Bullfrog Gold Corp.
897 Quail Run Drive
Grand Junction, CO 81505
Phone: 970-628-1670

NI 43-101 Technical Report
Mineral Resource Estimate
Bullfrog Gold Project
Nye County, Nevada

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Prepared by: Rex Bryan, PhD – Registered SME Member

TETRA TECH

350 Indiana Street, Suite 500 | Golden, CO 80401
Phone: 303-217-5700 | Fax: 303-217-5705

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1. EXECUTIVE SUMMARY

This report has been prepared for the Bullfrog Gold Corp. (Bullfrog, or the Company) for the Bullfrog Gold Project (Project) in Nevada. Gold was produced from the Bullfrog project by various companies, with Barrick Bullfrog Inc. being the most recent. The mine was exploited through open pit and underground methods and ore was processed in a conventional cyanidation mill.

This report has been prepared for the purposes of producing an independent estimation of mineral resources that are still available at the site. This included a review of the drilling data for the project to date, including historical drilling.

1.1 Location, Property Description & Ownership

The Bullfrog Gold Project is located in the Bullfrog Hills of Nye County, Nevada and in the southern half of the Bullfrog Mining District **(Figure 1-1)**. Basic amenities are available in the town of Beatty, which is 6.5 km (4 miles) east of the project. Las Vegas is the largest regional city with full services and is a 260 km drive to the site. Project properties are located in Sections 25, 26, 35 and 36 of T11S, R46E and Sections 1, 2, 3, 4, 5, 6, 8 9, 10, 11, 12, 13, 14, 15, `6, 17, and 23 of T12S, R46E, Mt. Diablo Meridian.

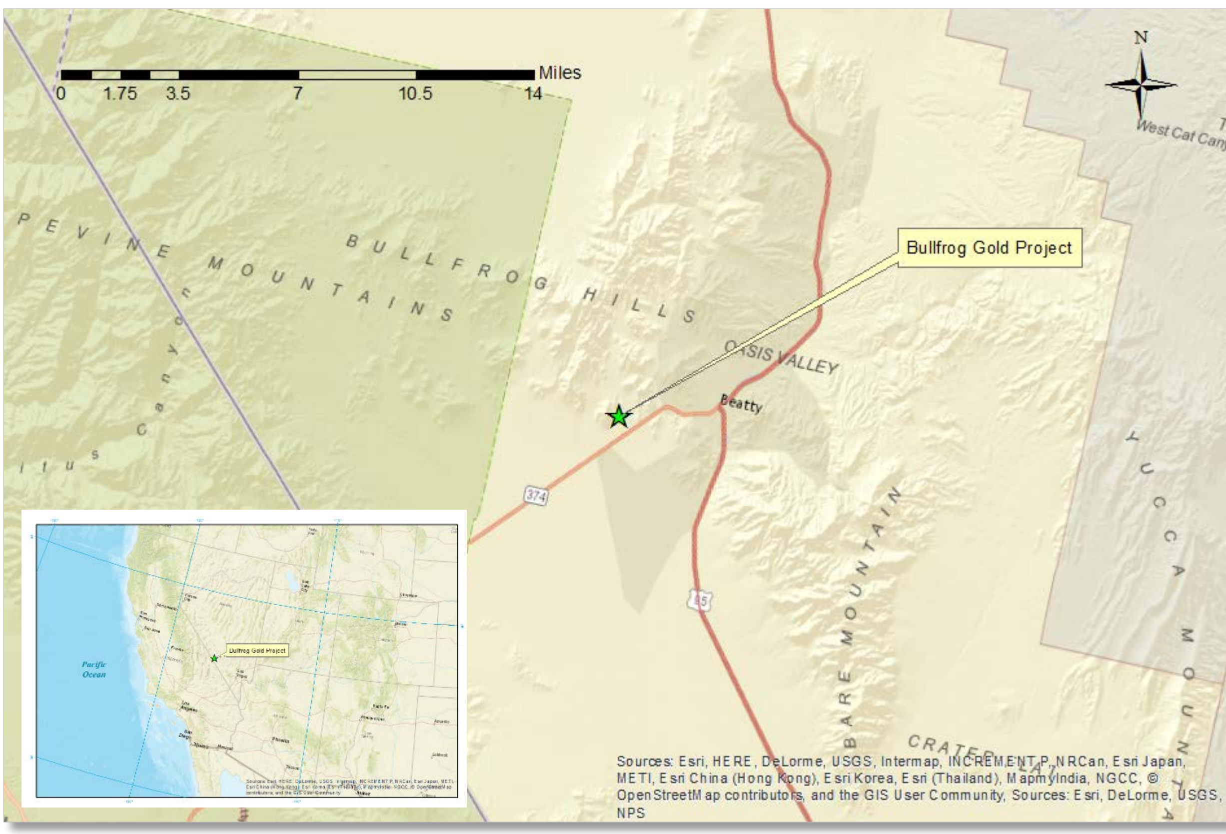

Figure 1-1: Location Map
(Scale bar is approximately 22.5 km long)

1.2 Geology & Mineralization

The Project is located in the southern Walker Lane trend within brittle upper-plate volcanic host rocks that were severely broken from dominant detachment faulting and associated dip-slip and strike-slip displacements. Epithermal solutions permeating the broken host rocks in the M-S and Bullfrog deposits precipitated micron-sized but relatively high-grade gold (Au) within major quartz-calcite veins and disseminated gold in associated stock works. The veins contain very little gangue minerals other than quartz, calcite and manganese oxides, the latter of which contributes to silver (Ag) recoveries that are lower than gold. The district geology map is shown below.

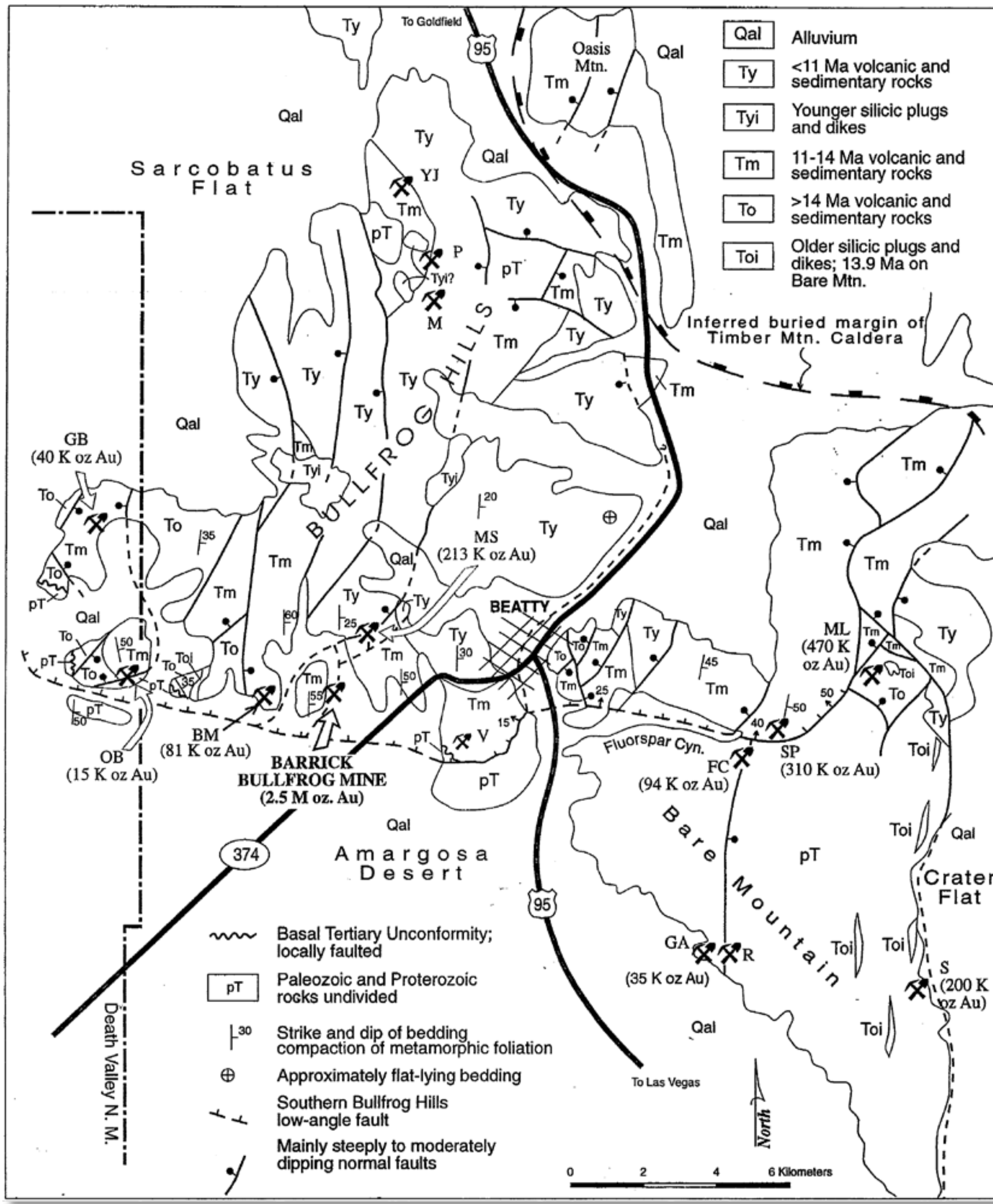

Figure 1-2: District Geology Map

The highest grades in the Bullfrog deposit typically correlate with zones of black manganese-rich material, where much of the early manganiferous calcite has been leached out, rendering the vein a rubble zone of quartz, calcite and wad. Veins continue up dip and down dip, but the gold grades and thicknesses diminish rapidly above and below these elevations. The veins and vein breccias associated with the mineralization are generally associated with the MP Fault and its immediate hanging wall. Mineralization also occurs in upper and lower Stockwork zones that are subparallel to the high-grade brecciated vein within the main fault structure.

1.3 Exploration, Drilling, Sampling & QA/QC

1.3.1 Exploration

Bullfrog's exploration activities to date have focused on the following:

- Acquiring, organizing, digitizing and vetting electronic and paper data bases obtained from Barrick mainly related to drill data, metallurgy and project infrastructure; and
- Maintaining and expanding the land holdings.

1.3.2 Drilling

The project drilling includes 1,262 holes, for a total of 250,641 meters completed between 1983 and 1996. Of the total, 1,243 m were cored and 230,521 m were drilled using reverse circulation methods. **Table 1-1** summarizes the project drilling by year.

Table 1-1: Project Drilling by Year

Year	Holes	Length (m)
1983	6	975
1984	37	3,560
1985	3	303
1986	29	3,364
1987	163	29,749
1988	321	66,325
1989	71	12,285
1990	154	37,114
1991	79	22,954
1992	23	4,907
1993	9	287
1994	210	31,362
1995	99	22,370
1996	58	15,254
Total	**1,262**	**250,641**

1.3.3 Sampling

Drilling and coring information used in this report was obtained from several drill programs that began in 1983 with St. Joe Minerals, continued with Bond Gold and Lac Minerals, and ended by Barrick in late 1996. Of 1,262 total holes drilled in the area, 147 holes included core and 1,243 holes were drilled using reverse circulation methods. Most of the cored holes included intervals of core plus RC segments. Percent recovery and RQD measurements were made on all core intervals. An assessment was made of the quality of the orientation data and the core was marked accordingly. The core was then logged, recording lithological, alteration, mineralization, and structural information including the orientation of faults, fault lineation's, fractures, veins, and bedding. With few exceptions, the entire lengths of the holes were sampled. Sample intervals were 5 feet and occasionally based on the geological logging, separating different lithologies and styles of mineralization and alteration. Samples were marked and tagged in the core box before being photographed, after which the core was sawed in half, with one half sent for assay and one half retained for future reference. Each sample interval was bagged separately and shipped to the lab for analysis.

Cuttings from nearly all reverse circulation drill programs were divided into two streams, one was sampled and the other was disposed during the reclamation of each drill site. Using a Jones splitter the sample stream was further divided into two sample bags, one designated for assaying and the second duplicate designated as a field reject. Samples were collected at five-foot intervals and bagged at the drill site. Each five-foot sample was sealed at the drill site and not opened until it reached the analytical lab. At each 20 foot rod connection, the hole was blown clean to eliminate material that had fallen into the hole during the connection. The designated assay samples for each five foot interval were collected by the site geologist and moved to a secure sample collection area for shipment to accredited laboratories off site. When duplicate samples were collected they were retained at the drill site as a reference sample, if needed. If the duplicate samples were not used they were blended with site materials during site reclamation.

1.3.4 QA/QC

The sampling QA/QC program was originally established by St. Joe Minerals. Subsequent owners followed the procedures with any necessary updates to meet quality assurance standards of the time. The standard practices included the supervision of drilling, logging of core, as well as in-stream sample submittal for blanks, certified standards and duplicate testing to ensure laboratory performance. All assay testing was completed by outside laboratories, such as Skyline, Legend, Iron King, Barringer, American Assay, and Chemex. Assay certificates are available and have been electronically scanned to complete the project drilling database.

1.4 Mineral Processing & Metallurgical Testing

Metallurgical testing programs that are relevant to the development plans of the Project are summarized below.

In 1986 St. Joe American performed two large column tests on 20 t (22 short tons) composites of M-S samples, and recovered 56% of the gold after 59 days of leaching material grading 0.034 opt and crushed to -19 mm (-3/4 inch). The other column recovered 49% of the gold after 59 days of leaching minus 304.8 mm (-12-inch) material grading 0.037 opt. Projected 90-day recoveries were 61% and 54% respectively.

Results from leach tests performed in 1994 by Kappes Cassiday of Reno, Nevada on 250 kg of sub-grade material from the Bullfrog mine are shown below:

	Bottle	Column	Column
Size, mesh, & mm (inch)	-100 mesh	-38 mm (-1.5")	-9.5 mm (-3/8")
Calc. Head, opt Au	0.029	0.035	0.029
Rec %	96.6	71.4	75.9
Leach time, days	2.0	41	41
NaCn, kg/t (lb/short ton)	0.5 (0.1)	0.385 (0.77)	5.35 (10.7)
Lime, kg/t (lb/short ton	1.0 (2.0)	0.155 (0.31)	1.75 (0.35)

In 1995 Barrick performed pilot heap leach tests on 765t (844 short tons)of BF subgrade material and 730 t (805 short tons) from the M-S pit. Both composites were crushed to 0.8 mm (-1/2 inch). Results are shown below.

	BF Low-Grade	M-S Ore
Calc. Head, opt Au	0.019	0.048
Calc. Head, opt Ag	0.108	0.380
Projected Au Rec %	67	74
Projected Ag Rec %	9	32
Leach Time, days	41	37
NaCn, kg/t (lb/short ton)	0.10 (0.20)	0.125 (0.25)
Lime, kg/t (lb/short ton)	Nil (Nil)	Nil (Nil)

1.5 Mineral Resource Estimation

Resources have been estimated for the Bullfrog deposit using a block model to fit the deposit strike for each of the areas. Two separate block models were created, one for the Bullfrog Pit (BF) area, and one of the Montgomery-Shoshone (M-S) area. Sub-blocking was used to help define the vein system. Two wireframe domains were built for the Bullfrog deposit, one for the high grade and one for the low grade gold. Vein solids were created for Polaris and Montgomery veins in the M-S pit area. Au and Ag grades were estimated using Ordinary Kriging on blocks independently within and also outside of wireframe constrained domains. Reporting of estimated blocks has been constrained by a base case pit optimization using input parameters deemed reasonable.

Although the mineral resources are pit constrained using reasonable cost assumptions, detailed costing and economic evaluations have not been performed. The pit optimizations only consider ounces on lands controlled by Bullfrog Gold, but the pit has been allowed to extend onto non controlled land for planning purposes. The pit optimizations include resources that have not demonstrated economic value and include inferred resources that are too speculative for the definition of reserves.

Estimated mineral resources within the base case pit constraint are shown in **Table 1-2** for the Bullfrog Pit area. Estimated mineral resources within the base case pit constraint is shown in **Table 1-3** for the M-S Pit area. Historically mined ounces were flagged and removed from the model before calculating the resource numbers. A total of all ounces for both deposits can be found in **Table 1-4**.

Table 1-2: Mineral Resource Estimate for the Bullfrog Pit Area

Classification	Cutoff Au g/t	Tonnes (M)	Au g/t	Ag g/t	Au oz (1000)	Ag oz (M)
Measured	0.36	2.05	0.88	2.35	58	0.15
Indicated	0.36	12.9	1.04	2.52	431	1.04
Measured + Indicated	0.36	14.95	1.02	2.50	489	1.2
Inferred	0.36	2.8	1.2	2.58	109	0.24

NOTES:
(1) Cutoff grade calculated using a metal price of $1,200 per troy ounce of Au and a recovery of 72% for Au.
(2) Mineral Resources have been pit shell constrained using the Lerch Grossman algorithm
(3) Metal prices do not exceed three-year trailing average as of the end of December 2016, per SEC guidance.

Table 1-3: Mineral Resource Estimate for the M-S Pit Area

Classification	Cutoff Au g/t	Tonnes (M)	Au g/t	Ag g/t	Au oz (1000)	Ag oz (M)
Measured	0.36	0.41	1.03	4.53	13.7	0.06
Indicated	0.36	0.71	0.99	3.72	22.7	0.09
Measured + Indicated	0.36	1.12	1.00	4.02	36.4	0.15
Inferred	0.36	0.045	1.17	5.53	1.69	0.008

NOTES:
(1) Cutoff grade calculated using a metal price of $1,200 per troy ounce of Au and a recovery of 72% for Au.
(2) Mineral Resources have been pit shell constrained using the Lerch Grossman algorithm
(3) Metal prices do not exceed three-year trailing average as of the end of December 2016, per SEC guidance.

Table 1-4: Measured and Indicated Resource Summary for Project

Classification	Cutoff Au g/t	Tonnes (M)	Au g/t	Ag g/t	Au oz (1000)	Ag oz (M)
Bullfrog	0.36	14.95	1.02	2.50	489	1.2
M-S	0.36	1.12	1.00	4.02	36.4	0.15
Total	0.36	16.07	1.02	2.61	525.4	1.35

NOTES:
(1) Cutoff grade calculated using a metal price of $1,200 per troy ounce of Au and a recovery of 72% for Au.
(2) Mineral Resources have been pit shell constrained using the Lerch Grossman algorithm
(3) Metal prices do not exceed three-year trailing average as of the end of December 2016, per SEC guidance.

Additional upside material can be provided by evaluating the low gold grade material between a 0.2 and 0.36 gold cutoff grades. This information is discussed in detail in Section 14. Instead of being stored in the waste rock facility, it is possible to heap leach this uncrushed material to recover additional gold and silver.

1.6 Interpretations & Conclusions

Drill hole samples were collected and analyzed using industry standard methods and practices at the time they were drilled, and based on the assay certifications, are sufficient to characterize grade and thickness and support the estimation of mineral resources. Given the grade and tonnage of the mineral resources estimated as part of this report, it is recommended the project be advanced to the preliminary economic assessment (PEA) study stage.

The Bullfrog project and deposit have several beneficial attributes that provide opportunities to justify further investigation by way of a PEA:

- The Project is located in a jurisdiction amenable to mining. Local permitting authorities and the community are accustomed to mine development and the potential economic benefits.
- The Town of Beatty with a population of approximately 1,000 is 6.4 km (4 miles) away and has adequate amenities and services.
- The Project is near infrastructure, including power lines on site, a paved highway to the site, water below the Bullfrog pit, a network of roads on site, and pit ramps that are in place.
- Years of production data and comprehensive heap leach tests have demonstrated acceptable heap leach recoveries at various crushed and run-of-mine sizes.
- Subject to acquiring additional lands, nearly all mine waste can be backfilled in the Bullfrog pit, which reduces waste haulage costs and avoids environmental impacts related to new or expanded waste dumps.
- The Project has potential to expand resources around the pits as well as exploration upside in the District.
- Extensive drilling helps defines several targets for expanding the pits and providing exploration upside.
- After 20+ years, existing pit walls remain stable up to 53 degrees.

Project risks include:

- Potential permitting and environmental issues may be a concern.
- Mineral resources have been constrained by an optimized pit shell; however, scoping study-level costing for mining and processing have not been undertaken.
- Timely acquisition of funding, additional land, and permits.

1.7 Recommendations

Current estimation of resources indicate the Bullfrog project warrants further advancement to the PEA study stage.

The following recommendations are made in context of the typical NI 43-101 project progression, from mineral resource to mineral reserves. The initial costs to follow that framework are summarized in **Table 1-5**.

Table 1-5: Approximated Costs of Recommended Work (US$ Currency)

Recommendation	Quantity	Cost Range (thousands)
In Fill and Conversion Drilling	2,400 m	$400
Environmental Consultation/Baseline & Permitting	One Study	$100-150
Land Acquisitions		To be determined
PEA	One Study	$75-150
Total:		**$575-700**

The Project needs to acquire the lands covering the entire Bullfrog pit to obtain additional resources and allow the backfilling of the Bullfrog pit with waste from expansions of the Bullfrog and M-S pits.

It is recommended that a local environmental consulting firm, experienced in the area of permitting and societal issues in the area, be retained to assist in baseline and background work that will be required as inputs into the feasibility and mine planning process. Some existing Baseline Studies already exist, due to the historic mining, but updates will be required for a minimum of:

- Geochemical characterization of the waste rock.
- Hydrologic characterization of the water in the Bullfrog Pit and in existing wells.
- Plant and wildlife surveys, mainly concerning the Desert Tortoise and bats.
- Meteorological Data.
- Cultural Surveys

Additional exploration holes are recommended to confirm resource estimations and condemn areas ultimately selected for siting Project facilities.

2. INTRODUCTION

This report has been prepared for Bullfrog Gold Corp. for the Bullfrog Gold Project in Nevada.

This report has been prepared for the purposes of detailing drilling data collected by multiple companies during the exploration and exploitation of the deposit in the past and to detail the results of an independent estimation of mineral resources calculated by Tetra Tech.

Technical information, including locations, orientations, mapping and analytical data has been supplied by Bullfrog. Information pertaining to title, environment, permitting and access has also been supplied by Bullfrog, and the author of this report has relied on the experts supplying this information. Introductory summaries pertaining to infrastructure, location, geology and mineralization have been primarily sourced from the historical reports from past producers and by Bullfrog.

The project site was inspected by Dr. Rex Bryan of Tetra Tech and primary author of this report on August 4th, 2017.

2.1 Units of Measure

All references to dollars in this report are to U.S. dollars (US$) unless otherwise noted. Distances, areas, volumes, and masses are expressed in the metric system unless indicated otherwise. Historic data is expressed in English units, such as feet and tons.

For the purpose of this report, common measurements are given in metric units. All tonnages shown are in Tonnes (t) of 1,000 kilograms, and precious metal grade values are given in grams per tonne (g/t), precious metal quantity values are given in troy ounces (toz). To convert to English units, the following factors should be used:

- 1 short ton = 0.907 tonne (T)
- 1 troy ounce = 31.1035 grams (g)
- 1 troy ounce/short ton = 34.286 grams per tonne (g/t)
- 1 foot = 30.48 centimeters (cm) = 0.3048 meters (m)
- 1 mile = 1.61 kilometer (km)
- 1 acre = 0.405 hectare (ha)

2.2 Abbreviations

The following is a list of the abbreviations used in this report:

Abbreviation	Unit or Term
2D	two-dimensional
3D	three-dimensional
Ag	silver
Au	gold
BFGC	Bullfrog Gold Corporation
cm	centimeter
cm^3	cubic centimeters
g	gram
g/t	grams per tonne
g/cm^3	grams per cubic centimeter
ha	hectare
kg	kilogram
km	kilometer
km^2	square kilometers
km/hr	kilometers per hour
m	meter
M	million
Mm	millimeter
mm/yr	millimeters per year
Mya	million years before present
NDEP	Nevada Department of Environmental Projection
NI 43-101	Canadian Securities Administrators' National Instrument 43-101
NSR	Net Smelting Return
Pb	lead
PEA	Preliminary Economic Assessment
ppm	parts per million
Project	Bullfrog Gold
QA/QC	quality assurance/quality control
T	metric ton
toz	Troy ounces
T/d	Tonnes per day
US$	United States dollars

3. RELIANCE ON OTHER EXPERTS

The author is relying on statements by Bullfrog Gold concerning legal and environmental matters mainly included in Section 4.0 and 5.0 of this report.

The author is relying on statements and documents provided by Dave Beling, PE, President of Bullfrog Gold, regarding:

- Permitting requirements to initiate mining,
- Location of the land holdings,
- Status of the land holdings,
- Surface access per the agreements and US mining law,
- Royalty and purchase agreements relating to the land holdings concessions, and
- Other information related to the Project.

4. PROPERTY DESCRIPTION AND LOCATION

The Project is located in the Bullfrog Hills of Nye County, Nevada (**Figure 4-1**). BFGC's property covers approximately 1,539 hectares of patented and unpatented lode mining claims in Sections 25, 26, 35 and 36 of T11S, R46E and Sections 1, 2, 3, 4, 5, 6, 8, 9, 10, 11, 12, 14, 15, 16, 17, and 23 of T12S, R46E, Mt. Diablo Meridian. The Project is accessible via a 2¼ hour (260 km) drive north of Las Vegas, Nevada along US Highway 95. Las Vegas is serviced by a major international airport and is the closest major hub for providing equipment, supplies, services and other support to the Project. The Project lies 4 miles west of the Town of Beatty, Nevada, which has a population of approximately 1,000 and contains most basic services, including motels, gasoline stations, schools, and a variety of stores and services. Access around the Project is provided by a series of reasonably good gravel roads that extend to the existing mines and important exploration areas.

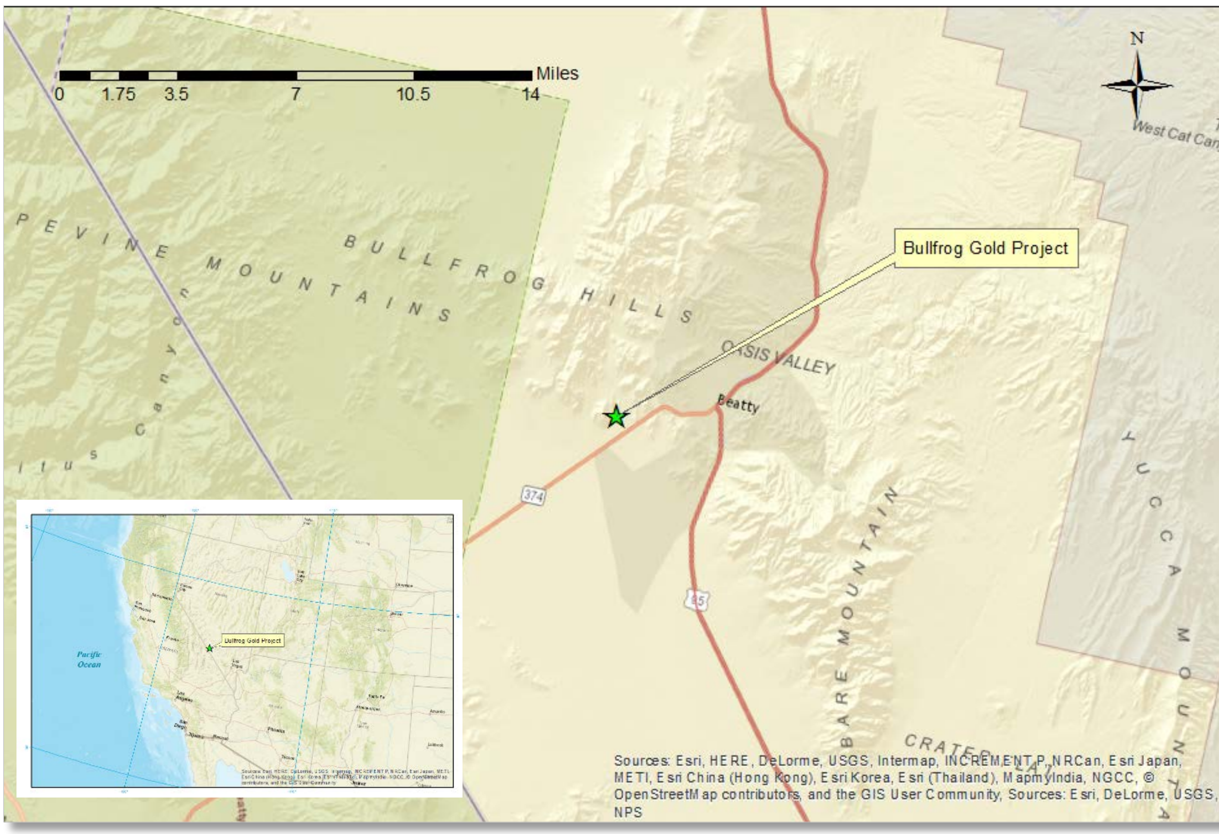

Figure 4-1: Location Map

BFGC has four option/lease/purchase agreements in place and has located 61 claims that give it control of 161 unpatented lode mining claims, 44 patented claims and 8 mill site claims. These lands are listed in **Table 4-1**. A property map with the locations shown in detail can be seen below in **Figure 4-2**.

