reported in the Biron Bay annual reports from the Summit mine have been confirmed by analytical results from mine sampling. In the process of developing additional ore at the Summit mine, Billingsley drove underground workings toward each of five drill holes from Biron Bay"s exploration drilling program. In each case, as the ore grade intercepts from the drill holes were approached in the mine workings, assays of the mine samples confirmed the values reported in the drill holes. For each drill hole, Mr. Billingsley hand sampled three locations in each mineralized zone in the mine workings, had them assayed, and averaged the values of the three samples.

Mr. Billingsley then drove the underground workings along the strike length of the mineralized quartz structures. He hand sampled the mineralization as it was exposed in the mine workings, each time taking three samples, assaying each, and averaging them. He found that the extent of continuous mineralization along the quartz structure was a minimum length of 100 ft (30 m), with two locations having a strike length of over 230 ft. He also drove raises up any mineralization exposed on the mine level and confirmed that mineralization of the same grade was found in the drill holes up to distances of 50 to 60 feet above the levels.

At the Summit mine, careful records are maintained concerning the mined location of each truckload of ore that is sent to the Summit mine concentrator at Lordsburg, New Mexico. The average assays of each truckload of ore were compared to the assays of the samples from the appropriate mine workings. These comparisons indicate that the grades of the mine samples correlate with the assays of the truckloads from those mine locations that were introduced to the concentrator. In addition, the assays of the truckloads correlate with assays of the final concentrate from those truckloads that were shipped to the smelters.

Credibility of the Biron Bay drill results is thus confirmed at the Summit mine by the correlation between the assays of the Biron Bay drill intercepts and assays of samples from the mine workings, ore truckloads at the concentrator, and concentrate shipped to the smelter. This confirmation of the credibility of the Biron Bay drill results at the Summit mine indicates that the assays of samples from the drill holes on the Billali claim can be relied upon.

According to the Biron Bay drill intercepts, the mineralization in the quartz structures at the Summit mine continues along strike onto the Billali claim. The assays on mineralization intercepted by the drill holes on the Billali claim are about 15 to 20% higher grade than those on the Summit claims.

10.2 Data Adequacy

The author believes that the data has been collected, recorded, and assembled into spreadsheets according to appropriate industry standards at the time of collection, although the original assay sheets are not available for verification. The author concludes that the data provided by MPH to the owners of the Billali have been collected and analyzed in accordance with acceptable industry procedures at the time of drilling (1990-1992) and are acceptable.

11 Mineral Processing and Metallurgical Testing (Item 13)

Mineral processing and or metallurgical testing have not been done by the owners at the Billali mine project, as the project is currently in the exploration phase. Any silver or gold discovery would be amenable to well-known metallurgical recovery methods that are used in similar epithermal precious metal deposits throughout the world. Until a mineral deposit of potentially economic interest in located, metallurgical testing is not necessary.

11.1 Testing and Procedures

According to their website, Santa Fe Gold Corporation conducted metallurgical testing on the mineralized drill core from the drill program on the Summit, Billali, and nearby claims. Those sections of the core are missing from the core that was returned to Billali.

11.2 Relevant Results

Verifiable results of the metallurgical testing on the combined Summit-Billali material are not available. "Conventional processing including crushing, grinding and milling of Summit ore to produce a bulk sulfide flotation concentrate containing the recoverable precious metals was evaluated and tested at bench scale. Preliminary bench scale flotation tests indicated that a precious metals recovery of 80-86% with a concentration ratio of 70 to 1 would be reasonably achievable" (www.santafegoldcorp.com, accessed December 2011).

11.3 Recovery Estimate Assumptions

Assumptions about the recovery estimates are not available.

11.4 Sample Representativeness

The representativeness of the core samples taken for testing is unknown. The core boxes containing Biron Bay"s drill core from the Billali was returned to the owners by Santa Fe Gold Corporation. However, the drill intervals that contained recorded amounts of gold and silver were missing from the core boxes (Merz, personal communication).

11.5 Significant Factors

As the Billali quartz containing gold and silver values is planned to be sold as smelter flux, the metallurgical testing on the processing is not significant. The significant parameters would be the concentrations of elements that could be deleterious to the smelting process. Because the silver-gold containing quartz ore from the adjoining Summit mine is currently being sold to smelters as flux, it is likely that the continuation of the quartz structures on the Billali, which were intersected by the Biron Bay drilling, will similarly be appropriate for use as smelter flux.

12 Mineral Resource Estimate (Item 14)

The Billali mine is an advanced stage exploration project. At this stage of the project, NI 43-101 compliant mineral resource and mineral reserves have not been defined for the Billali mine.

There is no current NI 43-101 compliant mineral resource or mineral reserve estimate for the Billali mine project. The historical resource estimate stated in Section 4.3 (Historic Mineral Resource Estimates) should not be relied upon as they have not been verified or classified according to current CIM or SME resource/reserve categories by a Qualified Person.

However, it is significant that Biron Bay Resources hired a well-respected, major Canadian consulting firm, MPH Consulting (MPH), to prepare an estimate of tonnage and grade for the Billali patented claim, based on the 24 drill holes Biron Bay had drilled as of the 1991 report (Biron Bay, 1991). Biron Bay"s Annual Report did not include the basis for calculation of the tonnage or grade. The estimate appears to have been based on the specific mineralized intercepts of the "Main Zone" and did not include those from the "New Zone" (Figure 8-3).

At the time of the MPH calculation of tonnage and grade, the price of gold was about $270 to $280 per ounce and the price of silver was about $4.50 per ounce. At those prices, the project could not have been operated at a profit, so Biron Bay terminated their lease on the Billali mine.

Assumptions, parameters, methods, basis for estimate, and relevant factors are not discussed. These items will be addressed when exploration efforts have reached the potential ore bodies.

13 Mineral Reserve Estimate (Item 15)

The Billali mine is an advanced stage exploration project. At this stage of the project, mineral reserve estimates have not been defined for the Billali mine.

There is no current NI 43-101 compliant mineral reserve estimate for the Billali mine project. The historical production stated in Section 6.0 (History) should not be relied upon as they have not been verified or classified according to current CIM or SME resource/reserve categories by a Qualified Person.

Conversions, assumptions, parameters, methods, and relevant factors are not discussed. These items will be addressed when exploration efforts have reached the potential ore bodies.

14 Mining Methods (Item 16)

All the information in this section was obtained from the Billali Mining Plan (Merz, 2011). The mining plan at the Billali mine is to drive a decline ramp to intersect the mineralized zones recorded in the Biron Bay 1991 drilling (Figure 14-1). Then drifts are planned to be driven following, but below, the mineralized quartz structures (Figure 14-2). Drilling up from these levels will allow analysis of the mineralized zones with a hand-held X-ray Fluorescence (XRF) instrument. Ore will be blasted and fall by gravity to the drifts, where it will be loaded into 7- or 10-ton rail cars by an Eimco 630 mucker.

The rail cars will be maneuvered underground by a trammer. Then the ore cars will be hoisted out of the mine via rail by a winch and cable system at the top of a steel trestle lined up with the decline ramp. The side dump rail ore cars will be dumped by a camel-back dump system into 20-ton haul trucks below the trestle. The trucks will haul the quartz-gold-silver ore to Duncan, where it may be milled or may be directly loaded onto Southern Pacific rail cars for hauling to either the Freeport McMoRan smelter at Miami or the ASARCO smelter at Hayden.

14.1 Current or Proposed Mining Methods

The mining plan is to mainly use compressed air and electric equipment, thus avoiding underground use of diesel-powered equipment and accompanying underground air quality challenges. Haulage will be conducted using the 7-ton and 10-ton ore cars that are loaded by a small compressed-air driven loader.

14.1.1 Decline Ramp

The Billali Mine, LLC (the Company) plans to drive the minus 20% decline ramp (Figure 14-3) down perpendicular to the quartz structure to intersect the center quartz structure that was intersected by Biron Bay drill holes B-91-15 and B-91-16 (Figure 14-4). At this point, a cross cut will be driven to the southwest until the mineralized quartz structure is reached.

The access decline ramp is planned to be 10-feet wide by 10-feet high with an arched back. This size ramp will accommodate the 10-ton ore cars with ample room for compressed air and water lines, as well as a 36-inch diameter, canvas ventilation bag.

14.1.2 Analysis of Mineralization

Once access to the main zone of mineralization is intersected, the presence of mineralization sufficient to qualify as ore will be analyzed with a hand-held X-ray fluorescence (XRF) instrument that provides virtually instant silver analyses. Once mineralization is reached at the Billali, the Company will assay both silver and gold in a laboratory. This will provide a consistent ratio of silver to gold. Once that ratio is known, the silver analysis can be used as an indication of typical accompanying gold values. If the read-out from the XRF instrument indicates that the values of silver (with associated gold values) are not ore grade, then that portion of the mineralization will not be drilled and blasted. Below ore grade mineralization will be left in place. After ore-grade mineralization is confirmed, a modified air-track drill will be used to drill holes upward into the quartz structure that carries mineralization. The blast holes are planned as 50-foot long blast holes.

14.1.3 Drive Raises and Drifts

Once the gold-silver mineralization is intersected, the Company will drive a raise up through the ore, in order to have a "break to" space. After a raise is driven for a convenient distance for stoping (such as 50 feet), the Company plans to drill off-set, up-holes every 6 or 8 feet for blasting. Various drill patterns will be tested to find the optimum pattern to obtain the optimum detritus size.

Once the ramp reaches the 5,100 foot elevation level where the mineralization was intersected in two of the Biron Bay drill holes, and once the mineralization is confirmed, then mining of ore will begin. These mineralized intercepts are located approximately 200 feet vertically below the Knudsen adit, on the 5100 foot elevation. The ore cars will be moved with a small electric trammer. The skidder can load the muck from the draw points that will be driven in the foot wall of the quartz structure. Once loaded by the skidder or one of the Eimco 630 muckers, the trammer will get the ore car to the base of the ramp for haulage to the surface.

In the footwall of each quartz structure, the Company will drive a drift parallel to the structure, leaving an 8-foot pillar in the footwall. Every 10 feet, a short cross cut will be driven into the stope in order to muck out the blasted ore. Track will be laid in this footwall drift in order to load the ore cars. On these horizontal drifts, the ore cars will be maneuvered by a small electric trammer. An electric or compressed air-driven loader, such as an Eimco 21, will load the ore cars. Once loaded, two cars will be hoisted up the decline ramp to the surface by the 60-ton electric hoist and cable at the top of the steel trestle.

A drift will be driven in the footwall of the mineralized quartz, from which draw points will provide access to the blasted material for loading into the ore cars. Stoping will be conducted by driving a raise up the footwall of the mineralized quartz for a distance of 50 feet. The raise will be slashed up to the width of the mineralization. Once completely exposed, blast holes will be drilled in the mineralized portion of the rock from below. Once two cars are loaded, they will be hauled up to the surface by the 6-ton winch by the hoist man. All underground personnel will be cross trained, so that each one can perform any of the several jobs required to obtain each day‟s production.

Mine Safety and Health Administration (MSHA) requires that a safety pocket should be located at least every 50 feet in any access ramp. This wider stretch of ramp will also be used to provide turning space for the air track drill and the mucking machine. The mucker is required to load the muck into the rail ore cars that will be winched up to the surface.

In the Steeple Rock district, many workings and large stopes have stood open for 50 or more years with no significant rock falls or cave-ins. Thus, timbering is not anticipated to be needed in the decline ramp or in the stopes. The adjoining Summit mine uses no supports in the mine, except for many plates soundly secured by roof bolts. Because the Billali mineralization occurs in the same quartz structures as at the Summit mine, similar roof and back supports should be sufficient for ground control. If poorly supported ground is intersected, appropriate ground support will be installed.

14.1.4 Winch to Surface and Dump Ore Cars

Once the two cars reach the surface, either loaded with ore or with waste rock, they will be dumped directly into the dump bed of a truck. If an empty truck is not available, the muck will be dumped onto the concrete pad under the trestle. From this temporary pile, the muck can be picked up with a 2- or 3-yard front-end loader. It will be transferred to the road up to the Knudson Tunnel if the material is non-ore waste, or into a truck dump bed if it is ore to be transferred to Duncan for shipment to a smelter.

At the dump point, a camel-back dump system will activate the side-dump cars. All ore will be loaded into trucks for shipment to Arizona as soon as possible. Any waste rock (non-mineralized dacite) that is removed from the mine will be used in the construction of the road to the escape-way exit. This exit will be located at the point where the ten-foot diameter raise-bore hole reaches the surface near the southern end of the Billali claim. This second escape-way exit will be located approximately 100 feet south of the Knudsen adit. The tonnage required for this road will be approximately 12,000 to 13,000 tons, which is approximately the same volume as the non-ore muck produced from the driving of the decline ramp.

If any evaluation of mineralized rock with the XRF instrument is below the cut-off grade, that portion of the mineralized rock will not be drilled and blasted as ore. All ore that is drilled and blasted will be hauled out from the mine to the surface where it will be loaded into a 20-ton truck as soon as possible. A concrete pad has been constructed on the surface, so that any precipitation or other water cannot freely flow away. Rather, any water or rock dust will be gathered in a low spot on the concrete pad and be removed for final disposition according to environmental standards, as required by the Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department (NMEMNRD).

All ore grade material that is drilled and blasted will be loaded into trucks upon leaving the mine and will be taken to Arizona. No stockpiling of ore will be necessary. When the NMEMNRD issued the mining permit, they specified obligations that the Billali mine would not be allowed to create, use, or have any waste or ore dumps or mined ore material on the surface. Non-ore waste rock material from the decline ramp (material containing no sulfides) could be used to build a roadway on the surface from the ramp portal to the location of the raise bore hole in order to provide access to the second escape-way.

14.1.5 Escape-way to Surface and Road

MSHA and other mine safety standards require a second escape-way be made available prior to initiating mine production. The Company plans to have two "second escape-way" exits. The first will be a raise from the ramp at approximately 200 feet down the portal of the decline ramp, which places it about 40 feet below the south drift, near the west end of the Hoover tunnel. This 60-foot high raise with appropriate landings and steel ladders will be driven and furnished by the ramp crew, before the workings reach the lower level of the decline ramp where the target mineralized zone is located.

The second escape-way will be located at the bottom of the ramp, approximately 100 feet below the 5,100-foot elevation level. At this location, the Company plans to drive two cross-cuts from the decline ramp to the two high-grade intercepts in the Biron Bay drill holes. From this point, the Company will contract with a raise-bore contractor to drill a 10- to 12-inch diameter hole from the surface down to the bottom of the decline ramp. Once this pilot hole is drilled, the contractor will drive a 10-foot diameter circular raise with their raise-borer up to the surface. Once the 10-foot diameter raise-bore is completed, a steel ladder with landings every 20 feet will be constructed in the raise-bore up from the bottom of the decline ramp to the surface. Eventually, this raise-bore will be furnished with a hoist and cable and will become the prime method of raising ore from the mineralized level to the surface. A vertical shaft with hoist and dumping buckets is the cheapest and quickest way to remove ore from any mine.

14.1.6 Surface Trestle and Haul Trucks

A steel trestle has been constructed on the surface from the adit portal at the beginning of the decline ramp and directly in line with the decline ramp direction and inclination. The winch is mounted at the top of the trestle for easy hoisting of the ore cars. Each of the ore cars has a side dump mechanism operated by a steel wheel, which is raised by a mechanism known as a camel-back and which the company owns. The camel back dump mechanism will be mounted on the trestle in order to facilitate dumping of the side-dump cars.

Rail from the decline ramp up onto the trestle will allow the ore cars to dump directly into the bed of a truck under the trestle. Once the raise-bored shaft becomes available, the decline ramp will no longer be used for hoisting ore from the mine. Then, it will be used for transporting supplies, men, and equipment that are too large to fit into the vertical shaft.

On the surface, a 2-yard or 3-yard front-end loader will be obtained to pick up material dumped on the concrete pad for removal to the end of the road for extension of the road bed to the second escape-way exit. The loader will also smooth the road surface and keep the road in good condition. The Company has a Galion road grader with a 12-foot blade that will be used for final road surfacing.

By leaving the below ore-grade material in place, the only material to be removed from the mine (other than ore shipped to Arizona) would be barren dacite host rock or barren quartz with no mineralization. Once stoping is started and the road is finished, any additional blasted barren or below ore-grade material would be used as back-fill material in the open stopes. This material would not be taken out of the mine, and would not be part of any stockpile or waste dump on the surface.

Both the barren dacite host rock and the barren quartz rock have been subjected to acid-base accounting analysis and each was found to create basic (alkaline), not acidic, conditions when tested (Merz, personal communication). Therefore, neither of these rocks would cause any environmental concern if they are used for construction of the road to the second escape-way exit.

If it should become necessary to obtain copper, lead, and zinc assays, they too will be obtained from the XRF instrument. Any other requested analyses such as Acid-Base Accounting will be conducted by outside certified laboratories.

All ore removed from the mine will be loaded directly into the dump bed of a haul truck. Once loaded and properly covered, the truck will transfer the ore to Arizona where it will be prepared for shipment to a smelter. The trucks that will carry this ore will have strict instructions to not exceed a speed of 25 miles per hour on the county dirt roads, and will have the necessary covers for the loads to prevent dust and other contamination, as required by law.

14.2 Relevant Information

14.2.1 Safety

One of the owner/managers of the Billali mine, Les Billingsley, is an MSHA instructor. Thus, he is fully qualified to instruct each employee at the project about mine safety in all aspects that MSHA and the State of New Mexico require at an underground mining operation. He is also qualified and committed to maintaining high safety standards at the mine, as are the other owner/managers.

It is the custom of all the owner/managers of the Billali to strongly emphasize safety. At the beginning of each shift, a short safety meeting will be held each day, so that on a daily basis, safety is the first topic of the day. In addition, on the first day of the week, the meeting will be a full half hour safety meeting prior to anyone entering the mine. By emphasizing safety, a company culture of safety consciousness can be built and maintained.

As a very practical aspect of the safety of the 10-ton ore cars, a solution to the unlikely, but possible, case of having an ore car escape from the hoist cable, was addressed. Besides the powerful cast steel couplings that require effort at engaging or disengaging, the Company will have strong 4-inch chains that will be hooked between each car. In addition to these two attaching devices, additional safeguards are important to be prepared to handle a loose car.

A simple, but effective, solution to the problem was designed by the owner/managers. Because each mine car will always be facing the same way, one end will always be facing the up ramp, and the other end will constantly face the down inclination of the ramp. On the downhill side of the ramp, a simple, 3-inch pipe length will be coupled to the car‟s suspension, so that when the car is being cabled up or down, the pipe will not drag on the sill. However, as soon as the tension on the pull cable is lessened, the pipe will drop down to drag on the sill and in doing so, will quickly jamb between the ballast or any tie, thus forcing the car up and off the track, as it will be derailed instantly. This detail is offered to illustrate the Company‟s dedication to safety matters and the necessity to prepare solutions to potentially dangerous situations before they arise with the constant attention required to avoid accidents.

14.3 Relevant Parameters

There is no available water in the Steeple Rock district. The water level in the Norman King mine shaft is at 126 feet below the surface and does not vary even when Bitter Creek, which is 20 feet from the mine shaft, is running after the occasional summer rains. The inference is that the small cracks and openings in the wall rock are discontinuous, so that water does not enter the shaft or leak out into the ephemeral stream. The Norman King shaft is approximately 175 feet from the northeast corner of the Billali claim. Water samples from this shaft were analyzed by Turner Laboratories of Tucson, and found to be slightly alkaline with a pH of 7.6 (Merz, 2011).

The adjacent Summit mine also has no water for drilling or other uses and must truck water from Duncan. The Summit mine ramp is at least 175 feet below the adit entrance and has not encountered water in the underground workings. It is likely that the Billali will experience similar dry conditions. The Company will haul water from a private supplier (one of the owner/managers has a private well) in Duncan.

14.3.1 Owner/Managers

The three original partners in the Billali patented mining claim (Richard Billingsley, Leslie Billingsley, and Joy Merz) are experienced professional miners and will serve as co-managers of the Billali mine. Each of the managers has a strong family tradition of mining, with fathers and grandfathers involved in the mining business. Some of this experience was in the Steeple Rock district. Each of the managers has a strong commitment to safety and is very knowledgeable about safety requirements and strategy. The three owners/managers of the Billali worked together at the Ash Peak mine in Arizona in the late 1970s, where they gained experience at a silica flux mine containing low grade silver mineralization. They will apply that experience with the Ash Peak mine to the Billali mine.

Mr. Leslie H. Billingsley, current mine superintendent at the adjacent Summit mine, is a certified Mine, Safety, and Health Administration (MSHA) instructor. His experience includes operation, repair, and maintenance of all types of equipment used in both underground and surface mines. He is also qualified in ground control and underground development in all types of underground mining operations.

Mr. Richard O. Billingsley is a master electrician, assayer, land and underground surveyor. He also has expertise in repair of refrigeration, electrical, compressed air, and other types of equipment. His experience includes the engineering, design, and construction of underground hoist and head frames with hoisting safety guides and safety latches.

Mr. Joy J. Merz has a Master of Science degree in geology from the University of Arizona in Tucson, Arizona. His experience includes general manager of mining operations and exploration projects in 16 countries, in both underground and open pit operations throughout the world.

14.3.2 Personnel

The operation plan is based upon using three men, and one top-lander, nipper or roust-about, and one bookkeeper (miners per two shifts and bookkeeper only on dayshift). Each of those working at the mine-site will work five, ten hour shifts per week. Week-ends will have a watch man.

During the driving of the decline ramp, each crew will be responsible for drilling, blasting, loading and hauling to surface of the waste rock. Once the ramp is down to the 5,100 elevation, horizontal cross cuts will be driven to each of the other two quartz structures for access to potential ore. The Company plans to have three or four developed headings in ore. From these headings, stoping will be done to obtain the planned production of 100 tons per day. Developing several headings allows continuous production in spite of any unexpected problems that could cause disruption of the operational plan.

During driving the decline ramp, two men will be involved in advancing the decline ramp. This includes rock-bolting, extending air and water lines, laying track, and other incidental tasks involved in properly maintaining safe underground operations.

14.4 Production Rates, Mine Life, Unit Dimensions and Dilution

The Company plans to operate two shifts for five days per week (Monday through Friday), 10 hours per day. The weekends will thus be available for any maintenance or repair of equipment.

A reliable diesel/gas mechanic is located within a few miles of the mine and has agreed to repair and maintain the equipment.

The planned mining rate is 100 tons per day (tpd) for five days per week.

At the planned mining rate of 100 tpd, the currently projected resources would be mined out in approximately between 7.7 and 9 years. The mine plan indicates that once the 5100 foot level is close to being mined out, the decline ramp will be continued down an additional 200 feet to allow access to the ore that was intersected by drilling below the 5100 foot level. A dilution of approximately 10% of the ore is expected. The underground development and backfilling are described in Sections 14.1 and 14.1.6.

14.5 Mining Fleet and Requirements

A partial list of the equipment that will be used at the Billali Operation is presented in Table 14-1. Additional equipment may become necessary, but this list is fairly complete. Additional supplies and parts may be required by the contracted mechanic in order to assure that any routine breakdown on any of the critical items can be repaired as soon as possible.

14.5.1 Available Equipment

Billali Mine LLC (the Company) owns, or has access to via lease from the managers, most of the equipment required for the operation of the mine. Billali mine has acquired four 36-inch gauge, 10-ton ore cars, and two 7-ton ore cars. The ore cars will be raised and lowered by a 6-ton winch that the Company owns and has placed at the top of the ramp trestle. This winch has more than 1,200 feet of 1 1/8 inch diameter cable attached. The winch only requires installation, anchoring and electric power supply.

The Company owns one 50-horsepower (hp) blower fan and several hundred feet of 36-inch canvas blower bag. If additional lengths of blower bag become necessary, the company plans to acquire them.

All of the rail equipment that the Company has available is for 36-inch gauge track.

The drill that will be used to drive the decline ramp is an adaptation to a standard track air drill. This adaptation was designed and constructed by the managers. The adaptation uses a percussion drill with a twelve-foot steel adapted to the boom of a standard track air drill. This drill is both fast and flexible in its use.

The Company has access to two diesel-powered generators: a 15 KVA generator and a 250 KVA generator that is in place at the Billali mine. Connections between it and the 900-cubic feet per minute (CFM) air compressor and the hoist can be made in a few days. The smaller generator will be used on weekends and the larger generator will be used to supply power to the 6-ton winch and the compressor when full crews are working underground.

A 5,000 gallon water truck is available to the Company, but requires minor mechanical repairs. This truck would be used to haul water from Duncan to the Billali mine.

The company has two Eimco 630 muckers. Each has caterpillar tracks that allow for more flexibility, because they are not restricted in movement by being on rail tracks. The muckers function by filling the scoop bucket on the front, then the scoop is rotated upward and the scoop dumps into an ore car by lifting the scoop up and over its own body throwing its contents into the ore car behind the mucker. The scoop bucket on the Eimco 630 holds about two cubic feet of muck. Once two cars are loaded, they will be winched up the ramp to surface.

The Company also has a small, rubber-wheeled, front-end loader. The bucket on this Caterpillar loader holds approximately one-half a cubic yard of muck. Having this very versatile loader allows much more versatility for loading the steel ore cars for haulage to the surface. Informally, this loader is called a “skidder”.

14.5.2 Equipment to be Obtained

There will be one curve in the track going down the ramp. This curve will be driven on a fifty-foot radius. In order to accommodate the 1 1/8 inch cable around this curve, three steel rollers will be installed to prevent chafing of the cable on the ribs of the ramp.

The closest power grid is approximately 8 miles distant. Estimates for connection to this grid are at approximately $1.5 million dollars. As soon as this amount of funding becomes available, consideration will be given to making that investment.

The Company has located a supply of used 60- and 75-pound track that will be laid with 8” x 8” wooden ties every 36 inches. Forty-pound rail would have been sufficient. However, the only 40-pound rail available was new, excessively expensive, and in northeastern Canada, which would require high freight costs to New Mexico.

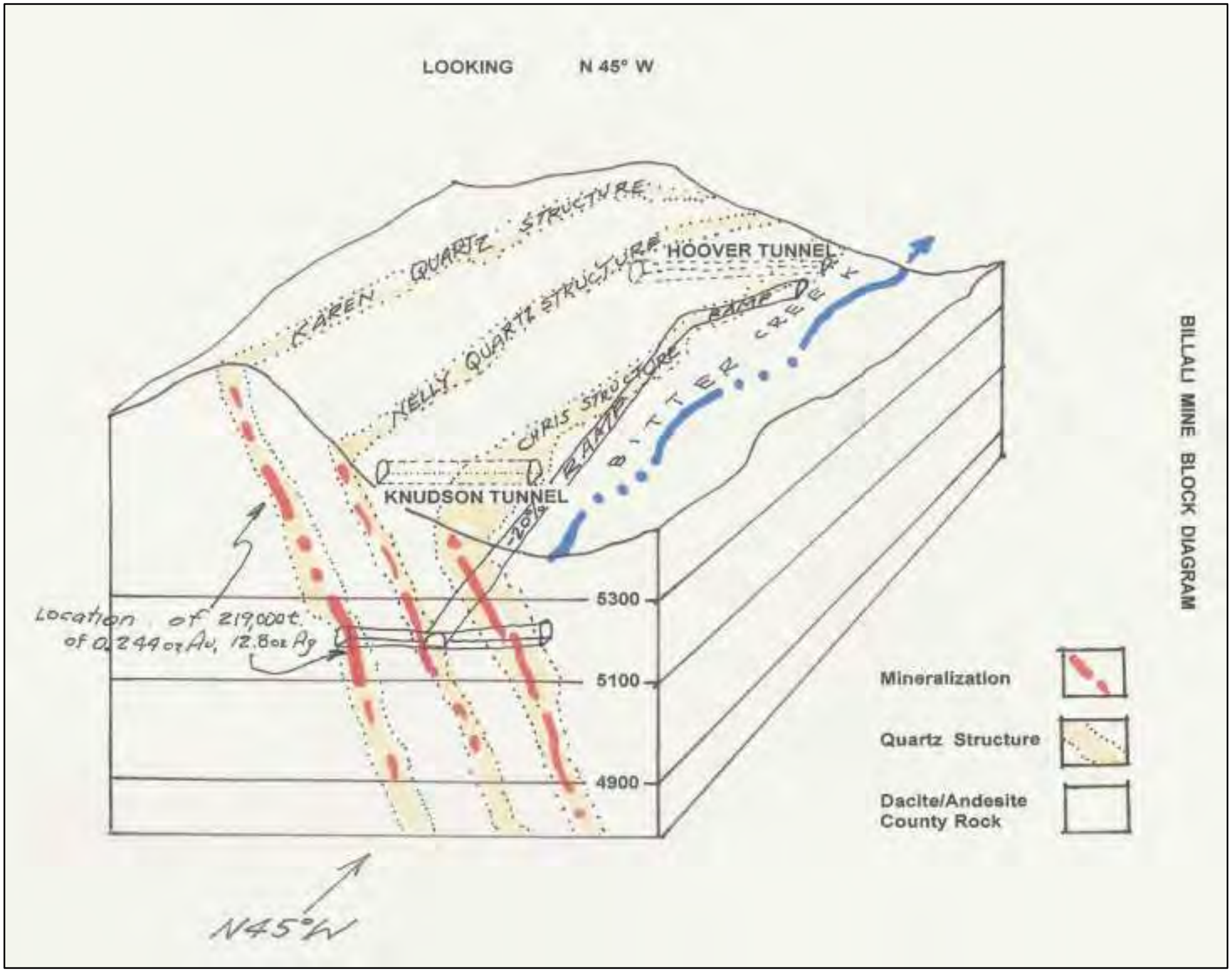
Analyses of mineralization will be obtained using a hand-held XRF instrument to provide virtually instant silver assays. This machine is available on the market for approximately $37,000.

Recently, the Company has been advised of the availability of a 120-ton per day, portable concentrator plant that would be ideal for the planned 100-ton per day production rate. This plant would allow the Company to handle both the oversize as well as the undersize material left over from crushing to the exact size required by a smelter. As soon as sufficient capital becomes available, this plant may be acquired and installed in Arizona for handling of the over-, and under-size material after separation of the size required by direct shipping to a smelter.

