Preliminary Economic Assessment and Independent Technical Report for the Goldstrike Project, Washington County, Utah USA

Prepared for

Liberty Gold Corp.

Prepared by

SRK Consulting (Canada) Inc.
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1 Executive Summary

1.1 Introduction

Liberty Gold Corporation has retained SRK Consulting (Canada) Inc., Golder Associates Inc., Kappes, Cassiday and Associates (KCA), and G.L. Simmons Consulting LLC to produce a technical report in compliance with disclosure and reporting requirements set forth in the Canadian Securities Administrators' National Instrument 43-101, "Standards of Disclosure for Mineral Projects", for the Goldstrike exploration property.

This report discloses a first-time release of a preliminary economic assessment (PEA) by Liberty Gold for the Goldstrike Project. It follows on from the technical report, "Independent Technical Report and Resource Estimate for the Goldstrike Project, Washington County, Utah USA" (SRK, 2018), which provided an update to the mineral resource estimate for the project. The content of that prior report, issued in March 2018, is largely still current, as noted in the sections of this current report. One notable exception is re-stating the mineral resource estimate at a lower cut-off grade, as supported by the economic analysis of the PEA.

The PEA described herein is preliminary in nature and is partly based on inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary assessment based on these mineral resources will be realized.

Mineral resources that are not mineral reserves do not have demonstrated economic viability.

1.2 Property Description and Ownership

The Goldstrike Project is located in the Bull Valley Mountains in Washington County, approximately 50 km northwest of St. George, in southwestern Utah, USA. The project area comprises a central block of patented claims, surrounded by a contiguous block of unpatented claims, and one outlier block of unpatented claims and land leased from the State of Utah. The combined mineral property at Goldstrike, controlled by Liberty Gold, totals 18,855 acres (7,630 hectares) as of 01 February 2018.

Liberty Gold Corp. holds its interest in the Goldstrike Project through its indirect subsidiary, Pilot Goldstrike Inc., a Nevada, USA Corporation. Liberty Gold (formerly named Pilot Gold Inc.) was spun-out in the 2011 acquisition of Frontier Gold by Newmont Mining.

1.3 Geology and Mineralization

The Goldstrike property occurs at the eastern edge of the Basin and Range Province, transitional to the Colorado Plateau. Late Paleozoic era marine clastic and carbonate sedimentary sequences are unconformably overlain by mid to late Mesozoic era sandstones and conglomerates and Cenozoic era sedimentary and volcanic rocks. Rocks as young as Jurassic were strongly deformed during the Late Cretaceous Sevier orogeny, being folded and thrust-imbricated. This was followed by the Laramide-age contractional deformation, that is likely a relatively minor event.

Late Cretaceous to Paleocene basins developed with voluminous deposits of coarse clastic strata, and these were overlain by sandstone and conglomerate deposits of Paleocene to Oligocene age, including the Claron Formation. Tertiary ash-flow tuffs, Tertiary limestone, sandstone and conglomerate, and Miocene intermediate to felsic volcanic rocks overlie the older sedimentary rocks. Strongly altered mafic dikes of basalt or andesite composition locally intrude the sedimentary section.

The basal clastic member of the Tertiary Claron Formation is the principal host rock for disseminated gold at Goldstrike, with gold mineralization also present in the underlying Paleozoic rocks with the Pennsylvanian Callville Limestone and middle member of the Pakoon Dolomite being the preferred hosts that were excavated in four existing open pit mines on the southwestern part of the mine trend.

Alteration and mineralization consist primarily of finely disseminated gold hosted in silicified or jasperoidal rocks. Silicification is accompanied by clay alteration, iron oxides, and decalcification of limy host rocks. Altered and mineralized zones are characterized by elevated arsenic, antimony, and mercury. Gold shows a strong spatial association with east-northeast and northwest-striking high angle faults. Overall, the alteration and geochemistry are typical of the sediment-hosted “Carlin-style” deposits of Nevada and western Utah.

1.4 Exploration Status

Drill Hole Database

The Goldstrike Project drill hole database comprises a grand total of 1,978 holes for 170,989 m drilled by 13 companies on the property, including Liberty Gold, from 1978 through 2017. Most of the holes drilled are vertical reverse-circulation/rotary holes (1,950 holes for 167,527 m), with limited core drilling (28 core holes for 3,461 m).

Historical Exploration

Liberty Gold inherited substantial historical data from the previous operators, including a partial historical digital drill hole database. Original laboratory certificates are available for most of the drill holes samples, as are some surface geochemical and blast-hole data for all the historical mine pits. Paper maps, cross sections, drill logs, reports, and other miscellaneous information derived from the historical mining operation are also part of the historical data package. These data have been digitized, verified, and assembled by Liberty Gold into a comprehensive digital database.

Work continues to compile geologic mapping and surface sampling by historical operators into a complete digital geologic map of the property. Liberty Gold has supplemented the approximately 7,912 historical soil samples and 507 historic rock samples with an additional 1,987 soil samples, and 975 rock samples collected throughout the property.

Historical Drilling and Sampling, 1978 to 2012

The historical drill hole database includes 1,501 holes drilled by 12 previous operators during 1978 to 2012, totaling 96,264 m, including 1,484 reverse-circulation/rotary holes for 94,359 m and

17 core holes for 1,905 m. Drill hole collar information has had several iterations of validation. The historical database contains 59,869 assay intervals, which average 1.57 m, with 97% of the sample intervals having a length of 1.524 m (5 ft).

There is limited information available for drilling and sampling methods and procedures employed by historical operators. There are no down-hole survey data in the project database for the historical holes. Almost 80% of the historical holes in the compiled database were drilled vertically, and only 44 of the 1,501 historical holes were drilled to depths exceeding 125 m.

It is difficult to assess the adequacy of historical sampling, sample preparation, and assaying due to a lack of sufficient quality assurance/quality control (QA/QC) data. However, some QA/QC analyses were completed by previous operators, Inspiration, Tenneco, Midway, and Cadillac. Inspiration, Tenneco, and United States Mineral Company (USMX) drilled 93% of the holes in the project database, and all were well-recognized and reputable mining companies at the time of their involvement at Goldstrike, which was prior to the implementation of NI 43-101 reporting requirements.

Liberty Gold Exploration, 2015 to 2017

As of February 2018, Liberty Gold had drilled a total of 477 holes for 74,725 m during 2015 to 2017 at the Goldstrike Property, including 466 reverse-circulation holes for 73,169 m and 11 core holes for 1,556 m.

Liberty Gold's 2015-2017 QA/QC program meets current industry standards. No significant issues are indicated from the available QA/QC data for Liberty Gold drilling at Goldstrike.

1.5 Historical Development

Historical Mining

Historical exploration and mining within the property culminated with the development of the Goldstrike mine by Tenneco Oil Company, which, from 1988 to 1996, produced oxidized disseminated-gold ore by heap-leach recovery from 11 open pits. In 1992, the Goldstrike mine was sold to USMX, who mined out the remaining ore and reclaimed the property. A total of about 210,000 ounces of gold and 198,000 ounces of silver were recovered from approximately 6.9 million tons of ore.

Site Reclamation

Reclamation of the site was completed in 1999. In 2012, the State of Utah Department of Natural Resources Division of Oil, Gas and Mining stated: *"The site is stable, and the post mining land uses of grazing and wildlife habitat have been re-established. It is a showcase of exemplary reclamation in arid areas of Utah"* and recommended that the file be closed. Liberty Gold believes that there are no outstanding reclamation liabilities.

1.6 Mineral Processing and Metallurgical Testing

The Goldstrike Project was a past producer of gold and silver, via run-of-mine (ROM) and crushed ore heap leaching, and there is limited information pertaining to historical metallurgical testing. In 1993, KCA carried out a bulk sampling and large diameter column leach test program on two samples, one from the Moosehead Pit area and the second from the Beavertail Pit area. Data from this report was re-constructed into a format consistent with the 2016-2017 testwork and is included in some of the analysis.

In 2016, Liberty Gold approved a first stage of metallurgical testing for the Goldstrike Project. Phase 1 testing was conducted by KCA, in Reno, Nevada. Metallurgical database development and analysis is provided by GL Simmons Consulting, LLC, in Larkspur, Colorado.

The 2016 scope of work included:

- Sample preparation
- Head assays and geochemical analysis
- Comminution characterization, comprising SMC testwork and Bond abrasion index testwork, sub-contracted to Hazen Research Inc. in Golden, Colorado
- 10 mesh (75 microns) and 200 mesh (1,700 microns) bottle roll tests
- Column leach testing at 80% passing 12.5 and 25.0 mm
- Tails screen analysis and assay by size fraction
- Load permeability testing
- Environmental characterization

Summary conclusions from the metallurgical test work program are:

- Head analyses results show that gold grades ranged from 0.35 to 3.18 g/t, silver grades ranged from 2.9 to 58.9 g/t and copper values were very low, ranging from 5 ppm to 35 ppm.
- Gold cyanide (AuCN) solubility ranged from 38.1% to 102.5% and correlates well with sulfide sulfur assays, with higher sulfide sulfur ($S^{=}$) content correlating to lower AuCN %.
- Organic carbon assays were low and preg-robbing assays do not indicate any problems.
- Concentrations of the deleterious elements: Se <8 ppm and Hg ranged from 0.06 to 0.50 ppm.
- Arsenic levels were low, ranging from 86 to 5,221 ppm, and the concentrations of the primary cyanide consumers (Cu, Ni and Zn) were low and suggested minimum potential to effect cyanide consumption rates.

Ten samples were selected for comminution testing and were subjected to modified SMC - SAG Mill Comminution testing and abrasion Index (Ai) testing at Hazen Research. SMC Drop Weight index ranged from 2.56 kWh/m^3 to 6.88 kWh/m^3, indicating soft to medium hard material. Abrasion index test results ranged from 0.144 g to 0.733 g and averaged 0.472 g, indicating moderate abrasiveness.

Laboratory scale heap leach cyanidation was conducted on 20 of the 24 variability composites. Most all, 19 of the 20, composites were readily amenable to simulated heap leach cyanidation treatment, with one composite being sulfide refractory. Gold extraction rates were very rapid, with greater than 80% of total extractable gold being recovered within the first ten days of leaching. No solution percolation problems were observed during column leaching.

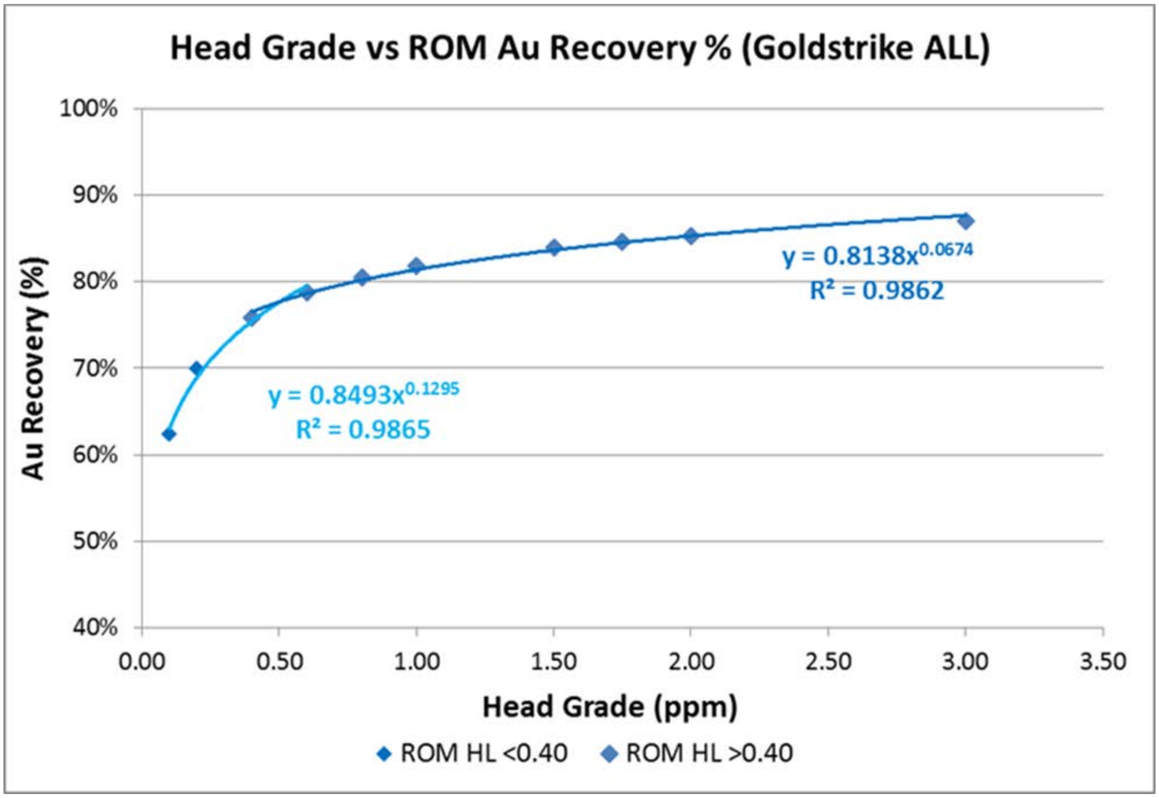
Three of the composites failed load permeability testing at heights greater than 25 m. These samples contained variable amounts of clay and should be evaluated for blending with coarser materials before heap leaching. Agglomeration testing should be evaluated in future test programs on similar material types.

Gold recovery models were developed using data from the 1993 and 2016-2017 column/bottle roll leach test programs. Oxide material (AuCN >70%) recovery equations, for a ROM heap leach (P_{80} = 150 mm or 6 in), are represented by the following equations and are graphed below (Figure 1-1).

$$Au\ Rec\ (\%) = 0.8493*(G_{Au})^{\wedge 0.1295}\ (for\ HG_{Au} < 0.40\ g/t)$$

$$Au\ Rec\ (\%) = 0.8138*(G_{Au})^{\wedge 0.0647}\ (for\ HG_{Au} > 0.40\ g/t)$$

where: HG_{Au} = Head grade for gold, in g/t



Source: Simmons, 2018

Figure 1-1: Goldstrike Resource – gold recovery model graph

1.7 Mineral Resource Estimate

Geologic controls for resource estimation are based on the geologic interpretation established by Liberty Gold. Gold mineralization is primarily associated with a series of steeply dipping normal-oblique fault zones as well as a low-angle unconformity surface (Control Surfaces). Gold grades have been estimated by inverse distance squared interpolation into 10x10x10 m blocks. Sample selection during gold estimation is restricted by distance to the Control Surfaces and, in this way, reproduces the concentric or banded nature of the gold mineralization along fault zones and stratigraphic trends. Density has been applied at an average value of 2.52 t/m^3 based on 160 measurements carried out by Liberty Gold on drill core.

The mineral resource estimate is supported by 1,730 holes, totaling 153.0 km that fall inside the limits of the block models. Samples were composited to the average sample length of 1.524 m (5 ft) prior to use in grade estimation; 102,264 composites are contained inside the modeled volume. Statistical evaluation of composite data by fault and stratigraphic zones led to the establishment of high-grade capping limits by control surface.

The mineral resource was classified based on available drill data as well as by proximity to the interpreted geologic controls. Inferred mineral resource is within 50 m of a sample or must be estimated by at least two holes. Indicated mineral resource must lie within 40 m of sample data and must be estimated by at least three holes if within 40 m of a control surface or by at least two holes if within 30 m of a control surface. Intrusives and the isolated high-grade volumes were classified as indicated resource if within 40 m of sample data and estimated by at least three holes.

Reasonable prospects of eventual economic extraction were established through the generation of Whittle optimized pit shells; all reported resource is contained within those shells. Optimization parameters were (in U.S. Dollars): $2.25/t mining cost, $4.30/t processing and G&A cost (assuming Run of Mine Heap Leach operation), 50°pit slopes, and $1500/oz gold less $2.20 selling cost. An economic internal cut-off grade was estimated at 0.13 g/t Au. Based on ongoing preliminary metallurgical studies, recovery was variable depending on head grade: Au ≥ 0.4 g/t - rec% = 0.8133*Au^0.0677; Au < 0.4 g/t - rec% = 0.8491*Au^0.1301. The Whittle™ pit model was produced by Mr. Grant Carlson, P.Eng. of SRK, an independent Qualified Person as defined by NI 43-101.

The classified mineral resource estimate is quoted at a cut-off grade of 0.20 g/t Au and consists of:

- An indicated resource of 925,000 ounces of gold at an average grade of 0.50 g/t Au (57,846,000 t)
- An inferred resource of 296,000 ounces of gold at an average grade of 0.47 g/t Au (19,603,000 t).

Table 1-1: Mineral resource statement, Goldstrike Project, Washington County, Utah, 08 February 2018

Cutoff (Au g/t)	Indicated			Inferred		
	Tonnes (1,000s)	Grade Au (g/t)	Ounces Au (1,000s)	Tonnes (1,000s)	Grade Au (g/t)	Ounces Au (1,000s)
0.10	72,303	0.43	994	24,739	0.40	320
0.20	**57,846**	**0.50**	**925**	**19,603**	**0.47**	**296**
0.25	49,553	0.54	865	16,443	0.52	274
0.30	42,102	0.59	800	13,465	0.57	247
0.40	29,159	0.70	655	8,760	0.69	195
0.50	19,861	0.82	522	6,025	0.80	156
0.60	13,874	0.93	416	4,150	0.92	123
0.70	9,774	1.05	331	2,895	1.04	96
0.80	6,947	1.18	264	2,041	1.16	76
0.90	5,165	1.30	215	1,443	1.29	60
1.00	3,768	1.42	173	1,115	1.39	50

1.8 Mine Development and Operations

Mining Methods

The Goldstrike Mine is to again adopt open pit mining methods using loaders and trucks to deliver 22,500 tonnes per day to a heap leach facility. The life-of-mine leach material mined is 59 Mt at a 1.2:1 strip ratio (Waste:Leach Material), giving a 7.5-year mine life (Figure 1-2).

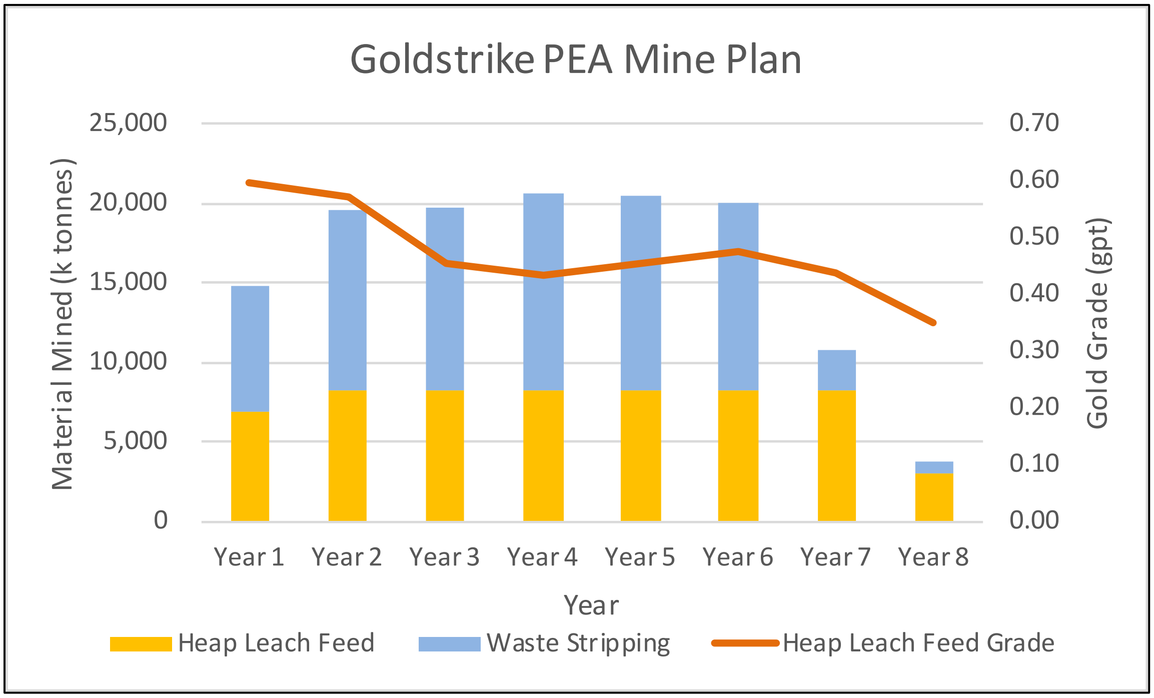


Figure 1-2: Mine production summary

Recovery Methods

The process selected for recovery of gold and silver from the Goldstrike mineralized material is a ROM heap-leach circuit. The material will be mined by standard open pit mining methods, and truck-stacked onto heap leach pads in 9-meter (30-foot) lifts. The heap leach facility (HLF) contains one single leach pad and a pond system that is constructed in three phases.

The ROM material will be leached with a dilute cyanide solution, and the leached gold will be recovered from solution using a carbon adsorption circuit. The gold will be stripped from carbon using a desorption process, followed by electrowinning to produce a precipitate sludge. The precipitate sludge will be refined in a furnace to produce doré bars.

Heap Leach Facility

The planned HLF includes one dedicated lined leach pad and a lined process and event pond system that is designed to be constructed in three phases. The HLF site was selected as the preferred site out of six sites reviewed. The selected site is designed to hold approximately 60 Mt of leachable resource using a stacked dry density of 1.6 t/m^3. Under the design criteria and assumptions used, the heap leach pad is designed to be stable to the maximum stacked height of 100 m. Shaping and grading of the site will use mine waste rock placed as engineered fill to construct a toe fill at the base of the leach pad and for a flat pad where the process pond, event pond, and process plant will be constructed.

Prior to final phase construction (Phase 3), the northeast side of the Moosehead Pit will be backfilled, and the Phase 3 leach pad liner is designed to be constructed over the backfilled pit, to provide positive drainage of Phase 3 to the process ponds.

The leach pad and process and event ponds will be lined with geomembrane lining systems in accordance with current industry practices for ground water protection. The lined ponds will be sized to contain gravity solution flow during normal operating conditions in addition to severe emergency events including severe storm events and a power or pump outage that prevents recirculation to the desorption plant or back to the leach pad.

Off-site Infrastructure

The mine is located proximate to major infrastructure. The major components of off-site infrastructure that have been considered are:

- An upgrade and partial realignment of the existing access road from Old Highway 91 to the mine site
- The installation of a high-voltage transmission line and associated sub-station along the access road alignment from a substation in the St George area.
- The provision of water supply from a bore-field to the mine site via a 9-km pipeline and associated pumping facilities. The pipeline is assumed to primarily follow existing roads.

1.9 Marketing

Marketing for the gold doré product is expected to be straightforward. The price of $1300/oz (2018 Real USD) used for the optimization and evaluation is appropriate for a PEA.

1.10 Environmental Studies, Permitting, and Social or Community Impact

Liberty Gold is authorized to conduct gold exploration in the Bull Valley project area under the *Bull Valley Plan of Operations* (UTU-091579) (Plan) and the Utah Division of Oil, Gas & Mining *Notice of Intention to Conduct Exploration (E/053/0069)* (NOI) in February 2017 and received authorization from the U.S. Bureau of Land Management (BLM) and Utah Division of Oil, Gas, and Mining in June 2017 to conduct exploration activities within the project area. The Plan and NOI were amended in November 2017 to add acreage associated with historic mine disturbance and reclaimed roads. The project area encompasses about 1,264 acres that includes 1,016 acres of BLM-administered land, 241 acres of private land, and seven acres of leased School and Institutional Land Trust Administration (SITLA)-administered land.

There are currently no known environmental conditions associated with the Goldstrike Mine project.

Environmental permitting for mines in Utah is predicated on land status. Because the Goldstrike Mine and infrastructure will be located on both public land administered by the Department of the Interior - BLM, state land controlled by SITLA, and private land controlled by Liberty Gold, the permitting path will involve multiple state and federal agencies as shown in Table 20-1.

The BLM Plan of Operations must provide sufficient detail to identify and disclose potential environmental impacts during the mandatory *National Environmental Policy Act* (NEPA) review process, under which the potential impacts associated with project development are analyzed. The most likely level of NEPA analysis for this project will be an environmental impact statement. Issues that may be associated with federal permitting include potential impacts to:

- Surface and ground water resources including seeps and springs and jurisdictional waters
- Nearby wilderness areas and lands with wilderness characteristics
- The Beaver Dam Wash Area of Critical Environmental Concern

Other issues that could potentially arise during the NEPA process are Native American religious concerns especially as related to water; however, these issues did not arise during the 2017 EA consultation.

At the current phase of the Goldstrike Mine project design, detailed environmental management plans have not yet been developed. During state and federal permitting of the mineral extraction and processing operations, a number of regulatory plans would be required as part of the permit applications, as described in Section 20.2.

Pursuant to state and federal regulation, any operator who conducts mining operations under an approved Plan of Operations or NOI must furnish a bond in an amount sufficient for stabilizing and reclaiming all areas disturbed by the operations. At the current phase of the Goldstrike Mine project design, a reclamation cost estimate has not yet been developed.

1.11 Costs & Economic Analysis

Capital Costs

Capital costs were estimated via a combination of first-principles models for major components such as mining and processing, as well as factored and benchmarked costs for minor components. The level of accuracy of the capital cost estimate is approximately -20%/+40%. Initial and life-of-mine (LOM) capital costs for the project are summarized in Table 1-2.

Table 1-2: Life-of-mine capital costs

Capital Costs		Initial	LOM
Mining			
Mining Capital	$M	$23.5	$61.3
Infrastructure			
Road Access	$M	$4.9	$5.7
Water	$M	$12.9	$12.9
Power	$M	$12.0	$13.0
Diversion Channels	$M	$1.6	$3.5
Total Infrastructure Capital	**$M**	**$31.4**	**$35.1**
Processing			
Stacking (Lime Addition)	$M	$0.4	$0.5
Recovery Plant	$M	$13.7	$16.8
Laboratory	$M	$2.3	$2.8
Mobile Equipment	$M	$0.2	$0.3
Spare Parts	$M	$0.4	$0.4
Contingency	$M	$4.2	$5.2
Indirect Costs	$M	$2.6	$2.6
Initial Fills	$M	$0.6	$0.6
EPCM & Commissioning	$M	$2.1	$2.1
Process WC	$M	$2.4	$2.4
Leach Pad Phase 1	$M	$19.3	$19.3
Leach Pad Phase 2	$M	$0.0	$8.9
Leach Pad Phase 3	$M	$0.0	$6.6
Total Processing Capital	**$M**	**$48.3**	**$68.4**
Closure Costs	**$M**	**$0.0**	**$20.0**
Owners Costs	**$M**	**$10.0**	**$10.0**
Total Capital Costs	**$M**	**$113.2**	**$194.8**

Operating Costs

Operating costs for the project were estimated using a combination of first-principles models and factored and benchmarked estimates. The level of accuracy is approximately -25/+25% and is appropriate for a PEA. Operating costs are summarized in Table 1-3

Table 1-3: Summary of operating costs

Operating costs	LOM ($M)	$/tonne
Mine Operating Cost	$272.1	$4.59
Leach Operating Costs	$117.5	$1.98
Water Supply	$3.5	$0.06
Road and Infrastructure Maintenance	$17.0	$0.29
Site G&A	$35.2	$0.59
Total	**$445.3**	**$7.51**

Table 1-4: Unit cash costs per ounce

Unit Costs per Ounce	$/oz
Mine Operating Cost	$392.16
Leach Operating Costs	$169.37
Water Supply	$5.01
Road and Infrastructure Maintenance	$24.50
Site G&A	$50.73
Total Operating Unit Cash Cost	**$641.77**
Royalty	$33.33
Total Adjusted Unit Cash Cost	**$675.11**
Operating Margin	51%
Sustaining Capital Costs (incl. closure)	$117.61
All-in Sustaining Costs (AISC)	**$792.72**

Economic Analysis

The economic analysis is partly based on inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary assessment based on these mineral resources will be realized.

Certain information and statements contained in this section are “forward looking” in nature. Forward-looking statements include, but are not limited to, statements with respect to the economic and scoping-level parameters of the project; mineral resource estimates; the cost and timing of any development of the project; the proposed mine plan and mining methods; dilution and mining recoveries; processing method and rates and production rates; projected metallurgical recovery rates; infrastructure requirements; capital, operating and sustaining cost estimates; the projected life of mine and other expected attributes of the project; the net present value (NPV); capital; future metal prices; the project location; the timing of the environmental assessment process; changes to the project configuration that may be requested as a result of stakeholder or government input to the environmental assessment process; government regulations and permitting timelines; estimates of reclamation obligations; requirements for additional capital; environmental risks; and general business and economic conditions.

All forward-looking statements in this report are necessarily based on opinions and estimates made as of the date such statements are made and are subject to important risk factors and uncertainties; many of which cannot be controlled or predicted. In addition to, and subject to, such specific assumptions discussed in more detail elsewhere in this report, the forward-looking statements in this report are subject to the following assumptions:

- There being no signification disruptions affecting the development and operation of the project
- Exchange rate assumptions being approximately consistent with the assumptions in the report
- The availability of certain consumables and services and the prices for power and other key supplies being approximately consistent with assumptions in the report
- Labour and materials costs being approximately consistent with assumptions in the report
- Assumptions made in mineral resource estimates, including, but not limited to, geological interpretation, grades, metal price assumptions, metallurgical and mining recovery rates, geotechnical and hydrogeological assumptions, capital and operating cost estimates, and general marketing, political, business and economic conditions

The PEA of the Goldstrike Project indicates that the project as conceived has the potential for economic execution.

The base-case after-tax NPV evaluated at a discount rate of 5% is $129.5M. The internal rate of return is 29.4%. The payback of initial investment is estimated to occur approximately 2.3 years into production.

A positive valuation is maintained across a wide range of sensitivities on key assumptions.

Table 1-5: Production profile summary

Production Profile	
Total Leach Tonnes Mined	59.3 million
Total Tonnes Waste Mined	70.6 million
Head Grade	0.48g/t
Mine Life	7.5 years
Tonnes per Day Mined	22,500 tpd
Strip Ratio (Waste:Leach Material)	1.2:1
Gold Recovery	78%
Total Gold Ounces Mined	915,516 oz
Total Gold Ounces Recovered	713,004 oz
Average Annual Gold Production[1]	94,493 oz
Peak Annual Gold Production	117,855 oz

Table 1-6: Unit costs per ounce

Unit Operating Costs	
LOM Average Cash Cost	US$641.77/oz
LOM Average Adjusted Cash Cost	US$675.11/oz
LOM Cash Cost plus Sustaining Cost (AISC)	US$792.72/oz

[1] The average annual gold includes only the production over the 7.5 years that the project is in full production. “Remnant” gold recovered at the end of the mine life as the heaps are flushed and drained down, and the time period for this recovery, are excluded from average production rate calculations.

Table 1-7: Key economic metrics

Project Economics	
Royalties	2.50%
Pre-tax NPV (5% Discount Rate)	$176.2
Pre-tax Internal Rate of Return	34.8%
Undiscounted Operating Pre-tax Cash Flow	$259.3
Corporate Income Tax / Utah Mining Tax	21% / 5%
Post-Tax NPV (5% Discount Rate)	$129.5
Post-Tax Internal Rate of Return	29.4%
Undiscounted Operating Post-tax Cash Flow	$195.5
Post-tax Payback Period (years)	2.3 years

1.12 Conclusions and Recommendations

Geology and Exploration

- SRK believes the Goldstrike data are acceptable as used in this report. This conclusion is based on:
  - The historical analytical data were used to support a successful mining operation.
  - No significant issues are identified by the Liberty Gold or historical QA/QC data.
  - The lack of down-hole survey data is not a significant issue, particularly in the pit areas already mined historically.
  - The drilling results of Liberty Gold are generally consistent with those generated by the historical operators.
  - Liberty Gold drilling now comprises approximately 44% of the total drilling completed on the property.
- The knowledge gained through Liberty Gold's compilation and interpretation of the extensive historical records, in combination with the positive results derived from the 2015 through 2017 drilling program, in conjunction with the resource estimate presented in this report, suggest that the project warrants additional exploration and assessment.
- Based on results to date, the aggressive program of drilling that is presently underway should continue through 2018, in conjunction with other activities designed to assess the economic viability of the project, including a preliminary economic assessment, additional metallurgical testing, and an upgrade to the Plan of Operations to allow for increased access to areas peripheral to the resource area for drilling.
- Liberty Gold proposes two phases of exploration work for 2018. A budget of $US4.45 million is proposed for the first phase, which includes 2,000 m of core drilling and 14,900 m of reverse-

circulation drilling during 2018. Advancement to the second phase of exploration is contingent on acceptable results from the first phase. Reverse-circulation drilling would be focused on:

  – Assessing the gold content of historic heap leach and low-grade stockpile areas
  – Infill and step-out drilling

- A revision to the Plan of Operations is recommended to reach areas with insufficient access, in order to increase drill hole density pursuant to a revised resource estimate.

Metallurgical Testing

- Metallurgical testing should be expanded to include areas of the resource not previously tested, with samples derived from large-diameter core in the Peg Leg, Dip Slope, Moosehead, Beavertail and Covington areas.
- It is recommended that column residues and process solutions be characterized for environmental permitting and process design considerations.
- It is recommended that blending of clayey material with coarser rock types be evaluated in the next phase of mine/process planning. Primary crushing and agglomeration testing options should also be evaluated if blending proves to be insufficient.

Mine Development and Operations

SRK recommends reviewing the development of pits and waste storage facilities in water drainages. There may be environmental conditions or restrictions.

Marketing

Marketing for the gold doré product is expected to be straightforward. The price of $1300/oz (2018 Real USD) used for the optimization and evaluation is appropriate for a PEA.

Environmental Studies, Permitting, and Social or Community Impact

In SRK's opinion, Liberty Gold should identify long-lead environmental studies such as geochemical characterizations of mined materials, surface and ground water hydrology, and jurisdictional waters to identify the presence or absence of jurisdictional waters within and upstream and downstream of the project area. The geochemical characterization program should include static and kinetic testing for ore, waste rock, and spent leached material to assess acid rock drainage and metals leaching potential from the dumps, spent heap, and pit walls and floors. The surface water study should also include a comprehensive review to identify pre-mining flows from East Fork Beaver Dam Wash and contributing streams upstream and downstream of the project area. The groundwater study should address water chemistry and water level elevations within the project area. This study will be used to identify baseline conditions and measure potential impacts to seeps and springs and groundwater drawdown during the environmental impact statement process.

Liberty Gold should also assess the need to conduct golden eagle nesting studies within ten miles of the project boundary. Nests that have direct line-of-sight or could be affected by noise or human activity may require that Liberty Gold institute mitigation measures during design and operations.

After an in-house review of potential environmental study needs, Liberty Gold should meet with representatives of Washington County, the UDOGM, SITLA, and the BLM to introduce these agencies to the proposed project and identify their concerns and baseline information requirements. Liberty Gold may also want to consider reaching out to the Shivwits Band of Paiutes on an informal basis to assess what concerns they may have.

Costs & Economic Analysis

This study of the project has demonstrated the potential for economic development. It is recommended that the project be advanced to pre-feasibility. Associated with this will be an increase in detail and precision for both cost estimation across all disciplines and for an economic analysis. Otherwise, there are no specific recommendations.

Table 1-8 provides an estimated budget for the foregoing recommendations.

Table 1-8: Estimated budget for PFS recommendations

Area	Estimated Budget ($)
Geology and Mineral Resources	$4,446,000
Geotechnical Pit Slope Investigations	$600,000
Geotechnical Waste Storage Facilities	$150,000
Mining	$350,000
Mineral Processing	$782,000
Heap Leach Facility Site Investigation	$350,000
Water Supply Investigation and Site Water Balance	$1,070,000
Environment, Permitting, Social, Closure	$585,000
Technical Report	$170,000
Total Estimated Cost for Next Phase of Study	**$8,503,000**

2 Introduction

2.1 Issuer

The Goldstrike Project is an early-stage gold exploration project, located approximately 50 km northwest of St. George in Washington County, southwestern Utah, USA. Liberty Gold Corp., which is listed on the Toronto Stock Exchange (LGD) (formerly "Pilot Gold Inc."), holds its interest in the Goldstrike Project through its indirect subsidiary, Pilot Goldstrike Inc., a Nevada, USA corporation. For the purposes of this report, Liberty Gold Corp. and its subsidiaries are referred to interchangeably as "Liberty Gold". "Cadillac" in this report refers to Cadillac Mining Corporation, prior to its acquisition by Liberty Gold.

2.2 Terms of Reference

In February 2018, Liberty Gold commissioned SRK to undertake a preliminary economic assessment (PEA) for the Goldstrike Project. The services were rendered from March to July 2018, leading to the preparation of this technical report the summary results of which were disclosed publicly by Liberty Gold in a news release on 10 July 2018.

This technical report includes, and is in-part based on, a mineral resource statement for the Goldstrike Project prepared by Mr. James N. Gray of Advantage Geoservices Ltd and reviewed by SRK. That mineral resource statement was published as part of a technical report on 21 March 2018. This current technical report re-states the mineral resource for Goldstrike as well as incorporates the results of the PEA. Importantly, in the mineral resource statement, a lower cut-off grade has now been used, as supported by the economic analysis of the PEA. Otherwise, the content of the March 2018 report ("the March 2018 SRK Report", [SRK, 2018]) is largely still current, as noted in the sections of this current report.

This technical report was prepared following the guidelines of the Canadian Securities Administrators' National Instrument 43-101 (NI 43-101) and Form 43-101F1. The mineral resource statement reported herein was prepared in conformity with generally accepted CIM "Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines."

2.3 Responsibility

SRK was joined by multiple parties in undertaking the PEA and preparing this report. A summary of responsibilities by Qualified Person (QP) is shown in Table 2-1.

Table 2-1: QP responsibilities

Name	Company	QP Responsibility
Bob McCarthy	SRK	Sections 2 to 5 (except 4.3, 4.4), 16 (except 16.1), 18.1.1, 18.1.2, 18.1.4, 0 & 21.2.2
Valerie Sawyer	SRK	Sections 4.3, 4.4 & 20
David Rowe	SRK	Sections 6 to 12 inclusive
Gary Simmons	Simmons Consulting	Section 13
James Gray	Advantage Geoservices	Section 14
George Lightwood	Golder Associates Inc.	Section 16.1
Carl Defilippi	KCA	Sections 17, 21.1.3 & 21.2.3
Russell Browne	Golder Associates Inc.	Sections 18.1.3, 18.2.2, 21.1.4 & 21.1.5
Michael Bidart	Golder Associates Inc.	Section 18.2.1 & 21.1.6 (Water Supply only)
Neil Winkelmann	SRK	Sections 18.3, 19, 21.1.1, 21.1.6, 21.2.1 21.2.4 & 22

The whole project team has reporting responsibility for their relevant sections of Section 1 (Executive Summary) and Sections 25 and 26 (Interpretation and Conclusions, Recommendations).

2.4 Work Program – Resource Statement

The mineral resource statement reported herein is a collaborative effort between Liberty Gold, Advantage Geoservices and SRK personnel. The exploration database was compiled and maintained by Liberty Gold. The geological model and outlines for the gold mineralization were reviewed by SRK from a three-dimensional geological interpretation provided by Liberty Gold. In SRK's opinion, the geological model is a reasonable representation of the distribution of the targeted mineralization at the current level of sampling.

The resource model and mineral resource estimate were completed by Advantage Geoservices in late 2017 – early 2018. The mineral resource statement reported herein was originally disclosed publicly in a news release dated 08 February 2018. The revised mineral resource was again disclosed publicly in a news release 10 July 2018 that specifically relates to this technical report. The revision to the mineral resource is its re-statement at a lower cut-off grade, as supported by the economic analysis of this PEA

2.5 Work Program – Preliminary Economic Assessment

The PEA reported in this technical report was undertaken in the SRK Vancouver office during the months of March to July 2018. It included evaluating the technical and economic viability of the Goldstrike Project as an open pit mining operation treating mined resource in a heap leach process.

The PEA described herein is preliminary in nature and is partly based on inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary assessment based on these mineral resources will be realized.

2.6 Basis of Technical Report

This report is based on information collected by SRK and others during site visits performed as set out in Section 2.7 and on additional information provided by Liberty Gold, Advantage Geoservices, Simmons Consulting, Golder Associates, and KCA throughout the course of the PEA study.

SRK has no reason to doubt the reliability of the information provided by Liberty Gold.

Execution of the PEA has been managed by Mr. Jim Lincoln, Pilot Goldstrike Chief Operating Officer, USA, supported by Dr. Moira Smith, Ph.D. and P.Geo., Liberty Gold Vice President Exploration of Liberty Gold. Mr. Gerald Heston, an employee of Liberty Gold with extensive exploration experience in the Great Basin, is responsible for compilation of the mineral tenure, environmental and permitting data.

2.7 Site Visits

In accordance with NI 43-101 requirements, the noted QPs (Table 2-1) have visited the Goldstrike Project as follows:

Mr. Gray visited the property from 11 to 14 September 2017, and was accompanied by Dr. Smith and Liberty Gold on-site technical team. The purpose of the site visit was to review the digitalization of the exploration database and validation procedures, review exploration procedures, define geological modeling procedures, examine drill core, and interview project personnel and to collect all relevant information for the preparation of a revised mineral resource model and the compilation of a technical report.

Mr. Rowe conducted a site visit to the Goldstrike Project from 06 to 07 December 2017 accompanied by Dr. Smith and Mr. Shabestari. The review included visits to the project site, reviewing technical aspects of the property (Section 12.3.1):

Mr. Simmons visited the property on 15 February 2017 and was accompanied by Dr. Smith and Liberty Gold's on-site technical team. The purpose of this visit was to examine mineralization and waste in the field and in core, as well as the layout of the historic mines and pits.

Mr. McCarthy visited the site from 06 to 07 December 2017 accompanied by Mr. Lincoln, Dr. Smith and Mr. Shabestari. The purpose of the visit was to become familiar with the terrain, the historic mining areas, and current exploration efforts.

Mr. Browne visited the site from 06 to 07 June 2017 and was accompanied by Dr. Smith and Mr. Shabestari. The site visit consisted of visual observations of six potential heap leach facility sites to evaluate in a trade-off study, and to review the layout of historic pits, dump, and heap leach facilities.

Mr. Bidart visited the site from 14 to 15 March 2018 and was accompanied by Mr. Lincoln and Mr. Shabestari. Mr. Bidart toured the previous operations and current infrastructure for the site, the areas of surface water supply for previous operations, portions of the pipeline corridor for the previous operations, and the alluvial areas along the East Fork Beaver Dam Wash and Beaver Dam Wash.

Mr. Lightwood visited the site from 14 to 16 March 2018 and was accompanied by Dr. Smith and Mr. Shabestari. Mr. Lightwood reviewed the existing pits to observe historic pit wall performance and performed a limited construction material borrow source investigation for low permeable soils for use beneath the heap leach facility geomembrane liner.

Mr. Defilippi visited the site on 04 April 2018 and was accompanied by Mr. Lincoln.

The QPs were given full access to relevant data and conducted interviews of Liberty Gold personnel to obtain information on the past exploration work, to understand procedures used to collect, record, store and analyze historical and current exploration data.

2.8 Acknowledgements

Full access to relevant data was provided and interviews of relevant Liberty Gold personnel were conducted to obtain information on the past exploration work, to understand procedures used to collect, record, store and analyze historical and current exploration data.

SRK would like to acknowledge the support and collaboration provided by Liberty Gold personnel for this assignment. Their collaboration was greatly appreciated and instrumental to the success of this project.

2.9 SRK Declaration

SRK's opinion contained herein and effective with the 10 July 2018 Liberty Gold press release, is based on information collected by SRK throughout the course of SRK's investigations, which in turn reflect various technical and economic conditions at the time of writing. Given the nature of the mining business, these conditions can change significantly over relatively short periods of time. Consequently, actual results may be significantly more or less favorable.

This report may include technical information that requires subsequent calculations to derive sub-totals, totals and weighted averages. Such calculations inherently involve a degree of rounding and consequently introduce a margin of error. Where these occur, SRK does not consider them to be material.

SRK is not an insider, associate or an affiliate of Liberty Gold, and neither SRK nor any affiliate has acted as advisor to Liberty Gold, its subsidiaries or its affiliates in connection with this project. The results of the technical review by SRK are not dependent on any prior agreements concerning the conclusions to be reached, nor are there any undisclosed understandings concerning any future business dealings.

3 Reliance on Other Experts

SRK has not performed an independent verification of land title and tenure information as summarized in Section 4 of this report. SRK is not an expert in legal matters, such as the assessment of the validity of mining claims, mineral rights, and property agreements in the United States. SRK did not verify the legality of any underlying agreement(s) that may exist concerning the permits or other agreement(s) between third parties and have relied on a legal advisor to the client as expressed in legal opinions provided to Liberty Gold on 2014, 2016, 2017 and 2018 (Erwin, 2014; Erwin, 2016; Erwin, 2017; Erwin, 2018). The reliance applies solely to the legal status of the rights disclosed in Sections 4.1 and 4.2 below.

Furthermore, SRK did not conduct any investigations of the environmental or political issues associated with the Goldstrike Project, and is not an expert with respect to these matters. SRK has therefore relied upon information and opinions provided by Liberty Gold and its consultants about the following:

- Section 4.1, which pertains to land tenure, was prepared by Liberty Gold in consultation with Richard Moorhead, a Utah Landman who reviewed the legal status of the original claim block purchased from Cadillac (Moorhead, 2014). Liberty Gold also received a report on the mineral status of unpatented claims from Erwin and Thompson LLP of Reno, Nevada (Erwin, 2014; Erwin, 2016; Erwin, 2017; Erwin, 2018).
- Section 4.2, which pertains to legal agreements and encumbrances, was prepared by Mr. Heston, responsible for maintaining the property in good standing, and includes Utah State Tax, Utah State Bill 216: High Cost Infrastructure Tax Credit effective date May 12, 2015, 12 p.; and Utah tax code for Severance tax reference, Utah Tax Code, Title 59, Chapter 5, Part 2, section 202.
- Section 4.3, which pertains to environmental permits and licenses, was prepared by Mr. Heston, responsible for permitting at Goldstrike.
- Section 4.4, which pertains to environmental liabilities, was summarized by Liberty Gold from documents prepared by Environmental Resources Management Inc.

SRK has relied on Liberty Gold to provide full information concerning the legal status of Liberty Gold and its affiliates, as well as current legal title, the material terms of all agreements, and material environmental and permitting information that pertains to the Goldstrike Project. SRK was informed by Liberty Gold that there are no known litigations potentially affecting the Goldstrike Project.

4 Property Description and Location

4.1 Mineral Tenure

4.1.1 Property Location

The Goldstrike Project is located in the Bull Valley Mountains in Washington County, approximately 50 km northwest of St. George, southwestern Utah, USA (Figure 4-1). The approximate geographic center of the Goldstrike Project is 37.386°N latitude and -113.88°W longitude.

4.1.2 Land Area

The Goldstrike Property is made up of a central block of patented claims that are surrounded by a contiguous block of unpatented claims and land leased from the state of Utah, all within Washington County, Utah. The combined mineral property at Goldstrike controlled by Liberty Gold totals 18,855 ac (7,630 ha) as of 08 February 2018.

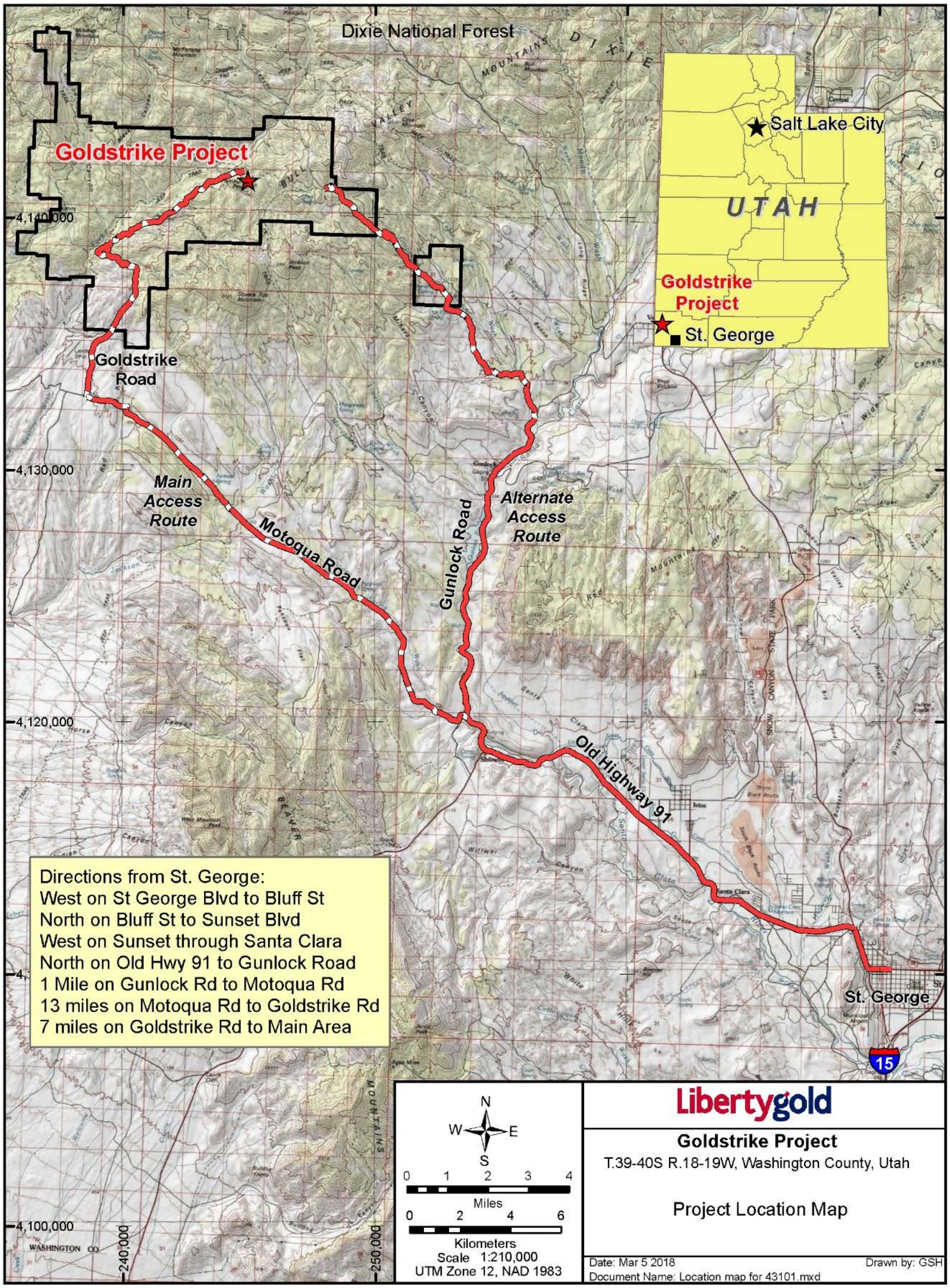
4.1.3 Unpatented Lode Claims

The Goldstrike Property includes a total of 887 unpatented federal lode mining claims and 16 unpatented Federal Placer Mining Claims for a total of approximately 17,135 ac (6,934 ha) (Figure 4-2). Listings of these claims, including Liberty Gold's holding costs, are provided in the appendices of the March 2018 SRK Report (SRK, 2018).

The unpatented lode claims were staked in 2004, 2010, 2011, 2014, 2015, 2016 and 2017. A total of 99 unpatented claims are leased from Oro Vista LLC and eight are leased from Ray Hunter LLC. The remaining 796 unpatented claims are 100% owned by Pilot Goldstrike Inc.

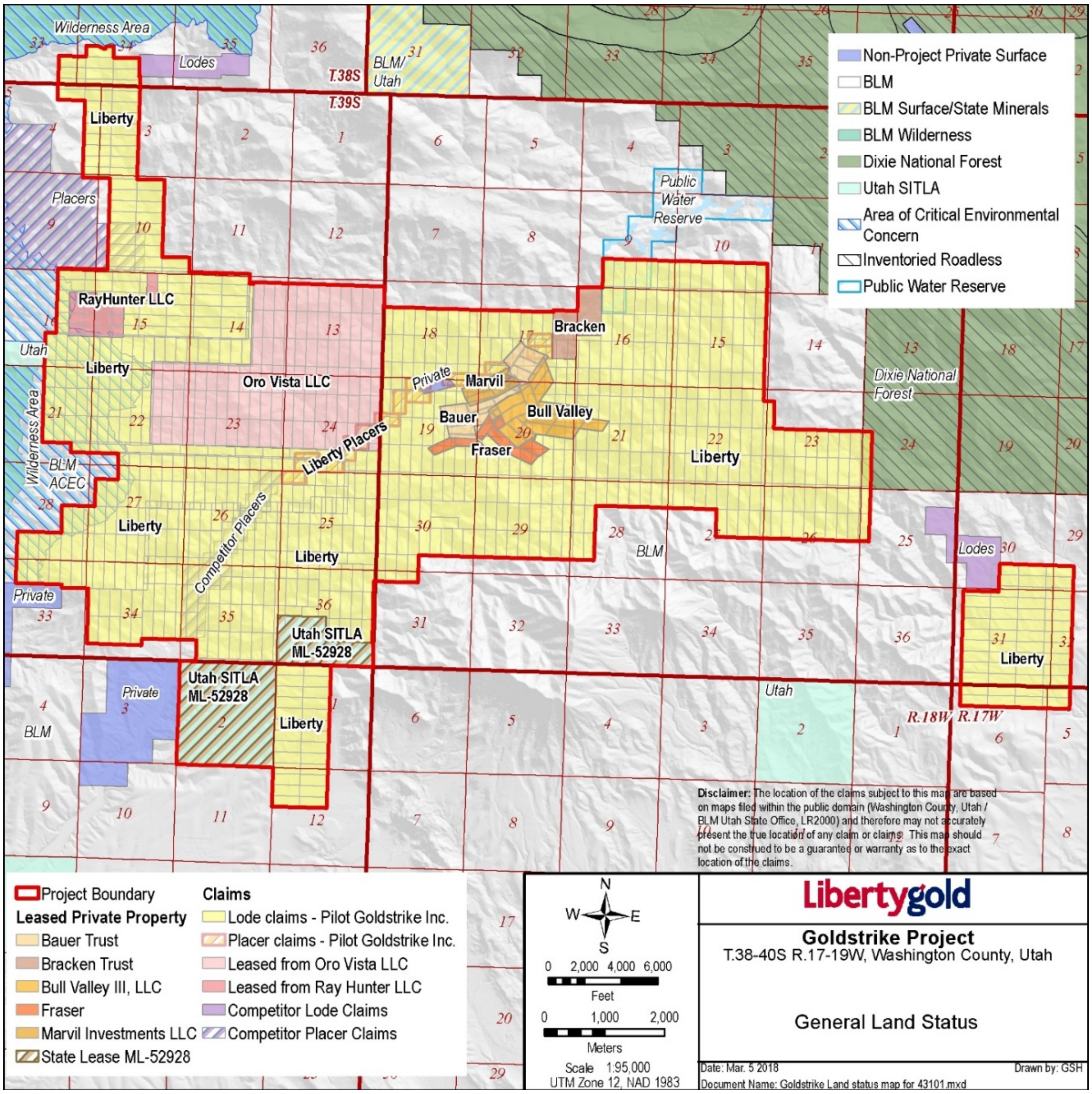
The status of 208 original claims was reviewed by Richard Moorhead, a Utah Landman, and found to be in good standing (Moorhead, 2014). A mineral status report was prepared by Erwin and Thompson LLP of Reno, Nevada (Erwin, 2014; Erwin, 2016; Erwin, 2017; Erwin, 2018). It indicates the presence of third-party claims in the vicinity of the Goldstrike Property, but no conflicts were identified. The third-party claims are senior to those held by Pilot Goldstrike Inc., and any overlaps of Pilot Goldstrike Inc. lode claims onto third-party lode claims are invalid.

Ownership of unpatented mining claims is in the name of the holder (locator), subject to the paramount title of the United States of America, under the administration of the U.S. Bureau of Land Management (BLM). Currently, annual claim maintenance fees are the only federal payments related to unpatented mining claims, and these fees have been paid in full through 01 September 2018. All claims have an expiration date of September 1, 2018 unless annual claim maintenance fees are paid on or before 01 September 2018. Liberty Gold's annual holding costs for the Goldstrike unpatented land and placer mining claims, exclusive of lease fees, are estimated at $140,877 (Table 4-1).



Source: Liberty Gold, 2018

Figure 4-1: Location of the Goldstrike Project



Source: Liberty Gold, 2018

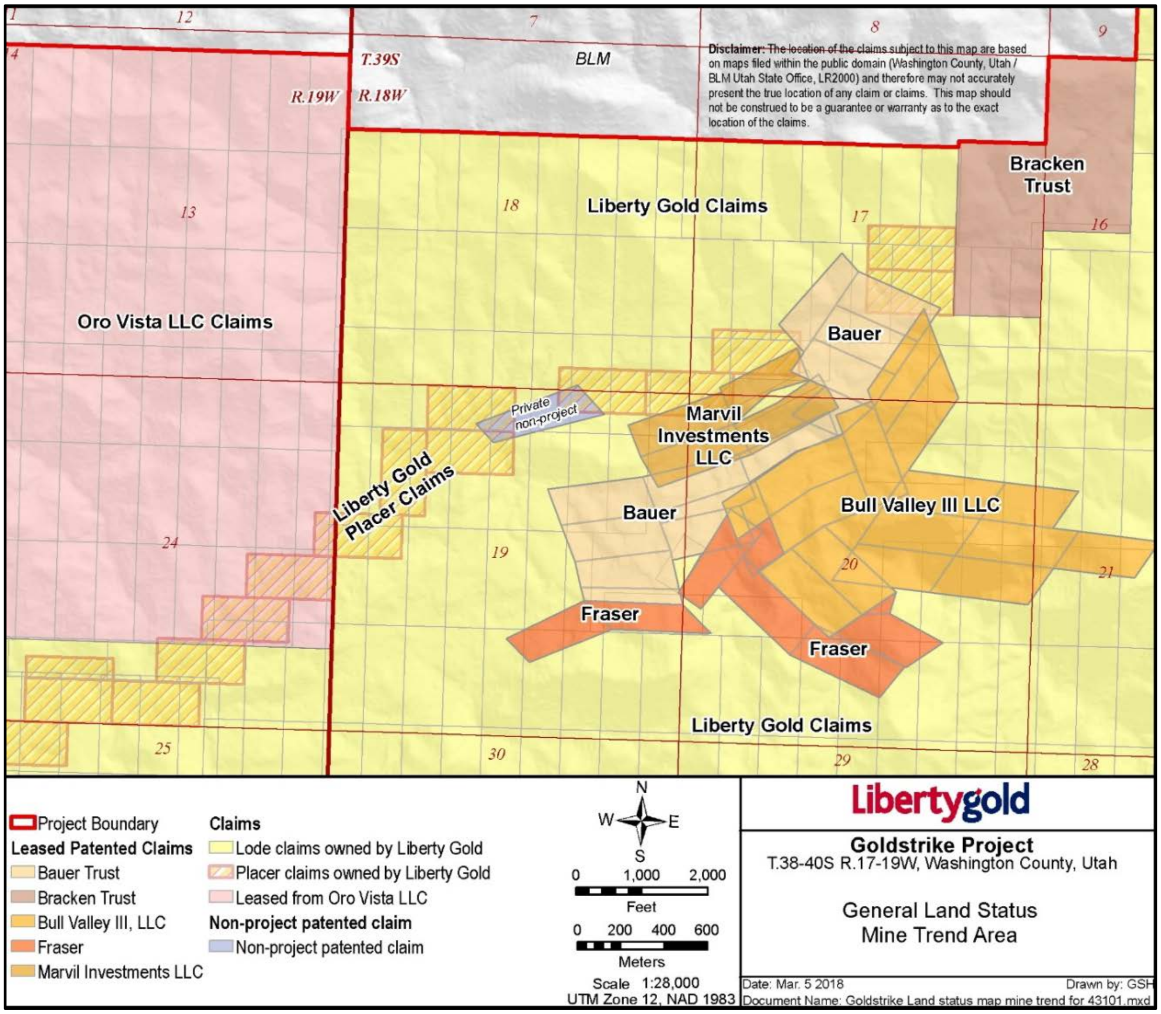
Figure 4-2: Land tenure map of the Goldstrike Property

Table 4-1: Mineral tenure information of the Goldstrike Property

Annual Fee Type	Amount
Unpatented BLM Fees	$139,965
Unpatented County Filing Fees	$996
Unpatented Lease Costs	$90,000
Patented Claims Taxes	$1,740
Patented Claims Lease Fees	$86,000
State Lands Lease Fees	$926
Total Annual Taxes and Fees	**$319,627**

4.1.4 Unpatented Placer Claims

Sixteen placer claims are located along Beaver Dam Wash and are recorded with Washington County and the BLM in 2017 (Figure 4-3). Again, details can be found in the appendices of the March 2018 SRK Report (SRK, 2018).



Source: Liberty Gold, 2018

Figure 4-3: Placer claims located in Beaver Dam Wash

4.1.5 Patented Mining Claims

Cadillac acquired leases on a large number of patented mining claims, totaling 41 claims (634.76 ac), as four separate parcels in 2011 (details in appendices of the March 2018 SRK Report, [SRK, 2018]). The claims cover approximately 40% of the historically mined area, including the Goldtown and Covington open pits and portions of the Basin and Hamburg pits (again, details in appendices of the March 2018 SRK Report [SRK, 2018]). Patent ownership documents were reviewed in May 2014, by Richard Moorhead, Utah Landman, and found to be accurate (Moorhead, 2014). Patents were further examined in a mineral status report prepared in June 2014 and updated in 2016, 2017, and January 2018, by Erwin and Thompson LLP of Reno, Nevada, with no conflicts identified (Erwin, 2014; Erwin, 2016; Erwin, 2017; Erwin, 2018). The lease payments are current as required.

In July 2017, Liberty leased an additional parcel of private land, consisting of two homestead patents, to the northeast of the 41 mining patents (Bracken Trust; Figure 4-2).

4.1.6 Utah State Leases

Two parcels of land are leased from the State of Utah under the School and Institutional Trust Lands Administration (SITLA) subject to a yearly lease fee as summarized in Table 4-1. As shown in Figure 4-2, these two parcels have the Utah State Mineral Lease number 52928. The Utah State Mineral Lease has been paid through 01 November 2018.

4.2 Underlying Agreements and Encumbrances

4.2.1 General Statement

Unless otherwise noted below, there are no back-in rights, payments or other agreements or encumbrances to which the property is subject.

4.2.2 Utah State Tax

Mineral production from Goldstrike would be subject to the Utah Mining Severance tax of 2.60%, subject to certain exemptions.

The Goldstrike Project may be eligible for a State of Utah High Cost Infrastructure Tax Credit, under which up to 30% of state revenues per year can be written off for up to 20 years, or until 50% of certain infrastructure investments are recovered.

4.2.3 Patented Claims and Utah State Lands Royalties

The 41 original patented claims are subject to a 2.5% Net Smelter Return (NSR) royalty, payable to the individual claim owners. The Bracken Trust patents are subject to a 1% NSR. Land leased from the State of Utah is subject to a 4.0% gross value production royalty.

4.2.4 Unpatented Claims

Unpatented claims leased from Oro Vista LLC and Ray Hunter LLC are subject to a 3.0% NSR royalty. Both the Oro Vista and Ray Hunter leases have been paid through 10 July 2018. Under the terms of the Oro Vista and Ray Hunter leases, Liberty Gold has the option to purchase one-third of both royalties (1%) for $500,000 each, until 10 July 2020.

The 116 GAP unpatented claims owned by Liberty Gold are subject to a 2.0% NSR royalty payable to Vista Gold U.S. Inc.

4.3 Permits and Authorization

Exploration work on patented and unpatented claims is permitted by the BLM under a Plan of Operations (PoO). Permitting and bonding through the Utah Division of Oil, Gas, and Mining (UDOGM) for disturbance is also required.

A PoO (UDGOM Permit # E/053/0069 and BLM UTU-091579) was approved by the BLM and bonded by UDOGM in August 2017. Approximately 77 ac of disturbance, covering most of the known surface mineralization on the property, are permitted.

A reclamation bond in the amount of $489,235 is in place.

4.4 Environmental Considerations

Evidence of extensive previous mineral exploration and mining activities persists. Tenneco Oil Company developed and operated the Goldstrike mine from 1988 to 1992, eventually selling it to United States Mineral Company (USMX). The mine produced oxidized, disseminated gold ore for heap-leach recovery from eight open pits. From east to west, these pits include the Padre, Main, Hassayampa, Goldtown, Basin, Hamburg, Moosehead, and Covington pits (see Figure 7-5). A crushing plant, two heap-leach pads, and recovery facility were located near the Main pit. A haul road connected the operations. The site was fully reclaimed by late 1996, including removal of all facilities, partial backfilling of pits, recontouring and revegetating of all heap leach pads, waste dumps and roads (with the exception of the haul road and exploration drill roads located on private land; Figure 4-4).

In a letter dated 12 August 2012, personnel of the State of Utah Department of Natural Resources Division of Oil, Gas and Mining stated that reclamation of the site was completed in 1999, and recommended that the file be closed. They further stated: *"Vegetation has established that exceeds the ground cover of the surrounding area. The site is stable, and the post mining land uses of grazing and wildlife habitat have been re-established. It is a showcase of exemplary reclamation in arid areas of Utah"*. On this basis, Liberty Gold believes that the surface disturbance and reclamation liability that are related to the above-described operations are not transferable. Thus, there are no outstanding reclamation liabilities that could or would be tied to successor companies as a result of holding the mining claims associated with the property.

Meetings between Liberty Gold and the St. George, Utah office of the BLM have indicated no immediate concerns regarding historic or prehistoric cultural sites. No wildlife concerns have been identified.

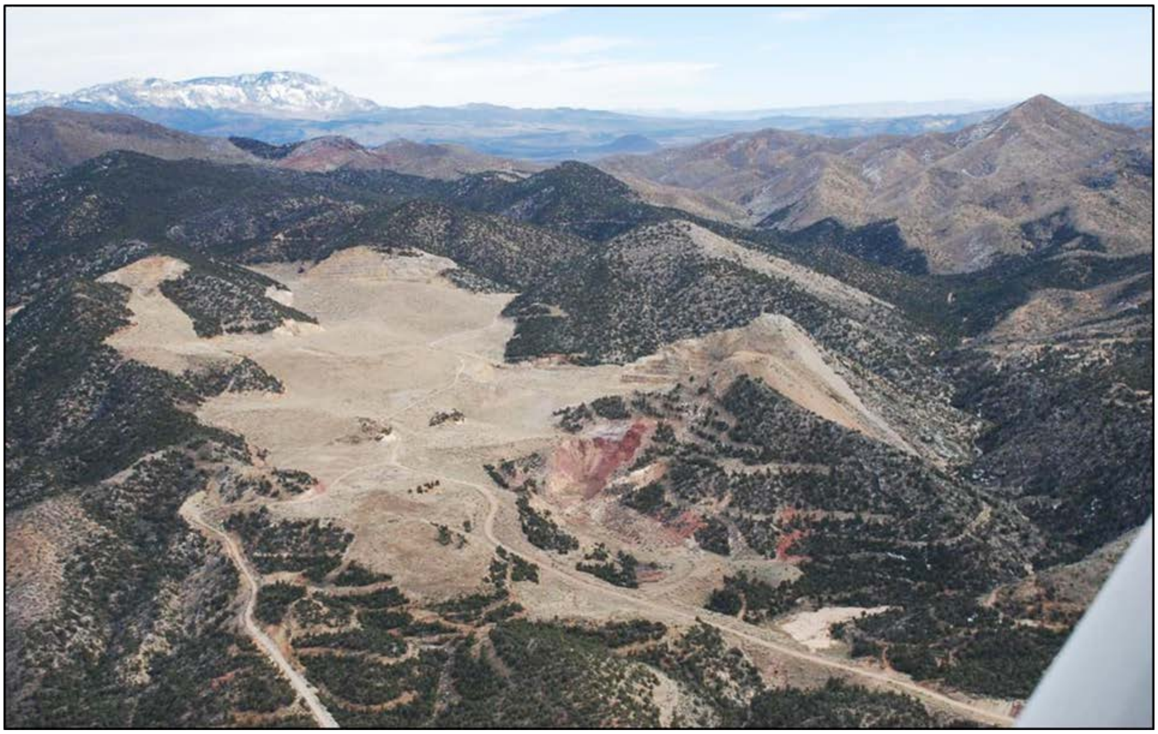
A Phase I Environmental Site Assessment (ESA) report was prepared for Cadillac by Environmental Resources Management Inc. (ERM) (Environmental Resources Management Inc., 2014). ERM identified the following issues:

- ERM advised Cadillac that at the time of their site visit (May 2013), water was observed seeping from the heap leach pad drainage underground collection point north of the Hamburg pit. Heap leach pad effluent data from 2008 indicated that the effluent contained constituents in excess of ground water quality standards. Current effluent water quality is not known. In May 2014, Liberty Gold geologists visited the site and did not see any water seepage.
- Historically, cyanide has been used and cyanide solutions were released on the property. All spills were cleaned up under State approved programs.