Table 4-1: Lands Under BFGC Control

Owned Lands – Standard Gold Corp *Acquired September 2011*	
Claim Name	**NMC BLM Serial No.**
BEATTY CON #1	109662
LUCKY QUEEN	109667
BC #8 BABINGTON	109697
BC #9 CORNELL	109698
BC #10 FLIN FLON 2	109699
BVD 6	987963
BVD 5	987964
BVD 324	987965
BVD 323	987966
BVD 322	987967
BVD 321	987968
BVD 317	987969
BVD 316	987970
BVD 315	987971
BVD 314	987972
BVD 303	987973
BVD 302	987974
BVD 301	987975
BVD 300	987976
BVD 207	987977
BVD 206	987978
BVD 205	987979
BVD 204	987980
BVD 203	987981
BVD 202	987982
BVD 201	987983
BVD 200	987984
BVD 107	987985
BVD 106	987986
BVD 105	987987
BVD 41	987988
BVD 40	987989
BVD 32	987990
BVD 31	987991
BVD 30	987992
BVD 29	987993
BVD 36	987994
BVD 35	987995
BVD 34	987996

Owned Lands – Standard Gold Corp ***Acquired September 2011***	
Claim Name	**NMC BLM Serial No.**
BVD 33	987997
BVD 28	987998
BVD 27	987999
BVD 26	988000
BVD 25	988001
BVD 19	988002
BVD 18	988003
BVD 17	988004
BVD 16	988005
BVD 24	988006
BVD 23	988007
BVD 22	988008
BVD 21	988009
BVD 20	988010
BVD 15	988011
BVD 14	988012
BVD 13	988013
BVD 12	988014
BVD 11	988015
BVD 39	988016
BVD 38	988017
BVD 37	988018
BVD 10	988019
BVD 9	988020
BVD 8	988021
BVD 7	988022
BVD 4	988023
BVD 3	988024
BVD 2	988025
BVD 1	988026
BVD 401	992989
BVD 402	992990
BVD 403	992991
BVD 404	992992
BVD 405	992993
BVD 406	992994
BVD 407	992995
BVD 408	992996
BVD 409	992997
BVD 410	992998

Patent Name	Mineral Survey No.
Providence	2470
Aurium	2654
Optioned Lands – Mojave Gold Mining Co. ***Acquired October 29, 2014***	
Patent Name	**Mineral Survey No.**
Polaris Fraction	2426
Inaugural Fraction	2426
Three Peaches	2426
Little Fraction	2471A
Indian Johnnie	2471A
Shoshone	2471A
Del Monte Fraction	2501A
Shoshone Two	2471A
Shoshone Three	2471A
Oro Grande	2470
Shoshone Extension	2470
Greenhorn	2470
Lease/Optioned Lands – Barrick Bullfrog Inc. ***Acquired March 23, 2015***	
Claim Name	**NMC BLM Serial No.**
Diny F	443898
Shorty 1	1058705
Shorty 2	1058706
Shorty 3	1058707
Shorty 4	1058708
Shorty 5	1058709
Shorty 6	1058710
Shorty 7	1058711
Shorty 8	1058712
Shorty 10	1058713
Shorty 11	1058714
Shorty 12	1058715
East Side	128709
Frog Extension	128711
Frog No. 1	128712
Cashboy	128714
Golden Age 16	298803
Golden Age 17	583388
Ace No. 1	112229
Yankee Girl #2 Lode Re-Discovered	128710

Mill Site	
BFMS 257	528775
BFMS 256	528776
FMS 255	528774
BFMS 254	528773
BFMS 253	528772
BFMS 252	528771
BFMS 251	528770
BFMS 250	528769
Patent Name	**Mineral Survey No.**
Polaris	2510 A
Delmonte	2510 A
Emerald	2316
Ruby	2316
Sunset 1	2539
Sunset 2	2539
Leased Lands – Luna Landing, LLC ***Acquired July 1, 2017***	
Patent Name	**Mineral Survey No.**
Elkhorn	2736
Red Bluff	2540
Black Bull	2425
Bell Boy Fraction	2425
South Fraction	2425
Lookout	2461
Molly Gibson #1	3043
Molly Gibson # 2	3043
Molly Gibson #3	3043
Molly Gibson #4	3043
Molly Gibson #5	3043
Rand,	2784
Rand #1	2784
Rand #2	2784
Rand #3	2784
Rand Fraction	2784
Early Bird	2491
Unexpected	2735
Scorpion	2411
St. Anthony	2734
Eva Bell	2576
Gem Fraction	2377
Quartzsite Fraction	2422
Annex	2715

Claims Located – Rocky Mountain Minerals Corp. ***Located June 2017***	
Claim Name	**NMC BLM Serial No.**
BFGC 1	1147851
BFGC 2	1147852
BFGC 3	1147853
BFGC 4	1147854
BFGC 5	1147855
BFGC 6	1147856
BFGC 8	1147857
BFGC 9	1147858
BFGC 10	1147859
BFGC 11	1147860
BFGC 12	1147861
BFGC 13	1147862
BFGC 14	1147863
BFGC 15	1147864
BFGC 16	1147865
BFGC 17	1147866
BFGC 18	1147867
BFGC 19	1147868
BFGC 20	1147869
BFGC 21	1147870
BFGC 22	1147871
BFGC 23	1147872
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BFGC 25	1147874
BFGC 26	1147875
BFGC 27	1147876
BFGC 28	1147877
BFGC 29	1147878
BFGC 30	1147879
BFGC 31	1147880
BFGC 32	1147881
BFGC 33	1147882
BFGC 34	1147883
BFGC 35	1147884
BFGC 36	1147885
BFGC 37	1147886
BFGC 38	1147887
BFGC 39	1147888
BFGC 40	1147889
BFGC 41	1147890

Claims Located – Rocky Mountain Minerals Corp. ***Located June 2017***	
Claim Name	**NMC BLM Serial No.**
BFGC 42	1147891
BFGC 43	1147892
BFGC 44	1147893
BFGC 45	1147894
BFGC 46	1147895
BFGC 47	1147896
BFGC 48	1147897
BFGC 49	1147898
BFGC 50	1147899
BFGC 51	1147900
BFGC 52	1147901
BFGC 53	1147902
BFGC 54	1147903
BFGC 55	1147904
BFGC 56	1147905
BFGC 57	1147906
BFGC 58	1147907
BFGC 59	1147908
BFGC 60	1147909
BFGC 61	1147910
BFGC 62	1147911

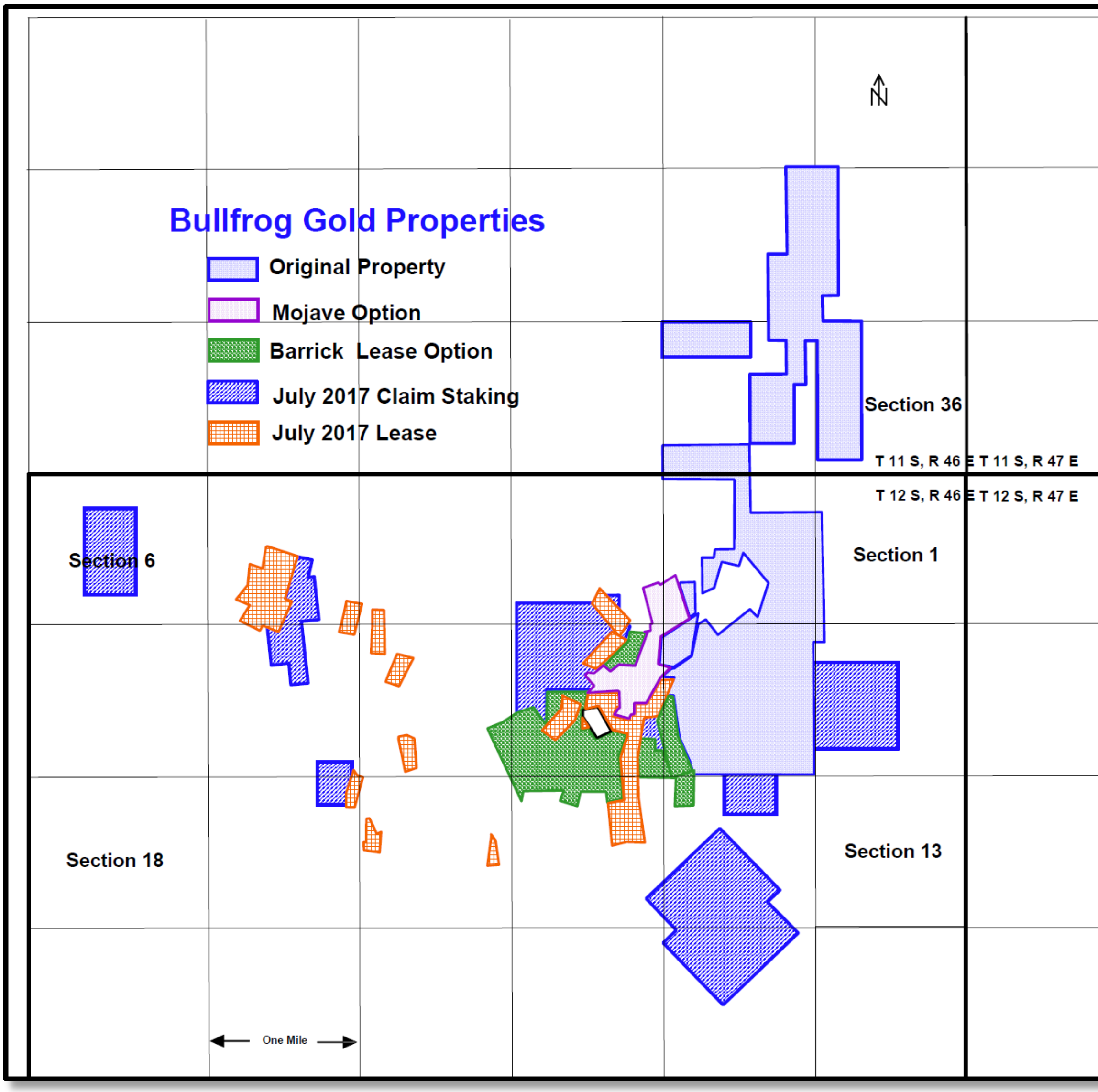

Figure 4-2: Property Map of the Bullfrog Project

4.1 NPX Assignment of Lands

In September 2011 the Company issued 14.4 million shares of BFGC to the shareholders of Standard Gold Corp. (SGC) to acquire 100% of SGC and its assets. SGC is a private Nevada corporation and now wholly owned by the Company. Concurrently, NPX Metals, Inc. (NPX) and Bull Frog Holding, Inc. (BHI) assigned all title and interests in 79 claims and two patents to Standard Gold Corp. (SGC). The Company granted a production royalty of 3% NSR on the property to NPX and BHI, plus an aggregate 3% NSR cap on any acquired lands within one mile of the 2011 boundary. Thus, NPX and BHI would not receive any royalty on acquisitions having a 3% or greater NSR.

4.2 Mojave Gold Option

In March 2014, the Company formed Rocky Mountain Minerals Corp. (RMMC), a private Nevada corporation, as a wholly owned subsidiary specifically for holding and acquiring assets. On October 29, 2014, RMMC exercised an option to purchase from Mojave Gold Mining Co. 12 patents west and adjacent to the Company's initial property and that cover the NE half of the M-S pit. Mojave was paid 750,000 shares of BFGC plus $16,000. RMMC agreed to make annual payments totaling $180,000 over nine years to fully exercise the option, and expend as a minimum work commitment for the benefit of the Property $100,000 per year and a total of $500,000 over five years on the Properties and surrounding lands within one-half mile of the 12 Mojave patents. Alternatively, RMMC can pay cash to Mojave at 50% of the difference between the minimum required and the actual expenditures. Mojave retained a sliding scale Net Smelter Return royalty ranging from 1% for gold prices below $1,200/ounce and up to 4% for gold prices above $3,200 per ounce. For reference, Barrick terminated a lease on the 12 Mojave patents in mid-2000 (then known as the Dees group) and all residual access rights in 2010.

4.3 Barrick Bullfrog Inc. Lease & Option

On March 23, 2015, Barrick exercised a lease/option for RMMC to acquire six patents, 20 unpatented claims, and eight mill site claims as shown in **Figure 4-2**. These Barrick lands cover the SW half of the M-S pit and the northern one-third of the Bullfrog deposit. Terms of the lease/option include five annual work commitments of $100,000, $200,000, $300,000, $400,000 and $500,000 by the respective anniversaries, and payment of 3.25 million BFGC shares upon exercise of the option by year five. Barrick retained a back-in right to re-acquire a 51% interest in the Barrick properties within a 150-day period after the Company establishes a 1.0 million ounce mineral resource estimate compliant with NI 43-101 standards and subject to reimbursing the Company at two and one-half times the Company's expenditures on the Barrick properties.

Royalties on the Barrick leased lands are as follows:

- Gross royalty of 2% to Barrick on all leased lands, plus
- Overriding gross royalty of 5% from three mining claims located in the northern part of the Bullfrog Pit but owned by Barrick, and
- Overriding gross royalty of 5% from the Sunset 1 and Sunset 2 patents located in the east part of the Mystery Hill area.

4.4 Lunar Landing Lease

On July 1, 2017, RMMC entered a lease with Lunar Landing LLC on 24 patents in the Bullfrog District:

- Two patents are adjacent and west of the M-S pit that could allow potential expansion of the pit down dip of the Polaris vein and stock work system.
- Ten patents have provided the Company with contiguous and connecting lands between the M-S and Bullfrog pits. These patents will also allow further expansions of the Bullfrog pit to the north and east.
- Four patents are within 0.5 to 1.2 miles west of the Bullfrog pit in the vicinity of the Bonanza Mountain open pit mine.

- Eight patents are in an exploration target area located about 1.5 miles NW of the Bullfrog pit and where the Company has owned the Aurium patent since 2011.

The lease includes the following:

- The Company paid $26,000 on signing and is scheduled to annually pay $16,000 for years 2-5, $21,000 for years 6-10, $25,000 for years 11-15, $30,000 for years 16-20, $40,000 for years 21-25 and $45,000 for years 26-30.
- Production royalty of 5% net smelter returns with the right to buy-down to 2.5%.
- The Company is to expend as a work commitment not less than $50,000 per year and $500,000 in total to maintain the lease.
- The Company has rights to commingle ores and the flexibility to operate the Project as a logical land and mining unit.

4.5 Other Property Considerations

All of the unpatented lode mining claims are on U.S. public land administered by the Bureau of Land Management ("BLM") and, therefore, are subject to exploration and development permits as required by the several current regulations. The unpatented lode mining claims require annual payments of $155 per claim to the BLM and $12 per claim to Nye County. Total fees paid in 2016 for 107 lode and mill site claims was $17, 870. Nye County property taxes paid in 2016 was approximately $500 for 20 patents.

In summary, the lands controlled by BFGC are in good standing with no significant liens, encumbrances or title adversities.

4.6 Environmental and Permitting

The author is not aware of any outstanding environmental, reclamation or permitting issues that would impact future exploration work. Future exploration work will require a Plan of Operations to be filed with the BLM and the Nevada Department of Environmental Protection.

The following outlines the general framework for permitting a mine in Nevada and the required permits. Many of the permits discussed herein apply to the construction stage and are not currently being pursued.

Exploration activities on Federal mining claims on BLM lands requires a Plan of Operations rather than a Notice of Intent to Drill due to the area being designated desert tortoise habitat. A Plan of Operations is also required with the Nevada Department of Environmental Protection ("NDEP") to fulfill the State of Nevada permitting obligations on private and public lands, respectively. Reclamation bonds related to environmental liabilities need to be calculated and posted to cover activities on the property. Additional permits and bonding will be required for developing, constructing, operating and reclaiming the Project.

Additional Baseline Studies will be required to update the historical studies by Barrick. This will include geochemistry, hydrologic studies of the in pit water and water in existing wells, plant and wild life surveys, meteorological information, and cultural surveys. Major permits, not inclusive of the Plan of Operations above, that will be required include:

- **Water Pollution Control (WPCP):** The WPCP application must address the open pit, heap leach pad, mining activities and water management systems with respect to potentially degrading of the waters of Nevada. Sufficient engineering, design and modeling data must be included in the WPCP. A Tentative Permit Closure Plan must be submitted to the NDEP-BMRR in conjunction with the WPCP. A Final Permanent closure Plan will be needed two years prior to Project closure.

- **Air Quality:** An application for a Class II Air Quality Permit must be prepared using Bureau of Air Pollution Control (BAPC) forms. The application must include descriptions of the facilities, a detailed emission inventory, plot plans, process flow diagrams and a fugitive dust control plan for construction and operation of the Project. A Mercury Operating Permit and a Title V Operating permit will also be necessary for processing loaded carbon or electro-winning precipitates.
- **Water Right:** Water rights will need to be transferred from Barrick and/or obtained from the Nevada Division of Water Resources (NDWR) for producing Project water.
- **Industrial Artificial Pond**: Water storage ponds, which are part of the water management systems, will require Industrial Artificial Pond permits (IAPP) from the Nevada Department of wildlife. Approval from the Nevada State Engineer's Office is also required if embankments exceed specified heights.

Additional minor permits will be required for the project to advance to production and are listed in **Table 4-2** below.

Table 4-2: Additional Minor Permits Required

Notification/Permit	Agency
Mine Registry	Nevada Division of Minerals
Mine Opening Notification	State Inspector of Mines
Solid Waste Landfill	Nevada Bureau of Waste Management
Hazardous Waste Management Permit	Nevada Bureau of Waste Management
General Storm Water Permit	Nevada Bureau of Water Pollution Control
Hazardous Materials Permit	State Fire Marshall
Fire and Life Safety	State Fire Marshall
Explosives Permit	Bureau of Alcohol, Tobacco, Firearms & Explosives
Notification of Commencement of Operation	Mine Safety and Health Administration
Radio License	Federal Communications Commission
Public Water Supply Permit	NV Division of Environmental Protection
MSHA Identification Number and MSHA Coordination	U.S. Department of Labor Mine Safety and Health Administration (MSHA)
Septic Tank	NDEP-Bureau of Water Pollution Control
Petroleum Contaminated Soils	NV Division of Environmental Protection

4.7 Significant Risk Factors

The author is not aware of any outstanding environmental, reclamation or permitting issues that would impact future exploration work.

The author is unaware of any other significant risk factors that may affect access, title, or right or ability to perform work on the property.

5. ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 Accessibility

The Bullfrog Project is accessible via a 2½ hour (120 mile) drive north of Las Vegas, Nevada on US Highway 95. Las Vegas, the largest city in Nevada, is serviced by a major international airport, and has ample equipment, supplies and services to support many of the Project's needs. The Project is 4 miles west of the Town of Beatty, Nevada via a paved highway. Beatty has a population of approximately 1,000 and can provide basic housing, services and supplies. Access around the Project is by a series of reasonably good gravel roads that extend to the open pit mines and most of the significant exploration areas.

5.2 Physiography, Climate and Vegetation

Figure 5-1: Photo of Bullfrog Hills at Rhyolite

The Bullfrog Project is in Western Nevada's high desert, which receives about 15 cm of precipitation per year, mostly as modest snowfall in the winter and thunderstorms in the summer. Temperatures typically range from -12°C (10°F) in winter to 43.3°C (110°F) in the summer. Due to the relatively mild climate at the Project, the operating season is year round.

The hills at the Project are covered with sparse low brush including creosote, four-wing saltbush, rabbit brush, and Nevada ephedra. The Project is in the Basin and Range province, but the local topographic relief is only a few hundred feet. Elevations in the main Project areas range from 1,035 m in the valleys to 1,270 m at the peak of Ladd Mountain and 1,320 m at the peak of Montgomery Mountain. Most of the Project is characterized by low hills separated by modest width valleys. Although the U.S. Fish and Wildlife Service has designated the area as habitat for desert tortoise—a threatened and endangered species—

Barrick and others have successfully coped with this designation, and the rough terrain is not conducive for these species. Additional studies may be required to meet requirements regarding the tortoise habitat.

5.3 Local Resources and Infrastructure

BFGC maintains sufficient surface rights to support mining operations, including areas for potential waste disposal, tailings storage, heap leach pads and potential mill sites. The Company recently located additional mining claims and is pursuing the acquisition of other lands in the area. Most claim blocks are contiguous and Bullfrog's Lease/Option includes Barrick's appurtenant water rights. The towns of Beatty, Pahrump and Tonopah in Nye County have populations that support mining operations in the area.

Valley Electric Association based in Pahrump, Nevada owns a 138 KV transmission line and a 24.9 KV distribution line that remain on-site and serviced mining at the site previously. The substation connected to the 24.9 KV line remains on-site, but the transformers and switchgear have been removed. Current monthly demand and energy rates are $4.00/kw and $0.096/kw-hr, respectively.

Pumping from relatively shallow wells completed near the bottom of the Bullfrog pit is required to access deeper mineralization and could produce most of the Project water needs. Water may also be available from Barrick's production wells located a few miles south of Highway 374, possibly from the Town of Beatty wellfield in Section 2, and to a limited extent from deepening the M-S pit.

6. HISTORY

The original Bullfrog deposit was discovered in 1904 by Frank "Shorty" Harris and Ernest Cross. This deposit is located 3.5 miles WSW of the Montgomery Shoshone (M-S) mine and initially had un-recorded but minor production. In 1904 the M-S deposit was discovered and an underground mine was developed to the 700-foot level. A 300-tpd cyanidation mill was constructed for processing the mined material. The M-S operation recovered 67,000 gold equivalent ounces from 141,000 tons or 0.48 gold ounce/ton (opt) during the period 1907 to 1911. The mine was shut down in late 1910 due to declining grades and operating issues at depth. The adjacent Polaris mine produced 4,900 ounces of gold from 9,500 tons, or an average recovery of 0.52 gold opt.

Through 1911 the District produced 94,000 ounces of gold, but thereafter only minor exploration, development, and production activities occurred until St. Joe American successfully initiated modern exploration programs in 1982. In July 1987, Bond International Gold acquired St. Joe and constructed a nominal 9,000-tpd cyanidation mill in July 1989. In November 1989, Lac Minerals acquired Bond's interest. In September 1994, Lac was acquired by Barrick. Recorded Project gold production from 1989 to 1999 is summarized in **Table 6-1**.

Table 6-1: Bullfrog Project Production

Year	Mined Tons	Gold Rec. OPT	Gold Rec. Oz	Silver Rec. Oz	Source Report
1989	1,025,000	0.060	56,771	35,752	Bond Gold
1990	3,036,000	0.080	220,192	228,647	Bond Gold
1991	2,988,000	0.073	198,863	188,824	Lac Min.
1992	3,173,000	0.111	323,825	313,100	Lac Min.
1993	3,080,000	0.125	354,900	469,899	Lac Min.
1994	3,093,000	0.105	301,000	NR	Barrick
1995	3,110,100	0.062	176,307	NR	Barrick
1996	3,008,600	0.073	205,300	NR	Barrick
1997	3,070,700	0.073	206,571	NR	Barrick
1998	3,213,000	0.070	208,123	NR	Barrick
1999	From Stockpiles		77,000	NR	NV G.S.
Total/Avg.	**28,797,400**	**0.081**	**2,328,852**	**2,493,591** *est.*	
	Mine	**Ore Tonnes**	**G Gold/T Ore**	**Gold Oz Rec.**	**Years Mined**
	BF Pit	18,428,840	2.44	1,346,852	1989 – 1994
	BF UG	2,782,077	8.30	690,000	1992 – 1998
	M-S Pit	3,504,309	2.10	220,000	1994 – 1997
	Bonanza Pit	1,416,715	1.70	72,000	1995 – 1996
		26,131,942	**2.98**	**2,328,852**	

Open pit mine production began in 1989 and underground mine production started in 1992 in the Bullfrog deposit. Bullfrog pit operations were terminated in late 1994, with the underground mine scheduled to produce the remaining Bullfrog reserves. The M-S deposit was open pit mined between 1994 and 1997, during which time the Bonanza Mountain deposit was also mined. Underground operations were shut down in late 1998 due to adverse economic conditions and depletion of remaining reserves. During the last years of mill operations, all remaining low- and high-grade stockpiles, grading +0.5 gold g/t, were blended with underground ores. For reference, gold prices averaged less than $290 per ounce during 1998 and 1999 and hit a multi-year low of $252/oz in August 1999.

By December 2000 Barrick completed all major reclamation and closure requirements, and subsequently removed all mine and processing equipment and buildings. Per Barrick's permit requirements, the deep north part of the Bullfrog pit has now been backfilled with alluvium to an elevation of 924 meters to cover the gradually rising water table, which currently is at an elevation of 906 m. There has been no backfilling in the M-S pit. Since 2000 no significant activities in the south half of the Bullfrog Mining District have been performed, other than reclamation by Barrick.

7. GEOLOGICAL SETTING AND MINERALIZATION

The following Geological Setting and Mineralization section was in large measure excerpted with permission from a paper presented at the Geological Society of Nevada Symposium "Geology and Ore Deposits of the American Cordillera", April 10-13, 1995, titled "Geology and Mineralization of the Bullfrog Mine and Vicinity Nye County, Nevada."

7.1 Regional Geology

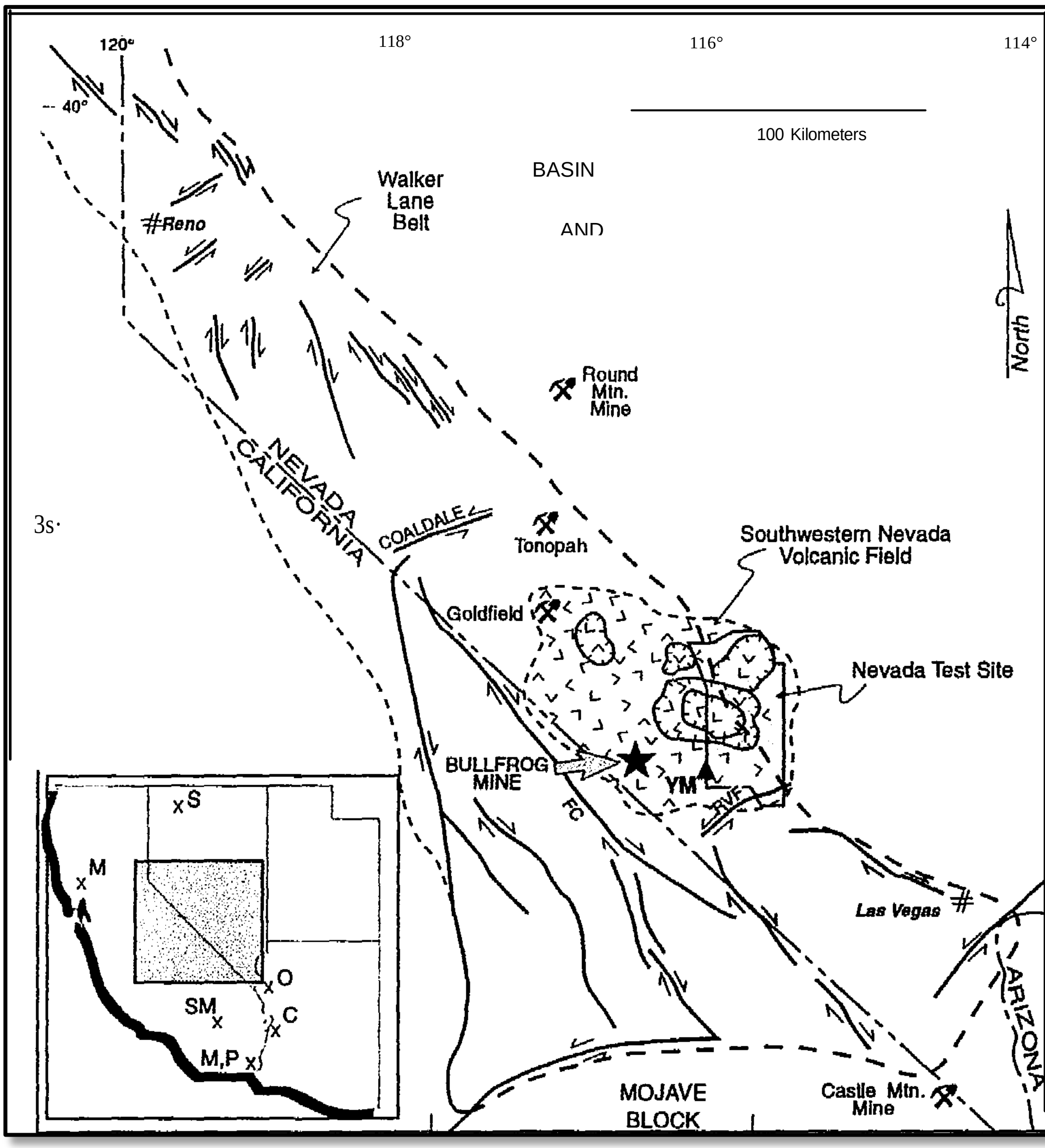

Figure 7-1: Regional Setting of the Bullfrog Mine (Eng et al., 1996)

The Bullfrog Project lies in the southwestern portion of the Great Basin along the southern part of the Walker Lane structural belt (Stewart, 1988) and in the southwestern part of the southwestern Nevada Volcanic Field (Noble et al., 1991). The Walker Lane lies along the western margin of the Great Basin and is bounded to the west by the Sierra Nevada province (**Figure 7-1**). Stewart (1988) divided the north-trending Walker Lane belt into nine blocks characterized by different structural fabric and development. The boundaries between blocks are commonly major strike slip faults or ill-defined transitions of structural fabric. The Bullfrog District lies near the southwestern margin of the Goldfield block. This block shows a general lack of strike slip faults but has locally substantial large-scale Late Tertiary extension faults notably in the Mineral Ridge Weepah Hills area to the north and detachment type faulting in the Bullfrog Hills, and Bare Mountain area to the south.