Table 14-1 List of Equipment Available or Needed

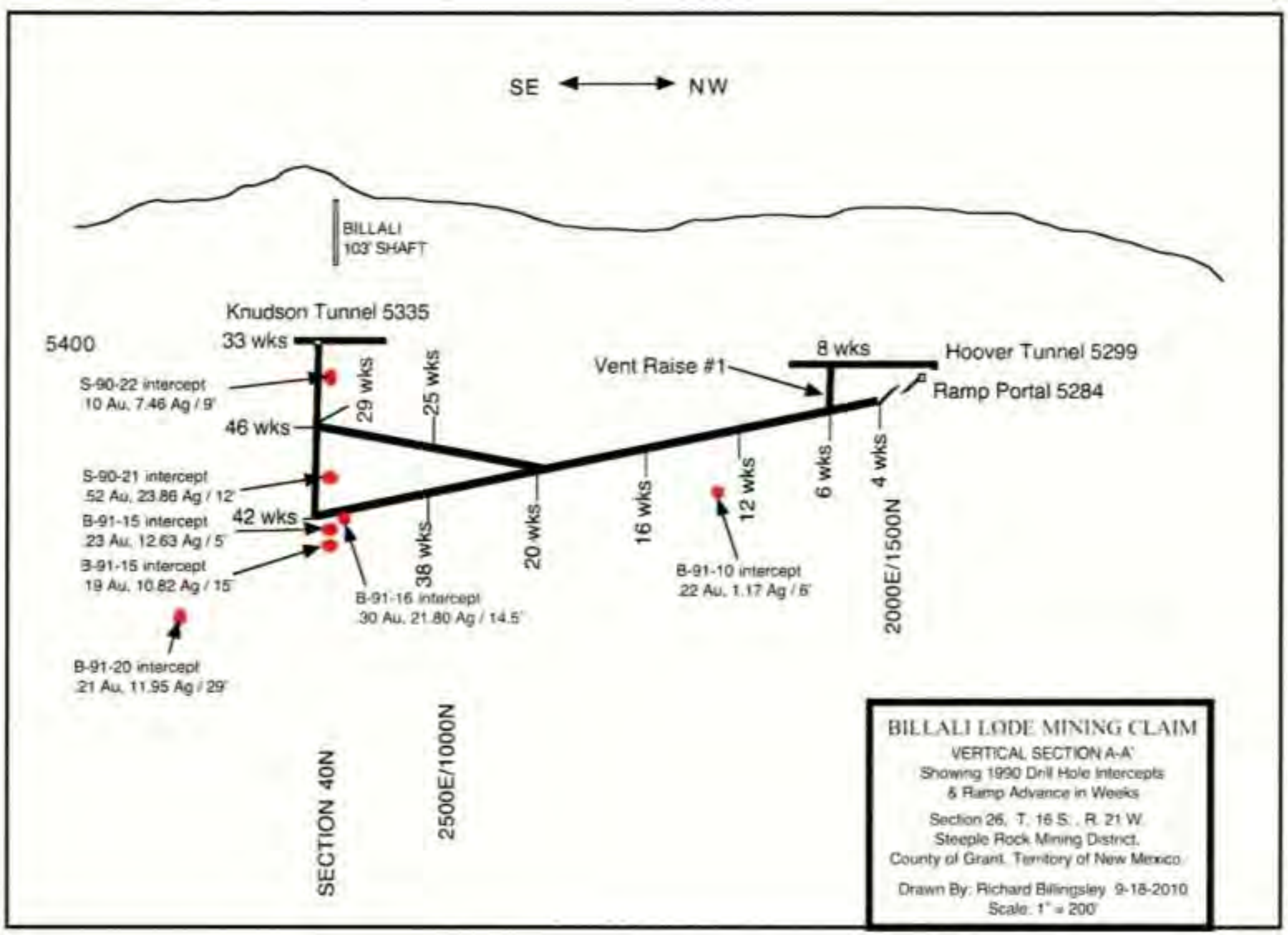
Source: Merz (2011) Billali Mine Plan

Equipment	Currently Available	Need to Obtain
Stainless Steel Water Tank	x	
Culverts (4 -48”)	x	
Ramp Portal	x	
4 - 10 ton, steel rail ore cars	x	
2 – 7 ton, steel rail ore cars	x	
1 – camel back dump mechanism	x	
1 – 6 ton winch with 1200 feet of 1¼ cable	x	
1 – 900 CFM Compressor	x	
2 - Air Track drills	x	
1 – two or three yard Surface Front-End Loader	x	
1200’ x 1” pipe		x
1200’ x 2” pipe		x
1200’ x 3” pipe		x
Drill Steel and Bits		x
1200’ x 4” pipe		x
1200’ x 3 x #000 wire		x
1000’ ft cable for slushers, ½ and ¾ inch		x
Fire and Safety equipment		x
Steel Ladders for escape ways		x
Split sets	x	
Jack Legs (5 x $3000)	x	
1 – Eimco 21 track loaders	x	
2 – Eimco 630 mucking machines	x	
2 - Mancha trammers	x	
HD track bender	x	
3,000 feet of 75 lb. Track	x	
20 ton dump truck	x	
50 hp fan blower	x	
1100 feet blower bag	x	
1 – 15 KVA genset	x	
2 – 250 kva genset	x	
1 – change house	x	
1 – Office	x	
1 – watchman trailer		x
1 – XRF instrument		x



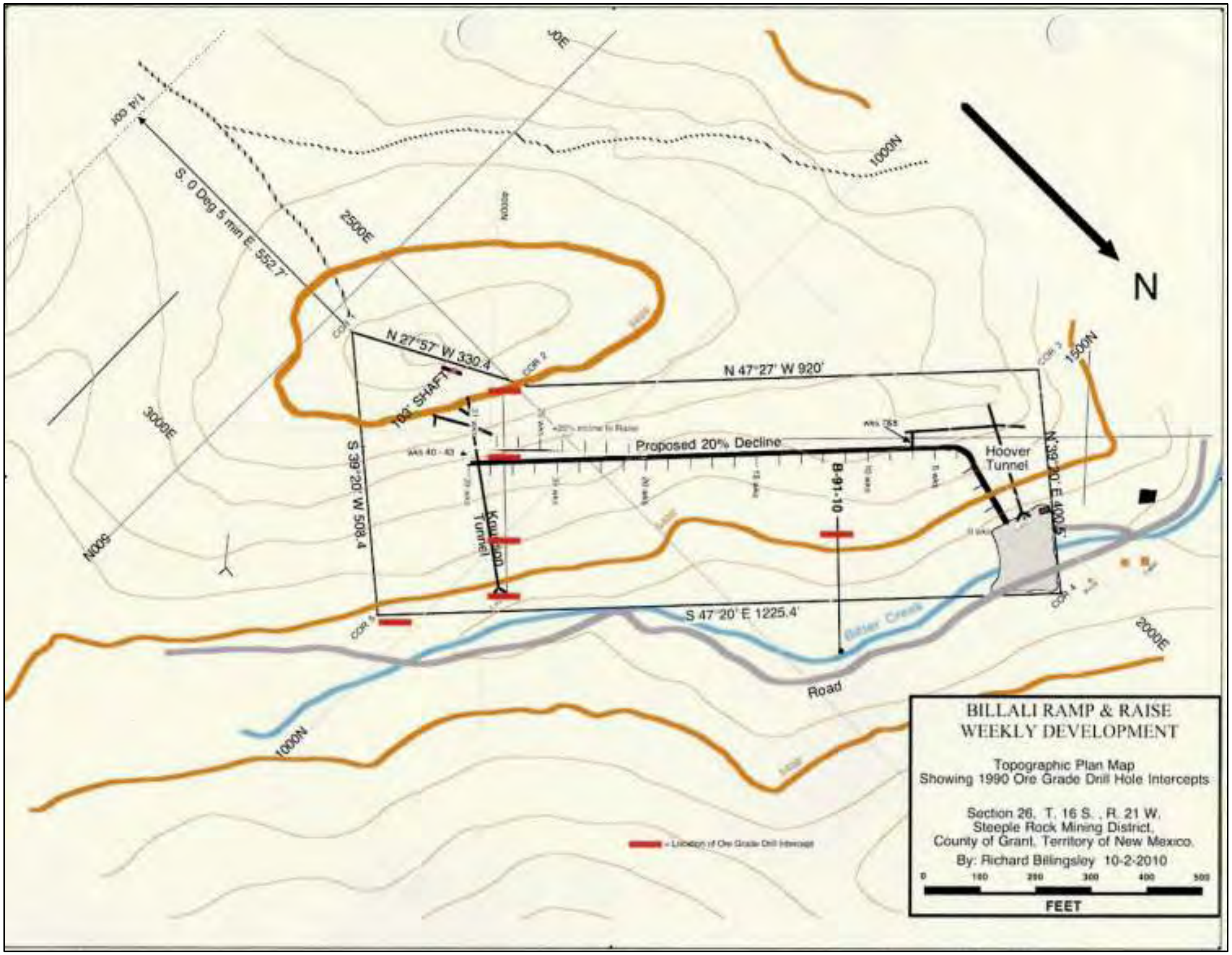
Source: Merz (2011)

Figure 14-1 Block diagram showing proposed tunnel to intersect Billali quartz veins



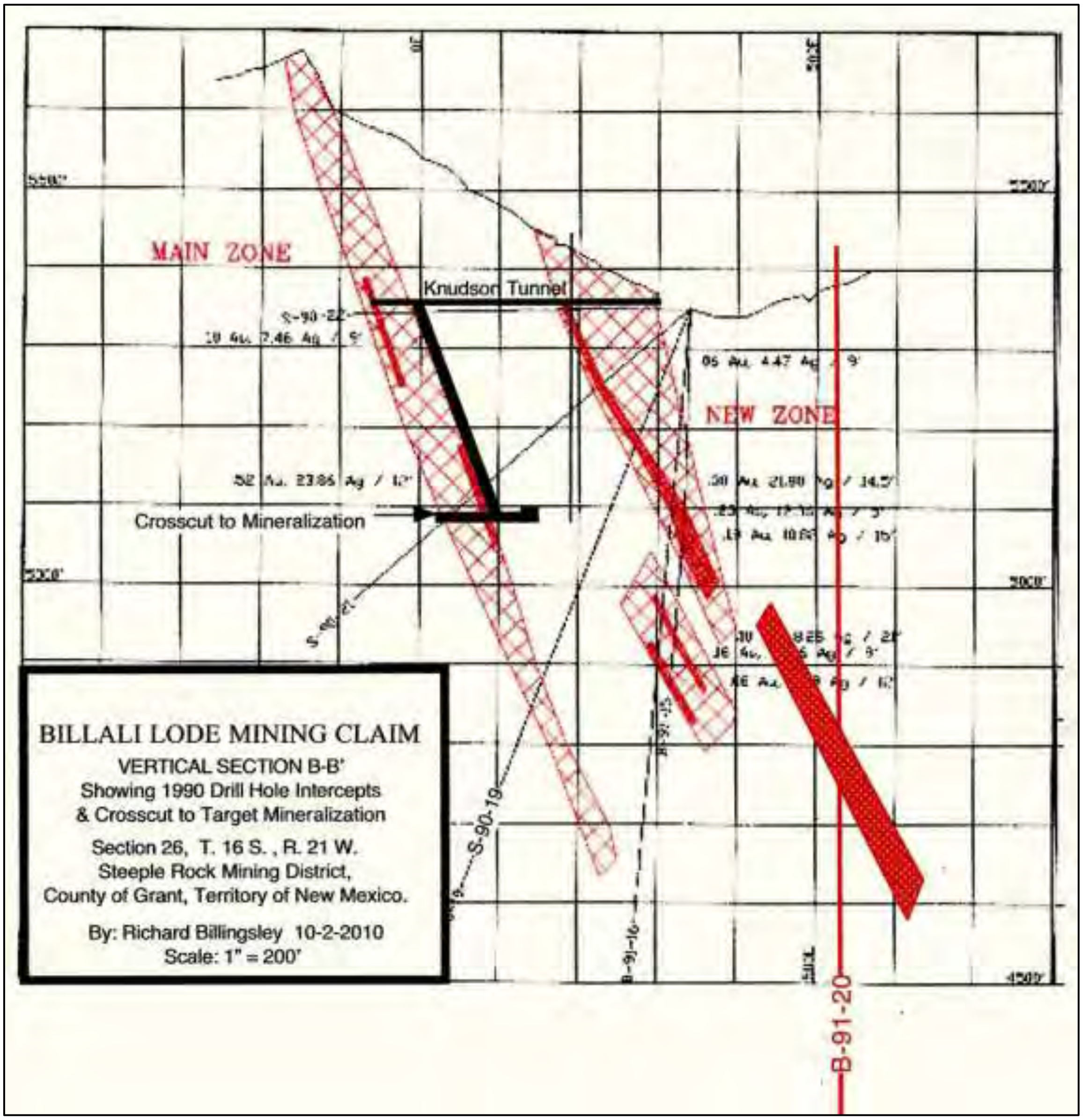
Source: Merz (2011)

Figure 14-2 Vertical section A-A' of planned Billali workings



Source: Merz (2011)

Figure 14-3 Map of planned Billali workings



Source: Merz (2011)

Figure 14-4 Vertical section B-B' of planned Billali workings

15 Recovery Methods (Item 17)

The mineralogy of the silver-gold quartz mineralization is amenable to the proposed processing methods. These processing methods include either direct shipping or the ore to a smelter or milling and sorting at an offsite facility and shipping to a smelter by rail. The ore will be used as flux by the copper smelter.

15.1 Operation Results

As the Billali mine is not currently producing ore, there are no operation results. Testing on the core intervals with ore grade intercepts from the Biron Bay drilling on the Billali claim was included with core from the Summit when Santa Fe Gold conducted metallurgical testing (Section 11). Only the summary statement from the Santa Fe Gold website is available. As the quartz structure on the Summit mine continues along strike onto the Billali claim and similar silver and gold mineralization was intercepted by the Biron Bay drilling, it is likely that similar operation results will be obtained.

15.2 Processing Methods

The Billali Mine Plan calls for the silver-gold bearing quartz to be either direct shipped to a smelter for use as flux or processed at a mill in Lordsburg for shipment of a concentrate to a smelter. It is more advantageous to directly ship the flux ore to the smelter, as the additional mill charge is bypassed and payment is received sooner from the smelter.

15.3 Plant Design and Equipment Characteristics

No processing plant or milling equipment will be installed at the Billali mine. A flow sheet of the process is not needed.

15.4 Consumable Requirements

Consumable materials will include fuel for the electric generator, water, powder, rail ties and spikes, office supplies, and other supplies. No additional process materials will be required, as the mineralization is direct shipping flux ore.

16 Project Infrastructure (Item 18)

16.1 Infrastructure and Logistic Requirements

A change house that is complete with showers and commode has been constructed and is available for use by employees as soon as funding becomes available for salaries. All water effluent from the change house will be treated in a standard leach field process that is used all over the world.

A small trailer-portable office will be acquired to accommodate planning and engineering drawings and calculations.

An additional small trailer will be placed in this same area, out of the way of the trucks and other structures for the watchman. Since the Billali mine will be working two, ten-hour shifts each weekday, five days a week, the watchman will have to be available starting on Saturday morning, until Monday morning in order to prevent vandalism and other curiosity seekers.

The current access road to the Billali will be used to haul the ore to the rail head at Duncan. The road to the escape-way exit will be constructed with the barren waste rock extracted from excavating the decline ramp. No rail, port facilities, dams, dumps, stockpiles, leach pads, tailings disposal, or pipelines will be needed. An electric power line may be constructed by the local utility in the future, with possible collaboration from adjacent mines and local ranchers.

17 Market Studies and Contracts (Item 19)

17.1 Summary of Information

The Billali owner/managers have had experience managing precious metal-silica flux mines. Their recent and current experience with selling gold-silver-quartz ore as flux to smelters give them confidence that the ore grades intersected in the Biron Bay drill holes on the Billali claim will be purchased by nearby copper smelters.

17.2 Relevant Market Studies

Mr. Merz has made contact with three nearby smelters:

1) Grupo Mexico‟s smelter in Cananea, Mexico;
2) Freeport McMoRan Copper & Gold Inc.‟s (FMI) (formerly Phelps Dodge) smelter in Miami, Arizona; and
3) ASARCO (Grupo Mexico)‟s smelter in Hayden, Arizona.

All three smelters are approximately the same distance from the mine site, so transportation costs would be similar and would not enter into consideration in selection of a smelter.

Both FMI and ASARCO smelters expressed strong interest in the Billali product and both asked that, once access was achieved to the ore grade quartz structures, they be contacted. The smelter would then send a geologist to examine the Billali mine and sample the silica. They would then negotiate a purchase contract for the gold-silver bearing quartz. Each smelter currently is purchasing direct shipping ore from the Summit mine. Grupo Mexico‟s Cananea smelter manager did not appear to be interested, as he already had a good supply of barren silica rock that was locally available and did not seem to be interested in the precious metal contents (Merz, personal communication).

17.3 Nature of Material Terms

The usual practice is that, as long as the minimum 85% or 90% SiO_2 is available in the silica, smelters pay up to 92% of the contained precious metal value. This is similar to the cost to send the Billali product to a custom concentrator for preparation of a precious metals concentrate that would then have to be shipped to a smelter for smelting and refining. In addition, shipping directly to a smelter involves more rapid payment, which is of benefit.

17.4 Commodity Price Projections

Prices for precious metals vary according to market variability and world events. Current gold price is approximately $1740/ounce and silver is approximately $32/ounce (www.kitco.com accessed December 7, 2011).

17.5 Confirmation and Results of Review

The author has reviewed the market studies conducted by Billali and finds that the results support the assumption of marketability.

17.6 Contracts and Status

Neither FMI nor ASARCO discussed possible contract details (Merz, personal communication).

18 Environmental Studies, Permitting and Social or Community Impact (Item 20)

As professional miners, the three owners/partners of Billali Mine LLC recognize that proper and adequate attention must be paid to environmental considerations. Recognition of the importance of protecting the environment is an important aspect of any sized mining operation. The care of the environment is easy, logical, and does not add materially to the cost of operation. The benefits are clean sites, orderly appearance of camps, and involve the least disruption of the natural habitat possible.

18.1 Related Information

Part of good environmental procedure, involves such simple arrangements as having a protected place prepared for used batteries, burnt or used oil, and other hazardous waste that could cause detriment to the environment if disposed of carelessly. This place would be periodically cleaned by shipping whatever hazardous waste and other undesirable items and material to an authorized waste dump site for proper disposal.

18.2 Environmental Study Results

There is a requirement to periodically analyze the environmental impact of possible changes in the chemistry of the wall rock and the quartz structures. Recently, the Mining and Minerals Division of the Energy, Minerals and natural Resources Department of New Mexico (NMEMNRD) requested that three samples (wall rock, non-mineralized quartz, and mineralized quartz rock) be tested for Acid-Base Accounting.

The results of each of these tests indicated that each sample produced no acidic results from the procedure, as the results were alkaline or basic. As required by NMEMNRD, in the future, additional samples of each rock type may have to be collected every quarter to ensure that no significant rock change may cause the Acid-Base Accounting results to become acidic instead of the current alkaline results.

18.3 Environmental Issues

If significant water is found in any of the underground workings, it should be tested. All currently available evidence indicates that any water found will be slightly basic and will not cause any concern for the environment.

18.4 Operating and Post Closure Requirements and Plans

Mining permit No. GR058MN from NMEMNRD is reproduced in Appendix C. This permit requires compliance with state and federal requirements and standards and states that “The permittee shall take all necessary steps to minimize any adverse impact to the environment or public health and safety resulting from non-compliance with any term or condition of the Permit, the Rules, or the Act.

18.5 Required Permits and Status

The required minimal use mining permit was granted by NMEMNRD in 2009. No post-performance or reclamation bonds are currently required.

18.6 Social and Community

The Billali mine is located in a rural area adjacent to the Summit mine. There appear to be no nearby neighbors, other than local ranches.

18.7 Mine Closure

According to Permit No. GR058MN, "The Permittee is not required to provide financial assurance to MMD as long as the operation maintains two acres, or less of disturbance. … The Permittee is permitted to conduct concurrent reclamation activities, but must otherwise commence reclamation activities within 180 days after permanent cessation of mining activities. … The Permittee will implement erosion control measures that are designed, constructed and maintained using professionally recognized Best management Practice (BMP) standards as needed. … All disturbances relative to the mining operation shall be revegetated and left in a stable configuration."

19 Capital and Operating Costs (Item 21)

19.1 Capital Cost Estimates

Estimated costs for capital equipment remaining to be purchased by the Billali mine are based on estimates from a raise-borer contractor and price lists and ads for new and used equipment.

19.2 Operating Cost Estimates

Estimated operating costs are based on salaries and taxes that are currently being paid in the local area.

Table 19-1 Capital cost estimates

Task	Estimated Cost ($)
XRF instrument	37,000
Equipment (front end loader, used)	50,000
Equipment (raise borer)	385,000
18-wheel haul truck (used)	250,000
Total Capital Costs	**722,000**

Note: Costs are in U.S. dollars and are rounded to the nearest thousand

Table 19-2 Monthly operating cost estimates

Task	Monthly cost ($)
Salaries (2 shifts/day, M-F for miner, miner's helper, roustabout, hoistman, book keeper; part time watchman, administration)	81,000
Consumables (fuel, powder, rail, etc.)	33,000
Ore shipping by rail	75,000
State & Federal taxes	20,000
Total Operating Costs	**209,000**

Note: Costs are in U.S. dollars and are rounded to the nearest thousand

20 Economic Analysis (Item 22)

As the Billali mine is an advanced exploration project, an economic analysis is not required.

21 Adjacent Properties (Item 23)

There are no publicly available data regarding all properties adjacent to the Billali property. Information on the Summit mine operation and claim status is publicly available from the website of the Santa Fe Gold Corporation of Albuquerque, New Mexico. This source indicates that the holdings at the Summit silver-gold property in Grant County, New Mexico, consist of 10 patented federal mining claims totaling approximately 117 acres and 62 unpatented federal mining claims totaling approximately 740 acres (www.santafegoldcorp.com).

21.1 Verification

The U.S. Bureau of Land Management (BLM) website (http://www.glorecords.blm.gov) has a searchable database for mining claim and patent information. The Billali patented claim is misspelled as Billalt and is listed as NMNMAA 000191, issued to the Steeple Rock Development Co., without an image of the patent. A poor resolution image of the map of land ownership is shown on the website and is not readable. The mapping function of the Government Land Office [GLO] land status was temporarily unavailable. However, it was possible to confirm the general pattern of patented claims in the lower right hand portion of the map as the same as the Billali-Summit claims.

The author and qualified person was unable to verify the information on the land status of the Summit claims (Figure 2-5). However, the author visited the Summit mine on October 31, 2011, toured some of the underground workings, and examined the working face and sulfide mineralization in hand samples taken from the working face. The information from the Summit mine is not necessarily indicative of the mineralization on the property that is the subject of the technical report.

22 Other Relevant Data and Information (Item 24)

The author is not aware of any other relevant data or information that affects the potential to pursue continued exploration on the Billali project.

23 Interpretation and Conclusions (Item 25)

The author"s examination of the evidence indicates that Billali"s approach to exploration at the Billali mine project is valid. The Billali project is an advanced-stage exploration project. While current, NI 43-101 compliant resources and/or reserves have not been established, the Billali mine LLC considers the existing project data to be important, substantial, and relevant to the project. In the author"s opinion, a NI 43-101-compliant mineral resource estimate is not achievable using the existing drilling data.

The Billali property represents an opportunity to develop and pursue exploration concepts and targets for mining, using the existing historical data for background. The Billali property will have the inherent opportunity and risk of an exploration property.

23.1 Results

The author concludes that the advanced-stage exploration concept of the Billali Mine LLC is appropriate for the Billali property. Results of the Biron Bay drill assay data, the compilation of mineralization observations made from published sources and geological mapping, and the Biron Bay geophysical surveys indicate the strong likelihood of intersecting gold-silver mineralization in quartz structures at depth on the Billali claim.

The compilation of available data has been conducted in accordance with acceptable industry procedures at the time of exploration in the early 1990s. The presence of the epithermal gold-silver mineralization in quartz structures on the Billali patented mining claim was confirmed by the Biron Bay drilling reported by MPH and by McLemore (1993).

23.2 Significant Risks and Uncertainties

The primary risk at the exploration stage is that the proposed drift and raise excavations will not hit sufficient gold and silver mineralization. Exploration targets of current interest are gold-silver-bearing quartz structures found in fault zones. It is not known to what extent gold-silver mineralization of economic interest might be present.

A mineral resource estimation for the Billali project would be premature, pending further exploration drifting that defines a mineralized deposit. There are many variables in the resource estimation process that are risks in achieving a desirable resource estimate, and include the variability of assay grades. There is no guarantee that a resource of sufficient size to be of economic interest to Billali can be identified.

The current price for gold is US$ 1740/ounce and the current price for silver is $32/ounce. Stability of commodity price and the availability of supplies to meet demand are risk factors for the Billali project. However, future projections by most experts indicate that the price of metals will remain higher than those of several years ago.

Risk factors include the high-risk nature of the mining business, volatile markets for gold and silver, extensive governmental regulations, restrictions on production, tax increases, increasing environmental controls, changing national and international economic conditions, heavy reliance on the services of the managers, and possibility of uninsured losses from natural disasters.

24 Recommendations (Item 26)

Recommendations for future work programs, the approximate timeline, and estimated costs to advance the Billali project are provided below. The author recommends the gold-silver quartz vein targets can be pursued by a program of $ 2,000,000 as shown in Table 24-1.

24.1 Recommended Work Programs

The author believes that additional work on the Billali project is warranted and recommended. A resource estimate would not be conducted until sufficient drifting to intersect the mineralized quartz structures was completed. This exploration would allow characterizing the resources to an inferred or indicated classification.

Continued exploration by driving the decline ramp to the gold-silver mineralization intersected in the Biron Bay drill holes is recommended. The cost (at $100/foot) of drilling the large number of diamond drill holes to the depth required to confirm additional resources would cost as much as driving the decline. It is more practical to drive the decline to the potential ore indicated by the Biron Bay drill holes on the Billali claim, as driving the decline would have to be done anyway.

Assay data (via laboratory analysis and the XRF instrument) from the mineralized quartz veins should be entered into computer programs, such as a GIS model of the mine. These data can be transferred where appropriate to an appropriate 3-dimensional geology mine planning and resource estimating software. Records should be kept of the mined location of each truckload of ore sent to the smelter and correlated with the smelter grades and returns.

24.2 Costs

Estimated costs are discussed in Section 19.

24.2.1 Proposed Budget

It is recommended that work in Table 24-1 be pursued as soon as funds are available.

Table 24-1 Recommended exploration program, Billali property

Task	Monthly cost	Estimated 6 months Cost
Salaries (2 shifts/day, M-F for miner, miner's helper, roustabout, hoistman, book keeper; part time watchman, administration)	81,000	486,000
Consumables (fuel, powder, rail, etc.)	33,000	198,000
Ore shipping by rail	75,000	450,000
State & Federal taxes	20,000	120,000
XRF instrument		37,000
Equipment (front end loader, used)		50,000
Raise borer		385,000
18-wheel haul truck (used)		250,000
Total Recommended Expenditures		**$ 1,976,000**

Note: Costs are in U.S. dollars and are rounded to the nearest thousand

25 References (Item 27)

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26 Glossary

26.1 Mineral Resources

The mineral resources and mineral reserves have been classified according to *the "CIM Standards on Mineral Resources and Reserves: Definitions and Guidelines"* (November 27, 2010). Accordingly, the Resources have been classified as Measured, Indicated or Inferred, the Reserves have been classified as Proven, and Probable based on the Measured and Indicated Resources as defined below.

A "Mineral Resource" is a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth"s crust in such form and quantity and of such a grade or quality that it has reasonable prospects for economic extraction. The location, quantity, grade, geological characteristics and continuity of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge.

An „Inferred Mineral Resource" is that part of a Mineral Resource for which quantity and grade or quality can be estimated on the basis of geological evidence and limited sampling and reasonably assumed, but not verified, geological and grade continuity. The estimate is based on limited information and sampling gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes.

An „Indicated Mineral Resource" is that part of a Mineral Resource for which quantity, grade or quality, densities, shape and physical characteristics can be estimated with a level of confidence sufficient to allow the appropriate application of technical and economic parameters, to support mine planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough for geological and grade continuity to be reasonably assumed.

A „Measured Mineral Resource" is that part of a Mineral Resource for which quantity, grade or quality, densities, shape, physical characteristics are so well established that they can be estimated with confidence sufficient to allow the appropriate application of technical and economic parameters, to support production planning and evaluation of the economic viability of the deposit. The estimate is based on detailed and reliable exploration, sampling and testing information gathered through appropriate techniques from locations such as outcrops, trenches, pits, workings and drillholes that are spaced closely enough to confirm both geological and grade continuity.

26.2 Mineral Reserves

A "Mineral Reserve" is the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified. A Mineral Reserve includes diluting materials and allowances for losses that may occur when the material is mined.

A „Probable Mineral Reserve" is the economically mineable part of an Indicated, and in some circumstances a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction can be justified.

A „Proven Mineral Reserve" is the economically mineable part of a Measured Mineral Resource demonstrated by at least a Preliminary Feasibility Study. This Study must include adequate information on mining, processing, metallurgical, economic, and other relevant factors that demonstrate, at the time of reporting, that economic extraction is justified.

26.3 Glossary

The following general mining terms may be used in this report.

Table 26-1 Glossary

Term	Definition
Assay:	The chemical analysis of mineral samples to determine the metal content.
Composite:	Combining more than one sample result to give an average result over a larger distance.
Cut-off Grade:	The grade of mineralized rock, which determines as to whether or not it is economic to recover its gold content by further concentration.
Dip:	Angle of inclination of a geological feature/rock from the horizontal.
Fault:	The surface of a fracture along which movement has occurred.
Footwall:	The underlying side of an orebody or stope.
Gangue:	Non-valuable components of the ore.
Grade:	The measure of concentration of gold within mineralized rock.
Hanging wall:	The overlying side of an orebody or slope.
Igneous:	Primary crystalline rock formed by the solidification of magma.
Lithological:	Geological description pertaining to different rock types.
Mineral/Mining Lease:	A lease area for which mineral rights are held.
Ore Reserve:	See Mineral Reserve.
Sedimentary:	Pertaining to rocks formed by the accumulation of sediments, formed by the erosion of other rocks.
Shaft:	An opening cut downwards from the surface for transporting personnel, equipment, supplies, ore and waste.
Sill:	A thin, tabular, horizontal to sub-horizontal body of igneous rock formed by the injection of magma into planar zones of weakness.
Stope:	Underground void created by mining.
Stratigraphy:	The study of stratified rocks in terms of time and space.
Strike:	Direction of line formed by the intersection of strata surfaces with the horizontal plane, always perpendicular to the dip direction.
Sulfide:	A sulfur bearing mineral.