- If ground-water monitoring wells were not abandoned, they should be properly abandoned to State standards.

In the fall of 2014, Liberty Gold completed reclamation of the road and drill pads built by Cadillac during their brief drill program in the West Hamburg Area. The disturbance was on BLM and private land, and an inspector from the BLM reviewed the work. The disturbed areas were seeded with a BLM-approved seed mix in the late fall of 2014. Approximately 1.15 ac were reclaimed. When it was found that there was continued traffic on the reclaimed section across BLM-administered land, county road crews set a berm across the access to the reclaimed area.

Liberty Gold routinely reclaims drill sites and access roads that are no longer required for drilling. Liberty Gold estimates that it has reclaimed approximately 10.3 ac on both public and private land as of the effective date of this report.



Source: Liberty Gold, 2017

Figure 4-4: Aerial view of the reclaimed Goldstrike Mine, and typical landscape, looking east

4.5 Mining Rights of the Goldstrike Project

Mining rights are granted by the federal government under the Mining Law of 1872. In the case of leases and patents, these rights, originating with the federal government, are assigned by the private owners and the state of Utah in the case of the state mineral leases.

All of the unpatented lode and placer mining claims are located on lands administered by the Bureau of Land Management, St. George Field Office. Parts of three claims at the east end of the property extend into the Dixie National Forest, Pine Valley Ranger District.

Under the Mining Law of 1872, which governs the location of unpatented mining claims on federal lands, the locator has the right to explore, develop, and mine minerals on unpatented mining claims without payments of production royalties to the U.S. government, subject to the surface management regulation of the BLM. In recent years, there have been efforts in the U.S. Congress to change the 1872 Mining Law to include, among other items, a provision of production royalties to the U.S. government.

For the patented claims, the leases grant Liberty Gold the right to *"… erect, construct, maintain, and operate, on and in the Property, buildings, structures, facilities, machinery, and equipment, and to use, occupy, excavate, and disturb so much of the surface and subsurface of the Property as Cadillac may determine to be useful, desirable, or convenient...*"

The Utah State Mineral Lease grants Liberty Gold the following "*Together with the right and privilege to make use of the surface and subsurface of the Leased Premises for uses reasonably incident to the mining of leased substances by Lessee on the Leased Premises or on other lands under the control of Lessee or mined in connection with operations on the Leased Premises, including, but not limited to, conveying, storing, loading, hauling and otherwise transporting leased substances; excavating; removing, stockpiling, depositing and redepositing of surface materials; developing and utilizing mine portals and adjacent areas for access, staging and other purposes incident to mining; and the subsidence, mitigation, restoration and reclamation of the surface.*"

4.6 General Statement Regarding Tenure and Permitting

Other than that which is discussed above, Liberty Gold has not identified any other significant factors or risks that may affect access to title or the right or ability to perform work on the property.

Liberty Gold is in the early stages of identification of potential stakeholders on a community, city, county and state level and has engaged in meetings with a number of these stakeholders. Liberty Gold is not aware of any potential social or community related requirements that may materially affect the Goldstrike Project at this time.

5 Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1 Accessibility

The Goldstrike Project is located approximately 50 km northwest of the city of St. George, Utah (Figure 4-1) and 13 km east of the Nevada state line. St. George is located on Interstate Highway 15, which connects Las Vegas to Salt Lake City. Access is via paved Utah State Highway 8, which turns into Old US Highway 91 north of Ivins, and then on the Motoqua Road, an improved, all-weather gravel road, to the Goldstrike Road. An alternate route is via the Gunlock Road from Old US Highway 91. Mine haul roads provide excellent access to all the mined pits, with unimproved gravel roads providing access to most other areas of the property.

5.2 Local Resources and Infrastructure

At present, there is no electrical power to the property, although a regional power transmission line extends to a natural gas pipeline located 12 km to the southeast of the property. The nearest major electrical transmission line is 8 km southeast of the property. At least one perennial stream crosses the property.

There are several water rights in the Beaver Dam Wash Basin held by private and other water rights owners. Once a sufficient water source is identified, Liberty Gold will work closely with the Washington County Water Conservancy District and the State of Utah Department of Natural Resources, Division of Water Rights to obtain water rights compliant with local and state regulations.

Liberty Gold controls all surface rights for the planned development of the Goldstrike Project, including open pits; waste storage, heap leach, and processing facilities; and site access roads.

5.3 Climate

The climate is semi-arid. Daytime temperatures may drop below freezing briefly in the winter and may exceed 45°C in the summer. Annual precipitation in St. George is approximately 20 cm, with more precipitation received at Goldstrike due to its higher elevation and mountainous terrain. Most precipitation falls as winter rain and occasional snow and late summer thunderstorms. The climate and road access are such that, with the exception of significant snow or rain events, year-round access is possible. Historical mining and processing occurred throughout the year.

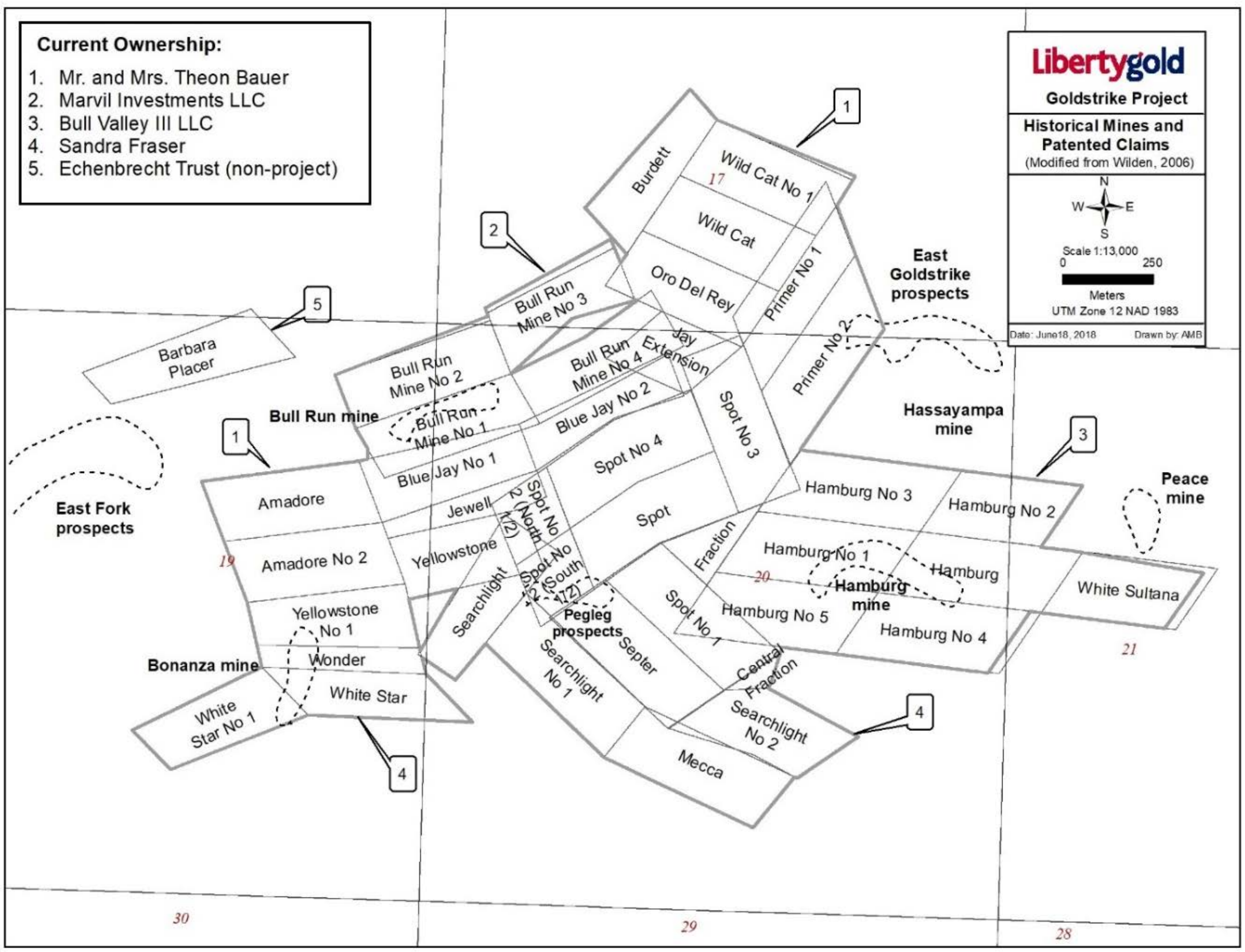
5.4 Physiography and Vegetation

The Goldstrike Project lies on the eastern margin of the Basin and Range physiographic province of Nevada and western Utah. The project site is characterized by moderate to steep terrain in the southern portion of the Bull Valley Mountains. Elevations range from approximately 1,200 m to 2,000 m. Sagebrush and other shrubs are the main vegetation in the lower elevation areas; pinion pine and juniper predominate at higher elevations. Stream courses contain cottonwood trees and other streamside vegetation. Overall, the project area is considered to be within the "desert woodland and sagebrush grassland" vegetation zones of western Utah (Shultz and Shultz, 1987). Typical landscape in the project area is shown in Figure 4-1.

6 History

6.1 Early Historical Prospecting and Mining

Prospecting in the Goldstrike mining district commenced as early as the 1870's, with minor exploration activity and gold production between 1895 and 1920. Approximately 40 lode claims and one placer claim were brought to patent during this period (Willden, 2006). Coarse gold was recovered, and a three-stamp mill operated briefly. The total recorded production from 1912 through 1942 was about 813 ounces, most of which was recovered from the Hamburg underground mine, located on the southwest high wall of the later Hamburg pit, and from the Bull Run underground mine, located approximately 0.5 km west-northwest of the (present day) Goldtown pit (Figure 6-1). Exploration in the district was largely dormant until the 1960's.

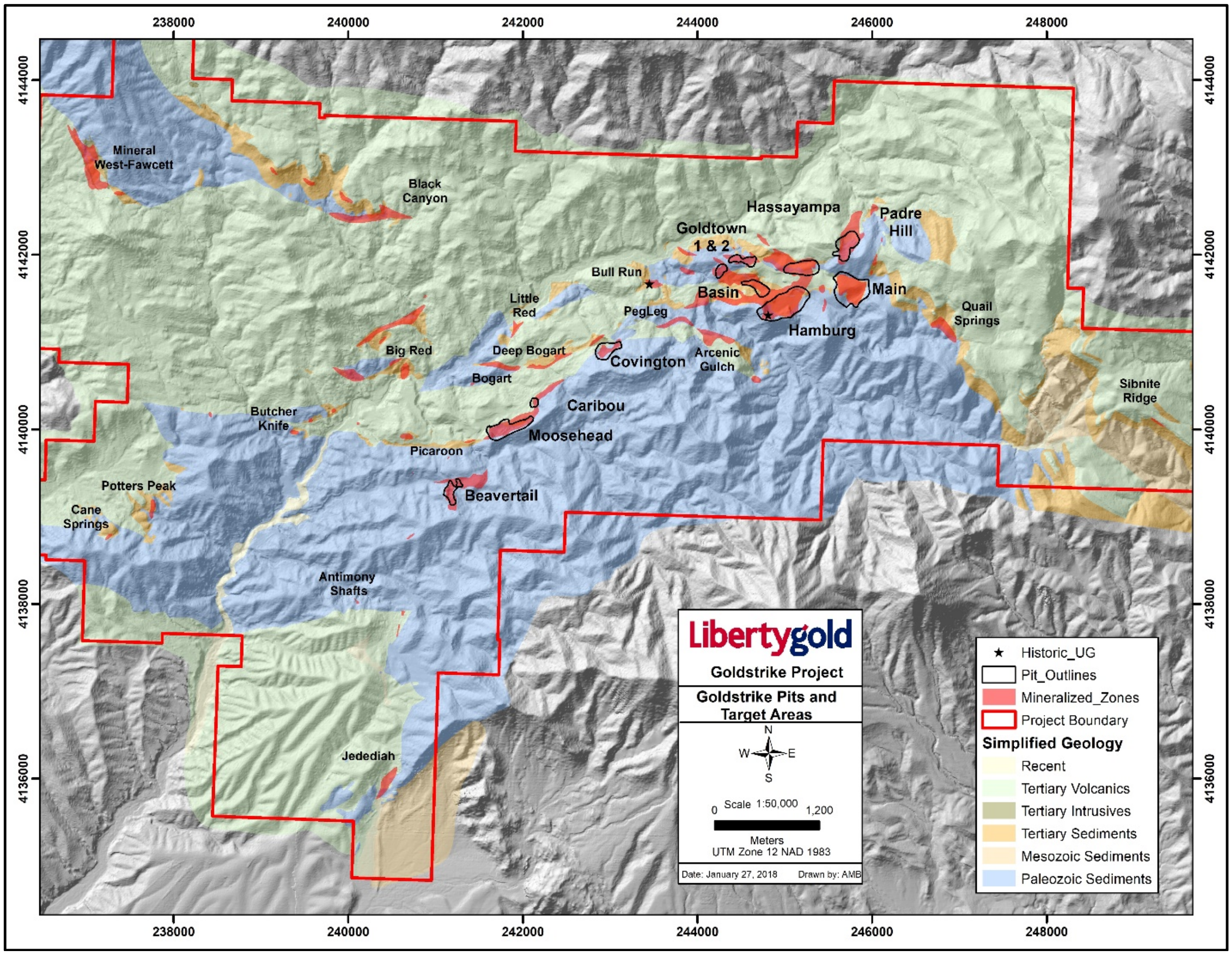


Source: after Willden, 2006

Figure 6-1: Historical mines and patented claims, Goldstrike Mining District

6.2 Modern Historical Exploration Campaigns

Modern exploration began in the late 1960's with the Padre Mining Company, which staked 53 claims on the east side of Liberty Gold's patented claim block. Exploration for "Carlin-style" sediment-hosted gold deposits began in earnest in the early 1970's. Reportedly, 14 companies explored the property between 1975 and 2012, summarized below. Historical exploration and drilling areas are shown in Figure 6-2, and the historical drilling totals reported are summarized in Section 10.1.



Source: Liberty Gold, 2018

Figure 6-2: Historical exploration and drilling areas, Goldstrike Project

- 1975 to 1976: Gold Resources Inc. (GRI) carried out reconnaissance mapping, soil and rock sampling, and identified gold mineralization over a 32 km^2 area. Elevated gold concentrations were found in fault-controlled jasperoids and at the base of the Claron Formation.
- 1977: Lustre Gold Mines Inc. optioned the Gunlock-Bonanza patented claims and opened and sampled the historic Hamburg underground mine.

- 1978 to 1979: Occidental Minerals leased the ground previously explored by GRI and test drilled surface geochemical anomalies that were identified by GRI near what became the Main, Hassayampa, Hamburg, and Goldtown pits.
- 1979 to 1982: Houston International Minerals Company continued the drilling started by Occidental on the Padre Mining leases and conducted additional mapping and sampling programs. The drilling focused on areas around the same geochemical anomalies identified by Occidental, as well as the Main, Arsenic Nose, and Peg Leg target areas.
- 1982 to 1987: Permian Exploration Account leased the Padre Mining properties from Houston International and conducted geological mapping, geochemical surveys, and drilling at the Hassayampa, Goldtown, Main, and Hamburg pit areas, as well as the Big Red target.
- 1985 to 1987: Inspiration Mines, Inc. subleased the property from Permian and carried out exploration and development drilling over four main target areas in and around the existing Hamburg, Main, Hassayampa, and Goldtown mineralized areas, discovering gold mineralization at the Basin and Padre targets. Some outlying targets were also drill tested. Inspiration sold their interests at Goldstrike to Tenneco in 1987.
- 1988 to 1989: Goldsil Resources carried out exploration drilling in the Moosehead and Caribou areas.
- 1987 to 1992: Tenneco carried out aggressive exploration and development drilling in ten target areas. Over the first few years, drilling focused mainly on the Main, Hassayampa, Goldtown, Hamburg, Basin, and Padre target areas. Expansion drilling then shifted westward with the discovery of mineralization in the Moosehead target area in late 1988, Caribou in 1989, Covington in 1990, and Beavertail in 1992, all of which were subject to definition drilling. Other significant targets that were drill tested by Tenneco include Peg Leg, Bogart, Arsenic Nose, Arsenic Gulch, Antimony Shafts, Bull Run, Picaroon, Big Red, Black Canyon, Butcher Knife, Mineral West – Fawcett, Potters Peak, Jedediah, and Cane Spring. In early 1992 Tenneco sold the project to USMX.
- 1989 to 1990: Pegasus Gold Corp. carried out exploration drilling in Mineral West – Fawcett area, of which Liberty Gold has no assays for three holes.
- 1992 to 1993: USMX carried out very limited exploration drilling in the Goldstrike property and focused on definition drilling.
- 1996 to 1997: North Mining, Inc. leased patented claims from Bull Valley LLC, and drilled in the floors of the Hamburg, Padre, and Main pits, testing for what was then considered deep, structurally-controlled mineralization, and were largely unsuccessful.
- 1999: Bull Valley LLC drilled holes testing for deep mineralization within or adjacent to the Basin and Hamburg pits, as well as at the Deep Bogart target, with negative results. The area of the property that includes the patented ground and open pits then remained idle until 2011.
- 2004: Midway Gold drilled exploration holes in the Mineral West – Fawcett area.

- 2009 to 2010: Tonogold Resources explored the Mineral West – Fawcett area, which at the time was known as the Mineral Mountain Project. Tonogold collected surface rock samples but did not conduct any drilling. Tonogold commissioned a NI 43-101 Technical Report on the Mineral West – Fawcett area in 2010, which was prepared by Puchski GeoConsultants and included a mineral resource estimate using Pegasus and Tenneco drill data. Liberty Gold is not treating that estimate as a current mineral resource; rather Liberty Gold is treating it as an historical resource and therefore it should not be relied upon (refer to Section 6.4 for further details).
- 2011 to 2014: Cadillac acquired the patented claims through lease agreements and staked claims in 2011. They assembled a large project dataset, including historical drill logs, maps, assays certificates, and reverse circulation (RC) drill chips. In 2011 to 2012, Cadillac exploration drilling was focused primarily on one target to confirm mineralization originally recognized by Tenneco, drilled on north-south-oriented sections primarily on the septa between Tenneco's Hamburg and Basin open pits and the area immediately to the west, to confirm mineralization originally recognized by Tenneco. Nine of the 12 holes drilled returned intercepts exceeding 1 g Au/t over down-hole intervals of 10 m or more.

6.3 Surface Exploration

6.3.1 Airborne Geophysical Surveys

Newmont Mining Magnetic and Radiometric Survey

An airborne magnetic and radiometric survey was flown over the region by Newmont Mining Corporation from 22 to 25 March 2002. Lines were oriented northeast-southwest, with 100 m line spacing and 25 m station spacing. Data were purchased from Newmont, evaluated by Wright (2017), and are described in the March 2018 SRK Report (SRK, 2018).

Gridded magnetic data clearly differentiate several stratigraphic units on the property. Paleozoic strata in the southern half of the property showed a low relief, relatively low magnetic response. The Claron Formation, as well as interbedded tuffs and limestones, including the Needles Range, Isom and particularly the overlying Leach Canyon tuffs, showed a slightly lower response. Conversely, the Miocene volcanic rocks, including the Swett-Bauer and Harmony Hills volcanic sequences, are strongly magnetic, suggesting that airborne magnetics can be a useful tool for outlining Oligocene and Miocene volcanic rocks.

Gridded radiometric data show a low response for Paleozoic strata and a generally high response for volcanic rocks, with the Claron Formation and associated limestones and Needles Range and Isom tuffs, having an intermediate response in the total count radiometric image.

Fox Geophysics Gradient Array Resistivity Survey

Fox Geophysics carried out resistivity surveys over portions of the Goldstrike Property in 1989, 1990 and 1992. The approach and results as evaluated by Wright (2017) are described in the March 2018 SRK Report (SRK, 2018).

Observed values, as with the other surveys, are consistent with the mapped rock types. Paleozoic rocks are high resistivity while the overlying Tertiary volcanic units are generally lower. In theory, alteration such as silicification would increase resistivity while clay alteration would lower resistivity, although this degree of detail is not immediately evident.

6.3.2 Geologic Mapping

Various campaigns of geologic mapping have been performed at several different scales and focused on different portions of the project area. Adair (1988) described his mapping efforts over much of the area for Permian. Of note is detailed geological mapping by Inspiration, from 1985 to 1987, covering the area from what is now the Padre pit, east to the Arsenic Nose area, encompassing the Padre, Main, Hassayampa, Hamburg, Basin and Goldtown pits. This (pre-mine) mapping proved extremely useful in understanding the detailed structural geology in the mine area. From 1987 to 1992, Tenneco carried out extensive detailed mapping over many of the outlying targets not mapped by Inspiration. The northwestern portion of the property was compiled into the Docs Pass Quadrangle Map by Rowley et al. (2007). Liberty Gold compiled the more reliable mapping efforts noted above into a single digital map, with extensive spot checking and remapping of key areas. All geologic maps in this report reference this compilation map, or maps simplified from this map, described in Section 9.2.

6.3.3 Soil Sampling

Liberty Gold's digital database includes data derived from 7,912 historical soil samples that cover most of the pit areas and the fault corridors within which the pits are situated. Few details are known about the accuracy of the sample locations, sampling methods, operators, laboratories, or analytical techniques. Some samples were analyzed for gold only; others were analyzed for up to seven additional elements, including Ag, Hg, As, Sb, Ba, Cu, and Zn.

It is clear that soil geochemistry played a critical part in determining historical exploration targets, as there is an excellent correlation between elevated gold-in-soils, mineralization in underlying bedrock and the locations of historical deposits and pits.

The data were merged with Liberty Gold's soil sampling, which is described in Section 9.3.

6.3.4 Additional Investigations

The following additional exploration investigations have been undertaken at the Goldstrike Project:

- Stream-sediment surveys by some operators, but Liberty Gold has not yet digitized the data to incorporate it into the exploration model
- Rock-chip geochemistry by Tenneco, Genesis Exploration, Bonanza Exploration and Tonogold on 507 rock-chip samples, which has been merged with Liberty Gold's rock chip sampling (described in Section 9.4)
- Landsat Thematic Mapper study (Green, 1985), which indicated only "carbonate", "sandstone", and "volcanic rock". Landsat data were effective at identifying clay, silica, and iron-oxide alteration, although most areas of alteration had been previously mapped.

- SIRIS (single-beam visible/infrared intelligent spectro-radiometer) portable field spectrometer on 96 rock-chip samples from the Padre pit, which detected illite, montmorillonite, kaolinite, and dickite, as well as jarosite and goethite (Green, 1985). X-ray diffraction was used to further differentiate between the clays.
- Petrographic study of 177 samples from the West Hamburg and Padre pits (Effner, 1992) yielded a paragenetic interpretation of the sequence of mineralization that is still in use at present

6.4 Historical Mineral Resource and Reserve Estimates

All but one of the estimates described in this section were prepared prior to 2000 and are presented here as items of historical interest with respect to exploration targets at Goldstrike. All the estimates were originally reported in imperial units. The classification terminology is presented as described in the original references, but it is not known if they conform to the meanings ascribed to the measured, indicated, and inferred mineral resource classifications or proven and probable reserve classifications by the Canadian Institute of Mining, Metallurgy and Petroleum (the CIM Definition Standards). A qualified person under NI 43-101 has not completed sufficient work to classify these historical estimates as current mineral resources or mineral reserves, and Liberty Gold is not treating these historical estimates as current mineral resources or mineral reserves.

Table 6-1: Historical resource and reserve estimates

Date	Source	Estimate Type	Tonnage (Mtons)	Grade (oz/ton)
1981	Houston International (Callaway & Gates, 1981)	Unspecified	1.0 (for 5 unspecified areas)	0.06
1986	Permian (Wilden & Adair, 1986)	"ore reserve"	1.17 (for unspecified areas)	0.064
1988	Tenneco (Hebert, 1988)	"resource" Pit constrained "reserve" in above	0.57 (for Hassayampa)	0.028 (for 15,834 ozs Au) (10,256 ozs Au)
1994	(Parsley, 1994)	"reserve"	0.29 (for Beavertail)	0.03 (for 7,857 ozs Au)

None of the above historical estimates are relevant to the current status of the Goldstrike Project, as all or portions of the materials estimated were subsequently mined.

In 2010, Puchski GeoConsultants of St. George, Utah, prepared an estimate of mineral resources in the Mineral West – Fawcett area at the request of Tonogold that was summarized in a NI 43-101 technical report (Puchlik, 2010). The estimate was based on drilling by Pegasus in 1989 to 1990, Tenneco in 1990, and Midway Gold in 2004. A total of nine separate mineralized zones were included, which were estimated by polygonal methods to contain, in aggregate, Inferred Resources of 41,144 ounces of gold in 3.4 million tons at an average grade of 0.42 g/t Au (0.0122 oz/ton Au) (Puchlik, 2010). This historical mineral resource estimate has been superseded by the estimate in this report. Again, a qualified person has not completed sufficient work to classify this historical estimate as current mineral resources or mineral reserves, and Liberty Gold is not treating this historical estimate as current mineral resources or mineral reserves.

6.5 Past Production

There is no record of production from the Goldstrike area until 1912, although some gold and silver was undoubtedly mined. Production attributed to the Goldstrike area by Willden (2006) is provided below in Table 6-2. High-grade gold and silver was mined from underground workings at the Hamburg, Bonanza, and Bull Run mines.

Table 6-2: Summary 1912 to 1942 gold and silver production of the Goldstrike District

Year	Source	Tons	Gold (ounces)	Silver (ounces)
1912	Heikes, 1913	18	9.39	4
1914	Heikes, 1916	35	23.22	9
1915	Heikes, 1917	173	593.00	222
1916	Heikes, 1919	15	10.49	4
1918	Heikes, 1921	15	9.87	4
1919	Heikes, 1922	1	0.97	2
1928	Gerry and Miller,	6	19.01	6
1929	Gerry, 1932		39.43	15 *
1931	Gerry and Luff, 1934	1	1.3	0
1933	Gerry and Miller,	3	11.27	11
1934	Gerry and Miller, 1935	3	41.80	20
1935	Gerry and Miller, 1937	5	1.80	
1936	Gerry and Miller. 1937	20	13.60	9
1937	Miller, 1938	4 **	4.00 **	4 **
1939	Miller and Luff, 1940	1	18.00	3
1940[2]	*Not available*[3]	11	8.00	
1941	Woodward and Luff, 1943	17	2.00	14
1942	Woodward and Luff, 1943	10	6.00	6
		Total	**813.95**	**333**

* - Part of this may have come from Apex mine.
** - Estimated from total Bull Valley production.

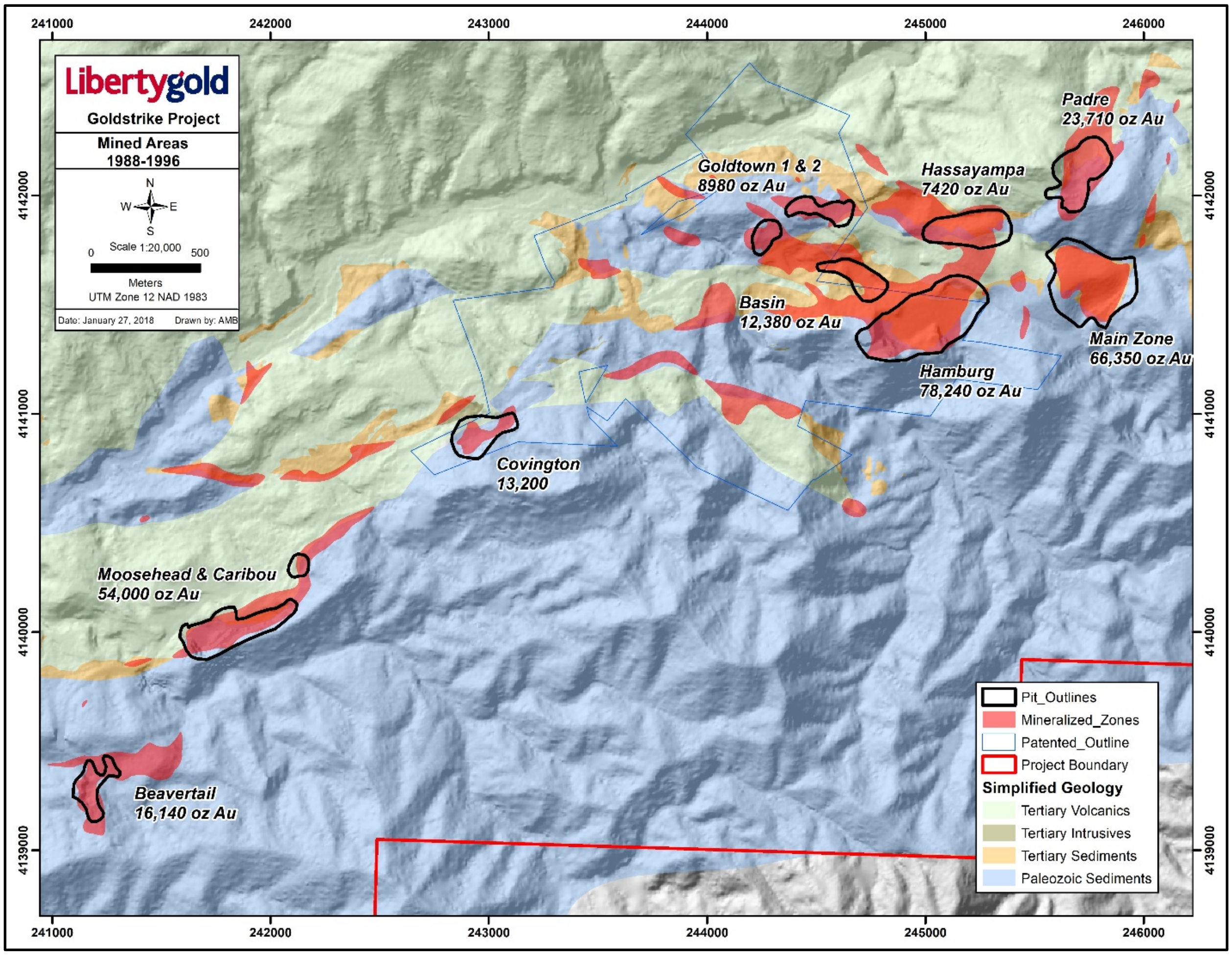
Source: Wilden, 2006

[2] Corrected to 1940 from assumed typographical error (1949) in original source. (Wilden, 2006)
[3] Blank in original source (Wilden, 2006)

Modern production began after Tenneco completed metallurgical and engineering studies and commenced open pit heap-leach mining and processing from the Hassayampa pit in late 1988 (Willden, 2006). The mine consisted of an office complex, two heap-leach pads, a crushing plant, and a solution-processing plant. The mining, crushing, and hauling of ore was done by mining contractors. The original heap-leach pad from the Hassayampa pit was subsequently levelled and overlain by an expanded heap-leach pad to accept ore from the Main pit. The Main pit, in turn, was backfilled with waste from the Hamburg and Padre Hill orebodies, and a new heap-leach pad was constructed over the backfilled Main pit. Over time, both the crushing plant and office complex had to be moved to expand the heap-leach facilities and allow mining of one of the two Goldtown orebodies (Willden, 2006). Mining proceeded westward, ending with the Moosehead and Beavertail pits (MEG, 2012).

Tenneco sold the mine to USMX in early 1992 and through their successor Dakota Mines, closed the mine and reclaimed the property. Mining ceased in late 1994, with continued rinsing of heaps through 1995.

Between 1988 and 1996, Tenneco and USMX produced at total of approximately 209,000 ounces of gold and 198,000 ounces of silver from the heap-leach operation at Goldstrike (see the March 2018 SRK report for details). Approximately 8 million tons was mined from 11 open pits (Figure 6-3). The average grade of the ore was 1.2 g/t Au (0.035 oz/ton Au). Some of the ore was crushed to minus 2-inch (51 mm) and the rest was processed as run-of-mine. The reported ore cut-off grade was approximately 0.617 g/t Au (0.018 oz/ton Au) over the life of mine. A total of 19 million tons (17 million tonnes) of waste was also mined. Throughout the life of the mine, cash costs, including depreciation, depletion, amortization and reclamation accruals, varied between $220 and $395 per ounce.



Source: Liberty Gold, 2018

Figure 6-3: Goldstrike production areas mined 1988 to 1996

Factors leading to the closure of the mining operation are reported to have included: (1) falling gold prices, (2) increasing strip ratios in some of the pits, (3) increasing haulage distances, and (4) unfavorable royalty payments. Willden (2006) reported that the leach pads had reached their capacity near the end of the mining operations.

The total reported gold production (209,835 ounces) and the total gold ounces reported to have been mined (280,420 ounces) suggest that the average recovery from the heap-leach operations at Goldstrike was about 75%. Tenneco and USMX monthly reports suggest that actual recovery varied from approximately 70 to 78% during the life of the mine.

7 Geological Setting and Mineralization

7.1 Regional Geology

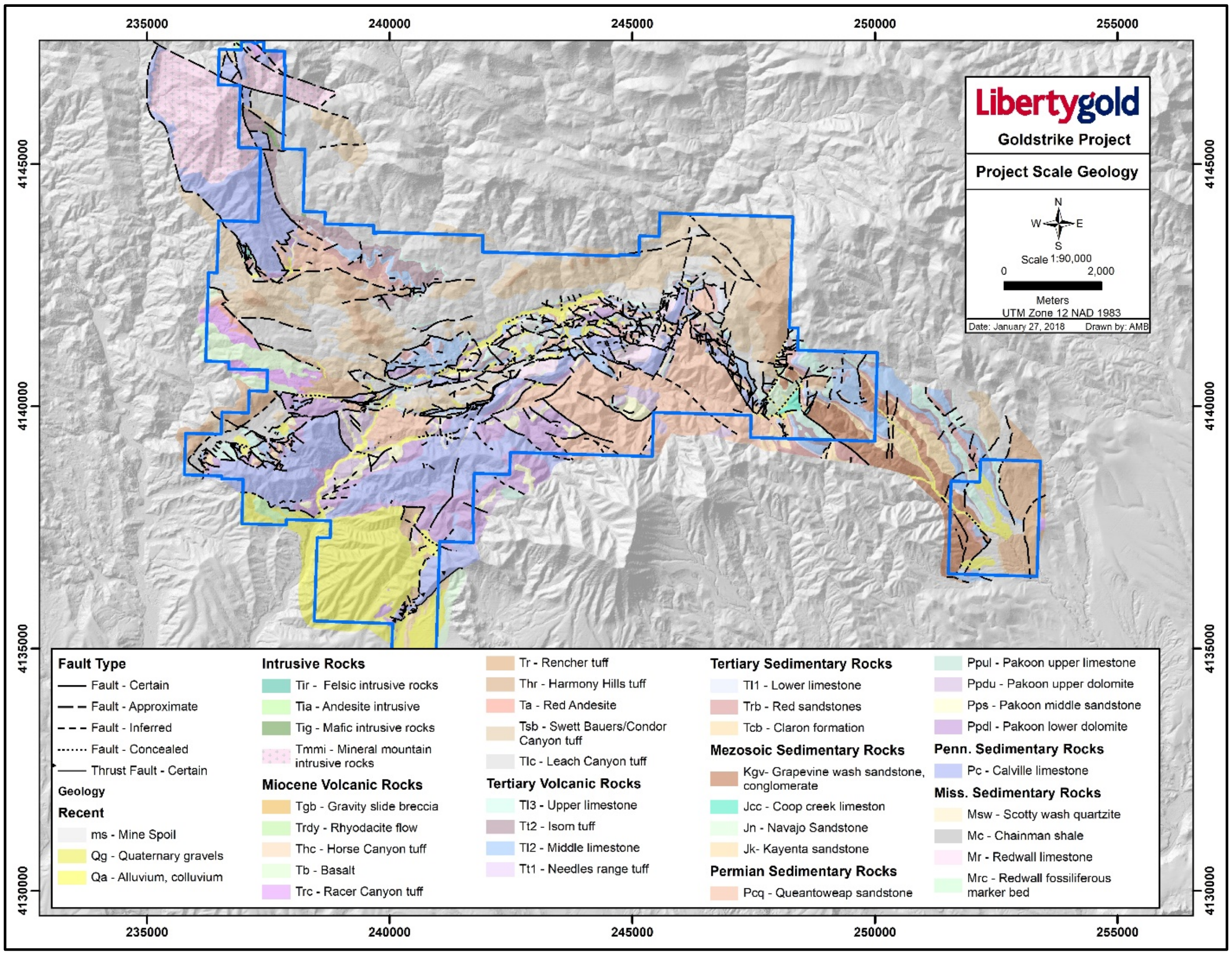
The Goldstrike Property lies within the Bull Valley Mountains, on the eastern edge of the Basin and Range Province, transitional to the Colorado Plateau. A generalized geological map of the Goldstrike Property is shown in Figure 7-1.

The oldest rocks are of Devonian and Mississippian ages, representing the transition from an open shelf environment to a distal foreland basin related to the Devonian-Mississippian Antler orogeny in central Nevada, and to a return to shallow-water carbonate sedimentation. Pennsylvanian through Permian carbonate and siliciclastic strata in the Bull Valley Mountains represent shallow water and supratidal carbonate deposition in an inner platform setting, with periodic input of siliciclastic material derived from the continental margin to the east.

Mesozoic rocks in the district include the Jurassic Navajo Sandstone, consisting of aeolian quartz-rich sandstone. Rocks as young as Jurassic were strongly deformed during the Late Cretaceous Sevier orogeny, wherein these rocks were folded and thrust imbricated. Thrust faulting and folding were thin-skinned, southeast-vergent and locally place the Paleozoic section over Mesozoic rocks. The effects of later, Laramide-age contractional deformation are difficult to differentiate from Sevier-age deformation in the area and are likely to be relatively minor. Late Cretaceous to Paleocene basins developed in association with the Sevier highlands and received voluminous deposits of coarse clastic strata, including the Upper Cretaceous Grapevine Wash conglomerate, a syn-tectonic alluvial fan shed off the Square Top Mountain allochthon. However, the presence of sandstone and conglomerate deposits of Eocene to Oligocene age, including the Claron Formation, suggests continuing active tectonism at that time.

Oligocene and Miocene intermediate to felsic volcanic rocks, including andesite flows and tuffs, overlie the older sedimentary rocks over a large area extending into eastern Nevada (Best, Christiansen and Blank, 1989b). These are likely related to the “mid-Tertiary ignimbrite flare-up” over most of Nevada, with the age of volcanism becoming progressively younger from approximately 40 million years ago (Ma) north of Elko to 26 to 18 Ma in the Goldstrike area.

East-west and northwest-striking steep faults are common in the region, with both normal and strike-slip movement, resulting in an overall west-northwest structural grain. Strata as young as Miocene in age are tilted gently northeastward, suggesting a listric geometry to at least some of the faults. Paleozoic strata are exposed in a dome-shaped feature in the Mineral Mountain area, perhaps related to uplift from intrusion of the Mineral Mountain laccolith. Faults in the Goldstrike area strike mainly east-northeast, in contrast to the regional structural grain.



Source: Liberty Gold, 2018 (after Adair, 1988)

Figure 7-1: Generalized geological map of the Goldstrike Property

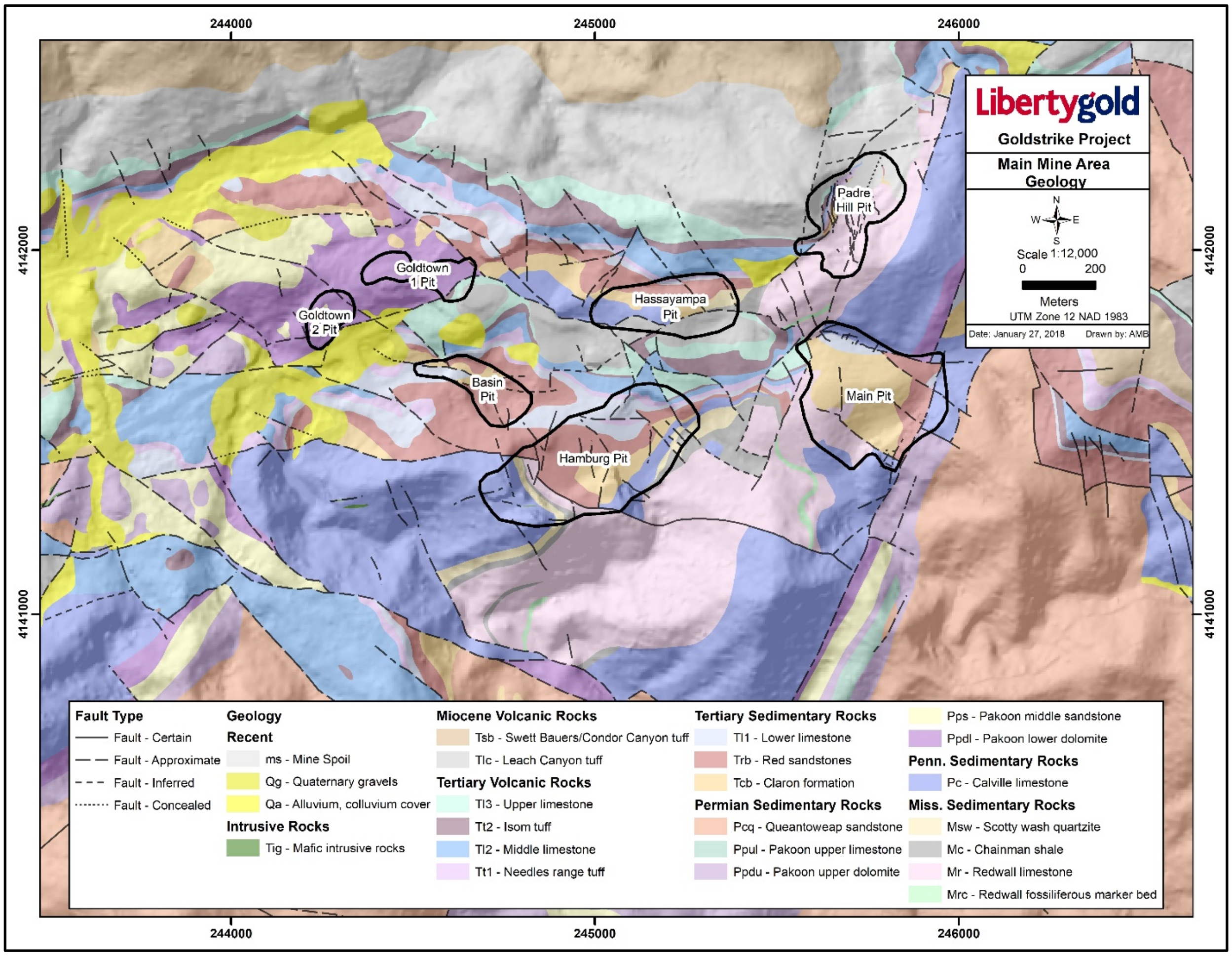
7.2 Property Geology

7.2.1 Property Geology Overview

The Goldstrike area is underlain by eroded Paleozoic rocks comprised of Devonian through Permian interbedded carbonates and sandstones, and Mesozoic rocks comprised of Jurassic and Cretaceous sandstones and conglomerates. As with most areas in the Basin and Range with economic quantities of disseminated gold, the Paleozoic and Jurassic strata are strongly deformed, being complexly folded and faulted during Mesozoic contractional and Cenozoic extensional events.

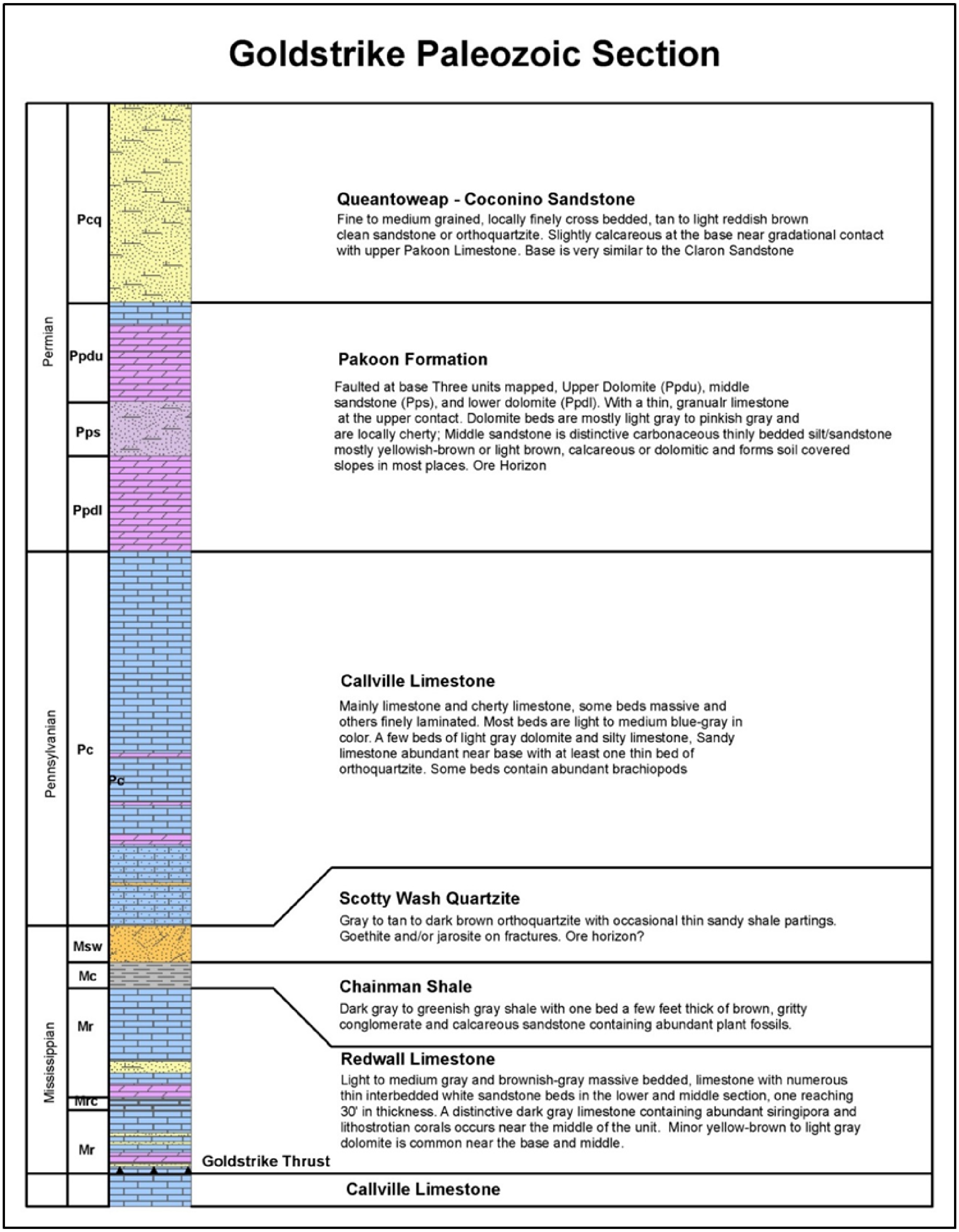
The Paleozoic and Mesozoic rocks are unconformably overlain by Cenozoic rocks comprised of Paleocene to Oligocene limestone, sandstone and conglomerate, and Oligocene-Miocene ash-flow tuffs (Figure 7-2). Strongly altered mafic dikes of basalt or andesite composition locally intrude the sedimentary section.

The Paleozoic stratigraphy of the project area is summarized in the stratigraphic column shown in Figure 7-3. Cenozoic stratigraphic units in the project area are summarized in Figure 7-4. These units are further described in the following sub-sections.



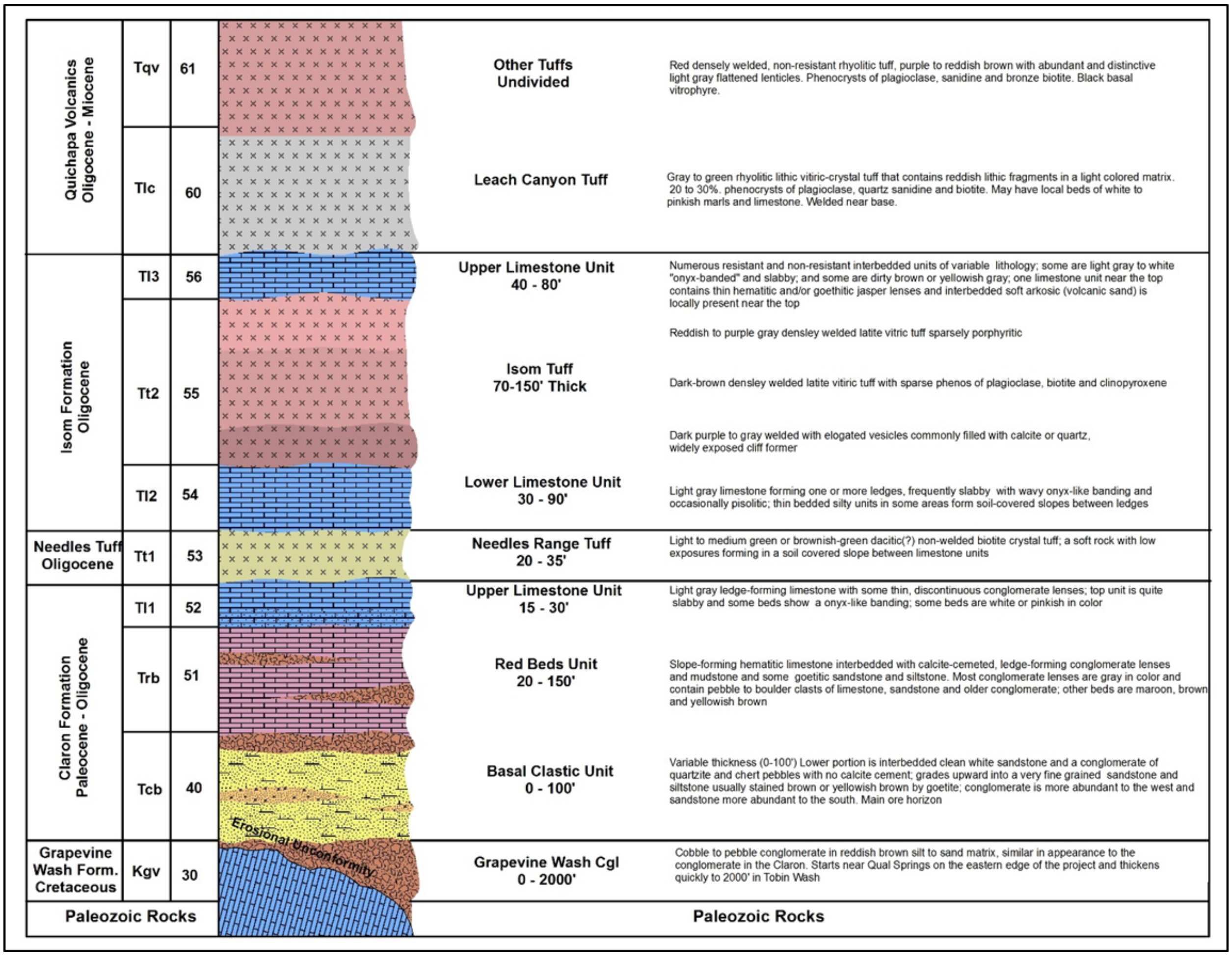
Source: Liberty Gold, 2018

Figure 7-2: Geological map of the main Goldstrike Project area



Source: Liberty Gold, 2016

Figure 7-3: Stratigraphic column for Paleozoic rocks in the Goldstrike Project area



Source: Liberty Gold, 2016

Figure 7-4: Stratigraphic column for Cenozoic rocks of the Goldstrike Project area

7.2.2 Paleozoic Rocks

Paleozoic rocks range in age from possibly Late Devonian through Permian, and form resistant outcrops of limestone, dolomite, and sandstone. The following units are recognized at Goldstrike (for detailed descriptions, see the March 2018 SRK Report [SRK, 2018]):

Mississippian

Mr – Redwall Limestone

Mrc – Redwall subunit with abundant syringopora

Mc – Chainman Shale and Scotty Wash Quartzite (Mississippian)

Msw – Scotty Wash Quartzite

Pennsylvanian

Pc – Callville Limestone

Permian

Pp – Pakoon Formation:

Pcq – Queantoweap - Coconino Sandstone

7.2.3 Mesozoic Rocks

Triassic and Jurassic strata are not well exposed on the property, and are likely more extensive at depth, forming an autochthon under thrusted Paleozoic strata in the hanging wall of the Square Top Mountain thrust fault. A rapidly thickening sequence of late Cretaceous sandstone and conglomerate – the Grapevine Wash Formation - begins at the eastern edge of the property, thickens rapidly to the south and east, and may represent detritus shed off the hanging wall of the Square Top Mountain Thrust.

The following units are recognized at Goldstrike (for detailed descriptions, see the March 2018 SRK Report [SRK, 2018]):

Jns – Navajo Sandstone (Jurassic)

Kgv - Grapevine Wash Formation (Cretaceous)

7.2.4 Early Cenozoic Rocks

The Paleocene to Oligocene Claron Formation unconformably overlies strongly-deformed and eroded Paleozoic and Mesozoic rocks, and locally overlies the Late Cretaceous Grapevine Wash Formation. At the Goldstrike Property, previous operators subdivided the Claron Formation into seven members, in upper and lower sequences. The Utah Geological Survey and others consider some or all of the upper five members of the Claron Formation as described below to be parts of the Oligocene Wah Springs Formation and Isom Tuff. Given the distinctive nature of the upper members and the Formation status of two of these members, use of the name Claron Formation is here restricted to only the Basal and Red Bed members, and overlying (unnamed) limestone. All early Cenozoic units are highly variable in thickness.

Claron Formation

The Claron Formation (or Claron Formation *sensu stricto*) forms the basal early Cenozoic siliciclastic unit overlying highly deformed Paleozoic and Mesozoic rocks and a Late Cretaceous wedge of coarse clastic rocks. It is poorly sorted and highly variable in composition. The age of this unit is poorly constrained. It is believed to be largely Eocene in age but may locally range in age to as old as Paleocene, based on dating of palynomorph samples from the Pine Valley Mountains (Goldstrand, 1991), and as young as middle Oligocene (Rowley et al., 1979). In the Table Cliff Plateau, a 50 Ma fission track age was determined 10 m below the Pine Hollow – Claron contact, suggesting a middle Eocene age for the basal Claron in this area. Fossil gastropods collected in the lower Claron (Goldstrand, 1991) are similar to those reported from the Paleocene to Eocene Flagstaff Formation of central Utah by LaRocque (1960). The Claron Formation is highly variable in thickness region-wide and is relatively thin in the Goldstrike area. It represents deposition of clastic strata in a fluvial-lacustrine basin during the waning phases of the Laramide orogeny (Goldstrand, 1994). At Goldstrike, the Claron Formation is subdivided into the following units (for detailed descriptions, see the March 2018 SRK Report [SRK, 2018]):

Tcb – Basal Clastic Unit

Trb – Red Beds Unit

Tl1 – Upper Limestone Unit

Tt1 – Needles Range Tuff

Isom Formation

The Isom Formation at Goldstrike has been divided into three units comprising a middle tuff between upper and lower limestone units (for detailed descriptions, see the March 2018 SRK Report [SRK, 2018]).

Tl2 – "Lower Limestone"

Tt2 – Isom Tuff

Tl3 – "Upper Limestone"

7.2.5 Late Cenozoic Rocks

The following units are recognized at Goldstrike (for detailed descriptions, see the March 2018 SRK Report [SRK, 2018]):

- Leach Canyon Tuff Member
- Bauers and Swett Tuffs, undivided (Condor Canyon Formation)
- Harmony Hills Tuff
- Tqv, Tlc - Quichapa Group (Miocene)
- Undifferentiated Tuff and Andesite

7.2.6 Intrusive Rocks

Mafic Dikes and Sills

Dikes and sills with a fine-grained, dark green matrix (andesitic or basaltic) and 5 to 7% small biotite phenocrysts have been documented cutting through the Paleozoic strata in the mine area and are thought to be largely or entirely of Cenozoic age. Where altered, they are white to tan, with most of the phenocrysts removed by leaching. They are locally mineralized along their margins. Zones of jasperoid and limonite adjacent to the faulted margins of dikes were some of the first zones mined at Goldstrike due to the presence of the high grade and coarsely crystalline gold associated with them.

An unaltered dike west of the Hamburg pit returned a uranium-lead (U-Pb) age date of 18.03 ± 0.29 Ma and a sample of mineralized intrusive near the Covington pit returned a U-Pb age date of 18.61 ± 0.29 Ma (De Witt, 2015). However, dark green lamprophyre dikes cut the 13.51 ±0.14 Ma Mineral Mountain intrusion (see below), implying that there are at least two generations of mafic dikes in the region.

Felsic to Intermediate Dikes and Sills

Dikes and sills of rhyolitic composition have been described near Mineral Mountain but have not yet been recognized in the main mine area. However, there are many zones of white, clay- altered rock near or in larger faults that could have been rhyolitic intrusive rock. The age of these intrusive rocks is unknown, although they appear to post-date Sevier-age deformation, and they have not been seen to cut the Miocene volcanic rocks or the Claron Formation in the main mine area. Quartz-hornblende-feldspar porphyritic dikes are present in the Mineral Mountain resource area. They are virtually identical in composition to the Harmony Hills tuff and may represent feeder dikes. They are not mineralized.

Mineral Mountain Intrusion

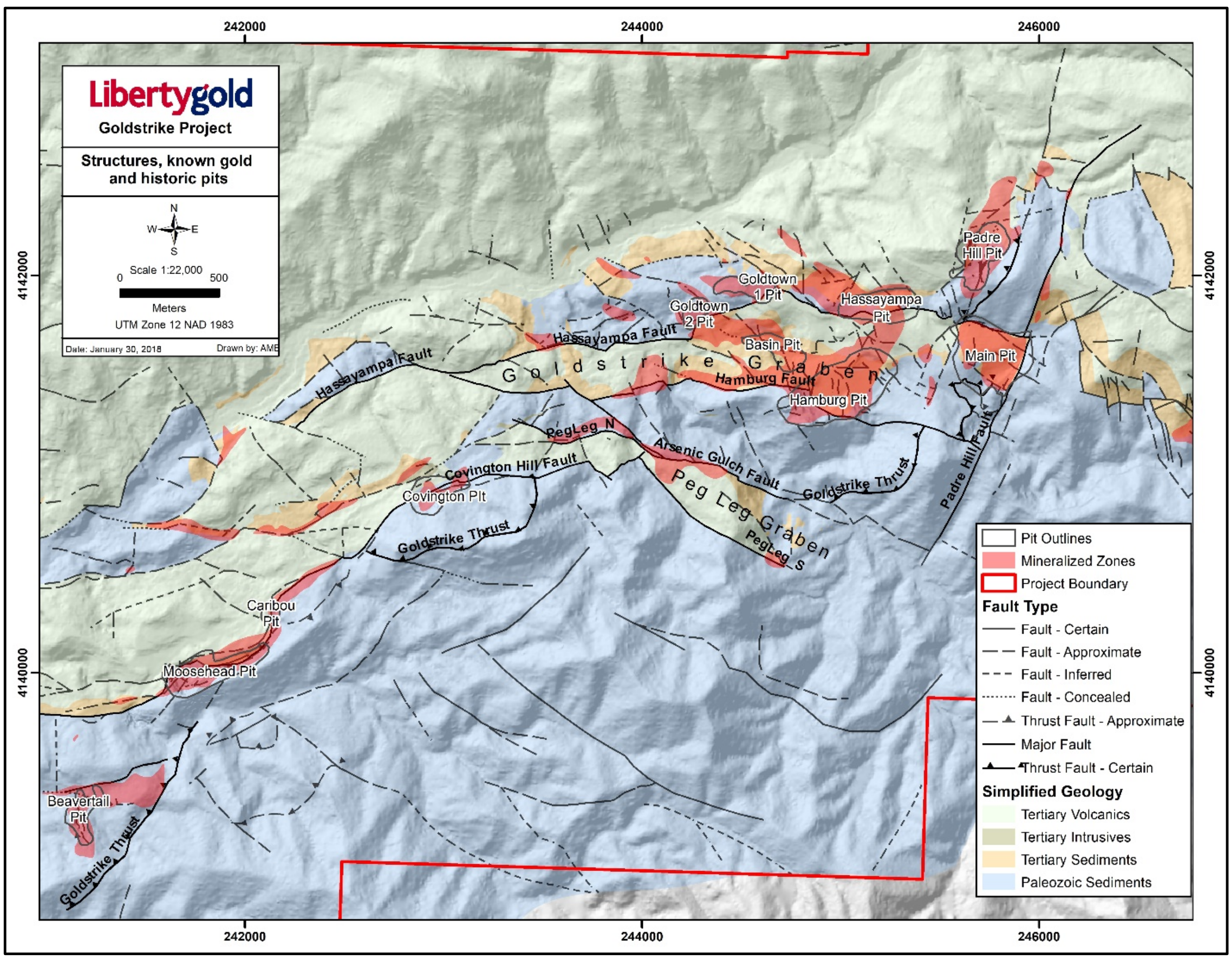
The Mineral Mountain intrusion is interpreted to be a laccolith, and consists of resistant light grey to pink, alkali-feldspar granite porphyry with distinctive large phenocrysts consisting of round quartz and quartz-feldspar intergrowths in a matrix of fine-grained orthoclase. Contact metamorphic effects related to the intrusion resulted in bleaching and recrystallization of limestone and hornfels from silty strata. This thermal alteration is observed to extend up to a few kilometers from the contacts.

The Mineral Mountain intrusion was given a Miocene age of 12.1 ±1.9 Ma based on a questionable $^{40}Ar/^{39}Ar$ age (Rowley et al., 2007). More recent U-Pb age dating yielded a similar result of 13.51 ±0.14 Ma (De Witt, 2015). Similar stocks along a linear zone to the northeast, termed the “Iron Axis”, have yielded early Miocene (~21 Ma) K-Ar and $^{40}Ar/^{39}Ar$ ages (Knudsen and Biek, 2014).

7.2.7 Structural Geology

Paleozoic and Mesozoic strata at the Goldstrike Property are strongly folded and thrust imbricated. The deepest structural level on the property is represented by outcrops of the Triassic-Jurassic Navajo Sandstone, which is present in a structural window in the southeastern part of the property. The overlying Square Top Mountain allochthon, encompassing much of the project area, is interpreted to be a significant regional feature (Willden, 2006). The hanging wall of the Square Top Mountain thrust fault includes the Mississippian Scotty Wash Quartzite and Chainman Shale, which are common units to the northwest, in eastern Nevada, but they do not occur as autochthonous units in southern Utah (Willden, 2006). Other units in the hanging wall of the Square Top Mountain thrust include the Redwall Limestone, Callville Limestone, Pakoon Dolomite and Queantoweap Sandstone.

This strongly-deformed sequence is in turn overlain by a repeated sequence of the same strata along the Goldstrike thrust fault, the surface expression of which trends roughly northeast across the property. These thrust faults are probably of Late Cretaceous-Paleocene (Sevier) age and appear to verge to the southeast, with asymmetric, locally overturned folds in the hanging walls. Significant offset is inferred by the presence of Paleozoic strata emplaced over Mesozoic Colorado Plateau strata. Fault propagation folding along this thrust fault probably caused the near-vertical bedding in the Pennsylvanian Callville Limestone exposed in the Moosehead pit. In general, Paleozoic strata in the historic mine trend form an anticlinal structure, the axis of which trends northeast in the western part of the property, bending around to assume a southeast trend in the eastern part of the property. A weak axial-planar cleavage is locally developed in shaley to silty units. The distribution of major faults relative to the mined pits at Goldstrike is shown in Figure 7-5.



Source: Liberty Gold, 2018

Figure 7-5: Relative positions of the major structures and pits from the 1988 to 1996 mining

Significant vertical relief existed in the district during late Cretaceous time, as evidenced by the Grapevine Wash Conglomerate, which extends southeastward from the Squaretop Mountain allochthon. Very coarse, poorly-sorted conglomerate represents colluvial and alluvial fan deposits shed off the allochthon into an adjacent basin to the south.

A significant period of erosion must have taken place post-Sevier thrusting, as rocks younger than Permian are lacking in this area (except for the footwall of the Square Top thrust), and the relatively undeformed Eocene basal Claron Formation overlies the middle to late Paleozoic section and Grapevine Wash Conglomerate on a significant unconformity. Rapid changes in thickness of the basal coarse clastic unit in the Claron Formation suggests some local relief on the erosional surface. There is some debate over whether the Claron Formation in the Goldstrike area represents local deposition in faulted basins, or is more regional in extent. Significant rounding of clasts and diverse clast provenance suggests the latter. Overlying Oligocene to Miocene tuffs are largely conformable, which is suggestive of relative tectonic quiescence during this period.

A major local faulting event most likely occurred in the Miocene following deposition of the volcanic sequence. This event formed faults that trend east-northeast, west-northwest and north-northeast, and created the dominant structural fabric on the property (Figure 7-1 and Figure 7-2). Faults formed during this event display normal and/or strike-slip displacements of varying magnitude. Faulting resulted in formation of several horsts, grabens and tilt blocks. Grabens include the east-trending Goldstrike graben and the northwest-trending Peg Leg graben (Figure 7-5). Willden (2006) interpreted the faulting event that formed the grabens to have exerted some control on the pattern of disseminated gold mineralization.

For example, several deposits including the Basin, Hamburg, and Main pits lie within the Goldstrike graben, while several others, including the Goldtown, Hassayampa and Padre pits are located in the immediate north footwall area. The south bounding fault of the Goldstrike Graben (Hamburg Fault) appears to have been active, or at least present, during mineralization, while the north (Hassayampa) graben-bounding fault has a listric geometry and largely or entirely post-dates mineralization, as evidenced by a lack of mineralization in the fault and offset of the (mineralized) Claron basal contact. This horst and graben fabric continues westward in a zone up to two kilometers wide, bounded on the south by the Covington fault and to the north by an unnamed fault. Strata throughout this area are tilted gently to moderately to the north, suggesting listric motion on at least some of the faults.

A prominent set of secondary, west-northwest-striking faults is present throughout the Main Zone. These faults are interpreted as Reidel shears related to right-lateral strike-slip motion along the main graben-bounding faults. Locally, they strongly control mineralization, for example in the Basin Pit. Another set of high angle faults strikes north-northeast, most notably bounding the Main Pit and along the axis of the Padre Pit. These faults are also mineralized and may represent reactivated faults in the Paleozoic rocks that controlled paleotopography to some extent.

7.3 Alteration

The earliest alteration recognized at Goldstrike was interpreted as steep quartz veins, later recognized to be intensely silicified rocks along high-angle faults (Willden, 2006). In addition, native gold mineralization of the Hamburg vein was believed to be hosted in a coarse calcite vein. Tabular, relatively flat-lying, silicified bodies (jasperoid) were later recognized to be widespread and primarily controlled by stratigraphy.

The most significant zones of mineralization discovered to date are associated with silicified rocks in the basal Claron Formation. Alteration in this unit consists of variably silicified and clay (illite-montmorillonite) altered conglomeratic rocks with associated iron oxide (jarosite – geothite) staining (Greenan, 1985), typically with late drusy quartz coatings and coarse crystalline jarosite. Altered zones contain elevated Au, Ag, As, Sb and Hg. Paleozoic rocks beneath the unconformity are characterized by local zones of silicification, jasperoid, clay alteration, iron oxides and decalcification of silty carbonate rocks. Late coarse, white calcite veins are present throughout the area. Overall, the alteration and geochemistry are typical of sediment-hosted “Carlin style” systems associated with Paleozoic carbonate strata in Nevada and locally in western Utah.