The Goldfield block is bounded on the west by the northwest-striking right-lateral Death Valley-Furnace Creek fault zone, which is one of the largest strike-slip faults in the Walker Lane with approximately 40-100 km of right-lateral displacement (cf. Stewart, 1967; McKee, 1968), and on the north and south by the east-northeast striking, left-lateral Coaldale fault zone and Mine Mountain-Rock Valley fault zones, respectively. The eastern boundary of the Goldfield block is less well defined; it lies buried under alluvium of Cactus Flat and is further obscured by volcanic centers of the southwest Nevada volcanic field.

The Bullfrog Hills are in the western part of the south-western Nevada volcanic field (**Figure 7-1**) which encompasses a complex of nested and overlapping calderas that developed between about 15 - 11 Ma (see Byers et al., 1989; Sawyer et al., 1994 and references therein). Two additional volcanic centers formed to the northwest at 9.4 Ma and 7.5 Ma (Noble et al., 1984). Many of the Tertiary volcanic rocks in the Bullfrog Hills came from these volcanic centers which collectively erupted >13,500 km^3 of magma. Source areas for some of the older volcanic units (>14 Ma) in the Bullfrog Hills are less well known, whereas the younger small-volume tuffs and lavas (11-10 Ma) appear derived mainly from flow domes within the Bullfrog Hills (Noble et al., 1991; Connors, 1995; Weiss et al., 1995).

Large-scale extension of the Bullfrog Hills in the mid- to late-Miocene led to moderate to steep eastward tilting of rocks along listric normal faults in the hanging wall of a major low-angle fault zone, recently referred to as a "detachment fault" (e.g. Hamilton, 1988, Maldonado 1990a, b). Most of the extensional faulting and tilting in the Bullfrog Hills temporally overlapped with volcanism in the southwestern Nevada volcanic field and with eruption of local tuffs and lavas in the Bullfrog Hills. Precious metal mineralization in the southern Bullfrog Hills occurred during the final episodes of large-scale extension and tilting

7.2 Local and Property Geology

Rocks in the southern Bullfrog Hills consist of lower- and upper-Proterozoic metamorphic rocks, Paleozoic marine sedimentary rocks, and Cenozoic volcanic and sedimentary rocks; Mesozoic sedimentary rocks are absent. Tertiary volcanic and less abundant sedimentary rocks are exceptionally well exposed, and record an episode of major crustal extension and volcanism, and are the principal hosts to precious metal deposits. The Proterozoic and Paleozoic rocks are only exposed locally, and because they have limited potential for hosting economic precious metal deposits in the area they were not studied in detail and are only discussed briefly here.

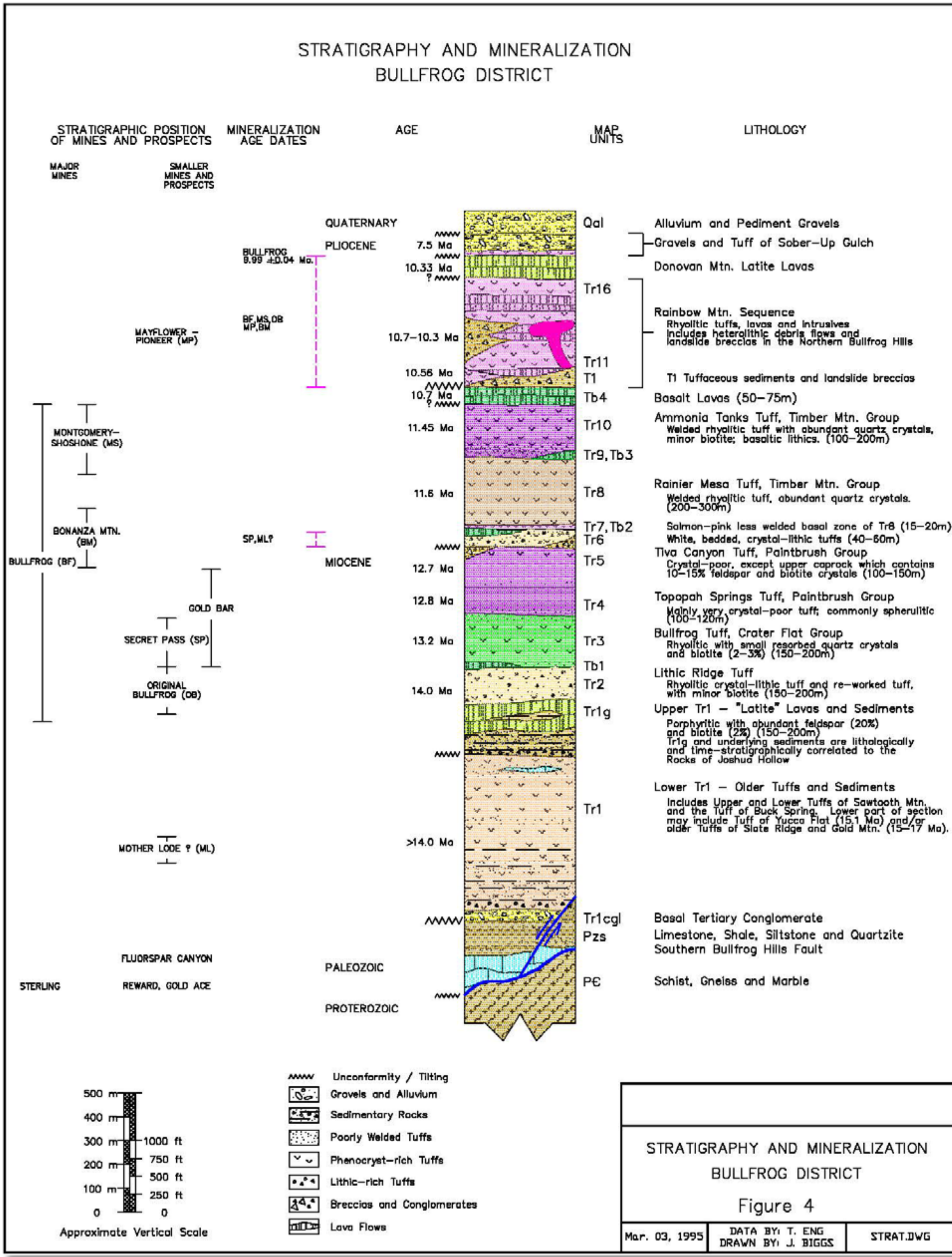

Figure 7-2: Bullfrog District – Stratigraphy and Mineralization

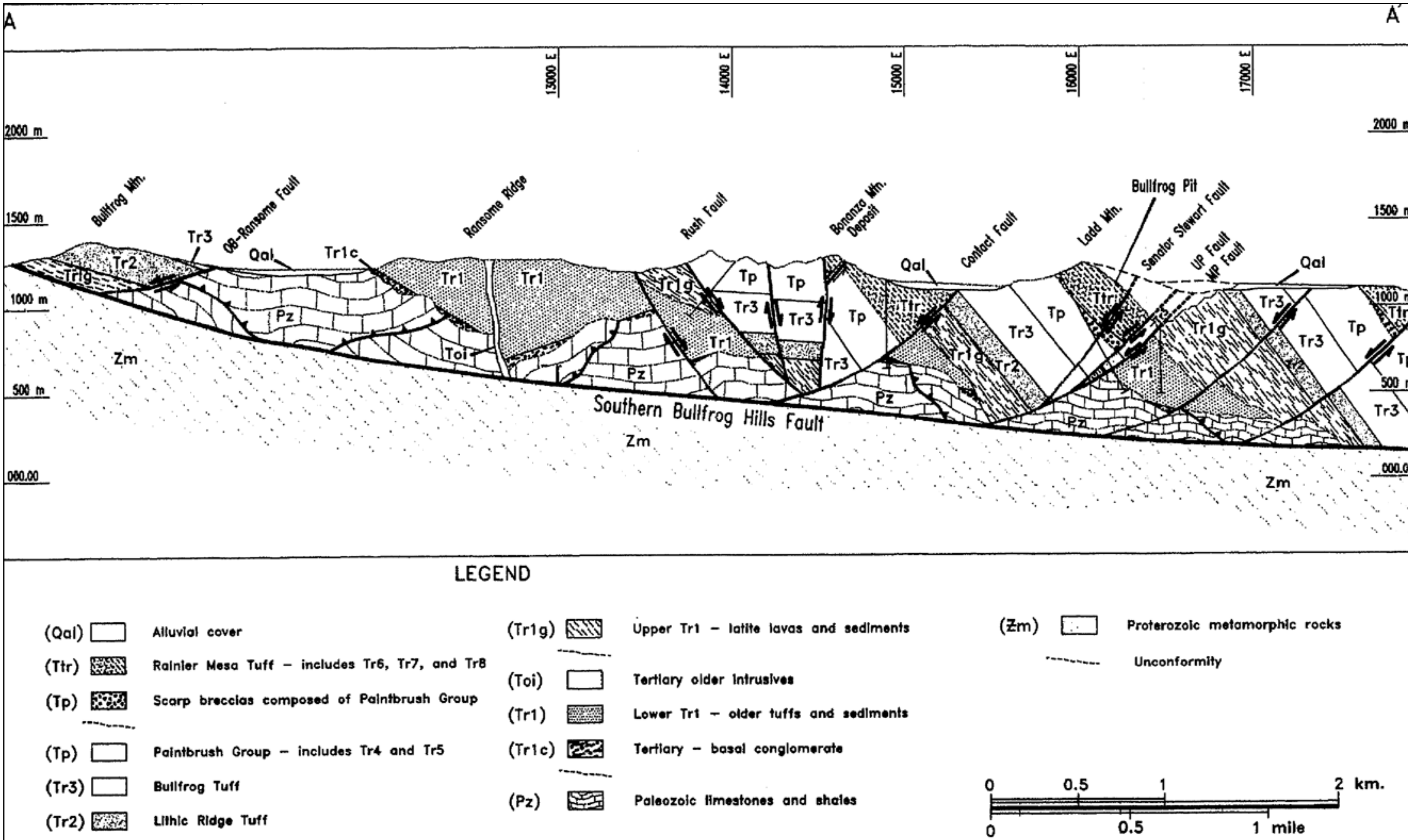

Figure 7-3: Cross Section of the Bullfrog Project Area

7.2.1 Cenozoic Rocks

The Tertiary section in the southern Bullfrog Hills is dominated by volcanic rocks, in particular ash-flow tuffs, and subordinate interbedded volcaniclastic and epiclastic sedimentary rocks. These rocks range in age from >14 Ma to about 7.5 Ma in the southern Bullfrog Hills.

7.2.2 Pre-14 Ma Rocks

Pre-14 Ma rocks are a heterogeneous assemblage of variably welded crystal-poor to crystal-rich ash-flow tuffs, conglomerate and fanglomerate, pumiceous gritstones, tuffaceous sedimentary shales (locally carbonaceous and calcareous), and a capping sequence of porphyritic lava flows and associated ruffs. This group of rocks comprises almost half of the Tertiary section (approximately 2.5 km aggregate thickness) and is the least understood because of abrupt facies changes, several nondescript units, and widespread alteration.

7.2.2.1 Basal Fanglomerate and Breccia

The unit is discontinuously exposed along the southwest foot of Ransome Ridge, where it forms a clast-supported fanglomerate or breccia, including cobble- to boulder-size clasts of Paleozoic limestone, quartzite, phyllitic shale, and lesser Tertiary porphyritic volcanic rocks. A coarse-grained feldspathic-lithic sandstone comprises the matrix. The unit is interpreted to mark a basal Tertiary fanglomerate shed from nearby highlands underlain mostly by Paleozoic rocks.

7.2.2.2 Tuffs and Tuffaceous Sedimentary Rocks of Buck Spring

These rocks are the oldest clearly volcanic and volcaniclastic rocks in the district, and are exposed in the immediate footwall of the Ransome fault. Overlying these lower units is a compound cooling unit consisting of a lower poorly to moderately welded crystal-lithic ash-flow tuff overlain by a thick densely welded crystal-rich ash-flow tuff. Total thickness of this unit is about 175 m.

7.2.2.3 Tuffs and Tuffaceous Sedimentary Rocks of Sawtooth Mountain

This is also a heterogeneous sequence of rocks, subdivided into the lower and upper tuffs of Sawtooth Mountain following terminology of Maldonado and Hausback (1990). Good sections of these rocks are exposed on Ransome Ridge (**Figure 7-3**) and on Sawtooth Mountain 3 km to the north where the combined thickness is approximately 1 km. The rocks also crop out on the east side of Beatty, but drilling suggests that the units probably thin to the east. The lower tuff of Sawtooth Mountain is dominated by variably reworked crystal-lithic ruffs and interbedded lacustrine and volcaniclastic sedimentary rocks that have an aggregate thickness of 370 m to 550 m. The upper tuff of Sawtooth Mountain underlies much of Ransome Ridge and is approximately 500 m thick. It has a 10-15 m thick poorly welded base that grades abruptly into densely welded ash-flow tuff. The unit is characterized by hackly fracture and is widely bleached and weakly silicified.

7.2.2.4 Thin-Bedded Calcareous to Carbonaceous Shales

These variably carbonaceous to calcareous shales and siltstones are also locally exposed in the footwall of the Bullfrog deposit. The contact with the underlying tuffs of Sawtooth Mountain is poorly exposed; it appears to be an angular unconformity.

7.2.2.5 Latitic Flows and Associated Tuffs and Volcaniclastic Rocks (Tr1g)

This sequence of rocks is best exposed in central Box Canyon and in the foot-wall of the mineralized vein zone at the Bullfrog deposit. This unit consists predominantly of porphyritic lava; variably reworked tuff occurs at the base and middle of the unit. The sequence which has an exposed aggregate thickness of about 400 m, is collectively termed Tr1g by exploration staff at the Bullfrog mine following an earlier stratigraphic division of rhyolite unit one of Ransome et al. (1910). The rock has been mapped and described as quartz latite (Maldonado and Hausback, 1990). The sequence of latitic lavas and associated tuffs rests conformably on underlying carbonaceous shales in Box Canyon. Soft sediment deformation in the shales is common in proximity to the contact. At the Bullfrog mine, carbonaceous shales are locally interbedded with flows of latite.

7.2.2.6 Intrusive Rocks

Intrusive rocks of this age group consist of diabase/diorite dikes, silicic porphyry dikes, and porphyritic quartz latite. The diabase/diorite dikes intrude Proterozoic gneiss and schist south and southwest of the Original Bullfrog mine. They consist of fine- to medium-grained, generally equigranular pyroxene-hornblende diabase or diorite. Unlike the rocks they intrude, the diabase dikes are un-foliated and postdate probable Cretaceous age metamorphism (Hoisch et al., in press). The diabase dikes have not been observed to intrude Tertiary volcanic and sedimentary rocks. Silicic porphyry dikes consist of a quartz porphyry and feldspar porphyry. Both rock types contain about 25% phenocrysts of mostly plagioclase and (or) quartz. The dikes are exposed on Ransome Ridge where they intrude the lower tuff of Sawtooth Mountain. The quartz porphyry dikes are typically moderately to strongly propylitized, whereas the feldspar porphyry dikes are relatively fresh suggesting that they may be younger. Porphyritic quartz latite forms dikes that fill faults and small plugs. The rock is only observed intruding porphyritic latite lavas at the top of the pre-14-Ma age group of rocks in central Box Canyon. The rock is lithologically similar to the intruded latite lavas, but it contains several percent quartz phenocrysts. It may represent the eroded parts of flow domes that fed the latite lavas.

7.2.3 14 to 11 Ma Rocks

This age group consists of rocks ranging from the 14.0-Ma Lithic Ridge Tuff to the 11.45-Ma Ammonia Tanks Tuff. Most of the rocks of this age group are units of rhyolite ash-flow tuff erupted from calderas in the southwestern Nevada volcanic field, and have a total thickness of approximately 1.5 km in the southern Bullfrog Hills.

7.2.3.1 14.0-Ma Lithic Ridge Tuff (Tr2) and Basalt Flow One (Tbl)

The Lithic Ridge Tuff is prominently exposed in the hills north of Ransome Ridge and on Bullfrog Mountain, where the total thickness is about 270 m. Most of the unit consists of poorly to moderately welded, crystal-lithic rhyolite ash-flow ruff, containing as much as 20% lithic clasts of mainly intermediate to mafic volcanic rocks.

7.2.3.2 Bullfrog Tuff (Tr3)

The Bullfrog Tuff is exposed on Bullfrog Mountain, and more locally on the lower southwest flank of Ladd Mountain and in the Bullfrog open pit. The Bullfrog Tuff is the middle unit of the Crater Flat Group, and is the principal unit exposed in the southern Bullfrog Hills; it corresponds to what Ransome et al. (1910)

mapped as rhyolite three. Radiometric age ($^{40}Ar/^{39}Ar$) for the Bullfrog Tuff is 13.25 ± 0.04 Ma (Sawyer et al., 1994).

7.2.3.3 Tuffs of the Paintbrush Group (Tr4, Tr5)

The Topopah Spring (Tr4) and overlying Tiva Canyon (Tr5) Tuffs comprise the Paintbrush Group in the southern Bullfrog Hills. These tuffs have $^{40}Ar/^{39}Ar$ ages of 12.8 ± 0.03 Ma and 12.7 Ma ± 0.03 Ma, respectively (Sawyer et al., 1994) and broadly correlate with rhyolite units four and five of Ransome et al. (1910). The Topopah Spring Tuff thickens eastward from 25 m on Bullfrog Mountain, to 110 m on the lower western flank of Ladd Mountain. Lithologically, it is a densely welded fine-grained, very crystal-poor ash-flow tuff. The unit contains 1% crystals of feldspar, except in the uppermost 3-5 m where the crystal content increases to 5%. The unit is also shard- rich and fiamme- poor. In many places, the Topopah Spring Tuff is characterized by a vuggy to knobby or pimply appearance due to pronounced spherulitic or lithophysal devitrification.

The Tiva Canyon Tuff (Tr5) is exposed over a wide area from Bullfrog Mountain on the west to Ladd Mountain on the east. It is separated from the underlying Topopah Spring Tuff by a thin layer (<1 m) of reworked tuff. Total thickness of the Tiva Canyon Tuff ranges from about 215 m on Bullfrog Mountain to approximately 120 m along the west side of Ladd Mountain. The Tiva Canyon Tuff consists of two mappable subunits. The lower subunit (Tr5a) consists of a 5 m thick poorly welded devitrified zone that grades upward into densely welded tuff containing dark grey wavy lenticles in its lower part. The lower subunit contains 3-5% crystals of sanidine, and ranges in thickness from about 100 m on Ladd Mountain to 150 m at Bullfrog and Bonanza Mountains. The contact between the lower and upper subunits is marked by a thin (<1.0 m) laterally persistent horizon of spherulitic devitrification. The upper subunit (Tr5b), for most of its extent, forms a lithologically distinctive caprock distinguished by 10- 15% crystals of feldspar and conspicuous biotite. The upper subunit of Tr5 ranges in thickness from 70-75 m on Bullfrog Mountain to about 15 m on the west side of Ladd Mountain.

7.2.3.4 Monolithic (Paintbrush Group) Scarp Breccia (Tr5c)

Overlying the upper subunit of the Tiva Canyon Tuff is a newly identified, a really restricted avalanche or scarp breccia (Tr5). The unit is locally exposed in the hanging wall of the Rush fault in Box Canyon (**Figure 7-3**), where it ranges in thickness from 0-30 m and consists of lenses of mostly monolithic clast-supported fragments of Topopah Spring and Tiva Canyon Tuffs.

7.2.3.5 Bedded Tuffs and Local Debris Breccias (Tr6)

This distinct unit consists mostly of an interbedded mixture of light-colored, poorly welded crystal-lithic rhyolite ash-flow tuff and tuffaceous sedimentary rocks. Sanidine from an ash-flow tuff layer at the base of the sequence (Huysken et al., 1994) indicating that deposition of these rocks began almost immediately after eruption of the 12.7-Ma Tiva Canyon Tuff. The unit is about 40-50 m thick on Bonanza and Ladd Mountains, but thickens rapidly eastward to as much as 200 m in the southwest portion of the Bullfrog open pit. West of Box Canyon, however, Tr6 pinches out and it is absent on Bullfrog Mountain.

7.2.3.6 Basalt Flow Number Two (Tb2)

This basalt flow is exposed on Sutherland Mountain (located between Bonanza Mountain and Box Canyon) where it forms the conspicuous dark layer below the summit. The unit is restricted in area as evidenced by its discontinuous presence just to the east on Bonanza Mountain, and its general absence on Ladd Mountain and in the Bullfrog pit Thickness ranges from 0-18 m.

7.2.3.7 Tuffs of the Timber Mountain Group (Tr7, 8, 9, 10)

This sequence consists of the Rainier Mesa and Ammonia Tanks Tuffs, which have $^{40}Ar/^{39}Ar$ ages of 11.6 Ma ± 0.03 and 11.45 ± 0.03 Ma, respectively (Sawyer et al., 1994). They are well exposed throughout the southern Bullfrog Hills and have an aggregate thickness of about 600 m. The Rainier Mesa Tuff (Tr7, Tr8) consists of a salmon-pink, poorly to moderately welded base (Tr7) that grades upward into a brown-purple, densely welded interior that comprises the bulk of the tuff (Tr8). The main densely welded part of the Rainier Mesa Tuff can be sub-divided, in many places, into three subunits—a lower subunit of moderately welded fiamme-rich quartzose tuff, a middle subunit of densely welded quartzose tuff containing 15-20% crystals, and a capping subunit marked by noticeable increase in biotite (l.0-1.5%). Lithics are sparse throughout. The Rainier Mesa Tuff is about 400 m thick on Ladd Mountain and is a main host for ore at the Bullfrog deposit.

In most places the Rainier Mesa Tuff is overlain by a massive to vesicular flow of basalt (Tb3). The basalt forms subdued outcrops, but is well exposed in the north wall of the Bullfrog open pit, where the unit is 20-25 m thick. At the Montgomery-Shoshone deposit, the basalt flow is generally absent, and a 1-3 m thick basaltic, chlorite-bearing gritstone and reworked tuff horizon is present.

The Ammonia Tanks Tuff consists of a poorly welded base (Tr9) that grades upward into light-grayish, moderately to densely welded tuff that comprises most of the tuff (Tr10). In and near the Montgomery-Shoshone deposit, a distinctive light-green to dark-gray vitrophyre is present near the base, and is about 5 m thick. The Ammonia Tanks Tuff has a maximum exposed thickness of about 250 m.

7.2.3.8 Intrusive Rocks

Intrusive rocks of this age group are volumetrically minor in the southern Bullfrog Hills, and consist of crystal-poor rhyolite and basalt dikes. The rhyolite occurs as small bodies intruding latite lava (Tr1g) and the Topopah Spring Tuff (Tr4) near Box Canyon. The rhyolite is crystal-poor to aphyric and is typically finely flow laminated. Dikes of basalt are the most widespread intrusive rock.

7.2.4 Post 11 Ma to 7.6 Ma Rocks

This age group includes a basal flow of basalt overlain by epiclastic breccias and conglomerates, a thick sequence of tuffs and lavas, and locally capping gravels and intercalated ash- flow tuff. The thick sections of tuffs and lavas have been referred to as the tuffs and lavas of the Bullfrog Hills (Noble et al., 1991; Connors, 1995; Weiss et al., 1995) and as the rhyolite tuffs and lavas of Rainbow Mountain (Maldonado and Hausback 1990).

7.2.4.1 Basalt Flow Number Four (Tb4)

This basalt forms subdued exposures north and south of highway 374 south of Burton Mountain (**Figure 7-3**). There, the basalt has an exposed true thickness of about 200 m, but it is thinner elsewhere. A K-Ar age of 10.3 ± 0.4 Ma is reported for this unit (Marvin et al., 1989; Maldonado and Hausback, 1990). A lithologically similar basalt flow at the same stratigraphic position in Fluorspar Canyon east of Beatty yielded a K-Ar age of 10.7 ± 0.2 Ma (Monsen et al., 1992). In the southern Bullfrog Hills, angular discordance between the basalt and underlying Ammonia Tanks Tuff (Tr10) is probably minor (<5°).

7.2.4.2 Epiclastic Rocks and Breccias

This unit overlies basalt Tb4 and is best exposed north of highway 374 about 1.5 km west of Beatty. These rocks weather into conspicuous pale green to reddish pink northwest-trending hogbacks. Ransome et al. (1910) designated this sequence as tuff unit one (t1), and Maldonado and Hausback (1990) mapped the unit as sedimentary rocks and tuff. The unit thins to the northwest and is absent along the west base of Rainbow Mountain. Near the Mayflower and Pioneer mines in the northern Bullfrog Hills, this sedimentalogically diverse section of rocks was mapped as an early phase of a debris flow sequence (Conners et al., in Conners, 1995). In areas west of Beatty, the unit is comprised of thinly bedded tuffaceous shale, siltstone, and local pebbly conglomerate, coarse fanglomerates, and mega-breccia slide blocks. Dips of bedding decrease upward through the unit from 45-50° at the base to about 30-35° at the top. Breccia deposits in the unit are heterolithic to monolithic with clasts ranging from <1 m to several meters across. In some breccia deposits, clasts rest in a muddy matrix suggesting deposition into a shallow lake from nearby over-steepened slopes. Stratigraphically lower breccia deposits contain clasts derived from underlying basalt flow four, whereas higher breccia deposits contain clasts from the Rainier Mesa and Ammonia Tanks Tuffs. A megalithic block (-100 m long) of a portion of the Rainier Mesa Tuff and underlying bedded tuffs (Tr6) occurs near the top of the unit just north of highway 374. The upward change of breccia clasts in the unit suggests progressive uplift and erosion of the source rocks from which the breccia deposits were derived.

7.2.5 10.6-10.0 Ma Rainbow Mountain Sequence (Trm; Tr11-16 and other units)

This sequence is well exposed on Rainbow Mountain and nearby Black Peak. Total thickness of section exposed in these areas is about 760 m. New $^{40}Ar/^{39}Ar$ ages from this study indicate that the most of the sequence was deposited between 10.6 and 10.3 Ma. Unlike the ash-flow tuffs of the 14-11 Ma group which came from calderas to the east, these deposits are locally derived from scattered plugs and volcanic domes in the Bullfrog Hills.