26.4 Abbreviations

The following abbreviations may be used in this report.

Table 26-2 Abbreviations

Abbreviation	Unit or Term
Ag	silver
Au	gold

Abbreviation	Unit or Term
°C	degrees Centigrade
cm	centimeter
cm^2	square centimeter
cm^3	cubic centimeter
°	degree (degrees)
FA	fire assay
ft	foot (feet)
ft^2	square foot (feet)
ft^3	cubic foot (feet)
g	gram
gal	gallon
g/L	gram per liter
g/t	grams per tonne
km	kilometer
km^2	square kilometer
LOI	Loss On Ignition
m	meter
m^2	square meter
m^3	cubic meter
Ma	million years ago or Mega-annum
NI 43-101	Canadian National Instrument 43-101
oz	troy ounce
%	percent
ppb	parts per billion
ppm	parts per million
QA/QC	Quality Assurance/Quality Control
RQD	Rock Quality Description
SEC	U.S. Securities & Exchange Commission
sec	second
st	short ton (2,000 pounds)
t	tonne (metric ton) (2,204.6 pounds)

Appendices

Appendix A: Author Certificate

CERTIFICATE OF AUTHOR

I, Jan C. Rasmussen, a Registered Geologist, do hereby certify that:

1. I am an independent consulting geologist at P. O. Box 36971, Tucson, Arizona, 85740. Most of my recent NI-43-101 reports have been written as a Senior Associate Geologist for SRK Consulting (U.S.), Inc. (SRK), 3275 W. Ina Road, Suite 240, Tucson, Arizona USA, 85741.

2. I graduated with a Bachelors of Science degree in Geology from the University of Arizona in Tucson, Arizona, in May 1965. I graduated with a Master of Science degree in Geosciences from the University of Arizona in December 1969. I graduated with a Doctor of Philosophy degree with a major in Geosciences (Economic Geology specialty) and minor in Engineering Geology from the University of Arizona in December 1993.

3. I am a Registered Member (3526300) with the Society of Mining, Metallurgy, and Exploration Geology and have been since 2006. I am a Registered Geologist in the State of Arizona, USA, (#15,566), and have been since 1983.

4. I have worked as a Geologist in the mining and mineral exploration business or as a geology professor for a total of 37 years since my graduation with an M.S. in Geology from the University of Arizona. My Ph.D. dissertation was written on the geochemistry of various types of ore deposits (copper, silver, gold, lead-zinc, and tin deposits). I previously worked for SRK in exploration, environmental permitting, and mine reclamation. I am a Registered Geologist in Arizona and an SME Registered Professional Member. I am a Qualified Person for this Technical Report, and am responsible for writing all sections of this report.

5. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101), and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.

6. I am responsible for writing all sections of the technical report titled " NI 43-101 Technical Exploration Report, Billali Mine, New Mexico", effective date December 9, 2011, and dated December 9, 2011 (the "Technical Report") relating to the Billali mine project. I visited the Billali mine and the Steeple Rock mining district on October 31, 2011, for one day.

7. I have not had prior involvement with the property that is the subject of the Technical Report.

8. I am independent of the issuer applying all of the tests in section 1.5 of National Instrument 43-101.

9. I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with that instrument and form.

10. I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

11. As of December 9, 2011, to the best of my knowledge, information and belief, Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading

Dated this 9 Day of December 2011

Jan C. Rasmussen

REGISTERED GEOLOGIST
CERTIFICATE NO. 15664
JAN CAROL RASMUSSEN
DATE SIGNED 12/9/11
ARIZONA, U.S.A.
12/31/12

Appendix B: Patent to Billali Mining Claim

GENERAL LAND OFFICE
No. 31326

MINERAL CERTIFICATE
No. 612

THE UNITED STATES OF AMERICA,

To all to whom these Presents shall come, Greeting:

WHEREAS, In pursuance of the provisions of the Revised Statutes of the United States, Chapter Six, Title Thirty-two, and legislation supplemental thereto, there have been deposited in the GENERAL LAND OFFICE of the United States the Plat and Field Notes of Survey and the Certificate, No. 612, of the Register of the Land Office at Las Cruces in the Territory of New Mexico, accompanied by other evidence, whereby it appears that the Steeple Rock Development Company

did, on the thirteenth day of February, A. D. 1899 duly enter and pay for that certain mining claim or premises, known as the Billali lode mining claim

designated by the Surveyor General as Lot No. 1021, embracing a portion of section twenty six, township sixteen south of range twenty one west, New Mexico meridian

in the Steeple Rock Mining District, in the County of Grant and Territory of New Mexico, in the District of Lands subject to sale at Las Cruces and bounded, described, and platted as follows, with magnetic variation as hereinafter stated.

BEGINNING at corner No. 1, quartzite stone 6 x 20 x 28 inches, marked 1-1021, with mound of stone from which the south quarter corner of section twenty six, in township sixteen south of range twenty one west, New Mexico meridian bears south five minutes east five hundred and fifty two and seven tenths feet distant; an

r two, and
the Plat and
appears that
that certain
District, in

[illegible] four inches in diameter blazed and marked B. T. 1-1021 bears north forty three degrees and fifty five minutes east forty-five and five tenths feet distant.

Thence, first course, magnetic variation twelve degrees and thirty five minutes east, north twenty seven degrees and fifty seven minutes west three hundred and thirty and four tenths feet to corner No. 2.

Thence, second course, magnetic variation twelve degrees and thirty minutes east, north forty seven degrees and twenty seven minutes west nine hundred and twenty feet to corner No. 3.

Thence, third course, magnetic variation twelve degrees and thirty minutes east, north thirty nine degrees and twenty minutes [illegible] four hundred and five tenths feet to corner No. 4 a porphyry stone 4×14×26 inches, chiseled 4-1021 and 5/4 [illegible] of stone, identical with corner No. 4 of survey No. 51[illegible] the "[illegible]" lode claim from which a cedar tree two feet in diameter blazed and marked B. T. 4-1021 and B. T. 5/4 bears north only five degrees and forty five minutes east thirty five and five tenths feet distant, a black oak twelve inches in diameter blazed and marked B. T. 4-1021 and B. T. 5/4 bears [illegible] two degrees and forty five minutes east forty two and five tenths feet distant, U. S. mineral monument No. 2 bears north forty six degrees and [illegible] minutes west seven hundred and nineteen and five tenths feet distant, a black oak twelve inches in diameter blazed and marked B. T. 4-1021 and B. T. 5/4 bears south sixty six degrees and five minutes west forty-eight feet distant.

Thence, fourth course, magnetic variation twelve degrees and thirty five minutes south forty seven degrees and twenty minutes east one thousand two hundred and twenty five and four tenths feet to corner No. 5.

Thence, fifth [illegible]

nine degrees and twenty minutes, west three hundred feet to corner No. 1 five hundred and eight and four tenths feet to corner No. 1 the place of beginning; said Lot No. 1021 extending one thousand two hundred and twenty five and four tenths feet in length along said Billali vein or lode, and containing eleven acres and five hundred and ninety seven thousandths of an acre of land, more or less.

NOW KNOW YE, That there is therefore hereby GRANTED by the UNITED STATES unto the said Steeple Rock Development Company

and to its successors and assigns, the said mining premises hereinbefore described, and not expressly excepted from these presents, and all that portion of the said Billali vein, lode, or ledge, and of all other veins, lodes, and ledges, throughout their entire depth, the tops or apexes of which lie inside of the surface boundary lines of said granted premises in said Lot No. 1021 extended downward vertically, although such veins, lodes, or ledges in their downward course may so far depart from a perpendicular as to extend outside the vertical side lines of said premises: *Provided*, That the right of possession to such outside parts of said veins, lodes, or ledges shall be confined to such portions thereof as lie between vertical planes drawn downward through the end lines of said Lot No. 1021 so continued in their own direction that such planes will intersect such exterior parts of said veins, lodes, or ledges: *And provided further*, That nothing herein contained shall authorize the grantee herein to enter upon the surface of a claim owned or possessed by another.

TO HAVE AND TO HOLD said mining premises, together with all the rights, privileges, immunities, and appurtenances of whatsoever nature thereunto belonging unto the said grantee above named, and to its successors and assigns forever; subject nevertheless to the above mentioned and to the following conditions and stipulations:

First. That the premises hereby granted, with *the exception of the surface*, may be entered by the proprietor of any other vein, lode, or ledge, the top or apex of which lies outside of the boundary of said granted premises, should the same in its dip be found to penetrate, intersect, or extend into said premises, for the purpose of extracting and removing the ore from such other vein, lode, or ledge.

Second. That the premises hereby granted shall be held subject to any vested and accrued water rights for mining, agricultural, manufacturing, or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local laws, customs, and decisions of courts. And there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States.

Third. That in the absence of necessary legislation by Congress, the Legislature of New Mexico may provide rules for working the mining claim or premises hereby granted, involving easements, drainage, and other necessary means to its complete development.

IN TESTIMONY WHEREOF, I William McKinley, PRESIDENT OF THE UNITED STATES OF AMERICA, have caused these letters to be made PATENT, and the SEAL OF THE GENERAL LAND OFFICE to be hereunto affixed.

GIVEN under my hand at the City of Washington the eleventh day of July, in the year of our Lord one thousand eight hundred and ninety-nine, and of the INDEPENDENCE OF THE UNITED STATES the one hundred and twenty fourth.

[L.S.]

BY THE PRESIDENT: William McKinley

By F M McKean, Secretary.

C H Brush, Recorder of the General Land Office.

[illegible]

[illegible]

Appendix C: Mining Permit

PERMIT NO. GR058MN
BILLALI MINE
MINIMAL IMPACT NEW MINING OPERATION

MINING AND MINERALS DIVISION
ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

This permit is issued by the Director of the Mining and Minerals Division (MMD) of the New Mexico Energy, Minerals and Natural Resources Department to:

Richard Billingsley and Leslie Billingsley
and Joy Merz

Whose correct address is:
P.O. Box 207
7 Billingsley Lane
Duncan, AZ, 85534

(Permittee) for the Billali Mine, located in Grant County, New Mexico.

Section 1. **STATUTES AND REGULATIONS**

A. This Permit is issued pursuant to the New Mexico Mining Act, NMSA 1978, §69 - 36-1, et seq. (1993, as amended through 1999).

B. This Permit is subject to all applicable regulations of the New Mexico Mining Act (Act), New Mexico Mining Act Rules (19.10.1 New Mexico Administrative Code (NMAC) through 19.10.14 NMAC) and any other regulations which are now or hereafter in force under the Act; and all such regulations are made a part of this Permit by this reference.

Section 1a. **PERMIT APPLICATION PACKAGE**

A. The Permit Application Package (PAP) package includes:

1) *A permit application for a Part 3 minimal impact new mining operation submitted to MMD on June 30, 2008, and is identified as "Attachment D."*
2) *Letter to MMD from the operator, dated January 27, 2009, clarifying the items requested in Attachment D.*
3) *A map of the design limits, and the area to be mined, and is identified as "Attachment B."*
4) *A total dissolved solids report (TDS) from the Town of Duncan, Arizona, Laboratory, dated January 20, 2009, and is identified as "Attachment C."*
5) *A new mine plan dated October 2, 2009, and received by MMD on October 5, 2009, and is identified as "Attachment F."*

PERMIT NO. GR058MN

6) *An updated minimal impact new mining application, dated October 9, 2009, and identified as "Attachment G."*

Section 2. **PERMIT AREA**

A. The Permittee is authorized to conduct mining and reclamation operations only on those lands that are specifically designated and authorized as the permitted area. The Permit area is 1.5 acres encompassing a portion of Section 26, Township 16 South, Range 21 West in the Steeple Rock Mining District, Grant County, New Mexico, as delineated in the design limit map in the PAP - Attachment B.

Section 3. **FINDINGS OF FACT**

A. The PAP is complete and demonstrates the proposed operation will meet the performance and reclamation standards and requirements of subsection D, Paragraphs 1 through 10, of 19.10.3.304 NMAC.

B. The Permittee paid the initial permit application fee of $350.00, on February 4, 2009, as required by Subsection D of 19.10.2.201 of the New Mexico Mining Act Rules (Rules) NMAC.

C. The Post Mining Land Use is designated for wildlife and grazing.

D. The Permit Area shall be the map received by MMD, on January 30, 2009, and filed with the PAP, Attachment B, in the folder, "Billali Mine."

E. The Permittee is not in violation of the terms of another permit issued by the Director, or in violation of a substantial environmental law, or substantive regulation at another mining operation, has not forfeited or had forfeited financial assurance in connection with another mining, reclamation or exploration permit, and has not demonstrated a pattern of willful violations of the Act or other New Mexico environmental statutes.

G. The applicant has signed a notarized statement that he agrees to comply with the requirements of the Permit, the Rules, and the Act, and allows the Director to enter the permit area for the purpose of conducting inspections.

H. The Secretary of the New Mexico Environment Department (NMED) has provided a written determination, dated October 26, 2009, stating that the operation is likely to have minimal environmental impact if operated and reclaimed in accordance with the approved permits, and NMED comments, and will be expected to achieve compliance with all applicable air, water quality, and other environmental standards if carried out as described in the New Mexico Mining Act (NMMA) plan. This determination addresses applicable standards for

PERMIT NO. GR058MN

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air, surface water, and ground water protection enforced, or for which the NMED is otherwise responsible.

Section 4. **COMPLIANCE REQUIREMENTS**

A. The Permittee shall comply with the statutes and regulations in Section 1 of the permit, and with the applicable regulatory and permitting requirements. The issuance of the permit does not relieve the Permittee from the responsibility of complying with other state and federal requirements and standards.

Section 5. **AGENCY RIGHT OF ENTRY**

A. The Permittee shall allow the authorized representatives of the Director, without advance notice, upon presentation of appropriate credentials, and without delay:

1) to enter the permit area as provided for in Subsection J, Paragraph 5 of 19.10.3.304 NMAC and Subsection E, Paragraph 1 of 19.10.11.1101 NMAC; and

2) at reasonable times have access to and copies of any records associated with permitting and compliance required by the Act, 19.10.NMAC or the permit.

Section 6. **PERMIT COVERAGE**

A. This permit shall be binding on any person or persons conducting mining and reclamation operations under this permit.

Section 7. **ENVIRONMENTAL COVERAGE**

A. The Permittee shall take all necessary steps to minimize any adverse impact to the environment or public health and safety resulting from non-compliance with any term or condition of the Permit, the Rules, or the Act.

Section 8. **COMPLIANCE WITH THE PERMIT APPLICATION PACKAGE**

A. The Permittee shall conduct mining and reclamation operations only as described in the approved PAP, and any other modifications approved by the Director pursuant to 19.10.6.608 NMAC. The Permittee shall comply with any and all conditions that are incorporated into the PAP.

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Section 9. **GENERAL OBLIGATIONS AND CONDITIONS**

A. The Permittee is not required to provide financial assurance to MMD as long as the operation maintains two acres, or less, of disturbance pursuant to Paragraph E of 19.10.3.304 NMAC. The term of the permit is governed by 19.10.6.607 NMAC.

B. The Permittee shall notify MMD, within at least thirty (30) days prior to initiating any reclamation approved pursuant to this permit.

C. The Permittee shall monitor the site at least once per year, for the duration of the permit, in order to assure knowledge of the general site conditions, and compliance with the approved permit.

D. The Permittee is permitted to conduct concurrent reclamation activities, but must otherwise commence reclamation activities within 180 days after permanent cessation of mining activities.

E. If the mine operation is inactive for more than one year, the Permittee shall reclaim the mine, unless granted an extension of time by the Director.

F. The Permittee will implement erosion control measures that are designed, constructed and maintained using professionally recognized Best Management Practice (BMP) standards as needed.

G. All disturbances relative to the mining operation shall be revegetated and left in a stable configuration.

H. The Permittee shall construct a continuous berm around the edge of all high walls. This berm shall be a minimum of three feet in height.

I. The Permittee shall submit annual reports pursuant to 19.10.6.610 NMAC.

J. The Permittee is authorized to operate a minimal impact new mining operation. The mining operation will have minimal impact on the environment pursuant to Subsection M, Paragraph 2 of 19.10.1.7 NMAC. In addition, the mining operation will not exceed two acres of disturbed land pursuant to Subsection A of 19.10.3.304 (E) NMAC. The Billali Mine will no longer qualify as a Minimal Impact Operation if permit authority is exceeded or Minimal Impact requirements, as described in Subsection M, Paragraph 2 of 19.10.1.7 NMAC, are violated.

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K. All lands to be disturbed by the mining operation will be addressed under the performance reclamation standards and requirements of 19.10.3.304 NMAC, and in accordance with the reclamation plan provided in the PAP.

L. The following conditions are incorporated into the permit, and shall be implemented by the operator as additional requirement(s) necessary for the Billali Mine to maintain minimal impact new mining operation status:

1) The Permittee shall collect runoff in a sump at the low point of the concrete ore stockpile pad and sample for field pH prior to transfer of the water to the underground mine. Water having a pH less than 5.0, shall be amended to raise the pH above 5.0, but no greater than 9.0, prior to introduction into the underground mine for use in drilling and/or dust control.

2) The Permittee shall sample wall rock during emplacement of the underground access ramp to monitor any change to the rock type. The monitoring shall take place on a quarterly basis, or every 200 feet of development, until completion of the access ramp. Monitoring shall entail Acid Base Accounting (ABA), including acid generating potential (AGP), acid neutralization potential (ANP), and net neutralization potential (NNP). Samples analyzed for ABA shall also be evaluated for mineralogical identification of major and trace minerals, including minerals responsible for providing acid generating potential and minerals responsible for providing neutralization potential.

3) The Permittee shall continually conduct visual evaluation for sulfides and changes in the geology of material being placed above ground on the escapeway pad. No sulfide bearing material will be placed on the pad or the roadway. A daily log shall be maintained to record visual observations and any sampling that occurs.

4) The Permittee shall map the geology along the length of the underground access ramp and provide this map to MMD upon completion of the access ramp.

5) The Permittee shall sample host rock, once encountered upon completion of the access ramp, and quarterly thereafter. Analysis shall include ABA and mineralogy, as described in condition number 2 above. The results of these ABA analyses may be used to determine the Permittee's continued status as minimal impact mining operation. Pursuant to 19.10.1.7 (M) (2) (h), the operation will be excluded from minimal impact status if, (h) the operation results in point or non-point source surface, or subsurface releases of acid or other toxic substances from the permit area.

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ORDER

NOW THEREFORE, IT IS HEREBY ORDERED that the Permit Application Package of Richard Billingsley, Leslie Billingsley and Joy Merz to conduct mining and reclamation operations at the Billali Mine located in Grant County, New Mexico, is approved. The Permit may not be transferred without approval by the Director. The Permit is subject to all conditions set out in the Director's Findings of Fact, Conditions, Conclusions of Law, and Order.

By Order of the Director, Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department, of the State of New Mexico.

By: Bill Brd

Bill Brancard, Director
Mining and Minerals Division
Energy, Minerals and Natural
Resources Department

Dated: Nov. 12, 2009

Appendix D: Published Drill Data

Table D-1 Summary of drill data by Inspiration Mines, Inc. at the Summit claims

Source: McLemore (1993)

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Table 11.7—Summary of drill data by Inspiration Mines, Inc., 1983-1984. Depths are drill depths.

Hole no.	Collar elev. (m)	Az	HD	Total depth (m)	Vein intercept (m)	Au oz/ton	Ag oz/ton	Comments
S-1	1757.8	S48 12'W	-35	158.2	100.5-146.6	0.025	1.376	Beneath stopes in Summit
					114.6-118.6	0.042	2.728	adit
S-2	1758.6	S66W	-25	174.3	122.5-134.1	0.027	1.808	Beneath stopes in Summit
					130.4-134.1	0.034	2.733	adit
S-3	1762.1	S53 25'W	-20	154.5	128.9-143.6	—	—	Beneath surface outcrop
					136.5-142.3	0.083	17.55	
S-4	1761.5	S52 5'W	-45	203.9	155.1-191.1	—	—	Beneath hole S-3
					173.4-181.3	0.8	6.78	
S-5	1755.8	S49 7'W	-15	92.3	74.7-84.4	—	—	Beneath surface outcrop
					80.8-84.4	0.024	1.32	
S-6	1755.6	S46 40'W	-45	110.0	83.8-98.8	minor	minor	Beneath hole S-5.
S-7	1750.5	S5 9'E	-15	77.4	52.7-69.9	—	—	Test northwest extension of
					63.7-68.3	0.051	3.88	Apex level
S-8	1750.4	S31 47'W	-15	79.8	57.3-73.5	—	—	Test beneath hole S-7
					68.3-72.5	0.023	1.64	
S-9	1750.2	S55 28'W	-15	131.4	76.2-107.9	—	—	Test northwest of S-8
					83.5-89.8	0.035	2.15	
					93.0-96.0	0.035	2.31	
					99.1-105.2	0.053	2.36	
S-10	1761.7	S37 28'W	-22	185.9	133.8-179.2	—	—	Test below Summit level
					158.8-164.6	0.048	2.085	
S-11	1728.4	N88 43'W	-28	128.3	96.0-122.2	—	—	Test below Juan's stope
					97.5-102.4	0.016	1.996	Hanging wall
					119.2-122.2	0.115	16.25	Footwall
S-12	1753.2	S8 43'W	-14	123.7	77.1-114.4	—	—	Test Billali ore shoot
					95.1-100.9	0.036	1.38	
					105.2-106.7	0.04	2.2	
S-13	1752.5	S50 W	-13	152.1	71.0-94.5	0	0	Test west of hole S-12
					119.8-147.2	—	—	
					128.3-137.5	0.013	1.105	
S-14	1706.8	N5 E	-35	119.2	38.4-99.1	—	—	Test extension of Apex level
					58.2-63.1	0.019	1.69	
S-15	1706.8	N35 E	-30	57.3	39.9-57.3	minor	minor	Test east of hole S-14

Table D-1 Summary of drill data on the Summit claims by Nova Gold and Biron Bay

Source: McLemore (1993)

Table 11.8—Summary of drill data along the East Camp-Summit fault, Nova Gold Resources, Ltd. and Biron Bay Resources, Ltd., 1988–1992. Data from some holes are unavailable. Assays are either high zones (less than 1.0 m intercept) or calculated over a specified depth interval. AZ — Azimuth in degrees. HD – Hole declination in degrees. * Holes examined for this study. Depths are drill depths.

Hole no.	Collar elevation (m)	Az	HD	Total depth (m)	Sample intercept (m)	Au oz/ton	Ag oz/ton	Comments
S88-1	1726.6	235	-47	196.0	156.4-158.1	0.016	1.32	–
S88-2	1744.9	223	-46	366.4	205.7-228.0	0.094	3.13	–
S88-3	1726.6	235	-80	317.0	268.9-290.0	tr	0.05	–
S88-4	1744.9	223	-68	424.9	322.5-333.1	0.028	1.55	–
S88-5*	1709.2	48	-36	164.9	108.4-110.8	0.201	5.21	–
S88-6	1673.9	238	-50	146.9	83.8-85.3	0.190	0.25	–
S88-7	1655.3	235	-63	299.9	229.8-231.9	0.045	3.17	–
S88-8	1738.5	225	-45	294.4	258.8-264.9	0.044	4.77	–
S88-9	1746.7	225	-53	318.2	262.4-298.9	0.145	16.8	–
S88-10	1738.5	225	-66	388.3	356.8-358.3	0.023	2.76	–
S88-11	1655.3	225	-71	464.8	390.4-404.1	0.007	0.69	–
S88-12	1694.6	225	-52	211.2	169.3-170.5	0.008	0.91	–
S88-13	1749.5	210	-43	305.1	167.5-176.5	0.052	4.69	–
S88-14	1741.8	210	-43	287.8	79.2-80.8	0.014	1.54	–
S88-15	1749.5	210	-70	324.3	245.0-271.6	0.073	5.04	–
S89-1	1746.7	220	-42	284.1	179.9-180.7	0.081	11.5	–
					225.5-232.2	0.061	3.58	–
					229.2-232.2	0.07	3.81	–
S89-2	1746.7	220	-62	367.0	310.3-311.5	0.124	1.0	–
					317.6-321.9	0.22	19.2	–
S89-3	1738.5	222	-30	276.4	191.4-195.1	0.017	1.3	–
					191.4-193.5	0.024	1.97	–
S89-4	1738.5	225	-55	329.5	291.7-294.1	0.021	2.37	–
S89-5	1746.7	225	-53	75.4	256.6-289.2	0.032	23.95	–
					274.3-276.4	0.056	1.95	–
					284.1-289.2	0.368	55.929	–
S89-6	1781.5	230	-45	204.8	158.5-169.5	0.157	4.626	–
					163.1-169.5	0.258	7.36	–
					166.1-169.5	0.444	12.6	–
S89-7	1741.8	210	-57	229.8	84.2-87.5	0.035	2.736	–
					191.1-192.9	0.006	1.0	–
S89-8	1741.8	210	-65	256.6	95.7-105.8	0.043	2.55	–
					103.0-105.8	0.087	6.83	–
					213.3-218.2	0.015	1.22	–
S89-9	1728.1	210	-55	321.5	261.2-263.0	0.075	6.025	–
					263.0-263.9	0.01	0.45	–
					263.9-264.9	0.054	2.65	–
S89-10	1728.1	210	-65	360.9	310.0-313.3	0.022	3.54	–
					331.3-332.2	0.04	4.45	–
S89-11	1694.6	229	-45	153.6	–	–	–	–
S89-12	1694.6	229	-70	209.1	–	–	–	–
S89-13	1682.4	211	-60	273.4	–	–	–	–
S89-14	1682.4	211	-69	284.4	–	–	–	–
S90-1	1749.5	210	-60	280.4	220.7-224.3	0.034	1.07	–
S90-2	1664.1	210	-45	489.5	–	–	–	–
S90-3	1751.0	229	-62	312.7	214.6-216.7	0.305	8.68	–
					228.3-233.5	0.056	4.94	–

Table D-1 Summary of drill data on the Summit claims by Nova Gold and Biron Bay (continued)

Source: McLemore (1993)

Table 11.8 (continued)

Hole no.	Collar elevation (m)	Az	HD	Total depth (m)	Sample intercept (m)	Au oz/ton	Ag oz/ton	Comments
					2253.6-258.5	0.289	0.47	–
S90-4	1741.0	229	-70	362.4	285.3-290.5	0.076	7.23	–
					287.1-288.9	0.11	13.35	–
					299.9-301.1	0.096	0.05	–
S90-5	1664.1	200	-45	504.7	–	–	–	–
S90-6	1751.0	229	-50	274.3	174.0-174.6	0.352	6.75	–
					185.3-187.1	0.107	8.275	–
S90-7	1743.4	229	-45	320.1	267.0-267.3	0.097	5.95	–
S90-8	1715.9	229	-52	480.0	396.1-396.4	0.665	111.0	–
S90-9	1743.4	229	-56	376.1	324.0-327.3	0.039	3.75	–
S90-10	1604.7	43	-45	169.8	100.9-121.9	0.071	0.32	Norman King
					134.4-135.3	0.098	0.3	–
S90-11	1604.7	43	-60	232.2	117.0-118.3	0.102	0.15	Summit
S90-12	1633.6	50	-47	170.7	116.1-123.0	0.109	0.05 FW	Norman King
					137.5-141.1	0.046	3.73 HW	–
S90-13	1633.6	50	-60	247.2	163.4-164.3	0.297	0.25	Norman King
S90-14	1621.5	235	-45	181.0	123.9-124.8	1.28	0.75 FW	Billali
S90-15	1621.5	247	-65	202.5	151.5-152.1	0.043	0.05	Summit
					166.1-167.3	0.056	0.05	–
S90-16	1624.5	222	-45	211.2	88.4-89.0	0.179	8.25	–
S90-17	1624.5	222	-75	175.3	122.8-124.0	0.079	0.2	–
S90-18	1624.5	222	-7	112.5	67.4-71.3	0.091	6.47	Billali
S90-19	1630.6	224	-68	239.3	54.3-55.2	0.128	9.1	Summit
S90-20	1744.9	227	-40	201.2	164.9-166.7	0.091	7.93	Summit
S90-21	1630.6	224	-40	171.0	105.8-108.2	0.52	23.86	Billali
S90-22	1630.6	224	0	119.5	106.7-109.4	0.096	7.46	Billali
S90-23	1636.7	227	-54	144.8	83.2-86.6	0.142	10.3	Billali
S90-24	1744.9	227	-58	257.2	203.0-205.4	0.046	4.07	Summit
S90-25	1636.7	227	-76	187.1	89.1-89.9	0.035	3.05	–
S90-26	1744.9	227	-71	274.0	255.7-260.3	0.288	15.211	–
S90-27	1636.7	226	-23	121.9	39.6-40.6	0.048	0.8	–
S90-28	1744.3	227	-58	295.6	252.7-255.4	0.089	6.43	–
S90-29	1667.2	270	-45	158.2	67.7-68.6	0.018	3.2	–
S90-29R	1667.2	268	-45	77.1	–	–	–	–
S90-30	1744.3	227	-29	213.3	178.9-179.8	0.254	10.7	–
S90-31	1652.8	270	-45	156.7	–	–	–	–
S90-32	1652.8	270	-65	213.7	–	–	–	–
S90-33	1749.5	180	-60	223.7	201.5-204.2	0.08	3.37	–
S90-34	1712.9	227	-55	487.7	338.8-339.8	0.046	1.05	–
S90-35	1749.5	180	-42	192.0	146.6-149.3	0.1	5.25	–
S90-36	1749.5	180	-70	360.9	288.6-289.2	0.182	8.2	–
S90-37	1712.9	225	-62	621.8	243.8-244.7	0.118	6.65	–
S90-38	1749.5	206	-55	222.5	177.7-180.4	0.368	2.83	–
S90-39	1749.5	206	-72	397.4	204.2-206.9	0.028	2.3	–
S91-1		229	-50	378.5	337.7-338.6	0.041	4.58	–
					338.6-339.5	0.032	3.33	–
					339.5-340.4	0.075	7.22	–
					340.4-341.4	0.028	2.03	–
S91-2	–	211	-36	439.8	258.6-259.2	0.043	0.05	–
					259.2-259.5	0.007	<0.05	–
					259.5-260.0	0.018	0.45	–
					395.7-396.5	0.005	0.05	–