Effner’s (1992) study is the most in-depth description of alteration to date. He described five periods of hydrothermal activity, including:

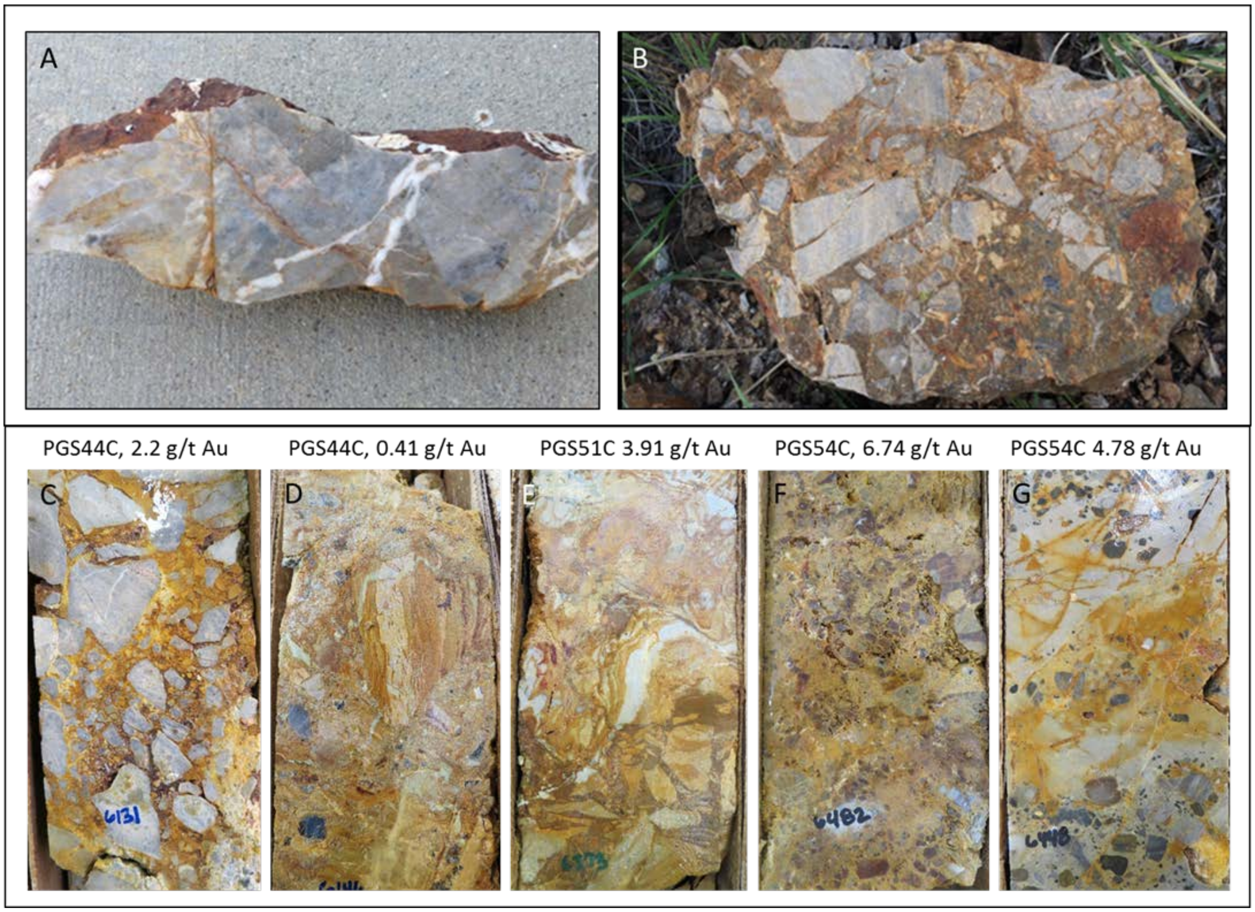
- Early-stage carbonate removal (decarbonatization or decalcification) and passive jasperoid replacement
- Main hydrothermal stage characterized by brecciation of the jasperoid and addition of silica, disseminated (arsenical) pyrite, illite and gold
- Late-stage quartz veining
- Late-stage sulphate deposition
- Final-stage calcite veining

Subsequently, most of the jasperoid and gold mineralized rocks drilled to date underwent oxidation, such that iron oxides including limonite, jarosite and goethite are ubiquitous throughout the mineralized zones.

In many areas, oxidized and brecciated jasperoidal gold zones in the basal Claron Formation are overlain by strongly clay altered mudstone with up to 10% disseminated and stringer pyrite. These zones are normally barren of gold, but are weakly mineralized in some locations.

As with the Claron Formation, alteration in the Paleozoic rocks is characterized by local zones of brecciated jasperoid, clay, iron oxides and decalcification of silty limestone or sandstone. Similar to the Claron Formation, two episodes of silicification can be seen clearly in the Paleozoic rocks. The first is represented by passive replacement of calcareous sedimentary rocks, resulting in a massive gray, fine-grained jasperoid, commonly cut by thin irregular calcite veins. This phase of silicification appears to be barren of gold but contains elevated arsenic and/or antimony. Proximal to the major faults, these early jasperoid bodies have been brecciated and then cemented by a second stage of quartz during the main phase of mineralization. These breccias are characterized by abundant iron oxides as gouge fill and can have late calcite, barite and occasionally stibiconite within the gouge (Figure 7-6).

Zones of clay alteration are common in the Isom and Needles Range tuffs as well as the Leach Canyon Tuff, where they are in close proximity to the fault zones that appear to control mineralization in the Claron Formation. Broad clay alteration zones, with small areas of localized weak silicification with sulphides, are also present in the Harmony Hills and Swett and Bauers Tuffs north of the Beaver Dam Wash. This alteration appears to be related to fault zones and bedding contacts. Given that the Leach Canyon tuff is 22.80 ±0.26 Ma (DeWitt, 2015), this evidence suggests that mineralization at Goldstrike may be substantially younger than that in the Carlin Trend, which dates to approximately 38 Ma.



Source: Liberty Gold, 2017
Note: A) Early barren passive silica (jasperoid) alteration.
B) Hand sample of mineralized breccia. Clasts are silicified as in 7.6 A. Second stage matrix consists of silica/quartz and iron oxides.
C-G) Examples of alteration and mineralization from PQ (10 cm diameter) core.
C) Tectonic breccia with silicified clasts and Fe-oxide matrix, similar to 7.8B.
D) Collapse breccia with polymictic clast assemblage. Weakly silicified with Fe-oxides.
E) Hydrothermal breccia with polymictic clast assemblage. Strongly silicified with Fe-oxides.
F) Multi-stage breccia developed in basal Claron conglomerate.
G) Basal Claron conglomerate and sandstone, strongly silicified.

Figure 7-6: Examples of alteration and mineralization at Goldstrike

7.4 Mineralization

7.4.1 Style of Mineralization

Most of the gold discovered at Goldstrike can be characterized as finely-disseminated “micron gold”, incorporated in the lattice of arsenical pyrite grains, in association with strong pervasive silicification. Very little of the mineralization at Goldstrike is preserved in this form, as most of the pyrite has been oxidized to iron oxides including hematite, goethite and limonite. As discussed above, gold is paragenetically late with respect to silicification, such that most of it is concentrated along fractures. Gold is geochemically correlated with arsenic, silver, antimony, thallium and mercury, although oxidation tends to disperse elements such as arsenic, making the correlation less strong.

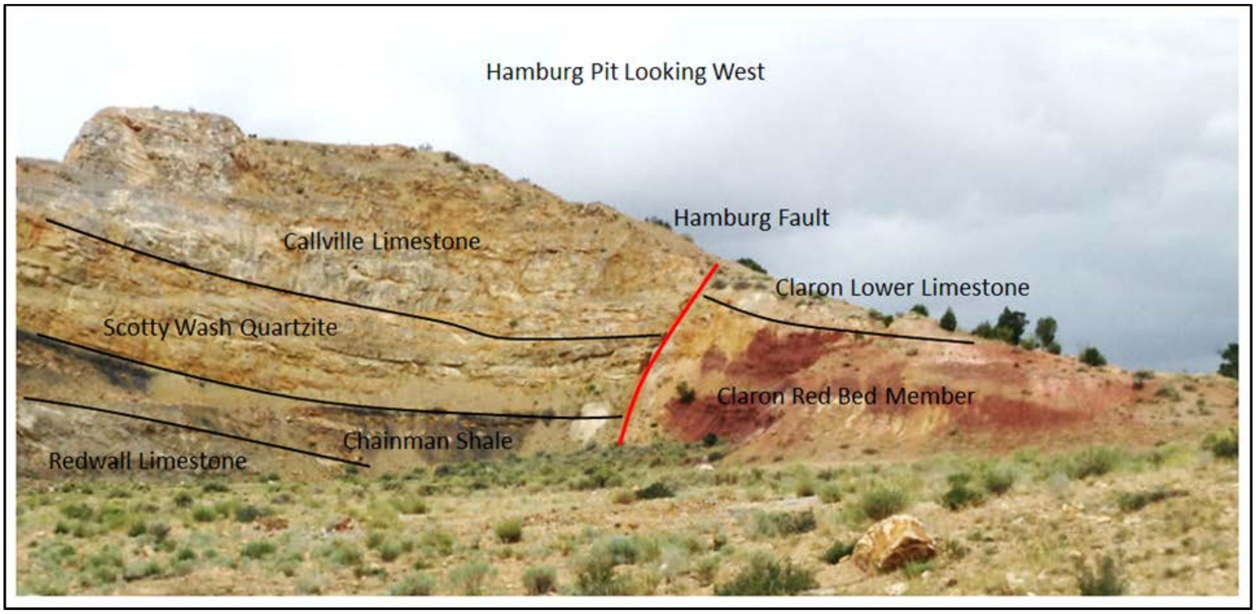
Coarse free gold has been noted in a few locations (see below), in association with silicified Chainman Shale. It is not known how this gold is related to the micron gold described above.

7.4.2 Location of Mineralization

Gold exploited in the late 19th and early 20th century was reportedly mined from structurally-controlled jasperoid bodies near the Hassayampa and Hamburg pits (Figure 7-7). In addition, coarse gold was reportedly mined from coarsely crystalline calcite veins at the Hamburg Mine (now part of the Hamburg pit) and Bonanza Mine (Covington pit), although Willden (2006) asserted that most of the veins were actually silicified zones along faults. The veins at the Hamburg Mine were localized along the margin of a strongly altered andesite or basalt dike.

Of greater significance, disseminated “micron” gold is commonly found in the basal portion of the Claron Formation and Paleozoic strata immediately under it, in association with silicification (jasperoid) and clay alteration, and in particular where the Claron contact is cut by roughly east-west, west-northwest, and north-northeast striking, high-angle faults. This setting is where the Goldtown, Hassayampa, Hamburg, Padre and Main pits are located (Figure 7-8 and Figure 7-9).

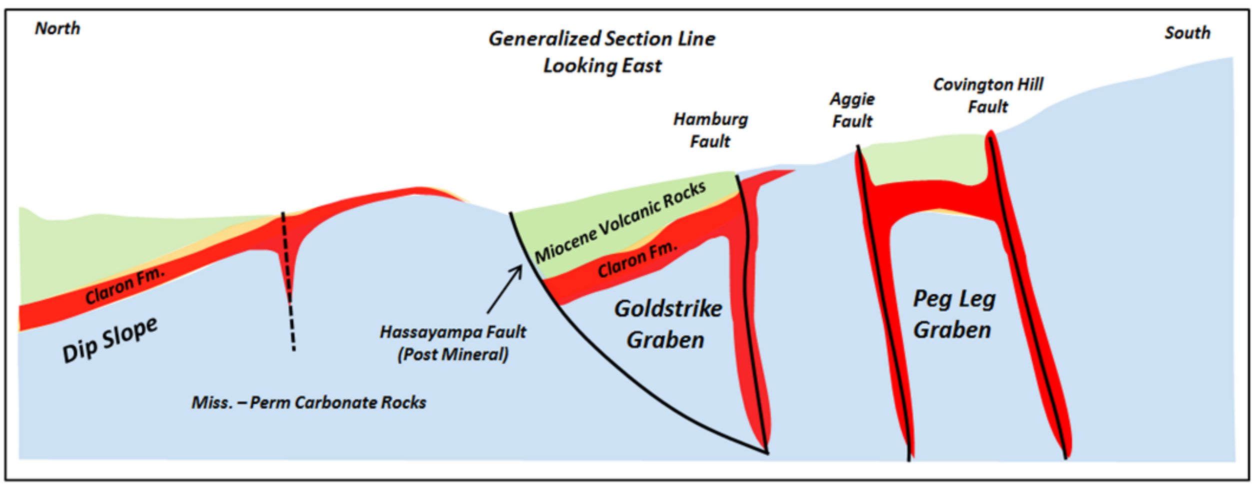
The high-angle faults are primarily mineralized only where they intersect favorable rock types, including conglomerate, sandstone and calcareous siltstone of the basal Claron above the unconformity. Multiple Fault intersections may play a role in localizing mineralization. Most of the graben-bounding faults are mineralized to some degree, with the exception of the listric Hassayampa fault bounding the north side of the Goldstrike Graben, a younger feature which offsets mineralization in a north side up configuration. Most mineralized faults also show some evidence of post mineral offset. The main graben-bounding faults bend into a more southwesterly orientation to the west, with a line of pits along this trend, including the Covington, Caribou and Moosehead pits. Mineralization in these areas, as well as the Beavertail Pit, is primarily hosted in the Callville Limestone, and to a lesser extent in the Scotty Wash Quartzite, Chainman Shale and Redwall Limestone.



Source: Liberty Gold, 2016

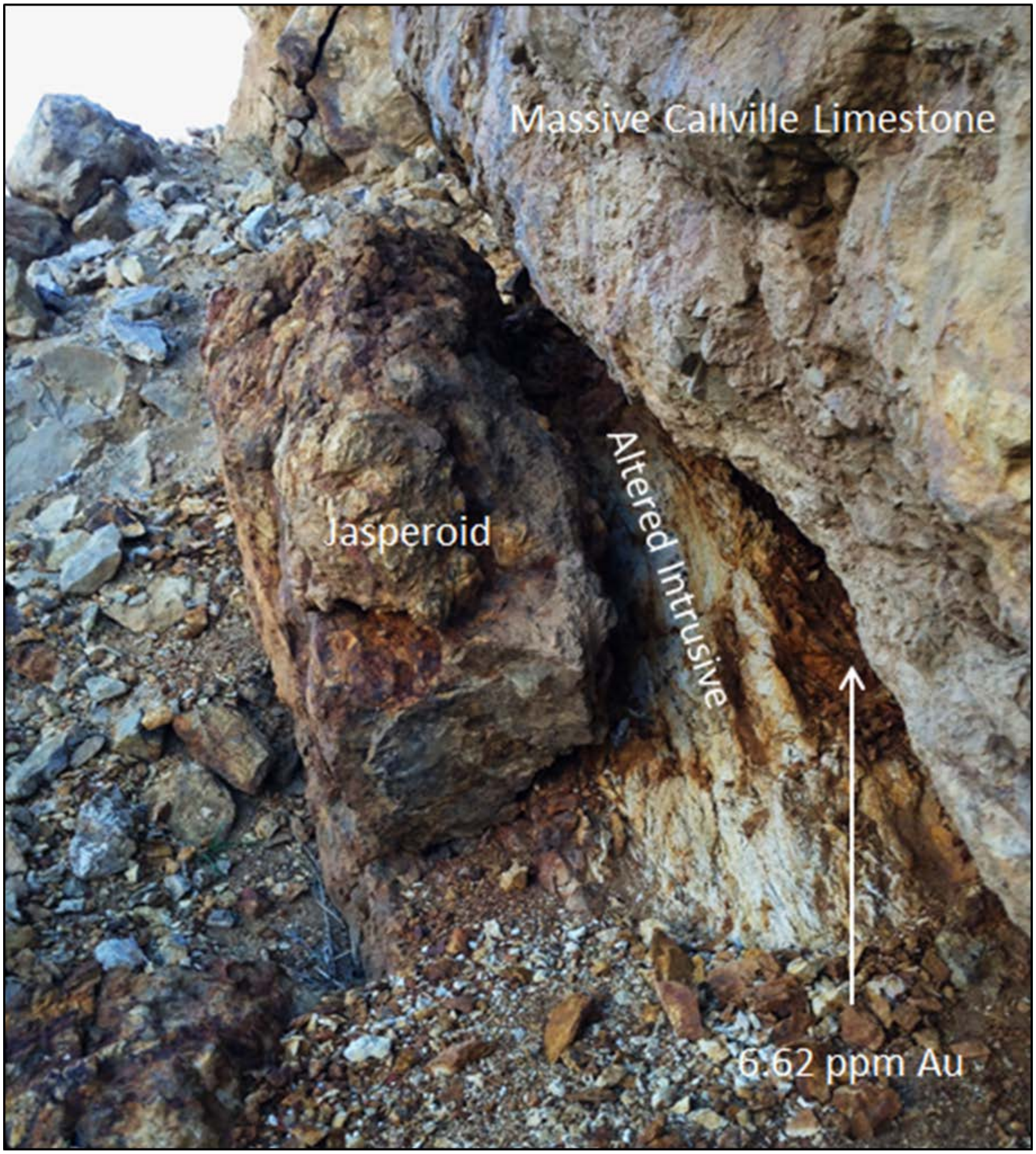
Note: The Hamburg Fault is a north-side-down fault; offset can be clearly seen in this photo. The Basal Claron Formation and adjacent Redwall Limestone were the primary hosts in the pit, which is now backfilled. The Hamburg Fault is steeply south dipping, with apparent reverse offset, but it is likely that the fault plane has been rotated, a result of its location in the hanging wall of the listric Hassayampa Fault.

Figure 7-7: View of the Syn-Mineral Hamburg fault, Hamburg Pit



Source: Liberty Gold, 2017

Figure 7-8: Generalized target concept for mineralization at Goldstrike



Source: Liberty Gold, 2016
Note: 6.6 g/t Au in sample of oxidized material surrounding the dike.

Figure 7-9: Altered intrusive rock along a fault in the Upper Hamburg Mine area

Faults associated with gold mineralization typically have large zones of calcite veining or calcite vein breccias developed along them. These calcite zones can be up to 15.2 m wide in places. It is assumed that these calcite veins are late with respect to Carlin-style mineralization, and barren, although early reports of gold production state that coarse gold was associated with the calcite veins. These same fault zones are in places intruded by thin basaltic dikes and sills that locally host coarse gold along their margins and internal steep sheers (Figure 7-9).

Extensive mineralization is also found in favorable Paleozoic carbonate, sandstone and shale units, particularly where they are in proximity to the basal Claron Formation unconformity or large faults. In general, the Paleozoic rock units at the unconformity young east to west in the Main Zone to Covington Pit area, with the Redwall Limestone in contact with the Claron Formation in the eastern Main and Hamburg pit areas and the Queantoweap Sandstone in contact with the Claron Formation north of the Covington Pit. The Callville Limestone is in contact with the Claron Formation in the Moosehead pit area and probably at Beavertail. In general, the upper portion of the Callville Limestone is the most favorable unit to host mineralization, while the Redwall, Scotty Wash, Chainman and the middle sandy member of the Pakoon Dolomite also host mineralization. The Queantoweap Sandstone and the upper and lower dolostone members of the Pakoon Dolomite tend to be barren of mineralization. As well, the basal Claron Formation adjacent to these units tends to be less well endowed with gold mineralization than when it is adjacent to more favorable Paleozoic units. This generalization can be extended to locations in the southeast part of the property where the Claron Formation is in contact with the Grapevine Wash Conglomerate. It is possible that the relative lack of calcite associated with these formations may be a factor in the lack of gold mineralization, or lack of a permeability/porosity contrast.

“Atypical” (for a Carlin system) mineralization has been noted primarily in the Paleozoic Rocks, in the form of relatively coarse free gold that is visible with a hand lens and can be panned from drill cuttings or outcrop. Gold is present either in association with medium to pale grey jasperoid or with greenish (chlorite) altered shale. The total extent of this style of mineralization is unknown at this time. Coarse free gold has been recovered in the historic Hassayampa, Peace, Hamburg and Bull Run mines as well as along the entire length of East Fork Beaver Dam Wash as placer gold.

Disseminated gold mineralization has been documented on a property-wide scale by surface sampling or drilling virtually everywhere that rocks proximal to the Claron Formation unconformity (basal Claron Formation or immediately underlying Paleozoic strata) are exposed, over an approximately 30 km^2 area. The surface extents and depths of known mineralized zones are illustrated in Section 10, Figure 10-3.

The style of disseminated mineralization at Goldstrike is similar to other sediment-hosted gold deposits in the Great Basin, where elemental gold is located within the lattice of arsenical rims on pyrite grains. Mineralization drilled and mined to date is oxidized, and thus the original presence of arsenical pyrite is inferred from the presence of scorodite with iron oxides and by the elevated arsenic content of mineralized rocks. Few other minerals have been noted in association with gold. These include very local occurrences of orpiment, realgar, stibnite and stibiconite.

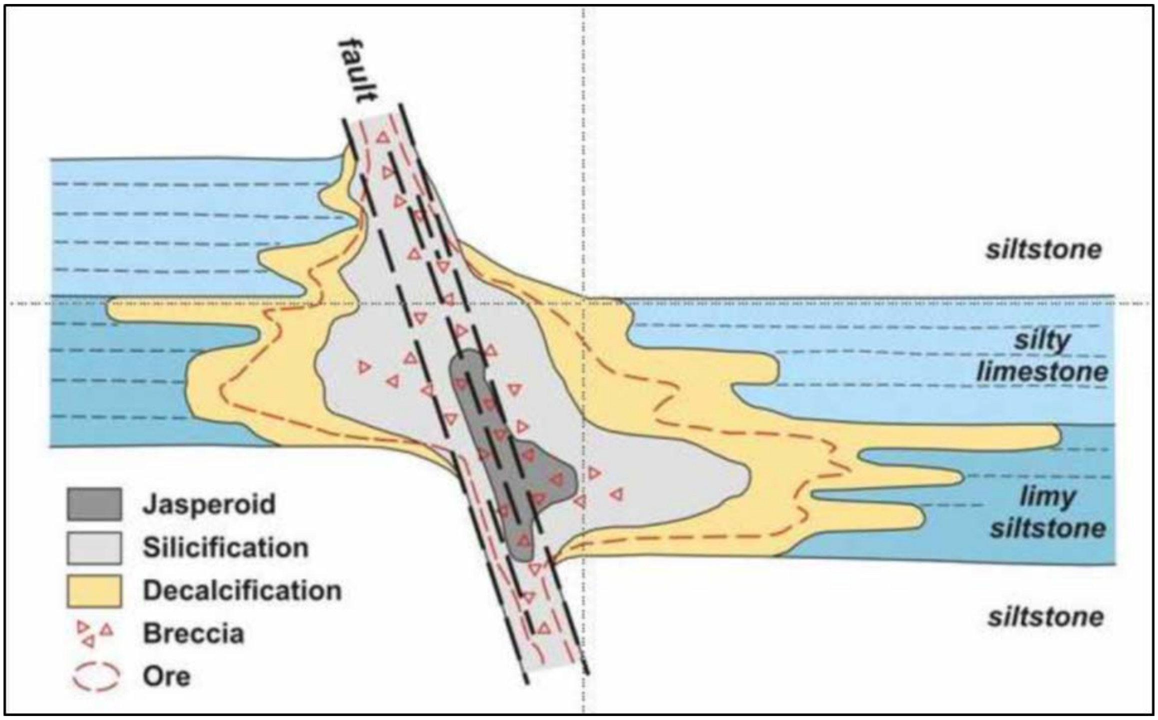
A number of exploration targets between and around the pits remain, primarily marked by linear zones of elevated gold in soil or rocks, and in shallow drill holes with gold mineralization.

8 Deposit Type

Goldstrike mineralization is best described to be in the class of sedimentary rock-hosted Carlin-style deposits (e.g. Cline *et al.*, 2005; Robert *et al*., 2007). The Carlin-style class of gold deposits are not unique to the eastern Great Basin. They are characterized by concentrations of very finely disseminated gold in silty, carbonaceous, and calcareous rocks. The gold is present as micron-size to sub-micron-size disseminated grains, often internal to iron-sulphide minerals (arsenical pyrite commonly) or with carbonaceous material in the host rock. Free particulate gold, particularly visible free gold, is not a common characteristic of these deposits; significant placer alluvial concentrations of gold are therefore not commonly associated with eroded Carlin-style gold deposits.

All Carlin-style deposits in the Great Basin have some general characteristics in common, although there is a wide spectrum of variants. Anomalous concentrations of arsenic, antimony, and mercury are typically associated with the gold mineralization; thallium, tungsten, and molybdenum may also be present in trace amounts. Alteration of the gold-bearing host rocks of Carlin-type deposits is typically manifested by decalcification, often with the addition of silica, fine-grained disseminated sulphide minerals, remobilization and/or the addition of carbon, and late-stage barite and/or calcite veining. Small amounts of white clays (illite) can also be present. Decalcification of the host produces volume loss, with incipient collapse brecciation that enhances the pathways of the mineralizing fluids. Due to the lack of free particulate gold, Carlin-style deposits generally do not have a coarse-gold assay problem common in many other types of gold deposits.

Deposit configurations and shapes are quite variable. Carlin-type deposits are typically at least somewhat stratiform in nature, with mineralization localized within specific favorable stratigraphic units. Fault and solution breccias can also be primary hosts to mineralization (Figure 8-1).



Source: Robert et al., 2007

Figure 8-1: Cross-section of a hypothetical Carlin-style sediment-hosted gold deposit

The mineralization identified at Goldstrike shares many of the characteristics of Carlin-type gold mineralization, including:

- Stratigraphic control of mineralization: Goldstrike mineralization is hosted primarily in conglomerate and limestone of the basal Claron Formation, as well as silty limestone in the Callville Formation
- Structural control on mineralization: occurs in karst cavities, collapse breccias, high-angle faults, and anticlinal fold hinges
- Geochemical association: elevated arsenic, mercury, antimony, and thallium accompany the Goldstrike gold mineralization, while base-metal concentrations are generally low
- Alteration: Goldstrike gold mineralization is associated with decalcification, silicification and/or jasperoid, and clay, as well as pyrite, arsenical pyrite, and arsenopyrite and their oxidized variants

The Goldstrike deposits also display some characteristics that are unlike typical Carlin-style gold deposits. The general location of the project is outside the major gold deposit trends in Nevada. Host rocks at Goldstrike are primarily Eocene conglomerate and sandstone with lesser mineralization hosted in Pennsylvanian to Permian silty limestone, whereas the majority of Carlin-style deposits in Nevada are in Ordovician-Devonian platform margin and slope facies rocks. Ag:Au ratios are higher than is typical. Finally, it is likely that mineralization at Goldstrike is considerably younger than Carlin-trend deposits.

9 Exploration

9.1 Compilation

This section details activities by Liberty Gold since acquisition of the Goldstrike Property.

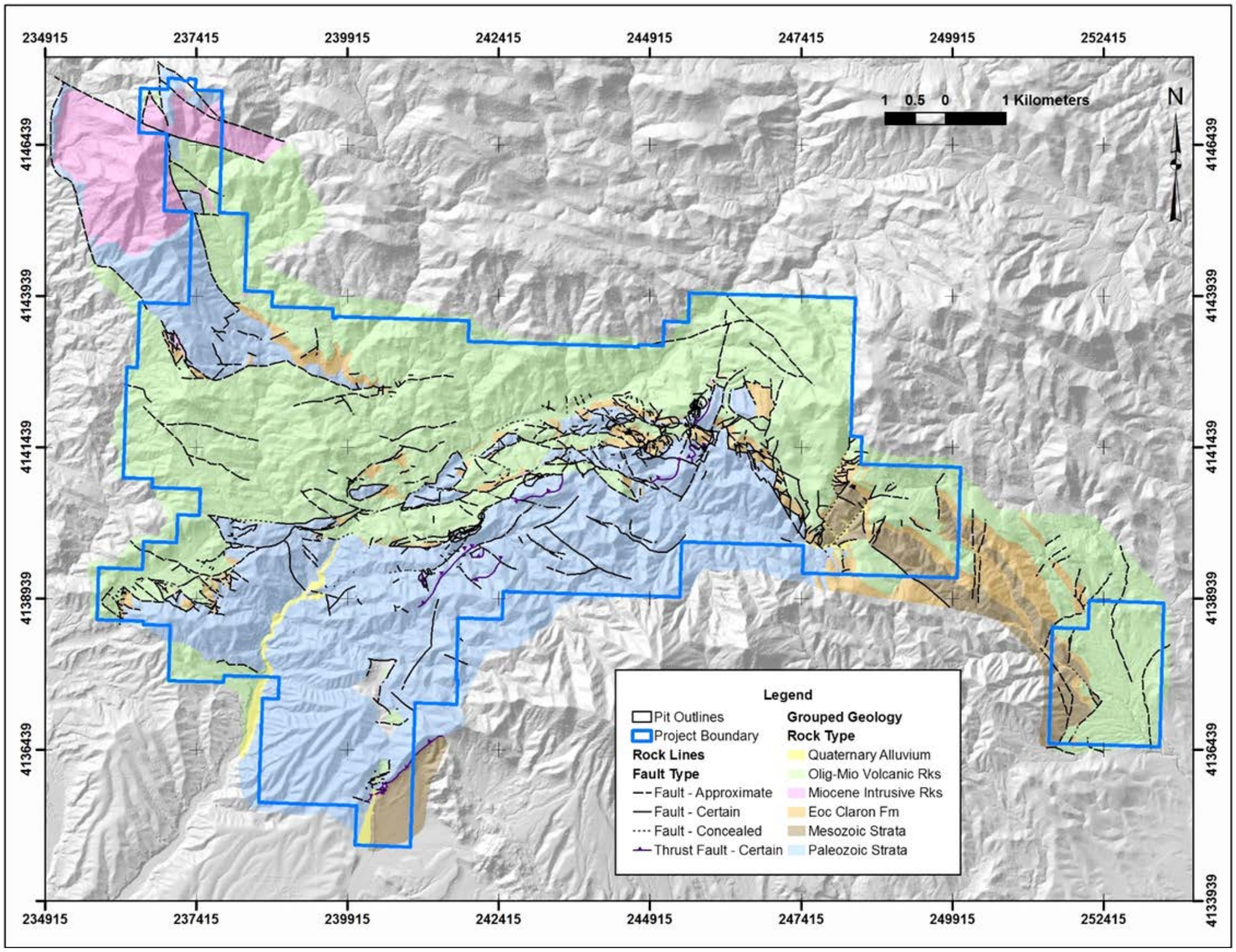
Liberty Gold inherited a partial historical digital drill hole database compiled by North Mining and Cadillac, including unverified spreadsheets, AutoCAD files with drill hole collar information, down-hole assay data primarily from original laboratory certificates for most drill holes, some surface geochemical data, and blast-hole data for two historical pits as x, y, z coordinates attributed with gold values. Virtually all other historical data came in the form of paper maps, sections, logs, memos, and information from the mining operation. Most of these data have been digitized, verified, and assembled into a comprehensive digital database under the supervision of Senior Geologist Mr. Shabestari.

As of the Effective Date of this report:

- The drill hole database has a total of 1,501 historical holes. Down-hole lithological information has been captured from paper drill logs and all drill hole coordinates have been validated by Liberty Gold through examination of the collar locations against digital topography and photography, as well as some field checking. Laboratory certificates and drill hole logs were used to validate a large proportion of the historical drill hole assays. See Section 12 for additional details on the verification of the project database.
- Original and/or final pit topography has been compiled and digitized from hard copy maps and digital data from aerial surveys by Olympus Aerial Surveys of Salt Lake City.
- Surface geochemistry has been compiled from AutoCAD files and hardcopy maps. As of the Effective Date of this report, a total of 7,912 samples are attributed with locations and gold assays.
- Surface geological mapping in the form of an Adair (1988) map digitized into AutoCAD has been properly registered and spot checked and corrected in the field. Pit maps have been digitized and amalgamated with this map, and other areas were mapped using data from USGS maps.
- Blast-hole data available to Liberty Gold includes a database of approximately 112,000 blast holes from all the open pit mines except for Hassayampa. Blast-hole data from historical bench maps was digitized.

9.2 Geologic Mapping

Several generations of surface mapping have been carried out over the last three decades, ranging from regional USGS mapping to mining pit maps. The primary references for regional scale mapping are Hintze et al. (1994) for the southern half of the property and Rowley et al. (2007) for the northern half. There are a large number of detailed geological maps for the various deposits and target areas in unpublished files from previous operators. The most comprehensive map of the area from Arsenic Nose to Padre pit is a set of four maps by Inspiration. Tenneco also produced numerous detailed maps. These maps and other data are gradually being evaluated by Liberty Gold, and, where relevant, compiled into a single digital geologic map of the property. A generalized geologic map is presented in Figure 7-1. Because the level of detail is difficult to convey in report format, Figure 9-1 shows a simplified geologic map of the property which breaks down the geology into Paleozoic strata, Mesozoic strata, the Claron Formation, Oligo-Miocene volcanic rocks and intrusive rocks.

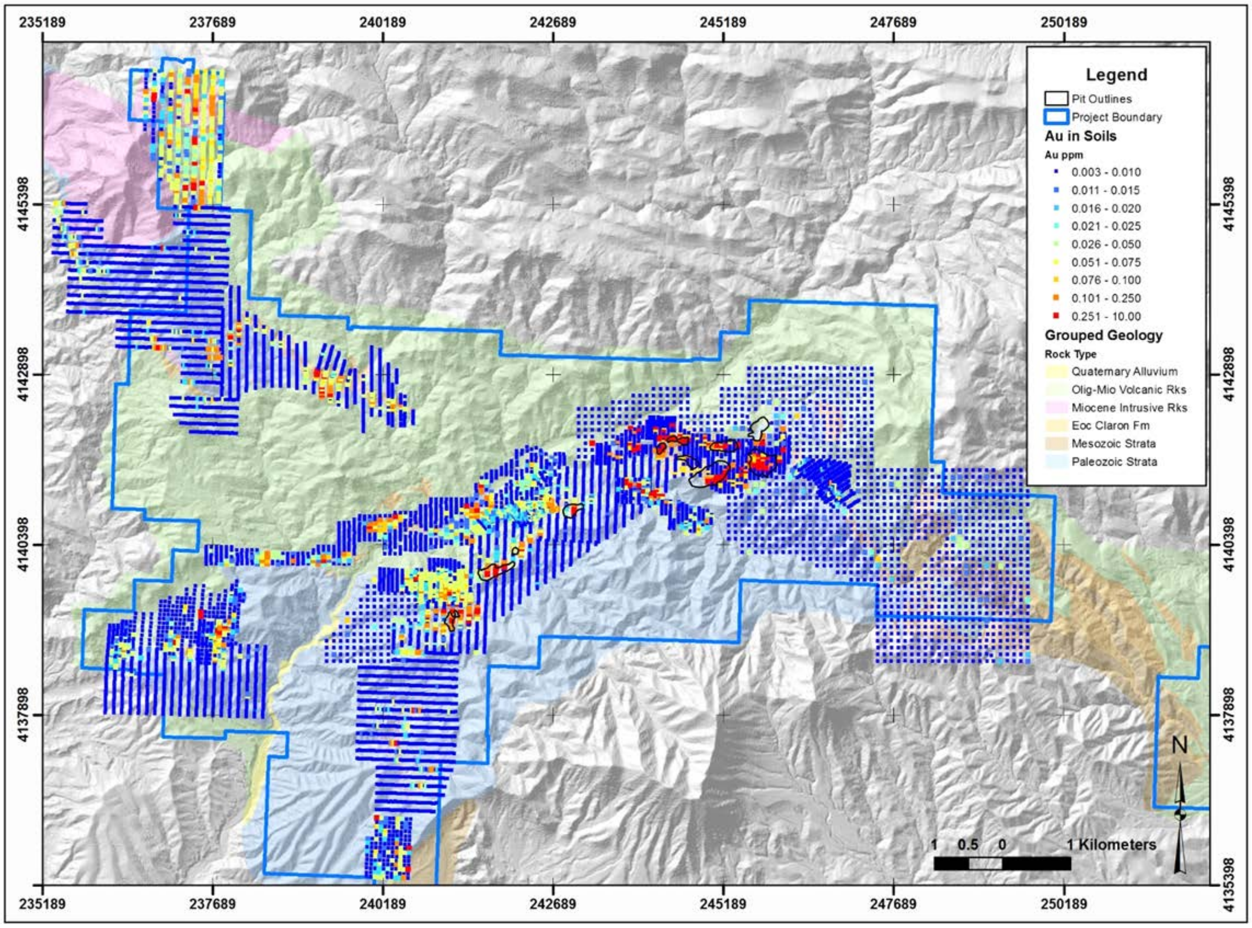


Source: Liberty Gold, 2018

Figure 9-1: Simplified geology map of the Goldstrike property

9.3 Liberty Gold Soil Sampling

Liberty Gold contracted Rangefront Consulting of Elko, Nevada on three occasions, once in 2014 and twice in 2016, to carry out a grid-based soil sampling program to expand the footprint of previous soil sampling programs on the property (Figure 9-2). C-horizon mineral soils were generally collected, as organic soil development on the property is poor. Further details of sampling and analytical methods are discussed in Section 11.



Source: Liberty Gold, 2018

Figure 9-2: All historical and Liberty Gold soil samples at Goldstrike

Historic soil sampling was carried out throughout the Main Zone Trend, extending southward to the Jedediah area, the Potter's Peak area and the Black Canyon to Mineral Mountain area. Gold in soils can be directly correlated to areas of outcropping mineralization.

Soil sampling by Liberty Gold was extended to areas north, east, and southeast of the Main, Padre, Hassayampa, Goldtown, Hamburg, and Basin pits, where outcropping mineralization gave rise to significant gold in soil anomalies in historical soil sampling. Only very minor gold anomalies were detected in this sampling. However, a strong antimony anomaly was detected to the southeast of the pits. Follow-up work discovered a 200-m long jasperoid breccia with abundant stibiconite pseudomorphs after stibnite that yielded anomalous gold in rock samples.

Liberty Gold also extended soil sampling westward along the northern edge of the "western grabens" area to the west of the historic mine trend. Gold in soil anomalies were detected in areas underlain by jasperoidized Paleozoic carbonate strata, with > 4 g/t Au detected in one sample.

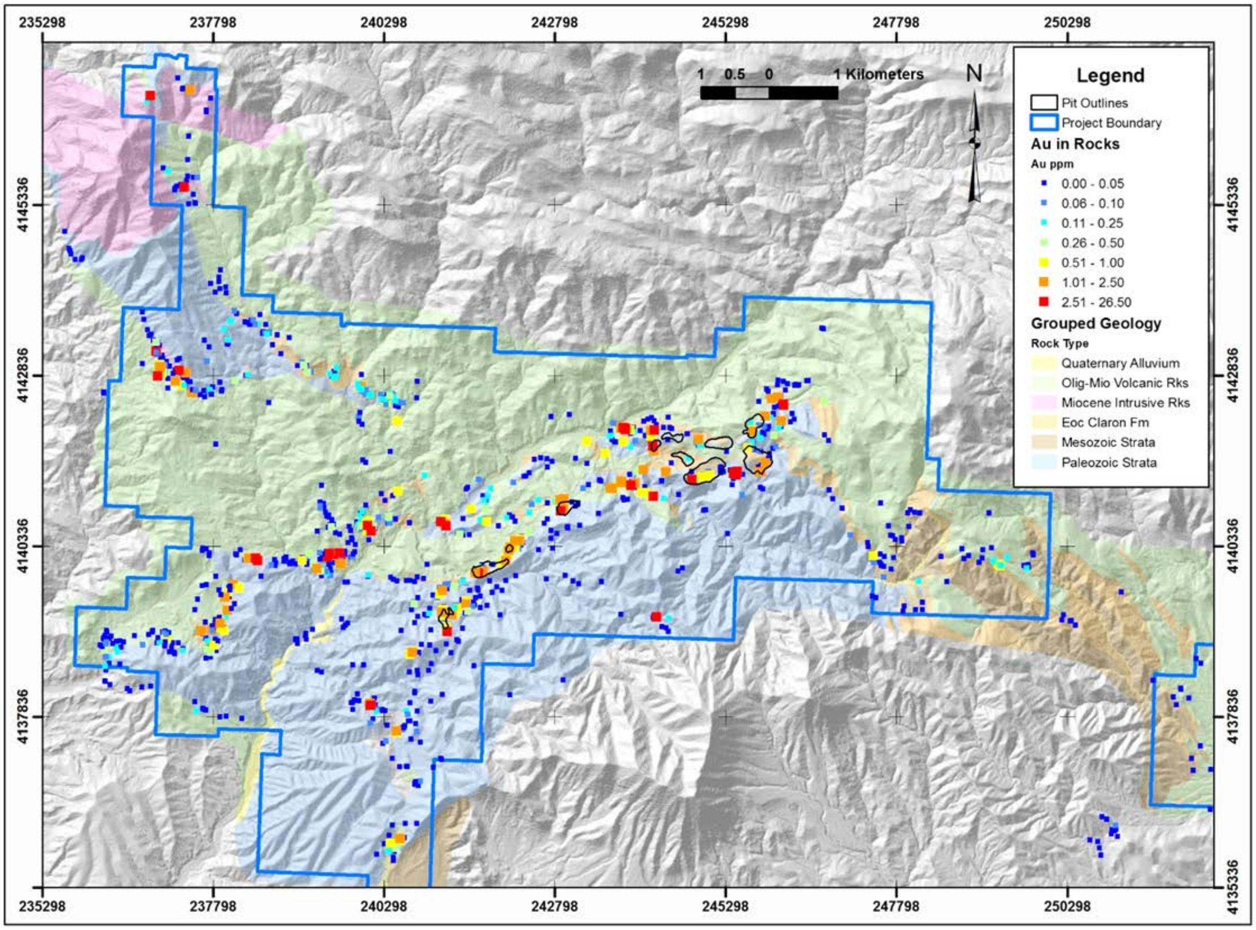
A separate soil grid over the eastern portion of the property defined a strong, linear, east-west-trending zone with elevated arsenic and antimony in the vicinity of the Quail Springs target.

Correlation matrices for the Liberty Gold soil samples show a moderate correlation of Au with Hg-Sb-Ni-Te-Zn-Mo-Tl-As-W-Cu.

9.4 Rock Sampling

To characterize the alteration and mineralization of the property beyond what had been previously done, Liberty Gold collected 975 rock samples throughout the property, primarily as grab samples, from 2014 to 2017. Sample locations and descriptions, including lithologic type and alteration, were logged into a handheld GPS unit with ArcPad. The sample locations and results are shown on (Figure 9-3). Further details of sampling and analytical methods are discussed in Section 11.

Sample values ranged from below detection to a high of 26.3 g/t Au. Correlation matrices for all the rock samples show a strong Au-Ag-Sb-Te affinity and a lesser Au-Hg-Tl-Zn-Ni-As-Mo-Cu correlation. The sampling indicates that gold is most closely associated with multi-phase jasperoid breccias with strong jarosite-limonite-hematite gouge. Late drusy quartz, euhedral jarosite and occasionally barite are common in the higher-grade samples. Jasperoid breccias are typically found within and adjacent to the major fault zones as well as along receptive bedding contacts and the regional unconformity between the Paleozoic rocks and the basal Claron Formation.



Source: Liberty Gold, 2018

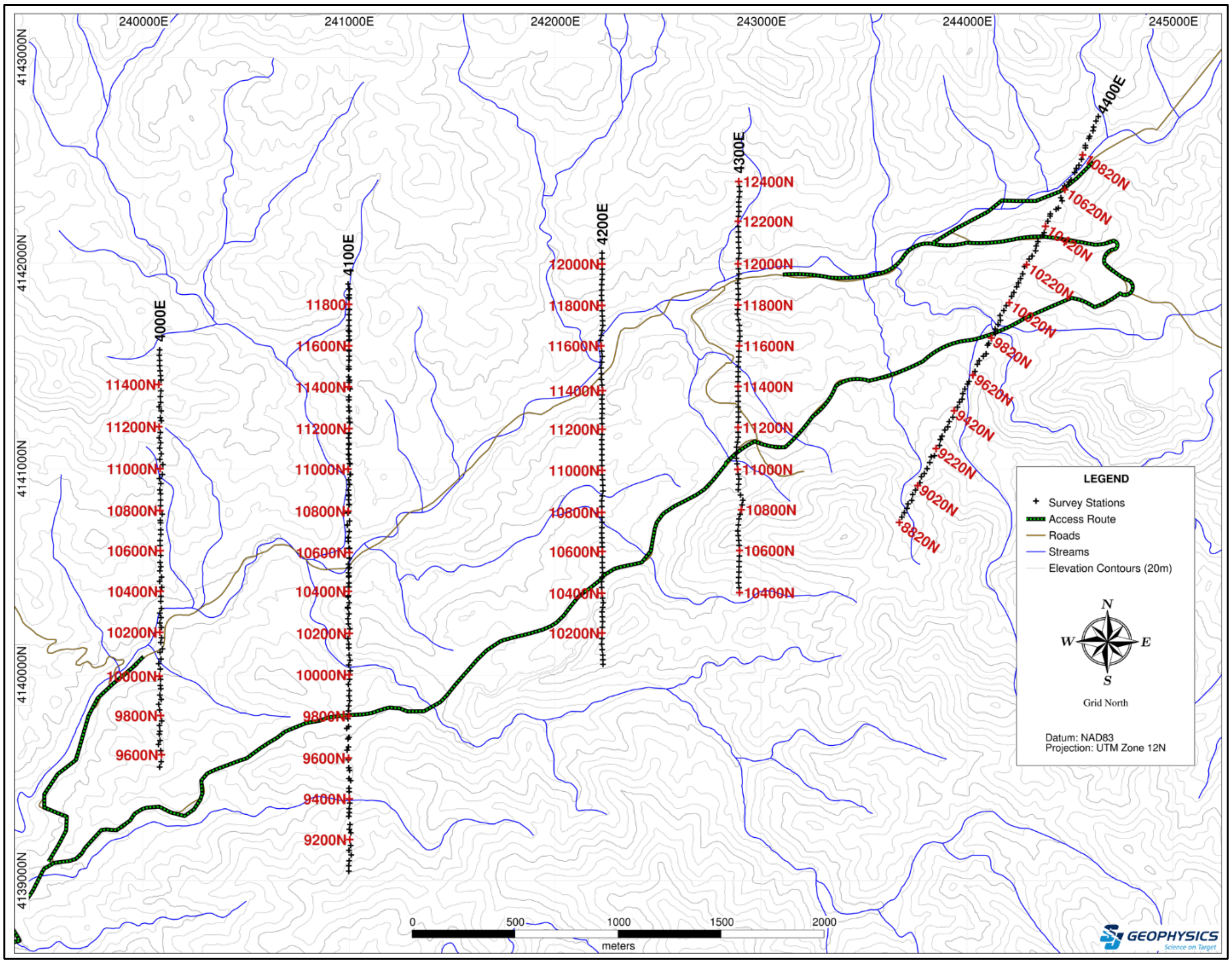
Figure 9-3: All historical and Liberty Gold rock samples at Goldstrike

9.5 Three-Dimensional Modeling

Liberty Gold has compiled a three-dimensional (3D) geological model for the Goldstrike Property in Leapfrog software to aid in drill targeting and resource estimation. As of the effective date of this report, 3D modeled geology extends to the Main, Dipslope/Padre, Peg Leg, Aggie/Warrior, Covington, Moosehead, Beavertail and Mineral Mountain areas, all relatively intensely drilled. The model is regularly updated with new drill data and is currently being extended to other areas of the property.

9.6 Induced Polarity (IP) Geophysics

A Volterra two dimensional Induced Polarization (IP) survey was carried out from 06 to 21 July 2017, consisting of five widely-spaced lines over the historic mine trend, for a total of 11,075 linear meters. The purpose of the survey was to evaluate the usefulness of IP to identify jasperoid bodies (resistors) and/or disseminated sulphide (chargeability highs) that might be related to gold mineralization. One line (4400E; Figure 9-4) was designed to cross several well-drilled areas, in order to observe whether specific features could be seen in the survey.



Source: SJ Geophysics, 2017

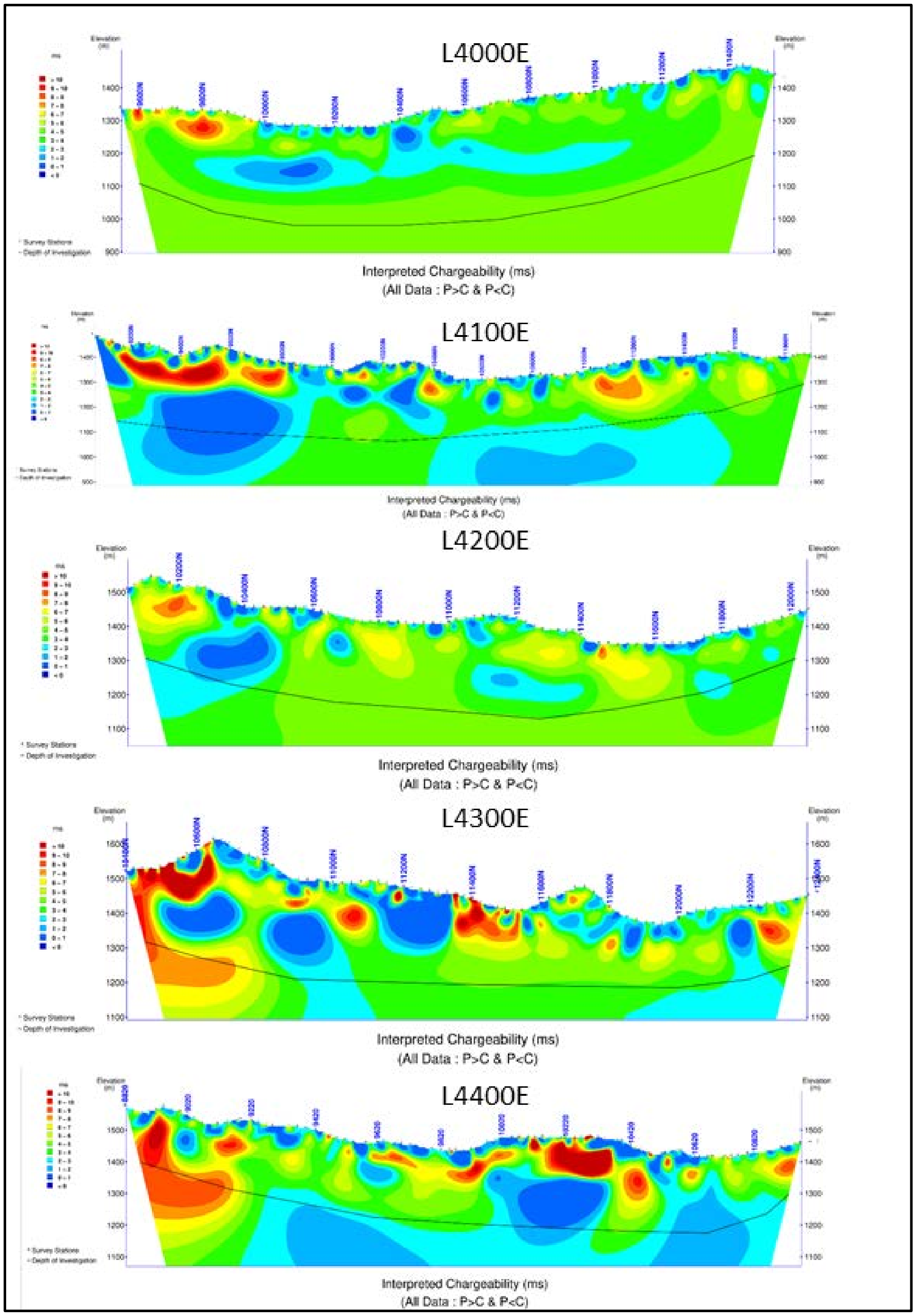
Figure 9-4: Induced Polarity lines, Goldstrike 2017 program

The survey was carried out by SJ Geophysics Ltd of Vancouver, B.C. (Enns, 2017). A proprietary data collector system (Volterra Distributed Acquisition System) was used. The survey utilized an interlaced array, with dipole lengths ranging from 50 to 100 m. Data quality was assessed in the field. Surface contact resistances were relatively low, in part due to the arid and sandy surface conditions. Data were subject to the UBC-GIF inversion algorithm, with the resulting inversion models compared to known 3D geological information.

The chargeability inversion sections (Figure 9-5) show that chargeability features are relatively subdued, with a maximum of approximately 15 milliseconds. The survey successfully modeled features on line 4400E, such as the zone of disseminated pyrite in clay-altered Claron mudstone that typically overlies jasperoidized oxide gold zones.

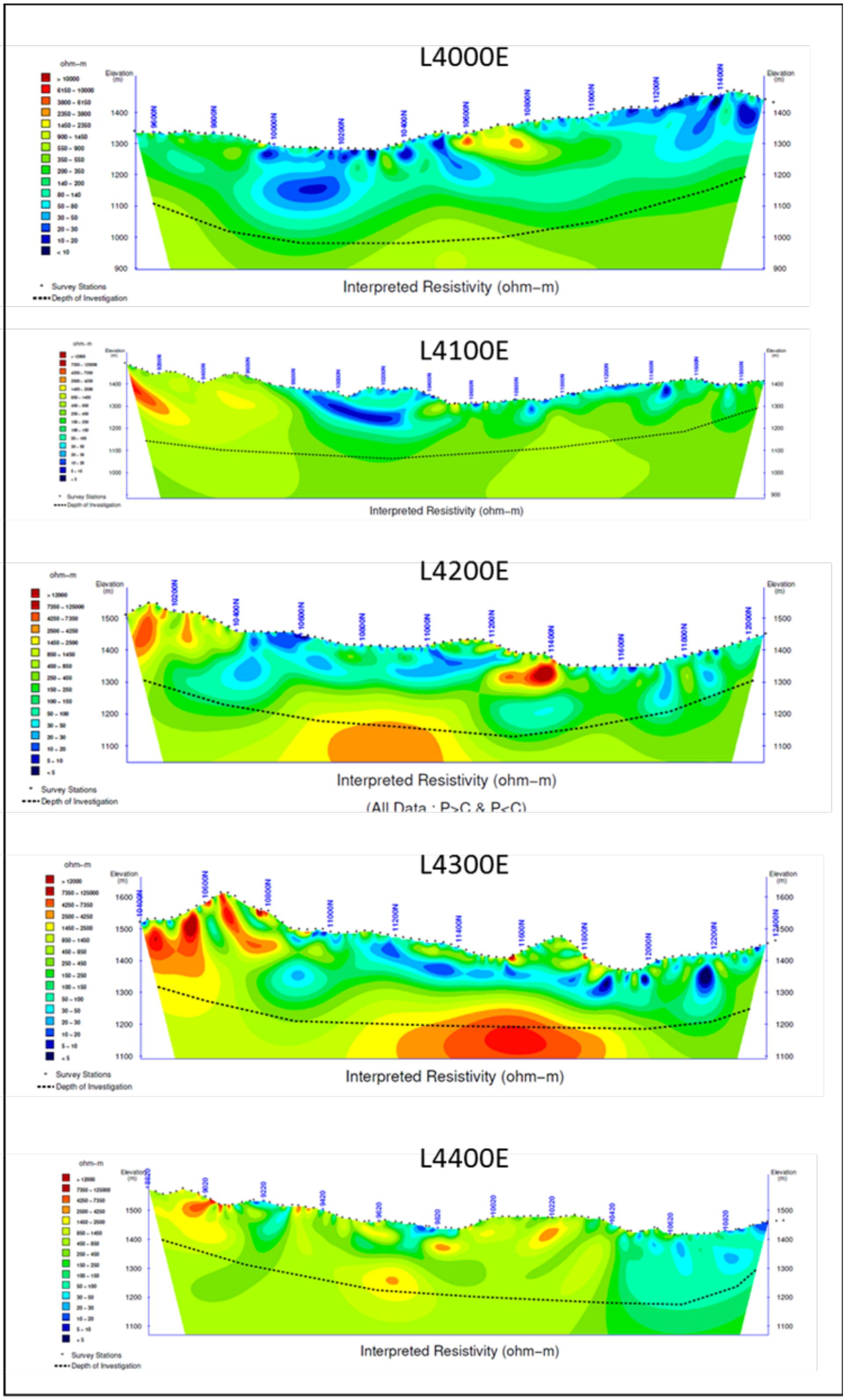
The resistivity inversion sections (Figure 9-6) highlight several highly resistive features. Small, shallow resistors on line 4400E generally correspond to known areas of jasperoid associated with the basal Claron Formation. Paleozoic rocks including dolostone and limestone are very resistive. A deep resistor on line 4300E was tested with one drill hole (Figure 9-7). It contained a section of jasperoid at the top of the resistor and consisted of massive limestone and dolostone. The silicified area contained anomalous gold mineralization.

Overall the IP survey was very effective at mapping the known structural and lithologic changes (Figure 9-7). Zones of strong sulfide alteration, such as in the Covington intrusive were mapped well by the chargeability.



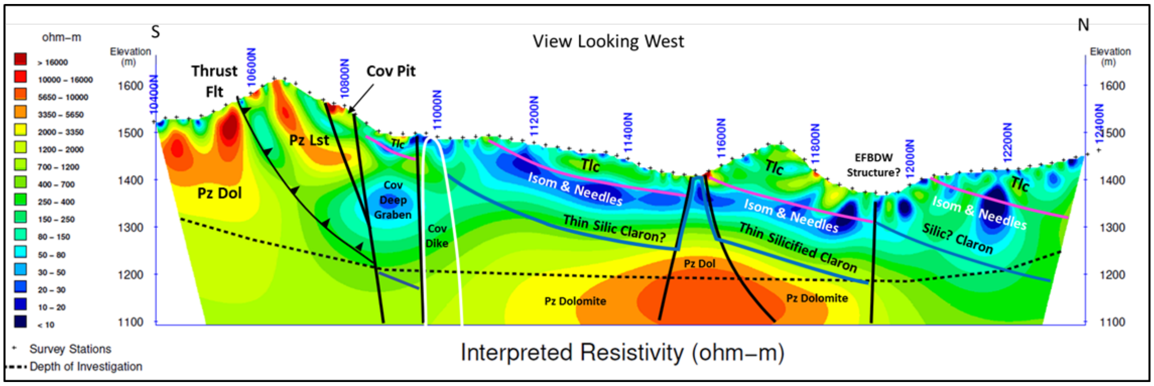
Source: Liberty Gold and SJ Geophysics, 2017

Figure 9-5: IP chargeability 2D inversion sections, Goldstrike 2017 program



Source: Liberty Gold and SJ Geophysics, 2017

Figure 9-6: Resistivity 2D inversion sections, Goldstrike 2017 program



Source: Liberty Gold and SJ Geophysics, 2017

Figure 9-7: Interpreted geology on resistivity – line 4300E, Goldstrike 2017 program

9.7 Summary Statement on Surface Exploration by Liberty Gold

SRK cannot comment on the soil and rock sampling methods and sample quality. These data were not the focus of SRK's data verification efforts.

10 Drilling

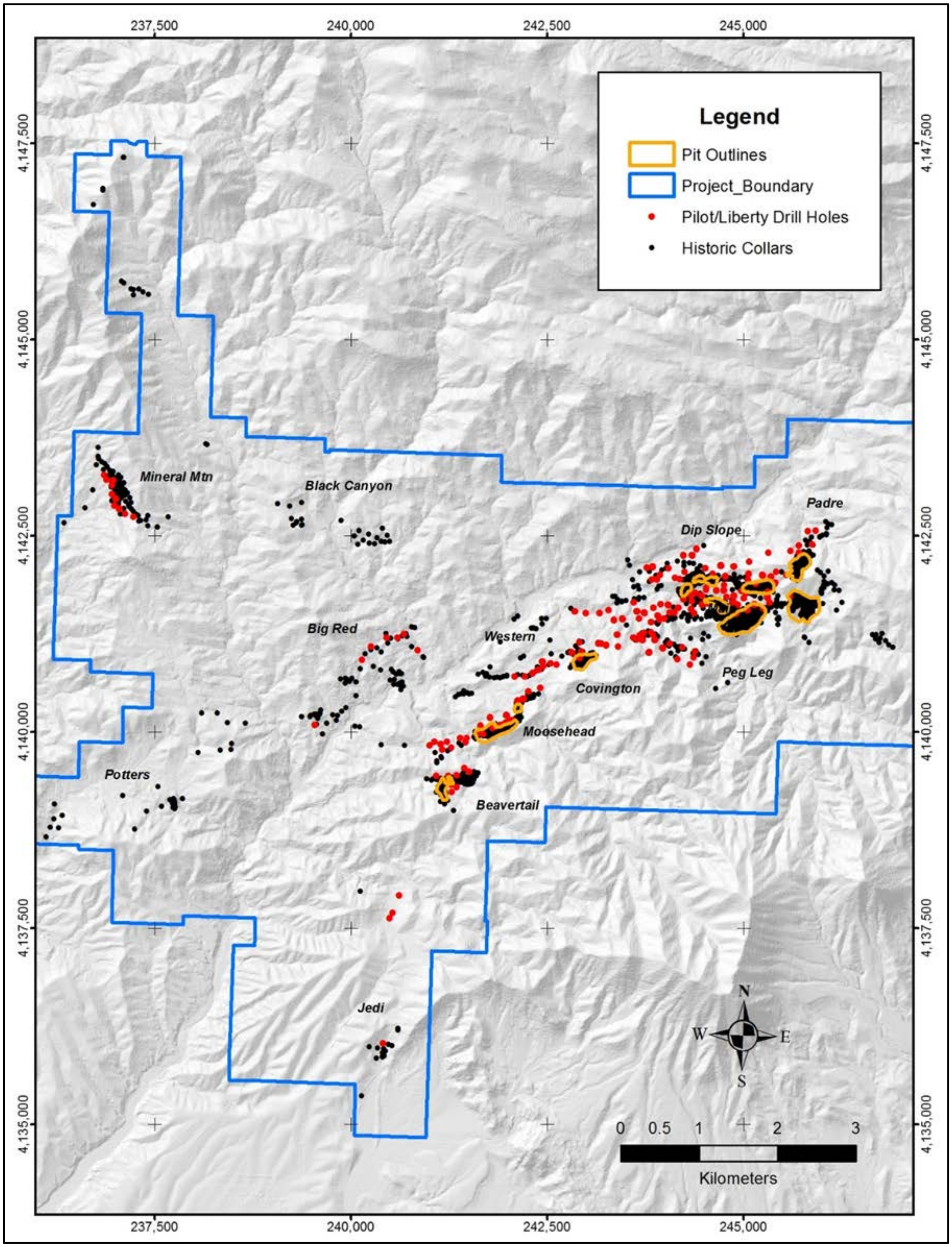
10.1 Historical Drilling

Liberty Gold's Goldstrike Project historical drill hole database has records of 12 companies carrying out RC, rotary, and core drilling on the Goldstrike Property from 1978 to 2012 prior to that conducted by Liberty Gold (refer to Section 6.2 for descriptions of the areas targeted and explored), for a total of 1,484 holes for 96,264 m drilled (Figure 10-1 and Figure 10-2):

Reported totals, and sometimes hole types, sometimes conflict with the project database, as not all holes are documented sufficiently to be entered into the database. The drilling totals are derived from historical reports where possible or from Liberty Gold's project database. There are no down-hole survey data in the project database for any of the historical holes. Almost 80% of the historical holes in the database were reportedly drilled vertically, and only 44 of the 1,467 historical holes were drilled to depths in excess of 125 m.

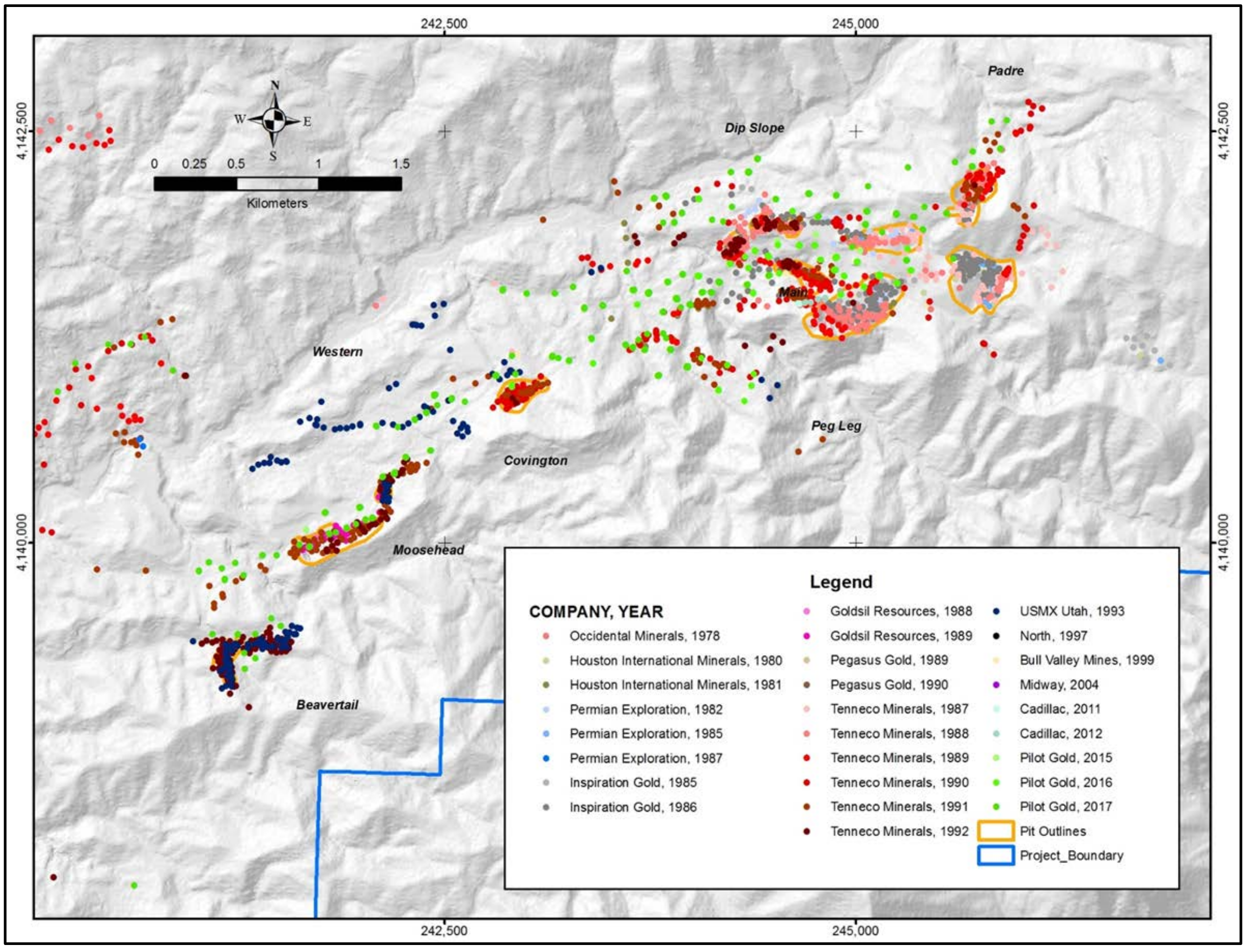
Additional historical drilling programs records include:

- Goldsil, 1998 to 1999. C&L drilling of Nampa, Idaho was the RC drilling contractor.
- Tenneco, 1987 to 1992. The drill contractors known to be used by Tenneco in 1990 include Miller Drilling Company of Orem, Utah and Five O Drilling of Las Vegas, Nevada. Miller Drilling Company was also used during at least part of 1991. Company files suggest that Stratagrout Drilling of Las Vegas, Nevada was utilized in 1992.
- North Mining, 1997. The drilling was performed by Boart-Longyear utilizing a Longyear 44 drill rig and wireline diamond coring. The core diameter was HQ except where it was necessary to reduce to NQ. The collars were surveyed, but the type of survey is not known. A downhole survey was taken every 200 ft (61 m) down hole. The type of survey tool is unknown.
- Bull Valley, 1999. Hole depths ranged from 366 to 512 m.
- Cadillac, 2011 to 2012. The drill contractor was More Core Diamond Drilling Services Ltd. of Stewart, B.C. Core diameter was NQ. The RC holes were drilled using a Schram 685 track-mounted drill rig operated by National Drilling of Elko, Nevada. No down-hole surveys were carried out. Cadillac determined the drill collar locations with a hand-held GPS.



Source: Liberty Gold, 2018

Figure 10-1: General map of historical and Liberty Gold drilling sites



Source: Liberty Gold, 2018

Figure 10-2: Drilling by year in the historical mine trend

10.2 Liberty Gold Drilling, 2015 to 2017

10.2.1 Liberty Gold Drilling Summary

Liberty Gold conducted three drilling programs at Goldstrike from November 2015 to December 2015, March 2016 through December 2016, and February through December 2017. Liberty Gold's 2015 to 2017 Goldstrike Project drill hole database currently contains a total of 477 RC and core holes for 74,725 m drilled by Liberty Gold (Table 10-1).