7.2.5.1 Basalt, Gravels of Sober-up Gulch, and Stonewall Flat Tuff

These rocks are exposed mainly in the east-central and northern Bullfrog Hills and are essentially flat lying. The gravels of Sober-up Gulch are loosely consolidated alluvial deposits containing well-rounded pebbles and boulders of pre· dominantly locally derived Tertiary volcanic rocks. The Spearhead Member of the Stonewall Flat Tuff is locally interbedded with the gravels of Sober-up Gulch (Noble et al., 1991) and has a $^{40}Ar/^{39}Ar$ age of 7.61 ± 0.3 Ma (Hausback et al., 1990).

7.2.5.2 Intrusive Rocks

Few intrusive rocks of this age group occur in the southern Bullfrog Hills. However, rhyolitic plugs and domes are common in the central and northern Bullfrog Hills where they appear to mark the sources of the flows and ash-flow tuffs of the Rainbow Mountain sequence (Maldonado and Hausback, 1990; Noble et al., 1991; Weiss et al., 1995). They are sparsely to moderately porphyritic and contain phenocrysts of quartz, plagioclase, sanidine, and accessory biotite.

7.2.5.3 Timing of Tertiary Deformational Events

The oldest Tertiary structural event is recorded by the basal Tertiary fanglomerate and breccia, which consists of mainly Paleozoic clasts, but also includes Tertiary volcanic rocks. Uplift and erosion that produced these localized deposits of fanglomerate and breccia took place prior to 15 Ma as indicated from previously discussed stratigraphic relationships. Continued episodic structural events between about 15 Ma and 14 Ma are indicated by local angular unconformities, and by variable thicknesses and abrupt lateral fades changes of rock units laid down during this time. East of the district on the lower northeast flank of Bare Mountain, Fridrich, 1999 documents a major angular unconformity between a round stone conglomerate and overlying carbonaceous sedimentary rocks of Joshua Hollow (Monsen et al., 1992), indicating that tectonic activity was widespread in the region prior to 14 Ma.

A significant episode of faulting occurred at about 12.7 Ma as evidenced by (1) fault scarp breccia and coarse conglomerate that directly overlies the 12.7 Ma Tiva Canyon Tuff and underlies the inferred 12.7 Ma base of Tr6 in the hanging wall of the Rush fault, (2) absence of Topopah Spring and Tiva Canyon Tuffs in the Bullfrog pit and presence instead of volcaniclastic debris breccia whose clasts consist of those units and of older rocks, and (3) a modest angular unconformity (10-20°) between the Tiva Canyon Tuff and overlying bedded tuffs in the lower and middle parts of Tr6 on the west side of Ladd Mountain. This episode of faulting appears to have been quite widespread as evidenced by a major angular unconformity between the Paintbrush and Timber Mountain Groups in upper Fluorspar Canyon (Monsen et al., 1992) and by the presence of landslide breccias intersected in drill holes along the west side of Crater Flat (the valley east of Bare Mountain) that lie between the Paintbrush and Timber Mountain Groups in the hanging wall of the Bare Mountain fault (Fridrich, 1999). The next episode of faulting in the southern Bullfrog Hills is chronicled by a syntectonic sedimentary unit that lies between a 10.7-Ma basalt flow (Tb4) and the lowest part of the Rainbow Mountain sequence dated at 10.56 Ma. During this time 15-20° of eastward tilting occurred. Most of the Rainbow Mountain sequence is tilted uniformly about 30° east. Although negligible differences in tilting are evident, episodes of faulting are recorded by intercalated lenses of fanglomerate and breccia that punctuate the Rainbow Mountain sequence. Between the latite, dated at 10.33 Ma, and the capping quartz-bearing latite, the tilt decreases 10-15° indicating a renewed phase of tilting between 10.3 and about 10 Ma. The final 15° of tilting occurred between about 10 Ma and the time of deposition of an un-tilted basalt dated at 8.1 Ma in the western Bullfrog Hills (Marvin et al., 1989).

7.3 Deposit Geology

The District is located in the southern Walker Lane trend within brittle upper plate volcanic host rocks that were severely broken from dominant detachment faulting and associated dip-slip and strike-slip displacements. Epithermal solutions permeating the broken host rocks in the M-S and Bullfrog deposits precipitated micron-sized but relatively high-grade gold within major quartz-calcite veins and disseminated gold in associated stock works. The veins contain very little gangue minerals other than quartz, calcite and manganese oxides, the latter of which contributes to low silver recoveries. The Montgomery system occurs on the east side of the M-S pit, strikes northerly and dips 70-85° west. The Polaris fault occurs on the west side of the pit, strikes nearly due north and dips 50-60° west.

Detachment-related structures and mineral trends are projected to extend onto the Company's lands to the north and east of the M-S open pit and deep drill holes intercepted thick zones of lower-grade mineralization that are 300 meters below the existing pit. Prior to oxidation the veins contained less than 2% sulfides, the low content of which is favorable with respect to processing and environmental concerns. Surface geology is shown in the figure below **Figure 7-4**.

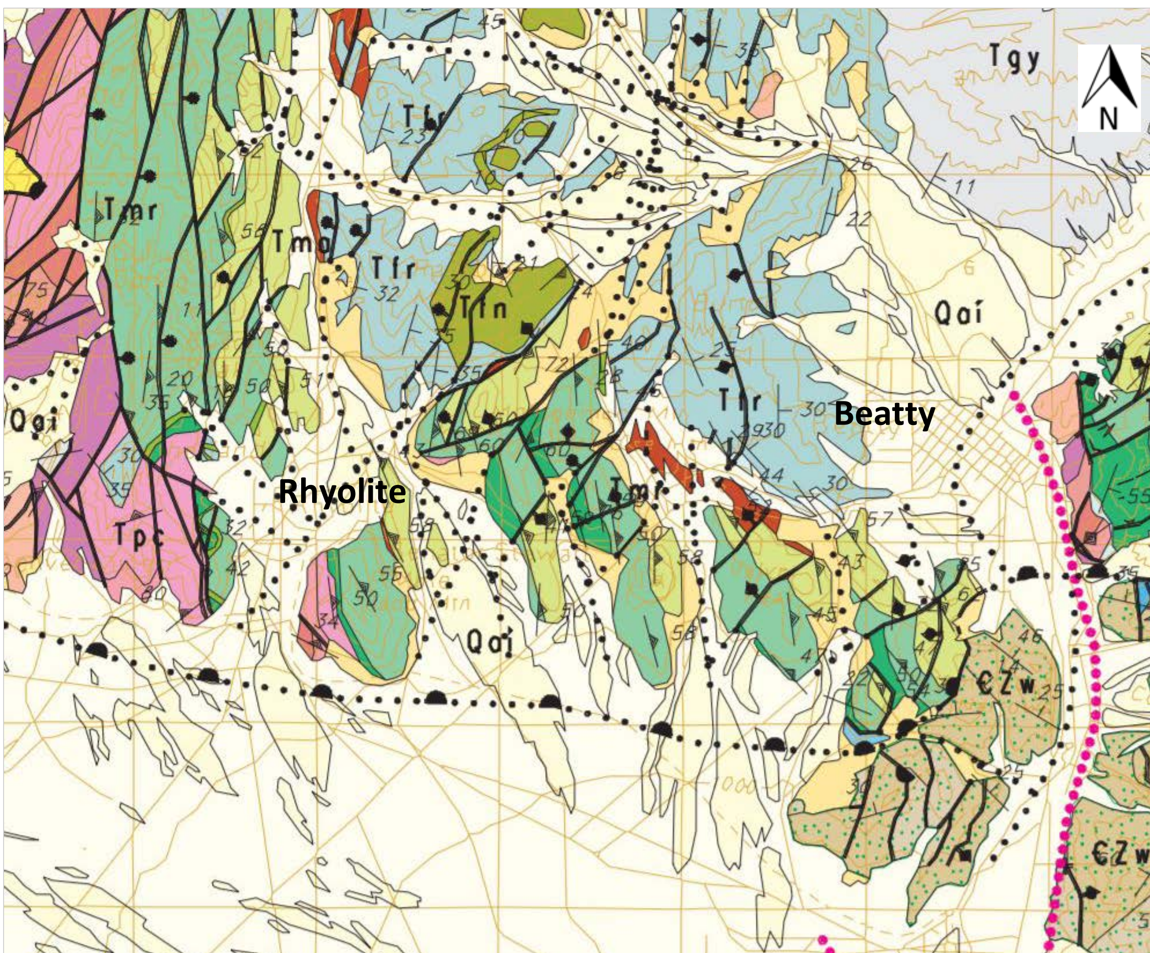

Figure 7-4: Deposit Geology Map – Each Section is 1.6 km, or 1 mile square

7.4 Mineralization and Veining

The gold deposits of the southern Bullfrog Hills are contained in epithermal quartz-calcite veins and stockworks. The main host rocks are middle Miocene volcanic rocks ranging from latite lavas (Tr1g, >14 Ma) to rhyolitic Ammonia Tanks Tuff (Tr10, 11.45 Ma).

7.4.1 Bullfrog Deposit

The strike length of the Bullfrog deposit is about 1,600 m, including the underground portion which accounts for about 600 m of the strike length. True widths mined in the underground, where the ore cutoff was 3.0 g/t Au, typically average 5-10 m and local zones may be as much as 15-20 m wide. The highest grades typically correlate with zones of black manganese-rich material, where much of the early manganiferous calcite has been leached out, rendering the vein a rubble zone of quartz, calcite and wad. Veins continue up dip and down dip, but the gold grades and thicknesses diminish rapidly above and below these elevations.

As in the underground mine, the highest grades in the open pit were associated with veins and vein breccias along the MP fault and its immediate hanging wall. Higher ore grades also occurred in veins along the UP fault but widths were generally narrow. Zones of quartz stockwork veins and breccia were developed between the MP and UP faults in intensely silicified and adularized wall rocks. The ore zone in the hanging wall of the MP fault, was termed the upper stockwork zone (Jorgensen et al., 1989). Many of the stockwork veins are subparallel in strike to the MP and UP faults, but dip more steeply. A zone of stockwork quartz veins also occurs in the footwall latite lavas (Tr1g) immediately beneath the MP fault, but here the ore zone is usually <10-15 m thick. This was termed the lower stockwork zone (Jorgensen et al., 1989). In this zone individual veins are often subparallel to the MP fault, and vein densities are typically in the range of 5-15%.

In most parts of the open pit, mineralized rock is truncated by the erosional surface and gravels. The ore zone thinned up-dip and only a modest amount of ore was probably lost to erosion. Below the open pit, ore grade values persist.

In the Bullfrog deposit, the high-grade zones do not comprise obvious discrete plunging ore shoots. Instead high-grade ore zones are developed along the plane of the MP fault/vein, within 10-20° of the dip of the fault. The overall geometry of these zones is that of elongate lenses in the plane of the fault, with long dimensions that strike roughly north-south at a low angle of plunge. The highest ore grades roughly coincided with the oxidation-reduction boundary in the deposit and the pre-mining water table, and modest localized supergene enrichment of precious metals near this boundary is suggested.

7.4.1.1 Ore Controls

The zoning patterns of ore grades, veins, and altered rock indicate that the MP-UP fault system was the main ore control and fluid pathway for the Bullfrog deposit. Minor local changes in the strike and (or) dip of these faults created dilatant zones aiding deposition of gold, particularly some of the higher grade ore. Northeast-trending faults were also an important control, acting as secondary fluid pathways and providing additional ground preparation. This is indicated by changes in ore character and geometry where these faults intersect the MP-UP fault system. As in most epithermal systems, physicochemical conditions limit precious metal ore deposition to a particular vertical interval. In the case of the Bullfrog deposit, the apparent maximum extent is 250-300 m, between about 1,075 and 775 m in elevation. Supergene and (or) hypogene oxidation may have also aided in local enrichment of ore, and is supported by the location of higher gold grades near the redox boundary and the pre-mining water table. The common occurrence of visible gold (electrum) in limonitic pyrite casts is also evidence for the concentration of gold during oxidation. However, unlike porphyry copper deposits, the enrichment and redeposition of precious metals was probably over the scale of millimeters or micrometers (Castor and Sjoberg, 1993).

7.4.2 Montgomery-Shoshone Deposit

The main host for the Montgomery-Shoshone deposit is the lowermost part of unit Tr10 (Ammonia Tanks Tuff, 11.45 Ma). The uppermost portion of unit Tr8 (Rainier Mesa Tuff, 11.6 Ma) is a less important host, along with Tb3, basalt dikes, and (or) unit Tb4. Basalt flow Tb4 appears to have acted as a barrier to ore fluids (Jorgensen et al., 1989), as virtually no mineralized rock occurs stratigraphically above unit Tr10 in the rhyolite tuffs and lavas of the Rainbow Mountain sequence, even though these rocks are all pre-mineral in age. The best marker bed is Tb3, which at Montgomery-Shoshone consists mainly of a 1-3 m thick irregular zone of basaltic, chlorite-bearing volcanic gritstone and re-worked tuff; a thin irregular basalt flow is less common at this horizon. The base of Tr10 is often a useful marker and consists of a light greenish or dark gray zone of more densely welded and vitrophyric tuff; the vitrophyric portion is usually less than 5-6 m thick.

Altered rocks are similar to those at the Bullfrog deposit, although rocks are more strongly clay altered and oxidized at Montgomery-Shoshone. Unlike at Bullfrog, carbon-pyrite is absent at depth. In the hanging wall of the deposit, rocks of the Rainbow Mountain sequence are argillized and bleached and contain 1-2% fine-grained disseminated pyrite. Wall rocks adjacent to veins and stockwork zones are typically flooded with silica-adularia, especially in Tr8 (Rainier Mesa Tuff) in the footwall of the deposit. Such silicified and adularized rock is absent, however, in the Rainbow Mountain sequence. Basalts of Tb4 in the hanging wall of the deposit are mostly unaltered, except along their margins near faults where they are argillized and clay altered.

7.4.2.1 Mineralization

Mineralized zones at Montgomery-Shoshone consists mainly of stockwork quartz-calcite veins forming 5-35% of the rock, with less abundant narrow irregular quartz-calcite-Mn oxide veins generally <1-3 m wide. Many of the textures that typify the high-grade veins at the Bullfrog deposit—such as strong banding and chaotic vein breccia—are absent, and it appears that the main-stage event was not as well developed. The widest zones of mineralization developed are along the Montgomery zone north of about 9,900N, and may locally be as much as 60-80 m wide. However, individual ore zones with >0.5 - 1 g/t Au in many portions of the deposit are commonly only 10-30 m wide, and the continuity of mineralization down dip and along strike is relatively poor.

Ransome (1910) noted that most of the higher-grade veins were localized within about 45 m of the basalt (Tb4) at the Contact fault, and that the veins decreased in grade and thick- ness below the 300 level (1,170 m). The veins were explored in these workings to about 1,050 m in elevation (700 level). The structures and veins continue below the 1,125 m elevation level, but as at the Bullfrog deposit, the grade and thickness of the mineralized zones uniformly diminish, with much of the rock containing only 0.1-0.5 g/t Au. However, deep exploration drilling encountered thick intervals of mineralized rock about 200-250 m in elevation below the current pit; the controls for this mineralized zone are unclear and further evaluation continues.

The veins generally increase in calcite content along strike to the south, as well as down dip, and this corresponds to a general decrease in the grade of mineralized rock; a similar change was noted by Ransome (1910). The Polaris vein zone exposed in the south pit high wall, consists of friable and leached, gray-brown quartz pseudomorphs after calcite, with minor Mn oxides. These type of veins characterize much of the southern half of the deposit and are uniformly of low grade or below pit cutoff (0.50 g/t Au).

8. DEPOSIT TYPES

The gold deposits of the southern Bullfrog Hills are contained in epithermal quartz-calcite veins and stockworks. The main host rocks are middle Miocene volcanic rocks ranging from latite lavas (Tr1g, >14 Ma) to rhyolitic Ammonia Tanks Tuff (Tr10, 11.45 Ma). The veins contain little gangue other than quartz, calcite and manganese oxides; adularia is present in trace to minor amounts, but it is usually microscopic. Fluorite and barite were noted during the development of the Bullfrog deposit (Jorgensen et al., 1989), but these minerals were only rarely observed during mining. The veins are commonly banded and crustiform, and although now mostly oxidized, originally contained minor amounts (<1-2%) of sulfide minerals, principally pyrite. The deposits fit the "adularia-sericite" type classification of Heald et al. (1987), although adularia and sericite (or illite) are only minor or trace constituents in the veins.

The deposits would also fit the "low-sulfidation" or "low-sulfur" classification (Sillitoe, 1993; Bonham, 1988) due to the impoverishment of sulfides and sulfates. The veins and stockworks fill open spaces and are often sheeted. They are hosted and controlled by northerly striking normal faults with modest to large displacements (50-1000 m), and moderate to steep dips (35-85°). Northeast-striking faults are also locally important, but are generally less mineralized. Within and adjacent to the veins and stockworks, the volcanic wall rocks are pervasively replaced by very-fine-grained hydrothermal quartz and adularia, and, where unoxidized, may contain 1-3% disseminated pyrite. In proximity to the deposits, clay minerals are not especially pronounced, except in poorly welded portions of the ash-flow tuffs, and in post- mineral fault gouge or oxidized zones.

Latite lavas (Tr1g) in the footwall of the orebody are altered to a propylitic alteration assemblage, characterized in hand specimen by thin fracture fillings or coatings of chlorite, calcite, and quartz, with disseminated or fracture filling pyrite. Petrographic and lithogeochemical data indicate that these rocks become strongly hydrothermally altered as the orebody is approached, with additions of potassium, silica, and rubidium; secondary albite also replaces plagioclase phenocrysts (Lac unpublished data; Weiss et al., 1995). Carbon-pyrite is also present in the footwall lavas; the carbon usually occurs as sooty coatings on fractures, but also locally occurs as glassy carbon in cavities. Laboratory studies show that the carbon is an organic, amorphous phase between bitumen and graphite (Allison, 1993), and it was probably remobilized by hydrothermal solutions from underlying carbonaceous Tertiary sedimentary or Paleozoic rocks.

Stratigraphic offset across the MP and UP fault zone decreases from about 1,000 m at the north end of the pit where the two faults converge, to about 600-800 m at the south end of the pit. As the Southern Bullfrog Hills fault is approached, offset decreases to about 500 m or less; farther south, the faults flatten and merge into or are cut off by the Southern Bullfrog Hills fault. Deep drilling on the southwest flank of Ladd Mountain indicates that the MP-UP faults become listric down dip, flattening to about 25°. Drilling in this area also suggests that the faults merge into or are cut off by the Southern Bullfrog Hills fault. Overall, the MP-UP fault system appears to have a scissored normal displacement, steepening to the north away from the Southern Bullfrog Hills fault, with generally increasing amounts of displacement as far north as the Montgomery South faults.

9. EXPLORATION

Several exploration targets are described below and shown overlain in **Figure 9-1**. These areas include existing targets that were partially drilled by Barrick, new targets identified by the Company, and pit expansions using lower cutoff grades than required during Barrick's mining and milling operations. For reference, the Company's property extends 5 km NE of the M-S pit but only eight holes were drilled in this area by Barrick and its predecessors.

9.1 M-S Area

The M-S area has five discernible targets proposed for drilling on a priority basis.

9.1.1 North-East Extension

There is only one weakly mineralized hole on the NE edge of the M-S pit (rdh-660) and only one non-mineralized hole (rdh-662) located 100 meters NE of the pit. The next holes (rdh-697, 699 and 700) had no mineralization but are 1,000 meters NE and spaced 300 meters apart. The Contact fault and related mineral trends are projected a few kilometers further north but there are only four wide-spaced holes in this large area ranging from 2,000 to 3,000 meters NE of the M-S pit. There are 15 more old holes in this far NE area but no data other than locations are available. A 1994 map by Lac Minerals notes that holes FF-1, FF-2 and FF-90-1 contain anomalous mineralization that has not been adequately tested. The NE extension area is several square kilometers and may contain high grade veins and/or disseminated stockworks.

In 1996 a hole was cored to a depth of 549 meters (1,800 feet) in the NW part of the Providence patent (see **Figure 9-2**). Although assays are not available, the hole reportedly had no significant mineralization. Notwithstanding, the core hole location does not test potential extensions of mineralization proposed herein.

9.1.2 Down-Dip Polaris Vein

Much of the Polaris vein and stockworks from Sections 9695 N through 10075 N extends down-dip below the existing pit. For example, an intercept of 24.4 m of 1.08 g/t in hole cdh-091 is about 140 meters down-dip from rdh-013. There also is a potentially un-named vein in the hanging wall of the Polaris as indicated by the 10.7 m of 0.72 g/t in rdh-588, 7.6 m of 0.93 g/t in rdh-013, 10.7 m of 1.28 g/t in rdh-601 and 10.7 m of 0.62 g/t in hole rdh-634.

Hole rdh-632 intersected a limited extension of the Polaris vein down-dip on Section 9954, but hole 632 also has 13.7 m of 1.08 in the hanging wall of the Polaris. Hole 717 shows 51.8 m feet of 1.35 g/t down-dip in the Polaris vein approximately 50 meters below an intercept of 33.5 m of 0.49 g/t in hole 603. Hole 733 intersected 19.8 m of 0.85 g/t in the down-dip extension of the Polaris vein and below the strong intercept in rdh 717. Several holes are also planned to define down dip extensions of the Montgomery vein and stock works.

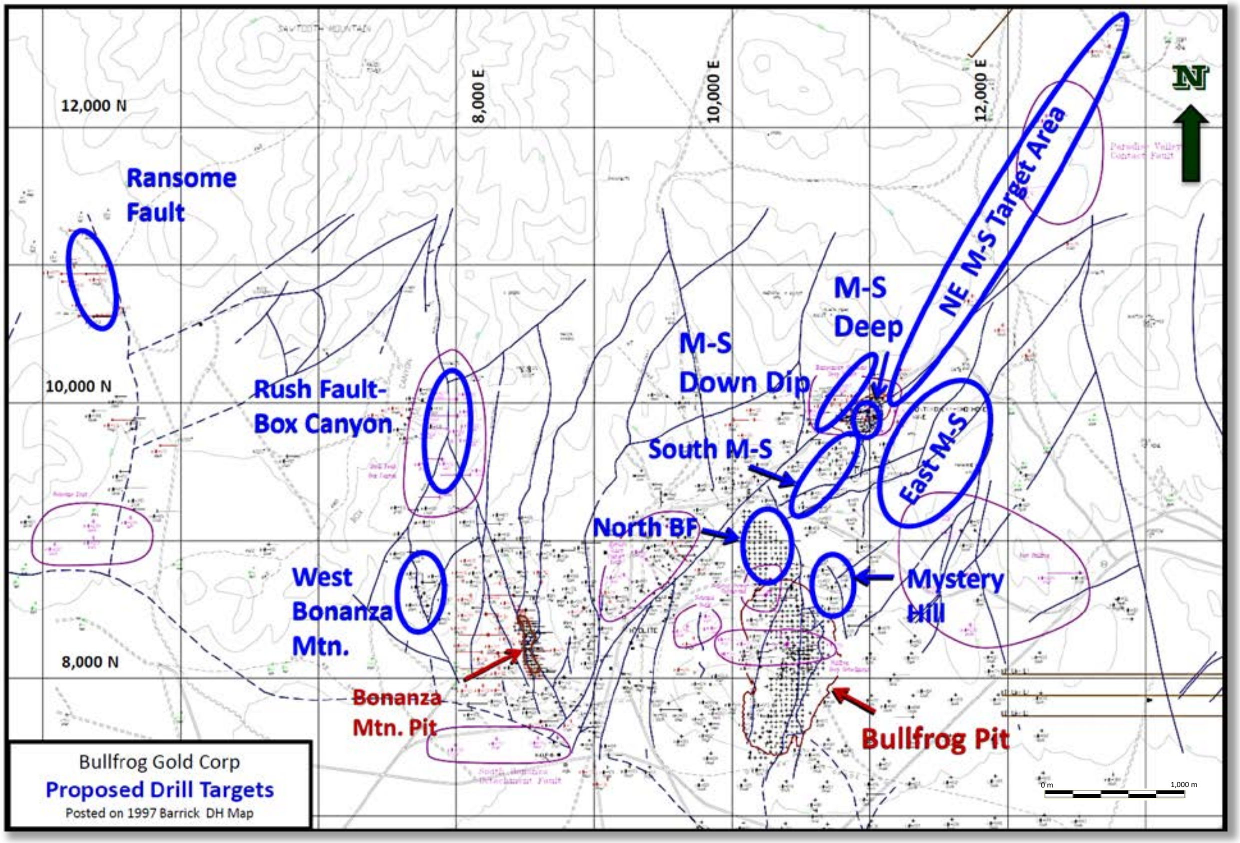

Figure 9-1: Exploration and Mining Targets at the Bullfrog Project

9.1.3 South Montgomery

Rdh-444 is located at 9520 N/9780 E and intersected 30.5 m of 0.76 g/t from 117.4 m to 147.9 m, including 4.6 m of 0.74 g/t from 117.4 m to 121.9 m and 15.2 m of 1.17 g/t from 132.6m to 147.9 m. A corridor 75 meters wide and 800 meters long and striking N 41°E and S 41°W has not been tested. Although the geology mapping shows structures south of this hole as striking N 70°E and S 70°W, this corridor and the northernmost structure on the map in **Figure 9-2** (structure # 1) should be drilled, particularly up-dip of the intercept in rdh-444.

The other structures (# 2 and further south) on the geology map were drilled to some degree by Barrick. The closest holes to the corridor are 100 meters N, S, E and W. There are no holes along strike for 200 meters to the NW and 600 meters toward the SW of rdh-444. One or two holes could be reasonably drilled along an existing road 45 meters to the NW to test this area along strike and up-dip.

An angle hole could be drilled 40 meters SW of rdh-444 along with more holes if initial results are acceptable. Rdh-447 is collared at 9375 N and 9500 E and intersected 0.19 g/t from 35.2 to 42.7 m, but it does not cross the south extension of the Montgomery vein. A new 45° angle hole at this location should be drilled with an azimuth of 90° next to rdh-447.

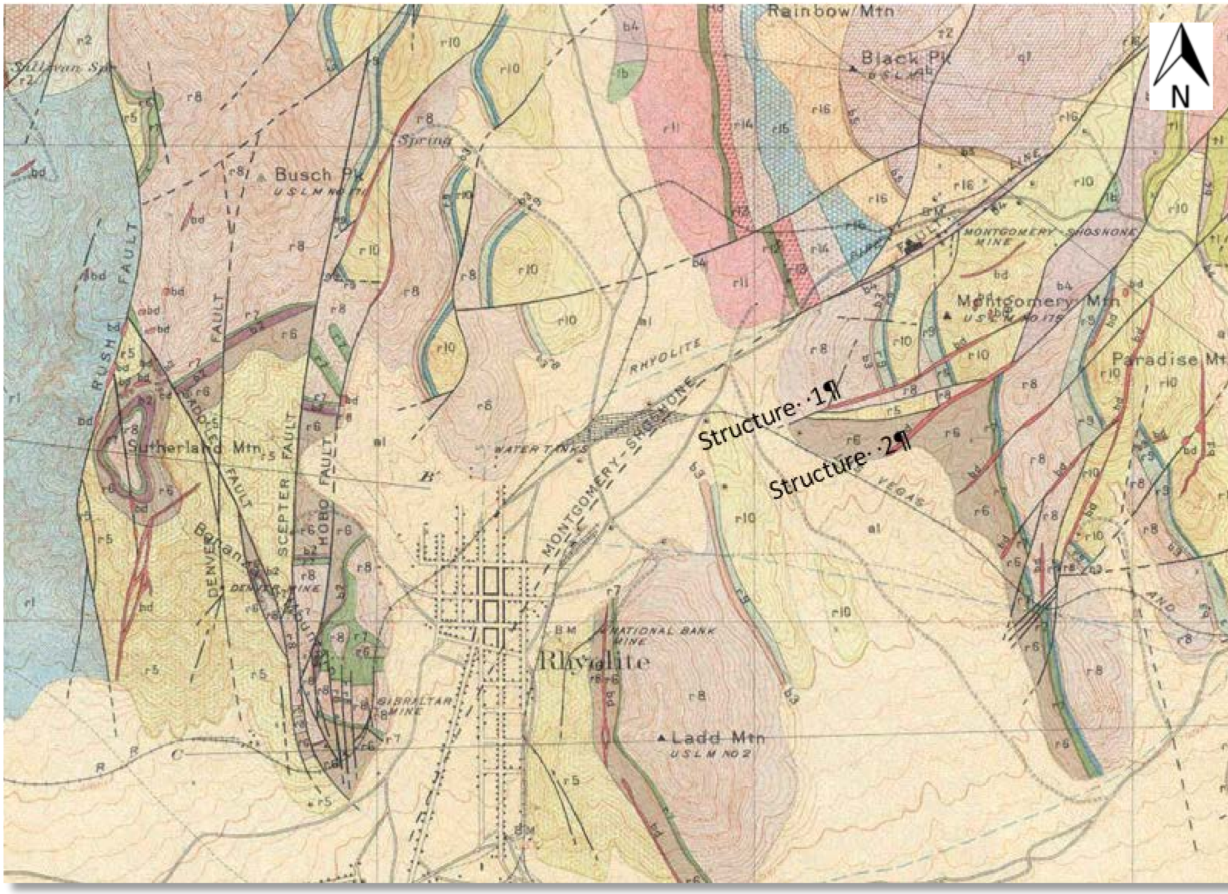

Figure 9-2: Structure Map with Geology

9.1.4 East

East of the M-S pit is an area that is 700 meters by 1,300 meters and only has one shallow historic hole for which no data is available. Only a portion of this area may be prospective, but additional study and exploration drilling is warranted. Lac's 1994 map shows a hole south of this area that had anomalous mineralization (BB-9 with no data available), but holes edh-18 and -19 appear to have tested this to the south.