Table D-1 Summary of drill data on the Summit and Billali claims by Nova Gold and Biron Bay

Source: McLemore (1993)

Table 11.8 (continued)

Hole no.	Collar elevation (m)	Az	HD	Total depth (m)	Sample intercept (m)	Au oz/ton	Ag oz/ton	Comments
S91-3		227	-38	358.1	87.2-91.4	tr	0.3	–
					298.7-299.3	0.012	0.7	–
					299.3-300.2	0.011	0.6	–
					328.6-329.5	0.006	0.6	–
S91-4		210	-50	568.1	242.6-243.8	0.012	0.1	–
S91-5		229	-55	247.2	210.5-212.6	0.034	2.75	–
					217.0-219.4	0.039	1.775	–
S91-6	1673.3	229	-38	219.8	171.6-173.4	0.093	6.04	Summit
S91-7		235	-39	177.7	153.9-158.2	0.159	29.77	Summit
S91-8		206	-49	506.6	279.2-280.0	0.011	0.04	Summit
S91-9		235	-57	229.5	205.1-206.3	0.05	8.8	Summit
S91-10		235	-70	303.3	236.5-237.4	0.03	0.35	–
S91-11		196	-33	107.3	83.8-88.4	0.176	13.77	–
S91-12		–	–	–	–	–	–	–
S91-13		206	-66	318.2	266.7-268.5	0.06	2.12	–
S91-14		206	-35	270.0	180.0-180.9	0.006	0.2	–
S91-15		235	-51	376.7	335.6-336.5	0.006	0.25	–
S91-16		207	-45	189.9	108.5-109.4	0.038	1.25	–
S91-17		206	-61	586.4	287.4-288.3	0.025	0.2	–
S91-18		207	-62	263.3	212.3-213.0	0.259	0.8	–
S91-19		230	-40	300.2	200.0-200.8	0.016	0.25	–
S91-20		207	-73	318.5	122.8-127.1	0.059	3.89	–
					132.6-135.0	0.064	3.73	–
					141.1-145.1	0.047	7.2	–
					154.2-156.0	0.098	5.18	–
S91-21		196	-38	265.5	203.6-203.9	0.281	2.55	–
S91-22		–	–	–	–	–	–	–
		0.048	3.15	–	–	–	–	–
S91-23		196	-48	332.8	216.1-220.1	0.84	3.87	–
					273.7-277.4	0.043	5.36	–
S91-24		196	-57	387.4	329.8-330.4	0.052	2.1	–
B91-16		224	-45	189.9	70.7-75.1	0.301	21.8	Billali
B91-17*		228	-77	366.0	324.4-343.6	0.033	0.08	–
					289.5-290.5	0.043	0.2	–
					304.5-305.4	0.025	0.45	–
					305.4-306.3	0.022	0.3	–
B91-18		Vert	Vert	477.3	342.4-343.6	0.034	0.05	–
					94.2-95.7	0.03	0.1	–
					118.3-119.2	0.04	0.05	–
B91-19		Vert	Vert	306.0	–	–	–	–
B91-20		Vert	Vert	275.5	81.1-84.7	0.113	6.6	–
					92.7-96.5	0.205	8.73	–
					158.6-155.4	0.098	5.27	–
					133.5-139.6	0.286	16.93	–
B91-21		Vert	Vert	394.4	191.4-193.5	0.021	0.78	–
					200.5-201.8	0.022	0.35	–
					216.4-220.4	0.024	0.13	–
					224.9-226.2	0.035	0.45	–
B91-22		226	-80	199.3	–	–	–	–

Appendix E: Assays from Biron Bay Drill Holes on Billali Claim

Source for all data in these tables is from MPH files (1991)

Table E-1 Assays and data for Diamond Drill Hole B-91-1

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-1	335.389	3770.43	5301.931	0	117	117		
B-91-1	310.568	3770.863	5248.407	117	118	1	0.028	2.05
B-91-1	309.312	3770.885	5245.683	118	123	5	0.024	1.7
B-91-1	308.056	3770.907	5242.959	123	124	1	0.014	0.05
B-91-1	305.545	3770.951	5237.51	124	135	11		
B-91-1	302.825	3770.998	5231.606	135	137	2	0.004	0.05
B-91-1	301.571	3771.02	5228.881	137	141	4	0.054	3.2
B-91-1	300.316	3771.042	5226.156	141	143	2	0.005	0.05
B-91-1	298.436	3771.075	5222.068	143	150	7		
B-91-1	296.346	3771.111	5217.526	150	153	3	0.005	0.15
B-91-1	295.093	3771.133	5214.8	153	156	3	0.059	3
B-91-1	293.84	3771.155	5212.074	156	159	3	0.003	0.05
B-91-1	289.459	3771.231	5202.532	159	177	18		
B-91-1	285.287	3771.304	5193.444	177	179	2	tr	0.2
B-91-1	284.245	3771.322	5191.172	179	182	3	0.004	0.05
B-91-1	282.994	3771.344	5188.445	182	185	3	0.002	0.05
B-91-1	281.953	3771.362	5186.173	185	187	2	tr	0.05
B-91-1	280.911	3771.381	5183.9	187	190	3	tr	0.05
B-91-1	276.332	3771.46	5173.899	190	209	19		
B-91-1	271.962	3771.537	5164.352	209	211	2	0.016	1.1
B-91-1	270.714	3771.558	5161.623	211	215	4	0.002	0.1
B-91-1	269.051	3771.588	5157.986	215	219	4	0.008	0.2
B-91-1	267.389	3771.617	5154.348	219	223	4	0.005	0.05
B-91-1	265.519	3771.649	5150.255	223	228	5	tr	0.05
B-91-1	263.443	3771.685	5145.706	228	233	5	0.002	0.05
B-91-1	261.989	3771.711	5142.522	233	235	2	0.002	0.1
B-91-1	260.744	3771.733	5139.793	235	239	4	0.001	0.05
B-91-1	259.292	3771.758	5136.609	239	242	3	tr	0.05
B-91-1	256.181	3771.812	5129.784	242	254	12		
B-91-1	253.071	3771.866	5122.96	254	257	3	0.002	0.1
B-91-1	251.828	3771.888	5120.23	257	260	3	tr	0.1
B-91-1	250.378	3771.913	5117.044	260	264	4	0.004	0.1
B-91-1	248.721	3771.942	5113.404	264	268	4	0.002	0.05
B-91-1	247.065	3771.971	5109.763	268	272	4	tr	0.05
B-91-1	245.409	3772	5106.122	272	276	4	0.005	0.1
B-91-1	243.754	3772.029	5102.48	276	280	4	0.007	0.05
B-91-1	242.099	3772.058	5098.839	280	284	4	0.015	0.8
B-91-1	236.933	3772.148	5087.456	284	305	21		
B-91-1	231.975	3772.235	5076.529	305	308	3	0.103	7.4
B-91-1	230.737	3772.256	5073.797	308	311	3	0.008	0.6
B-91-1	229.293	3772.282	5070.609	311	315	4	0.004	0.1
B-91-1	227.849	3772.307	5067.42	315	318	3	0.008	0.1
B-91-1	226.405	3772.332	5064.232	318	322	4	tr	0.2
B-91-1	224.55	3772.364	5060.133	322	327	5	0.004	0.2

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-1	222.901	3772.393	5056.488	327	330	3	0.004	0.1
B-91-1	221.768	3772.413	5053.983	330	332.5	2.5	0.006	0.45
B-91-1	220.326	3772.438	5050.794	332.5	337	4.5	tr	0.1
B-91-1	218.781	3772.465	5047.377	337	340	3	tr	0.05
B-91-1	217.34	3772.49	5044.187	340	344	4	0.003	0.1
B-91-1	215.693	3772.519	5040.542	344	348	4	0.03	1.25
B-91-1	214.047	3772.548	5036.897	348	352	4	0.001	0.1
B-91-1	212.402	3772.576	5033.251	352	356	4	tr	0.2
B-91-1	210.654	3772.607	5029.377	356	360.5	4.5	0.08	0.25
B-91-1	209.009	3772.636	5025.731	360.5	364	3.5	tr	0.1
B-91-1	207.674	3772.659	5022.768	364	367	3	0.005	0.25
B-91-1	206.441	3772.68	5020.033	367	370	3	0.005	0.25
B-91-1	205.208	3772.702	5017.298	370	373	3	tr	0.05
B-91-1	203.976	3772.723	5014.563	373	376	3	tr	0.05
B-91-1	202.539	3772.748	5011.372	376	380	4	tr	0.05
B-91-1	201.102	3772.774	5008.18	380	383	3	0.001	0.05
B-91-1	199.871	3772.795	5005.445	383	386	3	tr	0.05
B-91-1	198.64	3772.817	5002.709	386	389	3	0.017	0.05
B-91-1	197.204	3772.842	4999.517	389	393	4	tr	0.05
B-91-1	195.359	3772.874	4995.413	393	398	5	0.01	0.05
B-91-1	193.31	3772.91	4990.852	398	403	5	0.002	0.05
B-91-1	191.056	3772.949	4985.835	403	409	6	0.02	0.05
B-91-1	189.008	3772.985	4981.274	409	413	4	0.009	0.1
B-91-1	187.575	3773.01	4978.081	413	416	3	0.003	0.05
B-91-1	164.951	3773.405	4927.409	416	523.99	108		
B-91-1	142.939	3773.789	4878.1	523.99	524	0		

Table E-2 Assays and data for Diamond Drill Hole B-91-2

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-2	306.346	3770	5317.431	0	131	131		
B-91-2	251.462	3770	5279.001	131	134	3	0.006	0.25
B-91-2	249.005	3770	5277.28	134	137	3	0.018	0.05
B-91-2	189.616	3770	5235.696	137	279	142		
B-91-2	130.228	3770	5194.112	279	282	3	tr	0.05
B-91-2	127.975	3770	5192.534	282	284.5	2.5	0.004	0.05
B-91-2	125.927	3770	5191.101	284.5	287	2.5	0.004	0.15
B-91-2	123.675	3770	5189.523	287	290	3	0.002	0.05
B-91-2	121.217	3770	5187.802	290	293	3	0.002	0.05
B-91-2	118.76	3770	5186.082	293	296	3	0.008	0.05
B-91-2	116.302	3770	5184.361	296	299	3	tr	0.05
B-91-2	113.435	3770	5182.353	299	303	4	0.025	0.05
B-91-2	110.159	3770	5180.059	303	307	4	0.026	0.15
B-91-2	106.882	3770	5177.765	307	311	4	tr	0.05
B-91-2	103.605	3770	5175.471	311	315	4	0.004	0.05
B-91-2	100.329	3770	5173.176	315	319	4	tr	0.05
B-91-2	97.052	3770	5170.882	319	323	4	0.003	0.05
B-91-2	93.776	3770	5168.588	323	327	4	0.003	0.05
B-91-2	90.909	3770	5166.58	327	330	3	0.002	0.05
B-91-2	88.451	3770	5164.859	330	333	3	0.01	0.05
B-91-2	55.28	3770	5141.632	333	410.99	78		
B-91-2	23.333	3770	5119.263	410.99	411	0		

Table E26-3 Assays and data for Diamond Drill Hole B-91-3

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-3	301.194	3770.852	5350.729	0	98	98		
B-91-3	250.396	3771.739	5346.284	98	102	4	0.008	0.35
B-91-3	246.412	3771.808	5345.936	102	106	4	0.014	0.65
B-91-3	242.427	3771.878	5345.587	106	110	4	0.011	0.95
B-91-3	238.443	3771.947	5345.239	110	114	4	0.006	0.5
B-91-3	234.957	3772.008	5344.934	114	117	3	0.006	0.65
B-91-3	231.969	3772.06	5344.672	117	120	3	0.008	0.05
B-91-3	150.293	3773.486	5337.525	120	281	161	tr	0.05
B-91-3	67.124	3774.938	5330.248	281	287	6	0.001	0.05
B-91-3	62.642	3775.016	5329.856	287	290	3	tr	0.05
B-91-3	58.657	3775.085	5329.507	290	295	5		
B-91-3	53.677	3775.172	5329.071	295	300	5	0.001	0.1
B-91-3	49.195	3775.251	5328.679	300	304	4	tr	0.05
B-91-3	45.211	3775.32	5328.33	304	308	4	tr	tr
B-91-3	41.227	3775.39	5327.982	308	312	4	0.003	tr
B-91-3	37.243	3775.459	5327.633	312	316	4	0.004	tr
B-91-3	33.258	3775.529	5327.284	316	320	4	tr	tr
B-91-3	-8.57	3776.259	5323.624	320	399.99	80		
B-91-3	-48.412	3776.954	5320.138	399.99	400	0		

Table E-4 Assays and data for Diamond Drill Hole B-91-4

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-4	233.745	4198.646	5311.308	0	61	61		
B-91-4	222.99	4197.221	5281.203	61	64	3	0.025	0.75
B-91-4	221.992	4197.079	5278.377	64	67	3	0.022	0.05
B-91-4	220.995	4196.936	5275.551	67	70	3	tr	0.1
B-91-4	219.999	4196.792	5272.725	70	73	3	0.002	0.05
B-91-4	219.004	4196.648	5269.899	73	76	3	0.004	0.25
B-91-4	218.258	4196.539	5267.779	76	77.5	1.5		
B-91-4	217.265	4196.393	5264.952	77.5	82	4.5	0.005	0.15
B-91-4	185.617	4190.802	5171.578	82	275	193		
B-91-4	154.096	4185.191	5078.427	275	279	4	tr	0.15
B-91-4	152.859	4184.933	5074.631	279	283	4	tr	0.1
B-91-4	151.625	4184.674	5070.835	283	287	4	0.001	0.1
B-91-4	150.238	4184.381	5066.564	287	292	5	tr	0.05
B-91-4	148.393	4183.988	5060.869	292	299	7		
B-91-4	146.551	4183.593	5055.172	299	304	5	0.001	0.1
B-91-4	144.104	4183.061	5047.574	304	315	11		
B-91-4	141.965	4182.593	5040.925	315	318	3	tr	0.05
B-91-4	139.987	4182.154	5034.749	318	328	10		
B-91-4	137.86	4181.68	5028.097	328	332	4	tr	tr
B-91-4	136.647	4181.407	5024.295	332	336	4	tr	0.05
B-91-4	135.436	4181.132	5020.493	336	340	4	tr	0.05
B-91-4	134.228	4180.857	5016.69	340	344	4	0.005	0.05
B-91-4	133.02	4180.581	5012.886	344	348	4	tr	tr
B-91-4	131.815	4180.303	5009.082	348	352	4	tr	0.05
B-91-4	130.612	4180.025	5005.278	352	356	4	tr	0.05
B-91-4	129.41	4179.745	5001.473	356	360	4	tr	0.05
B-91-4	128.21	4179.464	4997.667	360	364	4	tr	tr
B-91-4	127.012	4179.182	4993.861	364	368	4	tr	tr
B-91-4	125.816	4178.899	4990.055	368	372	4	tr	tr
B-91-4	124.621	4178.615	4986.248	372	376	4	0.007	0.4
B-91-4	123.429	4178.33	4982.441	376	380	4	0.02	1.2
B-91-4	122.238	4178.044	4978.633	380	384	4	0.004	tr
B-91-4	121.049	4177.757	4974.824	384	388	4	0.004	0.05
B-91-4	119.862	4177.468	4971.016	388	392	4	0.031	0.1
B-91-4	118.677	4177.179	4967.206	392	396	4	0.002	tr
B-91-4	117.493	4176.889	4963.396	396	400	4	tr	tr
B-91-4	116.312	4176.597	4959.586	400	404	4	tr	0.05
B-91-4	115.132	4176.304	4955.775	404	408	4	tr	tr
B-91-4	113.954	4176.011	4951.964	408	412	4	0.015	0.35
B-91-4	112.778	4175.716	4948.152	412	416	4	0.004	0.15
B-91-4	111.603	4175.421	4944.34	416	420	4	0.003	0.1
B-91-4	110.431	4175.124	4940.527	420	424	4	0.001	tr
B-91-4	109.26	4174.826	4936.714	424	428	4	0.003	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-4	108.091	4174.527	4932.9	428	432	4	tr	0.1
B-91-4	106.924	4174.228	4929.086	432	436	4	0.004	0.05
B-91-4	105.759	4173.927	4925.271	436	440	4	tr	tr
B-91-4	104.741	4173.663	4921.933	440	443	3	0.002	0.15
B-91-4	103.869	4173.436	4919.071	443	446	3	0.002	0.05
B-91-4	102.854	4173.171	4915.732	446	450	4	0.026	0.05
B-91-4	98.672	4172.058	4901.898	450	474.99	25		
B-91-4	95.069	4171.098	4889.967	474.99	475	0		

Table E-5 Assays and data for Diamond Drill Hole B-91-5

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-5	230.398	4198.453	5331.11	0	31	31		
B-91-5	216.576	4196.756	5321.359	31	34	3	0.067	3.1
B-91-5	214.137	4196.456	5319.638	34	37	3	0.023	1.35
B-91-5	211.698	4196.157	5317.917	37	40	3		
B-91-5	209.462	4195.882	5316.34	40	42.5	2.5	tr	0.1
B-91-5	207.836	4195.682	5315.193	42.5	44	1.5	0.002	0.25
B-91-5	205.6	4195.408	5313.615	44	48	4	tr	0.1
B-91-5	142.182	4187.621	5268.877	48	200	152		
B-91-5	78.765	4179.834	5224.138	200	204	4	tr	tr
B-91-5	65.756	4178.237	5214.96	204	232	28		
B-91-5	53.56	4176.74	5206.357	232	234	2	tr	0.05
B-91-5	51.121	4176.44	5204.636	234	238	4	tr	0.05
B-91-5	47.869	4176.041	5202.342	238	242	4	0.004	0.05
B-91-5	44.617	4175.642	5200.047	242	246	4	0.003	0.1
B-91-5	41.365	4175.242	5197.753	246	250	4	0.003	0.1
B-91-5	38.112	4174.843	5195.459	250	254	4	0.005	tr
B-91-5	34.86	4174.444	5193.164	254	258	4	0.085	4.3
B-91-5	31.608	4174.044	5190.87	258	262	4	0.004	0.05
B-91-5	28.356	4173.645	5188.576	262	266	4	0.007	0.3
B-91-5	25.104	4173.246	5186.282	266	270	4	tr	0.05
B-91-5	21.851	4172.846	5183.987	270	274	4	0.002	tr
B-91-5	18.599	4172.447	5181.693	274	278	4	0.001	0.05
B-91-5	15.347	4172.048	5179.399	278	282	4	tr	tr
B-91-5	12.095	4171.648	5177.104	282	286	4	0.006	tr
B-91-5	8.843	4171.249	5174.81	286	290	4	0.037	0.8
B-91-5	5.591	4170.85	5172.516	290	294	4	0.012	0.05
B-91-5	2.338	4170.45	5170.221	294	298	4	0.002	tr
B-91-5	-0.914	4170.051	5167.927	298	302	4	tr	0.05
B-91-5	-36.277	4165.709	5142.979	302	384.99	83		
B-91-5	-70.019	4161.566	5119.176	384.99	385	0		

Table E-6 Assays and data for Diamond Drill Hole B-91-6

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-6	233.034	4199.759	5339.722	0	4	4	0.016	0.8
B-91-6	229.103	4199.276	5339.165	4	8	4	0.005	0.25
B-91-6	225.171	4198.793	5338.608	8	12	4	0.007	0.3
B-91-6	221.24	4198.31	5338.052	12	16	4	0.004	0.2
B-91-6	217.308	4197.828	5337.495	16	20	4	0.002	0.05
B-91-6	213.376	4197.345	5336.938	20	24	4	0.007	0.15
B-91-6	209.445	4196.862	5336.381	24	28	4	0.026	1.1
B-91-6	205.513	4196.38	5335.825	28	32	4	0.053	3.45
B-91-6	201.582	4195.897	5335.268	32	36	4	0.015	0.55
B-91-6	197.65	4195.414	5334.711	36	40	4	0.003	0.15
B-91-6	193.719	4194.931	5334.155	40	44	4	0.02	0.65
B-91-6	189.787	4194.449	5333.598	44	48	4	0.02	0.65
B-91-6	185.856	4193.966	5333.041	48	52	4	0.003	0.05
B-91-6	138.677	4188.173	5326.361	52	144	92		
B-91-6	91.499	4182.38	5319.681	144	148	4	0.009	0.15
B-91-6	87.567	4181.898	5319.124	148	152	4	tr	tr
B-91-6	45.794	4176.768	5313.209	152	233	81		
B-91-6	4.022	4171.639	5307.294	233	237	4	0.003	tr
B-91-6	0.09	4171.157	5306.738	237	241	4	0.003	0.1
B-91-6	-3.841	4170.674	5306.181	241	245	4	0.004	0.1
B-91-6	-7.773	4170.191	5305.624	245	249	4	0.003	tr
B-91-6	-11.705	4169.708	5305.068	249	253	4	0.01	0.1
B-91-6	-15.636	4169.226	5304.511	253	257	4	tr	tr
B-91-6	-19.568	4168.743	5303.954	257	261	4	0.003	tr
B-91-6	-23.499	4168.26	5303.397	261	265	4	0.001	0.05
B-91-6	-27.431	4167.778	5302.841	265	269	4	0.006	tr
B-91-6	-31.362	4167.295	5302.284	269	273	4	0.027	1.45
B-91-6	-35.294	4166.812	5301.727	273	277	4	0.029	1.25
B-91-6	-39.225	4166.329	5301.171	277	281	4	0.012	0.55
B-91-6	-43.157	4165.847	5300.614	281	285	4	0.055	5.35
B-91-6	-47.089	4165.364	5300.057	285	289	4	0.043	1.8
B-91-6	-51.02	4164.881	5299.501	289	293	4	0.007	0.05
B-91-6	-54.46	4164.459	5299.014	293	296	3	0.005	0.05
B-91-6	-92.296	4159.813	5293.656	296	369.99	74		
B-91-6	-128.663	4155.348	5288.507	369.99	370	0		

Table E-7 Assays and data for Diamond Drill Hole B-91-7

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-7	245.202	4200.12	5276.5	0	127	127		
B-91-7	245.418	4200.242	5211.001	127	131	4	0.001	0.05
B-91-7	245.448	4200.249	5207.001	131	135	4	tr	0.1
B-91-7	245.479	4200.255	5203.001	135	139	4	0.003	0.1
B-91-7	245.511	4200.261	5199.001	139	143	4	0.002	0.1
B-91-7	246.579	4200.008	5114.508	143	308	165		
B-91-7	247.659	4199.731	5030.016	308	312	4	0.002	0.05
B-91-7	247.717	4199.687	5026.017	312	316	4	tr	0.05
B-91-7	247.775	4199.642	5022.017	316	320	4	0.005	0.3
B-91-7	248.13	4199.281	4996.522	320	367	47		
B-91-7	248.483	4198.91	4971.027	367	371	4	0.002	0.05
B-91-7	248.541	4198.832	4966.528	371	376	5		
B-91-7	248.592	4198.761	4962.529	376	379	3	tr	tr
B-91-7	248.926	4198.093	4931.038	379	439	60		
B-91-7	249.253	4197.416	4899.547	439	442	3	0.005	0.2
B-91-7	249.279	4197.33	4896.048	442	446	4	tr	tr
B-91-7	249.308	4197.23	4892.05	446	450	4	0.015	0.6
B-91-7	249.332	4197.142	4888.551	450	453	3	0.01	0.4
B-91-7	249.382	4195.785	4841.571	453	544	91		
B-91-7	249.413	4194.42	4794.59	544	547	3	tr	tr
B-91-7	249.394	4194.326	4791.592	547	550	3	tr	tr
B-91-7	249.35	4194.138	4785.595	550	559	9		
B-91-7	249.303	4193.95	4779.598	559	562	3	tr	0.1
B-91-7	249.023	4193.224	4756.611	562	605	43		
B-91-7	248.731	4192.498	4733.625	605	608	3	0.004	0.2
B-91-7	248.681	4192.404	4730.627	608	611	3	tr	tr
B-91-7	248.629	4192.311	4727.629	611	614	3	tr	tr
B-91-7	248.566	4192.203	4724.131	614	618	4	0.002	tr
B-91-7	248.492	4192.079	4720.133	618	622	4	0.002	tr
B-91-7	248.416	4191.957	4716.136	622	626	4	0.006	0.2
B-91-7	248.336	4191.835	4712.139	626	630	4	0.002	tr
B-91-7	248.254	4191.714	4708.141	630	634	4	0.001	tr
B-91-7	248.169	4191.593	4704.144	634	638	4	tr	tr
B-91-7	248.081	4191.474	4700.147	638	642	4	tr	tr
B-91-7	247.99	4191.355	4696.15	642	646	4	tr	0.05
B-91-7	247.896	4191.238	4692.152	646	650	4	0.007	0.05
B-91-7	247.812	4191.136	4688.655	650	653	3	tr	tr
B-91-7	247.738	4191.049	4685.657	653	656	3	tr	tr
B-91-7	247.662	4190.963	4682.659	656	659	3	0.005	0.1
B-91-7	247.585	4190.878	4679.661	659	662	3	0.001	tr
B-91-7	247.506	4190.793	4676.664	662	665	3	0.024	0.15
B-91-7	247.426	4190.709	4673.666	665	668	3	tr	tr
B-91-7	247.344	4190.626	4670.668	668	671	3	tr	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-7	247.261	4190.544	4667.67	671	674	3	0.001	tr
B-91-7	247.176	4190.463	4664.673	674	677	3	0.001	0.2
B-91-7	247.09	4190.382	4661.675	677	680	3	0.001	0.1
B-91-7	247.002	4190.303	4658.677	680	683	3	0.002	0.1
B-91-7	246.912	4190.224	4655.68	683	686	3	0.002	0.1
B-91-7	246.821	4190.146	4652.682	686	689	3	tr	0.05
B-91-7	246.729	4190.07	4649.685	689	692	3	0.002	tr
B-91-7	246.635	4189.994	4646.687	692	695	3	0.001	tr
B-91-7	246.539	4189.919	4643.69	695	698	3	tr	tr
B-91-7	246.442	4189.845	4640.692	698	701	3	tr	tr
B-91-7	246.344	4189.773	4637.694	701	704	3	tr	tr
B-91-7	246.244	4189.701	4634.697	704	707	3	tr	0.05
B-91-7	246.142	4189.631	4631.7	707	710	3	tr	0.05
B-91-7	246.022	4189.551	4628.203	710	714	4	0.004	tr
B-91-7	245.883	4189.461	4624.206	714	718	4	tr	tr
B-91-7	245.74	4189.373	4620.209	718	722	4	tr	tr
B-91-7	245.596	4189.287	4616.213	722	726	4	tr	0.1
B-91-7	245.449	4189.204	4612.217	726	730	4	tr	0.05
B-91-7	245.3	4189.123	4608.22	730	734	4	0.001	0.05
B-91-7	245.148	4189.044	4604.224	734	738	4	0.001	0.1
B-91-7	244.994	4188.968	4600.227	738	742	4	tr	tr
B-91-7	243.949	4188.6	4575.257	742	787.99	46		
B-91-7	242.981	4188.268	4552.28	787.99	788	0		

Table E-8 Assays and data for Diamond Drill Hole B-91-8

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-8	172.611	4559.915	5320.525	0	171	171		
B-91-8	95.459	4518.893	5315.946	171	175	4	tr	0.05
B-91-8	91.932	4517.017	5315.737	175	179	4	tr	tr
B-91-8	88.846	4515.377	5315.553	179	182	3	tr	tr
B-91-8	86.642	4514.204	5315.423	182	184	2	tr	tr
B-91-8	84.438	4513.032	5315.292	184	187	3	0.002	tr
B-91-8	81.792	4511.626	5315.135	187	190	3	0.005	0.05
B-91-8	79.147	4510.219	5314.978	190	193	3	tr	tr
B-91-8	76.502	4508.813	5314.821	193	196	3	0.001	tr
B-91-8	73.857	4507.406	5314.664	196	199	3	tr	tr
B-91-8	71.212	4506	5314.507	199	202	3	0.002	tr
B-91-8	68.566	4504.593	5314.35	202	205	3	0.002	tr
B-91-8	65.921	4503.187	5314.193	205	208	3	0.002	tr
B-91-8	62.835	4501.546	5314.009	208	212	4	tr	0.1
B-91-8	59.308	4499.671	5313.8	212	216	4	0.001	tr
B-91-8	55.781	4497.795	5313.591	216	220	4	tr	tr
B-91-8	52.254	4495.92	5313.381	220	224	4	tr	tr
B-91-8	44.759	4491.935	5312.937	224	237	13		
B-91-8	37.265	4487.95	5312.492	237	241	4	0.008	0.05
B-91-8	33.738	4486.075	5312.282	241	245	4	0.012	0.05
B-91-8	30.211	4484.199	5312.073	245	249	4	0.001	tr
B-91-8	26.684	4482.324	5311.864	249	253	4	0.002	0.05
B-91-8	23.157	4480.449	5311.654	253	257	4	0.001	tr
B-91-8	19.63	4478.574	5311.445	257	261	4	0.004	tr
B-91-8	16.103	4476.698	5311.236	261	265	4	0.003	tr
B-91-8	13.017	4475.057	5311.052	265	268	3	0.019	0.15
B-91-8	10.372	4473.651	5310.895	268	271	3	0.006	0.05
B-91-8	-50.464	4441.304	5307.285	271	405.99	135		
B-91-8	-109.981	4409.658	5303.752	405.99	406	0		