Table 10-1: Summary of 2015 to 2017 Liberty Gold drilling

Company	Year	RC/Rotary Holes		Core Holes		Total	
		No.	Meters	No.	Meters	No.	Meters
Liberty Gold	2015	18	2,877	-	-	18	2,877
Liberty Gold	2016	163	24,482	11	1,556	174	26,038
Liberty Gold	2017	285	45,810	-	-	285	45,810
Liberty Gold Totals		**466**	**73,169**	**11**	**1,556**	**477**	**74,725**

In late 2015, Liberty Gold drilled in the Main, Aggie, and Moosehead areas. In 2016, further holes were drilled in the Main, Aggie, Peg Leg, Dip Slope, Western Grabens and Covington area. In 2017, holes were drilled in the Main, Aggie, Peg Leg, Dip Slope, Western Grabens, Padre, Moosehead, Caribou, Beaver Tail, Covington pit, Mineral Mountain, Jack's Camp and Jedediah areas. Significant mineralized intervals are provided in the appendices of the March 2018 SRK Report (SRK, 2018).

The drilling contractor for the 2015 drilling program was Major Drilling of Salt Lake City, Utah. A truck-mounted Schramm 450 type drill rig was utilized with a rotating wet "cyclone" type splitter sample return and 4.5 to 6 in diameter bits. All drilling was done with water injection.

The drilling contractor for the 448 RC holes drilled in 2016 and 2017 was Boart Longyear of Elko, Nevada. Track-mounted Foremost MPD 1500 type drill rigs were utilized, with a rotating wet "cyclone" type splitter for sample return and 4.5 to 6 in diameter standard or center-return bits. All drilling was done with water injection.

Down-hole surveys for the RC holes in all years were carried out by logging contractor International Directional Services (IDS) of Elko, Nevada. IDS utilized a truck-mounted, through-the-drill steel Reflex Gyro gyroscopic survey instrument. Readings were taken at the bottom, top, and at 15 m intervals throughout the completed drill hole. There generally can be more deviation in RC holes, however significant drill hole deviations have not been encountered in the RC drilling at Goldstrike. While an attempt was made to get a downhole survey on every hole there are 25 Liberty holes without surveys due to logistical considerations.

The drilling contractor for the core holes drilled in 2016 was Major Drilling of Salt Lake City, Utah, using a track-mounted LF-90 drill rig and PQ tools. Down-hole surveys for core holes were completed with a Reflex E-Z Shot electronic solid-state single-shot down-hole camera supplied by Major Drilling. Readings were taken at the collar and at approximately 30 m intervals down hole. Significant hole deviations were not encountered. The Major E-Z Shot tool was cross checked using the IDS instrument and no major discrepancy was noted.

Collar locations were initially located in the field by Liberty Gold personnel using a Trimble GeoXH type hand-held GPS unit receiver with differential correction accuracy of 0.5 m in the X and Y directions and 1.0 m in the Z direction. Subsequent to drilling, drill holes were abandoned according to Utah state regulations. After completion of the holes, the collars were marked with stamped brass tags on a steel wire and their locations were again surveyed by Liberty Gold personnel using a Trimble GeoXH type GPS unit. At the end of 2016 and 2017, most of the drill pads were surveyed by All Points North Surveying and Mapping of Elko, Nevada using a geodetic survey-grade Trimble 4000-series GPS receiver with a base station for real-time correction. Accuracy of the measurements is ±2 cm in the X and Y directions and ±3 cm in the Z direction. The surveys were specific to some, but not all the drill collars. Where multiple holes were drilled from one pad, normally only the most recent collars were recovered, while previous collar locations were destroyed by subsequent drilling activity. For unrecoverable drill collars, the X and Y coordinates from the previous Liberty Gold survey were used, with the Z coordinate from the All Points North survey.

The primary purpose of the 2015 program was to validate drilling carried out by previous operators, and to test the hypothesis that mineralization extends down-dip of the historic pits along the Claron Formation basal contact. Holes were drilled over approximately 4 km along the historic mine trend. The drilling provided proof of concept that mineralization extends down dip and lateral to the historic pits.

The drill program in 2016 focused primarily on resource definition in the Main Zone, defined as mineralization contained within the Goldstrike Graben. Late in the year, other targets, including the dip slope north of the Hassayampa fault, the Covington Pit area and the Peg Leg graben south of the Main Zone, were tested.

In 2017, in addition to continued drilling in the areas listed above, drilling was significantly expanded to include the Padre Pit area, and areas in the western portion of the historic mine trend, including the Moosehead and Caribou pits and several unnamed areas to the north. The Mineral Mountain area was also drilled. Late in the season, several outlying target areas were tested.

10.2.2 Main Zone (Goldstrike Graben)

Nine holes were drilled in the Main Zone in 2015. This test demonstrated the continuity of mineralization along the basal Claron unconformity down dip and between historic pits. Highlights include:

- 39.6 m grading 1.01 g/t Au in hole PGS003
- 41.1 m grading 0.84 g/t Au in PGS004
- 22.9 m grading 1.68 g/t Au in PGS008
- 36.6 m grading 1.06 g/t Au in PGS010

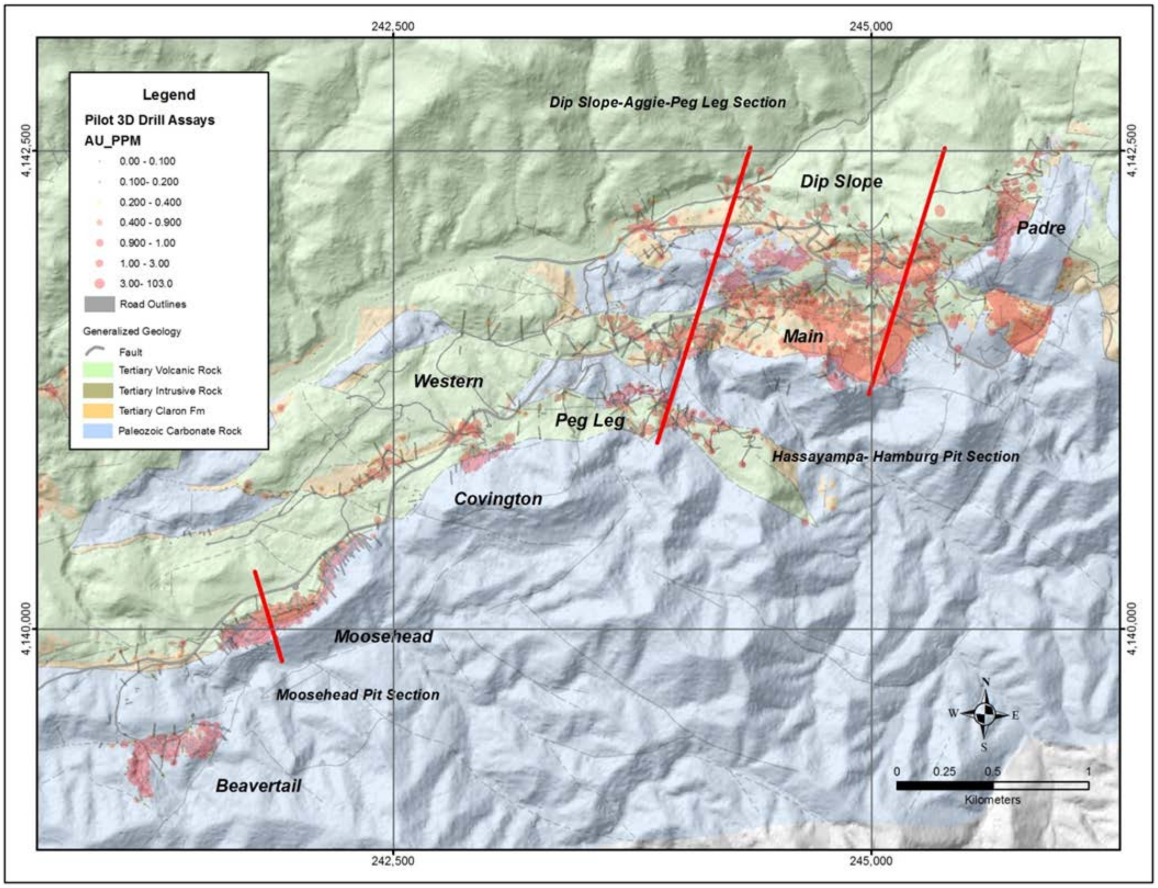
Liberty Gold continued drilling in the Main Zone area in 2016, with the primary goal of obtaining enough information for estimation of a resource. Core drilling highlighted the importance of breccias; while jasperoid is widespread along the basal Claron Formation contact, grades in excess of 1 g/t Au are generally only associated with jasperoids that were subject to tectonic or hydrothermal brecciation and subsequent deposition of additional silica and gold.

Near the east end of the Main Zone, relatively high-grade and thicker mineralization extends north-northeastward from the eastern Hamburg Pit to the Hassayampa Pit and beyond to the northern Dip Slope Area. This area, called the Octopad target, yielded several long intercepts of gold mineralization, including:

- 2.10 g/t Au over 35.1 m in PGS019, including 4.42 g/t Au over 13.7 m
- 3.28 g/t Au over 38.1 m in PGS048, including 4.92 g/t Au over 22.9 m, including 8.27 g/t Au over 10.7 m

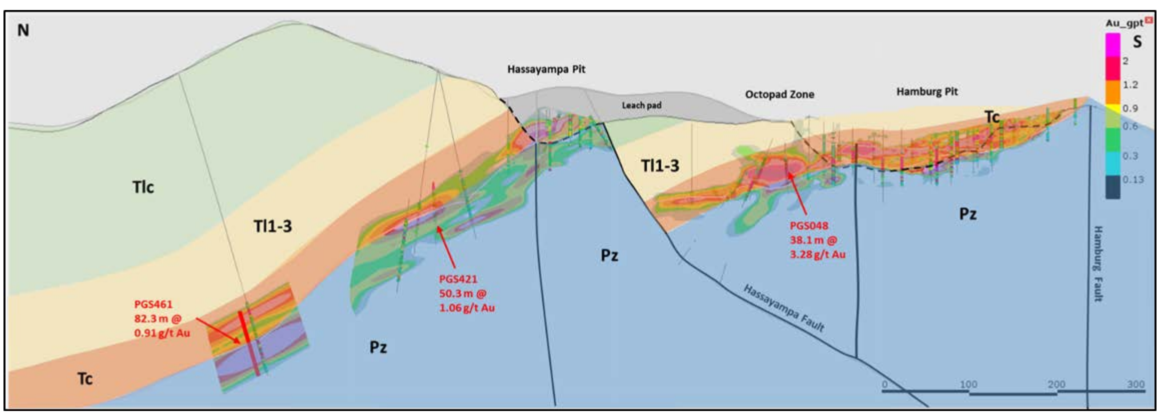
Figure 10-3 shows vertical section reference lines through the Octopad target the eastern Dip Slope Zone and the Moosehead Pit are, highlighting Liberty Gold drilling and the Leapfrog model derived from drill holes and blast holes. The represented sections are, east to west: the Hassayampa-Hamburg Pit Section (Figure 10-4), the Dip Slope-Aggie-Peg Leg Section (Figure 10-5), and the Moosehead Pit Section (Figure 10-6).

At the west end of the Main Zone, a zone of mineralization called the Aggie Zone (north of Peg Leg) was discovered in 2015 drill hole PGS-10 (Figure 10-5). This zone contains elevated concentrations of gold in an unusually thick section of conglomerate and breccia. Mineralization was drilled to the northwest of the Aggie Zone in an area named the Warrior Zone. Subsequent drilling showed that the two areas form a single zone, connected by a narrow, northwest striking fault zone.



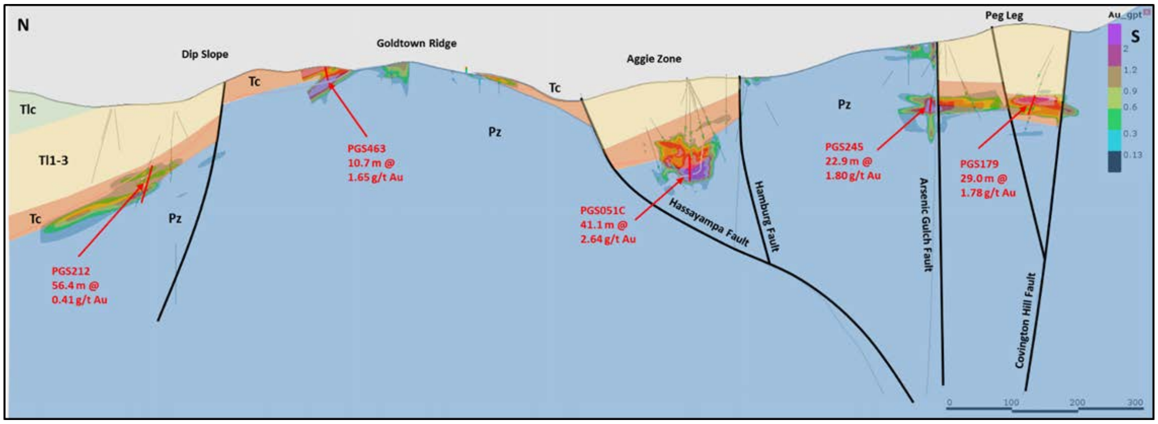
Source: Liberty Gold, 2018

Figure 10-3: Vertical section locations, Octopad target and eastern Dip Slope Zone, highlighting Liberty Gold drilling and Leapfrog model



Source: Liberty Gold, 2018

Figure 10-4: Hassayampa-Hamburg pit section, Octopad target. view to the east



Source: Liberty Gold, 2018

Figure 10-5: Dip Slope – Aggie – Peg Leg section, Dip Slope Zone, view to the east

Highlights from the Main and Aggie Zones include:

- 1.07 g/t Au over 30.5 m in PGS020
- 1.56 g/t Au over 27.4 m in PGS025
- 1.19 g/t Au over 57.9 m in PGS026
- 1.14 g/t Au over 47.2 m in PGS027
- 1.05 g/t Au over 24.4 m in PGS035
- 1.85 g/t Au over 30.5 m in PGS041C, incl. 2.63 g/t Au over 18.3 m – *core hole*
- 0.87 g/t Au over 61.0 m in PGS049, incl. 2.83 g/t Au over 7.6 m
- 0.87 g/t Au over 45.4 m in PGS046C – *core hole*
- 0.76 g/t Au over 67.1 m in PGS053, including 1.91 g/t Au over 6.1 m
- 2.24 g/t Au over 58.8 m in PGS054C, including 2.77 g/t Au over 36.2 m – *core hole*
- 0.96 g/t Au over 76.2 m in PGS058, including 1.98 g/t Au over 19.8 m
- 1.53 g/t Au over 25.9 m including 3.48 g/t Au over 9.1 m in PGS242
- 0.85 g/t Au over 50.3 m including 1.81 g/t Au over 15.2 m in PGS235
- 0.62 g/t Au over 50.3 m including 1.61 g/t Au over 7.6 m in PGS243
- 1.43 g/t Au over 13.7 m including 2.33 g/t Au over 7.6 m in PGS237

10.2.3 Dip Slope Zone

Near the end of 2016, drilling was expanded to the "Dip Slope Zone", comprising the footwall of the Hassayampa fault, which includes the historic Goldtown, Hassayampa and Padre Pits (Figure 10-4 and Figure 10-5). Strata are generally flat lying near the Hassayampa fault, then roll over to dip gently to moderately northward toward the wash. Due to disturbance and access constraints, holes drilled in this area in 2016 were widely spaced, with mixed results. It is apparent from this drilling that the basal Claron Formation thins north of the Goldtown Pits, and has highly variable thickness in the Dip Slope, limiting potential for thicker, continuous mineralization in the Lower Claron Formation. However, the underlying Paleozoic rocks are lithologically favorable gold hosts, and require additional exploration.

There is a fair degree of structural control on the distribution of mineralization in this area, with holes adjacent to faults yielding significant intercepts, while holes drilled a short distance away yield only anomalous or low-grade mineralization. 2016 highlights from the Dip Slope Zone include:

- 0.51 g/t Au over 41.1 m including 1.24 g/t Au over 6.1 m in PGS142
- 1.14 g/t Au over 6.1 m in PGS144
- 0.58 g/t Au over 21.3 m in PGS153
- 2.81 g/t Au over 3.0 m in PGS161
- 0.66 g/t Au over 36.6 m including 1.16 g/t Au over 15.2 m in PGS220

With the receipt of the PoO in 2017, access to the Padre Pit area and to the area north of the Hassayampa pit was established. Results from this area include:

- 1.93 g/t Au over 10.7 m within 0.67 g/t Au over 53.3 m in PGS335
- 0.96 g/t Au over 10.7 m and 0.38 g/t Au over 39.6 m in PGS342
- 1.35 g/t Au over 10.7 m within 0.69 g/t Au over 39.6 m in PGS347
- 1.89 g/t Au over 13.7 m within 1.22 g/t Au over 32.0 m in PGS362
- 2.03 g/t Au over 3.0 m within 0.65 g/t Au over 38.1 m in PGS365
- 2.39 g/t Au over 7.6 m within 0.91 g/t Au over 82.3 m in PGS461

10.2.4 Peg Leg Graben

Fifteen holes in late 2016 tested for mineralization in the Peg Leg Graben area located to the south of the Aggie Zone (Figure 10-5). The Peg Leg area was tested in historical drilling with several shallow drill holes into mineralized jasperoid hosted in the Callville Formation in the north footwall of the Graben. Only five historic holes tested the graben itself. Liberty Gold drilled widely-spaced holes over a 1000 m x 200 m portion of the graben floor. Holes targeting the unconformity in the southeastern portion of the graben were largely barren, but holes in the western part of the graben contained significant intercepts of gold mineralization, particularly where located adjacent to fault zones. 2016 Highlights from the Peg Leg graben include:

- 1.78 g/t Au over 29.0 m including 3.54 g/t Au over 12.2 m in PGS179
- 0.90 g/t Au over 6.1 m and 0.76 g/t Au over 33.5 m including 1.47 g/t Au over 6.1 m in PGS183
- 1.33 g/t Au over 18.3 m in PGS187

Infill drilling continued in 2017, with an emphasis on the mineralized northern bounding fault of the Graben. Results include:

- 0.64 g/t Au over 33.5 m and 0.77 g/t Au over 4.6 m and 0.96 g/t Au over 1.5 m in PGS338
- 0.52 g/t Au over 32.0 m in PGS355
- 0.56 g/t Au over 7.6 m and 1.71 g/t Au over 3.0 m within 0.77 g/t Au over 22.9 m in PGS356
- 2.32 g/t Au over 3.0 m within 0.82 g/t Au over 13.7 m in PGS363

10.2.5 Covington Pit

One hole was drilled in 2015 north of the historic Covington pit, targeting an altered mafic dyke with gold associated with oxidized shears exposed in a roadcut. It returned:

- 18.3 m grading 2.72 g/t Au in PGS012, including 10.7 m grading 4.32 g/t Au, with a single high sample of 18 g/t Au

The dyke strikes east-west and is near vertical in orientation. Subsequent results include:

- 1.57 g/t Au over 6.1 m and 4.10 g/t Au over 7.6 m including 6.32 g/t Au over 4.6 m in PGS191
- 1.15 g/t Au over 10.7 m in PGS182
- 0.83 g/t Au over 3.0 m and 7.36 g/t Au over 1.5 m in PGS178
- 0.74 g/t Au over 6.1 m in PGS 185

Drilling was largely unsuccessful in extending the mineralization remaining in the Covington pit either laterally or down dip, suggesting a wedge-shaped, rootless geometry of mineralization.

10.2.6 Moosehead and Caribou Pits

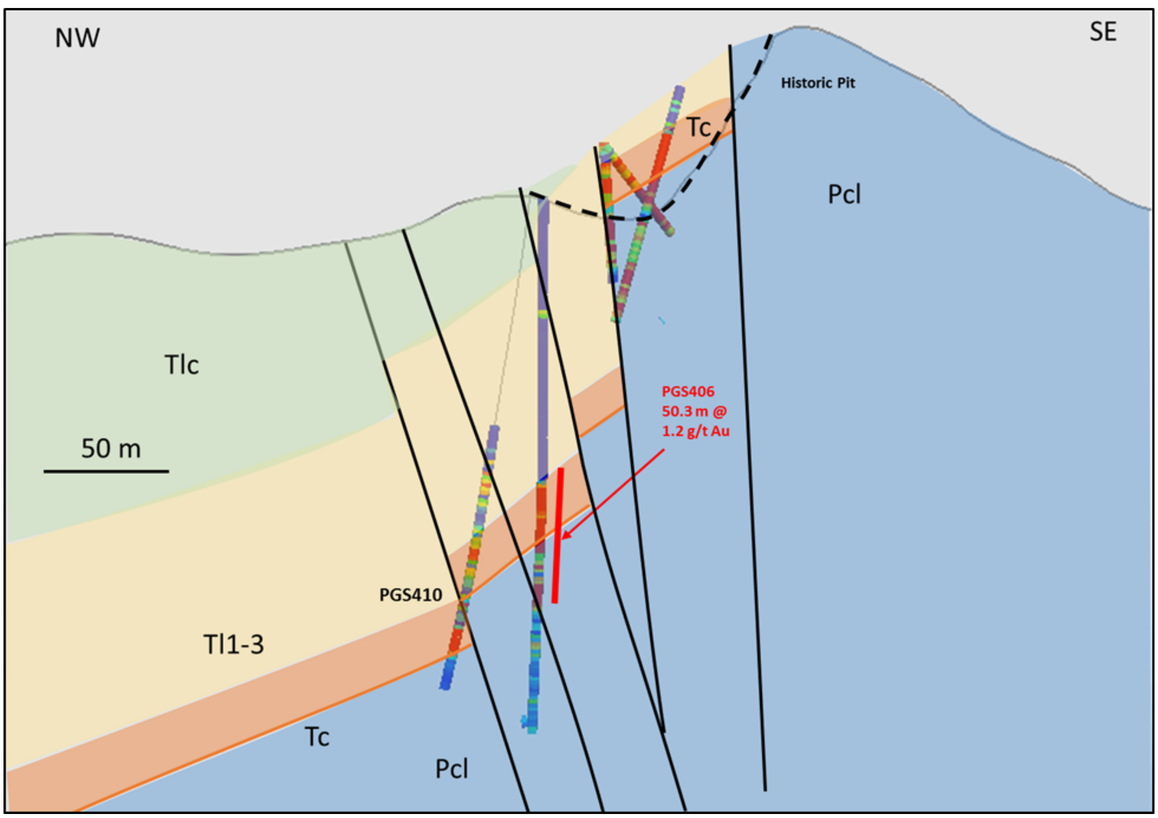
In 2015, the proof of concept drilling program tested this area with several holes. Highlights include:

- 0.48 g/t Au over 71.6 m in PGS013

- 0.47 g/t Au over 39.2 m in PGS014

In 2017, the Moosehead and Caribou pit areas were targeted for drilling down-dip and slightly north of mineralization in historic drill holes, as well as between the pits and laterally to the northeast and southwest of them (Figure 10-6). Results include:

- 0.90 g/t Au over 3.0 m and 0.45 g/t Au over 79.2 m and 0.38 g/t Au over 10.7 m in PGS279
- 2.09 g/t Au over 6.1 m within 0.69 g/t Au over 30.5 m
  0.41 g/t Au over 7.6 m and 0.48 g/t Au over 13.7 m
  1.79 g/t Au over 10.7 m within 0.74 g/t Au over 41.1 m in PGS281
- 1.20 g/t Au over 6.1 m within 0.62 g/t Au over 44.2 m in PGS289
- 1.97 g/t Au over 6.1 m within 0.65 g/t Au over 36.6 m in PGS291
- 1.62 g/t Au over 9.1 m within 0.78 g/t Au over 27.4 m in PGS295
- 0.74 g/t Au over 30.5 m in PGS298
- 0.97 g/t Au over 6.1 m within 0.48 g/t Au over 39.6 m in PGS317



Source: Liberty Gold, 2018

Figure 10-6: Moosehead pit section, view to the northeast

Mineralization in this area is hosted multiple strands of the steeply-dipping Covington fault zone, as well as in entrained lenses of the basal Claron Formation that step down to the northwest within the fault zone.

10.2.7 Mineral Mountain

The Mineral Mountain area, in the northwest corner of the property, had seen considerable drilling by several operators, including Tenneco and Tonogold (Puchlik, 2010). The area was mapped, sampled and modeled by Liberty Gold before 13 RC holes were drilled to test for down-dip extensions of mineralization along a normal fault bounding the west side of the mineralized zone, as well as locations to the north of the previously-drilled area. Gold mineralization was intersected by several holes.

This PEA does not include Mineral Mountain in the mine plan.

10.2.8 Other Targets

In late 2017, several outlying targets were drill tested. Locations are shown on Figure 6-2, with historic names in parentheses. All drill holes targeted the Claron unconformity as well as the potential for mineralization hosted in the middle Pakoon sandstone (Pps)/ Lower Pakoon Dolomite (Ppdl) contact and along potentially mineralized structures.

These areas have not been included in the PEA mine plan.

The Beach

The Beach (Deep Bogart) target is located 450 m northwest of the Covington Pit. Historic drilling identified gold, but geology had been misinterpreted and made targeting difficult. In addition, the presence of the Queantoweap Sandstone (Pcq) underlying the Claron unconformity in many of the historic holes made this a less compelling target. Re-logging of historic holes and better understanding the faults and geology lead to some significant drill intercepts in 2017. Liberty gold drilled a total of 21 RC holes in 2017.

Big Red

The Big Red target area is located approximately 1.5 km northwest of the Moosehead pit on the north side of Beaver Dam Wash. Historic drilling at Big Red primarily targeted jasperoids at the Pakoon Lower Dolomite / Calville Limestone contact, with variable success. Up to 6.0 g/t Au in single drill samples was achieved in historic drilling, although intercepts were relatively short. Geologic modeling of this area was hampered by a lack of precise locations for historic drill collars. Liberty Gold drilled six widely-spaced holes late in 2017 to test the Claron unconformity, the Pps/Ppdl contact and adjacent high angle faults.

Fenceline

The Fenceline (Deep Bogart) target is located approximately 1.7 km northwest of the Beavertail pit on the north side of Beaver Dam Wash, along the westward projection of faults associated with mineralization in the historic mine trend. Very shallow, poorly located historic drill holes tested jasperoids at the Pps/Ppdl and Ppdl/Pc contacts that crop out on surface, with indications of a few meters of gold mineralization at surface. Re-mapping the area and surface sampling, including a 4.5 g/t Au soil sample and 17.8 g/t Au in a rock sample, helped to better understand and target this area. One hole was drilled by Liberty testing the Pps/Ppdl contact at depth that intersected 1.46 g/t Au over 24 m.

Jack's Camp and Jedediah targets

The Jacks Camp (Antimony Shafts) and Jedediah targets are located approximately 1.8 km and 3.0 km south-southwest of the Beavertail Pit, respectively. In both areas, argillic to intermediate argillic altered feldspar porphyritic andesitic to dacitic rocks are faulted against Paleozoic rocks. The igneous rocks have either a volcanic or high-level intrusive origin. Gold is associated with intermediate argillic alteration, silicification and rare dark gray quartz veining in both the igneous rocks and wall rocks.

At Jack's Camp, several historic drill pads have been located but Liberty is not in possession of any data for them. Liberty Gold drilled three RC holes in this area, with the best results possibly related to a fault zone:

At Jedediah, historic drilling comprises 14 poorly located holes, with the best gold results in quartz rich dacitic rocks. Liberty Gold drilled one hole in 2017, which recovered minor gold associated with a fault zone near a contact with basement Paleozoic rocks.

10.3 SRK Comments

Liberty Gold's Goldstrike Project drill hole database currently includes 2,061 drill hole records, and all the holes in the database are located within Liberty Gold's landholdings at Goldstrike:

- A grand total of 1,978 holes for 170,989 m (1,950 RC/rotary holes for 167,527 m; 28 core holes for 3,461 m core), drilled by companies other than Liberty Gold over 1978 to 2012 and by Liberty Gold over 2015 to 2017.
- The core holes in the database account for about 2% of the drilling.
- 82 drill holes without a collar location but with assays or logs or notes indicating they exist.
- 48 drill holes with a corresponding verifiable assay.
- 134 drill holes without any kind of lithologic description or log.

The down-hole lengths of the drill samples in the project database average 1.57 m, with 97% of the sample intervals having a length of 1.524 m (5 ft).

SRK is not aware of the details regarding the drilling contractors, drilling methods, sampling procedures, collar-survey methods, and types of drill rigs utilized in the historical Goldstrike drilling programs other than those summarized above in Section 10.1 and Section 10.2.

Because of the age of some of the drilling and lack of data or conflicting hardcopy data, the drill hole database is constantly being refined by Liberty Gold. It is possible that further historical drill holes will be added to the database or locations will be found for missing holes as the project progresses. The drill hole database as presented in this report has an effective date of 08 February 2018.

The majority of the holes at Goldstrike have been drilled at vertical to sub-vertical angles, which cut the generally shallow-dipping mineralization that dominates the gold deposits at high angles. There are some holes that are poorly oriented with respect to the mineralization encountered, especially in cases of vertically oriented holes intersecting mineralization controlled by high-angle structures within the Paleozoic strata, or by favorable units in the Paleozoic that are steeply dipping. In these cases, gold intersections can have down-hole lengths that exaggerate true thickness. The thickness of mineralization is variable, and the sample lengths are appropriate for the style of mineralization at Goldstrike.

SRK does not believe the lack of down-hole survey data is a significant issue as nearly 80% of the historical holes are vertical and relatively short, with only 3% drilled deeper than 125 m.

Liberty Gold’s Goldstrike Project drill hole database includes assay data for 1,501 holes drilled by historical operators, totaling 96,263 m, and 477 holes drilled by Liberty Gold in 2015 through 2017 for a total of 74,726 m (Table 10-1). Drill hole locations are shown in Figure 10-1.

11 Sample Preparation, Analyses, and Security

11.1 Sample Preparation and Analyses

11.1.1 Historical Drilling Programs

Table 11-1 summarizes available historical drilling programs sample preparation, analysis and security information for the period from 1978 through 2012.

Table 11-1: Historical drilling programs

Date	Company	Sampling	Assaying
1978	Occidental	RC drilling Unknown procedures	Unknown procedures
1980-1981	Houston International	RC drilling, 5 ft interval, Split to "about 5 lb size"[1] Unknown splitting or wet/dry procedures	Au, Ag assayed at Bondar-Clegg of Denver, CO; Assay methods unknown
1982-1987	Permian	RC drilling Unknown procedures	Au assaying 1982-85 Unknown procedures
1985-1986	Inspiration	RC and core drilling Unknown procedures	Rock chip and drill samples analyzed by Inspiration's Talco lab at Safford, AZ (Au by fire assay), Hunter Mining Lab at Sparks, NV (Au by fire assay with atomic absorption finish and some Ag and As, by unknown), and in 1986 at Rocky Mountain Geochemical of Sparks, NV (Au+Ag by fire assay, As by colorimetric analysis)
1988-1989	Goldsil	RC drilling, 5 ft interval by cyclone, split by Jones splitter[2]; wet or dry unknown	Samples assayed by Iron King Assay of Humboldt, AZ (for Au+Ag by fire assay with AA finish)
1987-1992	Tenneco	RC and rotary drilling Unknown procedures	Drill cuttings analysed at Rocky Mountain's lab at West Jordan, UT (Au+Ag by "one-ton fire assay"); in 1991, select samples assayed for Au by cyanide-leach method at Metallurgy Testing and Research Associates
1993-1994	USMX	Unknown procedures	Drill cuttings analyzed at Rocky Mountain at West Jordan, UT (Au+Ag by "one-ton fire assay"; some samples analysed for CN-soluble Au at Rocky Mountain by AA; in 1993, 6 samples from DH93GG-17 analyzed at Rocky Mtn for Cu, PB, Zn, Mo, As, Sb, Hg, Bi and Te by AA; a few samples were analyzed for Sn at Cone Geochemical at Lakewood, CO

Date	Company	Sampling	Assaying
1997	North Mining	HQ and NQ core, photos and sampling on 3.5 to 5 ft intervals	Core samples analyzed for Au by fire assay with AA finish; Ag, Bi, Cu, Mo, Hg, Pb, Sb, and Zn by ICP[3] followed by aqua regia digestion; Liberty Gold infers lab to be Barringer Laboratories in Reno, NV or Denver, CO
1999	Bull Valley LLC	20 ft sample intervals Unknown procedures	Samples assayed by Cone (Au by 30 g fire assay with AA finish, Ag by 4-acid digestion and "AA/BC" [a presumed variant of AA], as well as for, As, Sb, Hg)
2004	Midway	RC drilling with splits at 5 ft intervals; samples put into sealed bags and transported to secure facility	Samples assayed by American Assay Laboratory by 30 g fire assay
2011-2012	Cadillac	Core drilling with 5 ft samples that were halved by core saw	Core samples were assayed at ALS Global – Geochemical Analytical Lab in North Vancouver, BC (Au by 30 g fire assay with AA finish); Pulps resubmitted for Ag assay by combined ICP and mass spectrometry (ICP-MS)

Sources: 1- Schaubs, 1981 and Callaway & Gates, 1981, 2- Schurman, 1987
3 - ICP = inductively coupled plasma atomic emission

11.1.2 Historical Surface Sampling

SRK is unaware of the sample preparation and analytical methods used for the historical surface samples, most of which are attributed to Tenneco.

11.1.3 Liberty Gold Surface Samples

Liberty Gold Soil Samples

Rangefront Geological Consulting collected soil samples using hand-held GPS units with pre-programed sample locations. Samples generally ranged in weight from 0.3 to 0.8 kg. Samples were transported by Rangefront directly to ALS's sample preparation facility in Elko Nevada, where they were transported to Winnemucca for preparation. Samples were screened to -180 µm. The less than 180 µm fractions were analyzed for gold by 30 g fire assay with AA finish (ALS method code Au-AA23) and 51 elements by ICP-MS following aqua regia digestion (ALS method code ME-MS41).

Liberty Gold Rock Samples

Rock samples were collected by Liberty Gold personnel and transported to the ALS sample preparation facility in Elko, Nevada. Sample weights were generally between 1 and 2 kg. Data recorded at the sample site include handheld GPS locations, type of sample (grab, chip), rock type and alteration. Samples were crushed to 70% passing 2 mm mesh, split and pulverized to 85% passing 75 µm mesh. Gold was determined by 30 g fire assay with AA finish (ALS code Au-AA23).

51 elements were determined by ICP-MS following aqua regia digestion (ALS method code ME-MS41).

11.1.4 Liberty Gold Drill Samples

Liberty Gold Core Drilling

Liberty Gold geologists were on site during the Liberty Gold drilling program and they carried out geological logging of drill core, and defined the core sample intervals. Drill core was collected at the drill sites by Liberty Gold personnel. The core was logged on site in or adjacent to a trailer designated for that purpose, using a purpose-built Excel template that records rock type, alteration, RQD and other parameters.

All drill core was sampled except for some backfill and pad-fill material, as well as the upper portions of holes drilled from the same drill pad, where mineralization was not expected. Sampled intervals were identified based on geological considerations. Sample lengths vary from approximately 0.24 to 5.8 m, with an average length of 1.5 m. After logging, the core was transported to Liberty Gold's core processing and storage facility in Elko by Liberty Gold staff. Personnel from Rangefront Geological Consulting photographed the core wet and dry, then cut the core length-wise into halves using diamond saws and sampled the core, with one half sampled and sent to the assay laboratory. All samples were transported by ALS personnel from the Liberty Gold cutting facility to the ALS sample preparation laboratory in Elko, Nevada. After sample preparation, sample pulps were sent from the ALS Elko laboratory to the ALS laboratory in Reno, Nevada, for analysis of gold by fire assay, and to the ALS laboratory in North Vancouver, B.C., for multi-element geochemical analyses.

Liberty Gold RC Drilling

Liberty Gold's RC samples were collected wet, with water injection, on 5 ft (1.524 m) intervals, each sample generally weighing in the range of about 5 to 10 kg, directly into pre-labeled, water-permeable cloth sample bags. Excess water was drained from the samples at the drill sites. The drill samples were transported periodically to the ALS facility in Elko, Nevada, by Liberty Gold personnel, or by contractor Feller Enterprises of St. George, Utah, or by Legarza Exploration of Elko, Nevada. At times during the program, it was deemed necessary by ALS to transport samples from Elko to an alternate prep lab, either in Reno, Vancouver, Thunder Bay, Ontario, or Hermosillo, Mexico.

Sample Preparation and Assay Procedures

Liberty Gold employs a blind numbering system for both core and RC samples, such that the hole number and down-hole footage are not known to the assay laboratory. The primary assay laboratory for Liberty Gold has been ALS Global - Geochemistry, a division of ALS Ltd.

ALS is a large, multinational laboratory analytical services company that is independent of Liberty Gold..Most ALS geochemistry laboratories, including the preparation and assay facilities in Elko, and Reno, Nevada, and North Vancouver, British Colombia, are registered or are pending registration to ISO 9001:2008, and a number of analytical facilities have received ISO 17025 accreditations for specific laboratory procedures.

After drying and weighing, the samples were crushed to 70% less than 2 mm particle size. The crushed material was riffle-split to obtain a 250 g sub-sample that was ring-mill pulverized to 85% at less than 75 µm. The pulps were analyzed for gold by 30 g fire assay with AA finish (ALS method code Au-AA23) at the ALS laboratory in Reno, Nevada. Some pulps were also analyzed for cyanide-soluble gold by cyanide leach and AA analyses, wherein a sample of pulp is agitated for one hour in a 0.25% NaCN solution (ALS method code Au-AA13), also in the ALS Reno laboratory. Samples returning a fire assay of >5.0 g/t Au were re-assayed and completed with a gravimetric finish. For these sampled, the gravimetric data were utilized in any further calculations.

Metallic screen techniques were employed in the rare instances where the presence of coarse free gold was suspected. Approximately 1,000 g of coarse reject material are pulverized and screened. Two splits of the fine fraction are assayed, as well as all material that does not pass through the screen (the coarse fraction). The final gold assay reported is a weighted average of the coarse and fine fractions. Silver, Cu, Pb, Zn, Ba, Al, As, B, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Fe, Ga, Ge, Hf, Hg, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, and Zr were analyzed by ICP-MS after aqua regia digestion (ALS method code ME-MS41) at the ALS laboratory in North Vancouver, B.C., using 1.0 g subsamples of the pulps.

QA/QC procedures used by historical operators and Liberty Gold are described in Section 11.3.

11.2 Specific Gravity Data

ALS completed 160 bulk specific-gravity (SG) determinations for Liberty Gold. The measurements were made on selected samples of half-cut PQ core (both mineralized and some un-mineralized) from 2016 and HQ core from 2012 and 1989, recovered from the Main Zone, Hamburg Pit, between the Hamburg and Basin pits, and the Aggie Zone (Figure 6-2). Samples were selected to reflect the range of mineralization types and degrees of oxidation in the areas tested by large diameter core holes for metallurgical testing.

The method employed was water-immersion on wax-dipped samples (ALS code OA-GRA08n). Values ranged from a low of 2.21 to a high of 2.76, with an average value of 2.52 and a standard deviation of 0.096. There did not appear to be a consistent correlation of SG to rock type or oxidation. Given the relatively low range of values and the lack of correlation to rock type, the average value of 2.52 was applied to the entire data set for resource estimation.

There was no external QA/QC carried out on these samples.

11.3 Quality Assurance and Quality Control Programs

11.3.1 Historical Drilling Programs

Table 11-2 summarizes available historical drilling programs QA/QC sample preparation, analysis and security information for the period from 1978 through 2012. Various duplicate check analyses were completed by Inspiration and Tenneco, who together drilled 80% of the holes in the project database. Additional QA/QC samples are reported by Puchlik (2010) for the 2004 Midway drilling program, and Cadillac reportedly inserted blanks into the sample stream from their 2011 to 2012 drilling campaign.

Table 11-2: QA/QC for historical drilling programs

Date	Company	Description
1978	Occidental	No QA/QC information for sample preparation and analysis
1980-1981	Houston International	No known QA/QC information for sample preparation and analysis
1982-1987	Permian	No known QA/QC information for sample preparation and analysis
1985-1986	Inspiration	Only duplicates of unknown origin and third-party check assays of original pulps
1988-1989	Goldsil	No known QA/QC information for sample preparation and analysis
1987-1992	Tenneco	Check gold and silver assaying was reportedly completed on 1988 to 1991 Rocky Mountain laboratory duplicates of uncertain origin.
1993-1994	USMX	No known QA/QC information for sample preparation and analysis
1997	North Mining	No evidence of QA/QC samples inserted into assays for core samples
1999	Bull Valley LLC	Certain RC drilling sample intervals were resampled and sent to Chemex Labs, Inc. (now ALS) in Sparks, Nevada for Au assay by fire assay and AA finish
2004	Midway	"Gold standards along with splits of selected 5 ft (1.524 m) intervals were randomly inserted in the sample number sequence as external checks of assay results." (Puchlik, 2010)
2011-2012	Cadillac	For Au+Ag assay at ALS, Cadillac inserted blank samples, but no standards or duplicate samples.

11.3.2 Verifications by Liberty Gold – Drill Hole Database

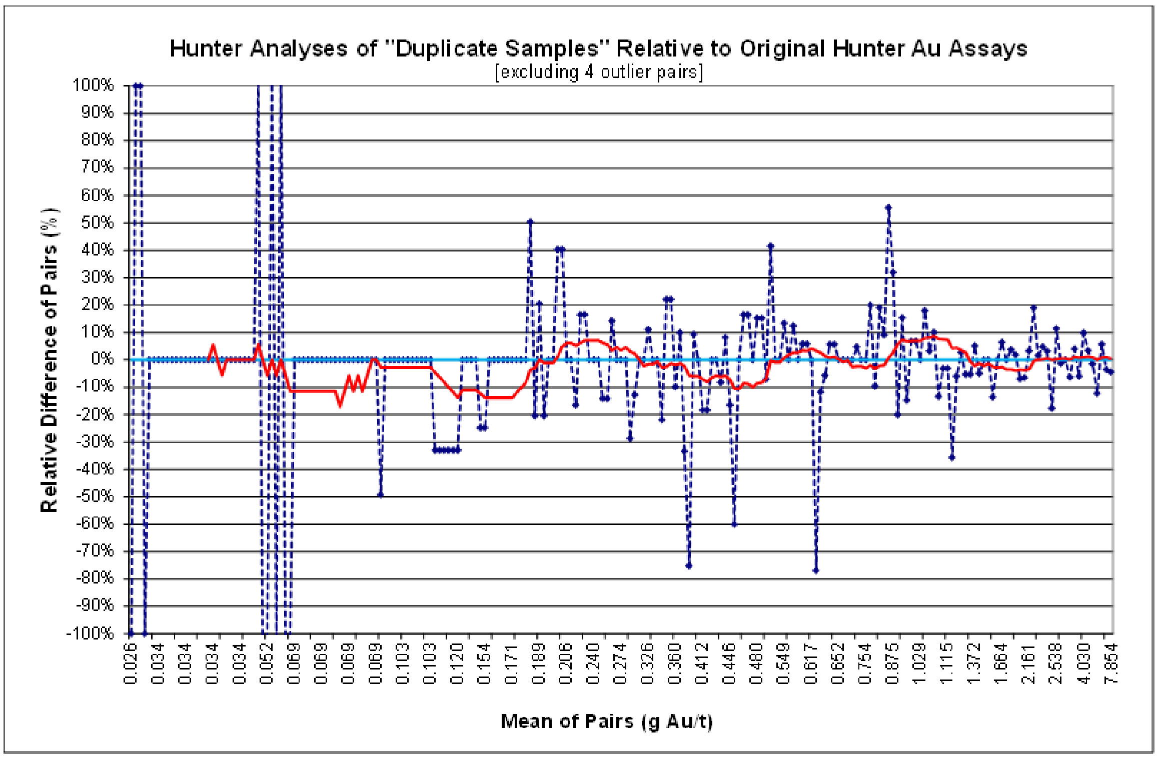
Liberty Gold inherited a project drill hole database and hardcopy documentation as part of its acquisition of the Goldstrike property. Liberty Gold has subsequently undertaken extensive efforts to digitize, validate, and improve the accuracy of the project data. Following Liberty Gold's verification and resultant updating of the database, Mine Development Associates (MDA) completed a verification of the historical data for a NI 43-101 Technical Report (Gustin and Smith, 2016) and which is summarized in the March 2018 SRK Report (SRK, 2018).

11.3.3 Verifications by Liberty Gold – Quality Assurance/Quality Control Programs

Inspiration

A total of 288 duplicate pairs were compiled from Hunter assay certificates from 1986 that include samples from holes 86-25 through 86-122. The duplicates are identified on the certificates by asterisks, with the duplicates listed immediately following the original (primary) samples. The total number of samples provided on the header of the certificates includes the duplicates, and all of the samples in aggregate are referred to as cuttings. Based on this information, it is likely that the duplicates represent field duplicates (analyses of duplicate samples collected at the drill rig along with the primary samples).

The 1986 Hunter duplicate analyses are compared to the primary assays in Figure 11-1.



Source: Liberty Gold, 2018

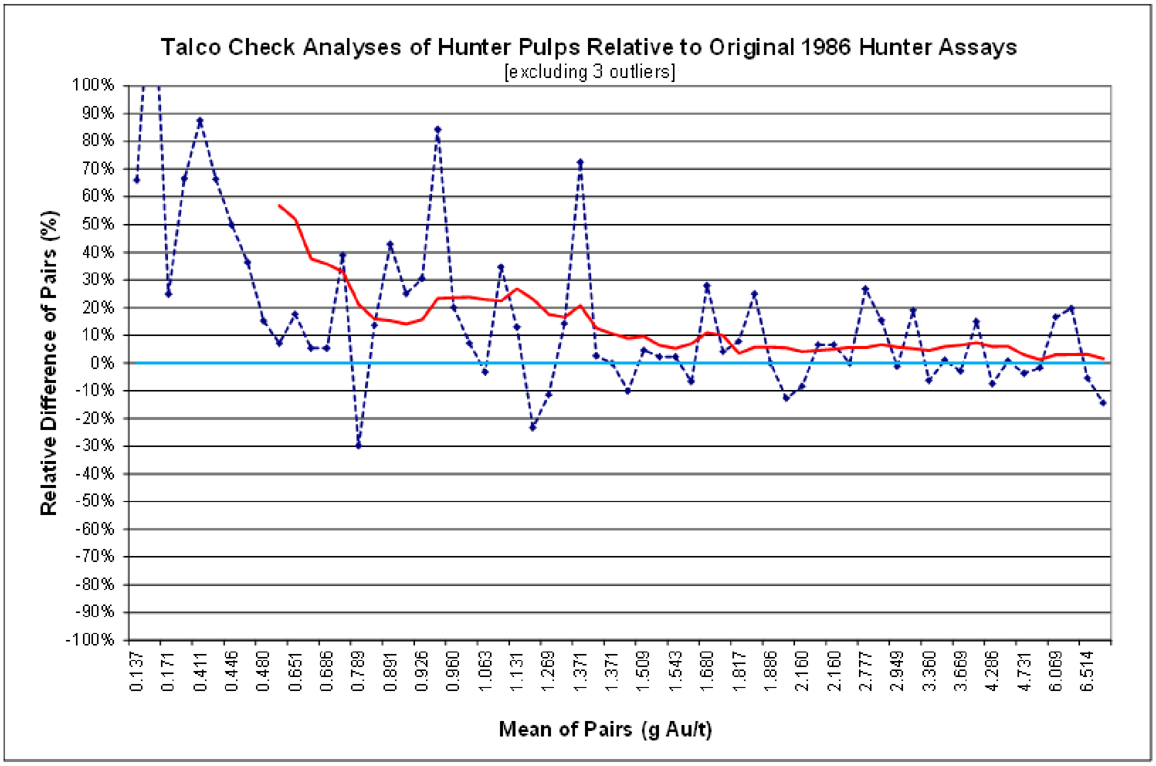
Figure 11-1: Hunter assays of duplicates relative to original Hunter analyses

The relative-difference graph in Figure 11-1 shows the percentage difference (plotted on the y-axis) of each Hunter duplicate assay relative to its paired primary-sample analysis. The x-axis of the graph plots the means of the gold values of the paired data in a sequential, non-linear fashion. The red line shows the moving average of the relative differences of the pairs and provides a visual guide to trends in the data, which aids in the identification of bias. Positive relative-difference values indicate that the duplicate-sample analysis is greater than the primary-sample assay.

The relative differences are calculated as follows:

$$\frac{(duplicate - original)}{lesser\ of\ (duplicate, original)}$$

A total of 217 pairs in which both the original and duplicate analyses are less than the detection limit are removed from the graph in Figure 11-2, as are four extreme outlier pairs; two of the extreme pairs removed have means of the pairs that exceed 0.1 g/t Au.



Source: Liberty Gold,2018

Figure 11-2: Talco check assays relative to original Hunter analyses

The means of the original Hunter analyses (0.703 g/t Au) and the duplicate analyses (0.700 g/t Au) are very close for all of the data and remain very close at mean-of-the-pairs (MOP) cut-offs of 0.2, 0.5, and 1.0 g/t Au. No consistent bias is evident. The variability of the data, as indicated by the average of the absolute values of the relative differences, is 10% at a MOP cut-off of 0.2 g/t Au, decreasing to 6% at a 1.0 g/t Au cut-off.

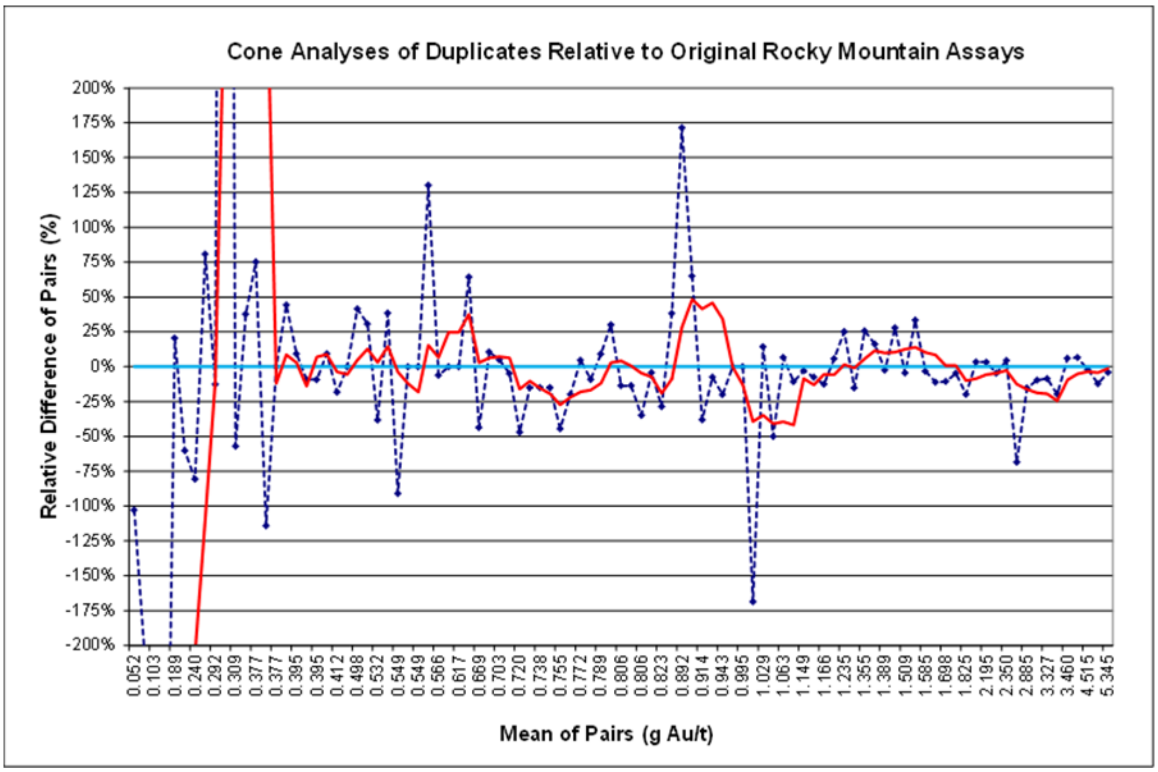
Inspiration also requested Hunter to send 65 original pulps from samples from 12 holes drilled in 1986 to Talco, Inspiration's in-house laboratory that was located in Safford, Arizona. The Talco check assays are compared to the original Hunter analyses in Figure 11-2; three extreme outlier pairs are excluded.

The Talco check analyses are systematically higher than the original Hunter analyses. This bias is highest at the lowest grades (MOPs < ~0.15 g/t Au) and gradually decreases through to a MOP of ~1.5 g/t Au, where the Talco assays are about 3% higher than the original Hunter analyses. Independent of this bias, the variability in the paired data is surprisingly high for pulp-check analyses, up to a MOP of ~1.5 g/t Au but is at a more expected level of ~5% at higher grades.

It should be noted that the dataset compared in Figure 11-2 does not represent the actual grade distribution of the Goldstrike mineralization, as it is biased towards relatively well-mineralized samples (the average grade of the pairs for the entire dataset is 2 g/t Au). A sample-selection bias such as this could result in the check assays being low relative to the original analyses, especially if there is a nugget effect (which is generally not the case at Goldstrike), but the opposite relationship is seen in this duplicate dataset.

Tenneco

Cone assayed Tenneco drill-sample duplicates from 70 holes drilled in 1988 through 1990 that were originally analyzed by Rocky Mountain; the type of duplicate is not known. The duplicate dataset consists of 97 pairs, excluding four pairs whereby both analyses in the pair are less than the detection limit (Figure 11-3).



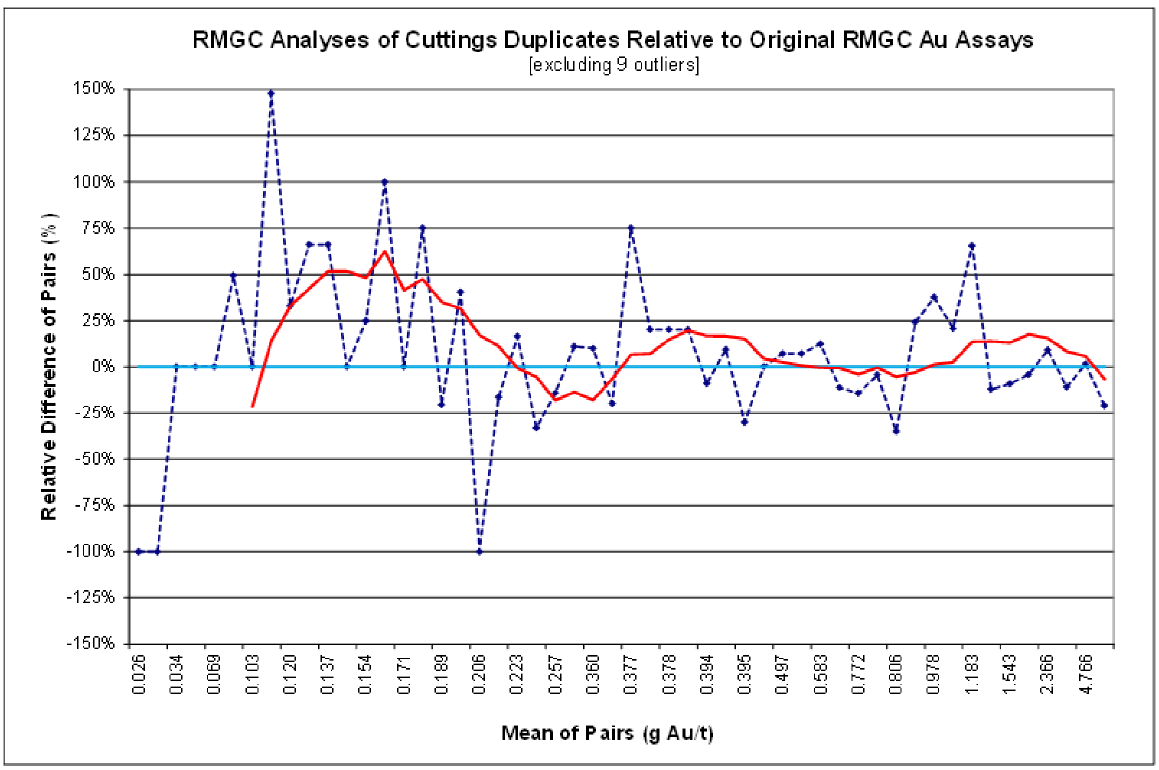
Source: Liberty Gold, 2018

Figure 11-3: Cone assays of duplicates relative to original Rocky Mountain analyses

The mean of the duplicate analyses (1.114 g/t Au) is 4% lower than the mean of the original analyses (1.155 g/t Au), and these means indicate that the dataset is biased somewhat to the high side of the full grade distribution of the Goldstrike mineralization, which has a mean of ~0.7 g/t Au. The means of the duplicate analyses remain ~4% lower than the original assays at MOP cut-offs of 0.2, 0.5, and 1.0 g/t Au, but no consistent bias is seen in the data. As indicated by the average value of the absolute values of the relative differences, variability is about 45% at a MOP cut-off of 0.2 g/t Au, dropping to 25% at a MOP of 0.5 g/t Au.

In late 1991, Tenneco sent Rocky Mountain 133 duplicate samples from 28 holes drilled earlier in the year. The samples, which were originally assayed by Rocky Mountain, were typically selected at 50 ft (15.24 m) intervals in each hole. The samples are described as cuttings on the certificate, which means they were most likely RC field duplicates, although they could have been preparation duplicates (pulps derived from splits of the coarsely crushed materials that remain after the primary splits were taken).

The duplicate analyses are compared to the original assays in Figure 11-4. A total of 72 pairs in which both assays returned less than detection limits are excluded, as are nine outlier pairs (only two of which have MOP greater than 0.1 g/t Au).



Source: Liberty Gold, 2018

Figure 11-4: Rocky Mountain assays of cuttings duplicates relative to original Rocky Mountain analyses

The mean of the duplicate analyses is identical to the mean of the original assays (0.717 g/t Au), and the means remain very close at various cut-offs. While the duplicate analyses are biased high at low grades, this bias disappears at pertinent grades (MOP grades above ~0.2 g/t Au). Variability at and above this cut-off is ~20%.

11.3.4 Liberty Gold Quality Assurance/Quality Control Program

QA/QC Program Method

The QA/QC program instituted by Liberty Gold for the Goldstrike 2015 to 2017 drilling programs included the systematic analysis of standards, coarse blanks, and RC field duplicates. Preparation duplicates and analytical duplicates (or replicates) were also routinely analyzed by ALS as part of their in-house QA/QC program. The Liberty Gold QA/QC program was designed to ensure that at least one standard, blank, and field duplicate was inserted into the drill-sample stream for every 36 drill samples, which is the number of samples in each ALS analytical batch. Splits from ALS pulps in mineralized zones were sent to Inspectorate Laboratories in two batches after the 2016 and 2017 drill programs for check assaying.

Certified Standards

Certified standards were used to evaluate the analytical accuracy and precision of the ALS analyses during the time the drill samples were analyzed. The nine certified standards used at Goldstrike include four custom standards prepared by Minerals Exploration and Environmental Geochemistry (MEG) of Carson City, Nevada, four sourced from Rocklabs, of Auckland, NZ and one from CDN Resource Laboratories of Langley, BC.

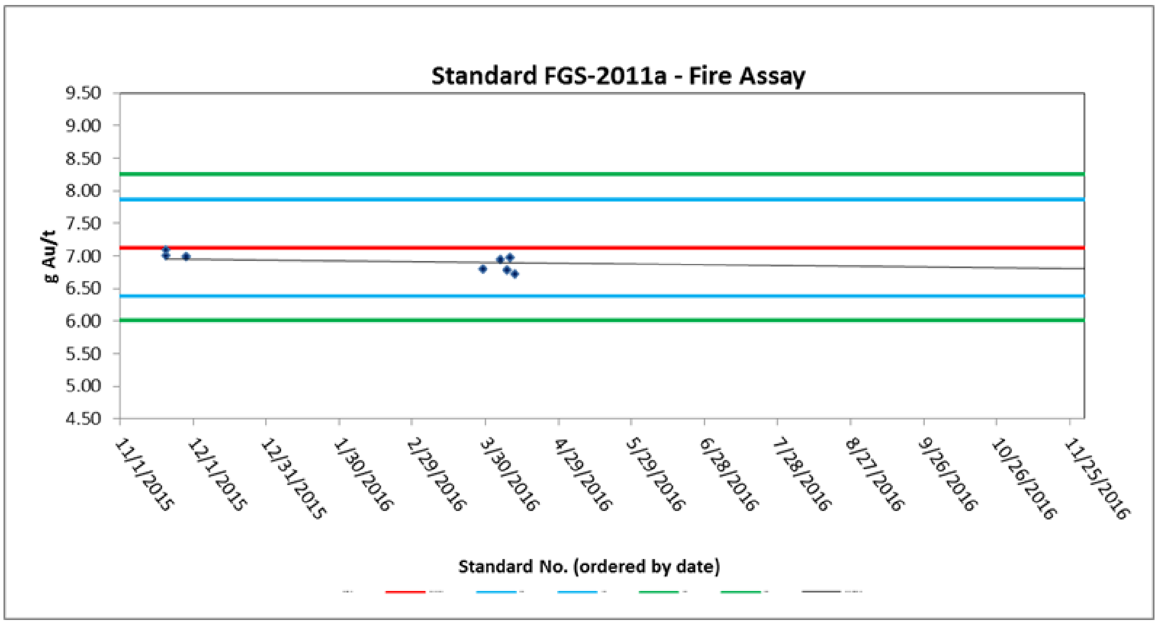
The standards were pre-assigned sample numbers in sequence with their accompanying drill samples prior to sampling the RC holes and then inserted into the drill-sample stream. In cases where the rocks were likely un-mineralized (either by taking note of unfavorable rock type or lack of alteration), no standard was inserted. Where possible, the standards were selected for insertion to try to match the expected gold values of the accompanying drill samples.

In the case of normally distributed data, 95% of the standard analyses are expected to lie within the two standard-deviation limits of the certified value, while only 0.3% of the analyses are expected to lie outside of the three standard-deviation limits. Note, however, that most assay datasets from metal deposits are positively skewed.

All samples outside of the three standard-deviation limits were considered to be failures. As it is statistically unlikely that two consecutive analyses of standards would lie between the two and three standard-deviation limits, such samples would also be considered failures unless further investigations suggest otherwise. Failures should trigger investigation, possible laboratory notification of potential problems, and a possible re-run of all samples included with the failed standard result. With respect to failures identified in this sample set, if the failed standards were within a mineralized zone (defined by a sequence of samples with >0.200 g/t Au assays), a rerun was requested. If the failed standards lay within an un-mineralized zone, no action was taken other than notifying the lab of the failure. A rerun consists of a re-assay of the standard along with 20 samples above and below the standard. All standards identified for re-assay passed the second time.

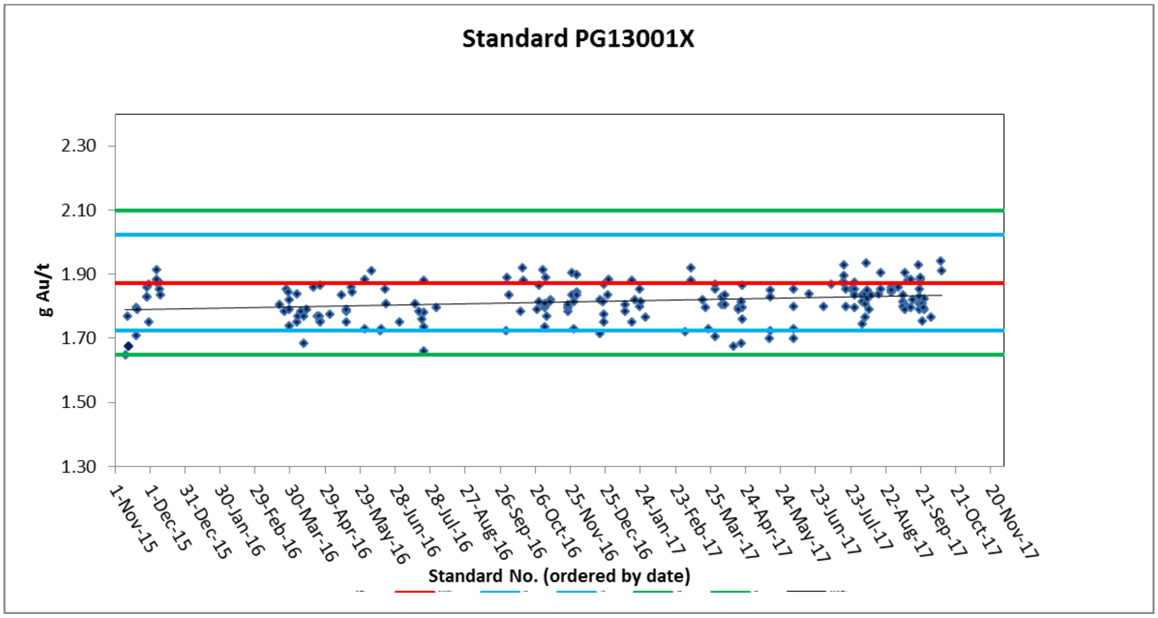
As defined above, the ALS analyses of the seven standards yielded 28 failures out of 996 standard analyses, or approximately 2.8%, an acceptable rate of failure. As indicated by the black trend lines in the graphs in Figure 11-5 to Figure 11-13, the analyses of all the standards are biased slightly low. Systematic low or high biases in the laboratory analyses relative to the expected value of the standard can lead to failures as defined above, but are more properly characterized as bias. For example, in the chart of standard PG14001X, the mean of all values is 0.320 g/t Au, compared to a certified value of 0.328 g/t Au, a difference of 2.4%. While a number of samples lie below the three standard-deviation limits and therefore could be considered as 'failures', it is evident that the ALS analyses are biased low with respect to the certified standard value. It is this low bias, not excessive variability, which may be the cause of many of the 'failures'.

A small number of samples assayed much lower than expected. In these cases, the laboratory was notified, and the cause of the abnormally low assay value was investigated. In these cases, the laboratory identified issues such as sample swaps or spillage of the sample. These issues are a concern, as they might otherwise go unnoticed in the general sample stream.