9.1.5 Deep Potential

Deep intercepts were encountered in four of ten deep angle holes drilled by Barrick below the M-S pit. The depths and grades of these intercepts are not foreseeably economic, but they demonstrate that additional gold occurs in a potentially large epithermal system with the potential for expansion and possible high-grade discovery. In this regard, there is no deep drilling northwest of holes rdh-733, 717, 734 and 778, and no drilling south of holes rdh-732, 777 and 779.

These deep intercepts could be part of a feeder zone that created the upper M-S deposit and may range from a limited area, or possibly extend along strike as well as up- and down-dip. A potential mineral inventory cannot be estimated in the deep zone based on the limited amount of drilling completed to date. Three of the deep holes also had significant shallow intercepts in the Polaris vein/stock-works (52 meters of 1.35 g/t, 12 m of 1.14 g/t and 4.6 m of 6.03 g/t).

Holes rdh-779 and rdh-777 were barren below 900 meters elevation, thereby limiting the down-dip extension of mineralization in rdh-732, but there are not enough holes to fully assess this deep zone.

9.1.6 Proposed Drilling

A proposed drill program includes 1,970 meters in 21 holes with average depths of 94 meters in Phase 1 and 2,410 meters in 14 holes with average depths of 172 meters in Phase 2. **Table 9-1** is a list and **Figure 9-3** shows a map of drilling in both areas. Three holes are 50, 70 and 240 m northeast of the pit, but additional holes can be added if results or further study justifies.

Table 9-1: Proposed Drill Holes in the M-S Area

Hole #	North, m	East, m	Inclination	Azimuth	Depth, m	Priority	Phase
1	10090	10170	-45	90	100	M	1
2	10075	10100	-45	90	80	M	1
3	10060	10040	-45	90	100	H	1
4	10060	9960	-90		140	H	1
5	10030	10040	-65	90	80	H	1
6	10015	9962	-45	90	115	H	2
7	10000	10025	-60	90	60	M	2
8	10000	9884	-90		140	H	2
9	9985	10005	-45	90	60	L	1
10	9985	9860	-65	90	120	H	2
11	9970	10000	-90		80	H	2
12	9970	9860	-60	90	120	M	2
13	9939	9860	-60	90	120	M	1
14	9939	9980	-60	90	70	H	1
15	9924	9885	-60	90	50	M	2
16	9924	10035	-45	90	45	H	2
17	9909	9980	-45	90	50	H	1
18	9893	9820	-60	90	65	H	1
19	9893	9690	-90		190	H	2
20	9878	9675	-60	90	190	H	1
21	9846	9750	-60	90	140	H	1
22	9829	9850	-60	90	70	H	1
23	9814	9852	-60	90	70	M	2
24	9777	9900	-60	90	60	M	1
25	9741	9920	-60	90	65	M	1
26	9710	9915	-60	90	60	H	1
27	9695	9930	-45	90	50	H	1
28	10105	10230	-90	90	120	H	1
29	10140	10240	-45	90	100	H	1
30	10240	10378	-45	90	100	H	1
31	9846	10110	-45	90	480	H	2
32	9814	10120	-60	90	390	M	2

Hole #	North, m	East, m	Inclination	Azimuth	Depth, m	Priority	Phase
33					400	M	2
34	9555	9798	-45	90	150	H	1
35	9500	9753	-45	90	150	M	2

Below is a map of the proposed drilling locations for both areas:

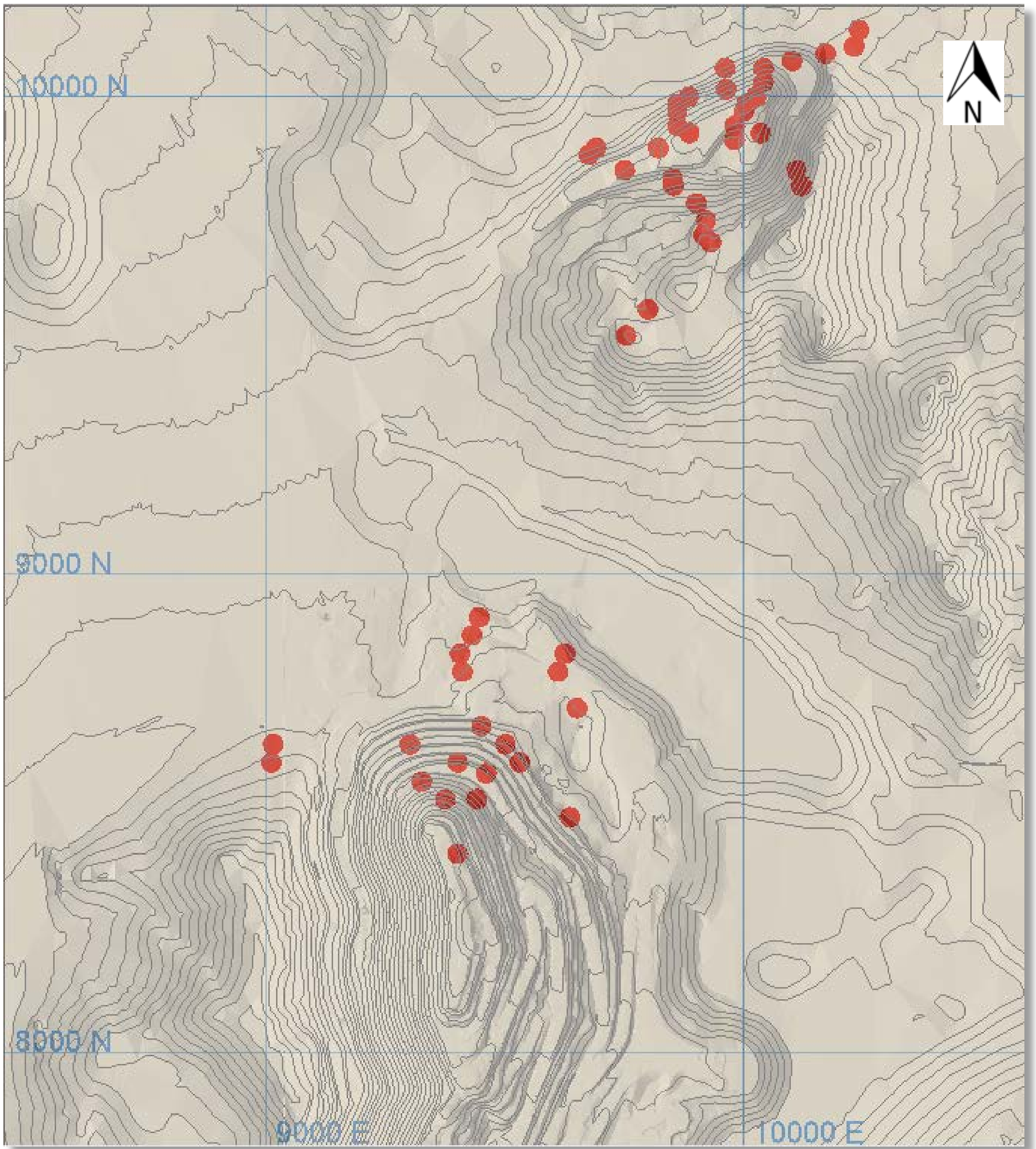

Figure 9-3: Proposed Drill Locations shown on 1000 meter spacing

9.2 Bullfrog and Mystery Hill Areas

The North area has been adequately drilled both in area and in depth; however, five holes have been proposed to further define the estimate and ultimate pit limits. **Table 9-2** shows the proposed drilling in the Bullfrog and Mystery Hill Areas.

Table 9-2: Proposed Drilling

Proposed Drill Holes in Bullfrog (BF) North and Mystery Hill (MH) Areas							
Hole #	**North, m**	**East, m**	**Inclination**	**Azimuth**	**Depth, m**	**Drill Order**	**Area**
1	8910	9445	-60	90	200	18	MH
2	8872	9430	-60	90	280	17	MH
3	8872	9590	-60	90	200	16	MH
4	8834	9405	-60	90	270	15	MH
5	8796	9610	-60	90	120	14	MH
6	8796	9410	-60	90	270	3	MH
7	8720	9650	-60	90	100	2	MH
8	8720	9450	-60	90	220	11	MH
9	8720	9572	-60	90	150	1	MH
10	8630	9575	-60	90	110	4	BF
11	8682	9450	-60	90	190	6	BF
12	8644	9500	-60	90	150	5	MH
13	8606	9532	-60	90	140	13	BF
14	8583	9460	-45	90	120	7	MH
15	8566	9325	-60	90	200	8	MH
16	8566	9670	-60	90	150	12	MH
17	8529	9374	-60	90	160	10	BF
18	8529	9440	-60	90	160	9	MH
19	8491	9690	-69	90	100	19	MH

The Mystery Hill Fault (MH) is sub-parallel to the Middle Plate Fault (MP), which is the main mineralized structure of the Bullfrog deposit. The MP fault appears to be the source of epithermal solutions that mineralized the MH fault. The down-dip extension of the MH fault has good potential and could have higher grades. However, this area only contains 6 interior drill holes.

It is noted that vertical hole rdh-041 is immediately north of the Mystery Hill area and contains 132.6 m averaging 0.14 g/t from 19.8 m to the TD at 152.4 m. Although this is low grade, a large amount of epithermal solutions permeated this thick zone. Hole rdh-459 is collared 80 meters SW of rdh-041 and intersected 7.6 m at 0.71 g/t from 27.4-35.1 m; 62.5 m at 0.19 g/t from 50.3-112.8 m; 19.8 m at 0.33 g/t from 114.3-134.1 m; and 79.3 m at 0.20 g/t from 134.1- 213.4 m. As a result, further drilling is needed to fully define the limits of mineralization above 0.2 g/t in the Mystery Hill area.

9.3 West Bonanza Mountain

The Bonanza Mountain pit area remains under control by Barrick and is located 2 km west of the Bullfrog deposit. Historically the area likely produced about 10,000 ounces in the early 1900's from several underground mines. Barrick's open pit mining began in late 1995 with a resource of 1.3 million tonnes averaging 1.8 g/t, based on a 0.5 g/t cutoff grade and a strip ratio of 4:1. Most of the ore occurs in the Hobo, Lester and Sceptre veins, which had limited widths of adjacent mineralization. Notwithstanding, the Bonanza Mountain area has several veins that have not been thoroughly drilled to the north and south. An estimate of mineralization around the Bonanza pit was not prepared for this report. The Company recently leased three patents and staked two claims to cover an exploration target in the west Bonanza Mountain area (see **Figure 9-1**); further study is required before a drill program can be proposed.

9.4 Western Exploration Targets

Several other areas within a few miles west the Bullfrog deposit were drilled by Barrick, but still have potential for additional mineralization that may be amenable to heap leaching. These areas include the Rush Fault-Box Canyon, Ransome Fault, and the Original Bullfrog mine.

9.4.1 Rush Fault-Box Canyon

The Company is in process of leasing five patents, recently staked four claims, and already owns one patent in the Rush Fault-Box Canyon area. This area is 1,500 meters NW of the Bonanza Mountain pit and Barrick et al. drilled 23 holes in the vicinity. Hole rdh-440 was angled -70° toward the SE and intercepted 4.6 meters averaging 1.37 g/t starting at a depth of only 30 meters. Three holes having relatively shallow but low-grade mineralization limit possible extensions to the south. Hole rdh-442 was collared a few meters from 440 and was angled -70º toward the NW, but did not intercept mineralization. As there are no drill holes north of hole 440, mineralization could possibly continue. Although Barrick was not interested in further exploration of this area, several faults have been mapped within several square kilometers north of this area. As a result, further study is recommended.

Two adits in the NE ¼ of Section 8 were sampled and assayed by Barrick. Adit #4 had 51 samples in five continuous segments that averaged 2.56 ppm. Adit #5 had four samples in two continuous segments that averaged 2.25 ppm. Maps of these adits and sample locations have not yet been found, but may be in Barrick's extensive paper database.

9.4.2 Ransome Fault

The Ransome Fault area is located 3 km west of the Bonanza Mountain area. During the early 1980s through 1996, Barrick et al. drilled 25 holes in this target area. Twenty-three holes had no significant mineralization, but hole rdh-668 had 4.6 meters averaging 1.56 g/t starting at a depth of only 12 meters. Although there are four non-mineralized holes within 300 meters of rdh-668, this area needs to be examined for drilling possible extensions along strike and down-dip. There are old holes a few hundred meters north of rdh-668, but there is no drill data available. The large area between the Ransome Fault and Box Canyon shows several faults that have not been drilled. Surface mapping possibly could generate additional drill targets

9.4.3 Original Bullfrog Mine

The Original Bullfrog deposit is located 4 km west of the Bonanza Pit and is barely within the east boundary of the Death Valley National Park. All National Parks have a ban on open pit mining along with several other impositions. Cross sections through this area show several intercepts of multi-ounce gold but, under the circumstances, the Company is unwilling to explore and develop the Original Bullfrog mine area.

10. DRILLING

Between 1983 and 1996, 1,262 reverse circulation and core holes totaling 250, 641 meters were drilled in the Bullfrog and M-S areas by Barrick and three predecessor companies, as summarized in **Table 10-1**. This drilling was completed by major mining companies who conducted sampling and assaying using prevailing and customary industry standards; the operators are detailed in **Table 10-2**. Tom John, Geological Consultant to BFGC, and Barrick Bullfrog's former Exploration Manager from 1995 through 1997, has presented information on the quality control of the data collected under his supervision as well as the data obtained from the exploration departments of St. Joe, Bond International Gold, and Lac Minerals.

The Company initially obtained a partial electronic/digital drill hole database, but eventually scanned Barrick's complete paper drill-hole database stored in Elko, Nevada. These scanned files included assay certificates, geologic logs, surface and down-hole survey data and notes, and maps prepared by site geologists. The data missing from the partial electronic/digital files was used to create a complete digital data on 1,262 holes in the Bullfrog area.

Table 10-1: Historic Drilling Totals by Type

Year	Total Drilling		Coring		Reverse Circulation	
	Holes	Meters	Holes	Meters	Holes	Meters
1983	6	975	6	975	0	0
1984	37	3,560		0	37	3,560
1985	3	303		0	3	303
1986	29	3,364		0	29	3,364
1987	163	29,479	3	732	163	28,747
1988	321	66,325	32	6121	321	60,204
1989	71	12,285		0	71	12,285
1990	154	37,114	33	3,676	154	33,438
1991	79	22,954	42	3,627	79	19,327
1992	23	4,907		0	23	4,907
1993	9	387		0	9	387
1994	210	31,362	9	1,412	210	29,951
1995	99	22,370	3	248	99	22,122
1996	58	15,254	19	3,329	45	11,924
Total	1,262	250,641	147	20,119	1,243	230,521

** NOTE: Many core holes were pre-collared using RC drilling and a few included deeper RC intervals.*

Table 10-2: Active Years by Operator

Operator	Years Active
St. Joe American	August 1983 - July 1987
Bond International Gold	July 1987 - November 1989
Lac Minerals	November 1989 - September 1994
Barrick Bullfrog Inc.	September 1994 - 1999

Bit sizes for the RC drilling ranged from 104.775 mm (4-1/8 inch) to 139.7 mm (5-1/2 inch) diameter, the latter being the typical size. Cores were reported mainly as NC, but included PQ, NX and HQ sizes. Coring was 8% of the total drilling but was closer to 10% in the mine areas, as no coring was performed in outlying exploration holes.

11. SAMPLE PREPARATION, ANALYSES AND SECURITY

Drilling and coring information used in this report was obtained from several drill programs that began in 1983 by St. Joe Minerals, continued with Bond Gold and Lac Minerals, and ended by Barrick in late 1996. Of 1,262 total holes drilled in the area, 147 holes included core and 1,243 holes were drilled using reverse circulation methods. Most of the cored holes included intervals of core plus RC segments. Percent recovery and RQD measurements were made on all core intervals. An assessment was made of the quality of the orientation data and the core was marked accordingly. The core was then logged, recording lithological, alteration, mineralization, and structural information including the orientation of faults, fault lineation's, fractures, veins, and bedding. With few exceptions, the entire lengths of the holes were sampled. Sample intervals were five feet and occasionally based on the geological logging, separating different lithologies and styles of mineralization and alteration. Samples were marked and tagged in the core box before being photographed, after which the core was sawed in half, with one half sent for assay and one half retained for future reference. Each sample interval was bagged separately and shipped to the lab for analysis.

Cuttings from nearly all reverse circulation drill programs were divided into two streams—one was sampled and the other was disposed during the reclamation of each drill hole. Using a Jones splitter, the sample stream was further divided into two sample bags—one designated for assaying and the second duplicate designated as a field reject. Samples were collected at five-foot intervals and bagged at the drill site. Each five-foot sample was sealed at the drill site and not opened until it reached the analytical lab. At each 20-foot rod connection, the hole was blown clean to eliminate material that had fallen into the hole during the connection. The designated assay samples for each five-foot interval were collected by the site geologist and moved to a secure sample collection area for shipment to accredited laboratories off site. When duplicate samples were collected they were retained at the drill site as a reference sample, if needed. If the duplicate samples were not used prior to the reclamation of the pad, they were interred in the sump at the time of reclamation.

There is no information available about how samples from the historic drilling prior to 1983 were handled, processed, and analyzed, but this data is not available and was not used in the resource estimate that is the subject of this report.

Blank rock and certified standard materials were each inserted at a ratio prevailing in the industry or deemed appropriate by the geologists. Samples for duplicate analysis were identified and given sequential sample numbers at the end of the shipment. In core drilling, once the samples were marked, the core was photographed and then sawed in half using a diamond saw. Half of the core was then sent for assay and half was kept for future reference. Prior to shipment, some of the samples were weighed and most were photographed and then secured in bags. Each hole was sent to accredited laboratories with a chain of custody document to certify that the shipment was received. Nearly all assays were performed by outside laboratories, including Skyline of Tucson, Arizona, Legend of Reno, Nevada, Iron King of Humboldt, Arizona, Barringer of Reno, American assay of Reno and Chemex of Reno.

Duplicate samples were prepared by splitting the crushed sample in half and creating two numbered samples. All samples were assayed for gold and silver using a 1 At (assay ton) or 2 At designation to represent sample charges of 29.2 grams or 58.4 grams, respectively. Select samples from 27 RC holes were analyzed for 29 elements.

The samples were taken from the drill site to the sample prep area where they were placed in order on a concrete slab or tarp to dry. While the samples were drying, control samples were inserted. Pre-bagged crushed blank material was inserted in most shipments. Commercially prepared standards with a known gold content were inserted throughout the hole. The geologist matched the level of gold standard to the anticipated level of mineralization in the drill hole. The samples to be duplicated were selected by the geologist, recorded in the drill log, and split in the lab. While placing the samples into bags for shipping, many samples were weighed and the weight was recorded on the drill logs. When the lab received the samples, they weighed each one and placed their identifier label on it and were instructed to incorporate the company's attached tag for sample tracking.

At the accredited laboratories the samples were dried as needed, then crushed, and a 350 to 500 gram split of the crushed material was then pulverized to make the analytical sample. One or two assay tons of material were analyzed by fire assay, with an atomic absorption finish (AuAA24 procedure). Grind tests were reported as a further quality control to insure that the pulps were sufficiently fine to supply a quality analytical pulp.

Standard RC drilling techniques were used to optimize recovery, minimize contamination, and keep the sampling circuit as clean as possible. Continuous sampling was done on five-foot (1.52m) intervals, and the splitter was thoroughly cleaned prior to the start of drilling of each 20-foot rod. Generally, drilling was dry and only one sample was collected during Barrick's tenure. These procedures were initiated by Barrick's predecessors and were generally followed by Barrick with minor adjustments as deemed appropriate. The primary assay samples were transported to a staging area near the property for subsequent shipment to the respective lab. Each batch of samples was loaded on a truck, with a driver supplied by the assay company. The driver collected the samples, received the sample submittal sheets, and transported the sample to the respective assay laboratories.

The drill cuttings were returned from the assay lab and were stored in a secure site for later reference. Upon closure in 2000, all RC and core reject samples were disposed of by Barrick.

11.1 St. Joe Minerals

This section summarizes QA/QC data related to new sampling carried out between 1983 by St. Joe Minerals and followed by Bond Gold, Lac Minerals and Barrick through the completion of drilling in the end of 1996.

11.1.1 RC Drilling

An industry-standardized sampling protocol utilizing two sets of pre-marked 20"x24"sample bags with numbered tags was implemented for each drill hole. Most drilling was dry, and a wet rotary splitter was not used. An effort was made to collect approximately 10kg of sample material.

11.1.2 Core Drilling

Industry-standard core sampling protocols were also implemented, whereby the entire length of each hole was sampled with continuous intervals based on careful logging of geological characteristics. In conjunction with the logging, sample intervals are marked in the core box and assigned unique sample numbers in a sequence that includes pre-selected QA/QC samples every tenth sample. Each hole starts with a blank QA/QC sample, and alternates between blanks and reference standard just like the RC holes. Once a hole is logged and tagged for sampling, each box is photographed. Once a hole was photographed, the photos were reviewed for adequacy and the photo files renamed using hole number and box number.

11.1.3 Transport and Security

Prior to shipment, all rock and core samples were placed in sealed bags and transported by a representative of the assay company.

11.1.4 Duplicates

Duplicates were used when appropriate to monitor the precision of the assays that are incorporated into the mineralization estimate. Duplicates were used to monitor three sources of variation, e.g. sampling, preparation and assaying. Field duplicates are used to document the precision associated with sampling, prep duplicates are used to monitor the sample preparation process, and pulp duplicates monitor the assaying process. St. Joe used all three types of duplicates to monitor the precision of the gold and silver analyses.

11.1.5 Field Duplicates

Field duplicates were only collected for RC samples and were created by placing a Jones splitter into the sample stream and creating two identical samples. There was no specific ratio of field duplicates to normal samples, but field duplicates were selected by the project geologist to represent the geological and grade variation based on the logging and original assays.

For gold samples that lie outside of the analytical precision field there seems to be a very slight tendency for the original sample to report higher value than the duplicate. This may reflect gold particle settling in the duplicate, which is related to the fact that the original sample is shipped wet while the duplicate continues to dry for several weeks before it is finally selected for assaying. Vibration during handling of the dry sample could allow gold particles to preferentially settle, making it more difficult to get a representative split.

11.1.6 Visible Gold Sampling Protocol

No metallic screen fire assays were used to determine a precise assay for such intervals. However, visual gold was most often recorded on the geologic logs.

11.1.7 Blanks

Blank material was used to monitor for carryover contamination and to ensure that there is not a high bias in the assay. Carryover is a process where a small portion of the previous sample contaminates the next sample. Each blank that assays higher than three times the detection limit is evaluated to see if the value reflects carryover or some other problem.

11.1.8 Certified Reference Material

Certified Reference Materials ("CRMs") or "standards" are used to monitor the accuracy of the assay results reported from the various labs. CRMs were inserted into the sample sequence to monitor both accuracy and sample sequence errors. A number of different CRMs covering a range of grades and mineral compositions were used. Each CRM comes with a certified concentration with a stated uncertainty. However, the precision on the assay is ultimately controlled by the 10% analytical precision.

11.1.9 Sample Recovery

The sample recovery from drilling has an important effect on how representative the sample is of the volume of rock that has been sampled. Core recovery can be easily measured on site by the length of core recovered. For RC it is much more difficult to determine the actual recovery from the interval because of the way it is collected. As a result, RC recovery is best reflected in the relative weights of the samples submitted for assay.

11.1.10 RC Recovery

It is very difficult to monitor RC recovery because the drillers constantly adjust the sample stream to collect an appropriate volume of sample—e.g. try to maintain the target 10 kg sample weight. This means they increase the fraction of the cuttings going to the sample stream when recoveries are lower and cut the fraction when recoveries are higher. Because of this, variations in the sample weight only vaguely reflect the actual sample recovery in any given interval. However, light samples do, in general, indicate that the flow of sample decreased, at least momentarily, possibly reflecting sample loss into cavities around the hole. RC sample dry weights were measured as part of the sample QA/QC program and these weights indicated how consistent the RC sampling has been. Importantly, only a very small number of samples have weights less than 3 kg, which almost certainly reflects major sample loss to the surrounding formations.

11.1.11 Laboratory Handling of Samples

Samples are monitored throughout the preparation process with various weights, e.g. shipped weights, received weights, dry weights, and coarse reject weights. This data is used to monitor sample login, layout and sample spillage or mixing. Theoretically, the only difference between the “dry weight” and the “coarse reject weight” should be the weight of the material extracted for pulverizing.

The standard requested pulp size for all drill samples is 1Kg with an acceptable range of values from 0.5 to 1.5Kg. Extracted weights outside of the acceptable range indicate there may be preparation issues such as spillage or blending of two samples. For blending of drill samples the protocol is to combine and homogenize all the materials from both samples and then split it in half to create two identical samples which are then assigned the original sample numbers. Theoretically, the weights of blended samples will show a symmetric weight gain and loss.

11.2 Conclusions

The principal author has reviewed previous QA/QC programs for the Project contained in previous reports and discussed related topics with Tom John, Barrick’s former Exploration Manager. As a result, he finds the information sufficient to confirm the validity of the sampling carried out between 1983 by St. Joe and followed by Bond Gold, Lac Minerals and Barrick through the completion of drilling in the end of 1996.

12. DATA VERIFICATION

The data for this mineral resource estimate comes from historical exploration and operations. The original laboratory certificates were available for the majority of the drilling. Data collected by previous operators has in part been verified by the corroborating data in the original laboratory certifications, as well as existing physical and digital records. Blind entry spot checks were run against the database and the laboratory certificates to ensure the quality of the database. No additional exploration drilling has been performed since the closure of the Bullfrog Mine. The quality of data reviewed meets industry-standard practice at the time of sampling and is sufficient to support the estimation of mineral resources at this level. Data from previous explorers, along with an independent estimation of previously mined resources to verify the data, is sufficient to support the estimation of mineral resources; however, details regarding QA/QC protocols and performance were not available for review.

The following section describes steps taken by the author of this report to verify data provided by the company. Data verification conducted during the site visit included observations of remaining mine workings, a drill hole location and ore bounding volcanic beds and fault. Mineralization was witnessed in outcrop and orientations were observed. Historic open pit mining and the site layout were also observed.

Core and chip trays from the original drilling are no longer available.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

Most of the metallurgical tests on the Project were conducted on high-grade ores using conventional milling and agitation leaching methods. Typical processing statistics during 1989 into 1999 are shown in **Table 13-1**.