Table E-9 Assays and data for Diamond Drill Hole B-91-9

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-9	200.404	4595.539	5285.232	0	137	137		
B-91-9	144.003	4591.006	5244.877	137	139	2	tr	0.05
B-91-9	141.988	4590.823	5243.408	139	142	3	tr	tr
B-91-9	139.572	4590.602	5241.644	142	145	3	tr	tr
B-91-9	137.156	4590.38	5239.879	145	148	3	0.001	tr
B-91-9	135.143	4590.195	5238.407	148	150	2	tr	tr
B-91-9	133.131	4590.009	5236.935	150	153	3	tr	tr
B-91-9	130.315	4589.747	5234.873	153	157	4	0.001	tr
B-91-9	127.098	4589.446	5232.515	157	161	4	0.001	tr
B-91-9	123.883	4589.143	5230.156	161	165	4	0.002	tr
B-91-9	120.668	4588.838	5227.795	165	169	4	0.002	tr
B-91-9	116.653	4588.454	5224.84	169	175	6	0.004	tr
B-91-9	111.836	4587.991	5221.293	175	181	6	0.011	0.05
B-91-9	86.236	4585.402	5202.268	181	239	58		
B-91-9	62.247	4582.962	5184.42	239	241	2	0.002	0.05
B-91-9	59.856	4582.707	5182.626	241	245	4	tr	tr
B-91-9	56.669	4582.366	5180.233	245	249	4	tr	tr
B-91-9	53.483	4582.024	5177.838	249	253	4	tr	0.05
B-91-9	50.697	4581.723	5175.741	253	256	3	tr	0.05
B-91-9	48.708	4581.507	5174.243	256	258	2	tr	tr
B-91-9	45.526	4581.16	5171.843	258	264	6	tr	0.05
B-91-9	41.55	4580.724	5168.843	264	268	4	0.002	tr
B-91-9	-51.796	4568.795	5096.016	268	501.99	234		
B-91-9	-143.557	4557.04	5024.386	501.99	502	0		

Table E-10 Assays and data for Diamond Drill Hole B-91-10

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-10	231.235	4597.829	5263.343	0	137	137		
B-91-10	201.254	4595.642	5201.236	137	138	1	tr	tr
B-91-10	195.217	4595.18	5188.612	138	165	27		
B-91-10	188.536	4594.668	5174.636	165	169	4	0.009	0.15
B-91-10	186.814	4594.535	5171.028	169	173	4	tr	0.15
B-91-10	185.308	4594.418	5167.871	173	176	3	tr	0.2
B-91-10	184.017	4594.318	5165.164	176	179	3	0.002	0.05
B-91-10	182.727	4594.217	5162.458	179	182	3	0.001	tr
B-91-10	181.437	4594.117	5159.751	182	185	3	0.002	tr
B-91-10	180.041	4594.008	5156.818	185	188.5	3.5	0.001	tr
B-91-10	178.537	4593.89	5153.66	188.5	192	3.5	tr	tr
B-91-10	176.926	4593.764	5150.276	192	196	4	0.001	0.1
B-91-10	175.209	4593.629	5146.666	196	200	4	tr	tr
B-91-10	173.492	4593.494	5143.055	200	204	4	tr	tr
B-91-10	171.99	4593.376	5139.896	204	207	3	0.005	0.15
B-91-10	170.704	4593.274	5137.188	207	210	3	tr	0.15
B-91-10	169.417	4593.172	5134.48	210	213	3	0.004	tr
B-91-10	168.131	4593.07	5131.771	213	216	3	0.003	0.2
B-91-10	166.846	4592.968	5129.063	216	219	3	0.081	1.25
B-91-10	165.561	4592.866	5126.354	219	222	3	0.367	1.1
B-91-10	164.276	4592.763	5123.645	222	225	3	0.002	tr
B-91-10	162.991	4592.661	5120.936	225	228	3	0.004	0.15
B-91-10	161.707	4592.558	5118.226	228	231	3	0.002	0.2
B-91-10	160.53	4592.464	5115.743	231	233.5	2.5	0.009	0.2
B-91-10	144.541	4591.158	5081.848	233.5	306	72.5		
B-91-10	128.555	4589.85	5047.951	306	308.5	2.5		
B-91-10	127.493	4589.761	5045.689	308.5	311	2.5		
B-91-10	78.463	4585.417	4939.828	311	541.99	231		
B-91-10	29.962	4581.117	4835.093	541.99	542	0		

Table E-11 Assays and data for Diamond Drill Hole B-91-11

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-11	263	4600	5318.5	0	13	13		
B-91-11	263	4600	5311.5	13	14	1	tr	0.1
B-91-11	263	4600	5258	14	120	106		
B-91-11	263	4600	5204	120	122	2	tr	tr
B-91-11	263	4600	5202	122	124	2	0.002	tr
B-91-11	263	4600	5200	124	126	2	tr	tr
B-91-11	263	4600	5135	126	254	128		
B-91-11	263	4600	5069	254	258	4	0.002	tr
B-91-11	263	4600	5063.5	258	265	7		
B-91-11	263	4600	5059.5	265	266	1	tr	tr
B-91-11	263	4600	4999	266	386	120		
B-91-11	263	4600	4937.5	386	389	3	tr	0.05
B-91-11	263	4600	4934.5	389	392	3	0.001	tr
B-91-11	263	4600	4931.5	392	395	3	0.003	0.05
B-91-11	263	4600	4918	395	419	24		
B-91-11	263	4600	4904.5	419	422	3	0.001	0.05
B-91-11	263	4600	4901.5	422	425	3	tr	tr
B-91-11	263	4600	4898.5	425	428	3	tr	tr
B-91-11	263	4600	4895	428	432	4	tr	tr
B-91-11	263	4600	4890.5	432	437	5	tr	tr
B-91-11	263	4600	4887	437	439	2	tr	tr
B-91-11	263	4600	4882	439	447	8	tr	0.05
B-91-11	263	4600	4876.5	447	450	3	tr	tr
B-91-11	263	4600	4873.5	450	453	3	tr	tr
B-91-11	263	4600	4870.5	453	456	3	0.002	tr
B-91-11	263	4600	4867.5	456	459	3	tr	tr
B-91-11	263	4600	4864.5	459	462	3	tr	tr
B-91-11	263	4600	4861.5	462	465	3	0.001	tr
B-91-11	263	4600	4858.5	465	468	3	tr	tr
B-91-11	263	4600	4855.5	468	471	3	tr	tr
B-91-11	263	4600	4852.5	471	474	3	tr	0.05
B-91-11	263	4600	4849.5	474	477	3	tr	tr
B-91-11	263	4600	4846.5	477	480	3	tr	tr
B-91-11	263	4600	4843.5	480	483	3	tr	tr
B-91-11	263	4600	4840.5	483	486	3	tr	tr
B-91-11	263	4600	4837.5	486	489	3	tr	tr
B-91-11	263	4600	4834.5	489	492	3	tr	0.05
B-91-11	263	4600	4831.5	492	495	3	tr	tr
B-91-11	263	4600	4828.5	495	498	3	tr	tr
B-91-11	263	4600	4825.5	498	501	3	tr	tr
B-91-11	263	4600	4820.5	501	508	7	tr	tr
B-91-11	263	4600	4814.75	508	512.5	4.5	0.001	0.05
B-91-11	263	4600	4811	512.5	515.5	3	0.002	tr
B-91-11	263	4600	4808.25	515.5	518	2.5	0.001	0.1

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-11	263	4600	4803.5	518	525	7	0.008	0.05
B-91-11	263	4600	4797.75	525	529.5	4.5	0.003	tr
B-91-11	263	4600	4793.25	529.5	534	4.5	tr	tr
B-91-11	263	4600	4789	534	538	4	0.04	0.15
B-91-11	263	4600	4785	538	542	4	0.021	0.25
B-91-11	263	4600	4781.5	542	545	3	0.15	0.75
B-91-11	263	4600	4778.5	545	548	3	0.011	tr
B-91-11	263	4600	4775.5	548	551	3	0.003	0.05
B-91-11	263	4600	4772	551	555	4	0.007	0.15
B-91-11	263	4600	4768.5	555	558	3	0.008	0.4
B-91-11	263	4600	4765	558	562	4	0.015	0.15
B-91-11	263	4600	4761.5	562	565	3	0.01	0.55
B-91-11	263	4600	4758.5	565	568	3	0.015	0.75
B-91-11	263	4600	4755.5	568	571	3	0.006	0.35
B-91-11	263	4600	4752.5	571	574	3	0.001	0.15
B-91-11	263	4600	4748.5	574	579	5	0.002	0.05
B-91-11	263	4600	4744.5	579	582	3	0.024	0.45
B-91-11	263	4600	4742	582	584	2	0.005	0.1
B-91-11	263	4600	4738	584	590	6	tr	tr
B-91-11	263	4600	4733	590	594	4	0.014	0.9
B-91-11	263	4600	4729.5	594	597	3	0.009	1
B-91-11	263	4600	4726.5	597	600	3	tr	0.75
B-91-11	263	4600	4723.5	600	603	3	0.004	1.35
B-91-11	263	4600	4720.75	603	605.5	2.5	tr	0.1
B-91-11	263	4600	4698.755	605.5	646.99	41.5		
B-91-11	263	4600	4678.005	646.99	647	0		

Table E-12 Assays and data for Diamond Drill Hole B-91-12

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-12	263.772	4100.608	5326.583	0	35	35		
B-91-12	251.262	4100.171	5311.631	35	39	4	0.012	0.3
B-91-12	248.699	4100.082	5308.561	39	43	4	0.02	0.95
B-91-12	246.137	4099.992	5305.49	43	47	4	0.01	0.6
B-91-12	243.576	4099.903	5302.419	47	51	4	0.017	0.55
B-91-12	241.016	4099.813	5299.347	51	55	4	0.015	0.9
B-91-12	238.456	4099.724	5296.275	55	59	4	0.001	0.1
B-91-12	236.217	4099.646	5293.586	59	62	3	tr	tr
B-91-12	233.978	4099.567	5290.897	62	66	4	0.012	0.2
B-91-12	210.373	4098.743	5262.416	66	136	70		
B-91-12	186.774	4097.919	5233.931	136	140	4	tr	tr
B-91-12	184.23	4097.83	5230.846	140	144	4	tr	tr
B-91-12	182.004	4097.753	5228.146	144	147	3	tr	tr
B-91-12	134.56	4096.096	5170.083	147	294	147		
B-91-12	87.126	4094.439	5112.012	294	297	3	tr	tr
B-91-12	85.238	4094.373	5109.681	297	300	3	tr	tr
B-91-12	83.352	4094.307	5107.349	300	303	3	tr	tr
B-91-12	81.465	4094.242	5105.018	303	306	3	tr	tr
B-91-12	79.579	4094.176	5102.686	306	309	3	0.004	tr
B-91-12	77.694	4094.11	5100.353	309	312	3	0.006	0.05
B-91-12	75.808	4094.044	5098.02	312	315	3	0.005	tr
B-91-12	73.767	4093.973	5095.493	315	318.5	3.5	0.031	1.5
B-91-12	71.411	4093.891	5092.576	318.5	322.5	4	0.083	0.8
B-91-12	68.9	4093.803	5089.464	322.5	326.5	4	tr	0.1
B-91-12	66.389	4093.715	5086.352	326.5	330.5	4	tr	0.05
B-91-12	64.035	4093.633	5083.433	330.5	334	3.5	0.083	3.15
B-91-12	61.996	4093.562	5080.903	334	337	3	0.011	0.2
B-91-12	60.428	4093.507	5078.957	337	339	2	0.021	0.8
B-91-12	59.174	4093.463	5077.4	339	341	2	tr	0.4
B-91-12	57.292	4093.397	5075.064	341	345	4	tr	0.1
B-91-12	54.785	4093.31	5071.949	345	349	4	0.004	0.25
B-91-12	52.278	4093.222	5068.833	349	353	4	0.005	0.2
B-91-12	26.973	4092.339	5037.23	353	429.99	77		
B-91-12	2.919	4091.499	5007.182	429.99	430	0		

Table E-13 Assays and data for Diamond Drill Hole B-91-13

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-13	271.889	4101.875	5323.505	0	34	34		
B-91-13	267.295	4101.737	5305.069	34	38	4	0.004	0.05
B-91-13	266.327	4101.713	5301.188	38	42	4	0.002	0.05
B-91-13	265.36	4101.69	5297.307	42	46	4	0.004	tr
B-91-13	264.393	4101.668	5293.426	46	50	4	0.002	tr
B-91-13	262.216	4101.623	5284.693	50	64	14		
B-91-13	260.039	4101.581	5275.96	64	68	4	0.024	0.6
B-91-13	259.192	4101.566	5272.564	68	71	3	0.009	0.4
B-91-13	258.467	4101.554	5269.654	71	74	3	0.077	4.4
B-91-13	257.741	4101.543	5266.743	74	77	3	0.003	tr
B-91-13	256.289	4101.523	5260.921	77	86	9	0.005	0.05
B-91-13	252.177	4101.48	5244.426	86	111	25		
B-91-13	248.79	4101.451	5230.842	111	114	3	0.004	tr
B-91-13	248.125	4101.447	5228.173	114	116.5	2.5	tr	tr
B-91-13	214.152	4102.526	5091.847	116.5	395	278.5	tr	tr
B-91-13	179.999	4103.638	4954.793	395	399	4	tr	tr
B-91-13	179.034	4103.706	4950.911	399	403	4	0.002	0.05
B-91-13	178.069	4103.774	4947.03	403	407	4	0.001	0.05
B-91-13	177.103	4103.843	4943.149	407	411	4	0.001	tr
B-91-13	176.138	4103.913	4939.268	411	415	4	0.001	0.2
B-91-13	175.173	4103.985	4935.387	415	419	4	tr	tr
B-91-13	174.208	4104.057	4931.505	419	423	4	tr	tr
B-91-13	173.364	4104.121	4928.109	423	426	3	0.004	tr
B-91-13	172.64	4104.177	4925.199	426	429	3	tr	tr
B-91-13	172.037	4104.223	4922.773	429	431	2	0.044	1.85
B-91-13	171.555	4104.261	4920.832	431	433	2	0.003	tr
B-91-13	170.952	4104.308	4918.407	433	436	3	tr	0.05
B-91-13	170.229	4104.366	4915.496	436	439	3	0.018	0.3
B-91-13	169.505	4104.424	4912.585	439	442	3	0.018	tr
B-91-13	168.782	4104.482	4909.674	442	445	3	0.01	0.1
B-91-13	168.179	4104.532	4907.248	445	447	2	0.007	0.5
B-91-13	167.697	4104.571	4905.308	447	449	2	0.01	0.15
B-91-13	167.154	4104.616	4903.124	449	451.5	2.5	0.004	tr
B-91-13	166.672	4104.657	4901.184	451.5	453	1.5	tr	tr
B-91-13	166.19	4104.697	4899.243	453	455.5	2.5	tr	tr
B-91-13	165.587	4104.748	4896.817	455.5	458	2.5	tr	tr
B-91-13	164.924	4104.805	4894.149	458	461	3	tr	tr
B-91-13	164.201	4104.867	4891.238	461	464	3	0.009	tr
B-91-13	163.478	4104.929	4888.327	464	467	3	0.011	0.25
B-91-13	162.755	4104.993	4885.416	467	470	3	tr	tr
B-91-13	162.032	4105.057	4882.506	470	473	3	tr	tr
B-91-13	161.43	4105.11	4880.08	473	475	2	tr	0.1
B-91-13	160.827	4105.164	4877.654	475	478	3	0.004	0.15
B-91-13	160.225	4105.219	4875.228	478	480	2	0.001	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-13	159.683	4105.268	4873.045	480	482.5	2.5	tr	0.05
B-91-13	158.9	4105.34	4869.892	482.5	486.5	4	0.002	0.2
B-91-13	157.937	4105.429	4866.011	486.5	490.5	4	0.003	0.2
B-91-13	156.973	4105.52	4862.129	490.5	494.5	4	0.005	0.15
B-91-13	156.01	4105.611	4858.248	494.5	498.5	4	0.011	0.8
B-91-13	155.227	4105.686	4855.095	498.5	501	2.5	0.002	tr
B-91-13	154.565	4105.75	4852.426	501	504	3	0.021	0.8
B-91-13	153.842	4105.82	4849.516	504	507	3	0.002	tr
B-91-13	153.12	4105.891	4846.605	507	510	3	0.001	0.15
B-91-13	146.385	4106.602	4819.441	510	562.99	53		
B-91-13	140.01	4107.278	4793.728	562.99	563	0		

Table E-14 Assays and data for Diamond Drill Hole B-91-14

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-14	273.052	4098.932	5339.55	0	4	4	tr	0.1
B-91-14	269.157	4098.796	5338.65	4	8	4	0.014	0.1
B-91-14	265.262	4098.66	5337.75	8	12	4	0.001	0.1
B-91-14	261.367	4098.524	5336.851	12	16	4	0.001	0.05
B-91-14	257.472	4098.388	5335.951	16	20	4	tr	0.05
B-91-14	253.577	4098.252	5335.051	20	24	4	0.006	0.15
B-91-14	249.682	4098.116	5334.151	24	28	4	0.003	tr
B-91-14	245.787	4097.98	5333.251	28	32	4	0.005	tr
B-91-14	241.892	4097.844	5332.352	32	36	4	0.006	0.15
B-91-14	237.996	4097.708	5331.452	36	40	4	0.003	tr
B-91-14	234.101	4097.572	5330.552	40	44	4	0.002	0.15
B-91-14	230.206	4097.436	5329.652	44	48	4	0.004	0.25
B-91-14	226.311	4097.3	5328.752	48	52	4	0.003	tr
B-91-14	222.416	4097.164	5327.853	52	56	4	0.004	tr
B-91-14	218.521	4097.028	5326.953	56	60	4	tr	tr
B-91-14	214.626	4096.892	5326.053	60	64	4	0.003	tr
B-91-14	211.218	4096.773	5325.266	64	67	3	0.005	tr
B-91-14	107.754	4093.16	5301.365	67	276.5	209.5		
B-91-14	3.803	4089.53	5277.351	276.5	280.5	4	0.008	0.05
B-91-14	0.395	4089.411	5276.564	280.5	283.5	3	0.007	0.05
B-91-14	-2.77	4089.3	5275.833	283.5	287	3.5	0.007	tr
B-91-14	-6.421	4089.173	5274.989	287	291	4	0.005	tr
B-91-14	-10.317	4089.037	5274.089	291	295	4	0.006	tr
B-91-14	-14.212	4088.901	5273.19	295	299	4	0.01	0.15
B-91-14	-18.107	4088.764	5272.29	299	303	4	0.008	0.25
B-91-14	-22.002	4088.628	5271.39	303	307	4	0.007	tr
B-91-14	-25.897	4088.492	5270.49	307	311	4	tr	tr
B-91-14	-29.792	4088.356	5269.59	311	315	4	0.004	0.15
B-91-14	-33.687	4088.22	5268.691	315	319	4	0.004	0.05
B-91-14	-50.723	4087.625	5264.755	319	349.99	31		
B-91-14	-65.817	4087.098	5261.268	349.99	350	0		

Table E-15 Assays and data for Diamond Drill Hole B-91-15

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-15	333.824	4036.344	5225.047	0	250	250		
B-91-15	334.634	4039.742	5099.096	250	252	2	0.002	0.05
B-91-15	334.606	4039.849	5097.1	252	254	2	0.155	10.8
B-91-15	334.569	4039.985	5094.603	254	257	3	0.28	13.4
B-91-15	334.514	4040.176	5091.109	257	261	4	0.002	0.1
B-91-15	334.456	4040.368	5087.615	261	264	3	tr	0.1
B-91-15	334.404	4040.534	5084.62	264	267	3	0.185	6
B-91-15	334.349	4040.702	5081.625	267	270	3	0.009	0.35
B-91-15	334.301	4040.843	5079.13	270	272	2	0.003	0.1
B-91-15	334.272	4040.928	5077.632	272	273	1	0.068	3.5
B-91-15	334.231	4041.041	5075.636	273	276	3	0.003	0.15
B-91-15	334.168	4041.212	5072.641	276	279	3	0.019	0.8
B-91-15	334.103	4041.385	5069.647	279	282	3		
B-91-15	334.052	4041.515	5067.401	282	283.5	1.5	0.002	0.15
B-91-15	334.017	4041.602	5065.904	283.5	285	1.5	0.018	0.4
B-91-15	333.963	4041.733	5063.659	285	288	3	0.448	19.5
B-91-15	333.889	4041.908	5060.665	288	291	3	0.077	3.35
B-91-15	333.812	4042.084	5057.671	291	294	3	0.002	tr
B-91-15	333.732	4042.261	5054.677	294	297	3	0.428	27.3
B-91-15	333.65	4042.439	5051.684	297	300	3	0.212	13.5
B-91-15	333.564	4042.618	5048.69	300	303	3	0.017	1
B-91-15	333.46	4042.828	5045.198	303	307	4	0.076	3.55
B-91-15	333.337	4043.069	5041.207	307	311	4	0.042	3.2
B-91-15	333.208	4043.31	5037.217	311	315	4	0.084	5.65
B-91-15	333.074	4043.553	5033.226	315	319	4	0.039	3.1
B-91-15	332.934	4043.797	5029.236	319	323	4	0.012	0.5
B-91-15	332.788	4044.042	5025.246	323	327	4	0.002	tr
B-91-15	332.637	4044.287	5021.257	327	331	4	0.001	0.5
B-91-15	332.48	4044.533	5017.267	331	335	4	tr	tr
B-91-15	332.317	4044.779	5013.278	335	339	4	0.001	0.154
B-91-15	332.148	4045.025	5009.29	339	343	4	tr	0.05
B-91-15	331.974	4045.272	5005.301	343	347	4	0.005	tr
B-91-15	331.794	4045.519	5001.313	347	351	4	0.003	0.05
B-91-15	331.607	4045.766	4997.325	351	355	4	tr	0.1
B-91-15	330.523	4046.987	4977.391	355	391	36		
B-91-15	329.407	4048.205	4957.46	391	395	4	0.002	0.1
B-91-15	329.153	4048.442	4953.475	395	399	4	0.003	0.4
B-91-15	328.892	4048.678	4949.49	399	403	4	0.027	2.15
B-91-15	328.625	4048.911	4945.506	403	407	4	0.078	5.9
B-91-15	328.387	4049.115	4942.02	407	410	3	0.051	3.9
B-91-15	328.178	4049.287	4939.033	410	413	3	0.118	9.6
B-91-15	327.966	4049.459	4936.045	413	416	3	0.324	29.7
B-91-15	326.608	4050.41	4918.624	416	448	32		
B-91-15	325.23	4051.352	4901.204	448	451	3	0.026	2.6

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-15	324.973	4051.503	4898.218	451	454	3	0.051	3.1
B-91-15	324.445	4051.796	4892.249	454	463	9	0.003	0.25
B-91-15	323.727	4052.177	4884.29	463	470	7	0.016	0.9
B-91-15	323.313	4052.384	4879.814	470	472	2	0.288	15.55
B-91-15	323.079	4052.496	4877.333	472	474.99	3	0.034	2.3
B-91-15	322.938	4052.563	4875.841	474.99	475	0		

Table E-16 Assays and data for Diamond Drill Hole B-91-16

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-16	331.088	4039.377	5247.89	0	205	205		
B-91-16	322.003	4038.742	5143.788	205	209	4	0.016	0.1
B-91-16	321.698	4038.72	5140.301	209	212	3	0.004	tr
B-91-16	321.438	4038.702	5137.312	212	215	3	0.002	tr
B-91-16	321.22	4038.687	5134.822	215	217	2	tr	tr
B-91-16	321.003	4038.672	5132.331	217	220	3	0.008	tr
B-91-16	320.699	4038.65	5128.845	220	224	4	0.016	tr
B-91-16	320.351	4038.626	5124.86	224	228	4	0.005	0.1
B-91-16	320.003	4038.602	5120.875	228	232	4	0.006	tr
B-91-16	319.72	4038.582	5117.638	232	234.5	2.5	0.123	8.9
B-91-16	319.547	4038.57	5115.645	234.5	236	1.5	0.159	9.3
B-91-16	319.394	4038.559	5113.902	236	238	2	0.005	tr
B-91-16	319.221	4038.547	5111.909	238	240	2	0.334	24.1
B-91-16	319.003	4038.532	5109.419	240	243	3	0.45	33.5
B-91-16	318.721	4038.512	5106.181	243	246.5	3.5	0.513	37.5
B-91-16	318.416	4038.491	5102.695	246.5	250	3.5	0.007	tr
B-91-16	318.09	4038.468	5098.959	250	254	4	0.005	0.1
B-91-16	317.742	4038.444	5094.974	254	258	4	0.004	0.2
B-91-16	317.395	4038.419	5090.989	258	262	4	0.003	tr
B-91-16	317.09	4038.398	5087.503	262	265	3	0.002	tr
B-91-16	316.83	4038.38	5084.514	265	268	3	tr	0.2
B-91-16	316.569	4038.362	5081.526	268	271	3	0.001	tr
B-91-16	316.308	4038.343	5078.537	271	274	3	0.002	0.15
B-91-16	302.267	4037.361	4917.652	274	594	320		
B-91-16	288.182	4036.377	4756.268	594	598	4	tr	tr
B-91-16	287.877	4036.355	4752.781	598	601	3		
B-91-16	282.139	4035.954	4687.032	601	730	129		
B-91-16	276.401	4035.553	4621.284	730	733	3		
B-91-16	276.14	4035.534	4618.295	733	736	3		
B-91-16	275.836	4035.513	4614.808	736	740	4		
B-91-16	275.488	4035.489	4610.824	740	744	4		
B-91-16	275.184	4035.468	4607.337	744	747	3		
B-91-16	274.879	4035.446	4603.85	747	751	4		
B-91-16	274.575	4035.425	4600.363	751	754	3		
B-91-16	274.314	4035.407	4597.375	754	757	3		
B-91-16	274.053	4035.389	4594.386	757	760	3		
B-91-16	273.793	4035.37	4591.398	760	763	3		
B-91-16	273.532	4035.352	4588.409	763	766	3		
B-91-16	273.271	4035.334	4585.421	766	769	3		
B-91-16	273.01	4035.316	4582.432	769	772	3		
B-91-16	272.749	4035.297	4579.443	772	775	3		
B-91-16	272.51	4035.281	4576.704	775	777.5	2.5		
B-91-16	263.99	4034.685	4479.082	777.5	970.99	193.5		
B-91-16	255.578	4034.097	4382.7	970.99	971	0		

Table E-17 Assays and data for Diamond Drill Hole B-91-17

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-17	485.221	4027.672	5234.966	0	338	338		
B-91-17	448.937	4034.444	5067.485	338	343	5	0.002	0.1
B-91-17	447.93	4034.642	5062.591	343	348	5	0.014	0.15
B-91-17	446.923	4034.841	5057.698	348	353	5	0.008	0.2
B-91-17	445.918	4035.039	5052.804	353	358	5	0.01	0.7
B-91-17	444.914	4035.238	5047.91	358	363	5	0.068	0.2
B-91-17	443.912	4035.437	5043.015	363	368	5	0.01	0.45
B-91-17	442.912	4035.635	5038.12	368	373	5	0.004	0.2
B-91-17	441.912	4035.834	5033.225	373	378	5	0.03	1.8
B-91-17	440.915	4036.032	5028.33	378	383	5	0.002	0.1
B-91-17	439.918	4036.231	5023.434	383	388	5	0.008	tr
B-91-17	438.923	4036.43	5018.538	388	393	5	0.033	2.7
B-91-17	437.93	4036.628	5013.642	393	398	5	0.003	0.25
B-91-17	436.938	4036.827	5008.745	398	403	5	0.002	0.1
B-91-17	435.948	4037.026	5003.848	403	408	5	0.016	tr
B-91-17	434.959	4037.225	4998.951	408	413	5	0.003	tr
B-91-17	433.971	4037.423	4994.054	413	418	5	0.006	tr
B-91-17	432.985	4037.622	4989.156	418	423	5	0.004	0.05
B-91-17	432	4037.821	4984.258	423	428	5	0.039	tr
B-91-17	431.017	4038.019	4979.36	428	433	5	0.003	tr
B-91-17	430.035	4038.218	4974.461	433	438	5	0.002	tr
B-91-17	429.055	4038.417	4969.562	438	443	5	0.003	tr
B-91-17	428.076	4038.616	4964.663	443	448	5	0.002	0.2
B-91-17	427.099	4038.814	4959.763	448	453	5	0.002	0.1
B-91-17	426.123	4039.013	4954.863	453	458	5	0.002	0.15
B-91-17	425.148	4039.212	4949.963	458	463	5	tr	0.1
B-91-17	424.175	4039.411	4945.063	463	468	5	0.002	0.1
B-91-17	423.203	4039.609	4940.162	468	473	5	0.005	0.05
B-91-17	422.233	4039.808	4935.261	473	478	5	0.004	tr
B-91-17	421.265	4040.007	4930.36	478	483	5	0.003	tr
B-91-17	420.297	4040.205	4925.459	483	488	5	0.007	0.2
B-91-17	419.332	4040.404	4920.557	488	493	5	0.004	0.15
B-91-17	418.367	4040.603	4915.655	493	498	5	0.005	0.05
B-91-17	417.404	4040.802	4910.752	498	503	5	tr	tr
B-91-17	416.443	4041	4905.85	503	508	5	0.004	tr
B-91-17	415.579	4041.179	4901.437	508	512	4	0.003	0.1
B-91-17	414.812	4041.338	4897.514	512	516	4	0.002	0.1
B-91-17	412.805	4041.755	4887.216	516	533	17		
B-91-17	410.705	4042.192	4876.428	533	538	5	0.002	0.15
B-91-17	409.754	4042.391	4871.523	538	543	5	0.005	0.1
B-91-17	408.804	4042.589	4866.618	543	548	5	0.006	tr
B-91-17	407.856	4042.788	4861.713	548	553	5	0.003	tr
B-91-17	406.909	4042.987	4856.807	553	558	5	0.002	tr
B-91-17	405.963	4043.185	4851.901	558	563	5	0.003	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-17	405.02	4043.384	4846.995	563	568	5	0.001	tr
B-91-17	404.077	4043.582	4842.089	568	573	5	0.022	tr
B-91-17	403.136	4043.781	4837.182	573	578	5	0.001	tr
B-91-17	402.196	4043.979	4832.275	578	583	5	tr	tr
B-91-17	401.446	4044.138	4828.35	583	586	3	0.003	tr
B-91-17	400.883	4044.257	4825.405	586	589	3	0.001	0.05
B-91-17	391.202	4046.337	4773.848	589	691	102		
B-91-17	381.349	4048.457	4721.306	691	696	5	0.003	tr
B-91-17	380.444	4048.655	4716.392	696	701	5	0.006	tr
B-91-17	379.54	4048.852	4711.478	701	706	5	0.001	tr
B-91-17	375.77	4049.682	4690.836	706	743	37		
B-91-17	372.005	4050.511	4670.193	743	748	5	0.004	0.05
B-91-17	371.115	4050.708	4665.277	748	753	5	0.002	0.05
B-91-17	370.227	4050.906	4660.361	753	758	5	0.006	0.1
B-91-17	369.339	4051.103	4655.444	758	763	5	0.003	0.05
B-91-17	368.454	4051.3	4650.527	763	768	5	0.002	tr
B-91-17	367.569	4051.497	4645.61	768	773	5	0.003	0.1
B-91-17	366.686	4051.694	4640.692	773	778	5	0.002	0.15
B-91-17	365.805	4051.891	4635.774	778	783	5	0.002	0.05
B-91-17	365.013	4052.068	4631.348	783	787	4	0.003	tr
B-91-17	364.31	4052.225	4627.414	787	791	4	0.008	tr
B-91-17	363.608	4052.383	4623.479	791	795	4	0.004	tr
B-91-17	363.081	4052.501	4620.528	795	797	2	tr	0.15
B-91-17	354.038	4054.559	4568.853	797	900	103	0.002	0.15
B-91-17	344.917	4056.637	4516.686	900	903	3	tr	0.15
B-91-17	344.41	4056.754	4513.731	903	906	3	tr	0.2
B-91-17	341.219	4057.495	4495.016	906	941	35		
B-91-17	338.032	4058.236	4476.299	941	944	3	0.008	0.2
B-91-17	337.532	4058.353	4473.344	944	947	3	0.011	0.05
B-91-17	337.033	4058.47	4470.388	947	950	3	0.013	tr
B-91-17	336.534	4058.586	4467.432	950	953	3	0.043	0.2
B-91-17	336.036	4058.703	4464.476	953	956	3	0.006	0.05
B-91-17	335.455	4058.839	4461.027	956	960	4	0.006	0.2
B-91-17	334.875	4058.975	4457.578	960	963	3	0.006	0.15
B-91-17	334.378	4059.092	4454.622	963	966	3	0.012	0.1
B-91-17	333.882	4059.208	4451.665	966	969	3	0.002	0.1
B-91-17	333.387	4059.325	4448.709	969	972	3	0.004	0.1
B-91-17	332.892	4059.441	4445.752	972	975	3	0.002	0.1
B-91-17	332.397	4059.558	4442.796	975	978	3	tr	0.15
B-91-17	331.903	4059.674	4439.839	978	981	3	tr	0.1
B-91-17	331.41	4059.79	4436.882	981	984	3	tr	tr
B-91-17	330.917	4059.907	4433.925	984	987	3	tr	0.05
B-91-17	330.424	4060.023	4430.968	987	990	3	tr	0.05
B-91-17	329.932	4060.139	4428.011	990	993	3	tr	0.15
B-91-17	329.441	4060.256	4425.054	993	996	3	tr	0.95
B-91-17	328.95	4060.372	4422.097	996	999	3	tr	0.45