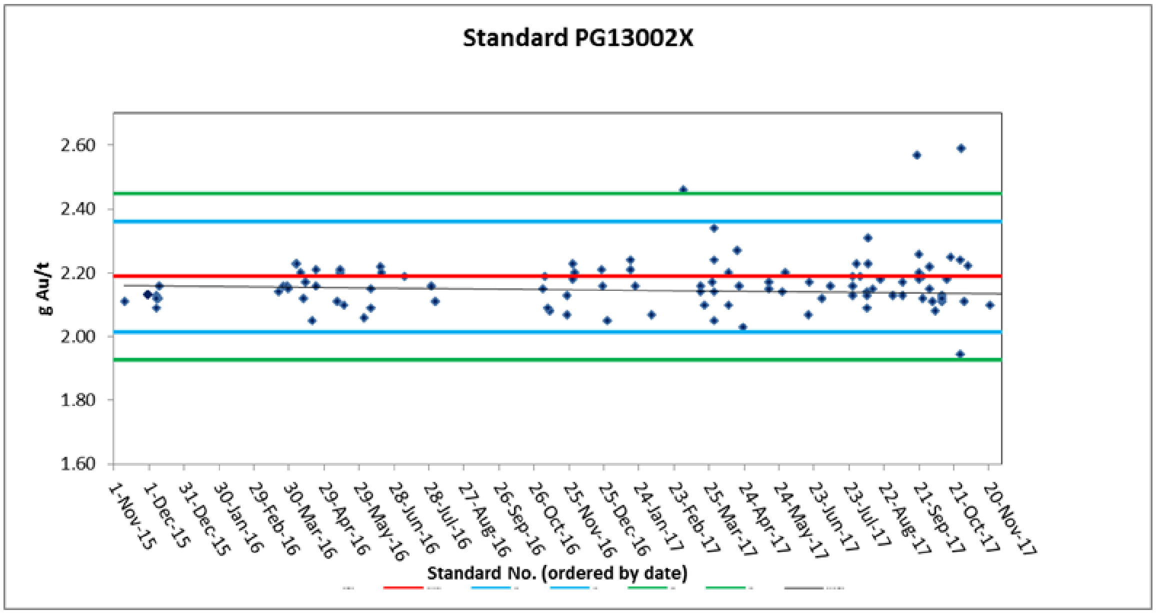
Source: Liberty Gold, 2018

Figure 11-5: Chart of standard performance for Goldstrike standard FGS-2011a



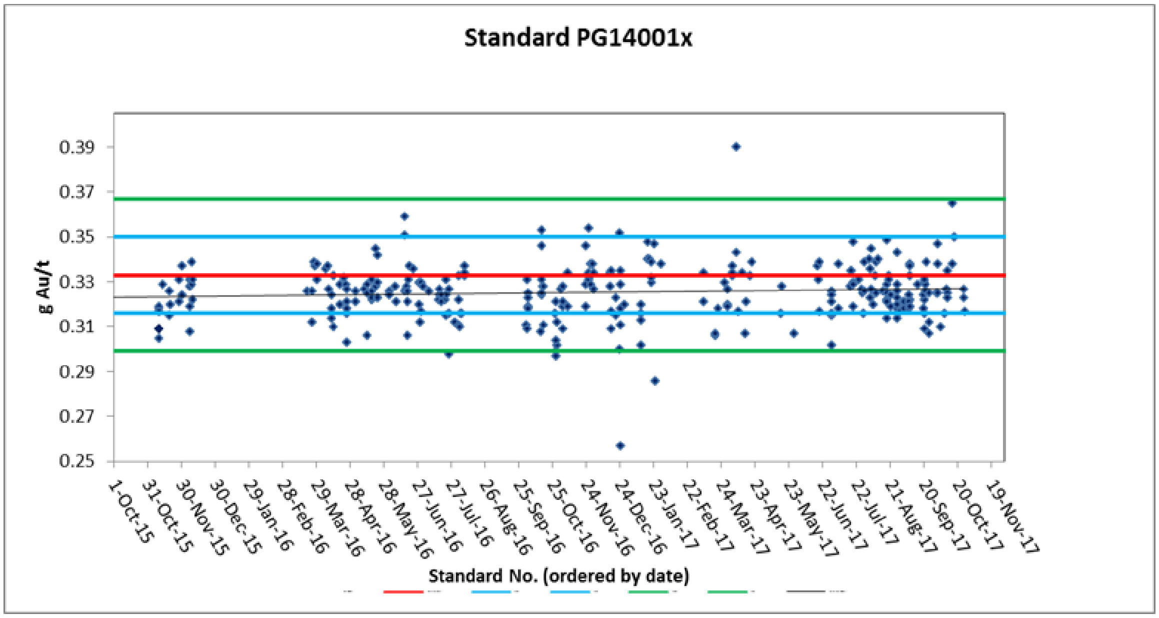
Source: Liberty Gold, 2018

Figure 11-6: Chart of standard performance for Goldstrike standard PG13001X



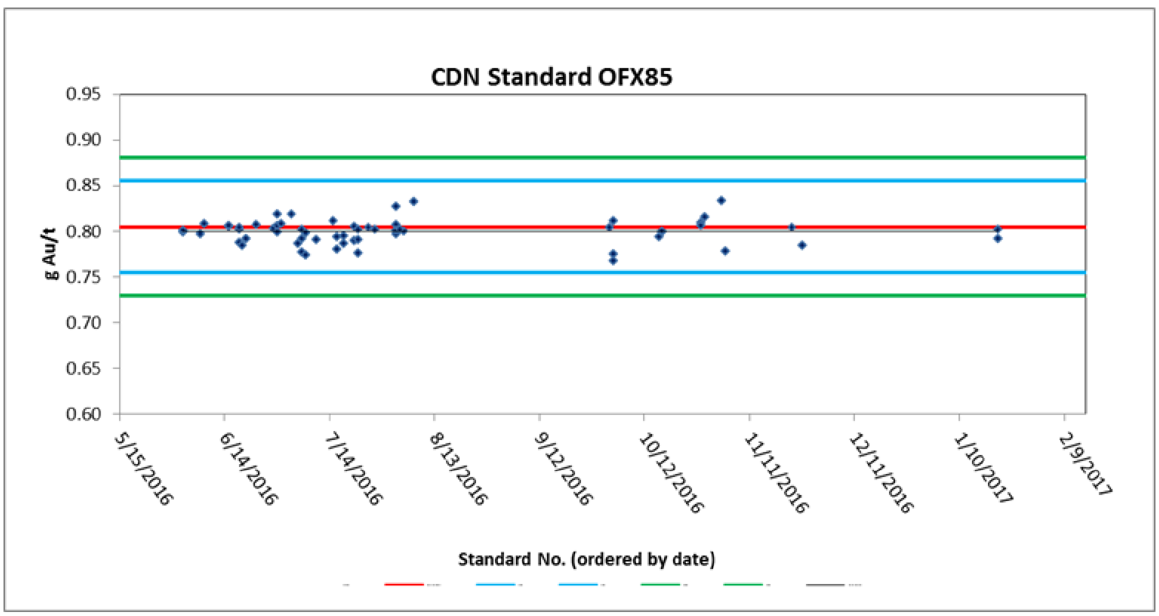
Source: Liberty Gold, 2018

Figure 11-7: Chart of standard performance for Goldstrike standard PG13002X



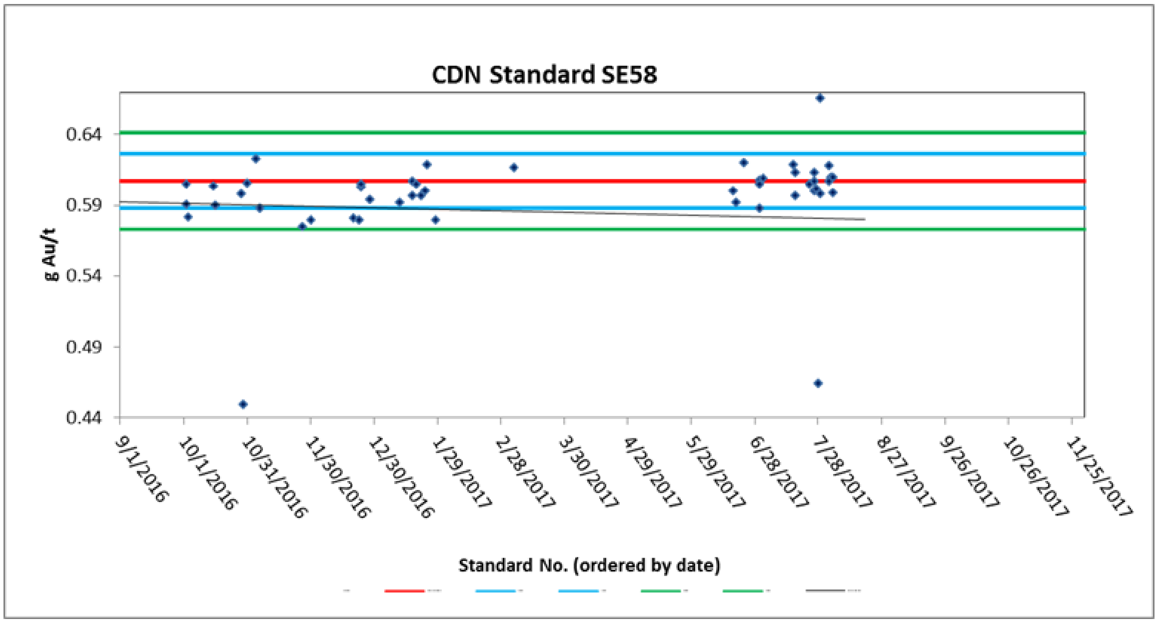
Source: Liberty Gold, 2018

Figure 11-8: Chart of standard performance for Goldstrike standard PG14001X



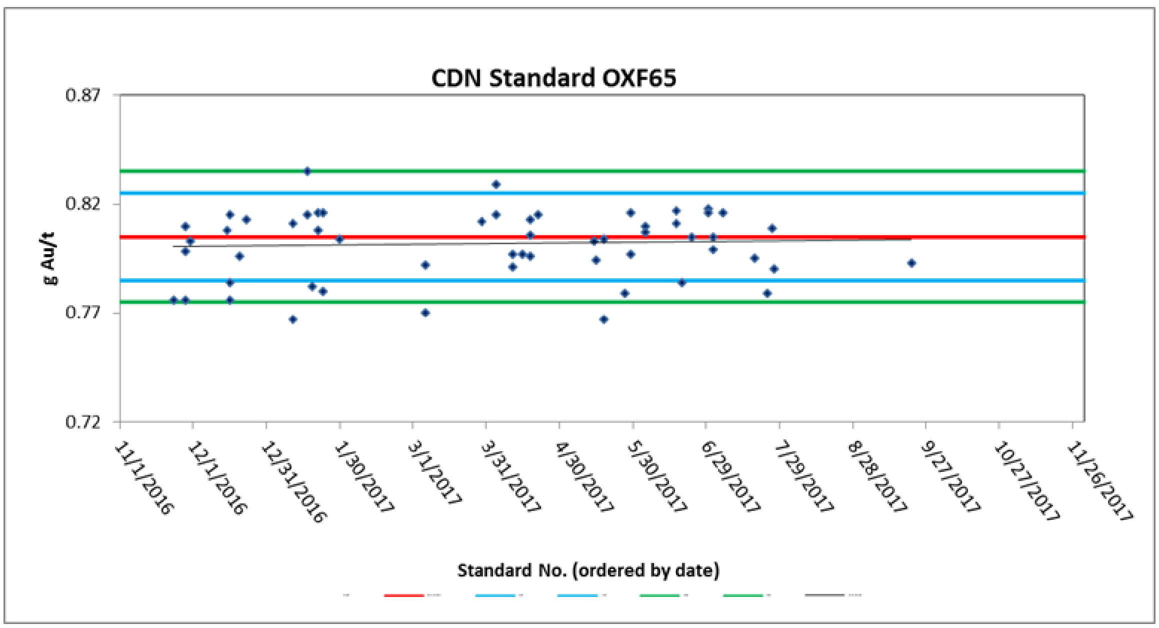
Source: Liberty Gold, 2018

Figure 11-9: Chart of standard performance for Goldstrike standard OFX85



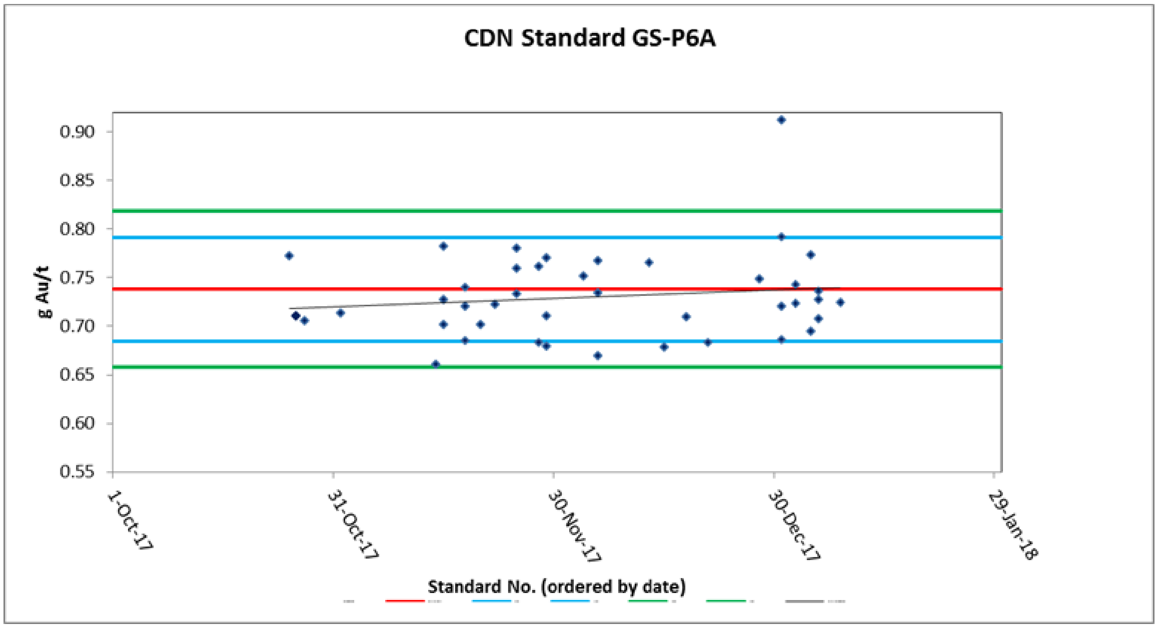
Source: Liberty Gold, 2018

Figure 11-10: Chart of standard performance for Goldstrike standard SE58



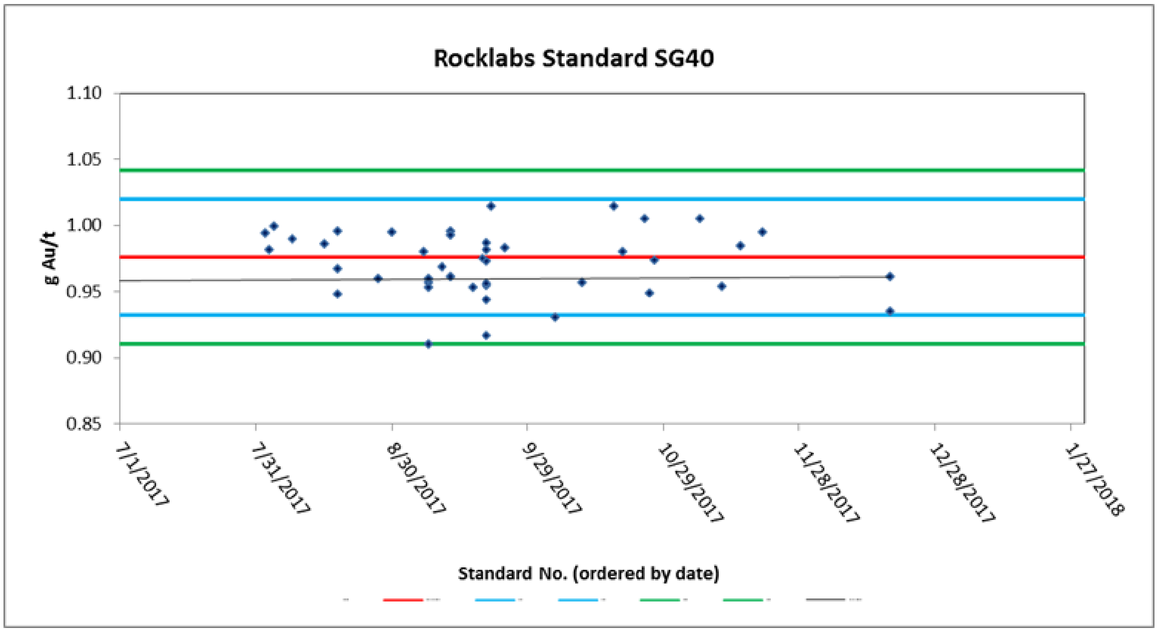
Source: Liberty Gold, 2018

Figure 11-11: Chart of standard performance for Goldstrike standard OXF65



Source: Liberty Gold, 2018

Figure 11-12: Chart of standard performance for Goldstrike standard GS-P6A



Source: Liberty Gold, 2018

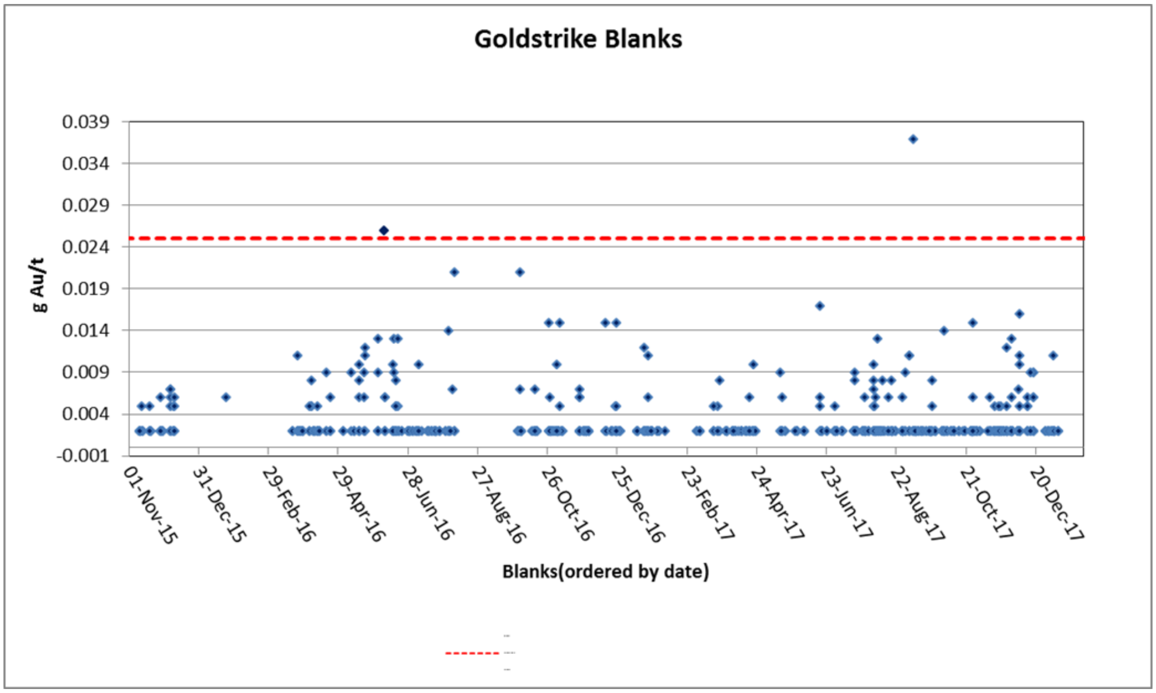
Figure 11-13: Chart of standard performance for Goldstrike standard SG40

Liberty Gold Coarse Blanks

Coarse blanks are samples of barren material that are used to detect possible contamination, which is most common during sample preparation stages. In order for analyses of blanks to be meaningful, they must be sufficiently coarse to require the same crushing and pulverizing stages as the drill samples. It is also important for blanks to be placed in the sample stream within a series of mineralized samples, which would be the source of most contamination issues (in practice, this is much easier to accomplish with core samples than RC). Blank results that are greater than five tines the lower detection limit are typically considered failures that require further investigation and possible re-assaying of associated drill samples. The detection limit of the ALS fire assay is 0.002 g/t Au, so blank samples assaying in excess of 0.01 g/t Au would be considered failures under the five times rule. However, a failure threshold of 0.025 g/t Au was adopted, as the difference between 0.01 and 0.025 g/t Au, relative to the average grade of the deposit, is not material, and because ALS uses 0.005 g/t Au as the detection limit in many of their internal QA/QC documents.

In 2015, Liberty Gold used coarse blank material from a bulk sample of “carbonate” blank material consisting of coarse crushed cinder-block material that was provided as certified blank material by MEG. Starting in 2016, the blanks were sourced from Vigoro brand “pond pebbles”. These blanks were coarse enough to require primary and secondary crushing, in order to monitor the entire sample-preparation process experienced by the drill samples. Blanks were inserted approximately every 36 samples. The blanks were pre-assigned sample numbers in sequence with their accompanying drill samples prior to sampling the RC holes and then inserted into the drill-sample stream. In cases where the rocks were likely un-mineralized (either by taking note of unfavorable rock type or lack of alteration), no standard was inserted. Where possible, the standards were selected for insertion to try to correspond with intervals with elevated gold values.

Between 2015 and the end of 2017, a total of 1,042 coarse blank analyses were obtained from the drilling program. Of these, 118 blanks reported above detection numbers, 28 reported values higher than 10 ppb, 11 reported values of 15 ppb or above, and only two of the ALS analyses of the blanks exceeded the failure threshold of 25 ppb Au, at 26 and 37 ppb (Figure 11-14). Of the eleven highest assay results, nine were inserted in intervals returning multi-gram gold intercepts. This performance well exceeds that guaranteed by ALS (<1% contamination).



Source: Liberty Gold, 2018

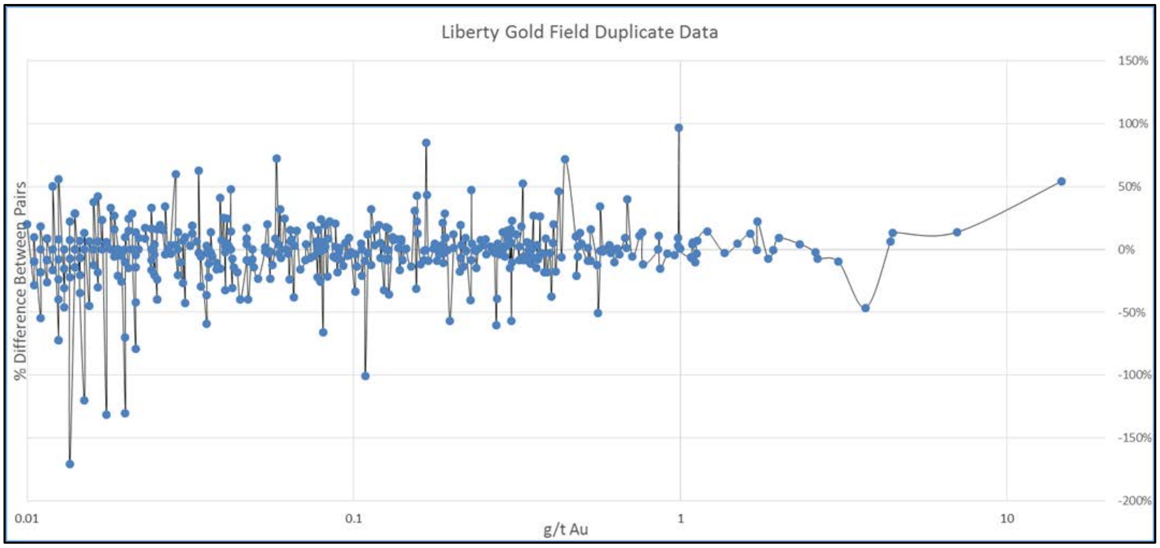
Figure 11-14: 2015 to 2017 blank performance, Goldstrike drill program

Liberty Gold Field Duplicates

Field duplicates are secondary splits of drill samples. Field duplicates are mainly used to assess inherent geologic variability and subsampling variance. The field duplicate samples were submitted to ALS at the same time as their associated original drill samples.

In the case of Liberty Gold's core drilling, field duplicates consisted of ¼-core splits, with the paired originals also being ¼-core splits (all other primary samples were ½-core splits). The RC field duplicates were splits of the cuttings collected at the drill rig at the same time as the primary samples. The outlet on the cyclone was set up with a "Y" splitter and, for the field duplicate, a second bucket was added to the secondary outlet of the "Y", so that two samples were collected for the interval. The field duplicates were collected randomly in the case of RC drilling, which resulted in a large number of duplicates of un-mineralized intervals.

A total of 1,109 RC duplicates and 26 core duplicates were collected by Liberty Gold and analyzed by ALS. The RC-duplicate data are presented in Figure 11-15 as a plot of the % difference in gold grade between the pairs; data is plotted logarithmically due to the large number of low grade pairs. Pairs with a mean value below 10 ppb, as well as four extreme outliers, possibly due to sample swaps or coarse gold, were removed from the dataset, leaving 463 pairs. With the remaining pairs, the % difference ranges from a low of 170.4% to a high of 96.8%. Most duplicate pairs are within 20% of the mean, an acceptable level of difference. When the outlier 16 g/t Au pair is removed from the data set, the mean of all original samples is 0.264 g/t Au, while the mean of all duplicate pairs is 0.267 g/t Au, a difference of 1.22%.



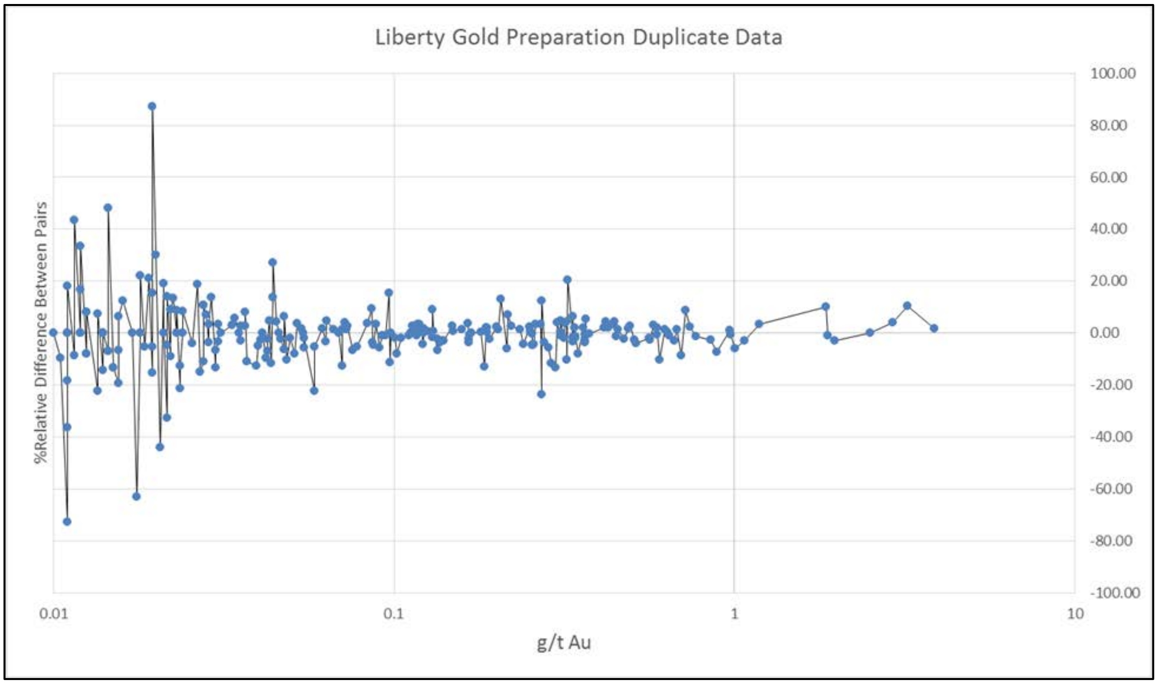
Source: Liberty Gold, 2018

Figure 11-15: Liberty Gold field duplicate data

Liberty Gold Preparation Duplicates

Preparation duplicates are analyses of pulps derived from second splits of the coarsely ground material that remained after the primary split was taken. These duplicates can therefore be used to evaluate the variability introduced by subsampling of the coarsely crushed material. ALS routinely creates and analyzes preparation duplicates as part of their internal QA/QC protocols, so Liberty Gold requests and tracks those results.

A relative difference graph that plots the preparation duplicate data from the 2015 to 2017 drilling program is shown in Figure 11-16; all pairs in which one or both analyses are equal to or less than 10 ppb Au have been removed, for a total of 258 remaining samples. Because these duplicates provide information relative to the variability introduced after coarse crushing of the drill samples, both core and RC data are shown together. Within this sample set, the % difference between the original and duplicate samples ranges from a low of -72.3% to a high of 87.2%, with the highest variability generally seen in samples close to the detection limit. As a whole, both the duplicate and original sample sets average 0.249 g/t Au, and most sample pairs lie within 10% of the mean.



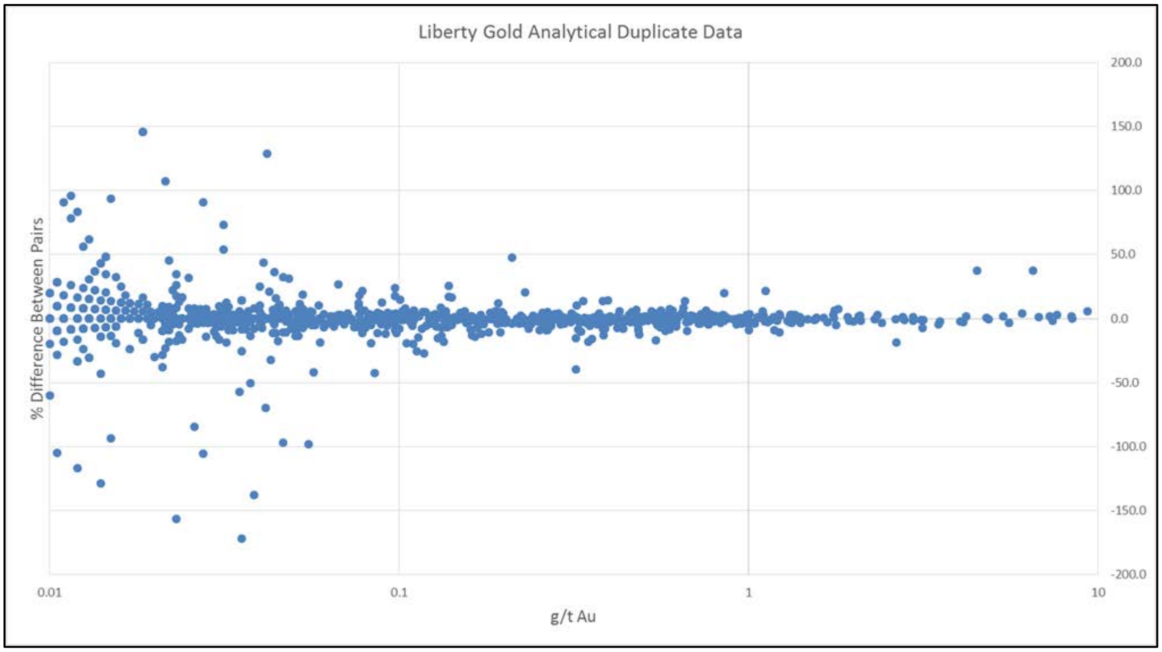
Source: Liberty Gold 2018

Figure 11-16: Liberty Gold preparation duplicate data

Liberty Gold Analytical Duplicates

Analytical duplicates (or replicates) are second analyses of the original pulps that are usually performed routinely by the primary analytical laboratory. These duplicates can be used to evaluate the precision of the subsampling of the pulp, and of the analysis itself. ALS completes analytical duplicates as part to their internal QA/QC routine, and Liberty Gold received these analyses on the drill hole sample assay certificates.

A relative difference graph that plots the preparation duplicate data from the 2015 to 2017 drilling program is shown in Figure 11-17; all pairs in which mean is equal to or less than 10 ppb Au, or for which one or both analyses are above the >10 g/t Au over-limit, or for which there was insufficient sample for the duplicate analysis have been removed, for a total of 981 samples in the data set. Because these duplicates provide information relative to the variability introduced after coarse crushing of the drill samples, both core and RC data are shown together. Within this sample set, the percent difference between the original and duplicate samples ranges from a low of -171.8% to a high of 145.9%, with the highest variability generally seen in samples close to the detection limit. As a whole, the duplicate sample set averages 0.391 g/t Au relative to 0.388 g/t Au for the original sample set, less than 1% difference. Most sample pairs with a mean greater than 0.1 g/t Au returned a % difference less than 5%, suggesting that the samples are well homogenized, and the analytical precision is high.



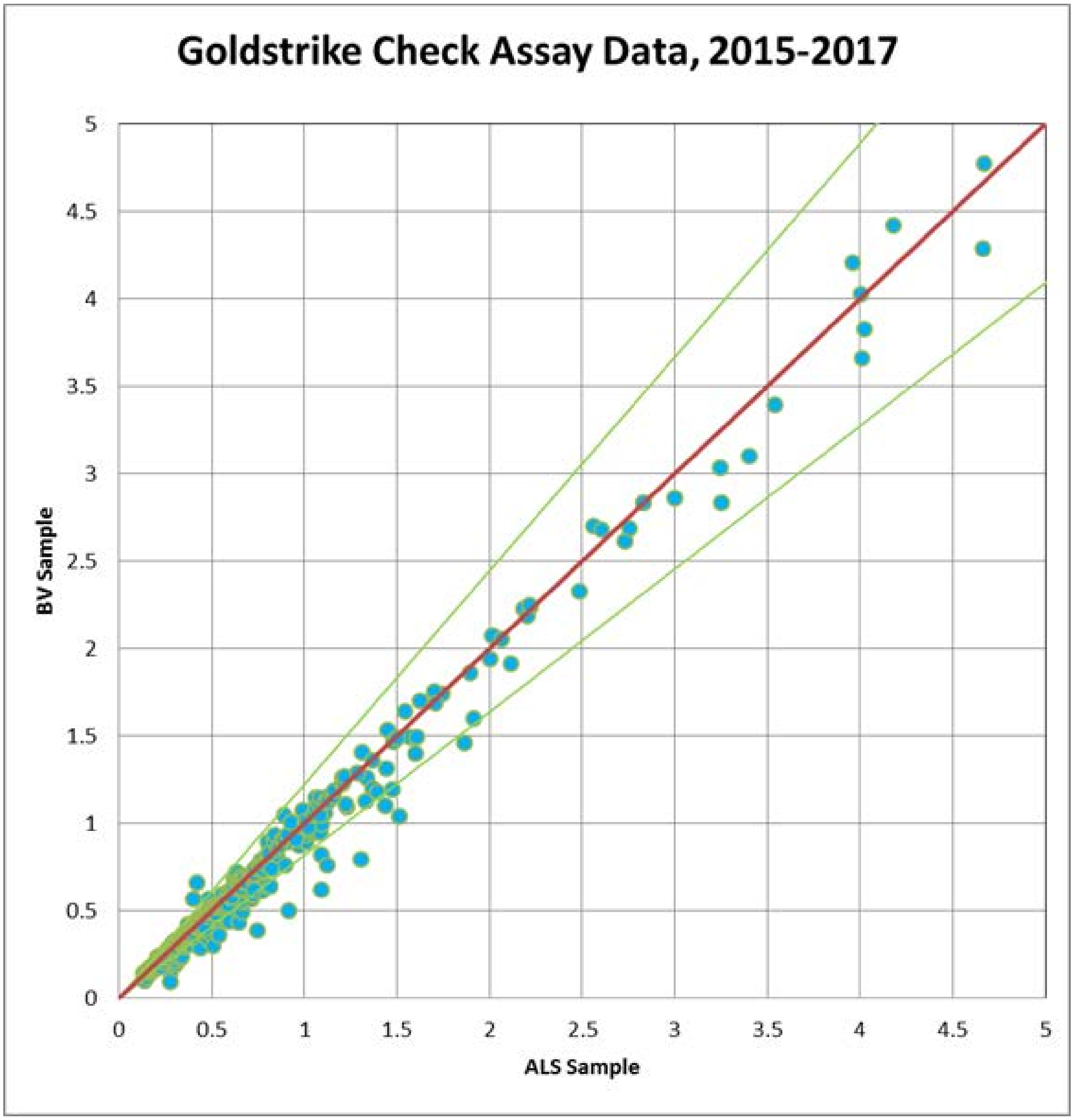
Source: Liberty Gold, 2018

Figure 11-17: Liberty Gold analytical duplicate data

Liberty Gold Check Assaying

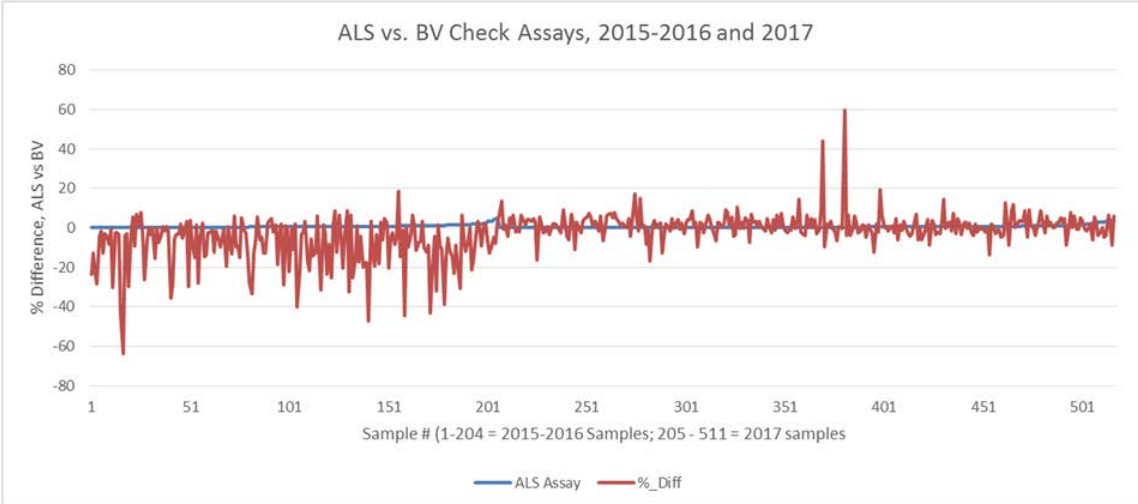
As a further check on analytical accuracy, Liberty Gold selected a portion of the original sample pulps from the 2015 to 2016 and 2017 drill programs and sent these to Inspectorate/Bureau Veritas (BV) Laboratories for re-assaying of gold content by fire assay with AA finish. The procedure for selection of check assays consisted of querying all samples that returned greater than 130 ppb Au and less than 5,000 ppb Au and assigning these a random number. The selection was then sorted on the random number and approximately 7% of these were selected for re-assay, for a total of 204 samples representing 2015 to 2016 drilling and 311 samples representing 2017 drilling. The original ALS pulps were used for the check assays. Standards and blanks were also submitted to Inspectorate along with the ALS pulps. A similar analytical method was used at Inspectorate for the gold check analyses. These check analyses are compared to the original ALS assays in Figure 11-18. The data set as a whole shows an excellent correlation between primary and check assays, with a difference of +0.82% between BV and ALS (BV numbers are slightly higher than ALS numbers.

However, the data set as a whole obscures a significant difference between results from 2015 to 2016 sampling and 2017 check assaying. The 2015 to 2016 check assaying, carried out in early 2017, returned a significant negative bias in BV check assaying, with samples returning assays an average of 9.08% lower than ALS assays. In contrast, check assaying of 2017 samples, carried out in January/February of 2018, returned an average 1.42% higher in BV check assaying compared to the original ALS assay results. This trend can be clearly seen in Figure 11-19, with percent difference/ALS assay results (same scale) plotted against sample number, with 1-204 representing 2015 to 2016 samples and 205-511 representing 2017 samples. A number of samples in the 2015 to 2016 BV sample set skewed very low relative to ALS assays, whereas there is very close agreement in the 2017 samples. There were no standard failures with either batch. The source of this discrepancy is unknown at this time. Given that ALS procedures have remained constant through the three-year period of assaying, the BV check assays from the first batch of samples are regarded as suspect.



Source: Liberty Gold, 2018

Figure 11-18: Comparison of ALS primary and BV check assays



Source: Liberty Gold, 2018

Figure 11-19: Percent difference graph of BV check assays versus ALS assays

11.3.5 QA/QC Discussion, Liberty Gold

Liberty Gold QA/QC Historical Programs

It is difficult to assess the adequacy of historical sampling, sample preparation, and assaying due to a lack of sufficient QA/QC data. However, some QA/QC analyses were completed by Inspiration, Tenneco, Midway, and Cadillac. Inspiration, Tenneco, and USMX drilled 93% of the holes in the historic project database, and all were well-recognized and reputable mining companies at the time (1980s and early 1990s).

The 1986 Inspiration duplicate analyses by Hunter show good agreement with the original Hunter assays, and variability is not high considering the duplicates were likely field duplicates. However, the check analyses completed by Talco are systematically higher than the original Hunter assays. Given that Talco was an in-house Inspiration laboratory of uncertain reliability, especially with respect to gold assaying, while Hunter was a well-known and widely used commercial laboratory at the time, Liberty Gold believes it cannot be concluded that the Hunter analyses are biased low.

The mean of Cone analyses of the 1988 to 1990 Tenneco duplicates of unknown origin (likely field or preparation duplicates) is ~4% lower than the mean of the original Rocky Mountain analyses, although no consistent bias is seen in the dataset and the average grade of the data are high relative to the mean grade of the Goldstrike mineralization. Variability is ~45% at an MOP cut-off of 0.2 g/t Au and ~25% at a MOP cut-off of 0.5 g/t Au. The variability at the lower cut-off is not surprising for field duplicates but could be somewhat high if the duplicate samples were preparation duplicates.

Tenneco also requested Rocky Mountain to complete duplicate analyses of samples of cuttings from the 1991 drilling program that were originally analyzed by Rocky Mountain (again, the duplicates were likely either field or preparation duplicates). The means of the duplicate and original analyses are very close, no bias is evident at pertinent grades (MOP grades above ~0.2 g/t Au), and the variability is acceptable for either field or preparation duplicates (~20%).

Liberty Gold has not evaluated the blank samples analyses Cadillac inserted into their 2011 to 2012 drill-sample streams.

In the opinion of Liberty Gold, the historic QA/QC data, while limited, do not identify any significant issues.

Liberty Gold QA/QC Programs – Drilling Samples

Liberty Gold did not identify any issues from their drilling program's QA/QC samples.

Liberty Gold's certified-standard results show systematic low biases (ALS analyses lower than expected values) for several standards. With few exceptions, the ALS analyses are within the two standard-deviation limits defined by the certified standards. Liberty Gold does not believe the biases are significant, especially in consideration of the limited data used to arrive at the expected values of the custom standards. If the individual analyses of a standard for each of the laboratories that participated in the certification process are compared to the actual expected value, most of the certifying laboratories will have high or low biases of varying magnitudes relative to the expected value.

The BV check assays of the 2015 to 2017 drilling programs appear to have a low bias relative to the original ALS analyses.

Liberty Gold QA/QC Programs – Soil and Rock Surface Programs

SRK is not aware of any QA/QC procedures that may have been used by Liberty Gold as part of its soil and rock sampling programs.

11.3.6 MDA 2015 Site Visit and Independent Sampling

Dr. Michael Gustin visited the Goldstrike property on 27 and 28 October 2015 (Gustin and Smith, 2016). The site visit included inspections of all of the historical open pits, as well as traverses outside of the pits, which together served to provide MDA with an overview of the project geology. Mineralization from open pit exposures and RC cuttings was inspected, as were numerous unaltered and altered (and possibly mineralized) outcrops outside of the open pits. While the 2015 RC drilling program was ongoing during MDA's site visit, the drill rig was not operating at the time.

In addition to the visit to the project site, reviews of the digital drill hole database and voluminous historical documents from prior operators were conducted at the Liberty Gold office in Elko on 29 October 2015.

MDA did not collect any assay samples from the Goldstrike Project for verification purposes. Gold production from the open pit heap-leach operations of Tenneco and USMX, both well-known mining companies at the time of mining, is documented in the historical data in the possession of

Liberty Gold and is also a matter of public record. In MDA's opinion, independent sampling for the purposes of verifying the Goldstrike mineralization is unnecessary.

11.3.7 Historical Surface Sampling

SRK is unaware of QA/QC employed for sample preparation, analytical methods and security of historical surface samples, most of which are attributed to Tenneco.

11.3.8 Liberty Gold Surface Samples

Liberty Gold Soil Samples

SRK is aware that for the soil samples collected by Rangefront Geological Consulting and assayed at ALS for gold, no QA/QC samples were inserted.

Liberty Gold Rock Samples

SRK is aware that for the rock samples collected by Liberty Gold and assayed at ALS no QA/QC samples were inserted.

11.3.9 Liberty Gold Drill Samples

Liberty Gold instituted a modern QA/QC program as part of their drilling campaign in 2015, which continues through the effective date of this report. This included systematic analysis of standards, coarse blanks, and RC field duplicates.

Liberty Gold Core Drilling

When field-duplicate core samples were taken, Rangefront Geological Consulting split one of the halves of core into two ¼-core samples, one for the primary assay and one for the duplicate, leaving half of the core stored for future reference in the Liberty Gold Elko office.

Liberty Gold RC Drilling

Liberty Gold collected 5 to 10 kg duplicate wet RC chips and fines samples using a rotating vane splitter, directly into pre-labeled, water-permeable cloth sample bags.

Sample Preparation and Assay Procedures

The ALS analytical facility in North Vancouver, B.C., is certified to ISO 9001:2008 standards and has received ISO/IEC 17025:2005 accreditation from the Standards Council of Canada (SCC) for all methods used to analyze samples from the Goldstrike Project, including ICP-MS. The ALS laboratory in Reno, Nevada, which was responsible for fire assaying of all samples from the Kinsley Project, is certified to ISO 9001:2008 standards and has received ISO/IEC 17025:2005 accreditation from the SCC for this method.

11.4 Comments

Liberty Gold has determined that information related to historical sample preparation, analyses, and sample security is incomplete and in many cases is not available. Historical records indicate that Inspiration, Tenneco, Midway, and Cadillac completed some QA/QC analyses, primarily of duplicate samples, and the data are limited. It is important to note, however, that the historical sample data were used to develop a successful commercial mining operation that produced more than 200,000 oz of gold.

SRK is satisfied that the procedures and methods used for the sample preparation, analyses and security of Liberty Gold's 2015 to 2017 samples are appropriate for generating reliable assay data that can be used to support the interpretations, conclusions, and recommendations in this report. No significant issues are indicated from the Goldstrike QA/QC data.

In SRK's opinion, the sampling preparation, security and analytical procedures used by Liberty Gold are consistent with generally accepted industry best practices and are therefore adequate.

12 Data Verification

12.1 Verifications by Advantage Geoservices Ltd

The primary focus of Mr. Gray's site visit in September of 2017 was the understanding of geologic controls on mineralization through discussion with Liberty Gold personnel and field inspections. Sampling procedures were witnessed during the drilling of hole PGS 391 and found to be adequate and appropriate.

Historic and current analytical drill results are deemed acceptable for use in resource estimation based on the work of Dr. Gustin of MDA, as previously reported in the 07 October 2016 NI 43-101 Technical Report.

12.2 Verifications by GL Simmons Consulting, LLC

The primary purpose of Mr. Simmons site visit in February 2017 was to examine mineralized zones and waste in the field and in core, and the layout of the historic mines and pits.

Mr. Simmons directly supervised the generation of the metallurgical data. The historic USMX 1993 KCA and Liberty Gold 2016 to 2017 KCA metallurgical test program data were reviewed by Mr. Simmons and are deemed acceptable for gold extraction modeling for the Goldstrike Project.

12.3 Verifications by SRK

12.3.1 SRK 2017 Site Visit

Mr. Rowe, Mr. McCarthy and Ms. Abdrakhimova of SRK conducted a site visit at the Goldstrike Project from 06 and 07 December 2017 accompanied by Dr. Smith, Ph.D., P.Geo., Mr. J. Lincoln, and Mr. Shabestari of Liberty Gold (Section 2.7).

At the Goldstrike Project site visit Mr. Rowe, Mr. McCarthy and Ms. Abdrakhimova visited RC drill sites and the sample collection methods were observed. Several drill hole collar locations were verified by GPS and compared to the Liberty Gold database. SRK reviewed the property geology and controls on gold mineralization, and reviewed mineralization styles in representative drill core. SRK was provided access to relevant data and interviewed Liberty Gold staff to understand the exploration work completed and the procedures used to compile, store, and confirm historic exploration data.

No significant issues were identified by SRK during the 2017 site visit, and the Liberty Gold procedures in place for the 2015 to 2017 Goldstrike Project meet NI 43-101 operational standards.

12.3.2 Database Validation

SRK has compared assay database against the assay certificates. The assay certificates were provided by ALS Global Labs. A total of 9,717 assays from the certificates were compared with the assays in the database. Only very minor differences were found in 47 assays.

12.3.3 Verifications of Analytical Quality Control Data

SRK has analyzed blanks, duplicates and standards collected by Liberty Gold. Standard assays were plotted by date and, as analysed by Liberty Gold, compared to statistics of the certified standards. Blanks were also plotted by date and compared, similar to Liberty Gold, to five times the lower detection limit. Duplicate assays were compared with original assays on scatterplots, and absolute relative deviation plots. The results confirmed the analyses completed by Liberty Gold.

12.3.4 Summary

In general, the analytical quality control data examined by SRK suggest that gold grades can be reasonably well reproduced. This indicates that the assay results reported by the primary assay laboratory are generally reliable for the purpose of resource estimation. The performance of the quality control samples is reasonable.

In SRK's opinion, the Liberty Gold 2015 to 2017 analytical results delivered by ALS are sufficiently reliable for the purpose of resource estimation. The historical data used in the resource estimate reported herein has been reviewed by Mr. Gray. The Qualified Persons are satisfied that the data set is acceptable for use in the preparation of the resource estimate.

13 Mineral Processing and Metallurgical Testing

The prior Goldstrike NI 43-101 report, which reported the mineral resource estimate (SRK, 2018), provides a comprehensive evaluation of the mineral processing and metallurgical testing aspects of the project. This work is summarized herein.

13.1 Historic Metallurgical Testing

Historic metallurgical sampling and testing (i.e. pre-Liberty Gold) extends back to the 1980s, though meaningful results are limited. However, Parsley (1994) reported that in 1993, USMX retained Kappes, Cassiday and Associates (KCA) to carry out cyanide-soluble assaying and column-leach testing on material from the Beavertail (BEV) and Moosehead (MOS) deposits (USMX, 1993). Material for two columns was crushed to 100% passing 4 in (10.2 cm). The columns utilized 708 kg of material from BEV and 805 kg of material from MOS. The material from BEV averaged 0.079 oz/ton Au (2.71 g/t Au) and that from MOS averaged 0.032 oz/ton Au (1.097 g/t Au). The column tests were carried out on a portion of each sample over a total of 61 days. Gold recovery was reported to be 78% for the MOS sample and 80% for the BEV sample.

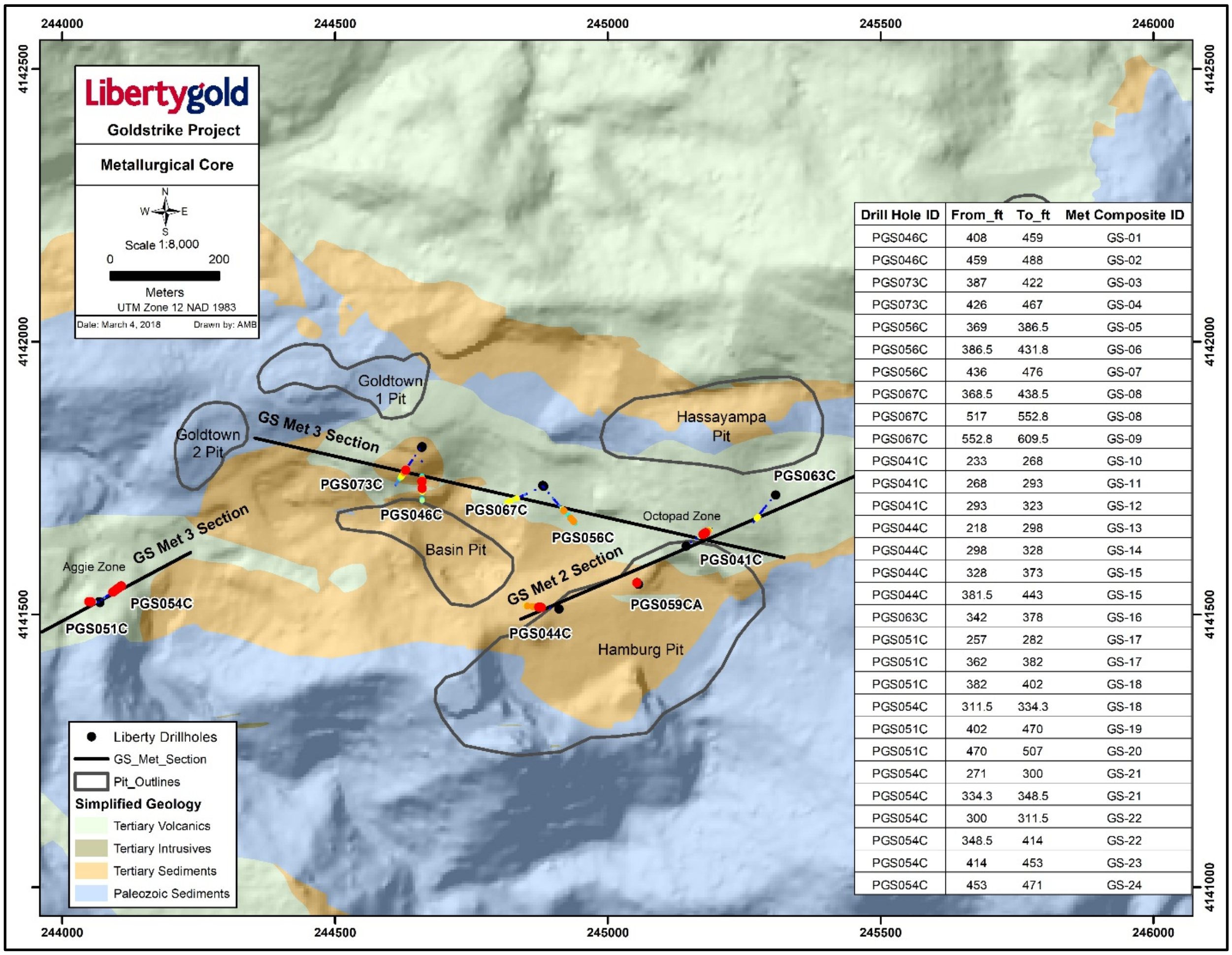
13.2 Liberty Gold Metallurgical Test Program

A Phase 1 bottle roll and column leach metallurgical program was commissioned by Liberty Gold in mid-2016 with work being conducted by KCA. The scope of work covered by KCA included:

- Sample preparation
- Head assays and geochemical analysis
- Comminution characterization, comprising SMC Testing Pty Ltd (SMC) test work and Bond abrasion index test work, sub-contracted to Hazen Research Inc. in Golden, Colorado
- 10 mesh and 200 mesh bottle roll tests
- Column leach testing at 80% passing 12.5 and 25.0 mm
- Tails screen analysis and assay by size fraction
- Load permeability testing
- Environmental characterization

13.2.1 Sample Selection

Metallurgical core samples were selected from ten PQ diamond core holes drilled in early 2016 from the Aggie, Basin, Hamburg and Octopad areas in the eastern portion of the historic mine trend Main Zone of mineralization (Figure 13-1).



Drill Hole ID	From_ft	To_ft	Met Composite ID
PGS046C	408	459	GS-01
PGS046C	459	488	GS-02
PGS073C	387	422	GS-03
PGS073C	426	467	GS-04
PGS056C	369	386.5	GS-05
PGS056C	386.5	431.8	GS-06
PGS056C	436	476	GS-07
PGS067C	368.5	438.5	GS-08
PGS067C	517	552.8	GS-08
PGS067C	552.8	609.5	GS-09
PGS041C	233	268	GS-10
PGS041C	268	293	GS-11
PGS041C	293	323	GS-12
PGS044C	218	298	GS-13
PGS044C	298	328	GS-14
PGS044C	328	373	GS-15
PGS044C	381.5	443	GS-15
PGS063C	342	378	GS-16
PGS051C	257	282	GS-17
PGS051C	362	382	GS-17
PGS051C	382	402	GS-18
PGS054C	311.5	334.3	GS-18
PGS051C	402	470	GS-19
PGS051C	470	507	GS-20
PGS054C	271	300	GS-21
PGS054C	334.3	348.5	GS-21
PGS054C	300	311.5	GS-22
PGS054C	348.5	414	GS-22
PGS054C	414	453	GS-23
PGS054C	453	471	GS-24

Source: Liberty Gold, 2017

Figure 13-1: Goldstrike Project metallurgical core plan map

A total of 24 variability composites were selected based upon the following geo-metallurgy criteria:

- Gold/Silver head grade;
- Cyanide solubility (AuCN %);
- Lithology;
- Alteration assemblages;
- Rock geochemistry.

Information related to F-Form(ation), F-Subunit, L-Llith1, Alt 1, Au Final, AuCN % and Ag assay was extracted from the Goldstrike Project geology database and were the primary geo-metallurgical parameters used for composite selection and makeup.

Six variability composites were made up of intervals taken from two or three adjacent drill holes with similar Formation, Subunit and Lithology characterization.

Metallurgical sampling and testing has been limited to the Main Zone of mineralization. Resources from the Moosehead, Caribou, Covington, Peg Leg and Padre areas have not been sampled or tested as part of this PEA.

Current resource geo-metallurgical characterization is in early stages of development and efforts to fill information gaps are needed to update the geology/mine database before pre-feasibility level studies can be completed. Additional geo-metallurgical data include:

- Gold cyanide solubility data is lacking in many areas and is needed to better identify oxide, transition and sulfide zones of mineralization.
- Develop more refined clay, jasperoid and breccia matrix models.

It is anticipated that future metallurgical composite test results will be sufficient to separate the Goldstrike resources into more than one geo-metallurgical type to accommodate projection of gold and silver recovery, by material type, rather than the single model currently being used for this PEA.

13.2.2 Head Analyses

Gold and silver head assays were conducted by KCA. Cyanide solubility (AuCN), preg-robbing assays, carbon and sulfur speciation and ICP analysis were conducted by ALS Chemex.

Gold grade ranged from 0.247 to 3.175 ppm, silver from 2.3 to 58.9 ppm and copper values were very low, ranging from 3 to 34 ppm. Cyanide soluble gold content ranged from 38 to 102% of the assayed head grade and cyanide soluble silver content ranged from 12 to 65% of the assayed head grade. Gold cyanide solubility (AuCN %) assays correlated with sulfide sulfur assays, with higher sulfide sulfur ($S^=$) content correlating to lower AuCN %.

Organic carbon values were low and ranged from 0.05 to 0.09%. Preg-robbing analysis indicated two of the composites to be mildly preg-robbing. Sulfide sulfur ranged from <0.01 to 1.65 %, and five of the 23 composites contained values >0.30% $S^=$.

From multi-element ICP geochemical analysis, Arsenic (As) levels were low, ranging from 86 to 552 ppm. Mercury (Hg) levels were low, ranging from 0.06 to 0.50 ppm. The concentrations of primary cyanide consumers (Cu, Ni and Zn) were low, suggesting minimal potential to effect cyanide consumption rates.

Whole Rock analysis was conducted on all composites. Silica (SiO_2) levels were high, ranging from 61.9 to 92.8%, but do not appear to have a material effect on cyanide solubility or gold extraction. Clay levels were low to moderate except for three composites that exhibited elevated Al_2O_3 content. Calcium levels were low to moderate with four composites containing Ca >5.0%.

13.2.3 Comminution Characterization (Hazen)

Ten samples were selected for comminution test work from drill holes where enough material was available and where the material represented major gold host rock types. Samples were subjected to the modified SMC (SAG Mill Comminution) drop weight test procedure to generate data for SAG mill, crushing and HPGR comminution evaluation by JKTech and abrasion index (Ai) testing at Hazen (Hazen, 2016).

SAG Mill Comminution Testing

Key comminution parameters tested on the ten composites included:

- A x b is a measure of resistance to impact breakage, and low values indicate hard materials, while high values indicate soft materials. The range of A x b, for the 10 composites, spanned a low of 38.0 to a high of 101.0 and averaged 60.8.
- Drop Weight Index (DWi, kWh/m^3) values are derived from the A x b results. It is a power input function required to calculate SAG Mill horsepower requirements for these materials being comminuted in a SAG Mill. The DWi ranged from 2.56 kWh/m^3 to 6.88 kWh/m^3, indicating soft to medium hard material.

The Goldstrike Project A x b and DWi values can be categorized as soft to moderate in comparison to the SMC worldwide database values. Although the Goldstrike oxide resource is not envisioned to require a milling circuit, the SAG comminution parameters are a primary component (output) of the SMC test, which also provides crushing energy parameters which are needed to design conventional crushing circuits, such as primary crushers and high pressure rolls (HPGR).

Other SMC test values that were evaluated include:

- Mih, which is the work index for grinding in high pressure grinding roll (HPGR) mills. (Not required for Goldstrike unless crushing finer than 12.5 mm is considered.)
- Mic, which is the work index in conventional crushers. (Some crushing might be required for a portion of the Goldstrike resource).

Conventional crushing related Mic results range from 3.0 to 7.9 kWh/t. Similar to the DWi results for SAG milling, the conventional crushing power input requirements are considered low to moderate, in the 10%-50% cumulative range of all samples tested by SMC.

Abrasion Index (Ai) Tests

Abrasion index tests were performed at Hazen Research, Inc. The abrasion index (Ai) for the 10 composites tested ranged from 0.1444 g to 0.7332 g and averaged 0.472 g, indicating moderate abrasiveness of the tested materials. The Ai results can be used by design engineers to calculate crusher and liner wear rates and corresponding operating cost for installed crushing plant and conveying equipment.

13.2.4 Bottle Roll and Column Leach Testing (KCA)

Bottle roll and column leach characterization test work was performed by KCA in Reno, Nevada (KCA, 2017). The following is offered as a summary of the findings from that report:

Laboratory scale bottle roll and column leach cyanidation testing was conducted on 24 drill core composites. The main objective for the testing program was to evaluate amenability of the

Goldstrike resources to crush or run-of-mine (ROM) heap leaching treatment methods. Direct agitated cyanidation (bottle roll) tests were conducted on all drill core composites at a target particle size of 80% passing (P_{80}) 1.7 mm and -75 µm, to determine gold extraction, extraction rate, reagent requirements and sensitivity to feed size. Column percolation leach tests were conducted on 20 of the 24 composites, targeting P_{80} feed size of either 12.5 mm or 25.0 mm, to evaluate heap leach amenability.

From column leach and bottle roll tests, 21 of the 24 composites were considered to be oxide, with AuCN >70%. Of the 20 samples that were column leached, 19 were considered to be oxide and all were readily amenable to simulated heap leach cyanidation treatment. Column gold extractions for the 19 oxide composites ranged from 65% to 97% and averaged 83.6% after 81 to 112 days of leaching.

Column test gold extraction rates were rapid, with greater than 80% of the total extractable gold, being recovered in the first 10 days of leaching. Additional gold was extracted after 10 days, but at a much slower rate.

Oxide column test cyanide (NaCN) consumptions ranged from 0.55 to 1.13 kg/mt, and averaged 0.85 kg NaCN/mt. KCA and industry experience related to commercial heap leach NaCN consumption rates indicate that consumption will be considerably lower. *"Based upon KCA's experience with mostly clean non-reactive ores, cyanide consumption in production heaps would be only 25 to 33 percent of the laboratory column test consumptions. For ores containing high amounts of leachable copper, higher factors should be utilized."*

Oxide column test lime consumption ranged from 0.5 kg/mt to 3.1 kg/mt and averaged 1.3 kg/mt.

One sulphide column sample (GS-03) required 1.6 kg/mt (4.0 lb/st) of cement addition for agglomeration prior to column loading and leaching.

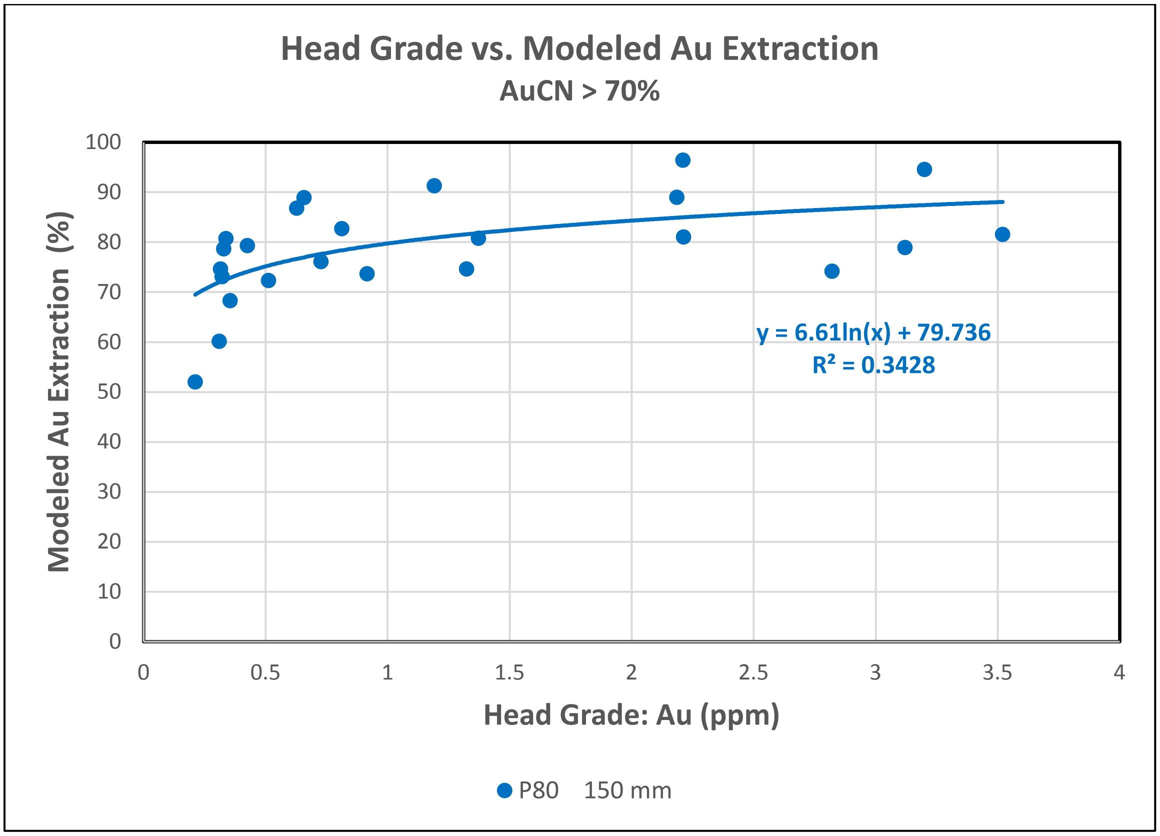
13.3 Gold Extraction Models

13.3.1 Recovery Models

Recovery models were developed by using the 2016-2017 bottle roll and column leach data reported by KCA and the 1993 reconstructed MOS and BEV bulk sample large diameter column leach data. The following serves as a brief description of the methodology followed to arrive at the recovery models:

- For each sample, perform leaches at a range of reasonable P_{80} particle sizes, typically 75 µm, 1,700 µm and 12.5 mm (½ in) and/or 25 mm (1 in).
- Determine extraction as a percentage of the fire assay and cyanide solubility value at each feed size, and graph gold extraction vs. particle size on a log/normal graph.
- Fit an equation through the data.
- Use the equation to calculate (extrapolate) the extraction at the desired leach feed particle size, e.g. ROM (or ± 6 in).

Gold extraction model results, for the 2016 to 2017 Goldstrike oxide composites (AuCN >70%), plus two large diameter column composites (MOS and BEV), tested by KCA in 1993, considering ROM heap leaching (P_{80} = 150 mm or 6 in) are plotted as Au Head Grade vs. Au Extraction (%) in Figure 13-2.



Source: Simmons, 2018

Figure 13-2: Head grade vs Au extraction (%)

13.3.2 Recovery Estimation Methodology

A three-step process was used to develop final gold recovery relationships for the Goldstrike Project:

Step 1: Head/Tail Grade/Recovery Models

Commercial operation gold recovery models are arrived at by applying system losses, due to heap leach inefficiencies and down-stream process plant solution losses, to the gold extraction models discussed in Section 13.3.1. A head grade/recovery relationship can be developed, incorporating the following components:

$$Au\ Rec = \frac{HG_{Au} - TG_{Au}}{HG_{Au}} = \frac{HG_{Au} - (a \times HG_{Au}^{b} + system\ losses)}{HG_{Au}} \qquad \textbf{Equation 1}$$

Where:

- HG_{Au} = Head Grade in g/t Au
- TG_{Au} = Tail Grade in g/t Au
- *a* and *b* are constants from the solution:ore ratio (S/O) fitted equation discussed in Step 2

Equation 1 calculates the expected gold recovery that can be achieved in a reasonably well operated heap leach. Under normal heap leach conditions, recovery takes place over an extended period of time and must be known as a function of time for planning purposes. To achieve this, the S/O Ratio concept is used.

Step 2: Solution:Ore Ratio Models

S/O ratio models determine the percentage recovery of extractable gold, as a function of time, represented by the S/O ratio. Because practical heap leach coarse particle material sizes are not normally tested under laboratory conditions, S/O ratio requirements, versus particle size, need to be established to derive a value at the desired coarse particle or ROM size. The process includes:

- Select percentages of the total extraction that will be used, typically 70%, 80%, 90%, 95% and 99% (ultimate) of total extraction.
- Construct a graph of S/O vs. particle size (normal/normal) and obtain a graphical relationship.
- From this, calculate the S/O ratio required at a specific particle size to achieve a target percentage of total extraction.
- Repeat for all percentages of total extraction for all leach feed types.
- Graph these values on a percent recovery of total extractable gold vs. S/O ratio.

Step 3: Bringing Steps 1 and 2 together

To relate recovery as a function of time, the above two methods (recovery as a function of head grade and recovery as a function of time) need to be incorporated together.

From the %Recovery of total extractable gold vs. S/O ratio graphs, a natural log equation can be developed of the format:

$$\%\ \text{of maximum recovery achieved at a given time} = d \times \ln(S/O) + f \qquad \textbf{Equation 2}$$

Where *d* and *f* are constants from the fitted equation.