Table 13-1: Typical Processing Statistics from 1989-1999

Gold Recovery	91%
Silver Recovery	65%
Leach Time	48 hours
Grind	80%-150 mesh
Rod Consumption	2.3 lbs/ tonne
Ball Consumption	2.1 lbs/ tonne
Cyanide Consumption	0.5 lbs/ tonne
Lime Consumption	1.2 lbs/ tonne

Barrick's mill recoveries were good for gold, but silver recoveries were lower mainly due to its refractory association with manganese. As a result, the 26 million tonnes of tailings stored south of NV Hwy 374 currently have little value. Since the silver recovery was only 1.07 times the gold recovered, Barrick used a carbon ADR circuit rather than the Merrill-Crowe process.

13.1 St. Joe

13.1.1 Large Column Leach Test

Reports by St. Joe Minerals provide detailed information on two large column tests on bulk samples of the M-S deposit. The test facility included a carbon adsorption plant and two concrete columns 24-feet high with inside diameters of 5.5 feet.

An area surrounding reverse circulation hole RDH-20 in the M-S deposit was drilled and blasted to produce 250 tons of bulk sample. The mined sample was split to produce 20 tons of uncrushed or run-of-mine column feed and 22 tons of crushed column feed. The columns were then loaded with efforts to minimize compaction and size sorting of the sample. Solution was applied at a rate of 0.004 gpm/sq. ft. Results after 59 days of leaching are shown below. A 90-day projected recovery was 61% Au on 19 mm (3/4") crushed ore and 54% on 305 mm (12") run-of-mine ore. Previous bottle roll tests on drill cuttings in this area averaged 78% gold and 33% silver.

Screen analyses of the -19 mm (-3/4") leached residue shows that the -65 mesh and -10 to + 65 mesh fractions yielded gold recoveries 96% and 86% for respective head assays of 0.074 and 0.057 oz/ton gold. The screen analyses also show that the loss of fines from a sample (which did occur) will not only depress the apparent gold grade, but will also cause an even greater depression in the apparent gold recovery.

St. Joe came to the following conclusions:

- M-S mineral is permeable and readily heap leachable. Cyanide and lime consumptions were reported as "average", but not quantified.
- Fine fractions yield the highest recovery, and if lost will depress gold recovery.

- Evidence suggests many fines were lost during handling and the recoveries are deemed minimum or conservative.
- There appears to be little correlation between recovery and grade.
- There were no observable chemical or percolation problems with the sample.

13.1.2 Bottle Roll Tests on UG Samples

Bottle roll tests on 39 underground sample composites obtained from the glory hole and 200 and 300 levels of the M-S mine recovered 78% of gold from material averaging 0.16 opt and crushed to -8 mesh. Recoveries ranged from 52% to 98% with no obvious correlation between grade and recovery. St. Joe concluded that bottle roll test (presumably for 24 hours) on material crushed to -8 mesh provides good representation as to what may be achieved in a column test sized at 19 mm (3/4-inch).

13.1.3 Column Testing by Kappes Cassiday

Results from leach tests performed in 1994 by Kappes Cassiday from a 250-kg composite of low-grade material from the Bullfrog mine are shown below:

Table 13-2: Leach Test Results

	Bottle	Column	Column
Size, mesh, & mm (inch)	-100 mesh	-38 mm (-1.5”)	-9.5 mm (-3/8”)
Calc. Head, opt Au	0.029	0.035	0.029
Rec %	96.6	71.4	75.9
Leach time, days	2.0	41	41
NaCn, kg/t (lb/short ton)	0.5 (0.1)	0.385 (0.77)	5.35 (10.7)
Lime, kg/t (lb/short ton)	1.0 (2.0)	0.155 (0.31)	1.75 (0.35)

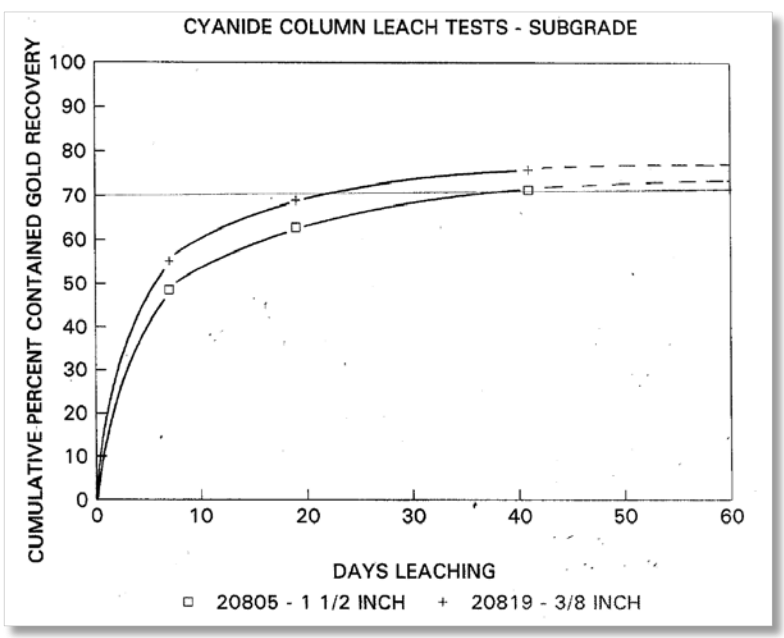

Figure 13-1: Leach Test Results

Note that the recovery in the coarse crush (-38.1 mm [-1.5”] is a 2-stage crush size) is only 4.5% less than the fine crush (-9.5mm [-3/8”] requires 3-stage crushing). The 41-day leach periods are also short and ultimate heap leach recoveries may be greater.

Two 45 kg sample were crushed and loaded into 6-inch diameter columns to heights of five feet. Leach solution was applied at a rate ranging from 0.004 to 0.006 gpm/sq ft and initially contained 1.0 g NaCN/l and 0.5 g/l lime. Input solutions were 0.4 to 0.6 g/l NaCn while maintaining a pH of 9.5 to 10.5. The initial solution was clear and bright yellow, and the final solution was clear and colorless. Column tailings retained 6% to 7.5% moisture after drain down, and each were screened and assayed for size fractions.

13.2 Pilot Testing by Barrick

In 1995, Barrick performed pilot heap leach tests on 844 tons of low-grade material from the Bullfrog pit and 805 tons of typical pit ore from the M-S pit. Both materials were crushed to -1/2 inch and leached at an application rate of 0.006 gpm/sq ft. Lift heights were 12 feet. Results are listed below:

Table 13-3: Heap Leach Pilot Tests – Barrick

	BF Low-Grade	M-S Ore
Calc. Head, opt Au	0.019	0.048
Calc. Head, opt Ag	0.108	0.380
Projected Au Rec %	67	74
Projected Ag Rec %	9	32
Leach Time, days	41	37
NaCn, kg/t (lb/short ton)	0.10 (0.20)	0.125 (0.25)
Lime, kg/t (lb/short ton)	Nil (Nil)	Nil (Nil)

Low-grade material was stockpiled during pit operations and ranged from a cutoff of 0.5 g/t gold and Barrick’s operating mill cutoff of 0.85 g/t. These stockpiles were later blended with underground ore and milled during 1998 and early 1999. All pit material below 0.5 g/t was dumped as waste rock. Based on the source and grade of this material, it is representative of the mineralization remaining in the Bullfrog deposit. The M-S sample represents ore that was in large measure mined by Barrick after this pilot test, but the information on reagent consumption is applicable to remaining mineralization and the recovery has reference value.

Again, acceptable solution grades at the end of the tests and leaching beyond 41 days at lower solution application rates could result in ultimate recoveries that are a few percent higher. Lime and cyanide consumptions were low. The test heap also did not reach maximum recovery due to poor solution distribution in the first couple of feet, which could be recovered from multiple lifts in a production scenario and improved solution distribution.

13.3 Conclusions for Heap Leaching

Based on the extensive test work completed to-date that is applicable to the remaining mineralization in the BF and M-S pits, long-term heap leach recoveries are projected as follows:

Table 13-4: Estimated Heap Leach Recovery

Leach Size	80% - 9.5 mm (3/8 inch)	ROM Low Grade
Estimated Recovery	72%	50%

** Silver Recovery is estimated at 1.07 x gold recovered ounces, which is the typical recovery attained by Barrick.*

All mineralization known to-date would be heap leached and the pregnant solutions would be processed through a carbon ADR plant to be constructed on site.

The Bullfrog and M-S deposits originally contained less than 2% sulphide minerals that were thoroughly oxidized below existing and proposed mining depths, including the current water table and virtually all deep drill holes. The historic water table was much lower in the geologic past, and the detachment and associated faults allowed epithermal solutions to oxidize the host and adjacent wall rocks to great depths. There is a small volume of mineralization in the footwall stock-works or east side of the central Bullfrog deposit near section 8148 north that contains carbon-pyrite alteration with attendant reductions in leach recoveries. This situation needs to be researched further as to extent and recovery. Additional leach tests are needed to optimize performance versus crush size.

13.4 Leach Pad Siting

There are seven areas that potentially could serve as leach pad sites within reasonable trucking or conveying distances from the Bullfrog and M-S pits as described below:

Potential Leach Pad Sites & Approx. Capacities

Priority	Criteria				Comments
	Criteria: Stacked Density: 1.8 t/m3				Swell factor of 35% for in place density of 2.45
	Heap Height : 30 m				As crushed material percolates well with minimum fines and clay, heights likely could be higher subject to confirmation testing.
	Min.Pad Slope: 3%				
	Max. Pad Slope: Site & Design Dependent				
1	**South Rainbow Mtn.**		360,000	m2	Has the shortests conveying/trucking distances and lowest operating costs, but expansion is limited. M-S waste dump is on NE side of area.
	West of M-S pit and N of Rhyolite		10,800,000	m3	
	Area: 600 x 600	Typ. Slope 5%	**19,440,000**	**tonnes**	
2	**South Paradise Mtn.**		270,000	m2	Second shortest convey/truck distance. Could be used after No. 1 is filled.
	1200 m east BF pit & 1600 m SE MS pit		8,100,000	m3	
	Area: 450 x 600	Typ. Slope 7%	**14,580,000**	**tonnes**	
3	**South Burton Mtn.**		975,000	m2	
	2300 m NE BF pit & 2000 m E MS pit		29,250,000	m3	
	Area: 1300 x 750	Typ. Slope 5%	**52,650,000**	**tonnes**	
4	**NE Barrick Tail Pond**		3,600,000	m2	Requires a conveyor or truck bridge over Hwy 374. This area could be substantially expanded, but this not foreseeably needed.
	S of Hwy 374		108,000,000	m3	
	Area:1800 x 2000	Typ. Slope 4%	**194,400,000**	**tonnes**	
5	**Barrick Tail Pond**		1,000,000	m2	Requires a conveyor or truck bridge over Hwy 374 and geotech studies on tailings. Lining this pad would be easy easy, but obtaining a 3+% slope requires earthworks.
	S. of Hwy 374. Contains 26 mm tonnes		30,000,000	m3	
	Area:1000 x 1000	Typ. Slope 1%	**54,000,000**	**tonnes**	
6	**West Plantsite**		4,410,000	m2	Requires a conveyor/truck bridge to cross the road to Rhyolite. Cannot be easily expanded but this is not foreseeably needed.
	West of road to Rhyolite and a cemetary		132,300,000	m3	
	Area: 2100 x 2100	Typ. Slope 4%	**238,140,000**	**tonnes**	
7	**Indian Springs**		2,560,000	m2	Long haul from Buffrog and M-S pits. M-S pit impairs direct route
	3300 m NE BF pit & 2300 m NE MS pit		76,800,000	m3	
	Area:1600 x 1600	Typ. Slope 4%	**138,240,000**	**tonnes**	

In all cases, additional drilling is required to adequately explore or condemn these areas, and considerable technical and economic studies are needed to select any site.

14. MINERAL RESOURCE ESTIMATES

Resources have been estimated for the Bullfrog deposit using a block model to fit the deposit strike for each of the two areas. Two separate block models were created, one for the Bullfrog Pit (BF) area and one for the Montgomery-Shoshone (M-S) area. The Bonanza Mountain Area was not estimated for this report. Sub-blocking was used to help define the veins. Two wireframe domains were built for the Bullfrog deposit, one for the high-grade and one for the low-grade gold. Vein solids were created for Polaris and Montgomery veins in the M-S pit area. Au and Ag grades have been estimated using Ordinary Kriging on blocks independently within and also outside of wireframe-constrained domains. Reporting of estimated blocks has been constrained by a base case pit optimization using reasonable economic parameters.

Although the mineral resources are pit-constrained using reasonable cost assumptions, detailed costing and economic evaluations have not been performed. The pit optimization only considers ounces on lands controlled by Bullfrog Gold, but the pit has been allowed to extend onto non-controlled land for planning purposes. The pit optimization includes resources that have not demonstrated economic value and include inferred resources that are too speculative for definition of reserves.

Estimated mineral resource within the base case pit constraint are shown in **Table 14-1** for the Bullfrog Pit area. Estimated mineral resource within the base case pit constraint are shown in **Table 14-2** for the M-S Pit area. Historically mined ounces, both open pit and underground, were flagged and removed from the model before calculating the resource numbers.

Table 14-1: Mineral Resource Estimate for the Bullfrog Pit Area

Classification	Cutoff Au g/t	Tonnes (M)	Au g/t	Ag g/t	Au oz (1000)	Ag oz (M)
Measured	0.36	2.05	0.88	2.35	58	0.15
Indicated	0.36	12.9	1.04	2.52	431	1.04
Measured + Indicated	0.36	14.95	1.02	2.50	489	1.2
Inferred	0.36	2.8	1.2	2.58	109	0.24

NOTES:
(1) Cutoff grade calculated using a metal price of $1,200 per troy ounce of Au and a recovery of 72% for Au.
(2) Mineral Resources have been pit shell constrained using the Lerch Grossman algorithm
(3) Metal prices do not exceed three-year trailing average as of the end of December 2016, per SEC guidance

Table 14-2: Mineral Resource Estimate for the M-S Pit Area

Classification	Cutoff Au g/t	Tonnes (M)	Au g/t	Ag g/t	Au oz (1000)	Ag oz (M)
Measured	0.36	0.41	1.03	4.53	13.7	0.06
Indicated	0.36	0.71	0.99	3.72	22.7	0.09
Measured + Indicated	0.36	1.12	1.00	4.02	36.4	0.15
Inferred	0.36	0.045	1.17	5.53	1.69	0.008

NOTES:
(1) Cutoff grade calculated using a metal price of $1,200 per troy ounce of Au and a recovery of 72% for Au.
(2) Mineral Resources have been pit shell constrained using the Lerch Grossman algorithm
(3) Metal prices do not exceed three-year trailing average as of the end of December 2016, per SEC guidance

Table 14-3: Measured and Indicated Resource Summary for Project

Classification	Cutoff Au g/t	Tonnes (M)	Au g/t	Ag g/t	Au oz (1000)	Ag oz (M)
Bullfrog	0.36	14.95	1.02	2.50	489	1.2
M-S	0.36	1.12	1.00	4.02	36.4	0.15
Total	0.36	16.07	1.02	2.61	525.4	1.35

NOTES:
(1) Cutoff grade calculated using a metal price of $1,200 per troy ounce of Au and a recovery of 72% for Au.

14.1 Input Data

The project database contains 1,262 holes, totaling 250,641 meters of drilling. Of those, 20,119 meters were core drilled, while 230,521 meters were completed using RC drilling. Of those holes, 658 holes are within the relevant resource area and were subsequently used for resource modeling. **Figure 14-1** shows the location of the drill holes in plan view.

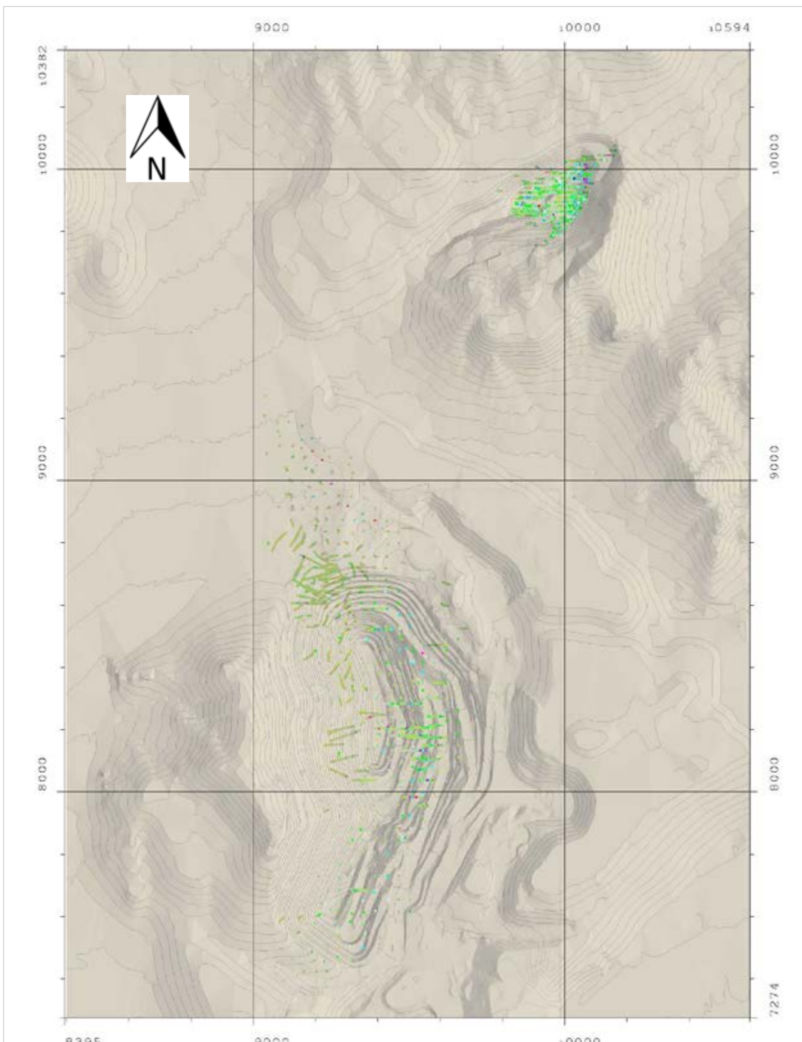

Figure 14-1: Plan View Map of Project Drilling Composites used for Estimation

14.2 Grade Capping

Intervals from the combined drill database that were within the mineral zones were analyzed as a natural log transformed population to determine upper grade limits. Upper limits were applied to raw sample values prior to compositing. The upper limit chosen for Au was 100 g/t for the high-grade Bullfrog material, and 7 g/t for the Bullfrog low-grade material. The silver was capped at 150 g/t for the high-grade zone, and 15 g/t for the low-grade zone. In the M-S zone, the Au was capped at 12 g/t and the silver was capped at 100 g/t. **Figure 14-2** shows the histogram for Au, while **Figure 14-3** shows the histogram for the Ag grades.

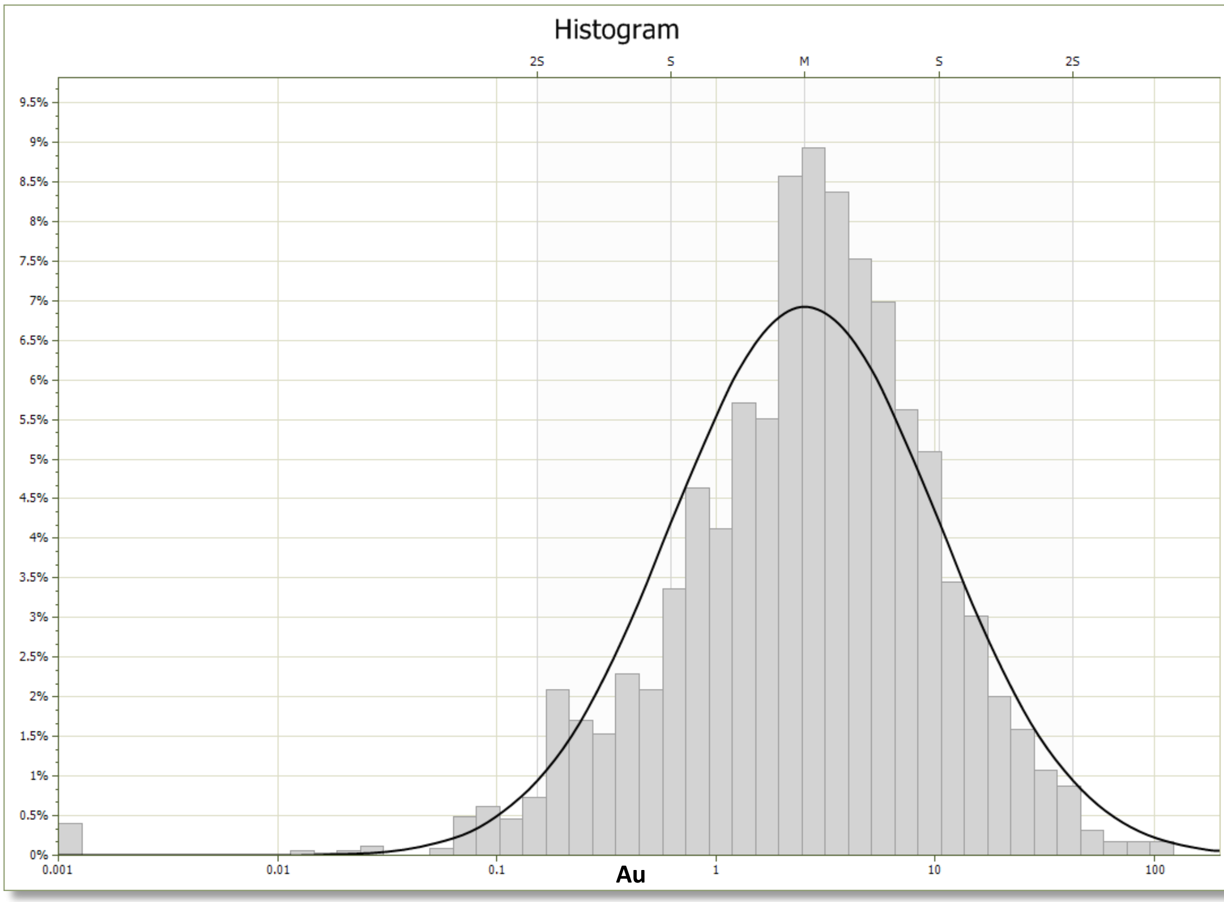

Figure 14-2: Histogram of Gold Grade values

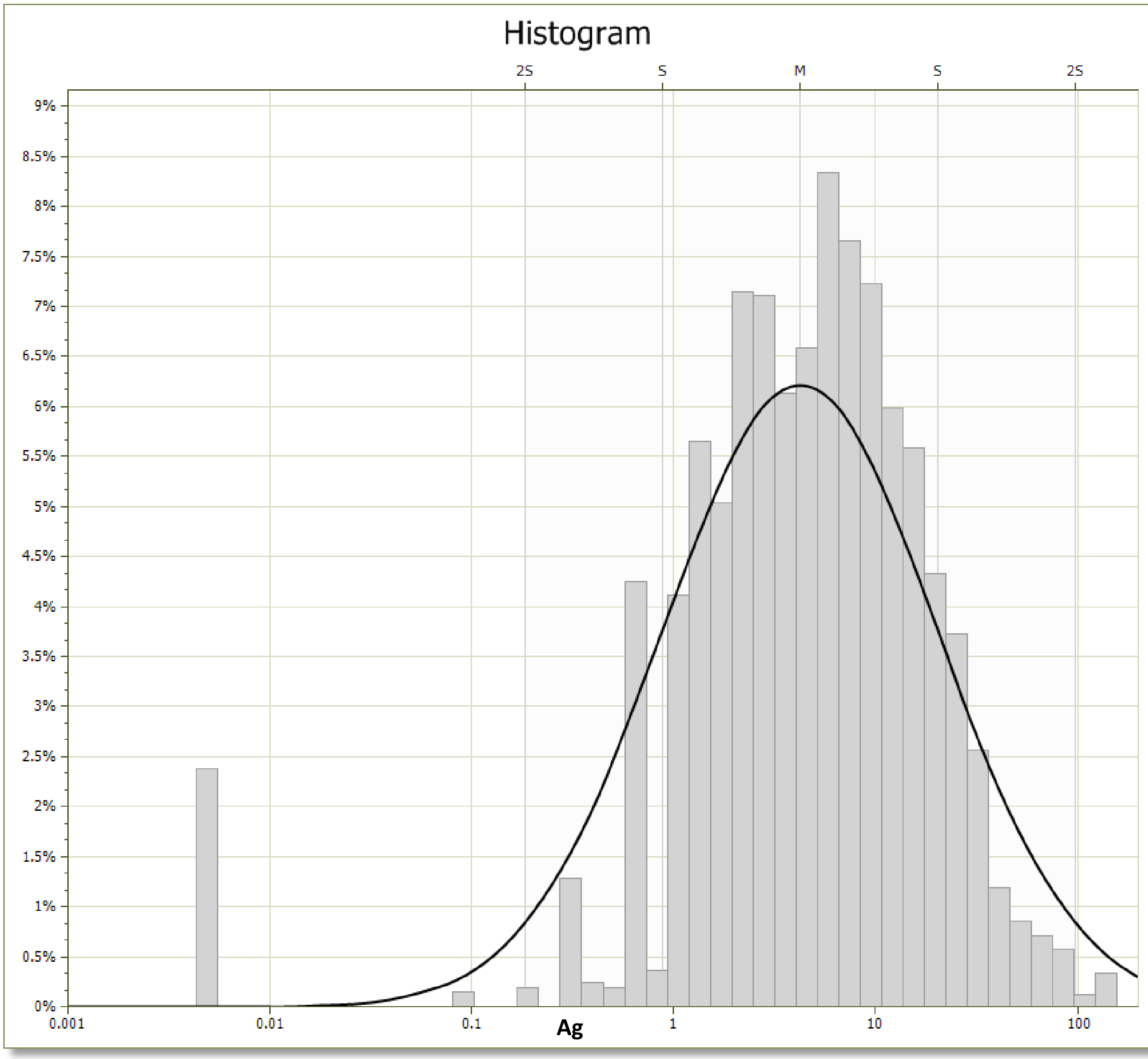

Figure 14-3: Histogram of Silver Grade values

14.3 Compositing

Each drill hole that intersected the modeled mineral zones was composited into five-foot (1.52 m) intervals and centroid coordinates were generated. New composites initiate at the mineral zone boundaries.

14.4 Mineral Zone Modeling

The Bullfrog Project is interpreted to be an epi-thermal deposit with stockwork and massive veining. Mineral zone solids were constructed separately for the BF and M-S deposits.

The project was first divided into two areas based on previous mining of deposits. This divides the project into the Bullfrog (BF) Pit area, and the Montgomery-Shoshone (M-S) Pit area.

14.4.1 Bullfrog Zone Modeling

The BF area was modeled as two wireframed domains. The first is a high-grade wireframe, which was constructed to represent the high-grade vein in the area. There are samples with grades outside of the high-grade wireframe and these grades were modeled into a low-grade wireframe domain. **Figure 14-4** shows the domains described above. All wireframes included the drilling in the mined out areas to show a better understanding of the system. These areas were estimated only for verification purposes and were not included in the resource estimate.