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-17	328.46	4060.488	4419.139	999	1002	3	0.025	0.45
B-91-17	327.97	4060.604	4416.182	1002	1005	3	0.022	0.3
B-91-17	327.481	4060.72	4413.224	1005	1008	3	0.003	0.2
B-91-17	326.91	4060.856	4409.774	1008	1012	4	0.016	0.2
B-91-17	326.26	4061.01	4405.83	1012	1016	4	tr	tr
B-91-17	325.61	4061.165	4401.886	1016	1020	4	0.001	tr
B-91-17	324.88	4061.339	4397.449	1020	1025	5	0.003	tr
B-91-17	324.232	4061.493	4393.505	1025	1028	3	0.002	tr
B-91-17	323.585	4061.648	4389.561	1028	1033	5	0.003	tr
B-91-17	310.027	4064.957	4304.199	1033	1200.99	168		
B-91-17	296.873	4068.169	4221.298	1200.99	1201	0		

Table E-18 Assays and data for Diamond Drill Hole B-91-18

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-18	517.923	4051.182	5245.507	0	309	309		
B-91-18	518.873	4052.405	5088.515	309	314	5	0.03	0.1
B-91-18	518.928	4052.487	5083.516	314	319	5	0.009	0.05
B-91-18	519.035	4052.648	5074.018	319	333	14		
B-91-18	519.143	4052.811	5064.52	333	338	5	tr	tr
B-91-18	519.479	4053.336	5037.027	338	388	50		
B-91-18	519.805	4053.847	5010.534	388	391	3	0.04	tr
B-91-18	519.87	4053.952	5005.536	391	398	7		
B-91-18	519.936	4054.058	5000.537	398	401	3	0.002	0.05
B-91-18	519.975	4054.123	4997.538	401	404	3	0.002	0.05
B-91-18	520.028	4054.209	4993.539	404	409	5	0.001	0.05
B-91-18	520.639	4055.251	4950.556	409	490	81		
B-91-18	521.246	4056.293	4908.073	490	494	4	tr	tr
B-91-18	521.307	4056.401	4904.075	494	498	4	0.008	tr
B-91-18	521.916	4057.499	4864.095	498	574	76		
B-91-18	522.517	4058.585	4824.615	574	577	3	tr	tr
B-91-18	522.563	4058.667	4821.616	577	580	3	0.012	tr
B-91-18	522.631	4058.791	4817.118	580	586	6	tr	tr
B-91-18	522.7	4058.914	4812.62	586	589	3	0.021	tr
B-91-18	522.753	4059.01	4809.122	589	593	4	0.002	tr
B-91-18	522.822	4059.134	4804.624	593	598	5	tr	tr
B-91-18	525.86	4064.615	4605.223	598	992	394		
B-91-18	528.898	4070.095	4405.821	992	997	5	tr	tr
B-91-18	528.974	4070.233	4400.824	997	1002	5	tr	tr
B-91-18	529.05	4070.37	4395.826	1002	1007	5	0.023	tr
B-91-18	529.119	4070.494	4391.328	1007	1011	4	0.011	tr
B-91-18	529.18	4070.604	4387.33	1011	1015	4	tr	tr
B-91-18	530.036	4072.149	4331.108	1015	1123.5	108.5		
B-91-18	530.893	4073.694	4274.886	1123.5	1127.5	4	0.034	0.05
B-91-18	530.946	4073.791	4271.388	1127.5	1130.5	3	0.003	tr
B-91-18	530.992	4073.873	4268.389	1130.5	1133.5	3	0.004	tr
B-91-18	531.62	4075.006	4227.159	1133.5	1213	79.5		
B-91-18	532.263	4076.167	4184.93	1213	1218	5	tr	tr
B-91-18	532.339	4076.304	4179.933	1218	1223	5	0.001	tr
B-91-18	532.416	4076.442	4174.935	1223	1228	5	tr	0.05
B-91-18	532.492	4076.579	4169.938	1228	1233	5	tr	tr
B-91-18	532.568	4076.716	4164.94	1233	1238	5	0.006	tr
B-91-18	532.644	4076.854	4159.943	1238	1243	5	0.022	tr
B-91-18	532.72	4076.991	4154.945	1243	1248	5	tr	tr
B-91-18	532.91	4077.334	4142.451	1248	1268	20		
B-91-18	533.078	4077.637	4131.457	1268	1270	2	tr	tr
B-91-18	533.969	4079.244	4072.986	1270	1385	115		
B-91-18	534.867	4080.865	4014.015	1385	1388	3	tr	tr
B-91-18	534.913	4080.947	4011.016	1388	1391	3	0.003	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-18	534.959	4081.03	4008.018	1391	1394	3	0.006	tr
B-91-18	535.179	4081.428	3993.525	1394	1420	26		
B-91-18	535.4	4081.826	3979.032	1420	1423	3	0.002	tr
B-91-18	535.446	4081.909	3976.033	1423	1426	3	0.001	tr
B-91-18	535.492	4081.991	3973.035	1426	1429	3	0.007	tr
B-91-18	535.545	4082.087	3969.537	1429	1433	4	0.009	tr
B-91-18	535.606	4082.197	3965.539	1433	1437	4	tr	tr
B-91-18	535.667	4082.307	3961.541	1437	1441	4	tr	tr
B-91-18	535.728	4082.417	3957.543	1441	1445	4	0.008	tr
B-91-18	535.796	4082.541	3953.045	1445	1450	5	0.007	tr
B-91-18	535.85	4082.637	3949.547	1450	1452	2	0.004	tr
B-91-18	535.895	4082.719	3946.548	1452	1456	4	tr	tr
B-91-18	535.956	4082.829	3942.55	1456	1460	4	0.002	tr
B-91-18	536.025	4082.953	3938.052	1460	1465	5	0.001	tr
B-91-18	536.093	4083.076	3933.554	1465	1469	4	tr	tr
B-91-18	536.162	4083.2	3929.057	1469	1474	5	0.001	tr
B-91-18	536.223	4083.31	3925.059	1474	1477	3	0.001	0.05
B-91-18	536.268	4083.392	3922.06	1477	1480	3	0.002	0.1
B-91-18	536.322	4083.488	3918.562	1480	1484	4	tr	0.1
B-91-18	536.375	4083.584	3915.064	1484	1487	3	0.023	tr
B-91-18	536.999	4084.711	3874.089	1487	1565.99	79		
B-91-18	537.601	4085.796	3834.608	1565.99	1566	0		

Table E-19 Assays and data for Diamond Drill Hole B-91-19

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-19	393.095	4614.1	5320.5	0	159	159		
B-91-19	393.197	4614.205	5238.5	159	164	5	0.008	0.05
B-91-19	393.21	4614.218	5233.5	164	169	5	tr	0.15
B-91-19	393.223	4614.231	5228.5	169	174	5	0.002	0.1
B-91-19	393.237	4614.244	5223.5	174	179	5	0.001	0.05
B-91-19	393.255	4614.262	5217	179	187	8		
B-91-19	393.274	4614.28	5210.5	187	192	5	0.005	tr
B-91-19	393.476	4614.465	5158.001	192	292	100		
B-91-19	393.683	4614.655	5105.502	292	297	5	tr	tr
B-91-19	393.707	4614.676	5100.502	297	302	5	0.002	tr
B-91-19	393.732	4614.698	5095.502	302	307	5	tr	0.05
B-91-19	393.757	4614.72	5090.502	307	312	5	tr	tr
B-91-19	393.783	4614.742	5085.502	312	317	5	tr	tr
B-91-19	393.809	4614.765	5080.502	317	322	5	tr	0.05
B-91-19	393.833	4614.785	5076.003	322	326	4	tr	0.05
B-91-19	393.852	4614.801	5072.503	326	329	3	0.009	0.15
B-91-19	393.868	4614.815	5069.503	329	332	3	0.002	0.15
B-91-19	393.884	4614.83	5066.503	332	335	3	tr	0.15
B-91-19	393.901	4614.844	5063.503	335	338	3	tr	tr
B-91-19	393.918	4614.858	5060.503	338	341	3	tr	0.05
B-91-19	393.935	4614.873	5057.503	341	344	3	tr	0.05
B-91-19	393.952	4614.887	5054.503	344	347	3	tr	0.2
B-91-19	393.97	4614.902	5051.503	347	350	3	0.003	0.25
B-91-19	393.987	4614.917	5048.503	350	353	3	tr	tr
B-91-19	394.005	4614.931	5045.503	353	356	3	tr	0.2
B-91-19	394.026	4614.949	5042.004	356	360	4	tr	0.2
B-91-19	394.05	4614.969	5038.004	360	364	4	0.004	0.05
B-91-19	394.074	4614.989	5034.004	364	368	4	0.002	0.05
B-91-19	394.099	4615.01	5030.004	368	372	4	tr	0.15
B-91-19	394.124	4615.031	5026.004	372	376	4	tr	0.2
B-91-19	394.146	4615.049	5022.504	376	379	3	0.006	0.1
B-91-19	394.165	4615.065	5019.504	379	382	3	0.002	0.2
B-91-19	394.184	4615.081	5016.504	382	385	3	0.001	0.1
B-91-19	394.204	4615.096	5013.504	385	388	3	tr	tr
B-91-19	394.224	4615.113	5010.505	388	391	3	0.004	0.35
B-91-19	394.243	4615.129	5007.505	391	394	3	0.005	0.3
B-91-19	394.267	4615.148	5004.005	394	398	4	0.001	tr
B-91-19	394.29	4615.167	5000.505	398	401	3	0.001	0.2
B-91-19	394.311	4615.183	4997.505	401	404	3	0.011	0.15
B-91-19	394.581	4615.395	4961.507	404	473	69		
B-91-19	394.861	4615.615	4924.508	473	478	5	0.004	0.3
B-91-19	394.902	4615.647	4919.509	478	483	5	0.003	0.2
B-91-19	395.247	4615.9	4881.511	483	554	71		

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-19	395.59	4616.152	4844.014	554	558	4	0.002	0.1
B-91-19	395.63	4616.181	4840.014	558	562	4	0.005	0.05
B-91-19	395.67	4616.209	4836.014	562	566	4	tr	0.55
B-91-19	395.71	4616.237	4832.014	566	570	4	tr	tr
B-91-19	395.997	4616.436	4805.017	570	620	50		
B-91-19	396.27	4616.624	4779.519	620	621	1	0.017	1.2
B-91-19	396.991	4617.088	4721.525	621	736	115		
B-91-19	397.714	4617.553	4663.532	736	737	1	0.002	0.1
B-91-19	397.825	4617.62	4655.533	737	752	15		
B-91-19	397.943	4617.692	4647.034	752	754	2	0.003	0.15
B-91-19	397.972	4617.709	4645.034	754	756	2		
B-91-19	398.007	4617.73	4642.534	756	759	3	tr	0.15
B-91-19	398.64	4618.096	4600.541	759	840	81		
B-91-19	399.284	4618.467	4558.047	840	844	4	tr	0.05
B-91-19	399.348	4618.503	4554.048	844	848	4	tr	0.1
B-91-19	399.413	4618.539	4550.049	848	852	4	tr	0.05
B-91-19	399.527	4618.601	4543.05	852	862	10		
B-91-19	399.642	4618.664	4536.051	862	866	4	0.003	0.4
B-91-19	399.701	4618.696	4532.552	866	869	3	0.004	0.5
B-91-19	399.759	4618.728	4529.052	869	873	4	0.004	0.55
B-91-19	399.826	4618.764	4525.053	873	877	4	tr	0.1
B-91-19	399.885	4618.795	4521.554	877	880	3	0.002	0.15
B-91-19	400.013	4618.864	4514.055	880	892	12		
B-91-19	400.158	4618.941	4505.557	892	897	5	tr	0.05
B-91-19	400.457	4619.097	4488.56	897	926	29		
B-91-19	400.74	4619.244	4472.563	926	929	3	tr	0.1
B-91-19	400.968	4619.359	4460.066	929	951	22		
B-91-19	401.216	4619.485	4446.569	951	956	5	0.001	0.15
B-91-19	401.309	4619.531	4441.57	956	961	5	tr	0.1
B-91-19	401.403	4619.578	4436.571	961	966	5	0.002	0.15
B-91-19	401.497	4619.624	4431.572	966	971	5	tr	0.2
B-91-19	401.592	4619.671	4426.573	971	976	5	tr	0.15
B-91-19	401.688	4619.718	4421.574	976	981	5	0.001	0.1
B-91-19	401.784	4619.765	4416.575	981	986	5	tr	0.1
B-91-19	401.881	4619.811	4411.576	986	991	5	0.001	0.05
B-91-19	401.959	4619.849	4407.577	991	994	3	0.002	0.15
B-91-19	402.018	4619.877	4404.578	994	997	3	0.002	0.1
B-91-19	402.116	4619.924	4399.584	997	1003.99	7		
B-91-19	402.185	4619.957	4396.085	1003.99	1004	0		

Table E-20 Assays and data for Diamond Drill Hole B-91-20

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-20	380.028	3770.031	5319	0	62	62		
B-91-20	380.059	3770.065	5286.5	62	65	3	tr	tr
B-91-20	380.066	3770.073	5283	65	69	4	tr	tr
B-91-20	380.256	3770.284	5228.501	69	174	105		
B-91-20	380.452	3770.502	5174.002	174	178	4	0.002	tr
B-91-20	380.47	3770.522	5170.502	178	181	3	0.001	tr
B-91-20	380.486	3770.54	5167.502	181	184	3	0.007	0.4
B-91-20	380.505	3770.561	5164.002	184	188	4	0.005	0.35
B-91-20	380.527	3770.585	5160.002	188	192	4	tr	0.1
B-91-20	380.549	3770.61	5156.002	192	196	4	0.004	tr
B-91-20	380.575	3770.639	5151.502	196	201	5	0.002	tr
B-91-20	380.605	3770.672	5146.503	201	206	5	tr	0.15
B-91-20	380.811	3770.9	5116.004	206	262	56		
B-91-20	381.017	3771.13	5086.006	262	266	4	tr	0.1
B-91-20	381.045	3771.16	5082.506	266	269	3	0.044	3.2
B-91-20	381.068	3771.186	5079.506	269	272	3	0.177	11.9
B-91-20	381.092	3771.213	5076.506	272	275	3	0.208	7.35
B-91-20	381.116	3771.24	5073.507	275	278	3	0.024	1.45
B-91-20	381.145	3771.271	5070.007	278	282	4	0.003	tr
B-91-20	381.177	3771.308	5066.007	282	286	4	0.008	0.5
B-91-20	381.207	3771.34	5062.507	286	289	3	0.037	3.05
B-91-20	381.232	3771.368	5059.508	289	292	3	0.003	0.05
B-91-20	381.258	3771.397	5056.508	292	295	3	0.007	0.3
B-91-20	381.283	3771.425	5053.508	295	298	3	0.006	0.15
B-91-20	381.309	3771.454	5050.508	298	301	3	0.008	0.4
B-91-20	381.336	3771.484	5047.509	301	304	3	tr	0.15
B-91-20	381.362	3771.513	5044.509	304	307	3	0.004	0.1
B-91-20	381.38	3771.533	5042.509	307	308	1	2.369	107
B-91-20	381.398	3771.553	5040.509	308	311	3	0.018	0.5
B-91-20	381.426	3771.583	5037.51	311	314	3	0.002	tr
B-91-20	381.449	3771.61	5034.91	314	316.2	2.2	0.024	0.15
B-91-20	381.461	3771.623	5033.66	316.2	316.5	0.3		
B-91-20	381.625	3771.805	5016.762	316.5	350	33.5		
B-91-20	381.809	3772.009	4998.014	350	354	4	0.027	0.4
B-91-20	381.85	3772.055	4994.014	354	358	4	0.007	0.25
B-91-20	381.889	3772.098	4990.265	358	361.5	3.5	0.008	0.3
B-91-20	381.921	3772.133	4987.265	361.5	364	2.5	0.005	0.15
B-91-20	382.077	3772.307	4973.017	364	390	26		
B-91-20	382.249	3772.498	4957.519	390	395	5	0.004	0.1
B-91-20	382.301	3772.555	4953.02	395	399	4	0.005	0.15
B-91-20	382.347	3772.607	4949.02	399	403	4	0.002	0.05
B-91-20	382.394	3772.658	4945.021	403	407	4	0.016	0.65
B-91-20	382.44	3772.709	4941.022	407	411	4	0.008	0.3
B-91-20	382.485	3772.76	4937.022	411	415	4	0.008	0.05

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-20	382.527	3772.807	4933.273	415	418.5	3.5	0.022	0.95
B-91-20	382.566	3772.85	4929.773	418.5	422	3.5	0.005	0.1
B-91-20	382.602	3772.89	4926.524	422	425	3	0.066	0.95
B-91-20	382.635	3772.926	4923.524	425	428	3	0.154	9.2
B-91-20	382.673	3772.968	4920.024	428	432	4	0.035	0.75
B-91-20	382.705	3773.004	4917.025	432	434	2	0.061	1.85
B-91-20	382.737	3773.04	4914.025	434	438	4	0.039	0.95
B-91-20	382.774	3773.081	4910.526	438	441	3	0.107	10.6
B-91-20	382.806	3773.116	4907.526	441	444	3	0.096	12
B-91-20	382.842	3773.156	4904.026	444	448	4	0.269	15.75
B-91-20	382.883	3773.202	4900.027	448	452	4	0.769	37.45
B-91-20	382.914	3773.236	4897.027	452	454	2	0.352	19
B-91-20	382.944	3773.269	4894.028	454	458	4	0.064	5
B-91-20	382.984	3773.314	4890.028	458	462	4	0.022	0.15
B-91-20	383.023	3773.358	4886.028	462	466	4	0.007	0.05
B-91-20	383.062	3773.401	4882.029	466	470	4	0.02	0.05
B-91-20	383.101	3773.444	4878.029	470	474	4	0.023	tr
B-91-20	383.144	3773.491	4873.53	474	479	5	0.021	0.05
B-91-20	383.19	3773.543	4868.53	479	484	5	0.03	0.2
B-91-20	383.237	3773.595	4863.531	484	489	5	0.033	0.5
B-91-20	383.277	3773.64	4859.031	489	493	4	0.052	3.65
B-91-20	383.307	3773.672	4855.781	493	495.5	2.5	0.084	8.1
B-91-20	383.329	3773.697	4853.282	495.5	498	2.5	0.006	0.2
B-91-20	383.353	3773.724	4850.532	498	501	3	0.008	0.4
B-91-20	383.384	3773.758	4847.032	501	505	4	0.037	4.2
B-91-20	383.422	3773.801	4842.533	505	510	5	0.011	0.6
B-91-20	383.465	3773.848	4837.533	510	515	5	0.015	0.1
B-91-20	383.506	3773.894	4832.533	515	520	5	0.006	0.1
B-91-20	383.547	3773.939	4827.534	520	525	5	0.004	0.2
B-91-20	383.587	3773.984	4822.534	525	530	5	0.005	0.1
B-91-20	383.627	3774.028	4817.534	530	535	5	0.008	0.05
B-91-20	383.665	3774.071	4812.535	535	540	5	0.002	tr
B-91-20	383.7	3774.109	4808.035	540	544	4	tr	0.05
B-91-20	383.907	3774.339	4777.037	544	602	58		
B-91-20	384.113	3774.568	4745.538	602	607	5	0.003	0.05
B-91-20	384.141	3774.6	4740.538	607	612	5	0.002	0.2
B-91-20	384.169	3774.63	4735.538	612	617	5	0.001	0.05
B-91-20	384.226	3774.693	4724.539	617	634	17		
B-91-20	384.279	3774.752	4714.039	634	638	4	tr	tr
B-91-20	384.295	3774.77	4710.539	638	641	3	0.022	tr
B-91-20	384.311	3774.788	4707.039	641	645	4	0.002	tr
B-91-20	384.327	3774.806	4703.539	645	648	3	0.001	tr
B-91-20	384.343	3774.823	4700.039	648	652	4	0.015	0.4
B-91-20	384.356	3774.838	4697.039	652	654	2	0.001	0.05
B-91-20	384.366	3774.849	4694.54	654	657	3	tr	tr
B-91-20	384.379	3774.863	4691.54	657	660	3	0.002	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-20	384.391	3774.877	4688.54	660	663	3	0.002	0.05
B-91-20	384.401	3774.888	4686.04	663	665	2	0.008	0.4
B-91-20	384.415	3774.903	4682.54	665	670	5	0.003	0.25
B-91-20	384.434	3774.924	4677.54	670	675	5	tr	0.2
B-91-20	384.452	3774.945	4672.54	675	680	5	0.003	0.05
B-91-20	384.468	3774.962	4668.04	680	684	4	0.002	0.1
B-91-20	384.482	3774.977	4664.04	684	688	4	0.001	tr
B-91-20	384.495	3774.992	4660.04	688	692	4	tr	0.05
B-91-20	384.507	3775.006	4656.04	692	696	4	0.003	0.05
B-91-20	384.518	3775.018	4652.54	696	699	3	0.004	0.2
B-91-20	384.527	3775.027	4649.54	699	702	3	tr	0.05
B-91-20	384.535	3775.037	4646.54	702	705	3	tr	tr
B-91-20	384.544	3775.046	4643.54	705	708	3	tr	tr
B-91-20	384.552	3775.055	4640.54	708	711	3	0.002	tr
B-91-20	384.56	3775.064	4637.54	711	714	3	0.003	0.05
B-91-20	384.567	3775.072	4634.54	714	717	3	tr	tr
B-91-20	384.574	3775.08	4631.54	717	720	3	tr	tr
B-91-20	384.581	3775.088	4628.54	720	723	3	tr	0.05
B-91-20	384.589	3775.097	4625.04	723	727	4	0.002	tr
B-91-20	384.597	3775.105	4621.54	727	730	3	tr	tr
B-91-20	384.604	3775.113	4618.04	730	734	4	0.002	0.05
B-91-20	384.611	3775.121	4614.54	734	737	3	0.003	0.05
B-91-20	384.616	3775.127	4611.54	737	740	3	0.003	tr
B-91-20	384.622	3775.133	4608.04	740	744	4	0.004	tr
B-91-20	384.627	3775.139	4605.04	744	746	2	tr	tr
B-91-20	384.631	3775.143	4602.54	746	749	3	0.004	tr
B-91-20	384.635	3775.147	4600.04	749	751	2	0.003	tr
B-91-20	384.639	3775.152	4597.04	751	755	4	0.002	tr
B-91-20	384.644	3775.158	4593.04	755	759	4	0.001	tr
B-91-20	384.649	3775.163	4589.54	759	762	3	tr	tr
B-91-20	384.652	3775.166	4586.54	762	765	3	tr	tr
B-91-20	384.654	3775.169	4584.04	765	767	2	0.006	0.75
B-91-20	384.656	3775.171	4582.04	767	769	2	tr	tr
B-91-20	384.659	3775.174	4579.54	769	772	3	0.004	tr
B-91-20	384.661	3775.177	4576.04	772	776	4	0.005	0.2
B-91-20	384.664	3775.18	4572.04	776	780	4	0.002	tr
B-91-20	384.667	3775.183	4568.04	780	784	4	tr	0.1
B-91-20	384.669	3775.185	4563.54	784	789	5	0.006	0.05
B-91-20	384.592	3775.099	4503.546	789	903.99	115		
B-91-20	384.513	3775.013	4446.046	903.99	904	0		