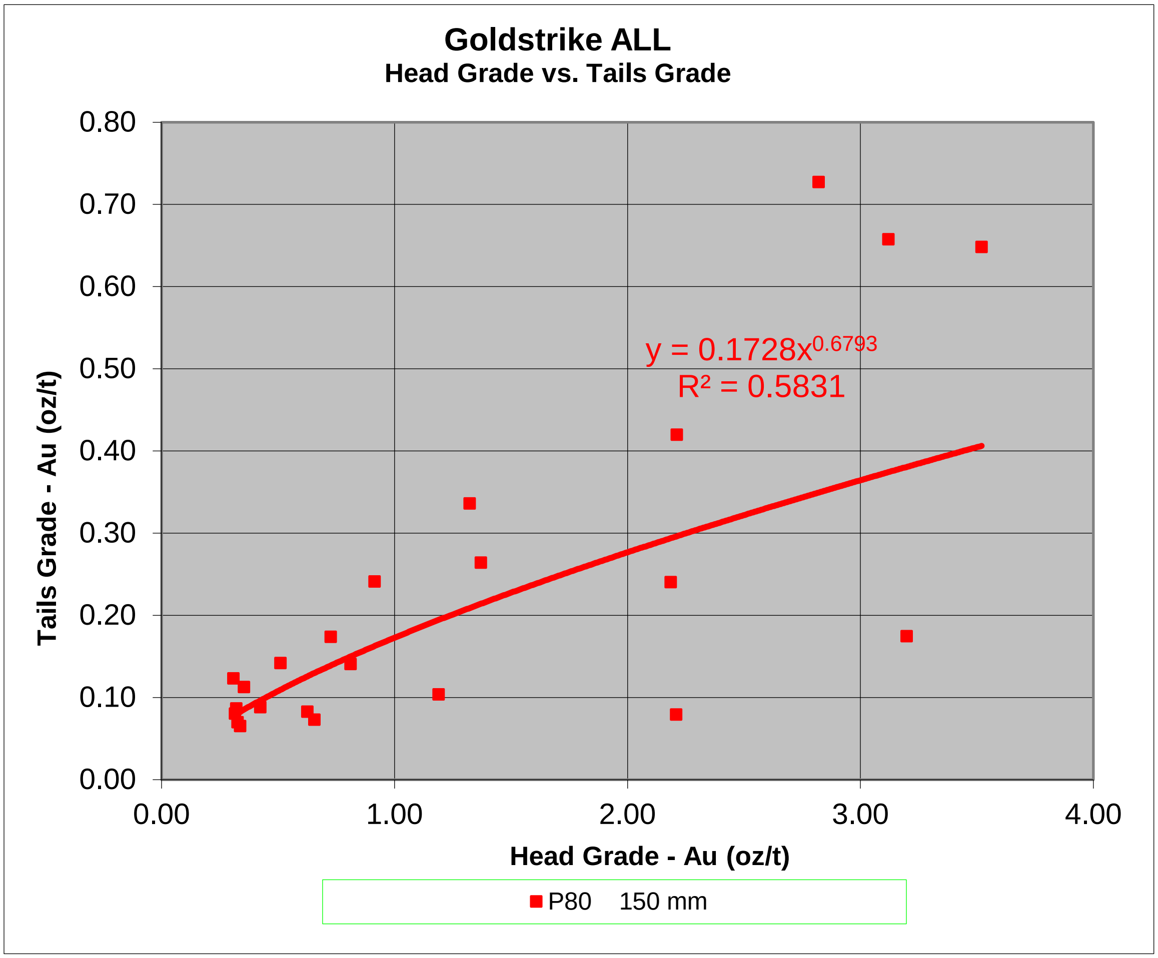
To determine the S/O ratio at any given time, the loading schedule, application rates and application schedules need to be combined and interpreted. The final recovery equation is then of the format:

$$Recovery\ \% = \frac{HG_{Au} - (a \times HG_{Au}^{b} + \text{system losses})}{HG_{Au}} \times (d \times \ln(S/O) + f) \qquad \textbf{Equation 3}$$

13.3.3 Head Grade/Tail Grade Relationships

Due to the limited number of metallurgical tests, derived from the various historic resource pit locations (areas), a single ROM Head Grade vs. Tails Grade model was developed for the overall Goldstrike resource (Figure 13-3).

Additional gold extraction model options were evaluated by sorting the test results by (historic mine) area location and by geology criteria and will be evaluated again after completion of additional metallurgical test work.



Source: Simmons, 2018

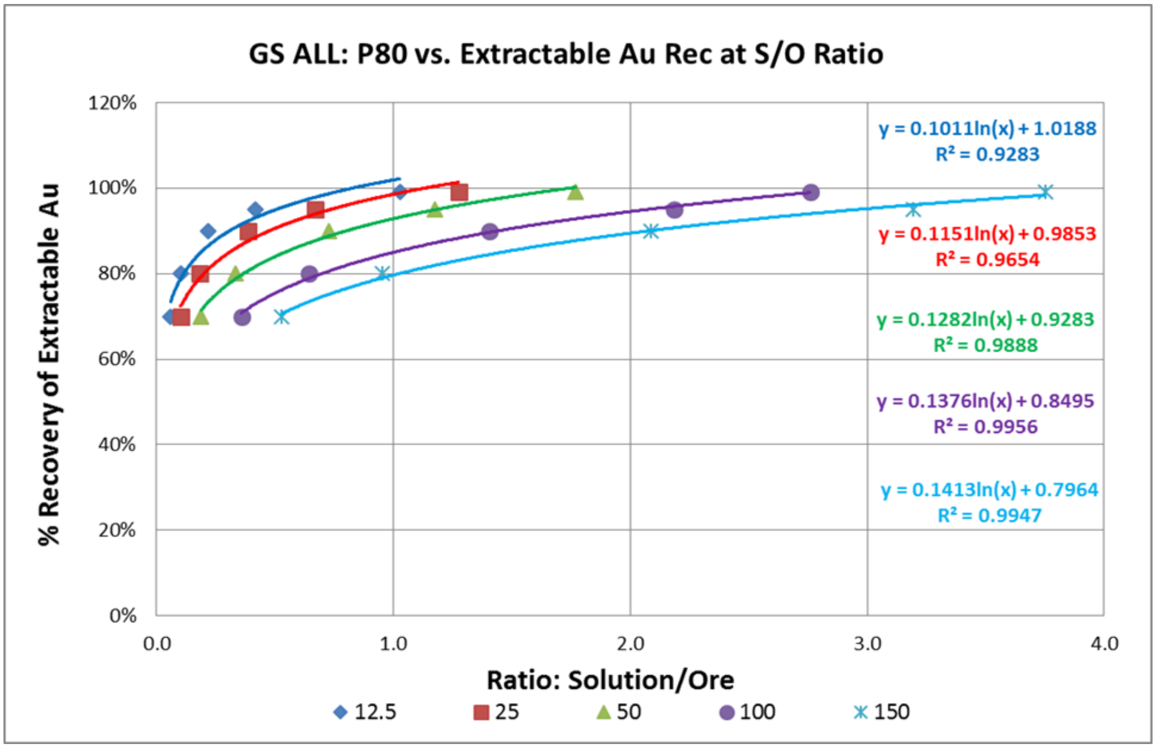
Figure 13-3: Head/tail grade ROM relationship model

13.3.4 Solution:Ore Ratio Models

The laboratory S/O data reported by KCA was adjusted to a six-meter heap height to represent commercial practice. The KCA data from the two large diameter core composites (MOS & BEV), tested in 1993, were reconstructed and are incorporated into the projection of S/O ratio requirements, at coarser particle size. Mr. Simmons believes that the MOS and BEV large diameter column tests provide valuable information and allow for a more accurate estimation assessment of S/O heap performance and gold extraction.

Plots of projected gold extraction at S/O ratio's representing 70%, 80%, 90%, 95% and 99% recovery of total extractable gold were used to model S/O ratios for the resource at various heap leach feed particle size and gold recovery rates. The results of this model method are shown graphically in Figure 13-4.

In projecting gold recovery for commercial practice, the recovery of total extractable gold is limited to 99% due to heap inefficiencies and other economic considerations. For a ROM heap leach, 99% recovery of total extractable gold is achieved at S/O ratio = 3.75. If crushing were to be used at Goldstrike, S/O ratios required to recover 99% of total extractable gold would be significantly lower, depending upon the degree of particle size reduction.



Source: Simmons, 2018

Figure 13-4: Recovery of total extractable gold vs. P80 and S/O ratio

The ROM (P_{80} = 150 mm or 6 in) trend line equation shown graphically in Figure 13-4, was used to obtain the constants *d* and *f* to be used Equations 2 and 3. In the Goldstrike case *d* = 0.1413 and *f* = 0.7964.

As more data becomes available, from future metallurgical test programs, it may be appropriate to break up the resource into more than one geo-metallurgical domain, with similar head/tail grade and S/O ratio response, for better estimation.

13.3.5 Summary of Leach Recovery Models

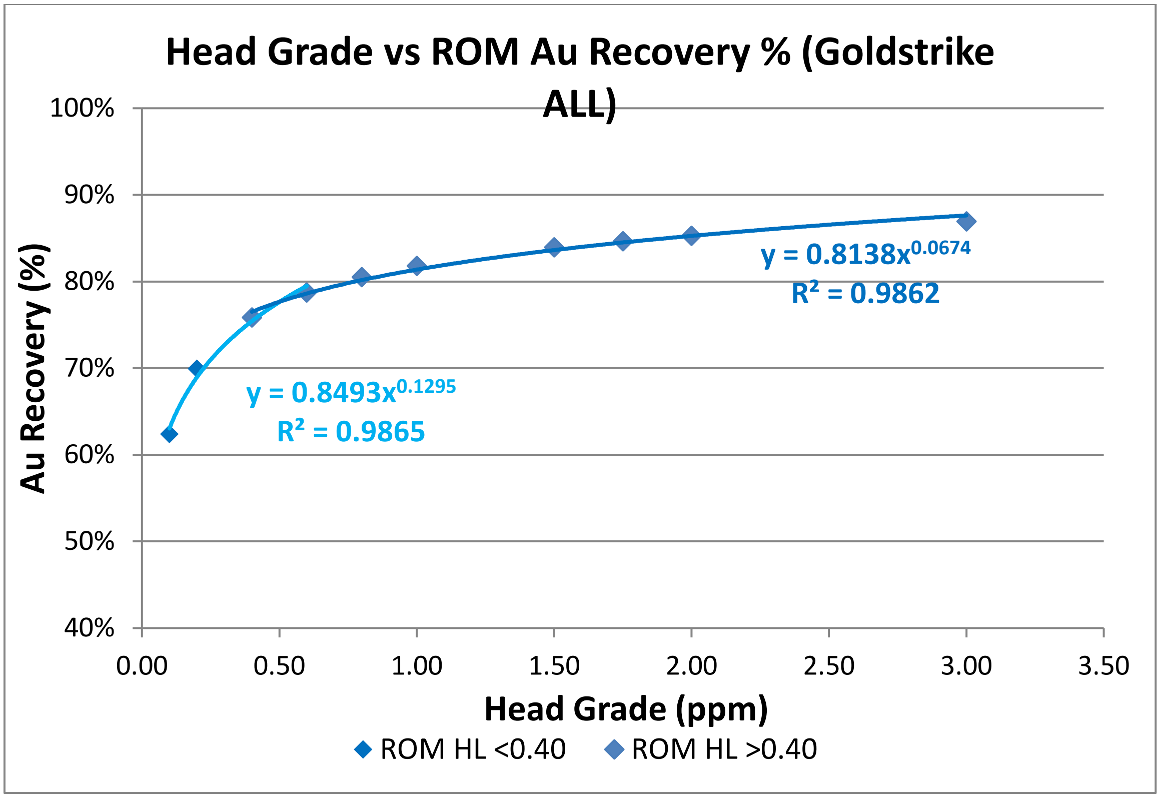
The heap leach values for the constants *a*, *b*, *d* and *f*, which are needed for Equation 3, are derived in Section 13.3.2 above and are summarized in Table 13-1. The values associated with system losses in the carbon-in-column circuit have been calculated to be approximately 0.000799 g/mt. The value for (d x ln(S/O) + f) has been calculated at a life-of-mine S/O ratio of 4.0.

$$\text{Recovery \%} = \frac{HG_{Au} - (a \times HG_{Au}^{b} + \text{system losses}) \times (d \times \ln(S/O) + f)}{HG_{Au}} \qquad \textbf{Equation 3}$$

Table 13-1: Gold recovery constants for ROM heap leach

Constants for Au Recovery Calculation (ROM)						
Grade Range	**a**	**b**	**d**	**f**	**d x ln(S/O)+f**	**System Losses (g/mt)**
GS ALL < 0.4	0.8493	0.1295	0.1413	0.7964	0.990	0.000799
GS ALL > 0.4	0.8138	0.0674	0.1413	0.7964	0.990	0.000799

Modeled ROM gold recovery is presented graphically in Figure 13-5, for two gold head grade ranges, <0.40 g/t Au and >0.40 g/t Au.



Source: Simmons, 2018

Figure 13-5: Goldstrike resource - gold recovery model graph

Gold recovery equations were derived for ROM heap leaching of the Goldstrike resource, for two gold grade ranges, <0.40 g/t Au and > 0.40 g/t Au and are shown below (Equations 4 and 5) and should be used for mine and process modeling and for economic evaluation.

Au Rec (%) = 0.8493(HG_{Au})^$^{0.1295}$ (for HG_{Au} <0.40 g/t)* **Equation 4**

Au Rec (%) = 0.8138(HG_{Au})^$^{0.0674}$ (for HG_{Au} >0.40 g/t)* **Equation 5**

13.4 Process Related Factors

Past operations used a combination of ROM and crush/agglomeration heap leaching. The current plan is to proceed with ROM heap leaching, based upon current metallurgical test results and the lower-grade resource.

The Goldstrike oxide resources appear to be readily amenable to crush and or run-of-mine conventional heap leaching practice. Oxide gold recoveries are considered to be good to excellent, depending upon resource area, cyanide solubility and particle size.

Cyanide and lime consumptions are low to moderate and deleterious elements such as Cu, Zn, Hg, Ni, etc. are low and will have minimum impact upon cyanide consumption.

14 Mineral Resource Estimates

14.1 Introduction

The mineral resource estimation for the Goldstrike Project follows the guidelines of Canadian NI 43-101 and is the initial resource reported for the project. Modeling and estimation of the mineral resources of the Goldstrike Project were completed in January, 2018 by Mr. Gray, qualified person with respect to mineral resource estimations under NI 43-101. The effective date of the resource estimate is 08 February 2018. Mr. Gray is independent of Liberty Gold by the definitions and criteria set forth in NI 43-101; there is no affiliation between Mr. Gray and Liberty Gold except that of an independent consultant/client relationship.

This resource estimate includes mineralization in the main Goldstrike area, that of historic production, as well as the much smaller Mineral Mountain area, approximately 3 km to the northwest. The estimation approach is consistent in the two regions of the Goldstrike Project.

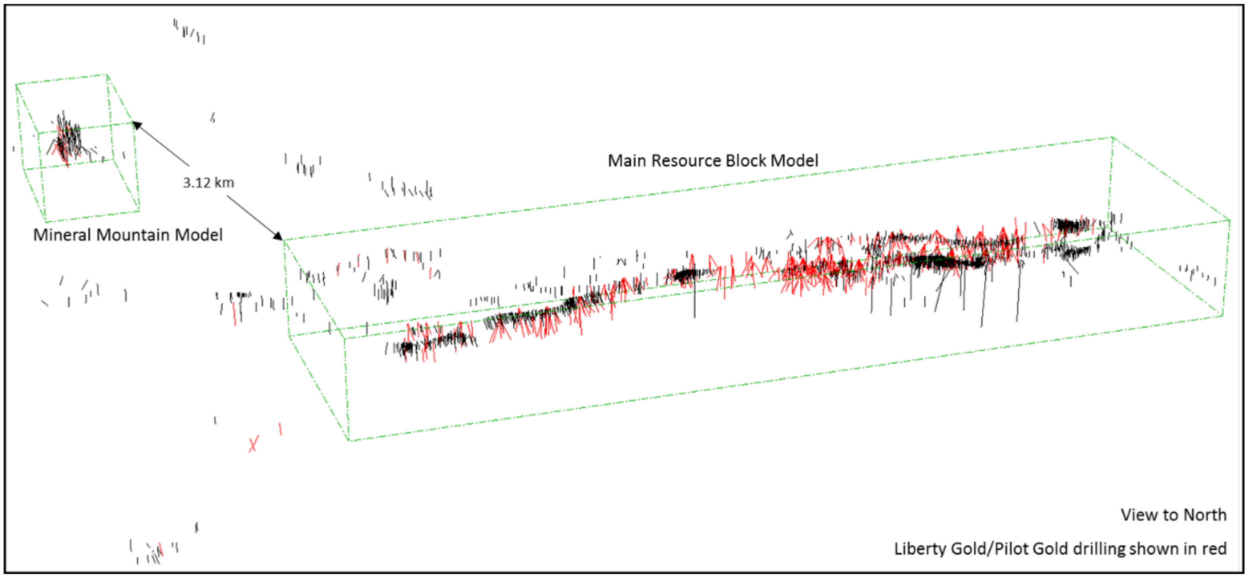
It is noted that the PEA reported in this current NI 43-101 technical report only considers the main Goldstrike area (i.e. not Mineral Mountain). Also, this current technical report makes reference to the March 2018 SRK Report (SRK, 2018) for a more detailed accounting of the Goldstrike Project mineral resource estimates.

14.2 Available Data and Model Setup

The Goldstrike gold resources were estimated using data generated by Liberty Gold and previous historical operators, including Tenneco, Inspiration and USMX. These data, which are primarily derived from RC and to a much lesser extent diamond-core drill holes, as well as as-mined digital topography of the project area, were provided to Mr. Gray and SRK by Liberty Gold and incorporated into a digital database. The project database is in UTM Zone 12 NAD83 coordinates (meters).

The Goldstrike resource is based on assay data available as of 24 December 2017. Figure 14-1 illustrates the limits of resource block model grids and drilling available for estimation. In total, 1,730 holes, totalling 153.0 km, fall inside the limits of block models supporting this Mineral Resource estimate; 461 of these have been drilled by Liberty Gold.

Grades were estimated into two block models, one covering the main Goldstrike area, including all historic mine excavations, and another to the northwest enclosing mineralization in the Mineral Mountain area; block size in both areas is 10x10x10 m (refer to the March 2018 SRK Report [SRK, 2018] for block model details).



Source: Advantage Geoservices, 2018

Figure 14-1: Goldstrike resource block model volumes and available drill holes

14.3 Deposit Geology Pertinent to Resource Modeling

Within the resource area, Eocene basal conglomerate, sandstone, mudstone and limestone of the Claron Formation overlie folded and faulted middle and Upper Paleozoic limestone, dolomite, sandstone and shale along an unconformity. The Claron Formation is overlain by limestone, tuff and volcanic rocks of Oligocene and Miocene age. All strata are intruded by 18 Ma and 13 Ma dykes. All strata were subject to Miocene normal and oblique-slip faulting, cutting the stratigraphic sequence into an arcuate series of horsts, grabens and half grabens.

Gold mineralization is closely associated with brecciated jasperoid and iron oxides, and, where unoxidized, with disseminated arsenical pyrite. Gold mineralization shows a strong affinity for the basal contact area of the Claron Formation, as well as carbonate rocks immediately underlying the unconformity, forming sheet-like bodies tilted gently northward. Gold mineralization is exposed on surface where the unconformity meets the surface, and “skies out” to the south where the underlying Paleozoic strata is exposed by tilting, faulting and erosion. Gold mineralized zones are thicker and higher-grade within and adjacent to many of the faults in the resource area, which are interpreted to be syn-mineral. Only one fault, the Hassayampa Fault bounding the Goldstrike Graben, is interpreted to be largely post-mineral, and separates mineralization in the Goldstrike Graben to the south from mineralization in the Dip-Slope zone to the north.

Within the resource area, gold mineralization in the basal unit of the Claron Formation ranges from 0 to 50 m thick and does not extend above the lower contact of the Claron Red Bed unit or (where absent) the Claron limestone. While argillic alteration and rare silicification is located along faults within the overlying Oligo-Miocene volcanic sequence, it is invariably un-mineralized. (small areas of gold mineralization have been recognized within the Claron limestone and overlying strata elsewhere on the property). Gold is also present within steep shear zones in 18 Ma dykes north of the Covington Pit.

The presence of gold along, above and below the Claron Formation basal unconformity, and along many of the normal and oblique-slip faults throughout the resource area, forms the primary basis for modeling the spatial distribution of gold in the resource model.

14.4 Modeling of Geology

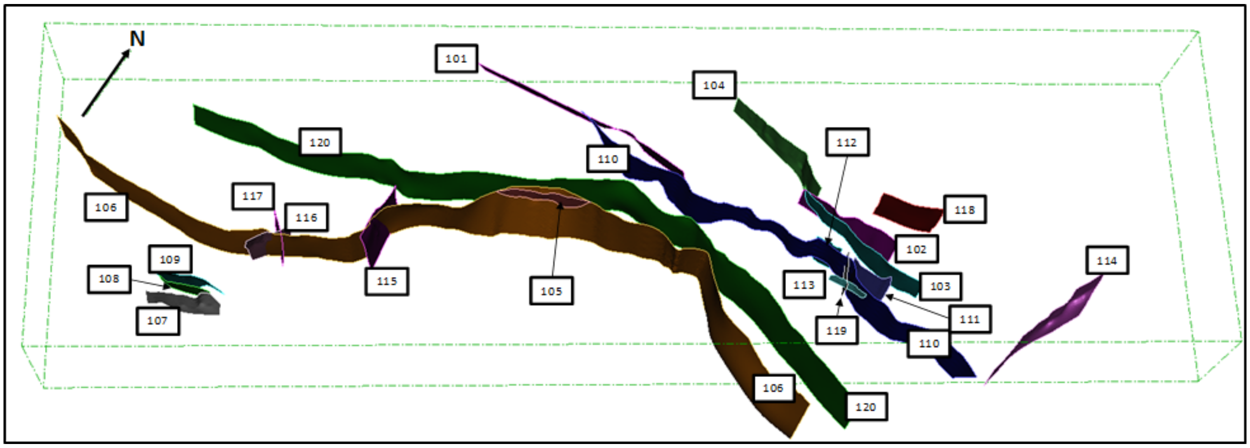
The geologic basis for grade estimation was the 3D geologic interpretation provided by Liberty Gold in the form of surfaces and solids developed in Leapfrog as exploration progressed. Modeled surfaces included the basal contact of the Claron Formation, and faults thought either to control the emplacement and geometry of mineralization or to offset it. Solids were generated to bound intrusive bodies and to constrain three isolated small volumes of high-grade mineralization within the Chainman Shale. Areas within 50 m of the Claron (stratigraphic) and fault surfaces contain the majority of the reported Goldstrike mineralization.

Implementation of the structural and stratigraphic surfaces as control for grade estimation was based on proximity to those various surfaces. Two sets of block models, one for faults and one for Claron surfaces, were populated with:

- Orthogonal distance to the closest surface
- Integer code denoting that surface
- Integer code representing the side of the surface (1 or 2; top/bottom, north/south or east/west)

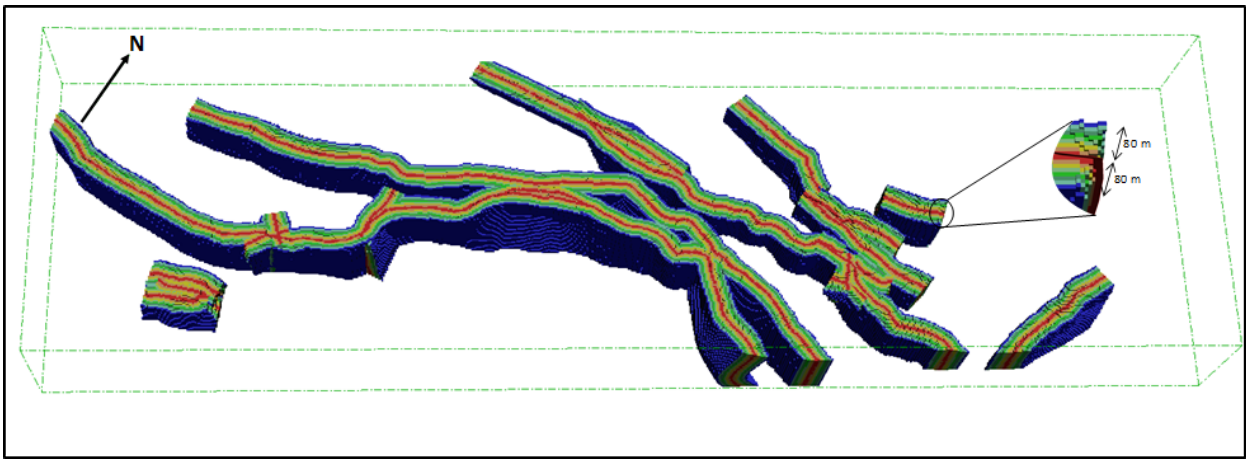
Coding of the above parameters was based on an 80-m spherical search. Plots of grade versus distance to structures were not compelling for all structures; the 80-m search distance was partly based on the fact that 80 m captured most mineralized intervals and the approach ensured that grades would be interpolated parallel to interpreted structures. Composite data was back-tagged with the above variables for the two sets of surfaces. Resultant block values were merged to generate a three-digit block code for use as geologic control in grade estimation.

Figure 14-2 and Figure 14-3 illustrate the 20 main Goldstrike area fault surfaces and the orthogonal distances coded into the block model.



Source: Advantage Geoservices, 2018

Figure 14-2: Main Goldstrike area fault surfaces



Source: Advantage Geoservices, 2018

Figure 14-3: Coded distance to mineralizing fault surfaces

14.5 Assay Compositing

Assays were composited to the average sample length of 1.524 m (5 ft); 98% of sample intervals were 5 ft in length. Missing and un-sampled intervals were included at a nominal grade of 0.001 g/t to prevent inappropriate grade smearing. Composites of less than half the target length (<0.75 m) were removed from the estimation dataset.

14.6 Grade Capping

Grade capping was used to control the impact of outlier high-grade samples on the overall resource estimate. For this estimate, composite grades were examined, by surface and solid association, in histograms and probability plots to determine levels at which values are deemed outliers to the general population. These cap values were applied by controlling surface or solid (see March 2018 SRK Report [SRK, 2018]).

Uncapped and capped composite statistics are presented in Table 14-1 and Table 14-2. In some cases, coefficients of variation (CV = standard deviation ÷ mean) are somewhat high for typical grade estimation. This is due in part to the very short composite length and is felt to be sufficiently mitigated by the requirement of a minimum of five samples for estimation and 10 from any one hole.

Table 14-1: 1.5 m composite statistics – main Goldstrike

Description	Code	Uncapped Au (g/t)				Capped Au (g/t)			
		Count	Mean	Max	CV	# Cap	Mean	Max	CV
Min. Fault	101	1,540	0.02	1.28	3.6	14	0.02	0.45	3.0
	102	4,250	0.15	6.42	2.5	5	0.15	4.00	2.4
	103	5,248	0.27	8.23	2.1	2	0.27	7.00	2.1
	104	1,862	0.12	6.23	3.6	16	0.10	2.00	2.8
	105	2,235	0.33	7.15	2	1	0.33	7.00	2.0
	106	12,403	0.23	12.67	2.4	11	0.22	5.50	2.3
	107	543	0.10	2.43	2.7	7	0.09	1.20	2.3
	108	1,208	0.27	7.97	1.8	1	0.26	3.60	1.6
	109	1,654	0.22	5.55	1.8	1	0.21	4.00	1.7
	110	8,354	0.20	8.46	2.8	51	0.19	3.50	2.5
	111	1,443	0.26	6.42	2.3	3	0.26	5.00	2.2
	112	923	0.30	5.64	2.3	2	0.30	4.50	2.3
	113	262	0.40	9.22	2.6	10	0.30	2.00	1.7
	114	1,844	0.32	21.26	3.8	13	0.28	6.00	2.9
	115	1,207	0.12	5.90	2.7	3	0.12	2.60	2.4
	116	375	0.47	11.98	2.5	3	0.44	6.00	2.3
	117	900	0.14	3.46	2.4	3	0.14	2.50	2.3
	118	1,524	0.11	7.20	3.3	12	0.10	2.00	2.7
	119	1,108	0.33	16.42	2.8	7	0.30	4.00	2.1
	120	8,129	0.07	7.35	3.7	26	0.06	2.00	3.2
Total:		***57,012***	***0.19***			***191***	***0.19***		
Min. Strat.	150	228	0.14	2.38	1.9	0	0.14	2.38	1.9
	151	28,122	0.24	21.26	2.7	9	0.23	10.30	2.6
	152	14,481	0.15	10.11	2.8	16	0.14	4.50	2.6
	153	3,612	0.23	11.98	2.3	14	0.23	3.50	2.1
	154	5,662	0.24	23.31	3.1	13	0.23	6.00	2.5
	155	2,173	0.11	4.11	3	14	0.10	2.00	2.7
	156	5,276	0.22	7.97	2.3	10	0.22	4.50	2.2
	157	3,556	0.05	7.35	4.2	21	0.05	1.20	3.1
	158	1,562	0.03	2.08	3.4	14	0.02	0.45	2.7
	159	2,658	0.29	7.15	2.1	7	0.28	3.80	2.0
	160	1,084	0.12	3.18	2.2	4	0.12	2.00	2.1
Total:		***68,414***	***0.20***			***122***	***0.19***		
Intrusives	1001	822	0.18	18.23	6.5	20	0.07	1.50	3.6
	1002	109	0.05	0.71	2.8	0	0.05	0.71	2.8
Total:		***931***	***0.16***			***20***	***0.07***		
High-Grade Bodies	1003	457	1.36	16.24	1.6	8	1.30	9.00	1.5
	1004	10	11.68	102.00	2.7	1	2.38	9.00	1.6
	1005	7	75.09	405.84	2	2	3.89	9.00	1.1
Total:		***474***	***2.67***			***11***	***1.36***		

Table 14-2: 1.5 m Composite statistics – Mineral Mountain

Description	Code	Uncapped Au (g/t)				Capped Au (g/t)			
		Count	Mean	Max	CV	# Cap	Mean	Max	CV
Min. Fault	201	335	0.40	5.98	2.2	5	0.40	4.1	2.1
	202	954	0.18	4.01	2.5	8	0.17	2.8	2.3
	203	863	0.04	1.85	3.3	8	0.03	0.6	2.6
	204	102	0.04	0.75	3	4	0.02	0.2	1.9
Total:		***2254***	***0.15***			***25***	***0.15***		
Min. Strat.	250	1862	0.06	3.54	3.4	10	0.05	1.2	2.7
Intrusive	2001	3007	0.08	2.81	2.6	9	0.08	1.7	2.4

The impact of grade capping can be measured by comparing estimated uncapped and capped grades above a zero cut-off. Metal removed by capping is 2.3% in the main Goldstrike area and 2.7% at Mineral Mountain.

14.7 Grade Interpolation

Gold grade was estimated by inverse distance squared (ID^2) weighting as opposed to a geostatistical method. The primary reason for this choice was the variability in mineralization direction – following interpreted surfaces – and the associated challenge in calculating appropriate experimental variograms. Global and downhole variography indicated approximately a 15% nugget effect and the choice of inverse distance squared was therefore made as the most appropriate weighting. The estimation was completed using Geovia GEMS® software.

The project is well-suited to the use of coordinate transformations (flattening relative to mineralizing surfaces) to allow sample selection using typical anisotropic search ellipses. However, the number of mineralizing surfaces involved would have led to a very complex and cumbersome implementation of such a technique.

Instead, control on sample selection is based on the coding of blocks and composites with the distance to, and side of, the various surfaces as described above. Three-digit "SD-Codes" (Side-Distance) were used as geologic control and, in this way, allowed grade interpolation parallel to control surfaces using a spherical search, instead of trying to follow surfaces with variably oriented elliptical searches. Estimation was by ID^2 in two passes for mineralized surface blocks and in a single pass for intrusives and segregated high-grade blocks; parameters are listed in Table 14-3. All SD-Codes and Intrusive/high-grade contacts are treated as hard in Pass 1. Boundary conditions are softened across one distance band in Pass 2 for grade interpolations associated with control surfaces

Table 14-3: ID² estimation parameters

Geologic Control		Search Direction (dip/dip dir'n)			Dimensions Pass1 (m)			Dimensions Pass2 (m)		
		X	Y	Z	X	Y	Z	X	Y	Z
Claron (Min. Strat.)			isometric		50	50	50	100	100	100
Mineralized Faults			isometric		50	50	50	75	75	75
Main Area, Intrusives	1001	00/075	87/165	-3/165	50	75	25		N/A	
	1002	00/.69	-80/159	10/159	50	75	25		N/A	
Main Area, High-Grade Bodies	1003		isometric		75	75	75		N/A	
	1004		isometric		75	75	75		N/A	
	1005		isometric		75	75	75		N/A	
Mineral Mountain, Intrusive										
	2001	61/244	-24/208	15/125	150	75	100		N/A	

Estimation Pass	Number of Samples for Estimate		
	min	max	max/hole
1	5	24	10
2	5	24	10

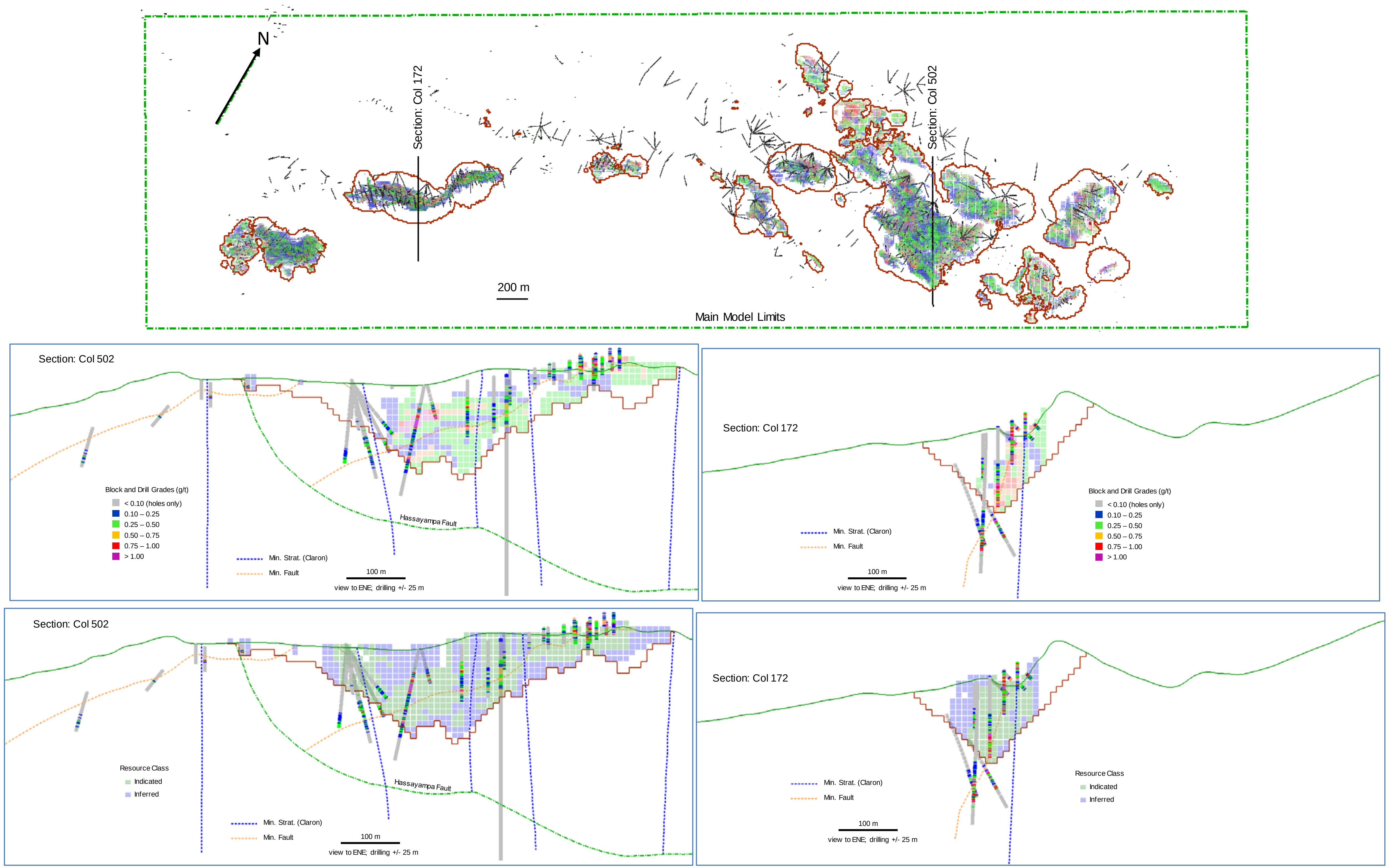
14.8 Density Assignment

An average density of 2.52 t/m³ was applied to all mineralized and un-mineralized rocks. Results of 160 core samples tested by Liberty Gold show low density variability, numerically and spatially, reflecting the state of pervasive oxidation.

14.9 Model Validation

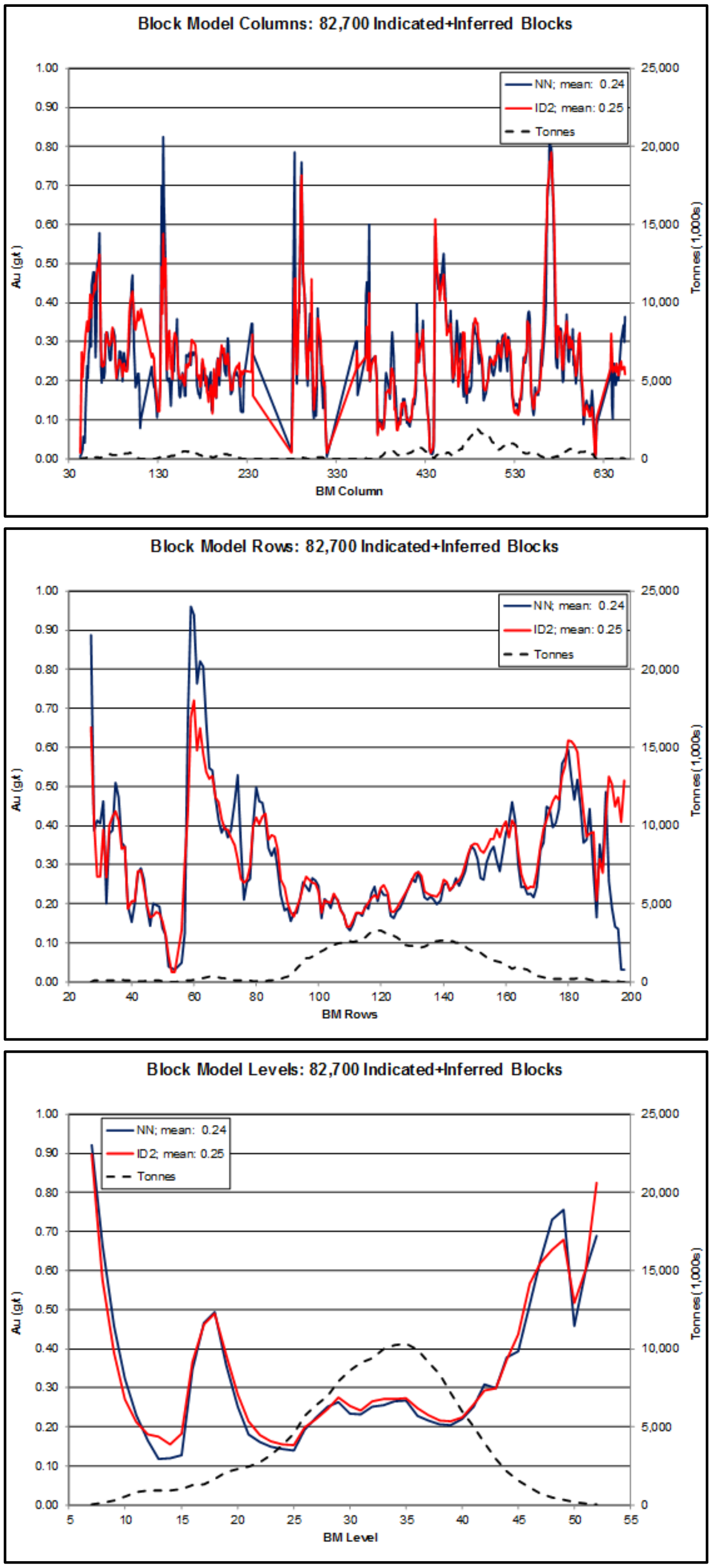
Estimated grades were validated visually by comparing composite to block values in 3D and on plan views and cross-sections. Liberty Gold geology staff reviewed estimates in detail and provided comments that aided in adjusting parameters such that estimated grades closely match the supporting drill data and their geologic understanding of the deposit. Example sections through the block model are presented in Figure 14-4.

A nearest neighbour (NN) validation model was also interpolated using parameters consistent with those used for the ID² resource estimate. To appropriately match the block size, a 10-m set of composites was generated for the NN interpolation. The two models are compared spatially in swath plots presented in Figure 14-5. Globally, model average grades above zero cut-off compare very closely indicating no bias; mean grades at zero cut-off are shown on the swath plots.



Source: Advantage Geoservices, 2018

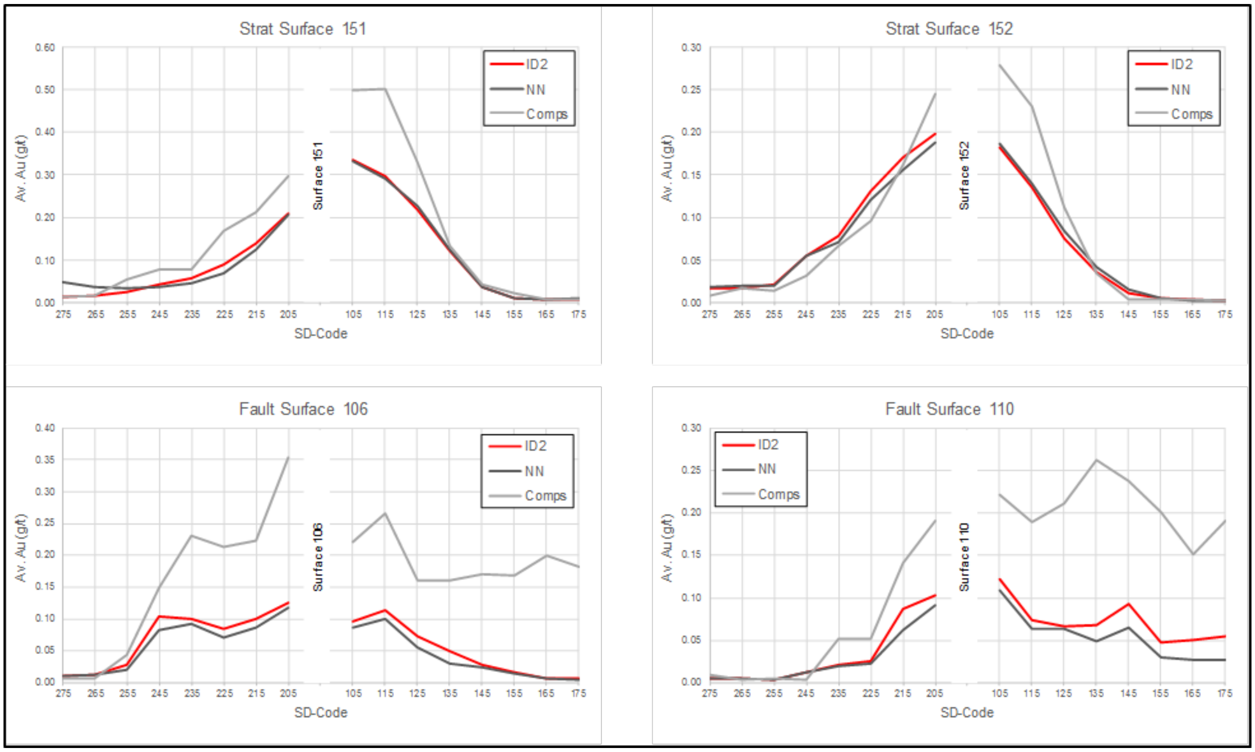
Figure 14-4: Example block model cross-sections



Source: Advantage Geoservices, 2018

Figure 14-5: Swath plots comparing ID^2 and NN gold grades

Plots comparing composite and block grades versus distance to control surfaces were also checked to validate the estimation process. Examples for the main surfaces in the pit are presented in Figure 14-6. There is good correspondence between the ID^2 and NN models, both of which have a similar profile to the supporting, non-declustered, composites.



Source: Advantage Geoservices, 2018

Figure 14-6: Grade vs. distance to control surfaces

14.10 Mineral Resource Classification and Tabulation

The mineral resource has been classified based on available drill data for grade estimation, by proximity to the interpreted geologic controls and by inclusion in an optimized pit shell. Inferred mineral resource is within 50 m of a sample or must be estimated by at least two holes. Indicated mineral resource must lie within 40 m of sample data and must be estimated by at least three holes if within 40 m of a control surface or by at least two holes if within 30 m of a control surface. Intrusives and the isolated high-grade volumes were classified as Indicated where within 40 m of sample data and estimated by at least three holes.

Measures were taken to ensure the resource meets the condition of "reasonable prospects of eventual economic extraction" as required under NI 43-101. An optimized pit shell was generated by Mr. Carlson, P.Eng. of SRK, an Independent Qualified Person as defined by NI 43-101, using Whittle™ software; only blocks within the pit volume are included in the Mineral Resource. Pit optimization parameters are listed in Table 14-4.

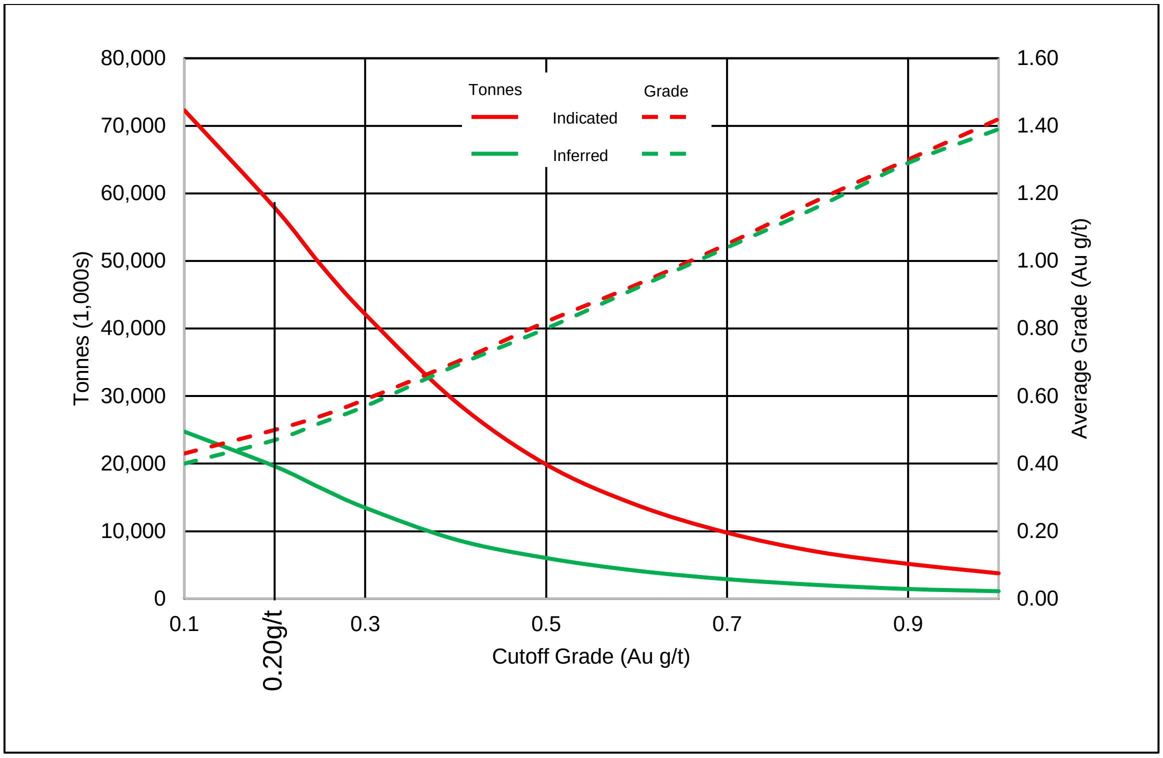
Table 14-4: Pit optimization parameters for mineral resources

Parameter	Value for Optimization and Units
Metal Price	US$ 1500/oz
Selling cost	US$ 2.20/oz
Recovery	≥ 0.4 g/t, rec% = 0.8133*Au$^{0.0677}$
	< 0.4 g/t, rec% = 0.8491*Au$^{0.1301}$
Mining cost	US $2.25 / tonne
Process cost	US $4.30 / tonne (incl. G&A)
Pit slope	50°

The mineral resource estimate is quoted at a cut-off of 0.20 g/t – a cut-off considered appropriate and achievable based on anticipated mining and processing conditions. At a cut-off of 0.20 g/t the total resource has a strip ratio of 1.7:1. To illustrate grade sensitivity, the in-pit estimate is presented at a series of cut-off grades in Table 14-5 and graphically in Figure 14-7.

Table 14-5: Goldstrike 2017 mineral resource (effective date 08 February 2018)

Cutoff (Au g/t)	Indicated			Inferred		
	Tonnes (1,000s)	Grade Au (g/t)	Ounces Au (1,000s)	Tonnes (1,000s)	Grade Au (g/t)	Ounces Au (1,000s)
0.10	72,303	0.43	994	24,739	0.40	320
0.20	**57,846**	**0.50**	**925**	**19,603**	**0.47**	**296**
0.25	49,553	0.54	865	16,443	0.52	274
0.3	42,102	0.59	800	13,465	0.57	247
0.4	29,159	0.70	655	8,760	0.69	195
0.5	19,861	0.82	522	6,025	0.80	156
0.6	13,874	0.93	416	4,150	0.92	123
0.7	9,774	1.05	331	2,895	1.04	96
0.8	6,947	1.18	264	2,041	1.16	76
0.9	5,165	1.30	215	1,443	1.29	60
1.0	3,768	1.42	173	1,115	1.39	50



Source: Advantage Geoservices, 2018

Figure 14-7: Goldstrike 2017 estimate – grade-tonnage curve

Table 14-6 breaks the resource down by area as well as by mineralization type. Well over 50% of the resource is associated with the Claron Formation – the stratigraphically controlled mineralization. The Mineral Mountain area represents less than 5% of the currently outlined resource.

Table 14-6: Mineral resource by area and mineralization type (0.20 g/t Au cut-off, 08 February 2018)

Area & Min. Type	Indicated			Inferred		
	Tonnes (1,000s)	Grade Au (g/t)	Ounces Au (1,000s)	Tonnes (1,000s)	Grade Au (g/t)	Ounces Au (1,000s)
Main Goldstrike						
Fault Controlled	14,475	0.48	223	9,732	0.49	153
Strat. Controlled	41,431	0.49	656	9,333	0.46	138
Intrusive Hosted	20	0.26	0	1	0.65	0
High-Grade Body	355	1.59	18	1	1.33	0
Subtotal:	**56,281**	**0.50**	**897**	**16,066**	**0.47**	**291**
Mineral Mtn.						
Fault Controlled	1,105	0.64	23	431	0.31	4
Strat. Controlled	101	0.31	1	106	0.32	1
Intrusive Hosted	359	0.40	5			
Subtotal:	**1,565**	**0.57**	**28**	**537**	**0.31**	**5**
Total:	**57,846**	**0.50**	**925**	**19,603**	**0.47**	**296**

Mr. Gray and Mr. Rowe are unaware of any factors that may potentially affect the resource estimate.

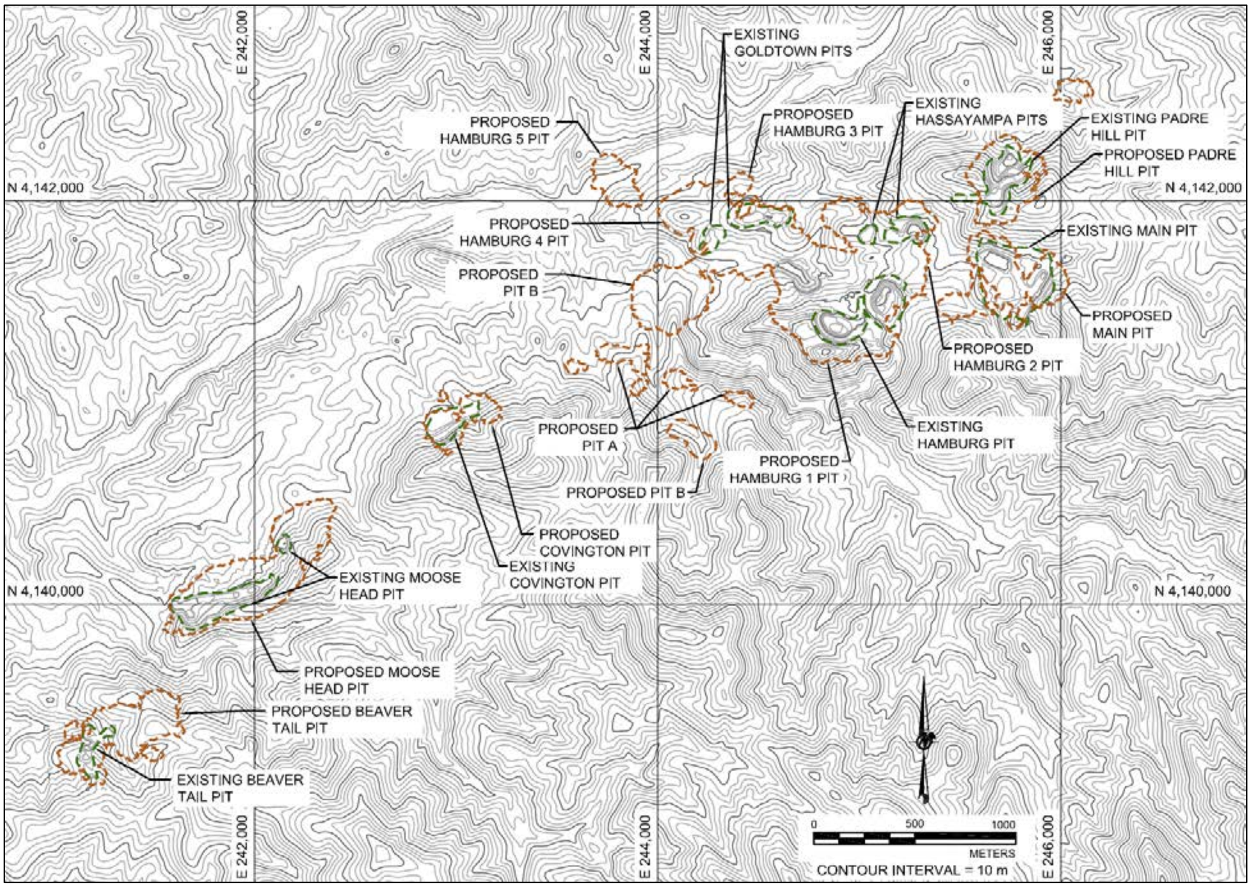
15 Mineral Reserve Estimates

There are no current mineral reserve estimates for the Goldstrike Project.

16 Mining Methods

16.1 Open Pit Slope Angles

The pits will be developed in an area where there are existing pits, some of which have been partially backfilled. Figure 16-1 shows the topography and locations of the existing pits along with outlines of the planned pits.



Source: Golder 2018

Figure 16-1: Location of Existing and Planned Pits

Open pit mines require stable pit slopes to allow access to the orebody and safe mining operations as the pits are developed and deepened. Pit slope stability is dependent on the strength of the rock mass, structural geology, ground water conditions, the slope angle and height, as well as other factors. The strength of the rock mass can in turn be dependent on the geologic formations and alteration of the rock units from mineralizing fluids as well as degree of weathering.

Generally, the stability of open pit slopes developed to the same height and at the same slope angles in the same geologic units is expected to be similar to past open pits providing the material properties, groundwater, and structural geology conditions are also similar. At the Goldstrike project, the existing open pits occur in the same geologic units and structural conditions, as the planned open pits.

At the Goldstrike project, stable open pit slopes were developed during previous mining at slope angles of about 50 degrees up to slope heights of 220 m in the Paleozoic rocks where geologic structure orientations are favorable for slope stability. In some of the existing pits, the slopes that appear to have been developed with inter-ramp slopes of 50 degrees became unstable during or after mining. Typically, the unstable slopes in the existing pits are composed of either altered and weathered Tertiary age volcanic rock or Paleozoic rocks containing geologic structures in orientations unfavorable for stability. For the PEA, the existing pits will in some cases be deepened to produce slope heights ranging from 20 to 220 m, and new pits will be developed in areas where there are no existing pits. To estimate the steepest inter-ramp pit slopes that can likely be obtained to allow mining of the planned pits, Golder reviewed the existing geologic mapping data prepared by Liberty Gold geologists, a simplified geologic model dividing the geologic units in three major units (Paleozoic rocks, Claron Formation, and Tertiary rocks), logs of geologic coreholes, depth to groundwater in drill holes and core from two of the existing exploration core holes that are located near the planned pit slopes. The geologic conditions of stable and unstable existing pit slopes were also observed during a site visit.

The stability of planned open pits was evaluated by comparing the geologic conditions, groundwater and other conditions that resulted in stable pit slopes in existing pits. Where the conditions in the planned open pits appear to be similar to the conditions in existing pits that allowed stable 50 degree inter-ramp slopes to be obtained, similarly steep slopes are recommended for the planned pits. Where conditions in the planned open pits were estimated to be similar to the conditions that resulted in slope instability in the existing pits, the inter-ramp pit slopes recommended for use in pit optimization studies were reduced to less than 50 degrees, and an inter-ramp slope angle appropriate to allow mining operations to continue to access the leach material were recommended instead.

Inter-ramp pit slope angles (IRA) and the data and engineering analyses used in the pit optimization for the Goldstrike pits were based on information contained in a report prepared by Golder (2018). A summary of these inter-ramp slope angle design criteria is shown in Table 16-1. The inter-ramp slope angles vary with pit, pit design sector, and rock type.

Table 16-1: Pit slope design parameters (based on data from Golder)

Pit Slope Design Sector Recommendations			
Pit	**Rock Type**	**Slope Dip Direction (Degrees Clockwise)**	**IRA (Degrees)**
Beaver Tail	Pz and Tc	260 to 330	40
		330 to 260	50
	Tv	All	40
Moose Head	Pz	All	50
	Tc	All	50
	Tv	All	40
Covington	Pz	270 to 020	42
		020 to 270	46
	Tc	270 to 020	42
		020 to 270	46
	Tv	All	40
Pit A+B	Pz and Tc	280 to 350	40
		350 to 280	50
Pit C	Pz and Tc	030 to 330	50
		330 to 030	45
Main Pit	Tv	All	40
	Pz and Tc	180 to 240	40
		240 to 180	50
Padre Pit	Tv	All	40
	Pz and Tc	All	50
Hamburg Pit	Tv	All	40
	Pz and Tc	0 to 270	50
		270 to 0	40
Other	Pz and Tc	All	50
	Tv	All	40

Notes: 1. Pz is Paleozoic rocks; Tc is Tertiary Claron formation; Tv is Tertiary Volcanic rocks
2. Inter-ramp slope angle is angle from horizontal between design bench toes for successive 10 meter high benches

For use in open pit optimization studies, the inter-ramp pit slope is reduced to allow incorporation of access roads in the pit slopes.

The inter-ramp pit slopes are based on comparisons of the geologic, material property, and groundwater conditions in the existing pits with the geologic, material property, and groundwater conditions expected to occur in the planned open pits. Where the conditions are not exposed at the ground surface, these conditions are based on interpolation and in some cases, extrapolation of geologic mapping data and data from drill holes. If conditions encountered during mining of the planned open pits are not similar to the conditions that result in stable slopes in the existing pits, the slopes of the planned open pits could become unstable. If the displacement of the unstable slopes is too great, the instability could impact access to leach material in the bottom of the pits, increased cost of mining, or result in suspension of operations due to unsafe working conditions.

To decrease the risk of slope instability reducing the amount of recoverable ore, additional studies will be required, including collection of geotechnical data from surface outcrops, geologic modelling, core drilling, and laboratory testing of drill core, and geotechnical engineering studies.

It should be noted that instability in itself does not always result in such severe operating conditions that access to the deposit is lost. It would be possible to reduce the incidence and risk of unstable pit slopes by reducing the inter-ramp slope angles, Reducing slope angles would also increase the amount of waste rock that must be mined to access the leach material and this raises costs. If this cost is too high, leach material is left in the planned pits that could be otherwise be recovered by making the pit slopes steeper and accepting some risk of slope instability. It is standard operating practice to monitor pit slopes for instability so open pit designs and operating methods can be modified during mining to keep the leach material accessible during mining to the extent practical, even in the presence of unstable pit slopes. Thus some slope instability should be anticipated in open pits designed using the pit slope design criteria listed in Table 16.1, but the degree of slope instability and the risk of slope instability is anticipated to the degree typically considered acceptable in open pit mining operations.

16.2 Open Pit Optimization

16.2.1 Input Parameters

The 3D mineral resource block model was provided to SRK by Advanced Geosciences as a CSV file. The block model was imported to MineSight™ mine design software in preparation for pit optimization and then the model was transferred to Whittle™ optimization software to carry out the pit optimization work.

The preliminary gold recovery formulae, as described below, were applied in the block model to calculate the recovered gold grade from the in-situ gold grades. The recovered gold grades were used in the pit optimization algorithm.

Estimates were made for gold price, mining dilution and offsite costs. Mining, processing, and general administration operating costs were also estimated based on assumed processing throughput and, along with geotechnical parameters, formed the basis for open pit optimization. The open pit mining costs assumed owner-operated mining. A summary of the input parameters used is presented in Table 16-2 below.

Table 16-2: Pit optimization input parameters

Item	Unit	Value
Revenue		
Au Price	$/oz	1,300
Au Recovery	%	See formulae
Technical Constraints		
Pit Slope Angles	overall degrees	38 to 48
Mining Dilution	%	5
Mining recovery	%	99
Processing rate	t/day	22,500
Offsite Costs		
Au refining/transportation charge	$/oz pay Au	2.20
Operating Costs		
Waste Mining Cost	$/t	2.25
Mineralised Material Mining Cost	$/t	2.25
Processing and G&A Cost	$/t milled	3.14

Whittle™ open pit optimization software was then used with the mineral inventory block model to determine optimal mining shells. This evaluation included the aforementioned parameters.

The economic shell limits included indicated and inferred mineral resources. Inferred mineral resources are considered too speculative geologically to have the economic considerations applied to them to be categorized as mineral reserves. There is no certainty that the inferred mineral resources will be upgraded to a higher resource category.

Gold Recovery

Gold recovery in the heap leach process at Goldstrike was estimated as a function of gold grade. The gold recovery formulae described in Section 13.3.5 were used for the pit optimization and development of mine plan outputs for economic analysis.

Cut-off Grade

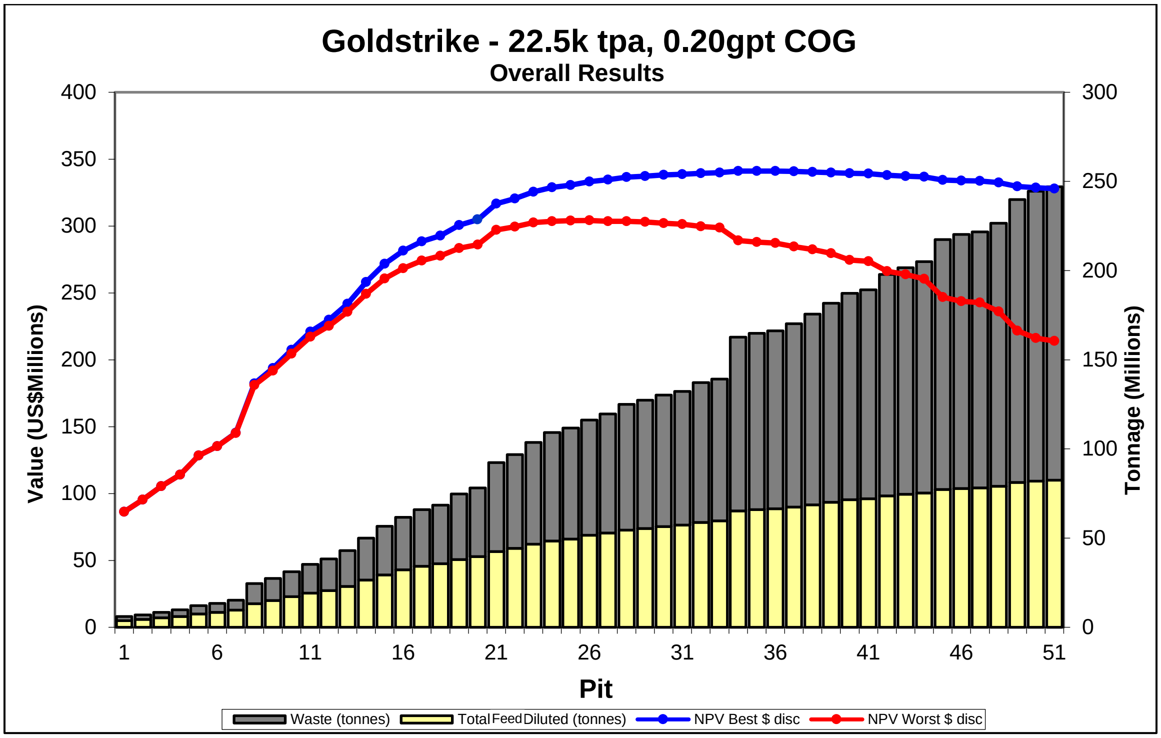
The economic cut-off grade, calculated based on the input parameters described above is approximately 0.15 g/t Au. For the purposed of this investigation, alternate elevated cut-off grades were assessed at 0.20 g/t and 0.25 g/t. Ultimately, a cut-off grade of 0.20 g/t was identified to present the best production and economic results and thus was carried forward in the mine plan.

16.2.2 Optimization Results

A series of optimized pit shells were generated for the Goldstrike deposit based on varying revenue factors. The results were analyzed with shells chosen as the basis for ultimate limits and preliminary phase selection.

The results of the pit optimization evaluation on the deposit for varying revenue factors values are summarized in Figure 16-2. Note the net present value (NPV) in this optimization summary does not take into account capital costs and is used only as a guide in shell selection and determination of the mining shapes. The actual NPV of the project is summarized in the economics section of this report (Section 22).

Whittle produces both “best case” (i.e., mine out shell 1, the smallest shell, and then mine out each subsequent shell from the top down, before starting the next shell) and “worst case” (mine each bench completely to final limits before starting next bench) scenarios. These two scenarios provide a bracket for the range of possible outcomes. The shells were produced based on varying revenue factors (0.3 through to 1.3 of base case) to produce the series of nested shells with the NPV results shown.



Source: SRK 2018

Figure 16-2: Pit optimization overall results

The incremental values, grades and strip ratios of the “best” and “worst” cases were all evaluated in the selection of an ultimate pit shell. Pit #32 was selected as the pit shell for this PEA as it balanced a maximum value for the best case with minimal risk of losing value in the worst case. Larger pit shells represent a step change increase in the overall strip ratio. After removing several scatter and small satellite pits which have been deemed to not add value to the overall project, pit shell #32 contains 59 Mt of diluted leach feed and 915,000 insitu ounces of gold. The pit shell contains 71 Mt of waste stripping resulting in a strip ratio of 1.2.