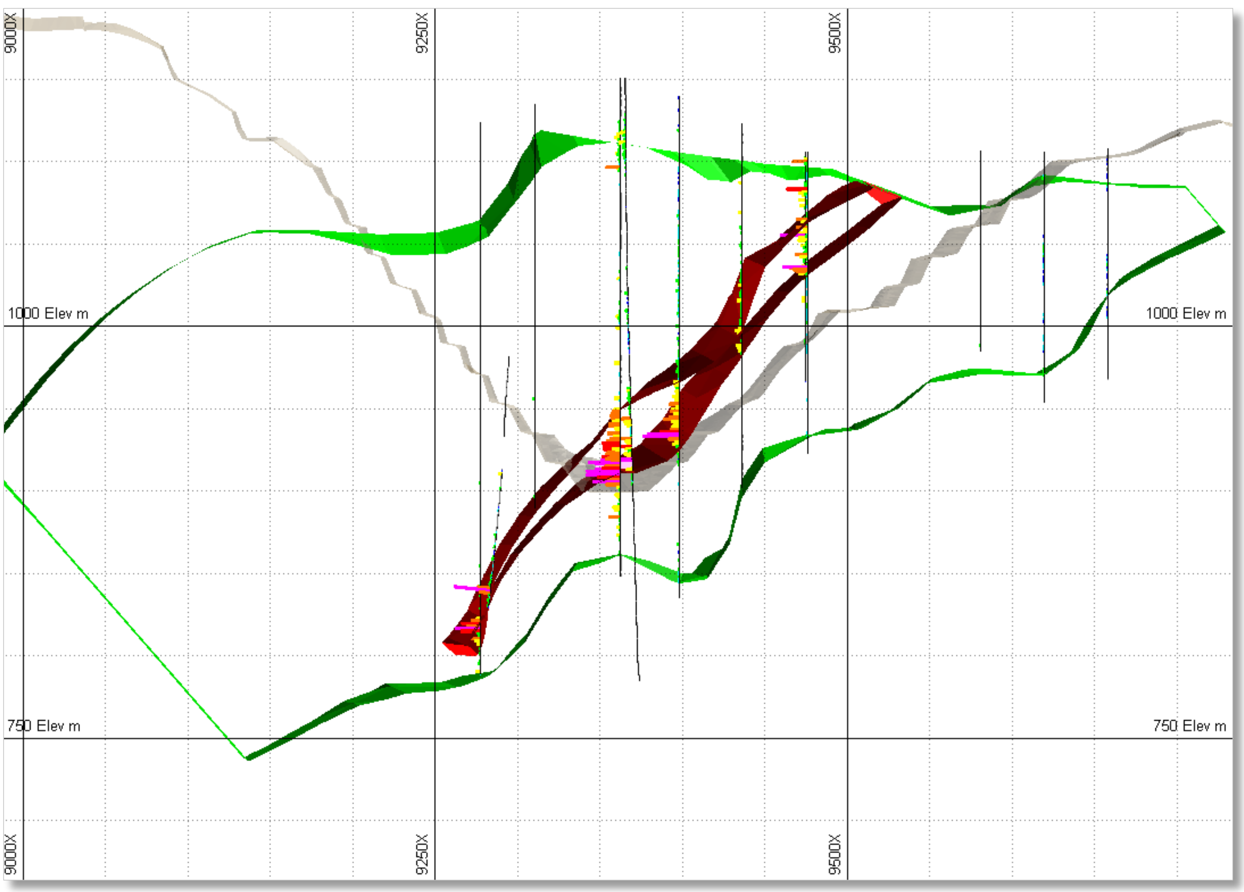

Figure 14-4: Cross-Section Mineral Domains at 8500 North

In the M-S pit area, there are two main veins present in the data: the Polaris and the Montgomery Veins. Each of these vein structures was modeled as a wireframe for use in block estimation. The modeled veins are show below in **Figure 14-5**.

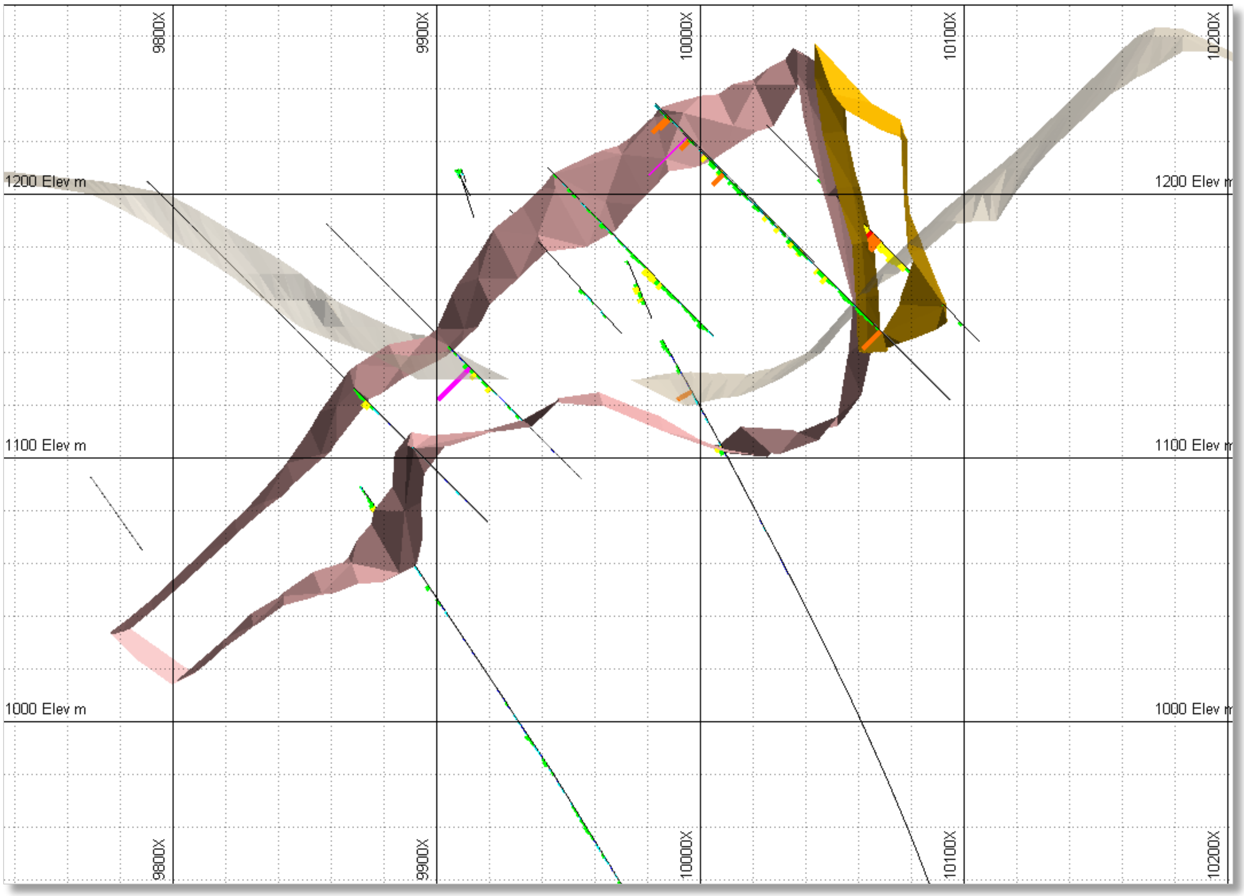

Figure 14-5: Montgomery and Polaris Veins at a Cross Section of 9980 North.

Table 14-4: Mineral Domain Information

Area	Mineral Zone	Count	Au Mean	Au Variance	Ag Mean	Ag Variance
BF_HG	High Grade	3452	5.67	84.4	9.51	211.21
BF_LG	Low Grade	36323	0.375	0.48	1.07	3.61
Polaris	Vein	3157	0.805	1.63	5.16	105.22
Montgomery	Vein	675	1.26	2.41	8.96	124.03

14.4.2 Density Determination

Barrick mined the Bullfrog Pit starting in 1989. They have significant data on specific gravity during mine operations. The density for the Bullfrog and Montgomery areas was 2.45 per bank cubic meters (bcm) when in production. This density was used for the block model.

14.5 Estimation Methods and Parameters

Resources have been estimated for the BF and M-S deposits using a block model rotated to fit the deposit strike. Sub-blocking was used to define the high grade and vein structures. Au and Ag grades were estimated using Ordinary Kriging.

14.5.1 Variography and Search

Search orientation and preliminary experimental variography were explored through semivariogram mapping. Composites in the main areas that are within any of the mineral zones were used as input data for the analysis. **Figure 14-6** and **Figure 14-7** show the resulting semivariogram maps for strike and dip. In the figures cooler colors represent lower semivariance, meaning better correlation.

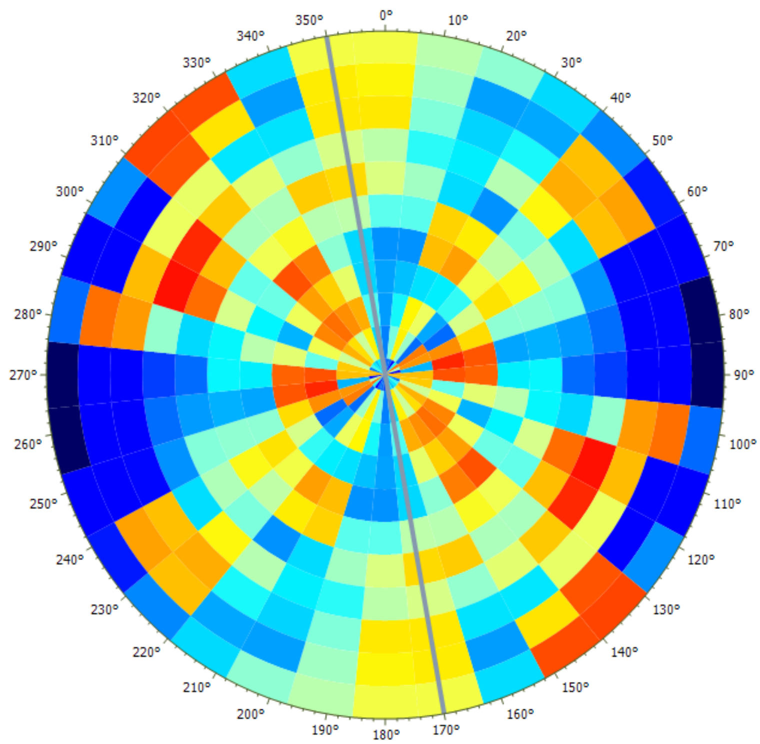

Figure 14-6: Semivariogram Map Strike

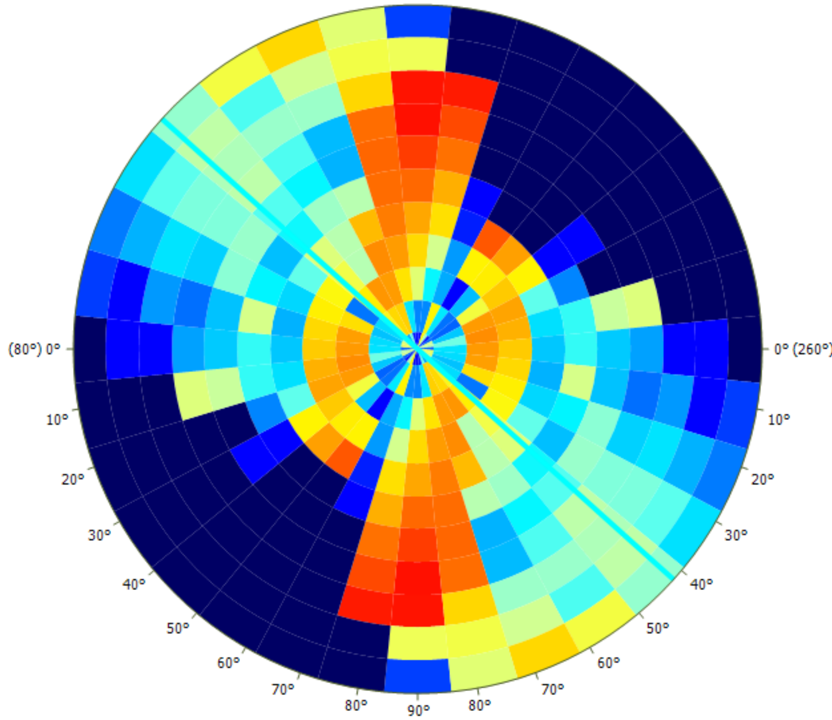

Figure 14-7: Semivariogram Map Dip

Pairwise semivariograms were used to establish the nugget and can be seen below in **Figure 14-8**.

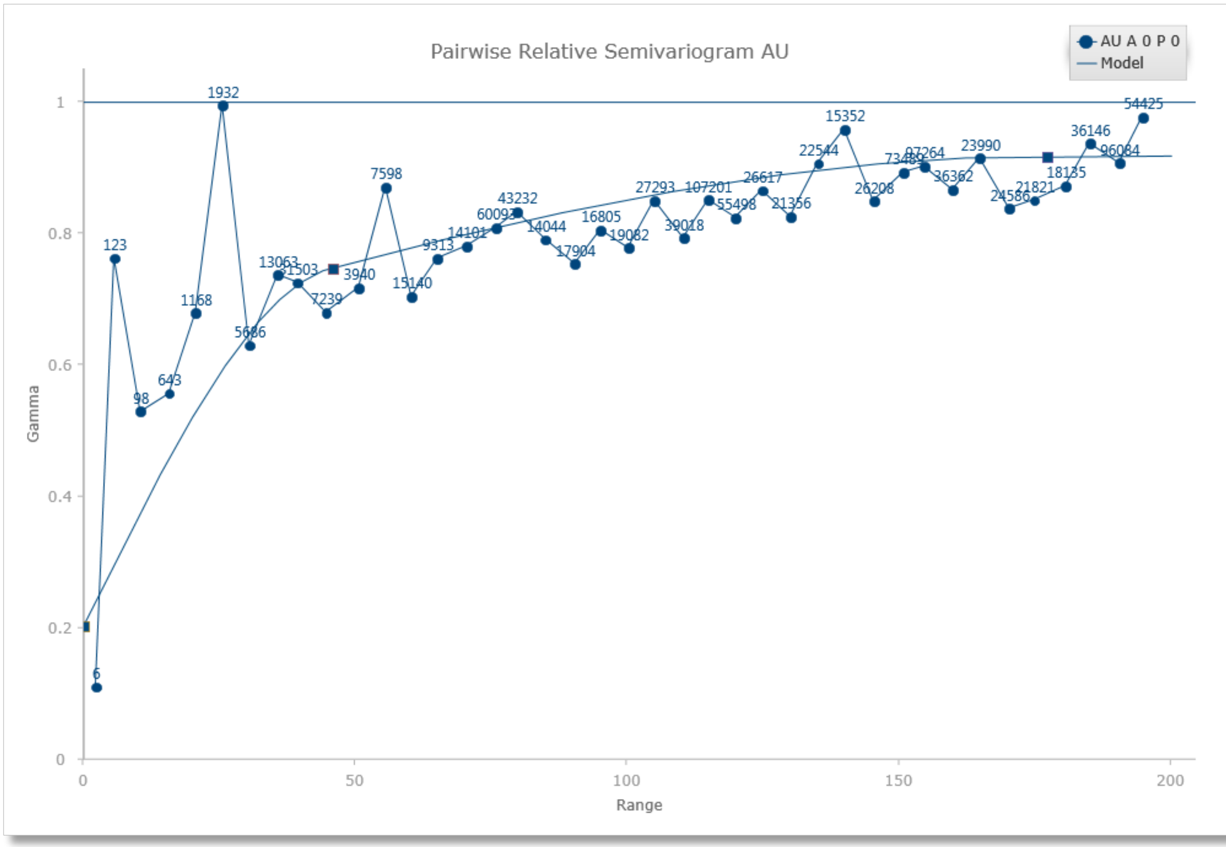

Figure 14-8: Pairwise Relative Variography Au

Orientations determined from the semivariogram maps were used as inputs for semivariogram modeling. The grade distance relationship was investigated for Au and Ag using natural log transformed directional variography on composited intervals. Nugget and sill portions have not been relativized to a total sill of 1 or 100% to correspond with the graphical output presented.

Although grade distance relationships were investigated and used as a guide, the ultimate search distances, classifications, orientations and anisotropies implemented were based on visual review of the mineralization and professional judgment.

A block model was fit to the extents of the mineral domains for each area with the parameters shown in below in **Table 14-5**. The block model was sub-blocked to help define the wireframes, and the blocks were assigned to domains based on the location of the block centroid relative to the domain wireframe.

Table 14-5: Block Model Setup Parameters

Direction	Origin (Corner)	Length m	Blocks Parent	Rotation About (Clockwise)	Sub-Block (Min)
Bullfrog					
X	8695	1200	20	0	1
Y	7280	2040	20	0	1
Z	700	600	20	0	1
M-S					
X	9450	920	20	0	1
Y	9410	880	20	0	1
Z	970	380	20	0	1

Grade attributes were estimated in two passes from small to large. Au and Ag were independently estimated within each modeled domain. **Table 14-6** details the search ellipse sizes and orientations along with sample selection criteria for each estimation pass.

Table 14-6: Ordinary Kriging Pass Parameters

Pass/Area	Mineral Zone	Bearing	Dip	Plunge	Major Axis (m)	Semi Major (m)	Minor Axis (m)	Samples /DH Max	Samples Min	Samples Max
BF_HG1	High Grade	170	42	0	30	20	30	4	3	30
BF_HG2	High Grade	170	42	0	80	60	40	4	3	30
BF_LG1	Low Grade	170	42	0	30	20	30	4	3	20
BF_LG1	Low Grade	170	42	0	60	60	40	4	3	15
MS_1	Montgomery	28	0	0	30	20	30	4	3	30
MS_2	Montgomery	28	0	0	80	60	40	4	3	30
PL_1	Polaris	28	0	0	30	20	30	4	3	30
PL_2	Polaris	28	0	0	80	60	40	4	3	30

14.5.2 Mineral Resource Classification

Mineral resource classification was established by evaluating the drill hole spacing of the composites and the distance to the nearest composite from a block. The kriging variance, which was recorded during the estimation, was also examined. The number of holes contributing to the estimation was also taken into account to classify the blocks. **Table 14-7** below shows the conditions for classification of blocks. Further classification refinement is made when the blocks are constrained by the pit shell optimization; blocks outside of both the base case pit shell optimization are not considered resource.

Table 14-7: Block Classification Parameters

Classification	Kriging Variance	Ownership Flag	Number of Samples	Distance to Nearest Sample
Measured	0-0.25	Yes	3+	<15
Indicated	0-0.25	Yes	3+	n/a
Inferred	0.25<	Yes	n/a	n/a

14.5.3 Cutoff Grade and Pit Shell Optimization

The base case cutoff grade has been calculated accounting for Au grade and recovery, as well as reasonable cost and metal prices assumptions.

The base and alternative case cutoff grade was determined using the three-year trailing average prices for Au, through May 2017, as mandated by the United States Securities and Exchange Commission (SEC). Additional tonnes and ounces were calculated on an internal cutoff of 0.20 to determine material that would be available for run-of-mine heap leaching.

Estimated blocks were constrained to two pits using the Lerch Grossman algorithm. The cutoff grade was applied to the blocks within the pit optimization base case with the assumptions shown in **Table 14-8**.

Table 14-8: Cutoff Grade and Pit Optimization Assumptions

Assumption	Input	Unit
Mining Cost Ore and Waste	2.25	$/t
Processing Cost	6	$/t
General and Administrative (G&A)	1.6	$/t
Refining Sales	0.05	$/t
Sell Cost	10	$/oz
Au Recovery	72	%
Ag Recovery	20	%
Au Price	1,200	$/oz
Pit Slopes	45	degrees
Calculated Cutoff for Optimization	**0.36**	**g/t**

The 45-degree pit slopes are conservative, and additional resource may be achieved through using steeper wall angles. The original mining slopes were 52 degrees and 45 degrees, based on rock properties in the pit areas. They have stood up reasonably well during the period since mining ceased at the pit, and it is reasonable to assume that slopes exceeding 45 degrees can be used, providing project upside. The $1,200 pit optimization is shown below with the current mined out topography; **Figure 14-9** shows the Bullfrog Deposit Pit and **Figure 14-10** shows the pit for the M-S deposit.

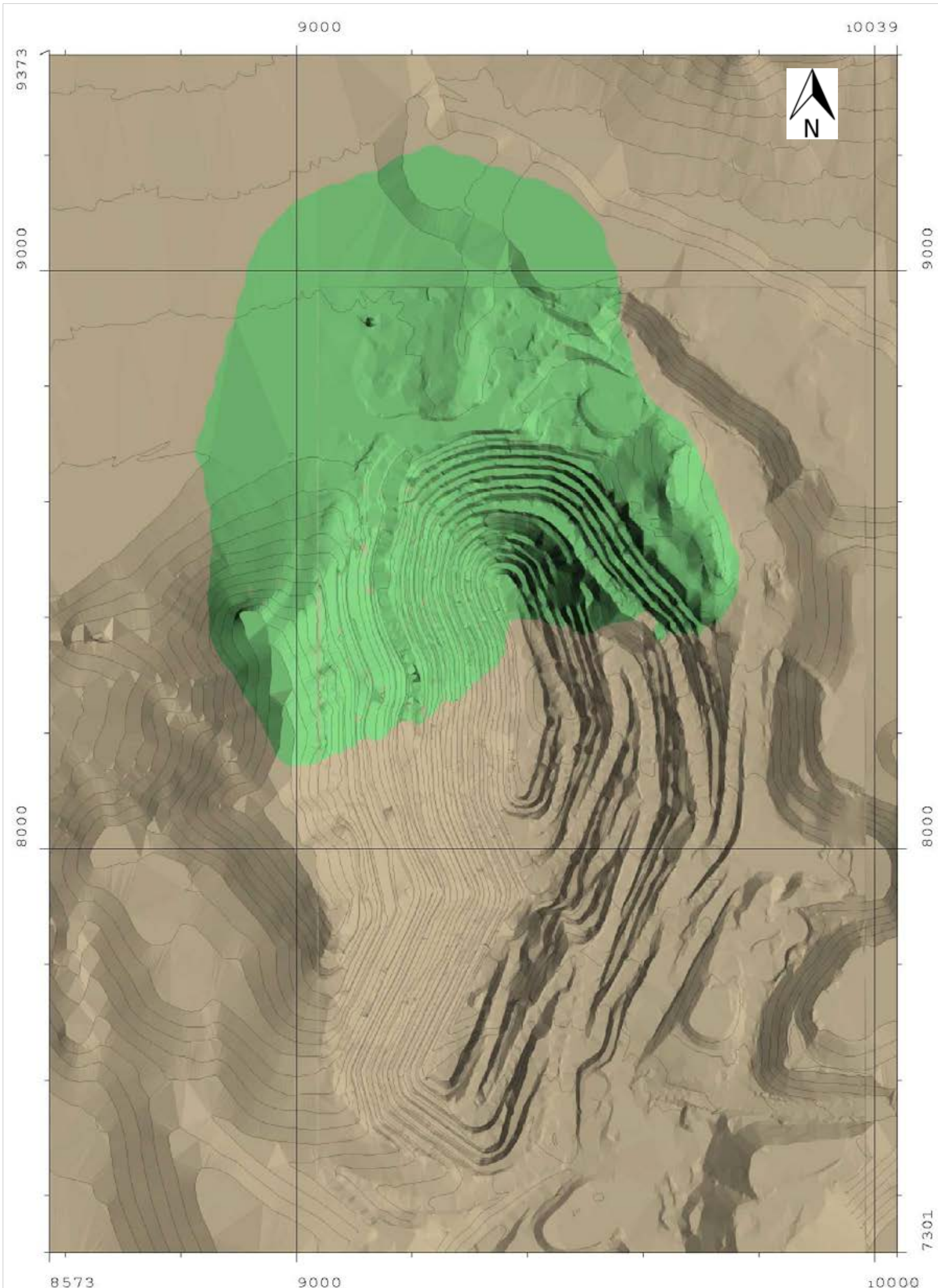

Figure 14-9: Bullfrog Current Pit and Optimized Shell

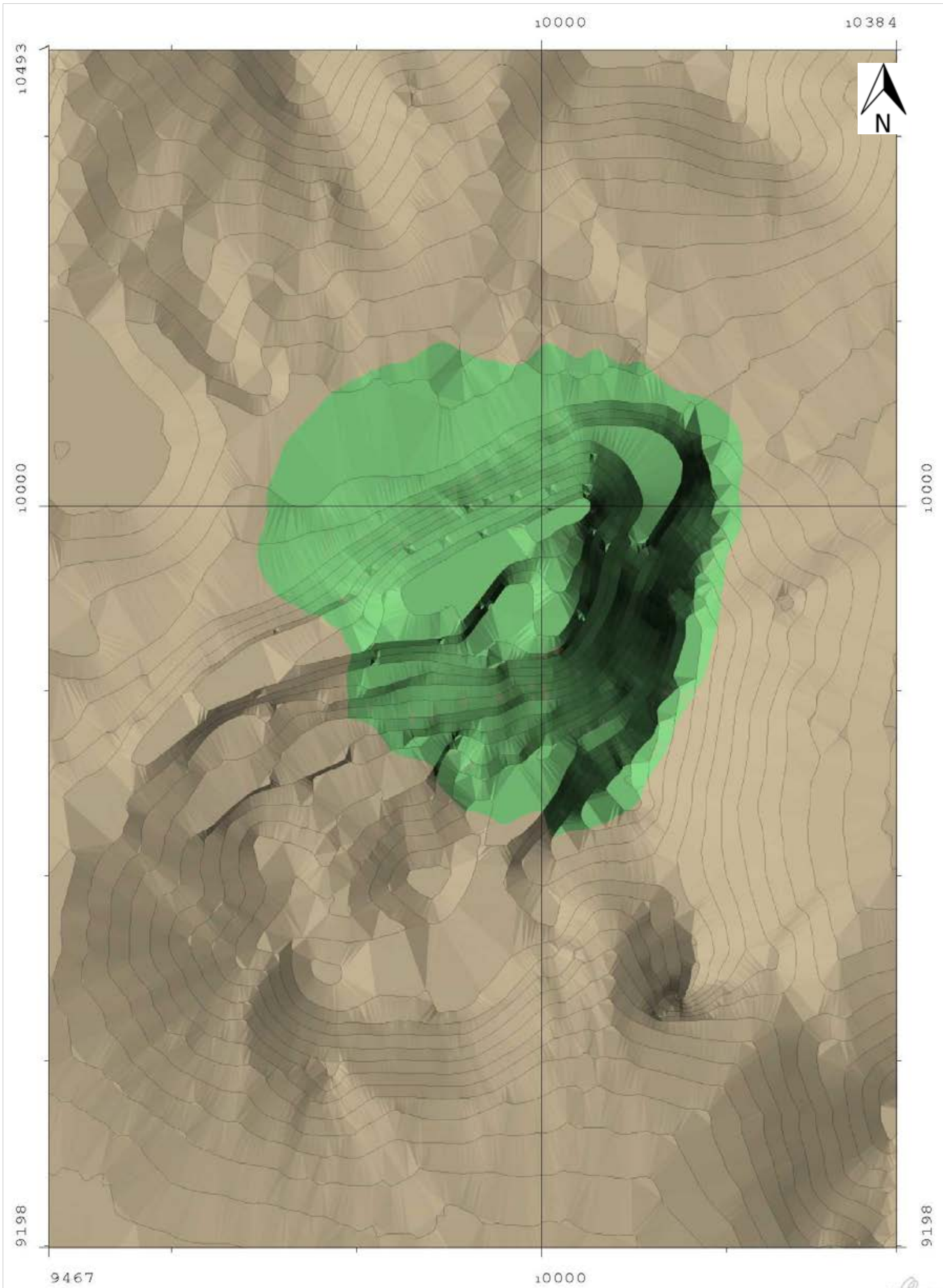

Figure 14-10: M-S Current Pit and Optimized Shell

14.6 Model Verification

Resource estimations have been verified by visual review, population analysis, and alternative estimation methods. Cross-section review of composite and block grades verify the estimation respects the input data. The Tetra Tech estimation model was also applied to the deposit before it was pit mined, and it was within 3% of the ounces actually produced from 1989-1998, thereby providing confidence in the database and the resource model and estimates herein. A nearest neighbor estimation was also performed and compared as an alternate estimation method.

Cross sections of the block models are shown below in **Figure 14-11** through **Figure 14-15**. The current mined-out topography and the $1,200 pits are displayed on the sections.