Table E-21 Assays and data for Diamond Drill Hole B-91-21

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-21	461	3620	5095.5	302	307	5	tr	0.1
B-91-21	461	3620	5090.5	307	312	5	tr	tr
B-91-21	461	3620	5085.5	312	317	5	tr	tr
B-91-21	461	3620	5081	317	321	4	0.002	0.05
B-91-21	461	3620	5076.5	321	326	5	0.008	0.1
B-91-21	461	3620	5071.5	326	331	5	tr	0.1
B-91-21	461	3620	5066.5	331	336	5	tr	0.05
B-91-21	461	3620	5061.5	336	341	5	tr	0.05
B-91-21	461	3620	5056.5	341	346	5	tr	0.1
B-91-21	461	3620	5051.5	346	351	5	tr	tr
B-91-21	461	3620	5047	351	355	4	tr	0.05
B-91-21	461	3620	5043.5	355	358	3	tr	0.15
B-91-21	461	3620	5040	358	362	4	tr	0.15
B-91-21	461	3620	5036.5	362	365	3	tr	0.05
B-91-21	461	3620	5033.25	365	368.5	3.5	0.003	tr
B-91-21	461	3620	5029.75	368.5	372	3.5	0.001	0.05
B-91-21	461	3620	5026	372	376	4	0.001	0.05
B-91-21	461	3620	5022.5	376	379	3	tr	tr
B-91-21	461	3620	5019	379	383	4	0.002	0.05
B-91-21	461	3620	5015	383	387	4	0.003	tr
B-91-21	461	3620	5011.5	387	390	3	0.003	0.05
B-91-21	461	3620	5007.75	390	394.5	4.5	0.002	0.3
B-91-21	461	3620	5003.75	394.5	398	3.5	0.005	0.05
B-91-21	461	3620	5000	398	402	4	0.007	0.15
B-91-21	461	3620	4995.5	402	407	5	0.006	tr
B-91-21	461	3620	4990.5	407	412	5	0.003	0.1
B-91-21	461	3620	4985.5	412	417	5	tr	0.05
B-91-21	461	3620	4980.5	417	422	5	tr	tr
B-91-21	461	3620	4975.5	422	427	5	tr	tr
B-91-21	461	3620	4936.5	427	500	73		
B-91-21	461	3620	4898	500	504	4	tr	0.05
B-91-21	461	3620	4894	504	508	4	tr	tr
B-91-21	461	3620	4890	508	512	4	tr	0.05
B-91-21	461	3620	4886	512	516	4	tr	0.15
B-91-21	461	3620	4882	516	520	4	tr	0.1
B-91-21	461	3620	4878	520	524	4	0.002	0.1
B-91-21	461	3620	4874	524	528	4	tr	0.25
B-91-21	461	3620	4870	528	532	4	tr	0.2
B-91-21	461	3620	4866	532	536	4	0.001	0.15
B-91-21	461	3620	4862.5	536	539	3	0.005	0.15
B-91-21	461	3620	4859.5	539	542	3	tr	0.15
B-91-21	461	3620	4856	542	546	4	0.002	0.15
B-91-21	461	3620	4852	546	550	4	tr	tr
B-91-21	461	3620	4848	550	554	4	0.013	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-21	461	3620	4844	554	558	4	tr	tr
B-91-21	461	3620	4840.5	558	561	3	tr	tr
B-91-21	461	3620	4837	561	565	4	tr	0.1
B-91-21	461	3620	4833	565	569	4	0.008	0.15
B-91-21	461	3620	4829.5	569	572	3	0.004	0.1
B-91-21	461	3620	4826.5	572	575	3	0.002	0.15
B-91-21	461	3620	4822.75	575	579.5	4.5	0.002	tr
B-91-21	461	3620	4819	579.5	582.5	3	tr	0.1
B-91-21	461	3620	4817	582.5	583.5	1	0.002	0.05
B-91-21	461	3620	4815.5	583.5	585.5	2	tr	tr
B-91-21	461	3620	4812.75	585.5	589	3.5	tr	0.1
B-91-21	461	3620	4809	589	593	4	tr	0.1
B-91-21	461	3620	4805	593	597	4	tr	0.1
B-91-21	461	3620	4801.5	597	600	3	tr	0.15
B-91-21	461	3620	4798.5	600	603	3	tr	0.1
B-91-21	461	3620	4795.5	603	606	3	tr	0.05
B-91-21	461	3620	4792.5	606	609	3	tr	0.1
B-91-21	461	3620	4789.5	609	612	3	0.004	0.15
B-91-21	461	3620	4786.5	612	615	3	0.009	0.1
B-91-21	461	3620	4784	615	617	2	0.006	0.05
B-91-21	461	3620	4781.5	617	620	3	0.017	0.4
B-91-21	461	3620	4778.5	620	623	3	0.009	0.05
B-91-21	461	3620	4775.5	623	626	3	0.016	0.35
B-91-21	461	3620	4773	626	628	2	0.002	tr
B-91-21	461	3620	4770	628	632	4	0.017	0.55
B-91-21	461	3620	4766.5	632	635	3	0.017	0.85
B-91-21	461	3620	4763.5	635	638	3	0.002	0.15
B-91-21	461	3620	4760	638	642	4	0.018	0.7
B-91-21	461	3620	4756	642	646	4	0.005	tr
B-91-21	461	3620	4752.5	646	649	3	0.011	tr
B-91-21	461	3620	4748.5	649	654	5	0.009	tr
B-91-21	461	3620	4744	654	658	4	0.006	tr
B-91-21	461	3620	4740	658	662	4	0.022	0.35
B-91-21	461	3620	4736	662	666	4	0.005	tr
B-91-21	461	3620	4732	666	670	4	0.008	tr
B-91-21	461	3620	4728	670	674	4	0.003	0.05
B-91-21	461	3620	4724	674	678	4	0.003	0.05
B-91-21	461	3620	4720	678	682	4	0.006	tr
B-91-21	461	3620	4716	682	686	4	0.004	0.05
B-91-21	461	3620	4712	686	690	4	0.031	tr
B-91-21	461	3620	4708	690	694	4	tr	tr
B-91-21	461	3620	4704	694	698	4	0.006	tr
B-91-21	461	3620	4700	698	702	4	0.017	tr
B-91-21	461	3620	4696	702	706	4	tr	tr
B-91-21	461	3620	4692	706	710	4	0.005	tr
B-91-21	461	3620	4688.5	710	713	3	0.031	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-21	461	3620	4685.5	713	716	3	0.005	tr
B-91-21	461	3620	4682.5	716	719	3	0.044	1.35
B-91-21	461	3620	4679	719	723	4	0.011	0.3
B-91-21	461	3620	4675	723	727	4	0.016	0.6
B-91-21	461	3620	4671	727	731	4	0.016	0.35
B-91-21	461	3620	4667	731	735	4	0.008	tr
B-91-21	461	3620	4663.5	735	738	3	0.001	0.05
B-91-21	461	3620	4660	738	742	4	0.035	0.45
B-91-21	461	3620	4656.5	742	745	3	0.001	0.05
B-91-21	461	3620	4653	745	749	4	tr	0.2
B-91-21	461	3620	4649.5	749	752	3	tr	0.05
B-91-21	461	3620	4646.5	752	755	3	tr	tr
B-91-21	461	3620	4643.5	755	758	3	0.02	0.05
B-91-21	461	3620	4640.5	758	761	3	0.017	tr
B-91-21	461	3620	4637.5	761	764	3	tr	tr
B-91-21	461	3620	4634.5	764	767	3	0.029	0.55
B-91-21	461	3620	4631.5	767	770	3	0.003	0.2
B-91-21	461	3620	4628.5	770	773	3	0.006	0.2
B-91-21	461	3620	4625.5	773	776	3	0.01	0.2
B-91-21	461	3620	4622.5	776	779	3	0.002	0.2
B-91-21	461	3620	4619.5	779	782	3	0.008	0.2
B-91-21	461	3620	4616	782	786	4	0.003	0.1
B-91-21	461	3620	4612	786	790	4	0.002	0.2
B-91-21	461	3620	4608	790	794	4	tr	tr
B-91-21	461	3620	4604	794	798	4	0.001	0.15
B-91-21	461	3620	4600	798	802	4	tr	0.15
B-91-21	461	3620	4596.5	802	805	3	tr	0.1
B-91-21	461	3620	4593.5	805	808	3	0.003	0.15
B-91-21	461	3620	4590.5	808	811	3	0.003	0.2
B-91-21	461	3620	4587.5	811	814	3	tr	tr
B-91-21	461	3620	4584.5	814	817	3	0.004	0.05
B-91-21	461	3620	4581	817	821	4	0.002	tr
B-91-21	461	3620	4577	821	825	4	tr	tr
B-91-21	461	3620	4573	825	829	4	0.002	tr
B-91-21	461	3620	4569	829	833	4	tr	0.05
B-91-21	461	3620	4565	833	837	4	tr	tr
B-91-21	461	3620	4561	837	841	4	tr	0.05
B-91-21	461	3620	4557.5	841	844	3	tr	0.1
B-91-21	461	3620	4554.5	844	847	3	0.002	0.05
B-91-21	461	3620	4551.5	847	850	3	0.001	0.05
B-91-21	461	3620	4548.5	850	853	3	0.006	0.15
B-91-21	461	3620	4545.5	853	856	3	0.002	0.1
B-91-21	461	3620	4542	856	860	4	tr	0.25
B-91-21	461	3620	4538	860	864	4	0.003	tr
B-91-21	461	3620	4534	864	868	4	0.002	0.2
B-91-21	461	3620	4530	868	872	4	0.004	0.05

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-21	461	3620	4526	872	876	4	0.002	tr
B-91-21	461	3620	4522	876	880	4	0.004	tr
B-91-21	461	3620	4518	880	884	4	0.02	tr
B-91-21	461	3620	4514	884	888	4	0.006	0.2
B-91-21	461	3620	4510	888	892	4	tr	tr
B-91-21	461	3620	4506	892	896	4	0.002	tr
B-91-21	461	3620	4502	896	900	4	0.014	tr
B-91-21	461	3620	4498	900	904	4	0.031	tr
B-91-21	461	3620	4494	904	908	4	0.003	tr
B-91-21	461	3620	4490	908	912	4	0.004	tr
B-91-21	461	3620	4486	912	916	4	tr	tr
B-91-21	461	3620	4482	916	920	4	0.003	tr
B-91-21	461	3620	4478	920	924	4	0.001	0.15
B-91-21	461	3620	4474.5	924	927	3	tr	0.1
B-91-21	461	3620	4471.5	927	930	3	0.002	0.1
B-91-21	461	3620	4468.5	930	933	3	tr	0.1
B-91-21	461	3620	4465.5	933	936	3	0.003	0.05
B-91-21	461	3620	4462.5	936	939	3	0.003	tr
B-91-21	461	3620	4459.5	939	942	3	0.014	0.05
B-91-21	461	3620	4456	942	946	4	0.001	0.1
B-91-21	461	3620	4452	946	950	4	tr	tr
B-91-21	461	3620	4447.5	950	955	5	0.002	0.05
B-91-21	461	3620	4443	955	959	4	0.001	tr
B-91-21	461	3620	4439	959	963	4	0.004	0.05
B-91-21	461	3620	4435	963	967	4	0.002	tr
B-91-21	461	3620	4431	967	971	4	0.002	0.05
B-91-21	461	3620	4427	971	975	4	tr	0.15
B-91-21	461	3620	4423	975	979	4	tr	tr
B-91-21	461	3620	4419	979	983	4	tr	0.1
B-91-21	461	3620	4415	983	987	4	tr	tr
B-91-21	461	3620	4411	987	991	4	0.003	tr
B-91-21	461	3620	4407	991	995	4	tr	0.05
B-91-21	461	3620	4403	995	999	4	0.006	0.1
B-91-21	461	3620	4399	999	1003	4	0.002	0.05
B-91-21	461	3620	4395.5	1003	1006	3	0.001	0.2
B-91-21	461	3620	4392.5	1006	1009	3	0.003	0.2
B-91-21	461	3620	4389	1009	1013	4	tr	tr
B-91-21	461	3620	4385	1013	1017	4	tr	tr
B-91-21	461	3620	4381	1017	1021	4	tr	0.15
B-91-21	461	3620	4377	1021	1025	4	tr	0.05
B-91-21	461	3620	4373	1025	1029	4	tr	0.1
B-91-21	461	3620	4369	1029	1033	4	tr	0.05
B-91-21	461	3620	4365	1033	1037	4	0.001	0.15
B-91-21	461	3620	4361.5	1037	1040	3	tr	0.05
B-91-21	461	3620	4358	1040	1044	4	tr	0.15
B-91-21	461	3620	4354.5	1044	1047	3	tr	0.05

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-21	461	3620	4351	1047	1051	4	tr	tr
B-91-21	461	3620	4347.5	1051	1054	3	0.006	tr
B-91-21	461	3620	4344	1054	1058	4	0.001	tr
B-91-21	461	3620	4340.5	1058	1061	3	0.015	tr
B-91-21	461	3620	4337	1061	1065	4	0.003	tr
B-91-21	461	3620	4333	1065	1069	4	tr	0.2
B-91-21	461	3620	4328.5	1069	1074	5	tr	0.05
B-91-21	461	3620	4324.5	1074	1077	3	0.004	tr
B-91-21	461	3620	4321.5	1077	1080	3	0.003	tr
B-91-21	461	3620	4317.5	1080	1085	5	0.024	0.05
B-91-21	461	3620	4312.5	1085	1090	5	0.003	tr
B-91-21	461	3620	4307.5	1090	1095	5	tr	tr
B-91-21	461	3620	4302.5	1095	1100	5	tr	tr
B-91-21	461	3620	4297.5	1100	1105	5	0.002	tr
B-91-21	461	3620	4292.5	1105	1110	5	0.003	0.05
B-91-21	461	3620	4287.5	1110	1115	5	0.002	tr
B-91-21	461	3620	4282.5	1115	1120	5	0.002	tr
B-91-21	461	3620	4277.5	1120	1125	5	tr	tr
B-91-21	461	3620	4272.5	1125	1130	5	tr	tr
B-91-21	461	3620	4267.5	1130	1135	5	0.002	tr
B-91-21	461	3620	4262.5	1135	1140	5	tr	tr
B-91-21	461	3620	4257.5	1140	1145	5	tr	tr
B-91-21	461	3620	4252.5	1145	1150	5	tr	tr
B-91-21	461	3620	4247.5	1150	1155	5	0.001	tr
B-91-21	461	3620	4243	1155	1159	4	tr	tr
B-91-21	461	3620	4239	1159	1163	4	0.002	tr
B-91-21	461	3620	4235.5	1163	1166	3	tr	tr
B-91-21	461	3620	4232.5	1166	1169	3	tr	tr
B-91-21	461	3620	4229.5	1169	1172	3	tr	tr
B-91-21	461	3620	4226	1172	1176	4	0.003	tr
B-91-21	461	3620	4222.75	1176	1178.5	2.5	0.001	tr
B-91-21	461	3620	4219.75	1178.5	1182	3.5	tr	tr
B-91-21	461	3620	4216	1182	1186	4	tr	tr
B-91-21	461	3620	4212.5	1186	1189	3	tr	tr
B-91-21	461	3620	4209.5	1189	1192	3	0.002	tr
B-91-21	461	3620	4206	1192	1196	4	0.002	tr
B-91-21	461	3620	4202	1196	1200	4	tr	tr
B-91-21	461	3620	4198	1200	1204	4	tr	0.05
B-91-21	461	3620	4194.5	1204	1207	3	tr	0.05
B-91-21	461	3620	4191.5	1207	1210	3	tr	tr
B-91-21	461	3620	4189	1210	1212	2	tr	tr
B-91-21	461	3620	4186	1212	1216	4	tr	tr
B-91-21	461	3620	4182.5	1216	1219	3	0.002	tr
B-91-21	461	3620	4179.5	1219	1222	3	tr	tr
B-91-21	461	3620	4176.5	1222	1225	3	0.003	tr
B-91-21	461	3620	4173	1225	1229	4	tr	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-21	461	3620	4169	1229	1233	4	tr	tr
B-91-21	461	3620	4165.5	1233	1236	3	tr	tr
B-91-21	461	3620	4162.5	1236	1239	3	0.002	0.05
B-91-21	461	3620	4159	1239	1243	4	0.001	tr
B-91-21	461	3620	4155.5	1243	1246	3	tr	tr
B-91-21	461	3620	4152.5	1246	1249	3	tr	tr
B-91-21	461	3620	4149.5	1249	1252	3	tr	tr
B-91-21	461	3620	4146	1252	1256	4	tr	tr
B-91-21	461	3620	4142.5	1256	1259	3	tr	tr
B-91-21	461	3620	4139.5	1259	1262	3	tr	tr
B-91-21	461	3620	4136.5	1262	1265	3	tr	tr
B-91-21	461	3620	4133.5	1265	1268	3	0.002	tr
B-91-21	461	3620	4130.5	1268	1271	3	tr	tr
B-91-21	461	3620	4126.5	1271	1276	5	tr	0.05
B-91-21	461	3620	4122	1276	1280	4	tr	tr
B-91-21	461	3620	4118	1280	1284	4	0.001	tr
B-91-21	461	3620	4114	1284	1288	4	0.002	tr
B-91-21	461	3620	4110.5	1288	1291	3	0.004	tr
B-91-21	461	3620	4107.505	1291	1293.99	3	tr	tr
B-91-21	461	3620	4106.005	1293.99	1294	0		

Table E-91-22 Assays and data for Diamond Drill Hole B-91-22

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-22	352.586	3769.043	5202.447	140	170	30		
B-91-22	349.431	3768.933	5185.234	170	175	5	0.002	0.3
B-91-22	348.527	3768.901	5180.316	175	180	5	0.007	0.3
B-91-22	347.621	3768.869	5175.399	180	185	5	0.011	0.6
B-91-22	346.077	3768.815	5167.041	185	197	12		
B-91-22	344.715	3768.768	5159.666	197	200	3	0.004	0.45
B-91-22	344.077	3768.746	5156.224	200	204	4	0.027	0.45
B-91-22	339.039	3768.57	5129.19	204	255	51		
B-91-22	333.996	3768.394	5102.157	255	259	4	0.022	0.25
B-91-22	333.35	3768.371	5098.717	259	262	3	0.002	0.1
B-91-22	332.612	3768.345	5094.786	262	267	5	0.003	0.25
B-91-22	331.872	3768.319	5090.855	267	270	3	0.002	0.3
B-91-22	331.317	3768.3	5087.907	270	273	3	0.004	0.4
B-91-22	330.854	3768.284	5085.451	273	275	2	0.001	0.1
B-91-22	330.206	3768.261	5082.011	275	280	5	0.004	0.15
B-91-22	328.721	3768.209	5074.15	280	291	11		
B-91-22	327.328	3768.161	5066.781	291	295	4	0.024	1.5
B-91-22	326.584	3768.135	5062.851	295	299	4	0.003	0.2
B-91-22	325.932	3768.112	5059.412	299	302	3	tr	0.1
B-91-22	322.801	3768.003	5042.958	302	332.5	30.5		
B-91-22	319.526	3767.888	5025.767	332.5	337	4.5	0.009	0.6
B-91-22	314.191	3767.702	4998.026	337	389	52		
B-91-22	308.993	3767.52	4971.023	389	392	3	0.002	0.2
B-91-22	308.327	3767.497	4967.587	392	396	4	0.001	0.1
B-91-22	307.471	3767.467	4963.169	396	401	5	tr	0.15
B-91-22	306.518	3767.434	4958.261	401	406	5	0.007	0.25
B-91-22	296.591	3767.087	4907.728	406	504	98		
B-91-22	286.654	3766.74	4857.197	504	509	5	0.004	0.05
B-91-22	285.776	3766.71	4852.783	509	513	4	0.004	0.05
B-91-22	284.995	3766.682	4848.861	513	517	4	0.002	0.2
B-91-22	284.213	3766.655	4844.938	517	521	4	tr	0.05
B-91-22	283.43	3766.628	4841.015	521	525	4	0.004	tr
B-91-22	282.745	3766.604	4837.583	525	528	3	tr	tr
B-91-22	282.059	3766.58	4834.151	528	532	4	0.002	tr
B-91-22	281.274	3766.552	4830.229	532	536	4	tr	tr
B-91-22	280.489	3766.525	4826.307	536	540	4	0.003	0.05
B-91-22	279.802	3766.501	4822.875	540	543	3	0.002	tr
B-91-22	279.015	3766.474	4818.953	543	548	5	0.007	0.05
B-91-22	278.031	3766.439	4814.051	548	553	5	0.003	0.25
B-91-22	277.046	3766.405	4809.149	553	558	5	0.002	0.25
B-91-22	276.06	3766.37	4804.247	558	563	5	0.001	0.05
B-91-22	275.073	3766.336	4799.346	563	568	5	0.009	0.1
B-91-22	274.184	3766.305	4794.935	568	572	4	0.002	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-91-22	265.608	3766.005	4752.805	572	653.99	82		
B-91-22	257.427	3765.72	4712.63	653.99	654	0		

Table E-23 Assays and data for Diamond Drill Hole B-92-1

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-92-1	431.201	3614.49	5155.532	0	503	503		
B-92-1	371.84	3608.894	4908.63	503	508	5	0.002	0.05
B-92-1	370.715	3608.72	4903.761	508	513	5	0.003	0.15
B-92-1	369.704	3608.563	4899.379	513	517	4	0.003	0.15
B-92-1	368.694	3608.405	4894.997	517	522	5	0.01	0.35
B-92-1	367.684	3608.246	4890.614	522	526	4	0.008	0.45
B-92-1	366.787	3608.104	4886.719	526	530	4	0.004	0.2
B-92-1	365.89	3607.961	4882.823	530	534	4	0.013	0.6
B-92-1	364.995	3607.817	4878.927	534	538	4	0.031	1.4
B-92-1	364.099	3607.672	4875.031	538	542	4	0.019	0.85
B-92-1	363.205	3607.527	4871.136	542	546	4	0.005	tr
B-92-1	362.311	3607.381	4867.239	546	550	4	tr	0.15
B-92-1	361.417	3607.234	4863.343	550	554	4	0.007	0.1
B-92-1	360.524	3607.086	4859.447	554	558	4	0.003	tr
B-92-1	359.632	3606.938	4855.551	558	562	4	0.003	0.05
B-92-1	358.852	3606.808	4852.141	562	565	3	0.007	tr
B-92-1	358.183	3606.695	4849.219	565	568	3	0.03	0.9
B-92-1	357.515	3606.583	4846.296	568	571	3	0.007	0.05
B-92-1	356.736	3606.451	4842.887	571	575	4	0.008	0.05
B-92-1	355.957	3606.318	4839.477	575	578	3	0.004	tr
B-92-1	355.29	3606.204	4836.554	578	581	3	0.025	0.85
B-92-1	354.623	3606.089	4833.632	581	584	3	0.006	0.3
B-92-1	354.068	3605.994	4831.196	584	586	2	0.004	tr
B-92-1	353.402	3605.878	4828.273	586	590	4	0.002	0.05
B-92-1	352.625	3605.743	4824.863	590	593	3	0.005	0.05
B-92-1	351.96	3605.627	4821.94	593	596	3	0.011	0.05
B-92-1	351.295	3605.51	4819.017	596	599	3	0.003	tr
B-92-1	350.63	3605.393	4816.094	599	602	3	0.006	0.25
B-92-1	349.966	3605.276	4813.171	602	605	3	0.045	1.5
B-92-1	349.302	3605.158	4810.248	605	608	3	0.002	0.05
B-92-1	348.638	3605.04	4807.324	608	611	3	0.001	0.1
B-92-1	347.864	3604.901	4803.914	611	615	4	tr	tr
B-92-1	347.091	3604.762	4800.503	615	618	3	0.003	0.05
B-92-1	346.318	3604.622	4797.092	618	622	4	0.001	tr
B-92-1	345.435	3604.462	4793.194	622	626	4	0.006	0.05
B-92-1	344.663	3604.321	4789.783	626	629	3	0.002	tr
B-92-1	344.001	3604.2	4786.86	629	632	3	0.002	tr
B-92-1	343.34	3604.078	4783.936	632	635	3	0.001	tr
B-92-1	342.57	3603.936	4780.525	635	639	4	0.054	tr
B-92-1	341.689	3603.772	4776.626	639	643	4	tr	tr
B-92-1	340.81	3603.608	4772.728	643	647	4	tr	tr
B-92-1	339.93	3603.443	4768.829	647	651	4	0.003	tr
B-92-1	339.052	3603.277	4764.93	651	655	4	0.002	tr

drill hole	East	North	elevation	from	to	thickness	Au (oz)	Ag (oz)
B-92-1	338.284	3603.132	4761.519	655	658	3	tr	tr
B-92-1	337.626	3603.007	4758.595	658	661	3	0.011	tr
B-92-1	336.968	3602.881	4755.67	661	664	3	tr	tr
B-92-1	336.31	3602.755	4752.746	664	667	3	0.003	tr
B-92-1	335.544	3602.607	4749.334	667	671	4	0.001	tr
B-92-1	334.668	3602.438	4745.435	671	675	4	tr	tr
B-92-1	333.903	3602.289	4742.023	675	678	3	tr	tr
B-92-1	333.247	3602.161	4739.098	678	681	3	tr	tr
B-92-1	332.591	3602.033	4736.173	681	684	3	tr	tr
B-92-1	331.936	3601.904	4733.249	684	687	3	tr	tr
B-92-1	331.172	3601.753	4729.836	687	691	4	tr	0.05
B-92-1	330.3	3601.58	4725.936	691	695	4	tr	0.05
B-92-1	329.428	3601.407	4722.037	695	699	4	tr	tr
B-92-1	328.557	3601.232	4718.136	699	703	4	tr	0.2
B-92-1	327.686	3601.057	4714.236	703	707	4	tr	0.15
B-92-1	326.816	3600.881	4710.336	707	711	4	0.003	0.1
B-92-1	325.946	3600.705	4706.436	711	715	4	0.001	0.1
B-92-1	325.077	3600.527	4702.535	715	719	4	0.003	0.1
B-92-1	324.209	3600.349	4698.635	719	723	4	tr	0.05
B-92-1	323.342	3600.171	4694.734	723	727	4	tr	0.1
B-92-1	322.475	3599.991	4690.833	727	731	4	tr	0.05
B-92-1	321.608	3599.811	4686.932	731	735	4	tr	0.1
B-92-1	320.634	3599.608	4682.544	735	740	5	0.002	tr
B-92-1	319.553	3599.38	4677.667	740	745	5	tr	0.05
B-92-1	318.473	3599.152	4672.791	745	750	5	tr	tr
B-92-1	317.393	3598.923	4667.914	750	755	5	0.002	tr
B-92-1	316.315	3598.692	4663.037	755	760	5	0.066	0.3
B-92-1	315.237	3598.46	4658.16	760	765	5	0.003	tr
B-92-1	314.161	3598.228	4653.283	765	770	5	0.002	0.1
B-92-1	313.193	3598.017	4648.893	770	774	4	0.002	tr
B-92-1	312.44	3597.853	4645.479	774	777	3	0.001	tr
B-92-1	308.158	3596.897	4625.972	777	813.99	37		
B-92-1	304.197	3596.011	4607.922	813.99	814	0		

Appendix F: Geologic Logs

All information in this appendix was provided by MPH

Table F-1 Geologic log for Diamond Drill Hole B-91-1

Drill hole #	depth (ft) ftom	depth (ft) to	geologic notes	East	North	elevation
B-91-1	0	12	ob/casing	357.466	3770.044	5349.562
B-91-1	12	117	1a	332.855	3770.474	5296.492
B-91-1	117	118	Altered Zone	310.568	3770.863	5248.407
B-91-1	118	123	Qtz Lithic Bx	309.312	3770.885	5245.683
B-91-1	123	137	1a	305.336	3770.954	5237.055
B-91-1	137	141	Qtz Lithic Bx	301.571	3771.02	5228.881
B-91-1	141	153	Silicified Zone	298.227	3771.078	5221.614
B-91-1	153	156	Qtz Vein	295.093	3771.133	5214.8
B-91-1	156	179	1a	289.668	3771.228	5202.986
B-91-1	179	187	Qtz Vein	283.203	3771.34	5188.9
B-91-1	187	209	1a	276.957	3771.45	5175.262
B-91-1	209	211	Qtz Vein	271.962	3771.537	5164.352
B-91-1	211	219	1a	269.883	3771.573	5159.805
B-91-1	219	223	Qtz Vein	267.389	3771.617	5154.348
B-91-1	223	239	Altered Zone	263.236	3771.689	5145.251
B-91-1	239	254	1a	256.804	3771.801	5131.149
B-91-1	254	268	Qtz Lithic Bx	250.793	3771.906	5117.954
B-91-1	268	284	Stockwork Zone	244.583	3772.015	5104.301
B-91-1	284	305	1a	236.933	3772.148	5087.456
B-91-1	305	318	Qtz Lithic Bx	229.912	3772.271	5071.975
B-91-1	318	337	Stockwork Zone	223.314	3772.386	5057.399
B-91-1	337	340	Qtz Vein	218.781	3772.465	5047.377
B-91-1	340	348	1a	216.517	3772.505	5042.365
B-91-1	348	352	Qtz Vein	214.047	3772.548	5036.897
B-91-1	352	364	Stockwork Zone	210.757	3772.605	5029.605
B-91-1	364	393	Qtz Lithic Bx	202.337	3772.752	5010.914
B-91-1	393	409	Stockwork Zone	193.106	3772.913	4990.396
B-91-1	409	416	Altered Zone	188.394	3772.995	4979.906
B-91-1	416	523.9	1a	164.969	3773.404	4927.45
B-91-1	523.9	524	EofH	142.957	3773.789	4878.142

Table F-2 Geologic log for Diamond Drill Hole B-91-2

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-2	0	37	1a(weathered)	344.846	3770	5344.389
B-91-2	37	97	1a	305.117	3770	5316.57
B-91-2	97	116	Stockwork Zone	272.76	3770	5293.914
B-91-2	116	130	Argillic Zone	259.244	3770	5284.45
B-91-2	130	133	Stockwork Zone	252.282	3770	5279.575
B-91-2	133	134	Qtz Vein	250.643	3770	5278.428
B-91-2	134	142	Stockwork Zone	246.957	3770	5275.846
B-91-2	142	143	Qtz Vein	243.271	3770	5273.265
B-91-2	143	144	Stockwork Zone	242.452	3770	5272.692
B-91-2	144	159	1a	235.898	3770	5268.103
B-91-2	159	160	Qtz Vein	229.345	3770	5263.515
B-91-2	160	171.5	1a	224.226	3770	5259.93
B-91-2	171.5	173.5	Limonitic Zone	218.696	3770	5256.058
B-91-2	173.5	219.5	1a	199.037	3770	5242.292
B-91-2	219.5	223.5	Stockwork Zone	178.558	3770	5227.953
B-91-2	223.5	257	Argillic Zone	163.199	3770	5217.198
B-91-2	257	282	1b	139.239	3770	5200.421
B-91-2	282	287	Qtz Vein	126.951	3770	5191.818
B-91-2	287	303	Stockwork Zone	118.35	3770	5185.795
B-91-2	303	322	1a	104.015	3770	5175.757
B-91-2	322	333	Stockwork Zone	91.728	3770	5167.154
B-91-2	333	388	1a	64.696	3770	5148.226
B-91-2	388	410.9	1b	32.79	3770	5125.885
B-91-2	410.9	411	EofH	23.369	3770	5119.289

Table F-3 Geologic log for Diamond Drill Hole B-91-3

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-3	0	98	1a	301.194	3770.852	5350.729
B-91-3	98	117	Stockwork Zone	242.925	3771.869	5345.631
B-91-3	117	145	1a	219.518	3772.278	5343.583
B-91-3	145	147	Qtz Vein Zone	204.578	3772.538	5342.275
B-91-3	147	169.5	1a	192.376	3772.751	5341.208
B-91-3	169.5	172.5	Qtz Vein Zone	179.677	3772.973	5340.096
B-91-3	172.5	207	1a	161.001	3773.299	5338.462
B-91-3	207	210	Argillic Zone	142.325	3773.625	5336.828
B-91-3	210	243	1a	124.396	3773.938	5335.259
B-91-3	243	247	Qtz Vein Zone	105.969	3774.26	5333.647
B-91-3	247	260	1a	97.503	3774.407	5332.906
B-91-3	260	263	Argillic Zone	89.535	3774.546	5332.209
B-91-3	263	281	1	79.076	3774.729	5331.294
B-91-3	281	290	Stockwork Zone	65.63	3774.964	5330.117
B-91-3	290	295	1a	58.657	3775.085	5329.507
B-91-3	295	319	Stockwork Zone	44.215	3775.338	5328.243
B-91-3	319	373	1a	5.369	3776.016	5324.844
B-91-3	373	374	Gouge Zone	-22.022	3776.494	5322.447
B-91-3	374	399.9	1a	-35.419	3776.728	5321.275
B-91-3	399.9	400	EofH	-48.367	3776.954	5320.142

Table F-4 Geologic log for Diamond Drill Hole B-91-4

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-4	0	4	ob/casing	243.321	4199.916	5338.12
B-91-4	4	63	1a	232.733	4198.515	5308.486
B-91-4	63	74	Stockwork Zone	220.997	4196.935	5275.551
B-91-4	74	77.5	1a	218.59	4196.588	5268.721
B-91-4	77.5	82	Stockwork Zone	217.265	4196.394	5264.952
B-91-4	82	168	1a	202.499	4194.027	5222.244
B-91-4	168	205	1c	182.569	4190.708	5164.158
B-91-4	205	275	1a	165.69	4187.49	5113.493
B-91-4	275	292	Stockwork Zone	152.097	4184.784	5072.26
B-91-4	292	315	1a	145.951	4183.471	5053.273
B-91-4	315	318	Stockwork Zone	141.971	4182.609	5040.928
B-91-4	318	328.5	1a	139.917	4182.153	5034.514
B-91-4	328.5	445.5	Stockwork Zone	120.952	4177.585	4973.822
B-91-4	445.5	474.9	1a	99.342	4172.244	4904.09
B-91-4	474.9	475	EofH	95.087	4171.113	4890.012