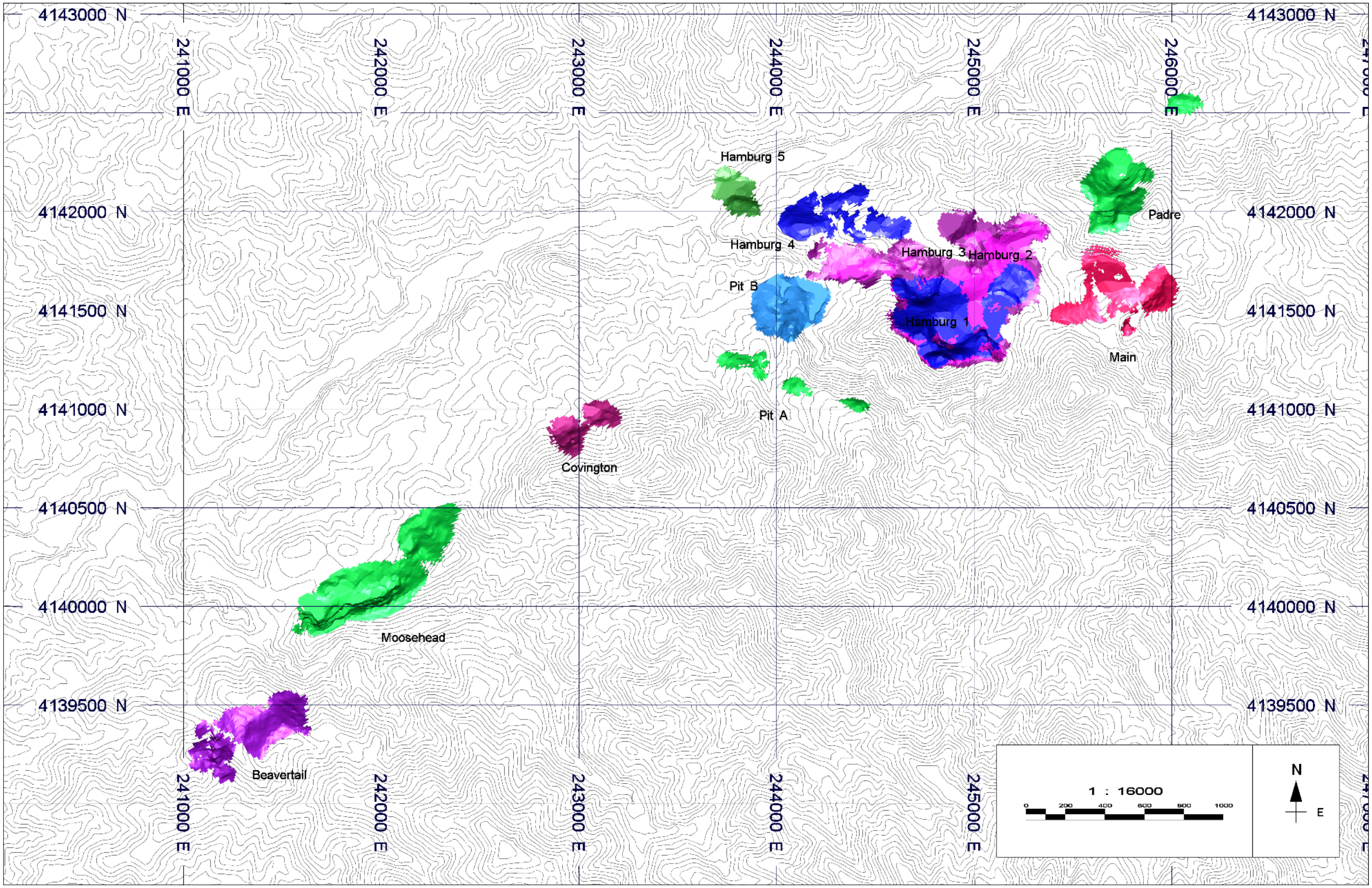
16.3 Open Pit Mine Design

Mine planning for the Goldstrike project was carried out based on the economic pit shells generated during the pit optimization. The bench volumes of mined resources and waste rock were generated using the MineSight™ block model and adjusted to account for 5% dilution and 1% mining loss.

The Goldstrike deposit includes several mineralized zones and as a result, the optimized pit shell is a collection of separate open pits of varying sizes. Several of the smaller open pits are planned to be mined as single individual phases, including the following pits: Beavertail, Moosehead, Covington, Pit A, Pit B, Main, and Padre.

The Hamburg Pit is the largest mining area and it is broken into phases in order to target high value resource early and manage waste mining rates. There are two satellite lobes of the Hamburg pit which are considered as independent phases. The large central body of the Hamburg pit is divided into three phases which are defined by high value economic pit shells from the pit optimization exercise which allow for practical mining widths between each subsequent phase.

In total there are twelve mining phases amongst the single-phase pits and the five Hamburg pit phases. All of the mine phases are illustrated in Figure 16-3.



Source: SRK 2018

Figure 16-3: Mine phases

16.4 Mine Phase Sequencing

Prior to mine scheduling, the mine phases were ranked by value to guide the scheduling sequence. The mining and processing unit costs from the pit optimization were used to estimate a cost per ounce of gold produced for each pit. The preliminary ranking of the mine phases is summarized in Table 16-3 below. The ranking accounts for phases which are dependent on the completion of other phases.

Table 16-3: Preliminary mine phase ranking

Mine Phase	Rank
Hamburg 4	1
Hamburg 1	2
Covington	3
Hamburg 5	4
Padre	5
Main Pit	6
Beavertail	7
Pit A	8
Hamburg 2	9
Moosehead	10
Pit B	11
Hamburg 3	12

The value ranking described above tends to rank the low strip ratio phases high on the list as they have the lowest mining cost per unit of gold produced. If this ranking is scheduled out, the mining rate of the project will start relatively low with the low strip ratio phases. Then the mining rate will increase substantially towards the end of the mine life as the high strip ratio phases are mined. In an effort to balance the mining rate over the life of mine, some of the higher strip ratio phases need to be advanced in the mining schedule. The final mine phase schedule employed for the PEA is presented in Table 16-4.

Table 16-4: Final mine phase sequence

Mine Phase	Sequence
Hamburg 4	1
Hamburg 1	2
Covington	3
Moosehead	4
Hamburg 5	5
Pit B	6
Padre	7
Beavertail	8
Main Pit	9
Hamburg 2	10
Hamburg 3	11
Pit A	12

16.5 Waste Storage Facility Design

Material below the cut-off grade is stored in a series of waste storage facilities (WSFs) located throughout the project area (see Figure 18-1). The WSFs are conceived to be bottom-up designed stockpiles with lift face angles of 37° and overall slope angles of 26°. The WSFs are assumed to have a density of 1.8 t/m3 in place and have sufficient capacity for the 70 Mt of waste stripping over the life of mine. The WSFs are placed in locations in the project area which provide for short haul distances from each mining area. Surface water containment and avoiding creation of water pooling features was also considered.

16.6 Open Pit Mine Operation

The open pit mining activities for the Goldstrike mine were assumed to be undertaken by an owner-operated fleet as the basis for this PEA.

The open pit mine is envisioned to be a conventional truck and shovel surface mining operation. Rotary drills will prepare blast patterns on 10-m benches. After blasting with bulk explosives, a fleet of 12-m^3 front end loader will load mineralized resources and waste stripping material into 136-t capacity rigid framed haul trucks.

16.6.1 Major Equipment Summary

Table 16-5 summarizes the all-diesel, major open pit equipment requirements used as the basis of this PEA and are based on similar sized open pit operations and considerations specific to this study. The proposed heap leach processing rate of 22,500 t/day (8.2 Mt per year) was used along with waste stripping requirements, deposit and pit geometry constraints, to estimate the mining equipment fleet needed. The fleet has an estimated maximum capacity of 57,000 t/day total material movement which is sufficient for the proposed life-of-mine plan.

Table 16-5: Major open pit equipment

Equipment Type	No. of Units
250-mm dia. Rotary, Crawler Drill	3
114-mm dia. Rotary, Crawler Drill	2
12-m^3 Front End Loader	3
136-tonne Haul Truck	11
D9-class 4.4-m blade	2
16H-class Grader, 4.9-m blade	2
90-tonne Water Truck	1

The following additional equipment will be required to support mining operations:

- Explosives storage and delivery equipment
- Field maintenance vehicles
- Light vehicles for personnel transportation
- Light plants
- Portable aggregate plant
- All-terrain crane
- Utility excavator

Blast-hole Drill Fleet

A combination of 114-mm and 250-mm diameter production blast-hole drills have been selected for this operation. The bulk of blast-hole drilling will be a regular, equilateral drill pattern and three rows of buffer holes will be designed along the pit walls to reduced wall damage.

Loader Fleet

A fleet of 12-m^3 front end loaders have been selected as the basis for this PEA. The total mining rate as well as the number of active mining areas were taken into consideration in selection of this size of loading equipment.

Haul Truck Fleet

A fleet of 136-t, rigid frame haul trucks have been selected for resource mining and waste rock stripping. This size of haul truck is suitable for the required mining rates, the size of the mining phases planned and match the size of the selected loaders.

16.7 Mine Schedule

16.7.1 Mine Schedule Summary

The production schedule for the Goldstrike PEA was developed using bench by bench mineable resources generated for each mining phase in MineSight™ software. The mineable resources were adjusted for dilution and mining loss before being scheduled into quarterly time periods.

The maximum mining rate planned for the Goldstrike operation is 57,000 tpd while the average mining rate is 50,000 tpd.

The Goldstrike production schedule includes inferred mineral resources which are considered too speculative geologically to have economic considerations applied to them and to be categorized as mineral reserves. There is no certainly that the inferred mineral resources will be upgraded to a higher resource category.

Table 16-6 below summarizes the key parameters of the PEA mine plan and Figure 16-4 shows the schedule by pit phase.

Table 16-6: Mine plan summary

Parameter	Units	Value
Leach Material Mined	M tonnes	59
Waste Mined	M tonnes	71
Strip Ratio	Waste : Leach Material	1.2
Total Mined	M tonnes	130
Heap Feed Grade	g/t	0.48
Avg. Gold Recovery	%	78
Total Gold Produced	koz	713

The Goldstrike deposits are planned to be mined at a rate of 22,500 t/day or 8.2 Mt per year This results in a 7.5-year mine life.

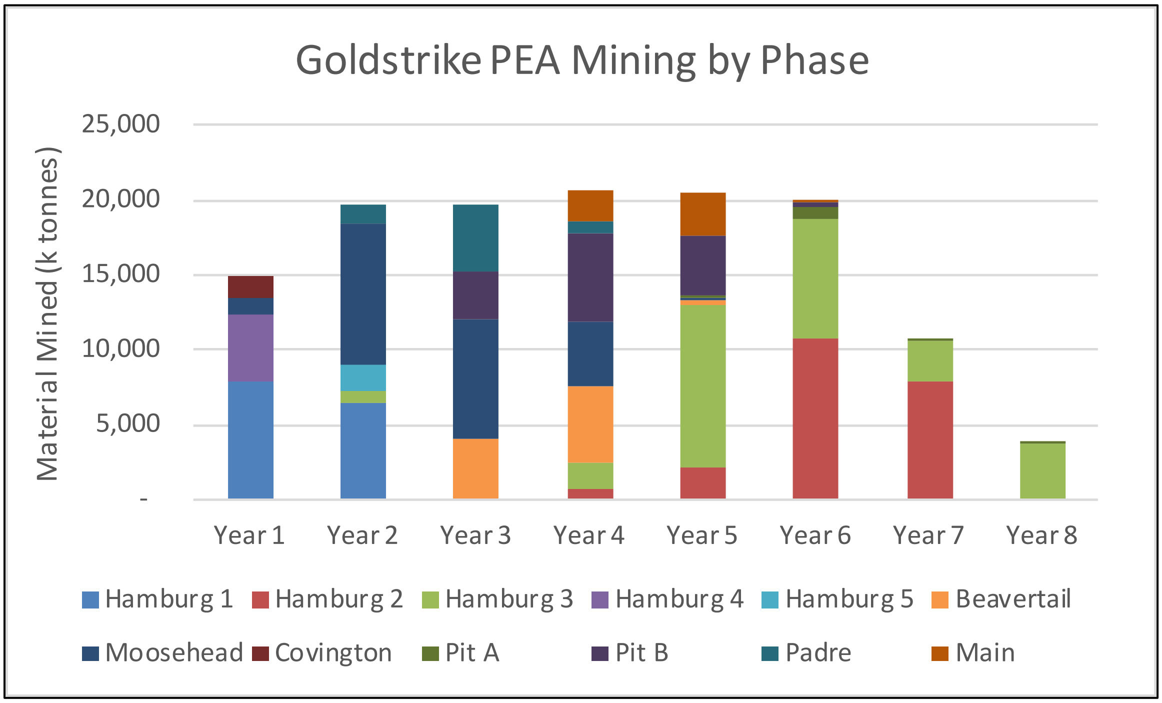


Figure 16-4: Mining production by phase

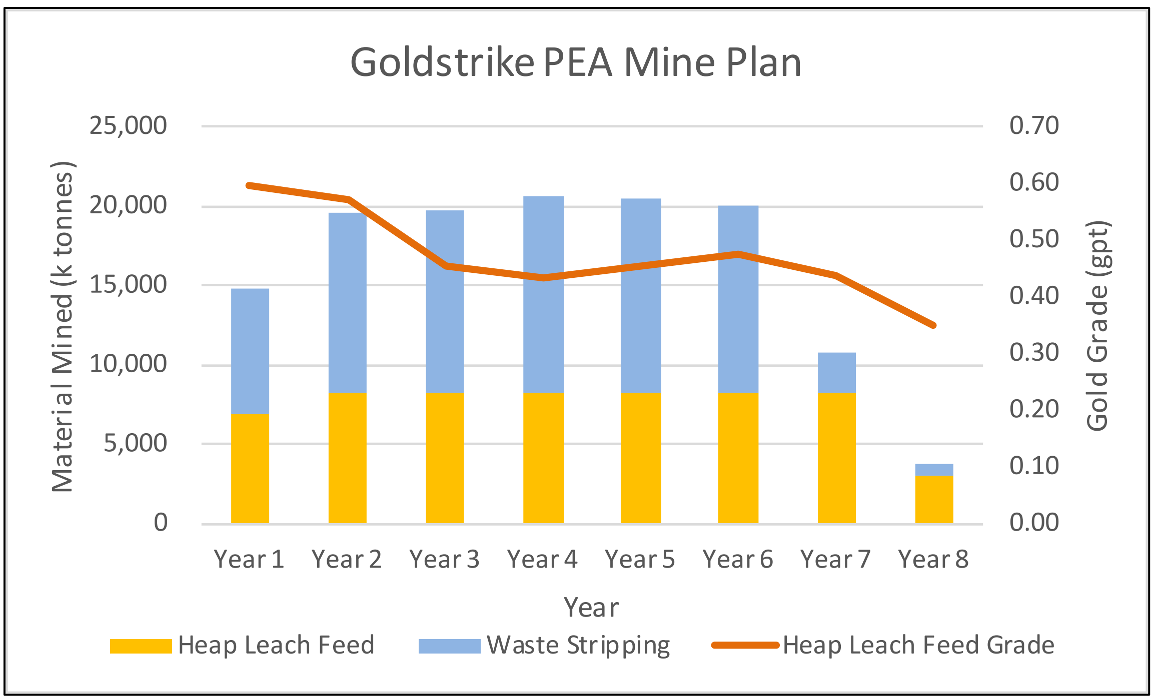


Figure 16-5: Mining production showing waste stripping and head grade

16.7.2 Mine Development Schedule

The following development schedule is envisioned:

Year -2 and -1: Development of site haul roads, preparation of initial waste storage facility foundations and preliminary waste stripping to release initial heap leach feed.

Year 1: Initial mining in the Hamburg 1 and 4, Covington and Moosehead pit phases.

Year 2: Mining starts on the Padre Pit, Pit B and Hamburg 5.

Year 3: Beavertail pit initiates mining.

Year 4: Hamburg 2 and 3 start mining along with the Main pit.

Year 5: Pit A starts mining.

Year 8: All open pits are complete; heap leaching continues and mine closure is underway.

16.7.3 Personnel

The Goldstrike project will require a maximum of approximately 230 personnel to carry out the proposed mine plan. At its peak, Mine Operations will required 34 people per each of the 4 crews. Similarly, Mine Maintenance will require a maximum of 34 people on each of it's 2 crews. Mine management, operations supervision and technical services will require 24 total people – some working shift work and others working a regular week day schedule.

17 Recovery Methods

17.1 Recovery Methods

The process selected for recovery of gold and silver from the Goldstrike mineralized material is a conventional heap-leach recovery circuit. The material will be mined by standard open pit mining methods, and truck-stacked onto heap leach pads in 9-meter (30-foot) lifts as ROM material without crushing.

Material will be leached with a dilute cyanide solution, and the leached gold will be recovered from solution using a carbon adsorption circuit. The gold will be stripped from carbon using a desorption process, followed by electrowinning to produce a precipitate sludge. The precipitate sludge will be refined in a furnace to produce doré bars.

The project has a total estimated mineable resource of 60 million tonnes and an estimated mine life of 7.5 years at the selected processing rate of 22,500 tonnes per day.

17.2 Gold Recovery

The gold and silver recoveries for heap leaching of the Goldstrike material have been taken from the recommendations detailed in Section 13 of this report. The average gold recovery for heap leaching of ROM material was estimated by others at 78.4 percent. The average silver recovery for heap leaching of ROM material was estimated by others at 15 percent.

17.3 Reagent Consumptions

The major reagent consumptions for heap leaching of Goldstrike materials have been provided by others, as taken from available metallurgical test data from column and bottle roll tests on crushed material. No test data exists at the ROM particle size and so the selected reagent consumptions for this material are based on the available test data.

The selected cyanide consumption for heap leaching of ROM material is 0.3 kg NaCN per tonne, or approximately 2,430 tonnes of NaCN per year.

The selected lime addition rate for control of pH during heap leaching of ROM material is 1.2 kg per tonne, or approximately 9,720 tonnes of lime per year.

Other process reagents are used primarily at the recovery plant, such as hydrochloric acid, caustic, make-up activated carbon, antiscalant, and fluxes. Consumptions of these reagents are based on benchmarking from similar operations.

17.4 Design Criteria and Process Flowsheet

Preliminary process design criteria for the Liberty Gold - Goldstrike Economic Assessment (PEA) Study are presented below. The project consists of a ROM heap leach with a carbon plant for solution recovery and on-site smelting of gold and silver into doré bars.

Table 17-1: General site conditions

General Site Conditions	
Country	USA
State	Utah
County	Washington
Nearest major metropolitan area	St. George, UT
Power	
Source	Line Power
Water Supply	
Source	Wells and/or Pipeline
Operation Design Basis	
Operation, days / a	360
Average ROM Material Processing Capacity, t / a	8.1 million
Average ROM Material Processing Capacity, t / d	22,500
Total tonnes	TBD
Resources	
Head grade, Au g / t (average, ROM)	0.54
Head grade, Ag g / t (average, ROM)	3
Mercury, Hg g / t	Negligible
ROM Characteristics	
Bulk Density, tonnes/m3	1.8
Size Distribution	TBD
Metal Recovery	
Selected Field Recovery, Au % (based on head grade formula: Au Rec% = 0.8493*(Head Grade Au)^0.1295)	78.4
Selected Field Recovery, Ag %	15
Heap Construction	
ROM Stacking	Truck stack
Lift Height, m	9
Total Heap Height, m	100
Leach Pad	
Type	Single Use, Multi-Lift
Solution Application	
Leach Time, Days	120
Solution Application Method	Drip tubes

General Site Conditions	
Solution Application Rate, L / hr / m2	10
Barren Application Rate, Nominal, m3 / hr	1,700
NaCN Consumption Rate, kg / tonne	0.3
Lime Consumption Rate, kg / tonne	1.2
Solution Recovery	
Method	Carbon Plant (ADR)
Adsorption Circuit, m3 / hr	1,700
Desorption Circuit	
Operation	5 days/week
Design C-Loading Capacity, g Au / tonne	2,000
Average Weekly Advance Rate, tonnes carbon	25.3
Selected Strip Circuit Size, tonnes	6.0
Smelting	
Type	Tilting Crucible, Diesel Fired
Laboratory	
Fire Assays / day	150
Solution samples / day	150

17.5 Heap Stacking

ROM material will be transported directly from the open pits to the heap and dumped by mine haul trucks. Before stacking on the heap, lime will be added to the trucks at a rate of 1.2 kg lime per tonne in a dedicated staging area along the mine haul road.

Material will be stacked in 9-meter high lifts. Stacking will be assisted by a low-pressure track dozer to push and spread material in preparation for leaching. Dozer ripping to facilitate improved percolation will also be performed after each lift has been stacked to the determined height.

The annual tonnage of ROM material stacked is approximately 8.1 million tonnes.

17.6 Leaching and Solution Handling

After each leach cell has been stacked and dozer ripped, the irrigation system will be installed. Dripline emitters will be used to apply a dilute cyanide solution, at an average application rate of 10 L/hr/m2. A minimum primary leach cycle of 120 days has been selected, based on a review of the selected leach curves.

Barren leach solution pH will be maintained at a minimum value of 10 and will be controlled by the lime addition to the haul trucks. Barren solution will be delivered from a barren tank located at the recovery plant, by high-flow high-head pumps at the design flow rate of 1700 m3/h. This solution will be carried by a steel pipeline to the base of the heap and then to a network of sub-headers and risers to the top of the heap where it is finally applied to the material by drip emitters.

Solution passing through the heap will dissolve the contained metals and then collect in a network of perforated solution collection pipes, which feed to a common discharge point at the base of the heap. The solution will then be carried by gravity to a pregnant solution tank. Excess solution from the heap will overflow from the pregnant tank to a lined process pond. Pregnant solution is pumped from the pregnant tank to the adsorption carbon column circuit at the recovery plant.

The carbon adsorption circuit consists of a series of gravity-fed cascade-style columns. Pregnant solution runs through the columns to load the soluble gold onto the carbon. Barren solution exiting the columns is directed to the barren tank where make up cyanide is added and the solution returned to the heap for further leaching. Overflow from the barren tank is directed to a barren/event pond designed by others.

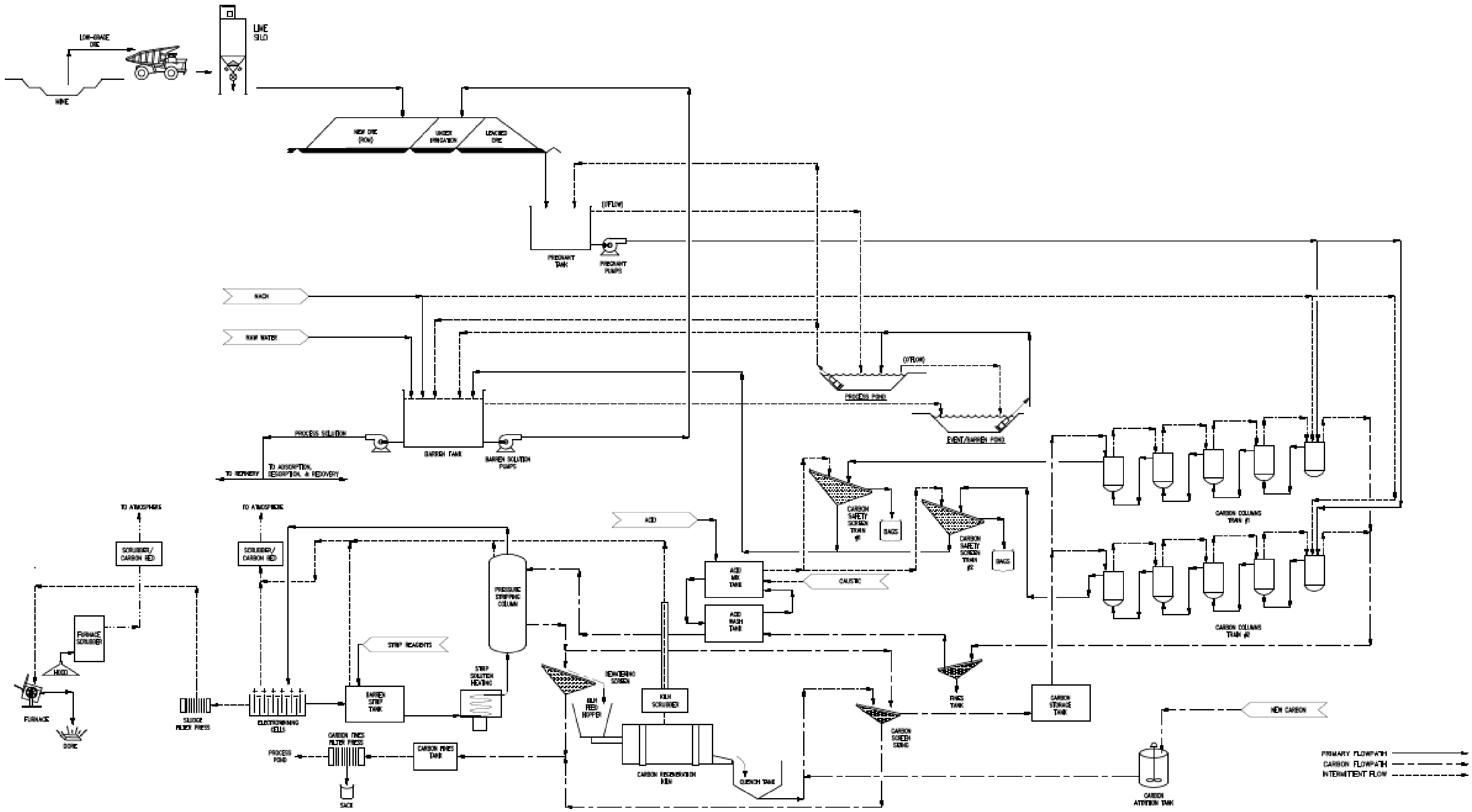


Figure 17-1: A process flowsheet for the project

17.6.1 Solution Ponds

Two storage ponds are assumed for the management of solutions, the process pond and barren/event pond. The process pond will collect overflow from the pregnant solution tank and is sized to also contain 24 hours of pregnant solution working volume. Overflow from the process pond will report to the barren/event pond via an HDPE-lined channel. The barren/event pond will collect overflow from the barren solution tank during process upsets, and is expected to be sized to handle storm water collection from a severe storm event plus 24 hours of solution storage, in the event of pregnant or barren pump failure or site power loss. Pond sizing and design is by others.

Solutions collected in these ponds will be pumped back to the corresponding barren or pregnant solution tanks using submersible pond pumps for distribution either to the recovery plant or to the heap.

17.7 Recovery Plant – Stripping and Carbon Handling

Loaded carbon from the carbon adsorption circuit will be passed over a carbon dewatering screen, where process solution and any carbon fines in the undersize are transferred to a carbon fines tank, and the oversize loaded carbon is directed to the acid wash circuit. The loaded carbon will be acid washed in a dilute hydrochloric acid solution to remove calcium and other contaminants as required. The acid wash circuit sizing will allow for acid washing after every strip, which is expected for optimum performance of the carbon.

Loaded, acid-washed carbon will then be pumped to the elution circuit where it will be batch stripped in a 6-tonne pressure stripping vessel, in a modified Zadra circuit. The loaded carbon is eluted using a sodium hydroxide solution rate of about two bed volumes per hour at a temperature of 275-300°F. The eluted pregnant solution will report to the electrowinning cells, described in Section 17.7.

Eluted carbon will be passed over a sizing screen and then reactivated as necessary using a carbon regeneration kiln. The kiln will have capacity to regenerate at minimum a third of the total carbon stripped. Regenerated carbon will be again screened to remove fine carbon from the circuit, as required.

Carbon fines from the dewatering and sizing screens will be periodically sent to a filter press for collection.

17.8 Recovery Plant - Refinery

Solution from the strip vessel will be pumped through electrowinning cells where gold and silver will be precipitated on stainless steel cathodes. The eluted barren solution from electrowinning will then be recycled back to a barren eluant solution storage tank. Solution from the eluted barren tank will be pumped back to the strip vessel to be reused for loaded carbon stripping.

When sufficiently loaded, the electrowinning cells will be shut down, and the gold and silver sludge will be removed from the cathodes. The sludge will then be pumped to a filter press for dewatering.

The de-watered sludge will be blended with fluxes and then smelted in a diesel-fired crucible furnace to yield doré. The doré will be shipped off site for final processing and sale.

17.9 Recovery Plant Reagents and Utilities

Recovery plant reagents will include cyanide, caustic, hydrochloric acid, antiscalant, activated carbon, and various furnace fluxes. Diesel will be used to fuel all thermal equipment in the plant.

17.10 Laboratory Facilities

Analytical support, including fire assays and metallurgical testing required to support the project operations, will be conducted on-site using a dedicated laboratory. It is assumed that approximately 150 samples per day will be delivered from the mine for fire assay. An additional 150 solution samples are expected to test recovery. A small number of fire assays, solutions, and carbon assays will be required for metallurgical control for processing and are assumed in the previously mentioned counts.

17.11 Process Manpower Requirements

Manpower required for the process facilities is summarized in Table 17-2. Staffing assumes two 12-hour shifts and four crews for 24/7 coverage where necessary for operation and maintenance of the plant. Management, laboratory and refinery personnel will be on 8-hour shifts 5 days per week.

Table 17-2: Process manpower requirements

Area/Job Title	Quantity
Process	
Supervision	
Process Manager	1
Shift Foreman	1
Process Maintenance Foreman	1
Administrative Technician	1
Heap Leach	
Leach Operator*	4
Shift Laborer / Pipe Crew	8
Recovery Plant	
Recovery Plant Operator	4
Refinery	
Refiner	1
Refinery Helper	1
Process Maintenance	
Mechanic	1
Mechanic Helper	1
Electrician	1
Subtotal Process	**25**
Laboratory	
Metallurgist	1
Fire Assayer	1
Lab Technician	2
Shift Sample Buckers	4
Subtotal laboratory	**8**
Total	**33**

18 Project Infrastructure

18.1 On-Site Infrastructure

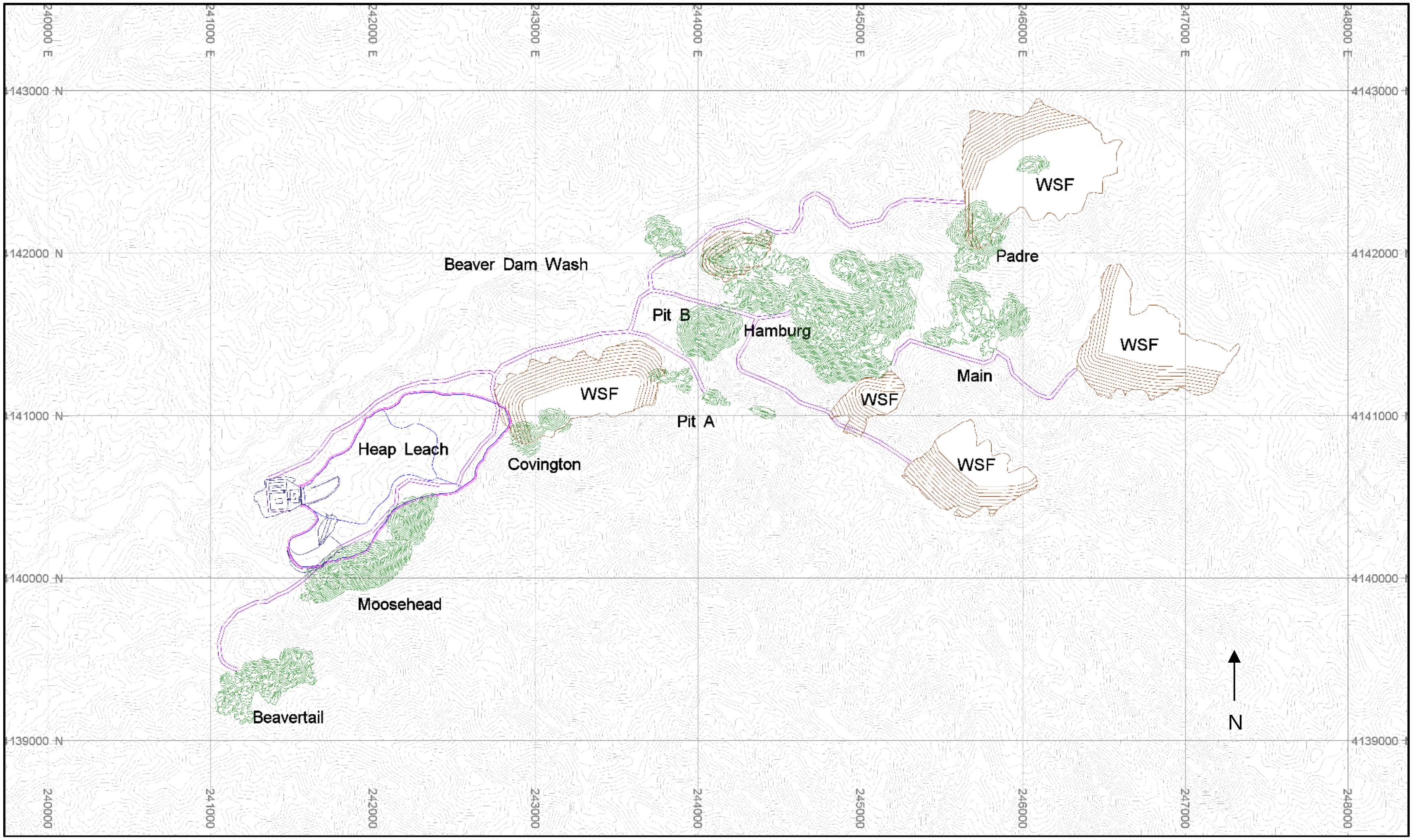
18.1.1 Existing Infrastructure

Other than access roads, no infrastructure currently exists at site.

18.1.2 Proposed Infrastructure

A site layout plan covering the proposed facilities is shown in Figure 18-1. An overview of the infrastructure that is likely to be required based on current design assumptions includes:

- **A road network** connecting the open pit to the waste dumps, main processing area, heap leach facilities, and maintenance complex
- **Processing plants**. Includes upflow columns containing activated carbon
- **Heap leach facilities**. The heap leach facilities will consist of a permanent cyanidation heap. Section 17 and Section 18.1.3 provide additional information.
- **Solution ponds and pumping systems** for solution management
- **Waste storage facility**. Refer to Section 18.1.4 for additional information.
- **Water management system**. Refer to Section 18.2 for additional information.
- **Administration building**. Offices the mine management and supervisory staff as well as for human resources, accounting, procurement, information technology, and safety staff.
- **Maintenance workshop**, mining truckshop, warehouse and laboratory complex
- **Explosives magazine** and ANFO mixing plant
- **Fuel storage**. A bermed tank farm with storage tanks.
- **Communications system**
- **Water supply** (potable and process)



Source: SRK, 2018

Figure 18-1: Site layout

18.1.3 Heap Leach Facilities

Leach material from the pits will be processed by heap leaching. Current mine plans identify 59 Mt of leach grade ore. A dedicated heap leach facility (HLF) has been designed to contain 60 Mt of leach grade material and consists of a lined leach pad and process pond system. The HLF has been divided up into three construction phases, with Phase 1 providing 2 years of leach storage, Phase 2 providing 3 years of leach storage, and Phase 3 providing the 2.5 years of leach storage during the final years of operations.

A brief reconnaissance and engineering analysis of six potential heap leach facility (HLF) sites supported site selection. Capital cost, haulage costs, operating costs, leach storage capacity, geotechnical/geologic risk, and closure risk were analyzed for each of the six potential sites. The HLF site selected (as described herein) provides: sufficient capacity for the leach feed identified in the current mine model, the most favorable capital cost, and the shortest haul distance from the pits.

The conceptual design of the preferred HLF alternative was based on internationally-accepted heap leach pad design standards, which are strongly influenced by Nevada Regulatory Standards. These standards provide guidance for design of containment, piping systems, and ponds that lessen the environmental risk of the facilities to impact the local soils, surface water, and ground water in and around the facility. To maintain this level of environmental control, it is imperative that subsequent stages of design, construction, and operation be advanced and completed using these standards.

The HLF has been conceptually designed using an average stacked density of 1.6 tonnes per cubic meter, an average heap height of 50 to 60 meters, and a maximum heap height of 100 meters. Lifts of leach material will be stacked in 9 m vertical increments (lifts) to provide benches between lifts around the perimeter of the heaps to provide an average overall leach material slope of 2.5H:1V (horizontal to vertical). The leach pads are designed to be lined with a composite lining system of 2.0-mm thick high-density polyethylene (HDPE) geomembrane liner installed directly on top of a compacted 30-cm thick low-permeability soil bedding layer.

Under the current mine plan, each lift of leach material will be leached at a nominal rate of between 1,650 and 1,700 m^3/hr. Pregnant solution will be processed at a nominal rate of between 1,588 and 1,637 m^3/hr. During leaching of the ore, solution will be collected by a drainage system placed above the synthetic leach pad liner, which will in-turn direct pregnant solution flows to a Pregnant Pond located at the down-gradient end of the leach pad. The drainage layer will consist of perforated piping embedded in a 70-cm-thick layer of processed gravel. During upset conditions, such as a power or pump outage, or a severe storm event, solution will flow by gravity from the Pregnant Pond sequentially to two lined “event ponds” located downstream of the Pregnant Pond. The Pregnant Pond and event ponds are sized to contain the combined volume from heap drain down resulting from a 48-hour power outage (assuming full drain down from the heap at a rate of 1650 m^3/hr), the volume of fluid resulting from a 100-year, 24-hour storm event falling on the pad, pond, and lined areas, the minimum operating volume of solution in the Pregnant Pond, and the accumulation of solution in the ponds resulting from the 1 in 100 wet year climate. The event ponds are designed to be single-lined and the Pregnant Pond is designed to be double-lined with two layers of HDPE and will be fitted with a continuous leak detection/collection layer installed between the two liners.

The HLF will fill a small valley. Conceptually, grading for the HLF is planned to primarily consist of filling in the lower reach of the valley to provide a flat base for the process plant, process ponds, and Barren Tank. The design includes extending the fill up the valley under the toe of the heap to provide a 2% grade for the leach pad liner that, when stacked with ore, will provide a stabilizing buttress for the remainder of the heap. Grading will also include general shaping of the leach pad site to provide smooth and planar surfaces with local slopes no steeper than 2.5H:1V in preparation for liner placement. Prior to Phase 3 construction, the northeast side of the Moosehead Pit will be backfilled with mine waste to provide sufficient area for the leach pad expansion to extend into the backfilled pit.

The design includes routing storm water runoff from areas upslope of the heap leach facility around the facility using diversion ditches. The ditches are designed to convey the runoff from a 100-year, 24-hour storm event.

Processing

The process plant includes a complete facility to produce doré bars. The refinery and desorption sections of the plant are situated in a building. The laboratory includes all equipment, building and associated facilities to process solid and solution samples for metallurgical accounting purposes.

18.1.4 Waste Storage Facility

Material below the cut-off grade is stored in a series of WSFs located throughout the project area (Figure 18-1). The WSFs are to be built bottom-up with lift face angles of 37° and overall slope angles of 26°. Surface water containment and avoiding creating any water pooling features was also considered.

Thorough geotechnical analysis of the foundation conditions in each of the WSF sites has not been carried out and for the purposes of this PEA, it is assumed that the foundation conditions do not pose any significant risk to the safe construction of the facilities. Further investigation of the foundation conditions will be required for more detailed levels of study on this project.

18.2 Water Management Infrastructure

18.2.1 Water Supply

As planned in the PEA, the project requires, an off-site system to import water due to the absence of sufficient available groundwater within the project area. For the PEA, it was assumed the major components of a water supply system would include the installation of offsite wells with a network of minor pipelines from each well to a centralized booster station. From the booster station, a nine-kilometer long pipeline will deliver freshwater to the Goldstrike site for storage and distribution. At the present time, Liberty Gold does not control the land or water rights in the areas planned for the offsite wells or offsite pipeline access. A power transmission line will be routed to the booster station with other power distribution lines to each well location.

A deterministic water balance (see Section 18.2.2) indicates that the freshwater supply for Goldstrike site will need to meet the following requirements:

- Average annual water supply required is approximately 1,261,300 cubic meters per year (m^3/yr)
- Peak flow rate recommended for design capacity of the freshwater supply is 350 m^3/hr
- The water supply requirements are based on demands for process water, construction water and consumptive site use, including dust suppression on mine roads. Wells, pipelines and pumping facilities would be sized to accommodate slightly more than the maximum water required during July of the 1 in 100 dry year.

Based on a literature review of the regional geology, hydrogeology, and water rights and water use in the area, it is estimated that as many as four wells would be required to meet the peak flow rate. The location for installation of four wells is anticipated to be in the alluvium approximately 10 km southwest from the central project site along East Fork Beaver Dam Wash on BLM and Utah State lands. Since the assessment was not based on aquifer testing, a work plan for the groundwater development is recommended to initially drill and test smaller diameter pilot boreholes and then construct and subsequently develop production wells if the drilling and testing data indicates they are suitable.

18.2.2 Site Wide Water Balance and Water Management

To estimate water usage for the proposed mine, Golder developed a conceptual deterministic site wide water balance. The water balance considered water consumption for dust-control watering, heap leaching of ore, construction water, and additional minor consumers. Considering the arid climate, the leach pad as designed is predicted to have a “net-negative” water balance during operation, consuming more water than it develops through rainfall, except during short-duration severe precipitation periods or events.

Based on the water balance, site wide water requirements are highest during Phase 1 operations when water is required for construction of Phase 2 of the leach pad, and the heap leach pad area will be its smallest, thereby reducing the amount of precipitation developing from the lined pad and the need for increased makeup water.

Site wide water demands for the mine are estimated to be highest in July with a Phase 1 monthly water demand of 231,700 m^3 and 221,400 m^3 during extreme dry and average climate conditions respectively. Annual site wide water demand during Phase 1 operations is estimated to be 1,402,100 m^3 and 1,261,300 m^3 for extreme dry and average climate conditions, respectively. The water balance predicts that water demand for the mine continues to decrease with each successive leach pad phase to an annual requirement of 1,263,200 m^3 and 1,078,200 m^3 during Phase 3 operations for extreme dry and average climate conditions, respectively. Of the total water demand for the site during operations, and under average climate conditions, mine personnel water is estimated to be 1%, construction water is 5%, access road dust suppression is 6%, heap leach facility make-up water is 49%, and haul road dust suppression is 39%.

The conceptual water balance was also used to conceptually size lined event ponds for leach pad operations. The event ponds and Pregnant Pond were sized to contain the combined volume of fluids produced from the precipitation falling on all lined areas from the 1 in 100 wet year climate, the 48-hour pump outage drain down event, the minimum operational fluid level in the Pregnant Pond, and the 1 in 100-year, 24-hour storm event of 105.2 mm occurring over the lined pad and pond areas. Two event ponds and one Pregnant Solution Pond were sized to contain a total upset conditions volume of 158,800 m^3.

18.3 Off-site Infrastructure

18.3.1 Power

It is proposed to connect the mine site to the existing electrical grid. No detailed study has been done. It is assumed that a connection point will be available in the vicinity of St George, Santa Clara or Ivins. The powerline route is assumed to follow the existing access road. The connection is likely to be either 11kV or 33kV. An allowance of $12M was made for the electrical connection to site, including the connection to the exiting grid and the site substation. This estimate is based on scoping-level power infrastructure cost calculators, and does not reflect an engineered design.

18.3.2 Water Supply

See Section 18.2 for details of both site and off-site water supply infrastructure.

18.3.3 Access

The access to site is currently via an unpaved road from “Old Highway 91” near the town of Ivins to the mine site. The roadway will require realignment, repairs and upgrading to be suitable for construction and operation of the project. An allowance of $4.9M has been made for this work. The estimate is not based on an engineering study and is to be considered as a scoping-level estimate only.

19 Market Studies and Contracts

The product from the project will be a gold doré with the vast majority of value derived from the gold content. Some minor silver may be present, but this has not been explicitly modelled and it is not known whether it will represent a payable component.

The market for gold and gold doré is a liquid, transparent global market with prices easily discoverable. Smelting costs and payable assumptions are subject to minor variation, but this is not material for the purposes of PEA valuation. The product has high value density, and consequently, freight costs can be considered negligible in terms achieved pricing. The product is fungible in that gold doré does not typically have any distinguishing characteristics that materially alter the price. The global assumptions that pertain to marketing are shown in Table 19-1.

Table 19-1: Marketing parameters

Parameter	Units	Value
Gold Price	$/oz	$1,300
Payable %	%	99.9%
Refining Charges	$/oz	$0.35
Freight and Insurance Charges	$/oz	$0.75

The price assumption for the purposes of the PEA was $1300 (real 2018 USD) which is close to both current spot prices and to the 3-year trailing average. SRK considers this price to be appropriate for the purposes of this PEA (also see Figure 19-1). No marketing or sales agreements for produced gold have been entered into with respect to this project.

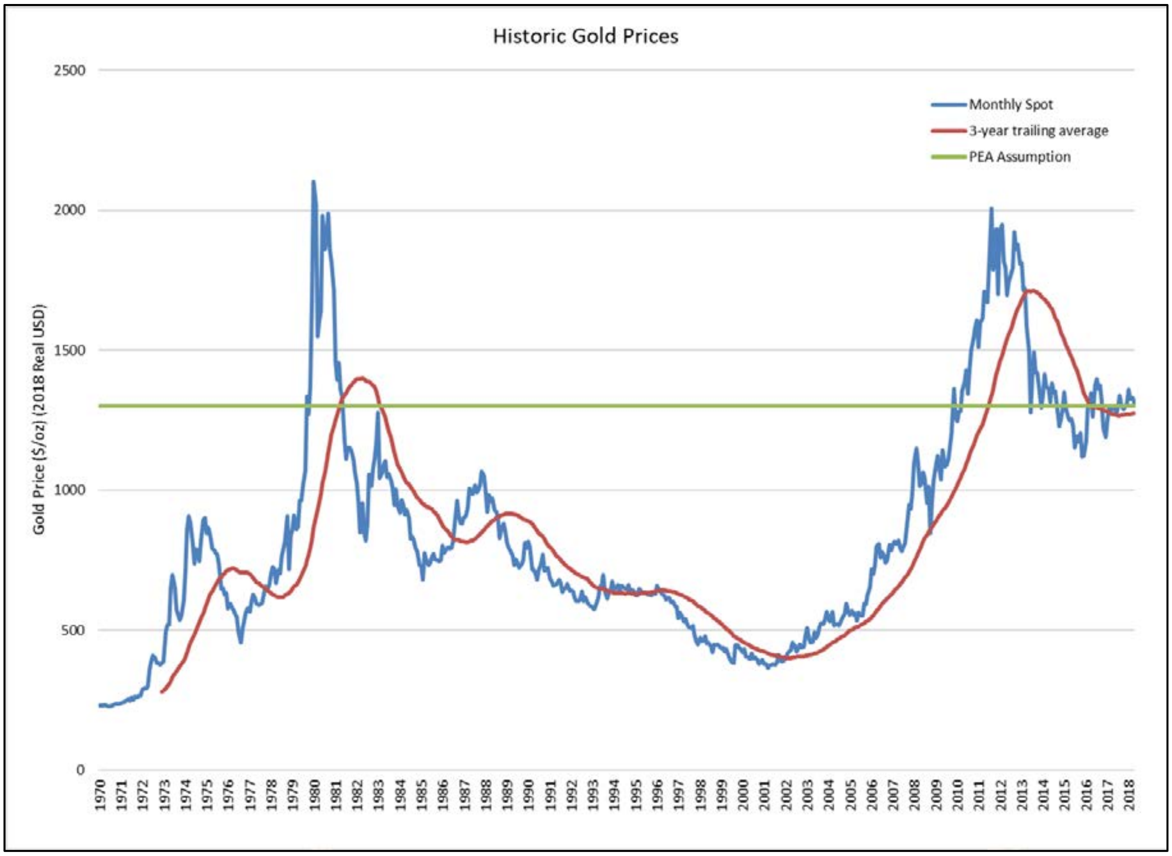


Figure 19-1: Gold price history (2018 real USD)

20 Environmental Studies, Permitting and Social or Community Impact

20.1 Environmental Studies

Liberty Gold conducted a number of baseline studies to support the development of the 2017 EA in the project area, which encompasses about 1,264 acres that includes 1,016 acres of BLM-administered land, 241 acres of private land, and seven acres of leased SITLA-administered land. Relevant studies are summarized below.

20.1.1 Water Resources

Most of the project area is in the Upper Beaver Dam Wash Watershed (Hydrologic Unit Code [HUC] 1501001001). A small portion of the project area is in the Lower Santa Clara River Watershed (HUC 1501000808). The Santa Clara River discharges to the Virgin River and ultimately the Colorado River (BLM, 2017).

Groundwater in the Beaver Dam Wash area is present in both consolidated rocks and basin-fill and alluvial channel-fill deposits. Groundwater in consolidated rocks in the higher-altitude mountainous areas provides the base flow of perennial reaches of streams and discharge to springs. Groundwater in the basin-fill deposits provides the base flow to perennial reaches of Beaver Dam Wash and discharge to springs in the lower-altitude areas. According to the U.S. Geological Survey (1997), groundwater recharge to the consolidated rocks in the Beaver Dam Wash area is from infiltration of precipitation and streamflow, and subsurface inflow (BLM, 2017).

Reviews of the historic drilling from Liberty Gold indicated that groundwater was rarely encountered and drilling confirmed this to depths of approximately 600 feet. Perched ground water (less than 5 gpm) is occasionally hit while drilling through known fault zones and the hole always dries out afterward (BLM, 2017).

Surface waters near or within the project area include East Fork Beaver Dam Wash and Arsenic Gulch, a tributary to East Fork Beaver Dam Wash. East Fork Beaver Dam Wash is an intermittent drainage throughout much of its length and flows as a result of irrigation returns, thunderstorms, and snow melt. Springs also contribute flow along short reaches. Upstream of the project area, flow in the wash is perennial; however, irrigation depletes most flow in the channel before it reach the project area. Surface flows are believed to be seasonal, or intermittent, within Arsenic Gulch (BLM, 2017).

20.1.2 Wildlife Including Migratory Birds

The general wildlife survey conducted in late spring of 2016, and encountered 58 avian species, eight mammalian species, and six reptilian species within the project area. The wildlife encountered are common species found in the region. The project area is also designated as big game habitat by the BLM for mule deer (*Odocoileus hemionus*). Critical big game habitat is located north of the project area, and a deer migration corridor extends from the critical habitat to the Bull Valley Mountains (BLM, 2017).

An acoustic bat survey was conducted near a stream that provides foraging habitat and documented three bat species in the project area: California myotis (*Myotis californicus*), yuma myotis (*Myotis yumanensis*), and big brown bat (*Eptesicus fuscus*).

Over 300 species of migratory birds have been documented using habitats within Washington County for breeding, nesting, foraging, and migratory habitats (BLM, 2017).

Eleven active raptor nests, 26 inactive unknown raptor species nests, one active unknown raptor species nest, and four common raven nests were located during the golden eagle and raptor nest survey which encompassed a one-mile buffer around the property boundary. Of the 11 active raptor nests, three were active golden eagle (*Aquila chrysaeto*s) nests. The remaining active nesting raptors observed during the aerial survey included: black hawk (*Buteogallus anthracinu*s), Cooper's hawk (*Accipeter cooperii*), peregrine falcon (*Falco peregrin*us), red-tailed hawk (*Buteo jamaicensis*), turkey vulture (*Cathartes aur*a), and great horned owl (*Bubo virginianu*s). The golden eagle was the only BLM sensitive wildlife species identified with potential foraging and nesting habitat in the project area and vicinity (BLM, 2017).

20.1.3 Vegetation

The majority of the project area burned from a wildland fire approximately ten years ago. Prior to the wildland fire, the project area was dominated with a pinyon/juniper forest community. The regrowth after the wildland fire has resulted in different shrub communities dominating the area, with some unburned areas of forest and blackbrush scattered throughout. The seven vegetation communities include: blackbrush, Dixie live oak, mountain brush, pinyon/juniper, reclaimed, riparian, and serviceberry (BLM, 2017).

20.1.4 Areas of Critical Environmental Concern, Wilderness, and Lands with Wilderness Characteristics, Caves and Karst

The designation of an area of critical environmental concern (ACEC) is to highlight areas where special management attention is needed to protect, and prevent irreparable damage to important historical, cultural, and scenic values, fish, or wildlife resources or other natural systems or processes, or to protect human life and safety from natural hazards (BLM, 2017).

Portions of the project area are located within the Upper Beaver Dam Wash ACEC. The Upper Beaver Dam Wash ACEC is approximately 33,063 acres in size. In its upper reaches, the West Fork of Beaver Dam Wash maintains good water quality where it flows through granitic bedrock. The stream supports both warm and cold water fisheries, maintains a quality riparian system, and constitutes potential habitat for the Virgin spinedace (*Lepidomeda mollispinus*) and the endangered Southwestern willow flycatcher (*Empidonax traillii extimus*). The Upper Beaver Dam Wash ACEC is managed to preserve watershed integrity and water quality and to maintain or improve riparian resources and potential habitats for the Virgin spinedace and Southwestern willow flycatcher. The water is also used for agricultural purposes near the community of Motoqua, as well as feeding groundwater aquifers that are under consideration for well-field development to provide culinary water for St. George and neighboring communities (BLM, 2017).

Three wilderness areas are located in the vicinity of the project area: Doc's Pass, Slaughter Creek, and Cougar Canyon. The United States Congress designated these wilderness areas in 2009; each comprises 18,216 acres, 4,047 acres, and 10,648 acres respectively. All are located in Utah and managed by the BLM (www.wilderness.net).

Lands with wilderness characteristics provide a range of uses and benefits in addition to their value as settings for solitude or primitive and unconfined recreation. Section 201 of *Federal Land Policy and Management Act* requires the BLM to maintain an inventory of all public lands and their resources and other values, including wilderness characteristics. In order for an area to qualify as lands with wilderness characteristics, the area must possess sufficient size, naturalness, and outstanding opportunities for either solitude or primitive and unconfined recreation. In addition, it may also possess supplemental values including size, naturalness, outstanding opportunities for solitude or primitive unconfined recreation, and other supplemental values (BLM, 2017). The entire project area was inventoried in 2011 for wilderness characteristics and three separate inventory units were identified: Square Top Mountain (UT-040-048A), Square Top Mountain (UT-040-048B), and Docs Pass (UT-040-124A).

The project area is located within a large and potentially significant karst terrain. Karst terrain can consist of caves, sink holes, blowholes, crevices, vugs, swallets and/or sinking streams. Any of these features can lead into a cave system that may contain unique cave adapted organisms or drain surface water directly into the water table or aquifer. There are no caves, shelters, or pits that have been identified in the project area. The Wooden Ladder Cave was discovered from a historic mine tunnel and this cave is located approximately 0.6 mile from the northwest corner of the project area, and the next closest caves are more than five miles south of the project area (Pilot Goldstrike, 2017). Many of these caves south of the project area have been listed as significant under the *Federal Cave Resource Protection Act* 16 USC Sec. 4301 Title 16 Chapter 63 (BLM, 2017).

BLM karst data was reviewed to identify which sandstones and limestones are the dominant host rock of the known caves, pits, and shelters in southwestern Utah. The BLM data showed that the geological formations within the project area with the potential to form caves include the Navajo Sandstone, Queantoweap Sandstone, Pakoon Dolomite, Calville Limestone and Redwall Limestones. Of these units, the Callville Limestone, Pakoon Dolomite, and Redwall Limestone are shown regionally to have the highest potential to host caves (BLM, 2017).

In order to calculate the "potential" karst forming areas, the geology was simplified into Tertiary sediments, volcanics and intrusives, as well as Paleozoic sediments. The Paleozoic sediments were then categorized as higher potential to host karsts (Redwall Limestone) or lower potential to host karsts (Calville Limestone, Pakoon Dolomite, and the Queantoweap Sandstone). In order to avoid impacts in higher potential karst forming units, Liberty Gold will inspect areas of higher potential karst forming units during exploration activities (BLM, 2017).

20.1.5 Cultural Resources and Paleontology

In May 2016, a Class III cultural resources inventory was conducted to identify cultural resources in the project area. Eleven new cultural resource sites were identified and recorded, and seven previously recorded sites were revisited, and re-recorded during the inventory. Eight of the sites are prehistoric artifact scatters, nine are historic era, primarily associated with historic mining, and one site contains prehistoric artifacts as well as historic era mining features. The BLM determined that ten of the sites are eligible for listing on the National Register of Historic Places (BLM, 2017).

There are two recorded paleontology sites within the vicinity of the project area. Both sites are listed as micro-fossil localities and are in one of the predominant geologic layers where the drilling activities will occur. It is likely the marine fossils occur within the limestone geologic units and some of the sandstone units within the project area. Much of the project area located east of East Fork Beaver Dam Wash is located on sandstone or other sedimentary geologic units (BLM, 2017).

20.1.6 Recreation

Opportunities for recreation in the project area and vicinity include mainly dispersed hunting, off-road vehicle activity, camping, pine nut harvesting, and rock-hounding. There are no developed campsites or recreational facilities in the area. The three most common recreational activities occurring in the project area include hunting, off-road vehicle recreation, and wilderness therapy (BLM, 2017).

From two weeks prior, to the end of the rifle hunting season, many hunters camp and hunt within the project area in the fall. There are 15 commercial hunting guides who are authorized to operate in the project area and vicinity (BLM, 2017).

The project area is a popular location for all-terrain vehicles/utility-terrain vehicles (ATV/UTV) enthusiasts, although the somewhat remote location keeps the use numbers relatively low. There are five companies that are authorized to conduct ATV/UTV tours in the area, and the annual Tri-State ATV Jamboree passes directly through the project area as part of their annual event (BLM, 2017).

There are two companies permitted with the BLM to operate wilderness therapy programs in the project area and vicinity. These programs typically focus on at-risk/troubled youth and young adults, and prefer to operate in areas where visitor traffic is low and contact with outside groups or individuals is discouraged (BLM, 2017).

20.2 Environmental Management Planning

At the current phase of the Goldstrike Project, detailed environmental management plans have not yet been developed. During state and federal permitting of the mining and processing operations, a number of regulatory plans will be required. State permitting environmental management plans include:

- Process fluid management plans
- Monitoring plans
- Emergency response plans
- Temporary and seasonal closure plans

- Reclamation plans

Federal permitting environmental management plans include:

- Water management plans
- Rock characterization and handling plans
- Quality assurance plans
- Spill contingency plans
- Reclamation plans
- Monitoring plans
- Interim management plans

Additional environmental management plans may be developed as part of the environmental impact analysis conducted by the federal land management agency.

At the current phase of the Goldstrike Mine project, environmental management plans have not yet been developed.

20.3 Project Permitting Requirements

Liberty Gold is authorized to conduct gold exploration in the Bull Valley project area under the *Bull Valley Plan of Operations* (UTU-091579) (“the PoO”) and the UDOGM *Notice of Intention to Conduct Exploration* (E/053/0069) (NOI) in February 2017 and received authorization from the BLM and UDOGM in June 2017 to conduct exploration activities within the project area. The PoO and NOI were amended in November 2017 to add acreage associated with historic mine disturbance and reclaimed roads. The project area encompasses about 1,264 acres that includes 1,016 acres of BLM-administered land, 241 acres of private land, and seven acres of leased SITLA-administered land. Up to 77.0 acres of exploration disturbance is authorized, of which about 67.3 acres will be new surface disturbance in addition to the existing 9.7 acres of notice-level disturbance. No additional permitting for surface disturbance is required at this time.

Environmental permitting for mines in Utah is predicated on land status. Because the Goldstrike Mine and infrastructure will be located on both public land administered by the Department of the Interior - U.S. BLM, state land controlled by SITLA, and private land controlled by Liberty Gold, the permitting path will involve multiple state and federal agencies as shown in Table 20-1.

The Goldstrike Project is located primarily on unpatented federal mineral claims administered by the BLM within Washington County, Utah. The project, therefore, falls under the jurisdiction and permitting requirements of Washington County, the state of Utah, and the BLM. The list of major permits and authorizations for the Goldstrike Mine project are presented in Table 20-1.

Table 20-1: Major permits for the Goldstrike Mine Project

Permit/Approval	Issuing Authority	Permit Purpose	Status
Federal Permits Approvals and Registrations			
Plan of Operations / *National Environmental Policy Act* Analysis and Record of Decision	BLM	Prevent unnecessary or undue degradation of public lands, Initiate NEPA analysis to disclose and evaluate environmental impacts and project alternatives.	**REQUIRED,** Liberty Gold unpatented mineral claims are located on public land. Exploration and operations will require a PoO and NEPA analysis.
Rights-of-Way / NEPA Analysis	BLM	ROW grant authorizes rights and privileges for a specific use of the land for a specific period of time.	**REQUIRED,** Linear infrastructure (e.g., pipelines, utilities, roads, etc.) crossing federal public lands require SF-299 and Plan of Development. Action analyzed under a NEPA document.
Explosives Permit	U.S. Bureau of Alcohol, Tobacco, Firearms, and Explosives	Storage and use of explosives	**REQUIRED,** Explosives are required for development of the process area site.
EPA Hazardous Waste ID No.	U.S. Environmental Protection Agency	Registration as a small-quantity generator of wastes regulated as hazardous	**REQUIRED,** of all mining operations in Utah that generate hazardous waste.
Notification of Commencement of Operations	Mine Safety and Health Administration	Mine safety issues, training plan, mine registration	**REQUIRED,** of all mining operations in Utah.
Biological Opinion and Consultation	U.S. Fish and Wildlife Service	Only if project Threatened or Endangered Species is determined present during the NEPA analysis of the project.	**NOT REQUIRED,** There are no current federal T&E species in the project area.
Incidental Take Permit	U.S. Fish and Wildlife Service	Required when non-Federal activities will result in take of T&E species. A habitat conservation plan must be developed to ensure that the effects of the take are minimized and mitigated	**MAYBE,** if golden eagles are affected.
404 Permit (Waters of the U.S. Jurisdictional Determination)	U.S. Army Corps of Engineers	Implementation of Section 404 of the *Clean Water Act* and Sections 9 and 10 of the *Rivers and Harbors Act* of 1899	**MAYBE**, The mining activity is in a hydrographic basin that is connected to the Virgin River and ultimately to the Colorado River.
Federal Communications Commission Permit	Federal Communications Commission	Frequency registrations for radio/microwave communication facilities	**MAYBE,** if Liberty Gold intends to use business radios to transmit on their own frequency
State Permits, Authorizations and Registrations			
Mineral Lease and Easement	Utah SITLA	Mineral lease for mining on SITLA-administered lands. Presently Liberty Gold maintains two parcels that have the Utah State Mineral Lease number 52928.	**MAYBE,** An easement(s) may be needed for a road, power lines, and pipelines located on SITLA-administered land.

Permit/Approval	Issuing Authority	Permit Purpose	Status
Title V Air Quality Operating Permit	Utah Department of Environmental Quality (UDEQ)/Division of Air Quality	Regulates project air emissions from stationary sources	**REQUIRED,** for proposed processing operation.
Notice of Intention for a Large Mining Operations (NOI)	UDOGM	Reclamation of surface disturbance due to mining and mineral processing; includes financial assurance requirements	**REQUIRED,** of all mining operations in Utah.
Groundwater Discharge Permit	UDEQ/ Division of Water Quality	Prevent degradation of groundwater from mining, establishes minimum facility design and containment requirements	**REQUIRED,** of mining operations in Utah.
Permit to Operate a Solid Waste Landfill	UDEQ/Division of Waste Management & Radiation Control	Authorization to operate an on-site landfill	**MAYBE,** if Liberty Gold proposes to utilize on-site landfill
Hazardous Waste Management Permit	UDEQ/Division of Waste Management & Radiation Control	Management of hazardous wastes	**MAYBE,** for depending if over 2,200 pounds of hazardous water are generated monthly.
Utah Pollutant Discharge Elimination System Permit	UDEQ/ Division of Water Quality	General permit for management of site discharges	**MAYBE,** required for discharges of treated groundwater.
Multi-Sector General Stormwater Discharge Permit	UDEQ/Division of Water Quality	Management of site stormwater discharges in compliance with federal *Clean Water Act*	**REQUIRED,** based on Standard Industrial Code.
Permit to Appropriate Water/Change Point of Diversion[1]	Utah Division of Water Rights (UDWR)	Water rights appropriation	**REQUIRED,** Liberty Gold is in the process of applying for water rights.
Permit to Construct a Dam	UDWR	Regulate any impoundment impounding more than 20 acre-feet	**MAYBE**, depending if the ponds are constructed with an embankment.
Potable Water System Permit	UDEQ/Division of Drinking Water	Non-transient non-community water system for drinking water and other domestic uses (e.g., lavatories)	**MAYBE**, depending if Liberty Gold plans to construct and operate a potable water system.
Large Underground Wastewater Disposal System Permit	Utah Division of Water Quality Wastewater Program	Design, operation, and monitoring of septic and sewage disposal systems over 5,000 gallons per day	**LIKELY,** if Liberty Gold proposes to utilize septic system(s)
Blasting Permit	Utah State Fire Marshal	Maintain, store, use or handle explosive materials	**REQUIRED**
State Business License	Utah Division of Corporations and Commercial Code	License to operate in the state of Utah	**REQUIRED**
Local Permits for Washington County			
Building Permits	Washington County	Ensure compliance with local building standards/requirements	**REQUIRED,** Development must meet Washington county code.
Conditional Use Permit		Provided as necessary under applicable zoning ordinances	**MAYBE**

Permit/Approval	Issuing Authority	Permit Purpose	Status
Business License		License for the engagement of business activities	**REQUIRED**
Road Maintenance Agreement		Agreement to utilize the county road for mining activities and perform maintenance	**MAYBE**

Issues that may be associated with federal and state permitting include potential impacts to:

- surface and ground water resources including seeps and springs and jurisdictional waters and water rights
- the presence of golden eagle nests
- the Beaver Dam Wash ACEC
- nearby wilderness areas and lands with wilderness characteristics

Other issues that could potentially arise during the NEPA process are Native American religious concerns especially as related to water; however, these issues did not arise during the 2017 EA consultation.

20.3.1 Geochemistry and Water Quality

The primary water issues that will likely arise during the agency review will be associated with potential impacts to surface and groundwater related to water use and geochemistry. Because the mining and processing operations will be located within the drainage of East Fork Beaver Dam Wash, the agencies will focus on changes to water quality and quantity from runoff from the dumps, haul roads, and processing operations and spills of fuels and reagents. The agencies will also scrutinize the geochemistry of the waste rock in dumps and the heap and remaining in the pit walls and floors.

Liberty Gold has not yet initiated a geochemical characterization program to guide waste rock management and closure of the dumps, pits, and heaps. The geochemical characterization program should include static and kinetic testing for ore, waste rock, and spent leached material to assess the acid rock drainage and metals leaching. Geochemical tests will provide an indication of the potential for material to generate acid or leach metals in the short and long terms and the timing to the onset of acid generating conditions after the neutralization potential is consumed, should these conditions be expected to occur. The tests rely on material generated during drilling activities and must address the compositional and spatial distribution of material expected to be encountered during mining. The characterization must also consider the rock types that will remain in the pit walls and floor due to potential interactions with seasonal pit lakes as a result of snowmelt and direct precipitation.

Geochemical characterization programs are lengthy with humidity cell testing requiring a minimum 40 weeks of testing. Therefore, early initiation of a characterization program will enable Liberty Gold to plan for and design the appropriate controls during mining and for closure for:

- management of potentially acid generating (PAG) waste rock;
- non-contact stormwater diversions
- contact stormwater collection and containment
- long-term closure to reduce infiltration of meteoric waters on dumps and the spent heap;
- post-mining stormwater diversions and other management
- water treatment, should it be required

20.3.2 Water Quantity

Surface waters near or within the project area include East Fork Beaver Dam Wash and Arsenic Gulch, a tributary to East Fork Beaver Dam Wash. Liberty Gold has not yet conducted a study to determine if these waters are jurisdictional under Section 404 of the *Clean Water Act*. The results of the jurisdictional determination will direct subsequent federal permitting. If jurisdictional waters are identified to occur within the East Fork Beaver Dam Wash drainage, then Liberty Gold will need to obtain either nationwide or an individual permit depending on the final layout of the mine facilities. Impacts are not confined to surface water but must consider a significant nexus of sub-surface water associated with this and other contributing drainages. Because a jurisdictional determination has not been conducted, no conclusions can be made at this time to the level of 404 permitting that may be required.

Liberty Gold will have to characterize both surface and ground water resources within the project area and the area of potential effect outside of the project area. The surface water study should also include a comprehensive review to identify pre-mining flows from East Fork Beaver Dam Wash and contributing streams upgradient and downgradient of the project area. The groundwater study should address water chemistry and water level elevations within the project area.

The water studies and long-lead items and will be used to identify baseline conditions and quantify potential impacts to seeps and springs and groundwater drawdown during the environmental impact statement (EIS) process. Drawdown of the potentiometric water levels has the potential to capture other naturally occurring, or existing, groundwater discharges in the hydrologic system. Capture may include local springs, discharges to streams, discharges from artesian flowing wells, evapotranspiration discharge by phreatophytes, and subsurface outflow from the basin.

Interruption of sub-surface flows in East Fork Beaver Dam Wash due to the Hamburg 5 Pit is a possible impact to the Beaver Dam Wash ACEC. This pit, located in East Fork Beaver Dam Wash, presents a risk of interrupting sub-surface flows in the wash and creating a seasonal pit lake. Depending on the outcome of the jurisdictional determination, the presence of this pit directly in the wash may elevate the level of 404 permitting

The U.S. Fish and Wildlife Service, in cooperation with the BLM and Utah Division of Wildlife Resources, protects golden eagles under the *Bald and Golden Eagle Protection Act*. This act provides additional legal protection to eagles which includes making it unlawful to disturb eagles or their nests. “Disturb” includes: “*agitating or bothering a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available: injury to an eagle; a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior; or nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior”.* Liberty Gold should assess the need to conduct golden eagle nesting studies within ten miles of the project boundary. Nests that have direct line-of-sight or could be affected by noise or human activity and may require that Liberty Gold institute mitigation measures during design and operations.