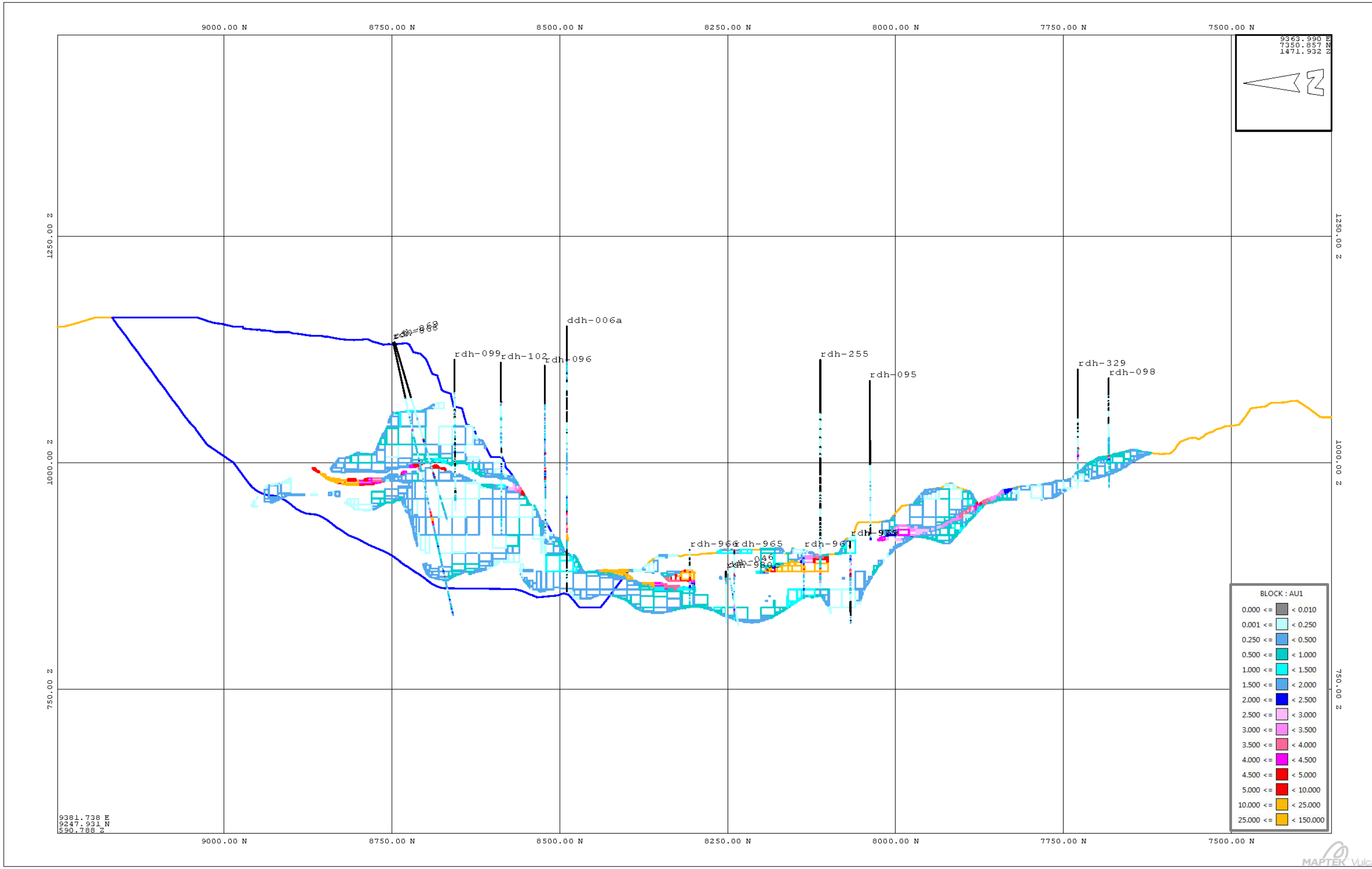

Figure 14-11: Long Section of the Bullfrog Deposit

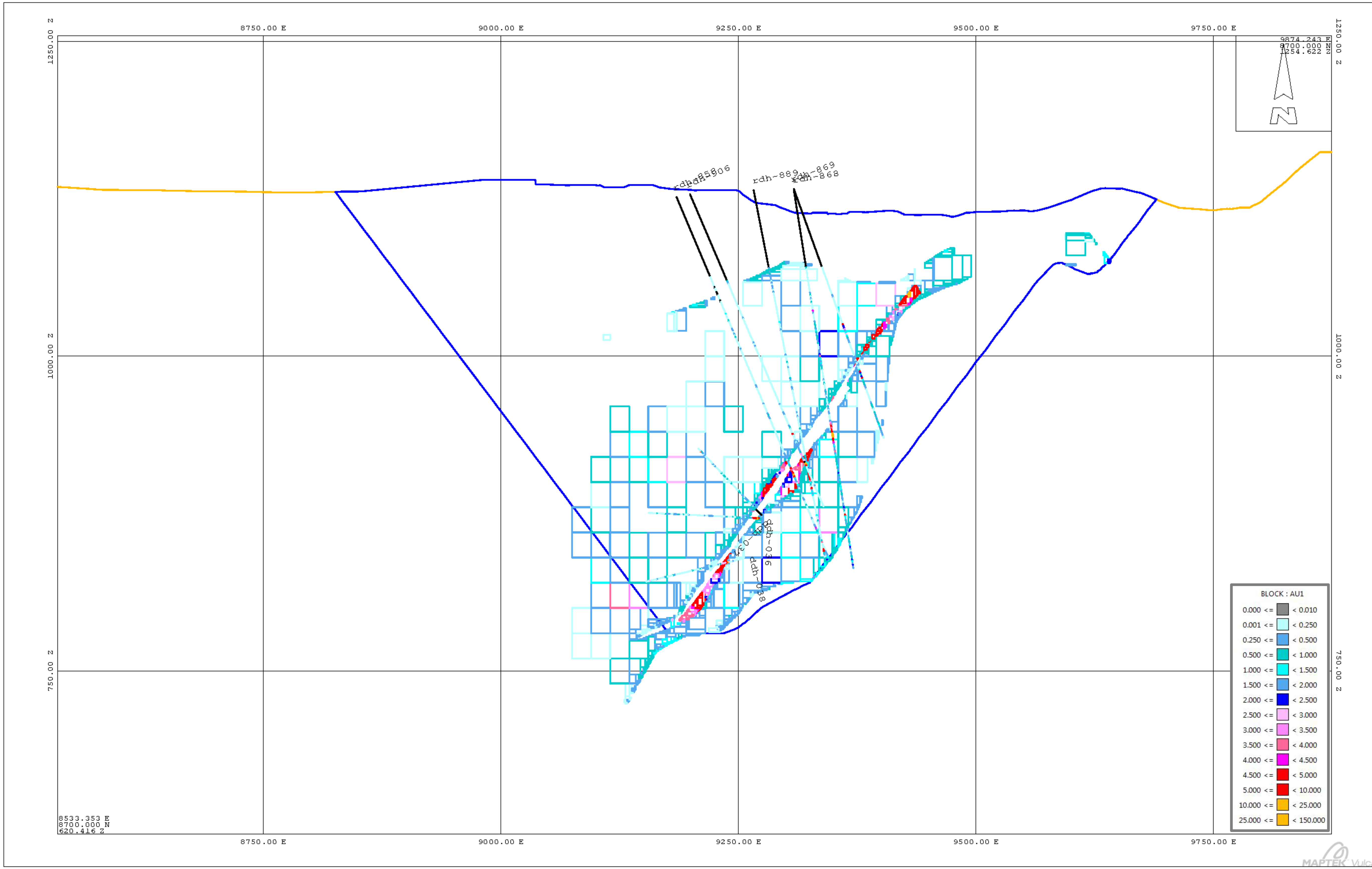

Figure 14-12: Cross Section of the Bullfrog Deposit at 8700 N

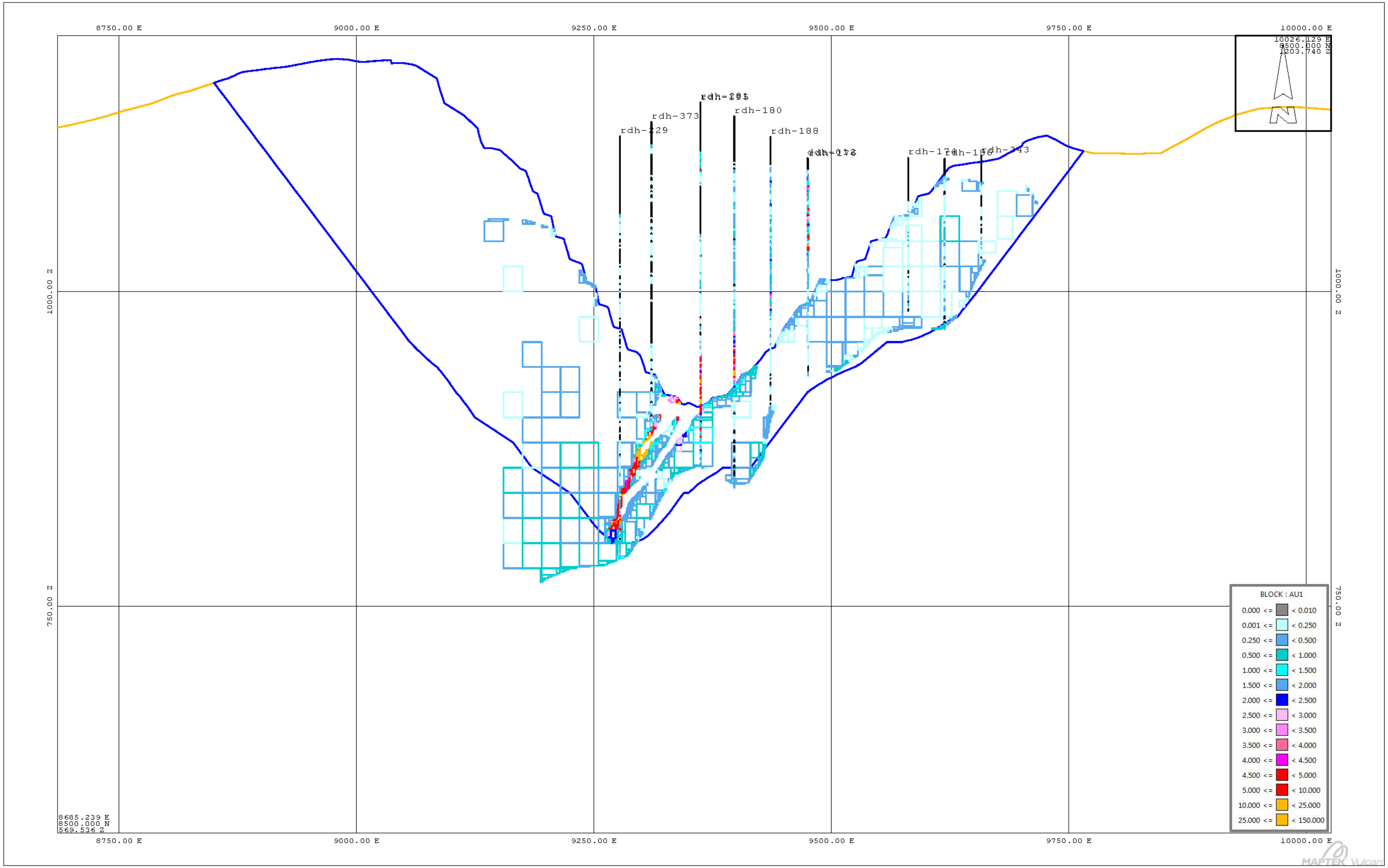

Figure 14-13: Cross Section of the Bullfrog Deposit at 8500 N

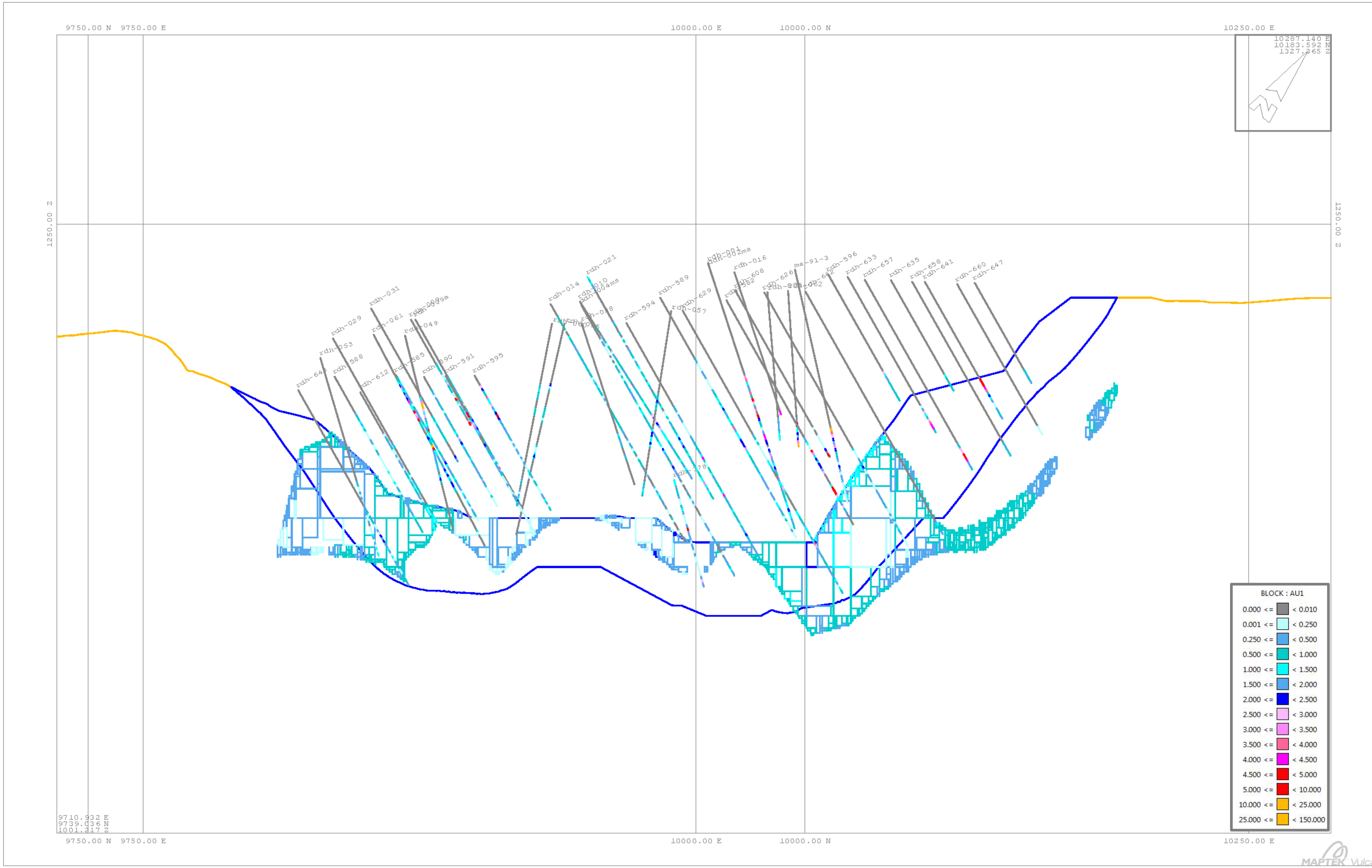

Figure 14-14: Long Section of the M-S Deposit

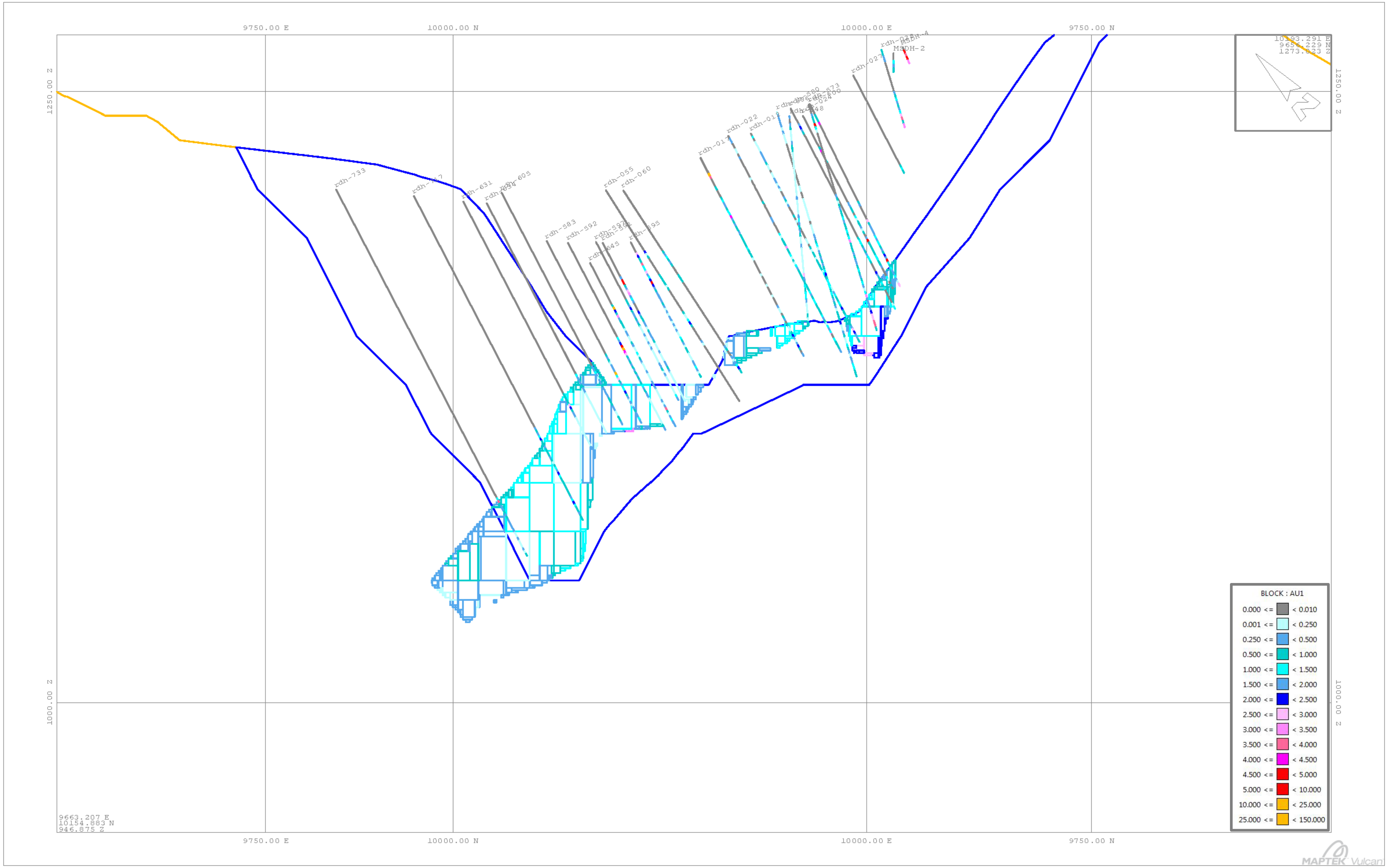

Figure 14-15: Cross Section of the M-S Deposit

14.7 Heap Leap Run-of-Mine

An internal gold cutoff grade of 0.2 g/t within the base case pit was also used to determine the amount of low grade that would be available for heap leaching at a run-of-mine or uncrushed size. For reference, this lower cutoff is also used at many other heap leach projects as the incremental or direct mining, crushing and G&A costs are not applicable. This low-grade material is processed using heap leach, instead of being deposited on the waste dump.

As a result, an additional 11.8 million tonnes averaging 0.26 g/t gold grade and containing 99,000 ounces of gold are contained within the base case pit at a 0.20 g/t gold grade cutoff. This material can provide project upside, as no incremental or direct mining, crushing and administrative costs would apply to this low-grade material, which otherwise would be dumped as waste rather than placed on a leach pad to potentially supplement Project performance.

14.8 Relevant Factors

Additional infill drilling could lead to improved understanding of stockwork veining and preferred mineralization horizons, which could alter the interpretation of the mineralizing controls and the estimation of resources.

The mining and processing costs used to constrain the resources by a pit shell are generalized industry costs. Mining, metallurgical, and geotechnical studies could materially alter the costs used to generate the pit constraints either positively or negatively.

There are no additional environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that the author of this report is aware of that could materially affect the mineral resource estimate. It is possible that, with detailed investigation, complications with any or all of the above-mentioned factors could arise, but currently no material complications are known.

Sections 15 through 22 apply to advanced properties only and have not been addressed in this report.

15. MINERAL RESERVE ESTIMATES

16. MINING METHODS

17. RECOVERY METHODS

18. PROJECT INFRASTRUCTURE

19. MARKET STUDIES AND CONTRACTS

20. ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

21. CAPITAL AND OPERATING COSTS

22. ECONOMIC ANALYSIS

23. ADJACENT PROPERTIES

Corvus Gold Corp (Corvus) controls most of the northern half of the Bullfrog Mining District. Corvus' southern land boundary is 2.4 km (1.5 miles) north of the Company's northern land boundary, or 8 km (5 miles) north of the M-S pit. Corvus estimated resources at their project in a May 2016 Preliminary Economic Assessment.

Corvus also recently acquired the Mother Lode properties in the Fluorine Mining District located about 7 miles east of the Company's properties. Northern Empire Resources recently acquired the Sterling properties also in the Fluorine Mining District located about 11.3 km (7 miles) SE of the BFGC lands. **Figure 23-1** below shows the land positions of BFGC, Barrick, Corvus and Northern Empire.

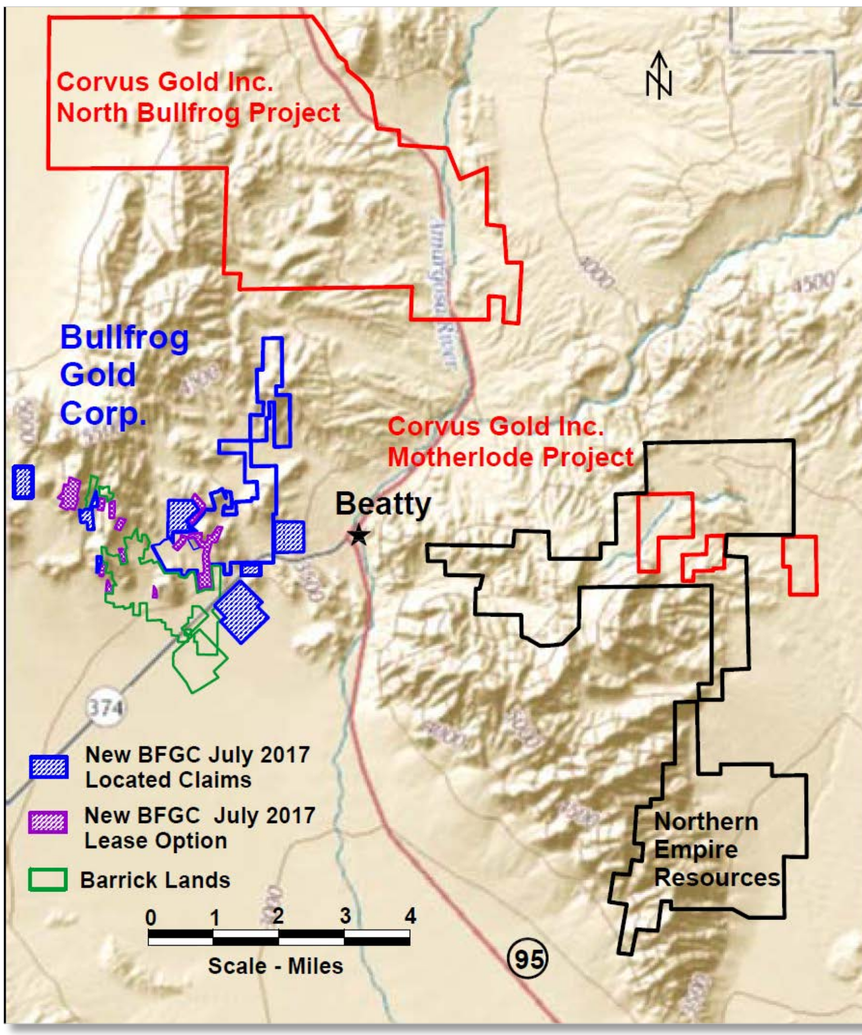

Figure 23-1: Land Positions of BFGGC, Barrick, Corvus and Northern Empire
(scale bar is approximately 6.4 km long)

24. OTHER RELEVANT DATA AND INFORMATION

Relevant data and information has been included within the respective sections.

25. INTERPRETATION AND CONCLUSIONS

Drillhole samples were collected and analyzed using industry-standard methods and practices at the time they were collected, and are sufficient to support the estimation of mineral resources. Given the grade and tonnage of the mineral resources estimated as part of this report, it is recommended the project be advanced to the preliminary economic assessment (PEA) study stage.

The Bullfrog Project has several attributes that are beneficial and provide opportunities and benefits for Bullfrog Gold Corp., and justify further investigation by way of a Preliminary Economic Analysis:

- The Project is located in a jurisdiction that is amenable to mining. Local permitting authorities and the community are accustomed to mine development and the potential economic benefits.
- The Town of Beatty with a population of 1,000 is only four miles away and has adequate amenities and services.
- The project site was open-pit mined extensively from 1989-1999 and has remaining infrastructure that includes power lines on site, a paved highway to the site, water below the Bullfrog pit, a network of roads on site, and pit ramps that are still in place.
- Years of production data and comprehensive heap leach tests have demonstrated acceptable heap leach recoveries at various crushed and run-of-mine sizes.
- The Project has potential to expand resources around the pits as well as exploration upside in the District.
- Nearly all mine waste can be backfilled in the Bullfrog pit, which reduces waste haulage costs and avoids environmental impacts related to new waste dumps. This will be contingent on acquiring additional lands.
- After 20+ years, existing pit walls remain stable up to 53 degrees.

25.1 Significant Risk Factors

Project risks include:

- Mineral resources have been constrained by an optimized pit shell; however, scoping study-level costing for mining and processing have not been undertaken.
- A pit shell constrained resource at a lower cutoff grade, assuming heap leaching, is supported by inferred resources.
- Timely acquisition of funding and permits for advancing the Project.

26. RECOMMENDATIONS

Current estimation of resources indicate the Bullfrog project warrants further advancement to the PEA study stage.

The following recommendations are made in context of the typical NI 43-101 project progression, from mineral resource to mineral reserves. The initial costs to follow that framework are summarized in **Table 26-1**.

Table 26-1: Approximated Costs of Recommended Work

Recommendation	Quantity	Cost Range (thousands)
In Fill and Conversion Drilling	2,400 m	$400
Environmental Consultation/Baseline & Permitting	One Study	$100-150
Land Acquisitions		TBD
PEA	One Study	$75-150
Total:		**$575-700**

The Project needs to acquire the lands covering the entire Bullfrog pit to obtain additional resources and allow backfilling the Bullfrog pit with waste from expansions of the Bullfrog and M-S pits.

26.1 Environmental Baseline Studies

It is recommended that a local environmental consulting firm, experienced in the area of permitting and societal issues in the area, be retained to assist in baseline and background work that will be required as inputs into the feasibility and mine planning process. Some existing Baseline Studies already exist, due to historic mining, but updates will be required for a minimum of:

- Geochemical characterization of the waste rock
- Hydrologic characterization of the water in the Bullfrog Pit and in existing wells
- Plant and wildlife surveys, mainly concerning the Desert Tortoise and bats
- Meteorological Data
- Cultural Surveys

27. REFERENCES

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28. DATE AND SIGNATURE PAGE

CERTIFICATE OF QUALIFIED PERSON

I, Rex C. Bryan, Ph.D., of Golden, Colorado, do hereby certify:

- I am a Senior Geostatistician with Tetra Tech, Inc. with a business address at 350 Indiana Street, Suite 500, Golden, Colorado 80401, USA.
- This certificate applies to the technical report entitled "NI 43-101 Technical Report Mineral Resource Estimate Bullfrog Gold Project Nye County", Nevada dated August 9th, 2017 (the "Technical Report").
- I graduated with a degree in Engineering (BS with honors) in 1971 and a MBA degree in 1973 from the Michigan State University, East Lansing. In addition, I graduated from Brown University, Providence, Rhode Island with a MS degree in Geology in 1977, and The Colorado School of Mines, Golden, Colorado, with a graduate degree in Mineral Economics (Ph.D.) in 1980. I have worked as a resource estimator and geostatistician for a total of thirty-one years since my graduation from university; as an employee of a leading geostatistical consulting company (Geostat Systems, Inc. USA), with large engineering companies such as Dames and Moore, URS, and Tetra Tech and as a consultant for more than 30 years. I am a Registered Member (#411340) of the Society for Mining, Metallurgy, and Exploration, Inc. (SME). 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.
- My most recent personal inspection of the Property was on August 4th, 2017 for one day.
- I am responsible for all sections of this Technical Report that require responsibility.
- I am independent of Bullfrog Gold Corp. as defined by Section 1.5 of the Instrument.
- I have no prior involvement with the Property that is the subject of the Technical Report.
- I have read the Instrument and the parts of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information and belief, the parts of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Signed and dated August 9th, 2017 at Golden, Colorado.

Rex C. Bryan, Ph.D.
Senior Geostatistician
Tetra Tech, Inc.