Table F-5 Geologic log for Diamond Drill Hole B-91-5

Drill hole #	depth (ft) ftom	depth (ft) to	geologic notes	East	North	elevation
B-91-5	0	34	1a	229.178	4198.303	5330.249
B-91-5	34	44	Qtz Vein	211.291	4196.107	5317.631
B-91-5	44	54	Stockwork Zone	203.161	4195.108	5311.895
B-91-5	54	71	1a	192.185	4193.761	5304.151
B-91-5	71	78	Argillic Zone	182.428	4192.563	5297.269
B-91-5	78	110	1a	166.574	4190.616	5286.084
B-91-5	110	117	Stockwork Zone	150.719	4188.669	5274.899
B-91-5	117	171	1a	125.921	4185.625	5257.405
B-91-5	171	172	Qtz Vein	103.563	4182.879	5241.632
B-91-5	172	195	1a	93.806	4181.681	5234.749
B-91-5	195	203	Stockwork Zone	81.204	4180.134	5225.858
B-91-5	203	208	1a	75.919	4179.485	5222.13
B-91-5	208	217	Argillic Zone	70.228	4178.786	5218.115
B-91-5	217	305	Stockwork Zone	30.795	4173.944	5190.297
B-91-5	305	384.9	1a	-37.46	4165.564	5142.145
B-91-5	384.9	385	EofH	-69.982	4161.571	5119.202

Table F-6 Geologic log for Diamond Drill Hole B-91-6

Drill hole #	depth (ft) ftom	depth (ft) to	geologic notes	East	North	elevation
B-91-6	0	57	Stockwork Zone	206.988	4196.561	5336.034
B-91-6	57	110	1a	152.929	4189.923	5328.379
B-91-6	110	116	Silicified Zn	123.934	4186.363	5324.273
B-91-6	116	144	1a	107.225	4184.311	5321.907
B-91-6	144	152	Stockwork Zone	89.533	4182.139	5319.402
B-91-6	152	173	1a	75.281	4180.389	5317.384
B-91-6	173	233	1c	35.474	4175.501	5311.748
B-91-6	233	259	Stockwork Zone	-6.79	4170.312	5305.763
B-91-6	259	296	Qtz Vein Zone	-37.751	4166.51	5301.379
B-91-6	296	302	1c	-58.883	4163.916	5298.387
B-91-6	302	369.9	1a	-95.201	4159.456	5293.245
B-91-6	369.9	370	EofH	-128.619	4155.353	5288.513

Table F-7 Geologic log for Diamond Drill Hole B-91-7

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-7	0	13	1a	245.002	4200.002	5333.5
B-91-7	13	46	1c	245.025	4200.022	5310.5
B-91-7	46	110.5	1a	245.178	4200.106	5261.75
B-91-7	110.5	127	1c	245.364	4200.187	5221.251
B-91-7	127	143	Stockwork Zone	245.481	4200.214	5205.001
B-91-7	143	180	1a	245.716	4200.238	5178.502
B-91-7	180	308	1c	246.75	4199.958	5096.01
B-91-7	308	312	Silicified Zn	247.639	4199.646	5030.016
B-91-7	312	367	1c	248.054	4199.241	5000.522
B-91-7	367	371	Qtz Lithic Bx	248.465	4198.824	4971.028
B-91-7	371	376	1c	248.523	4198.746	4966.529
B-91-7	376	379	Qtz Lithic Bx	248.573	4198.675	4962.53
B-91-7	379	439	1c	248.907	4198.008	4931.039
B-91-7	439	453	Stockwork Zone	249.273	4197.193	4894.05
B-91-7	453	533	1a	249.388	4195.873	4847.068
B-91-7	533	562	Stockwork Zone	249.36	4194.276	4792.592
B-91-7	562	585	1a	249.143	4193.46	4766.606
B-91-7	585	588	Qtz Vein	249.001	4193.049	4753.613
B-91-7	588	605	Argillic Zone	248.856	4192.735	4743.619
B-91-7	605	736	Stockwork Zone	246.917	4190.67	4669.674
B-91-7	736	742	Qtz Lithic Bx	244.986	4188.816	4601.227
B-91-7	742	787.9	1c	243.904	4188.428	4575.302
B-91-7	787.9	788	EofH	242.936	4188.097	4552.325

Table F-8 Geologic log for Diamond Drill Hole B-91-8

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-8	0	4.5	ob/casing	246.016	4598.945	5324.882
B-91-8	4.5	149	2a	180.327	4564.017	5320.983
B-91-8	149	171	1c	106.922	4524.987	5316.626
B-91-8	171	182	Stockwork Zone	92.373	4517.252	5315.763
B-91-8	182	184	Qtz Lithic Bx	86.642	4514.204	5315.423
B-91-8	184	224	Stockwork Zone	68.126	4504.359	5314.323
B-91-8	224	237	1a	44.759	4491.935	5312.937
B-91-8	237	271	Stockwork Zone	24.039	4480.918	5311.707
B-91-8	271	312	1a	-9.026	4463.337	5309.744
B-91-8	312	315.5	Stockwork Zone	-28.645	4452.905	5308.58
B-91-8	315.5	376	1a	-56.861	4437.903	5306.905
B-91-8	376	381	Qtz Lithic Bx	-85.738	4422.549	5305.191
B-91-8	381	405.9	1a	-98.92	4415.54	5304.408
B-91-8	405.9	406	EofH	-109.941	4409.679	5303.754

Table F-9 Geologic log for Diamond Drill Hole B-91-9

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-9	0	41	1(weathered)	239.282	4598.779	5313.199
B-91-9	41	137	1b	183.687	4594.32	5273.431
B-91-9	137	150	Stockwork Zone	139.576	4590.601	5241.642
B-91-9	150	161	Qtz Vein	129.916	4589.709	5234.578
B-91-9	161	181	Stockwork Zone	117.462	4588.528	5225.427
B-91-9	181	239	1a	86.238	4585.404	5202.269
B-91-9	239	268	Stockwork Zone	51.504	4581.799	5176.331
B-91-9	268	294	1a	29.646	4579.392	5159.818
B-91-9	294	346	1b	-1.214	4575.805	5136.242
B-91-9	346	385.5	1a	-37.281	4571.433	5108.438
B-91-9	385.5	387	Stockwork Zone	-53.393	4569.414	5095.925
B-91-9	387	402.5	1a	-60.052	4568.552	5090.714
B-91-9	402.5	407	1b	-67.884	4567.534	5084.58
B-91-9	407	434	1a	-80.189	4565.896	5074.886
B-91-9	434	439	Silicified Zn	-92.682	4564.223	5065.03
B-91-9	439	501.9	1a	-119.049	4560.512	5043.969
B-91-9	501.9	502	EofH	-143.507	4557.061	5024.42

Table F-10 Geologic log for Diamond Drill Hole B-91-10

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-10	0	2	ob/casing	260.563	4599.969	5324.101
B-91-10	2	23	2a?	255.539	4599.616	5313.763
B-91-10	23	77	1c	239.2	4598.445	5280.029
B-91-10	77	99	1a	222.677	4597.245	5245.831
B-91-10	99	103	Qtz Lithic Bx	217.039	4596.829	5234.124
B-91-10	103	124	1a	211.629	4596.424	5222.863
B-91-10	124	165	1c	198.241	4595.409	5194.921
B-91-10	165	188.5	Qtz Lithic Bx	184.343	4594.342	5165.84
B-91-10	188.5	233.5	Stockwork Zone	169.642	4593.185	5134.927
B-91-10	233.5	324	1a	140.72	4590.838	5073.705
B-91-10	324	343.5	1b	117.314	4588.905	5023.972
B-91-10	343.5	360	Qtz Lithic Bx	109.693	4588.258	5007.678
B-91-10	360	541.9	1a	68.102	4584.541	4917.694
B-91-10	541.9	542	EofH	29.981	4581.12	4835.135

Table F-11 Geologic log for Diamond Drill Hole B-91-11

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-11	0	22	1c	263	4600	5314
B-91-11	22	120	1	263	4600	5254
B-91-11	120	124	Stockwork Zone	263	4600	5203
B-91-11	124	131	1	263	4600	5197.5
B-91-11	131	134	Stockwork Zone	263	4600	5192.5
B-91-11	134	160	1	263	4600	5178
B-91-11	160	254	1d	263	4600	5118
B-91-11	254	258	Stockwork Zone	263	4600	5069
B-91-11	258	267	1d	263	4600	5062.5
B-91-11	267	277	Stockwork Zone	263	4600	5053
B-91-11	277	308	1d	263	4600	5032.5
B-91-11	308	309	Quartz Vein	263	4600	5016.5
B-91-11	309	321	1d	263	4600	5010
B-91-11	321	327	Quartz Vein	263	4600	5001
B-91-11	327	345	Stockwork Zone	263	4600	4989
B-91-11	345	386	1a	263	4600	4959.5
B-91-11	386	395	Stockwork Zone	263	4600	4934.5
B-91-11	395	406	1a	263	4600	4924.5
B-91-11	406	428	Stockwork Zone	263	4600	4908
B-91-11	428	534	Qtz Lithic Bx	263	4600	4844
B-91-11	534	562	Stockwork Zone	263	4600	4777
B-91-11	562	605.5	Qtz Lithic Bx	263	4600	4741.25
B-91-11	605.5	646.9	1a	263	4600	4698.8
B-91-11	646.9	647	EofH	263	4600	4678.05

Table F-12 Geologic log for Diamond Drill Hole B-91-12

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-12	0	35	1c	263.772	4100.608	5326.583
B-91-12	35	66	Stockwork Zone	242.621	4099.869	5301.263
B-91-12	66	69.5	Qtz Lithic Bx	231.58	4099.484	5288.015
B-91-12	69.5	136	1a	209.254	4098.704	5261.071
B-91-12	136	147	Stockwork Zone	184.549	4097.841	5231.231
B-91-12	147	294	1c	134.56	4096.096	5170.083
B-91-12	294	353	Qtz Lithic Bx	69.547	4093.825	5090.226
B-91-12	353	429.9	1a	27.001	4092.34	5037.265
B-91-12	429.9	430	EofH	2.947	4091.5	5007.217

Table F-13 Geologic log for Diamond Drill Hole B-91-13

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-13	0	34	1a	271.889	4101.875	5323.505
B-91-13	34	64	Stockwork Zone	264.151	4101.669	5292.456
B-91-13	64	86	Quartz Vein	257.862	4101.549	5267.228
B-91-13	86	102	1a	253.266	4101.488	5248.792
B-91-13	102	122	Stockwork Zone	248.911	4101.455	5231.327
B-91-13	122	279	1a	227.504	4101.775	5145.456
B-91-13	279	341	Stockwork Zone	201.025	4102.456	5039.208
B-91-13	341	395	1	187.013	4103.204	4982.931
B-91-13	395	429	Stockwork Zone	176.392	4103.904	4940.238
B-91-13	429	482.5	Qtz Lithic Bx	165.842	4104.75	4897.788
B-91-13	482.5	498.5	Stockwork Zone	157.467	4105.476	4864.07
B-91-13	498.5	512	Qtz Lithic Bx	153.915	4105.815	4849.758
B-91-13	512	562.9	1a	146.167	4106.624	4818.515
B-91-13	562.9	563	EofH	140.032	4107.276	4793.772

Table F-14 Geologic log for Diamond Drill Hole B-91-14

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-14	0	67	Stockwork Zone	242.378	4097.861	5332.464
B-91-14	67	276.5	1a	107.754	4093.16	5301.365
B-91-14	276.5	304	Qtz Lithic Bx	-7.639	4089.13	5274.708
B-91-14	304	315	Stockwork Zone	-26.384	4088.475	5270.378
B-91-14	315	325.5	Argillic Zone	-36.852	4088.11	5267.959
B-91-14	325.5	349.9	1a	-53.844	4087.517	5264.034
B-91-14	349.9	350	EofH	-65.773	4087.1	5261.278

Table F-15 Geologic log for Diamond Drill Hole B-91-15

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-15	0	242	1a	333.821	4036.121	5229.043
B-91-15	242	250	Stockwork Zone	334.592	4039.453	5104.092
B-91-15	250	254	Qtz Lithic Bx	334.514	4039.772	5098.101
B-91-15	254	283.5	Quartz Vein	334.208	4040.707	5081.38
B-91-15	283.5	285	Qtz Lithic Bx	333.912	4041.579	5065.907
B-91-15	285	291	1a	333.821	4041.798	5062.165
B-91-15	291	311	Qtz Lithic Bx	333.458	4042.57	5049.193
B-91-15	311	416	Stockwork Zone	330.475	4046.392	4986.883
B-91-15	416	448	1c	326.529	4050.483	4918.624
B-91-15	448	454	Silicified Zn	325.021	4051.499	4899.712
B-91-15	454	474.9	Stockwork Zone	323.815	4052.141	4886.331
B-91-15	474.9	475	EofH	322.862	4052.635	4875.886

Table F-16 Geologic log for Diamond Drill Hole B-91-16

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-16	0	149	1a	333.523	4039.547	5275.783
B-91-16	149	157	Stockwork Zone	326.698	4039.07	5197.582
B-91-16	157	205	1a	324.263	4038.9	5169.689
B-91-16	205	215	Stockwork Zone	321.742	4038.723	5140.799
B-91-16	215	220	Qtz Lithic Bx	321.09	4038.678	5133.328
B-91-16	220	234.5	1a	320.242	4038.618	5123.615
B-91-16	234.5	246.5	Qtz Lithic Bx	319.09	4038.538	5110.415
B-91-16	246.5	275	Stockwork Zone	317.329	4038.415	5090.242
B-91-16	275	594	1a	302.223	4037.358	4917.153
B-91-16	594	601	Stockwork Zone	288.051	4036.367	4754.774
B-91-16	601	730	1c	282.139	4035.954	4687.032
B-91-16	730	736	Stockwork Zone	276.27	4035.544	4619.789
B-91-16	736	777.5	Qtz Lithic Bx	274.206	4035.399	4596.13
B-91-16	777.5	970.9	1a	263.994	4034.685	4479.127
B-91-16	970.9	971	EofH	255.582	4034.097	4382.745

Table F-17 Geologic log for Diamond Drill Hole B-91-17

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-17	0	28	2a	517.91	4021.547	5386.356
B-91-17	28	293	1a	486.703	4027.324	5243.336
B-91-17	293	691	1c	420.194	4040.461	4918.858
B-91-17	691	776	Argillic Zone	374.2	4050.048	4681.975
B-91-17	776	780	Qtz Lithic Bx	366.246	4051.804	4638.227
B-91-17	780	795	1d	364.575	4052.178	4628.883
B-91-17	795	797	Quartz Vein	363.082	4052.513	4620.522
B-91-17	797	817	1d	361.16	4052.945	4609.7
B-91-17	817	822	Quartz Vein	358.98	4053.437	4597.401
B-91-17	822	941	1d	348.414	4055.862	4536.356
B-91-17	941	960	Qtz Lithic Bx	336.703	4058.559	4468.411
B-91-17	960	1016	Lithic Qtz Bx	330.529	4060.014	4431.451
B-91-17	1016	1200.9	1d	311.411	4064.639	4312.619
B-91-17	1200	91201	EofH	296.88	4068.18	4221.336

Table F-18 Geologic log for Diamond Drill Hole B-91-18

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-18	0	201	1a	517.403	4050.49	5299.502
B-91-18	201	202.5	Fault Zone	517.811	4050.989	5198.254
B-91-18	202.5	308	1a	518.306	4051.686	5144.761
B-91-18	308	314	Stockwork Zone	518.829	4052.425	5089.018
B-91-18	314	388	1a	519.304	4053.159	5049.028
B-91-18	388	391	Argillic Zone	519.767	4053.875	5010.537
B-91-18	391	399	1a	519.838	4053.991	5005.039
B-91-18	399	403	Quartz Vein	519.917	4054.118	4999.041
B-91-18	403	713	1a	522.303	4058.419	4842.118
B-91-18	713	830	1d	525.555	4064.284	4628.723
B-91-18	830	887	Stockwork Zone	526.88	4066.675	4541.766
B-91-18	887	979	1	528.014	4068.721	4467.303
B-91-18	979	1015	Qtz Lithic Bx	528.989	4070.479	4403.335
B-91-18	1015	1048	Stockwork Zone	529.514	4071.427	4368.852
B-91-18	1048	1123.5	1a	530.34	4072.918	4314.628
B-91-18	1123	51127.5	Quartz Vein	530.946	4074.01	4274.898
B-91-18	1127	51133.5	Stockwork Zone	531.022	4074.147	4269.9
B-91-18	1133	51151	1a	531.201	4074.47	4258.156
B-91-18	1151	1152	Qtz Lithic Bx	531.341	4074.724	4248.911
B-91-18	1152	1195	1a	531.676	4075.328	4226.922
B-91-18	1195	1228	Stockwork Zone	532.255	4076.372	4188.94
B-91-18	1228	1268	1a	532.811	4077.375	4152.458
B-91-18	1268	1270	Stockwork Zone	533.131	4077.952	4131.469
B-91-18	1270	1288	1b	533.283	4078.227	4121.474
B-91-18	1288	1364	1a	533.999	4079.518	4074.497
B-91-18	1364	1385	1b	534.737	4080.85	4026.021
B-91-18	1385	1394	Qtz Lithic Bx	534.966	4081.262	4011.028
B-91-18	1394	1420	1d	535.232	4081.743	3993.537
B-91-18	1420	1429	Lithic Qtz Bx	535.499	4082.224	3976.046
B-91-18	1429	1433	1a	535.598	4082.403	3969.549
B-91-18	1433	1450	Stockwork Zone	535.758	4082.691	3959.054
B-91-18	1450	1452	1a	535.902	4082.952	3949.559
B-91-18	1452	1465	Stockwork Zone	536.017	4083.158	3942.062
B-91-18	1465	1474	Qtz Lithic Bx	536.184	4083.46	3931.068
B-91-18	1474	1484	Argillic Zone	536.329	4083.721	3921.572
B-91-18	1484	1565.9	1a	537.028	4084.984	3875.645
B-91-18	1565	91566	EofH	537.653	4086.11	3834.665

Table F-19 Geologic log for Diamond Drill Hole B-91-19

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-19	0	34	2?	393.004	4614.005	5383
B-91-19	34	66	1a	393.02	4614.022	5350
B-91-19	66	70	Hematitic Zone	393.034	4614.037	5332
B-91-19	70	311	1a	393.398	4614.385	5209.501
B-91-19	311	313.5	Stockwork Zone	393.767	4614.737	5087.752
B-91-19	313.5	326	1a	393.806	4614.771	5080.252
B-91-19	326	360	Qtz Lithic Bx	393.936	4614.882	5057.003
B-91-19	360	368	1a	394.058	4614.984	5036.004
B-91-19	368	385	Stockwork Zone	394.136	4615.049	5023.504
B-91-19	385	398	Lithic Qtz Bx	394.233	4615.129	5008.504
B-91-19	398	404	Stockwork Zone	394.296	4615.18	4999.005
B-91-19	404	438	1a	394.439	4615.294	4979.006
B-91-19	438	554	1a,1d	395.063	4615.767	4904.01
B-91-19	554	570	1a,stockworks	395.646	4616.201	4838.014
B-91-19	570	840	1a	397.484	4617.362	4695.03
B-91-19	840	852	Bleached Zone	399.339	4618.52	4554.047
B-91-19	852	862	1d	399.518	4618.618	4543.049
B-91-19	862	880	Bleached Zone	399.75	4618.745	4529.052
B-91-19	880	951	1a	400.53	4619.152	4484.56
B-91-19	951	997	Stockwork Zone	401.598	4619.694	4426.073
B-91-19	997	1003.9	1a	402.105	4619.941	4399.629
B-91-19	1003	91004	EofH	402.174	4619.974	4396.13

Table F-20 Geologic log for Diamond Drill Hole B-91-20

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-20	0	5	ob/casing	380	3770	5347.5
B-91-20	5	59	Limonitic Zone	380.026	3770.028	5318
B-91-20	59	174	1a	380.246	3770.274	5233.501
B-91-20	174	206	Argillic Zone	380.531	3770.589	5160.002
B-91-20	206	230	1a	380.696	3770.773	5132.003
B-91-20	230	262	1	380.887	3770.985	5104.005
B-91-20	262	289	Stockwork Zone	381.111	3771.234	5074.507
B-91-20	289	304	1d	381.284	3771.426	5053.508
B-91-20	304	311	Argillic Zone	381.381	3771.533	5042.509
B-91-20	311	358	1	381.641	3771.823	5015.512
B-91-20	358	361.5	Lithic Qtz Bx	381.889	3772.098	4990.265
B-91-20	361.5	390	1	382.064	3772.292	4974.267
B-91-20	390	411	Stockwork Zone	382.343	3772.602	4949.52
B-91-20	411	418.5	1	382.507	3772.785	4935.272
B-91-20	418.5	458	Stockwork Zone	382.758	3773.063	4911.775
B-91-20	458	493	1a,stockworks	383.133	3773.479	4874.53
B-91-20	493	495.5	Qtz Lithic Bx	383.31	3773.676	4855.781
B-91-20	495.5	638	1a,stockworks	383.806	3774.227	4783.285
B-91-20	638	641	Qtz Lithic Bx	384.298	3774.774	4710.539
B-91-20	641	654	Stockwork Zone	384.334	3774.814	4702.539
B-91-20	654	665	Qtz Lithic Bx	384.386	3774.871	4690.539
B-91-20	665	684	Argillic Zone	384.443	3774.934	4675.54
B-91-20	684	696	Stockwork Zone	384.497	3774.994	4660.04
B-91-20	696	708	Lithic Qtz Bx	384.533	3775.035	4648.04
B-91-20	708	755	Stockwork Zone	384.598	3775.106	4618.54
B-91-20	755	776	Lithic Qtz Bx	384.655	3775.17	4584.54
B-91-20	776	789	Silicified Zone	384.669	3775.186	4567.54
B-91-20	789	903.9	1a	384.595	3775.103	4503.59
B-91-20	903.9	904	EofH	384.516	3775.016	4446.091

Table F-21 Geologic log for Diamond Drill Hole B-91-21

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-21	0	10	ob/casimg	461	3620	5395
B-91-21	10	33	2a	461	3620	5378.5
B-91-21	33	61	Argillic Zone	461	3620	5353
B-91-21	61	86	1a	461	3620	5326.5
B-91-21	86	99	Silicified Zone	461	3620	5307.5
B-91-21	99	176	1a	461	3620	5262.5
B-91-21	176	184	Silicified Zone	461	3620	5220
B-91-21	184	208	Lithic Qtz Bx	461	3620	5204
B-91-21	208	224	Silicified Zone	461	3620	5184
B-91-21	224	235	Stockwork Zone	461	3620	5170.5
B-91-21	235	254	Silicified Zone	461	3620	5155.5
B-91-21	254	265	Quartz Vein	461	3620	5140.5
B-91-21	265	273	Qtz Lithic Bx	461	3620	5131
B-91-21	273	321	Silicified Zone	461	3620	5103
B-91-21	321	358	1	461	3620	5060.5
B-91-21	358	368.5	Qtz Lithic Bx	461	3620	5036.75
B-91-21	368.5	379	Stockwork Zone	461	3620	5026.25
B-91-21	379	390	Lithic Qtz Bx	461	3620	5015.5
B-91-21	390	394.5	Qtz Lithic Bx	461	3620	5007.75
B-91-21	394.5	402	Stockwork Zone	461	3620	5001.75
B-91-21	402	500	1a	461	3620	4949
B-91-21	500	575	Stockwork Zone	461	3620	4862.5
B-91-21	575	579.5	Quartz Vein	461	3620	4822.75
B-91-21	579.5	582.5	Stockwork Zone	461	3620	4819
B-91-21	582.5	585.5	Qtz Lithic Bx	461	3620	4816
B-91-21	585.5	606	1b	461	3620	4804.25
B-91-21	606	612	Lithic Qtz Bx	461	3620	4791
B-91-21	612	617	Stockwork Zone	461	3620	4785.5
B-91-21	617	628	Quartz Vein	461	3620	4777.5
B-91-21	628	638	Stockwork Zone	461	3620	4767
B-91-21	638	642	Lithic Qtz Bx	461	3620	4760
B-91-21	642	649	Stockwork Zone	461	3620	4754.5
B-91-21	649	654	Lithic Qtz Bx	461	3620	4748.5
B-91-21	654	666	Stockwork Zone	461	3620	4740
B-91-21	666	674	Qtz Lithic Bx	461	3620	4730
B-91-21	674	719	Stockwork Zone	461	3620	4703.5
B-91-21	719	723	Qtz Lithic Bx	461	3620	4679
B-91-21	723	727	Stockwork Zone	461	3620	4675
B-91-21	727	745	Qtz Lithic Bx	461	3620	4664
B-91-21	745	786	Stockwork Zone	461	3620	4634.5
B-91-21	786	802	weak stockwork	461	3620	4606
B-91-21	802	825	Lithic Qtz Bx	461	3620	4586.5

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-21	825	847	Stockwork Zone	461	3620	4564
B-91-21	847	864	Lithic Qtz Bx	461	3620	4544.5
B-91-21	864	950	Stockwork Zone	461	3620	4493
B-91-21	950	955	Quartz Vein	461	3620	4447.5
B-91-21	955	1009	Qtz Lithic Bx	461	3620	4418
B-91-21	1009	1155	Stockwork Zone	461	3620	4318
B-91-21	1155	1192	Qtz Lithic Bx	461	3620	4226.5
B-91-21	1192	1207	Silicified Zone	461	3620	4200.5
B-91-21	1207	1225	Qtz Lithic Bx	461	3620	4184
B-91-21	1225	1239	Bleached Zone	461	3620	4168
B-91-21	1239	1252	1a	461	3620	4154.5
B-91-21	1252	1259	Bleached Zone	461	3620	4144.5
B-91-21	1259	1265	Qtz Lithic Bx	461	3620	4138
B-91-21	1265	1293.9	1a	461	3620	4120.55
B-91-21	1293	91294	EofH	461	3620	4106.05

Table F-22 Geologic log for Diamond Drill Hole B-91-22

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-91-22	0	14	ob/casing	378.783	3769.958	5348.107
B-91-22	14	61	Oxidized Zone	373.451	3769.771	5318.077
B-91-22	61	170	1a	359.609	3769.288	5241.317
B-91-22	170	185	Stockwork Zone	348.526	3768.901	5180.317
B-91-22	185	197	1a	346.077	3768.815	5167.041
B-91-22	197	204	Stockwork Zone	344.35	3768.755	5157.699
B-91-22	204	255	1a	339.039	3768.57	5129.19
B-91-22	255	280	Stockwork Zone	332.054	3768.326	5091.839
B-91-22	280	302	1a	327.698	3768.174	5068.746
B-91-22	302	310	1b	324.907	3768.076	5054.009
B-91-22	310	332.5	1	322.055	3767.977	5039.028
B-91-22	332.5	337	Stockwork Zone	319.526	3767.888	5025.767
B-91-22	337	396	1	313.525	3767.679	4994.59
B-91-22	396	406	Stockwork Zone	306.994	3767.451	4960.715
B-91-22	406	414	1a	305.277	3767.391	4951.88
B-91-22	414	427	Stockwork Zone	303.27	3767.321	4941.574
B-91-22	427	504	sz/qlb	294.583	3767.017	4897.422
B-91-22	504	513	Stockwork Zone	286.263	3766.727	4855.235
B-91-22	513	521	Qtz Lithic Bx	284.603	3766.669	4846.899
B-91-22	521	528	Stockwork Zone	283.136	3766.617	4839.544
B-91-22	528	543	Qtz Lithic Bx	280.979	3766.542	4828.758
B-91-22	543	572	1	276.648	3766.391	4807.189
B-91-22	572	653.9	1a	265.617	3766.006	4752.849
B-91-22	653.9	654	EofH	257.436	3765.72	4712.674

Table F-23 Geologic log for Diamond Drill Hole B-92-1

Drill hole #	Depth (ft) from	Depth (ft) to	Geologic notes	East	North	Elevation
B-92-1	0	3	ob/casing	489.637	3619.987	5398.545
B-92-1	3	47	2a	483.972	3619.758	5375.739
B-92-1	47	314	1a	447.148	3617.113	5224.686
B-92-1	314	342	Silicified Zone	412.388	3614.322	5081.368
B-92-1	342	349	1a	408.344	3613.867	5064.348
B-92-1	349	497	1a	390.67	3611.511	4988.927
B-92-1	497	503	Lithic Qtz Bx	373.128	3609.146	4913.989
B-92-1	503	517	Stockwork Zone	370.879	3608.799	4904.251
B-92-1	517	522	Qtz Lithic Bx	368.744	3608.468	4895
B-92-1	522	546	Stockwork Zone	365.496	3607.948	4880.878
B-92-1	546	554	Lithic Qtz Bx	361.915	3607.37	4865.295
B-92-1	554	558	Qtz Lithic Bx	360.575	3607.149	4859.451
B-92-1	558	618	Stockwork Zone	353.469	3605.92	4828.274
B-92-1	618	629	Qtz Lithic Bx	345.596	3604.544	4793.685
B-92-1	629	635	Quartz Vein	343.722	3604.201	4785.401
B-92-1	635	661	Qtz Lithic Bx	340.204	3603.543	4769.807
B-92-1	661	667	Quartz Vein	336.69	3602.88	4754.212
B-92-1	667	678	Qtz Lithic Bx	334.829	3602.521	4745.926
B-92-1	678	687	Stockwork Zone	332.642	3602.095	4736.177
B-92-1	687	735	1d	326.442	3600.843	4708.388
B-92-1	735	777	Stockwork Zone	316.697	3598.814	4664.502
B-92-1	777	801	1b	309.596	3597.274	4632.312
B-92-1	801	813.9	1a	305.646	3596.39	4614.312
B-92-1	813.9	814	EofH	304.257	3596.076	4607.97