20.3.3 Water Rights

The Goldstrike Project lies within the Beaver Dam Wash sub-basin of the Virgin River Basin. A small portion of the east side of the Goldstrike property is located in the Santa Clara River sub-basin of the Virgin River Basin; however, there are no planned facilities in this drainage.

Both surface water and underground water rights are present in the Beaver Dam Wash watershed. Liberty Gold is in the process of evaluating various opportunities for acquiring water rights through purchase or leasing; as well as developing new ground water sources within the Beaver Dam Wash watershed.

Liberty Gold is working closely with the Washington County Water Conservancy District and the State of Utah Department of Natural Resources, Division of Water Rights. Once a sufficient water source is located, Liberty Gold will work closely with these agencies to obtain water rights compliant with local and state regulations.

20.4 Federal Permitting

20.4.1 Plan of Operations

Liberty Gold will have to prepare a PoO that addresses the requirements of Title 43 of the *Code of Federal Regulations* (CFR Title 43) Subpart 3809. This PoO can also incorporate the elements of an NOI required by UDOGM in Utah Title 647-4 and SITLA in *Utah Rule R850-24-700*. A reclamation surety to close, physically and chemically stabilize, and reclaim mining-related disturbance without a post-mining use will be reviewed and approved by the BLM. Ideally, conceptual-level or greater engineering is needed to adequately prepare the PoO, which must also use imperial units.

Reclamation will be a large part of the PoO, which will have to describe the activities that will take place and be used to prepare the reclamation cost estimate for bonding.

20.4.2 NEPA Analysis

The PoO must provide sufficient detail to identify and disclose potential environmental impacts during the mandatory *National Environmental Policy Act* (NEPA) review process, under which the potential impacts associated with project development are analyzed. The most likely level of NEPA analysis for this project will be an environmental impact statement (EIS) which is a public disclosure document, not a permit or approval document. An EIS is intended to disclose any environmental impacts that may occur from the project and guide the decisions of the public land managers.

Each agency, BLM, UDOGM, and SITLA, will require that baseline environmental surveys be conducted. The same level of detail for information is generally required by each agency. If the 1,264-acre project area used in the exploration PoO remains the same size for mining, a portion of the baseline studies have been completed. On-the-ground surveys will typically include: cultural resources; cave and karst; vegetation and animal biological resources including threatened, endangered, and sensitive species and migratory birds; soils resources; noxious and invasive species; jurisdictional waters; and water quality and quantity including geochemistry. These surveys, prepared in accordance with federal and state protocols, will identify the presence or absence of a particular resource and be used as the baseline to assess potential impacts. The same level of study will be required for any new/improved access roads and water/power line corridors on public land outside of the PoO boundary.

Other resources that will likely need to be addressed via desktop studies and stakeholder consultation include, but are not limited to: Native American religious concerns, environmental justice, social and economic values, paleontology, livestock grazing, recreation, wilderness, and lands with wilderness characteristics.

The 2017 environmental assessment (EA) analyzed potential direct and cumulative impacts from exploration activities. This assessment provided background information regarding the environmental resources potentially affected by the proposed exploration activities as well as the non-government organizations (NGOs) that are likely to respond to a mine project and the types of issues that they may raise.

A listing of the types of studies that should be undertaken during the mine planning phase and in advance of the NEPA process and in support of the acquisition of various other permits, could include:

- Biological resources including an expanded survey for golden eagle nesting areas
- Cultural resources of all areas proposed for disturbance unless the area has been surveyed within the past ten years
- Hydrogeological assessment (may include impact modeling including potential for seasonal pit lakes)
- Geochemical characterization of leach material, waste rock, spent leach material)
- Air quality/meteorological parameters
- Traffic study
- Environmental justice/socioeconomics

The length of time to prepare an EIS varies with the complexity of the project. The BLM has recently been directed by the Department of the Interior to reduce the time and length of NEPA documents.

The EIS process is limited to one year after the baseline information and PoO have been approved. The length of an EIS is limited to 300 pages unless the project is “complex”.

20.4.3 Right-of-Way

Linear features outside the PoO boundary will need to be authorized under a BLM right-of-way. These linear features could include changes to the existing access road and the inclusion of a powerline along the existing access road that occur on land administered by the BLM. Should the water supply wells and pipelines need to be located outside of the project area, a BLM right-of-way and possibly a SITLA easement will be required. The right-of-way application will be based on high-level engineering designs for roads and the powerline. The NEPA analysis will most likely be included in the mine EIS. Liberty Gold will have to collect baseline information along these routes as identified above.

20.4.4 404 Permitting

The Goldstrike Mine will be located in East Fork Beaver Dam Wash which is intermittent throughout much of its length and flows in response to irrigation returns, precipitation, and snow melt. Upstream of the project area, flow in the wash is perennial; however, irrigation depletes most flow in the channel before it reaches the project area (BLM, 2017). East Fork Beaver Dam Wash flows into the main Beaver Dam Wash which ultimately flows to the Virgin River, making the East Fork drainage potentially jurisdictional and will come under the purview of the U.S. Army Corps of Engineers (USACE). Liberty Gold is planning to conduct a jurisdictional waters survey, which is the first step in determining whether or not a 404 permit will be needed.

If East Fork Beaver Dam Wash and contributing streams (i.e., Arsenic) within the project area are jurisdictional, Liberty Gold will have to obtain a 404 permit. The type of permit, nationwide or individual, will depend on the amount of disturbance under the ordinary high water mark in each drainage affected. The process to determine the presence or absence of jurisdictional waters, prepare the report to USACE standards, and receive a decision can be lengthy. If jurisdictional waters will be affected, the next step is to identify the appropriate level of permitting and engineering controls in coordination with the USACE

Liberty Gold should undertake a comprehensive stormwater study to identify potential flows from East Fork Beaver Dam Wash and contributing streams in the project area. The surface water study should also include a comprehensive review to identify potential flows from East Fork Beaver Dam Wash and contributing streams upstream and downstream of the project area.

20.5 State Permitting

Utah is a business-friendly state with a well-defined permitting system. The state of Utah requires a number of operational mining permits regardless of the land status of the project as shown in Table 20-1. The Utah permitting process can run concurrently with the federal permitting process..

20.6 Washington County

Washington County is a business-friendly county with well-defined permitting system. The *Washington County Resource Management Plan* encourages economic development and mining and "will seek cooperating agency status on all federal resource management plans within or affecting Washington County to influence mineral zoning and permitting decisions" (www.washco.utah.gov). Liberty Gold will have to acquire a building permit(s), conditional use permit, and business license. A road maintenance agreement with Washington County will likely have to be acquired as well.

20.7 Reclamation Bonding

The requirements for performance and/or reclamation bonding of the Goldstrike Project are discussed under Mine Closure (below).

20.8 Social and Community Requirements

20.8.1 Community

The project area is located in a rural part of Washington County, Utah. The nearest urbanized and populous city is St. George, with a population of 82,318 in 2017 (U.S. Census Bureau 2018). According to the Utah State Demographer, the population of Washington County was 160,245 in 2016. The 2016 median household income in the county is on the order of $65,900 (https://jobs.utah.gov). Other communities with smaller but expanding populations are also located within Washington County and include Ivins, Santa Clara, and Washington.

The Goldstrike Project workforce (including shorter-term construction contractors) will most likely reside in the towns of St George, Ivins, Santa Clara and Washington and also Beaver Dam/Littlefield Arizona and Mesquite, Nevada. The operations work forces is expected to be between 250 and 310 full-time employees and their families, who will have to be absorbed into the nearby communities. As such, the Liberty Gold will need to coordinate closely with local governments and businesses to ensure that the needs of both the community and the workforce are being met.

The mine will be located about 13 air miles from the Shivwits Band of Paiutes Indian Tribe. The 2017 EA did not identify whether this or any other Native American tribe was consulted; as such, concerns were not documented at that time. Engagement with Native American tribes during the NEPA process are handled by the BLM via government-to-government consultation.

20.8.2 Sociopolitical

The 2017 EA received comments from several environmental NGOs, namely the Southern Utah Wilderness Alliance which filed and then withdrew an appeal. The nature of the appeal is unknown as the actual appeal was not available for review.

Liberty Gold should be prepared to have more scrutiny of the PoO and EIS by environmental groups due to the proximity of the Beaver Dam Wash ACEC, the nearby wilderness areas, and lands with wilderness characteristics. As such, applicant-committed environmental protection measures will need to be developed to address and mitigate potential environmental issues in the PoO.

20.9 Mine Closure

The PoO, NOI, and groundwater discharge permit all have requirements that the project proponent plan for closure and reclamation of mining disturbances on BLM-administered, private, and SITLA-administered land. The initial submissions must include a discussion on how the mining disturbance will be physically and chemically stabilized.

The plans for final closure must address the long-term potential for groundwater contamination from the closed facility. Typically, this involves a decommissioning plan or a permanent capping plan along with a post-closure monitoring commitment. Permit applicants should consider ways of closing a facility which will eliminate any possibility of future groundwater contamination and thereby eliminate the need for long-term monitoring.

The BLM and UDOGM both require that a surety be posted sufficient to cover third-party costs to physically stabilize the site. The BLM requires the surety to cover costs associated with chemically stabilizing the spent heap and management of the draindown solution.

After mining and leaching operations cease, all buildings, infrastructure, and facilities from the Goldstrike Mine, not identified for a specific post-mining use, must be removed from the site during the reclamation, salvage, and site demolition phase. These activities will generally include, but not be limited to the:

- regrading, placement of growth media, and seeding of all disturbed surfaces without a post-mining use
- removal of surface pipelines and power lines and abandonment of underground pipelines
- demolition of process facilities and salvage/removal of equipment and residual reagents for proper disposal
- managing the drain-down solution to reduce the volume which may include the construction and operation of an evapotranspiration cell

To the extent practicable, reclamation and closure activities will be conducted concurrently to reduce the overall reclamation and closure costs, minimize environmental liabilities, and limit bond exposure.

At the current phase of the Goldstrike Mine project, a reclamation cost estimate has not yet been developed. An approximate closure cost of $20M has been assumed for economic evaluation.

21 Capital and Operating Costs

21.1 Capital Cost Summary

21.1.1 Summary Capital Costs

The initial and life-of-mine (LOM) capital costs for the project are summarized in Table 21-1. The sum of indirects, EPCM and contingency represents approximately 30% of direct costs.

Table 21-1: Life-of-mine capital costs

Capital Costs		Initial	LOM
Mining			
Mining Capital	$M	$23.5	$61.3
Infrastructure			
Road Access	$M	$4.9	$5.7
Water	$M	$12.9	$12.9
Power	$M	$12.0	$13.0
Diversion Channels	$M	$1.6	$3.5
Total Infrastructure Capital	**$M**	**$31.4**	**$35.1**
Processing			
Stacking (Lime Addition)	$M	$0.4	$0.5
Recovery Plant*	$M	$13.7	$16.8
Laboratory	$M	$2.3	$2.8
Mobile Equipment	$M	$0.2	$0.3
Spare Parts	$M	$0.4	$0.4
Contingency	$M	$4.2	$5.2
Indirect Costs	$M	$2.6	$2.6
Initial Fills	$M	$0.6	$0.6
EPCM & Commissioning	$M	$2.1	$2.1
Process WC	$M	$2.4	$2.4
Leach Pad Phase 1	$M	$19.3	$19.3
Leach Pad Phase 2	$M	$0.0	$8.9
Leach Pad Phase 3	$M	$0.0	$6.6
Total Processing Capital	**$M**	**$48.3**	**$68.4**
Closure Costs	**$M**	**$0.0**	**$20.0**
Owners Costs	**$M**	**$10.0**	**$10.0**
Total Capital Costs	**$M**	**$113.2**	**$194.8**

Capital Cost Contingency

The estimates were prepared with varying levels of contingency applied to different elements to reflect the relevant risk associated with those estimates. Table 21-2 summarizes the contingency allowances. Overall cost-weighted average contingency for the capital estimate is 18%.

Table 21-2: Capital cost contingency allowances

Category	LOM Base Capital ($M)	Contingency ($M)	Percentage
Mining Capital	$56.2	$5.17	9%
Road Access	$3.8	$1.13	30%
Water	$10.3	$2.58	25%
Power	$9.2	$2.77	30%
Diversion Channels	$2.7	$0.82	30%
Leach Facilities	$26.7	$8.01	30%
Processing	$28.5	$5.17	18%
Closure	$16.0	$4.00	25%
Owners Costs	$10.0	$0.00	0%
Total	**$163.4**	**$29.65**	**18%**

21.1.2 Mining Capital Cost Estimate

Equipment

SRK used benchmark costs for mine equipment as well as costs from past similar studies.

SRK added 4% for assembly/commissioning/training and 3% for spares. A 10% contingency was applied.

Pre-strip

While the first year of mining has reduced leachable resource produced, it was not significant enough to warrant producing a more complex plan with pre-stripped waste. The likely effect on project cashflows and valuation was considered to not be material at a PEA level..

Other Facilities

No additional facilities were estimated for the mining function. It is assumed that explosives facilities would be provided under contract,

Maintenance and office facilities are estimated with site infrastructure.

Sustaining and Life-of-Mine Totals

Sustaining Capital for primary and ancillary equipment is estimated on a replacement schedule. The drills, loaders, and trucks are assumed to last the LOM, while other equipment has at least one replacement cycle. Two additional trucks are required later in the mine plan due to longer haul profiles.

The mine capital cost summary is presented in Table 21-3.

Table 21-3: Mine capital cost summary

Category	Initial Capital ($M)	Sustaining Capital ($M)	LOM Capital ($M)
Primary Equipment			
Production Drill	$0.8	$1.7	$2.5
Small Drill	$0.6	$0.6	$1.2
Loader	$2.2	$4.4	$6.6
Trucks	$9.6	$16.8	$26.4
Dozers	$1.1	$3.4	$4.5
Utility Backhoe	$0.6	$0.0	$0.6
Grader	$0.8	$1.64	$2.5
Water Truck	$1.2	$1.2	$2.5
Primary Total	**$17.0**	**$29.8**	**$46.8**
Ancillary Equipment			
Dewatering and lighting	$0.3	$0.3	$0.6
Service vehicles	$1.1	$1.1	$2.2
Light vehicles	$0.7	$0.7	$1.4
Ancillary Total	**$2.1**	**$2.1**	**$4,.3**
Assembly/Commission	$0.7	$1.2	$1.9
Spares (1st purch. Only)	$0.5	$0.03	$0.5
Freight	$0.9	$1.5	$2.3
Contingency @ 10%	$1.9	$3.2	$5.1
Total Equipment Capital	**$23.1**	**$37.8**	**$60.9**
Misc. and detail design	$0.3	$0.0	$0.3
Contingency (20%)	$0.07	$0.0	$0.07
Grand Total Mining Capital	**$23.5**	**$37.8**	**$61.3**

Note on Mining Equipment Lease Options and Contract Mining

Small mines such as this often use leased equipment and contract mining as options to reduce initial capital expenditure. SRK considers that this project may be successfully developed using a contract mining model. Initial capital requirements would be reduced by approximately the quantum of the mining equipment capital, approximately $23.5M. Some light vehicles and additional offices would be required for the owners' team, so the net reduction would likely be somewhat less than this. Sustaining capital costs would also be reduced. However, operating costs would increase to cover both the cost of capital deployed by the contractor and a fee for profit and management. Additional analysis of the contract mining option could be undertaken at pre-feasibility as a trade-off study.

In general, contract mining options should not be considered as a way to improve the NPV of the project, but should rather be considered as a means of reducing risk and financing challenges.

21.1.3 Process Capital Cost Estimate

Process Capital Cost Summary

The estimated pre-production capital expenditures for the Goldstrike Project are summarized in Table 21-1. These costs are stated in US dollars (USD), are based on the design outlined in this study and are considered to have an accuracy of +/-30%. The scope of these costs includes all process facilities for ROM leach feed.

The costs presented have been estimated using information provided by Liberty Gold and KCA. All equipment and material requirements are based on the design information described in this study. Capital cost estimates have been benchmarked against two or more relevant recent projects in the western United States and escalated for inflation since their construction year. Quotes in KCA's historical project files were used where applicable to provide reasonable estimates for this level of study.

All capital cost estimates are based on the purchase of new equipment. State and county sales tax of 6% has been estimated for equipment purchase.

Table 21-4 Process capital cost summary

Plant Totals Pre-Production Direct Installed Costs	Estimated Total ($M)
Stacking (Lime Addition)	$0.3
Civils and Building	$1.6
ADR Plant (includes Electrics)	
CIC Circuit & Solution Handling	$4.5
Recovery Plant and Refinery	$5.7
Laboratory (includes Electrics)	$2.3
Process Mobile Equipment	$0.2
Spare Parts	$0.3
Plant Total Pre-Production Direct Costs	**$14.9**
Contingency (30%)	$4.4
Plant Total Pre-Production Direct Costs with Contingency	**$19.3**
Indirect Costs (construction, QA/QC, permits, fees, etc.)	$2.3
Initial Fills	$0.8
Sales Tax (6%)	$0.5
EPCM & Commissioning	$2.3
Process Working Capital for 60 Days (Excludes G&A and Mining)	$2.7
Sub Total Pre-Production Process Cost	**$27.9**
Total Cost	**$27.9**

Certain values in table may not sum due to rounding of values

Process Capital Costs

Process capital costs have been estimated by KCA with inputs from Liberty Gold. Capital cost estimates have been made using benchmarked or scaled prices from previous projects. Where possible, prices were used from near identical equipment to provide the most realistic pricing. Prices were benchmarked as major equipment items supplied in turn key packages where applicable. Supplier quotes for minor pieces of equipment were taken from KCA's project files.

Process Cost Basis

The capital costs are shown in the Pre-Production Capital Cost Table (Table 21-4) for each process area including: recovery plant, laboratory, and process mobile equipment.

Process areas can be considered as priced for turnkey installation including all structure, equipment, electrical and auxiliary systems. Site utilities such as water supply and distribution, power supply and distribution, and emergency power are not included.

Supply, freight, tax and installation costs are included in the capital cost for each area. In many cases, these costs were part of the turn key packages.

Engineering, procurement, and construction management (EPCM), commissioning and supervision, indirect costs, and initial fills inventory and working capital are added to the total cost.

Site Preparation

Site preparation including geotechnical testing, site leveling and backfilling for infrastructure, earthworks for the heap leach pad, solution storage ponds and roads are excluded from the process capital costs. Minor earthworks for leveling of the recovery plant only are included in the process capital costs.

Recovery Plant

Costs for the recovery plant were benchmarked from similar sized recovery plants. Costs assume a total installed cost and include the adsorption, elution, acid wash, carbon regeneration and handling, electrowinning, smelting, and handling circuits. No mercury handling is included in the cost estimation. Costs also include a partitioned building separating the strip and refinery areas.

Laboratory

Costs for an on-site laboratory are included. Costs assume a total installed cost and include all equipment, building and associated facilities to process approximately 150 fire assays per day for leach feed and process control, plus 150 solution assays for metallurgical accounting at the process facilities.

Process Mobile Equipment

Costs are included for mobile equipment items including two forklifts, a process mechanic service truck, and a skid-steer loader for use at the recovery plant.

Costs for hauling material to the heap are excluded from this portion of the study. Costs for light vehicles, warehousing equipment, and other site maintenance equipment are also excluded from process mobile equipment costs.

Spare Parts

Spares parts for the ADR plant and miscellaneous equipment were estimated based on recent projects of similar size and scope. Cost includes freight and taxes.

Freight

Freight costs are shown included in the process area direct costs as benchmarked by costs realized on previous projects in the western United States.

Sales Tax

Utah sales taxes are included where applicable in the process area direct costs at a 6% rate.

Indirect Capital Costs

Indirect costs include costs for items during the construction period such as equipment rentals, temporary construction facilities, quality control, survey support, mobilization and demobilization fees, operation of a temporary construction warehouse and fenced yard, consumables such as fuel and power, security, and commissioning of certain equipment items. Miscellaneous consultants, permitting costs, and an allowance for updating the mine design are also included in the indirect costs. These costs have been estimated as 12% of the total direct costs.

EPCM & Commissioning Costs

EPCM costs were based on KCA historical examples and project files. The EPCM and commissioning costs are estimated at 12% of the direct costs.

Contingency

A contingency of 30% was applied to the process area direct costs, consistent with this level of study.

Initial Fills

A separate initial fills component of the pre-production capital costs is included, and is based on similar recent project costs. Initial fills consist of critical consumable items purchased and stored on site at the start of operations. Initial fills items include sodium cyanide (NaCN), activated carbon, antiscalant, caustic soda, hydrochloric acid and fluxes (silica, borax, niter, and soda ash). This inventory of initial fills ensures adequate consumables are available for plant commissioning.

Process Working Capital

The process working capital in this estimate is the cost of operating the plant between start up and when there is a positive cash flow. KCA assumes from previous project experience that 60 days of operating costs for the Process is adequate. This figure does not include working capital needed for mining and G&A operating costs.

Process Capital Cost Exclusions

The following capital costs are excluded from KCA's estimate:

- Site preparation, including access roads, internal roads, and major site earthworks
- Plant utilities and infrastructure including power supply and distribution, water supply and distribution, emergency backup power, administrative facilities, warehousing and storage, septic, waste storage and disposal, and communications
- Costs related to mining and truck stacking fleet
- Mercury handling
- Site finishing including permanent fencing

- Owner's costs
- Finance charges and interest during construction
- Escalation costs
- Currency exchange fluctuations

21.1.4 Heap Leach Facilities

The capital cost for the heap leach facilities is provided in Table 21-5 and is described below.

Table 21-5: Capital and sustaining heap leach facility costs with 30% contingency

Category	Initial Capital Cost ($000)	Annual Sustaining Capital Cost (Years 2 through 8) ($000)	LOM Total ($000)
Heap Leach Facility	$19,305	$2,204	$34,733

- The estimate is based on the conceptual HLF design described in Section 18.1.3.
- Golder has applied unit costs in 2018 US dollars based on its experience at other similar projects. The unit costs are conceptual only and not based on a detailed design. A 30% contingency has been added to the estimate to account for changes to the design at subsequent stages of engineering, refinement in sourcing of soil and rock required to construct the HLF, and changes to the HLF requirements that could result from changes in the mine plan.
- Initial construction will include the Phase 1 leach pad (approximately 330,000 square meters), one event pond, and the process pond.
- Phase 2 construction is currently scheduled for the summer of Year 2 of operations with a goal of being operational at the start of Year 3 of operations. The Phase 2 pad will add approximately 195,000 square meters of leach pad surface and will add the second event pond.
- Phase 3 leach pad construction is currently scheduled for the summer of Year 5 of operations with a goal of being operational at the start of Year 6 of operations. The Phase 3 pad will add approximately 144,000 square meters of leach pad.
- Prior to Phase 3 leach pad construction, the conceptual design requires that the Moosehead Pit be partially backfilled with mine waste placed as engineered fill to create a platform for the Phase 3 leach pad expansion. Costs for pit backfill are assumed to be included in the mining capital and operating costs.
- The sustaining capital costs per year shown in Table 21-5are required in Years 2 and 5 of operations, but have been equally distributed throughout Years 2 through 8 of operations for simplicity.

21.1.5 Site Wide Storm Water Controls Construction

The capital costs for the site-wide storm water controls are provided in Table 21-6 and are described below.

Table 21-6: Capital cost of site wide water control facilities with 30% contingency

Category	Initial Capital Cost ($000)	Annual Sustaining Capital (Years 3 through 8) ($000)	LOM total ($000)
Site Wide Storm Water Controls	$1,622	$319	$3,536

- Estimated capital costs for diversion channels around the HLF, WSFs and proposed pits are based on the conceptual design. Golder has applied unit costs in 2018 US dollars based on its experience at other similar projects. The unit costs are conceptual only and not based on a detailed design. A 30% contingency has been added to the estimate to account for changes to the design at subsequent stages of engineering, refinement in sourcing of rock required to line the channels, and changes in facilities layouts that could result from changes in the mine plan.
- The initial capital cost estimate for diversion channels includes building about 50% of the total final channels for the first two years of operations. The sustaining costs per year shown in Table 21-5 assume that construction of the remaining 50% of the channels is equally distributed throughout the last 6 years of operations (Years 3 through 8).
- The cost estimate includes conceptual design of riprap-lined channels and is based on Golder's experience for sites with similar conditions in arid climate conditions. The channel costs are typical for sizing for the runoff produced during the 1 in 100-year, 24-hour storm event falling on basins upslope of the facilities.

21.1.6 Site and Other Infrastructure Capital Costs

High-level estimates of major site infrastructure capital costs were made. The initial capital total before contingency, EPCM and indirects for this category was $31M. The items covered by these estimates included:

- Site buildings not otherwise included in the mining and processing estimates
- Access road upgrades
- Water-supply infrastructure
- Construction of powerline

Access Road Upgrades

The access to site is currently via an unpaved road from "Old Highway 91" near the town of Ivins to the mine site. The roadway will require realignment, repairs and upgrading to be suitable for construction and operation of the project. An allowance of $4.9M has been made for this work. The estimate is not based on an engineering study and is to be considered as a scoping-level estimate only.

Water Supply

The total capital cost for the water supply infrastructure was estimated to be $12.9 M (including 25% contingency). Further detail is provided below for the water supply:

- The estimate is based on the conceptual water supply system design described in Section 18.2.1.
- Golder has applied unit costs in 2018 US dollars based on its experience at other similar projects. The unit costs are conceptual only and not based on a detailed design. A 25% contingency has been added to the estimate to account for changes to the design at subsequent stages of engineering, changes in the mine plan which result in changes to the water demand, or changes in the water supply system infrastructure following drilling of pilot boreholes.
- The estimated capital costs include indirect expenses, well equipment costs, piping from the wells, a booster pump station and a transmission pipeline to a delivery point on the project site. Costs were included for access roads and site development.
- Four new wells are anticipated to be constructed, with the actual number of wells dependent on hydrogeologic conditions encountered and aquifer testing.
- The estimate does do not include costs for water rights or land acquisition/access.
- Drilling costs for the production wells are assumed to be developed prior to the initial construction, so were not included in the project capital cost estimate.

Powerline Construction

It is proposed to connect the mine site to the existing electrical grid. No detailed study has been done. It is assumed that a connection point will be available in the vicinity of St George, Santa Clara or Ivins. The powerline route is assumed to follow the existing access road. The connection is likely to be either 11kV or 33kV. An allowance of $12M was made for the electrical connection to site, including the connection to the exiting grid and the site substation. This estimate is based on scoping-level power infrastructure cost calculators, and does not reflect an engineered design.

21.2 Operating Costs

21.2.1 Operating Costs Summary

Operating costs for the project were estimated using a combination of first-principles models and factored and benchmarked estimates. The level of accuracy is approximately -25%/+25% and is appropriate for a PEA. The summary of operating cost is presented in Table 21-7.

Table 21-7: Summary of operating costs

Operating costs	LOM ($M)	$/tonne
Mine Operating Cost	$272.1	$4.59
Leach Operating Costs	$117.5	$1.98
Water Supply	$3.5	$0.06
Infrastructure Maintenance	$17.0	$0.29
Site G&A	$35.2	$0.59
Total	**$445.3**	**$7.51**

Table 21-8: Unit cash costs per ounce

Unit Costs per Ounce	$/oz
Mine Operating Cost	$392.16
Leach Operating Costs	$169.37
Water Supply	$5.01
Road and Infrastructure Maintenance	$24.50
Site G&A	$50.73
Total Operating Unit Cash Cost	**$641.77**
Royalty	$33.33
Total Adjusted Unit Cash Cost	**$675.11**
Operating Margin	51%
Sustaining Capital Costs (incl. closure)	$117.61
All-in Sustaining Costs (AISC)	**$792.72**

21.2.2 Mine Operating Cost

SRK used benchmark equipment operating costs and labour costs to develop the mine operating costs from equipment hours derived from first principles. Truck haul profiles for each pit were derived for the leach pad and waste hauls, and a diesel cost of $2.50/US gallon was also assumed for all mine equipment.

The resulting life-of-mine operating costs for the PEA mine plan is $272.1M or an average of $4.59/t leached ($392/oz produced).

21.2.3 Process Operating Costs Summary

Process operating costs for the Goldstrike Project are stated in US dollars (USD) and have been based on the information presented in earlier sections of this report. Life-of-mine average process operating costs are estimated to be $1.98 per tonne of material.

Process operating costs are summarized in Table 21-9.

Table 21-9: Goldstrike Project process operating cost summary

Process Area	Annual Costs (US$M)	Cost per Tonne (U$M)
Labor - All Process Areas	$2.9	0.36
Heap / Solution Handling	$2.0	0.25
Recovery Plant	$1.3	0.16
Laboratory	$0.4	0.05
Reagents	$9.2	1.14
General Facilities	$0.2	0.02
Total	**$16.0**	**1.98**
Cost Type	**Annual Costs (US$M)**	**Cost per Tonne (U$M)**
Fixed Costs	$3.1	$0.38
Variable Costs	$12.9	$1.60
Total	**$16.0**	**$1.98**

Operating costs for all areas of the process have been estimated based on relevant recent project costs. Labor costs and unit consumptions of materials, supplies, power, water, and delivered supply costs are estimated based on location and past project experience. A breakdown of fixed and variable costs is also presented.

Process Operating Costs

The operating costs for the Goldstrike Project have been estimated at $1.98 per tonne of material processed on average, assuming a 22,500 tonne per day average material throughput.

Labor costs for the project have estimated based on industry data collected from previous KCA projects in the western US.

Unit consumptions and costs are based on relevant project operational and price data.

The operating costs are expected to have an accuracy of +/-25%. No contingency has been added to the process operating costs.

Process Labor

The labor cost is subdivided between Process (sub-divided by process areas) and Laboratory. Process staffing assumes two 12-hour shifts and four crews for 24/7 coverage where necessary for operation and maintenance of the plant. Management, laboratory and refinery personnel will be on 8-hour shifts 5 days per week.

Process Power

Installed power for the scope as defined in the Capital Cost Estimate is estimated at 3.23MW. Line power is assumed for all process facilities, at a rate of $0.09 per kWh. Power costs are included in each separate process area in the operating cost build up, based on annual kWh consumptions benchmarked from similar equipment installations and from KCA's project files. Table 21-10 shows the estimated annual power consumptions by major process area.

Table 21-10: Estimated annual power consumption by process area

Process Area	MWh/year
Heap / Solution Handling	15.8
Recovery Plant	3.2
Laboratory	0.97

Cyanide

Cyanide consumption is assumed at 0.30 kilograms per tonne material. The supply cost for delivered, liquid cyanide at 30% strength is assumed to be $2.89 per dry kilogram NaCN, based on KCA project files. Cyanide represents a total cost of $0.87 per tonne of material stacked on the heap and is included under the heap and solution handling area.

Lime

Lime consumption is assumed at 1.20 kilograms per tonne material. The supply cost for delivered lime is estimated to be $0.21 per kilogram and represents an operating cost of $0.25 per tonne of material stacked on the heap. Lime costs are included under the stacking area.

Heap and Solution Handling

Costs in the heap and solution handling area include power for the heap leach and pond pumps, cyanide, piping and drip tubing replacements and additions, and miscellaneous maintenance supplies.

Recovery Plant

Costs in the recovery plant area include all power, reagents, and operating and maintenance supplies for adsorption, stripping, refining, and supporting facilities. Costs were benchmarked from similar sized plants from KCA's project files based on a cost per tonne of carbon stripped.

Laboratory

Costs in the laboratory area include power, facilities support, operating and maintenance supplies, and processing of an average of 150 fire assays per day plus supporting solution assays.

General Facilities (Process Equipment Costs)

Costs in the general facilities area include the operating costs of two forklifts, one skid-steer and a maintenance truck. General building power costs are including for the process building.

Costs for other facilities and support such as site buildings and site maintenance are excluded from KCA's costs.

Process Operating Cost Exclusions

The following operating costs are excluded from KCA's estimate:

- General and Administrative (G&A) costs;
- Site maintenance including access roads and internal roads;
- Maintenance and operation costs of site utilities and infrastructure including power supply and distribution, water supply and distribution, emergency backup power, administrative facilities, warehousing and storage, septic, waste storage and disposal, and communications;
- Any operating costs related to mining and truck stacking fleet;
- Operating cost contingency;
- Escalation costs;
- Currency exchange fluctuations.

21.2.4 General and Administrative Costs

General and administrative costs for the project were estimated at a high-level, based on knowledge of other similar projects. Costs were estimated as being essentially fixed per year, tapering down in the final year of operations as activity reduced. The summary of the assumptions used is shown in Table 21-11.

Table 21-11: General and administrative operating costs (G&A)

Category	Annual Cost (max) ($M)	LOM total ($000)	Unit Cost ($/t)
Water Supply	$0.4	$3.5	$0.06
Road and Infrastructure Maintenance	$2.0	$17.0	$0.29
Site G&A	$4.4	$35.2	$0.59
Total	**$6.8**	**$55.7**	**$0.94**

22 Economic Analysis

The following section is partly based on inferred mineral resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as mineral reserves, and there is no certainty that the preliminary assessment based on these mineral resources will be realized.

Mineral resources that are not mineral reserves do not have demonstrated economic viability.

Certain information and statements contained in this section are “forward looking” in nature. Forward-looking statements include, but are not limited to, statements with respect to the economic and scoping-level parameters of the project; mineral resource estimates; the cost and timing of any development of the project; the proposed mine plan and mining methods; dilution and mining recoveries; processing method and rates and production rates; projected metallurgical recovery rates; infrastructure requirements; capital, operating and sustaining cost estimates; the projected life of mine and other expected attributes of the project; the NPV; capital; future metal prices; the project location; the timing of the environmental assessment process; changes to the project configuration that may be requested as a result of stakeholder or government input to the environmental assessment process; government regulations and permitting timelines; estimates of reclamation obligations; requirements for additional capital; environmental risks; and general business and economic conditions.

All forward-looking statements in this report are necessarily based on opinions and estimates made as of the date such statements are made and are subject to important risk factors and uncertainties; many of which cannot be controlled or predicted. In addition to, and subject to, such specific assumptions discussed in more detail elsewhere in this report, the forward-looking statements in this report are subject to the following assumptions:

- There being no signification disruptions affecting the development and operation of the project
- Exchange rate assumptions being approximately consistent with the assumptions in the report
- The availability of certain consumables and services and the prices for power and other key supplies being approximately consistent with assumptions in the report
- Labour and materials costs being approximately consistent with assumptions in the report
- Assumptions made in mineral resource estimates, including, but not limited to, geological interpretation, grades, metal price assumptions, metallurgical and mining recovery rates, geotechnical and hydrogeological assumptions, capital and operating cost estimates, and general marketing, political, business and economic conditions

22.1 Summary

The PEA of the Goldstrike Project indicates that the project as conceived has the potential for economic execution.

The base-case after-tax NPV evaluated at a discount rate of 5% is $129.5M. The internal rate of return is 29.4%. The payback of initial investment is estimated to occur at the end of Q1 in the third year of production.

A positive valuation is maintained across a wide range of sensitivities on key assumptions.

Table 22-1: Production profile summary

Production Profile	
Total Leach Tonnes Mined	59.3 million
Total Tonnes Waste Mined	70.6 million
Head Grade	0.48g/t
Mine Life	7.5 years
Tonnes per Day Mined	22,500 tpd
Strip Ratio (Waste:Leach Material)	1.2:1
Gold Recovery	78%
Total Gold Ounces Mined	915,516 oz
Total Gold Ounces Recovered	713,004 oz
Average Annual Gold Production[4]	94,493 oz
Peak Annual Gold Production	117,855 oz

Table 22-2: Unit costs per ounce

Unit Operating Costs	
LOM Average Cash Cost	US$641.77/oz
LOM Average Adjusted Cash Cost	US$675.11/oz
LOM Cash Cost plus Sustaining Cost (AISC)	US$792.72/oz

[4] The average annual gold includes only the production over the 7.5 years that the project is in full production. “Remnant” gold recovered at the end of the mine life as the heaps are flushed and drained down, and the time period for this recovery, are excluded from average production rate calculations.

Table 22-3: Key economic metrics

Project Economics	
Royalties	2.50%
Pre-tax NPV (5% Discount Rate)	$176.2
Pre-tax Internal Rate of Return	34.8%
Undiscounted Operating Pre Tax Cash Flow	$259.3
Corporate Income Tax / Utah Mining Tax	21% / 5%
Post-Tax NPV (5% Discount Rate)	$129.5
Post-Tax Internal Rate of Return	29.4%
Undiscounted Operating Post Tax Cash Flow	$195.5
Post-tax Payback Period (years)	2.3 years

22.2 General

Economic analysis was undertaken using a discounted cashflow model that was constructed in Excel®. The model used constant (real) 2018 USD and modelled the project cashflows in annual periods.

The model considered only cashflows from the beginning of construction forward. Expenditure for studies, exploration, optimization, design, permitting and other pre-construction activities were not modelled.

The model does not place the project within an estimated calendar timeline and is intended only as an indication of the economic potential of the project to assist in investment decisions.

The model assumes a two-year pre-production construction period.

22.3 Production Schedule

The production schedule evaluated is summarized in Table 22-4. The peak average gold production rate during the 6 years of full production (years 2 -7 inclusive) is estimated to be 97,400 ounces per year.

Table 22-4: Production schedule summary

Parameter	Units	LOM	1	2	3	4	5	6	7	8	9
Total Leach Material	Mt	59.3	6.9	8.2	8.2	8.2	8.2	8.2	8.2	3.1	0.0
Gold Grade	*gpt*	*0.48*	*0.60*	*0.57*	*0.45*	*0.43*	*0.46*	*0.48*	*0.44*	*0.35*	*0.00*
Contained Gold	oz	915,516	132,899	151,769	120,079	114,051	120,316	125,926	115,976	34,499	0
Total Waste	Mt	70.5	8.0	11.4	11.5	13.0	12.0	11.5	2.5	0.7	0.0
Total Material Moved	Mt	129.9	14.9	19.7	19.7	21.2	20.2	19.7	10.7	3.8	0.0
Au Produced	oz	713,004	87,876	117,855	97,463	88,650	92,447	97,234	90,742	36,427	4,309

22.4 Pricing Assumptions

Flat real prices were assumed for the life of the project. Table 22-5 shows the price assumptions used.

Table 22-5: Pricing assumptions for economic analysis

Commodity	Units	Price
Gold Price	$/oz	$1,300

22.5 Processing Recovery Assumptions

The project will employ heap-leaching for gold recovery. For the purposes of the project optimization and economic analysis, recovery functions were applied at the block model level, rather than within the economic model. The mining schedules reported recoverable gold, as well as in-situ grades. The resultant effective recovery for the life-of-mine plan is calculated to be 78%. The delay for placement of material and the production of gold doré for sale was assumed to be two months, reflecting the metal-weighted-average recovery time. Total residence time is assumed to be approximately six months.

22.6 Capital Costs

Capital costs used for the evaluation are summarized in Table 22-6. Additional detail regarding the estimation of the capital costs is contained in Section 21.

Table 22-6: Capital cost summary

Capital Costs		Initial	LOM	1	2	3	4	5	6	7	8	9	0	0
Mining														
Mining Capital	$M	$23.5	$61.3	$0.0	$23.5	$26.1	$0.0	$0.0	$10.4	$0.0	$1.4	$0.0	$0.0	$0.0
Total Mining Capital	$M	$23.5	$61.3	$0.0	$23.5	$26.1	$0.0	$0.0	$10.4	$0.0	$1.4	$0.0	$0.0	$0.0
Infrastructure														
Road Access	$M	$4.9	$5.7	$2.5	$2.5	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.0
Water	$M	$12.9	$12.9	$6.4	$6.4	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Power	$M	$12.0	$13.0	$6.0	$6.0	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.0
Diversion Channels	$M	$1.6	$3.5	$0.8	$0.8	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2	$0.2
Total Infrastructure Capital	$M	$31.4	$35.1	$15.7	$15.7	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.3
Owners Costs	**$M**	**$10.0**	**$10.0**	**$5.0**	**$5.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**	**$0.0**
Processing														
Stacking (Lime Addition)	$M	$0.4	$0.5	$0.2	$0.2	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Recovery Plant*	$M	$13.7	$16.8	$6.9	$6.9	$0.4	$0.4	$0.4	$0.4	$0.4	$0.4	$0.3	$0.2	$0.1
Laboratory	$M	$2.3	$2.8	$1.1	$1.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.0	$0.0
Mobile Equipment	$M	$0.2	$0.3	$0.1	$0.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Spare Parts	$M	$0.4	$0.4	$0.2	$0.2	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Contingency	$M	$4.2	$5.2	$2.1	$2.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.1	$0.0
Indirect Costs	$M	$2.6	$2.6	$1.3	$1.3	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Initial Fills	$M	$0.6	$0.6	$0.3	$0.3	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
EPCM & Commissioning	$M	$2.1	$2.1	$1.1	$1.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Process WC	$M	$2.4	$2.4	$1.2	$1.2	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Leach Pad Phase 1	$M	$19.3	$19.3	$0.0	$19.3	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Leach Pad Phase 2	$M	$0.0	$8.9	$0.0	$0.0	$0.0	$8.9	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Leach Pad Phase 3	$M	$0.0	$6.6	$0.0	$0.0	$0.0	$0.0	$0.0	$6.6	$0.0	$0.0	$0.0	$0.0	$0.0
Total Processing Capital	**$M**	**$48.3**	**$68.4**	**$14.5**	**$33.8**	**$0.6**	**$9.5**	**$0.6**	**$7.2**	**$0.6**	**$0.6**	**$0.5**	**$0.3**	**$0.2**
Closure Costs	$M	$0.0	$20.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$10.0	$10.0
Total Capital Costs	**$M**	**$113.2**	**$194.8**	**$35.2**	**$78.0**	**$27.1**	**$9.9**	**$1.1**	**$18.0**	**$1.1**	**$2.4**	**$0.9**	**$10.7**	**$10.4**

22.7 Operating Costs

Operating costs for the project were estimated using a combination of first-principles models and factored and benchmarked estimates. The level of accuracy is approximately -25%/+25% and is appropriate for a PEA. Operating costs are summarized in Table 22-7

Table 22-7: Summary of operating costs

Operating costs	LOM ($M)	$/oz	$/tonne
Mine Operating Cost	$272.1	$392.16	$4.59
Leach Operating Costs	$117.5	$169.37	$1.98
Water Supply	$3.5	$5.01	$0.06
Road and Infrastructure Maintenance	$17.0	$24.50	$0.29
Site G&A	$35.2	$50.73	$0.59
Total	**$445.3**	**$641.77**	**$7.51**

Operating costs as modelled on an annual basis are summarized in Table 22-8 and Table 22-9.

22.8 Taxes and Royalties

A royalty of 2.5% was applied to the Gross Revenue. This is an approximation of a range of more complex royalty arrangements that are in place over areas of the mining leases (Section 4.2). Detailed modelling of the individual contracts is not necessary for a PEA-level evaluation. The assumption of 2.5% is conservative and the true effective royalty rate is likely to be slightly lower than this.

The taxation was modelled in a simplified manner, consistent with a PEA. A federal corporate tax rate of 21% was applied, consistent with the latest tax rates for the US. A Utah State corporate tax of 5% was also applied. A credit for investment in infrastructure in Utah is available and this was applied. This credit is estimated to reduce the total tax burden by approximately $5M.

Tax losses were carried forward. An opening balance of $50,000 was assumed for tax losses on advice from Liberty Gold. This is not considered material to the overall conclusions and economics of the project.

Depreciation was modelled in a simplified fashion. Sensitivity analysis showed that depreciation treatment is not material to the overall project valuation at the level of a PEA.

22.9 Other Off-site Costs

Due to the nature of the product (gold doré) offsite refining and freight costs are not highly significant to the project value. Total off-site refining and freight charges (excluding payable deductions) totalled approximately 0.2% of the gross revenue of the project.

Table 22-8: Operating costs summary per ounce of produced gold

Unit Operating Costs per Ounce		LOM	1	2	3	4	5	6	7	8	9
Mine Operating Cost	$/oz	$392.16	$373.50	$328.40	$383.65	$458.26	$491.39	$440.34	$326.07	$336.07	$0.00
Leach Operating Costs	$/oz	$169.37	$146.77	$140.37	$171.59	$188.55	$180.87	$172.39	$184.36	$196.24	$121.36
Water Supply	$/oz	$5.01	$4.78	$3.57	$4.31	$4.74	$4.55	$4.32	$4.63	$11.54	$48.74
Infrastructure Maintenance	$/oz	$24.50	$23.39	$17.44	$21.09	$23.18	$22.23	$21.14	$22.65	$56.41	$238.32
Site G&A	$/oz	$50.73	$51.46	$38.36	$46.39	$51.00	$48.91	$46.50	$49.82	$82.73	$349.54
Total	**$/oz**	**$641.77**	**$599.90**	**$528.13**	**$627.02**	**$725.73**	**$747.94**	**$684.69**	**$587.53**	**$682.98**	**$757.95**
Ounces Produced	**oz**	**713,004**	**87,876**	**117,855**	**97,463**	**88,650**	**92,447**	**97,234**	**90,742**	**36,427**	**4,309**
Operating Margin	%	51%	54%	59%	52%	44%	42%	47%	55%	47%	42%

Table 22-9: Operating costs summary per tonne of material

Unit Operating Costs per Tonne		LOM	1	2	3	4	5	6	7	8	9
Mine Operating Cost	$/t moved	$2.10	$2.15	$1.92	$1.84	$1.86	$2.19	$2.12	$2.69	$3.16	$0.00
Mine Operating Cost	$/t	$4.59	$4.62	$4.57	$4.43	$4.82	$5.38	$5.06	$3.51	$3.86	$0.00
Process Operating Cost	$/t	$1.98	$1.82	$1.95	$1.98	$1.98	$1.98	$1.98	$1.98	$2.26	$0.00
Water Supply	$/t	$0.06	$0.06	$0.05	$0.05	$0.05	$0.05	$0.05	$0.05	$0.13	$0.00
Road and Infrastructure Maintenance	$/t	$0.29	$0.29	$0.24	$0.24	$0.24	$0.24	$0.24	$0.24	$0.65	$0.00
Site G&A	$/t	$0.59	$0.64	$0.53	$0.54	$0.54	$0.54	$0.53	$0.54	$0.95	$0.00
Total Operating Costs	**$/t**	**$7.51**	**$7.42**	**$7.36**	**$7.24**	**$7.63**	**$8.19**	**$7.87**	**$6.32**	**$7.85**	**$0.00**

22.10 Sensitivity Analysis

22.10.1 Net Present Value Sensitivity

Table 22-10 to Table 22-13 summarize the sensitivity of the project NPV to variations in key input assumptions across the changes in input assumptions shown.

Table 22-10: Two-factor NPV sensitivity – Capital and operating costs

		Operating Costs				
Base Case $NPV_{5\%}$ of $129.5M		-40.0%	-20.0%	0.0%	20.0%	40.0%
Capital Costs	-40.0%	$288.2	$236.0	$183.7	$131.4	$79.1
	-20.0%	$261.3	$209.0	$156.6	$104.3	$51.9
	0.0%	$234.2	$181.9	**$129.5**	$77.1	$24.5
	20.0%	$207.1	$154.7	$102.3	$49.6	($3.5)
	40.0%	$180.0	$127.4	$74.8	$21.9	($32.0)

Table 22-11: Two-factor NPV sensitivity – Prices and discount rate

		Discount Rate				
Base Case $NPV_{5\%}$ of $129.5M		0.0%	5.0%	6.0%	7.0%	8.0%
Gold Prices	-20.0%	$56.8	$23.5	$18.3	$13.4	$8.9
	-10.0%	$126.2	$76.7	$68.8	$61.5	$54.7
	0.0%	$195.5	**$129.5**	$119.0	$109.3	$100.2
	10.0%	$264.7	$182.2	$169.1	$156.9	$145.5
	20.0%	$333.9	$235.0	$219.2	$204.5	$190.7

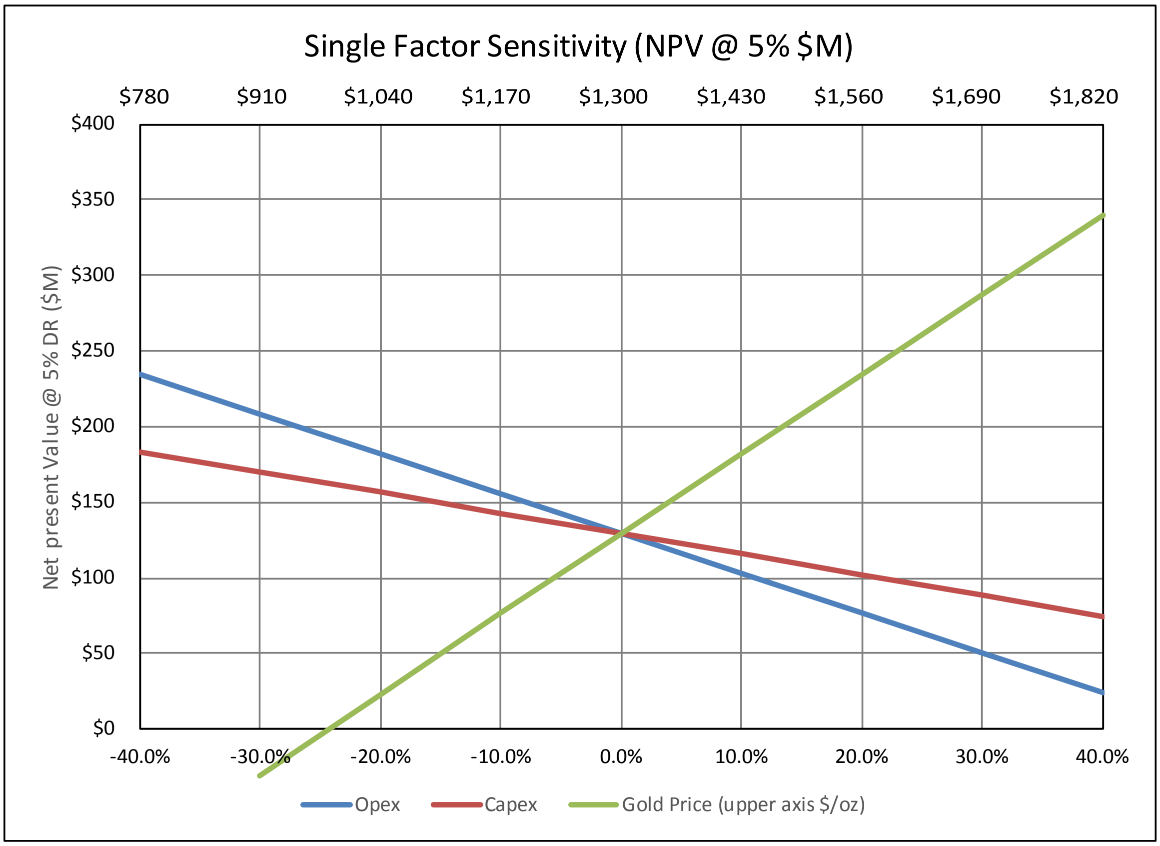
Table 22-12: Two-factor NPV sensitivity – Capital cost and gold prices

		Gold Prices ($/oz)				
Base Case $NPV_{5\%}$ of $129.5M		$900	$1,100	$1,300	$1,500	$1,700
Capital Costs	-40.0%	$21.4	$102.6	$183.7	$264.7	$344.8
	-20.0%	($6.5)	$75.5	$156.6	$237.7	$318.7
	0.0%	($35.2)	$48.1	**$129.5**	$210.6	$291.7
	20.0%	($67.7)	$20.4	$102.3	$183.5	$264.6
	40.0%	($101.4)	($7.8)	$74.8	$156.4	$237.5

Table 22-13: Two-factor NPV sensitivity – Operating costs and gold prices

Base Case NPV5% of $129.5M		Gold Prices ($/oz)				
		$900	$1,100	$1,300	$1,500	$1,700
Operating Costs	-40.0%	$71.7	$153.1	$234.2	$315.3	$396.3
	-20.0%	$18.9	$100.7	$181.9	$262.9	$344.0
	0.0%	($35.2)	$48.1	**$129.5**	$210.6	$291.7
	20.0%	($101.8)	($5.0)	$77.1	$158.3	$239.4
	40.0%	($169.8)	($64.2)	$24.5	$106.0	$187.1

Figure 22-1 shows how the project NPV varies as price, capital costs (Capex) and operating costs (Opex) are varied across a range of +/-40%. As is common to all minerals industry projects, commodity price is a highly significant driver of value.



Source: SRK 2018

Figure 22-1: Single factor sensitivity – net present value

22.10.2 Internal Rate of Return Sensitivity

Table 22-14 to Table 22-16 summarize the sensitivity of the project IRR to variations in key input assumptions across the changes in input assumptions shown.

Table 22-14: Two-factor IRR sensitivity – Capital and operating costs

		Operating Costs				
		-40.0%	-20.0%	0.0%	20.0%	40.0%
Capital Costs	-40.0%	74.5%	65.0%	54.7%	43.2%	30.3%
	-20.0%	56.7%	48.4%	39.5%	29.8%	18.6%
	0.0%	44.5%	37.3%	**29.4%**	20.7%	10.5%
	20.0%	35.8%	29.2%	22.0%	13.9%	4.3%
	40.0%	29.1%	22.9%	16.2%	8.5%	-0.6%

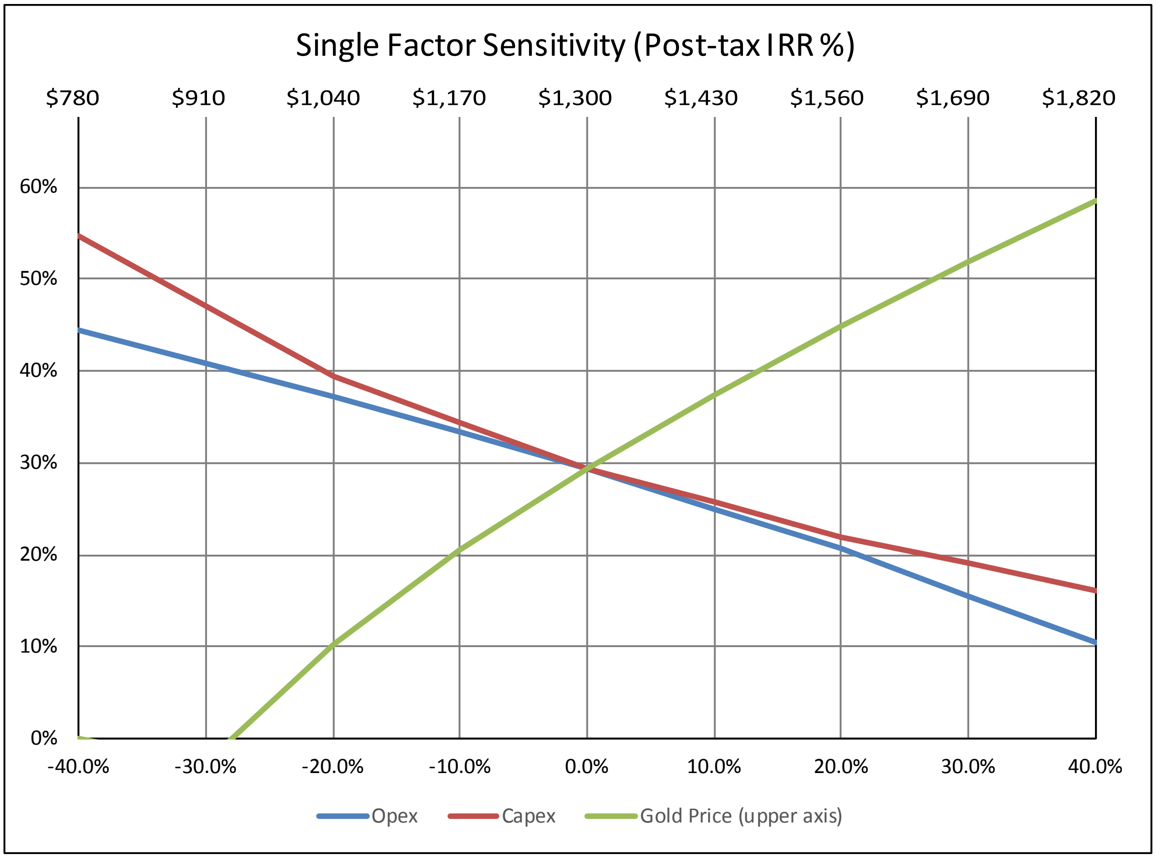
Table 22-15: Two-factor IRR sensitivity – Capital cost and gold prices

		Gold Prices				
		$900	$1,100	$1,300	$1,500	$1,700
Capital Costs	-40.0%	12.9%	36.1%	54.7%	70.6%	85.0%
	-20.0%	3.1%	23.8%	39.5%	53.3%	65.6%
	0.0%	-3.7%	15.2%	**29.4%**	41.5%	52.4%
	20.0%	-10.1%	8.8%	22.0%	33.0%	42.8%
	40.0%	-16.6%	3.7%	16.2%	26.5%	35.4%

Table 22-16: Two-factor IRR sensitivity – Operating costs and gold prices

		Gold Prices				
		$900	$1,100	$1,300	$1,500	$1,700
Operating Costs	-40.0%	19.5%	32.9%	44.5%	55.2%	64.9%
	-20.0%	9.2%	24.6%	37.3%	48.5%	58.9%
	0.0%	-3.7%	15.2%	**29.4%**	41.5%	52.4%
	20.0%	N/A	3.8%	20.7%	34.0%	45.6%
	40.0%	N/A	-13.3%	10.5%	25.8%	38.3%

Figure 22-2 shows how the project IRR varies as price, capital costs and operating costs are varied across a range of +/-40%. As is common to all minerals industry projects, commodity price is a highly significant driver of project returns.



Source: SRK 2018

Figure 22-2: Single factor sensitivity – internal rate of return

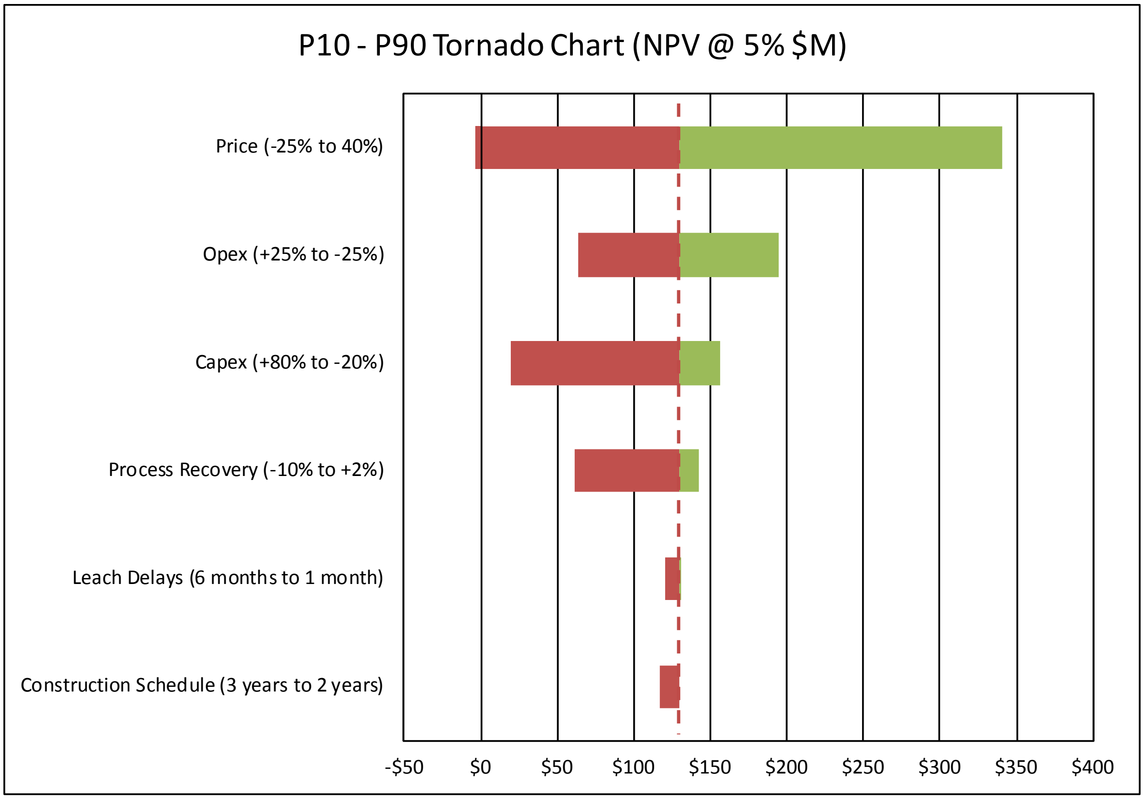
22.10.3 Net Present Value Tornado Chart

Figure 22-3 illustrates the response of project NPV to variations in assumptions regarding key value-drivers.

The general approach was to estimate P_{10} and P_{90} values for each key driver.

A P_{10} defines the downside parameter value that has only a 10% probability of not being realized. For example, a worse-than-30% reduction in the long-term prices has been estimated to be only 10% likely. Conversely it is estimated that there is a 90% chance of that value being exceeded.

A P_{90} defines the parameter value that is estimated to have only a 10% chance of being exceeded (or conversely a 90% chance of not being exceeded). Another way to look at it is that the parameter has an 80% chance of lying between the P_{10} and P_{90} values.



Source: SRK 2018

Figure 22-3: Tornado diagram of key risk sensitivity

Commodity Price was estimated to have a moderately asymmetric risk the with range being defined at -30% and +40% compared to base-case. Across this range commodity prices are the largest single uncertainty with respect to project value.

Capital Expenditure was estimated to have an asymmetric risk with a +80% to -20% range. That is, there is a 10% chance that the capital costs will be 80% higher than base case and a 10% chance that a saving of 20% will be realized.

Process Recovery is also considered as an asymmetric risk. A 15% reduction in recovery downside value and a 2% upside value was considered. Note that the flex is expressed as relative percent, and not percentage points

Operating Costs were estimated to have moderate risk across the range of +25% downside to -25% upside.

Construction Schedule was flexed (downside) by adding an additional year to the assumed 2-year base case. For the downside case, in addition to the deferment of project production and cashflow, an additional 25% was added to the pre-production capital costs as an estimated additional consequence due to the circumstances leading to the extended construction period. No upside flex was considered. Significant acceleration of the assumed construction period is not considered likely.

Metal Leach Time is the weighted-average period that the metal takes to be extracted from the leach pads. The base assumption of two months (associated with a six month residence time) was flexed to six months for the downside estimate and accelerated to one month for the upside estimate. It should be noted that there would also be an effect on capital timing associated with different-than-expected leach performance due the need to change the schedule of construction for the pads to maintain overall production rates. This capital timing is not modelled in this sensitivity.

22.11 Base Case Cashflow

The summary base-case cashflow is shown in Table 22-17.

Table 22-17: Base cash flow – 22.5 ktpd processing rate

				-2	-1	1	2	3	4	5	6	7	8	9	10
020COG_rev5	**NPV**	**$129,530,584**		Construction	Construction	Production	Production	Production	Production	Production	Production	Production	Production	Production	Closed
Processing 22ktpd	**IRR**	**29.4%**													
PREFINANCE SUMMARY CASH FLOW		**Total**	**NPV**												
Total Leach Net Revenue	**$M**	**$925.2**	**$705.1**	**$0.00**	**$0.00**	**$114.01**	**$152.93**	**$126.47**	**$115.03**	**$119.96**	**$126.17**	**$117.75**	**$47.28**	**$5.59**	**$0.00**
Royalty @ 2.5%	$M	$23.1	$17.6	$0.00	$0.00	$2.85	$3.82	$3.16	$2.88	$3.00	$3.15	$2.94	$1.18	$0.14	$0.00
Total Minesite Revenue	**$M**	**$902.1**	**$687.4**	**$0.00**	**$0.00**	**$111.16**	**$149.10**	**$123.31**	**$112.16**	**$116.96**	**$123.02**	**$114.80**	**$46.09**	**$5.45**	**$0.00**
Operating Costs															
Mine Operating Cost	$M	$272.1	$207.1	$0.00	$0.00	$31.94	$37.67	$36.39	$39.54	$44.21	$41.67	$28.80	$11.92	$0.00	$0.00
Process Operating Cost	$M	$117.5	$88.8	$0.00	$0.00	$12.55	$16.10	$16.28	$16.27	$16.27	$16.31	$16.28	$6.96	$0.51	$0.00
Water Supply Opex	$M	$3.5	$2.6	$0.00	$0.00	$0.41	$0.41	$0.41	$0.41	$0.41	$0.41	$0.41	$0.41	$0.20	$0.00
Road and Infrastructure Maintenance	$M	$17.0	$12.6	$0.00	$0.00	$2.00	$2.00	$2.00	$2.00	$2.00	$2.00	$2.00	$2.00	$1.00	$0.00
Site G&A	$M	$35.2	$26.4	$0.00	$0.00	$4.40	$4.40	$4.40	$4.40	$4.40	$4.40	$4.40	$2.93	$1.47	$0.00
Total Operating Costs	**$M**	**$445.3**	**$337.5**	**$0.00**	**$0.00**	**$51.30**	**$60.57**	**$59.48**	**$62.61**	**$67.29**	**$64.79**	**$51.89**	**$24.22**	**$3.18**	**$0.00**
Operating Cashflow	**$M**	**$456.7**	**$350.0**	**$0.00**	**$0.00**	**$59.87**	**$88.53**	**$63.83**	**$49.54**	**$49.67**	**$58.23**	**$62.92**	**$21.88**	**$2.27**	**$0.00**
Capital Costs															
Total Mining Capex	**$M**	**$61.3**	**$53.8**	**$0.00**	**$23.51**	**$26.06**	**$0.00**	**$0.00**	**$10.42**	**$0.00**	**$1.35**	**$0.00**	**$0.00**	**$0.00**	**$0.00**
Processing Capex															
Stacking (Lime Addition)	$M	$0.5	$0.5	$0.21	$0.21	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.00	$0.00
Recovery Plant*	$M	$16.8	$15.4	$6.86	$6.86	$0.41	$0.41	$0.41	$0.41	$0.41	$0.41	$0.31	$0.21	$0.10	$0.00
Laboratory	$M	$2.8	$2.6	$1.14	$1.14	$0.07	$0.07	$0.07	$0.07	$0.07	$0.07	$0.05	$0.03	$0.02	$0.00
Process Mobile Equipment	$M	$0.3	$0.3	$0.11	$0.11	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.01	$0.00	$0.00	$0.00
Spare Parts	$M	$0.4	$0.4	$0.20	$0.20	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Contingency	$M	$5.2	$4.7	$2.11	$2.11	$0.13	$0.13	$0.13	$0.13	$0.13	$0.13	$0.09	$0.06	$0.03	$0.00
Indirect Costs (construction, QA/QC, permits, fees, etc.)	$M	$2.6	$2.5	$1.30	$1.30	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Initial Fills	$M	$0.6	$0.6	$0.31	$0.31	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
EPCM & Commissioning	$M	$2.1	$2.0	$1.05	$1.05	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Process Working Capital for 60 Days (Excludes G&A and Mining)	$M	$2.4	$2.2	$1.18	$1.18	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Leach Pad Phase 1 (incl. contingency)	$M	$19.3	$17.9	$0.00	$19.31	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Leach Pad Phase 2 (incl. contingency)	$M	$8.9	$7.5	$0.00	$0.00	$0.00	$8.87	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Leach Pad Phase 3 (incl. contingency)	$M	$6.6	$5.0	$0.00	$0.00	$0.00	$0.00	$0.00	$6.55	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Total Processing Capital	**$M**	**$68.4**	**$61.6**	**$14.48**	**$33.79**	**$0.63**	**$9.50**	**$0.63**	**$7.18**	**$0.63**	**$0.63**	**$0.47**	**$0.31**	**$0.16**	**$0.00**
Infrastructure Capex															
Road Access	$M	$5.7	$5.3	$2.45	$2.45	$0.10	$0.10	$0.10	$0.10	$0.10	$0.10	$0.10	$0.07	$0.03	$0.00
Water	$M	$12.9	$12.3	$6.44	$6.44	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Power	$M	$13.0	$12.2	$6.00	$6.00	$0.12	$0.12	$0.12	$0.12	$0.12	$0.12	$0.12	$0.08	$0.04	$0.00
Diversion Channels	$M	$3.5	$3.0	$0.81	$0.81	$0.21	$0.21	$0.21	$0.21	$0.21	$0.21	$0.21	$0.21	$0.21	$0.00
Total Infrastructure Capex	**$M**	**$35.1**	**$32.6**	**$15.70**	**$15.70**	**$0.43**	**$0.43**	**$0.43**	**$0.43**	**$0.43**	**$0.43**	**$0.43**	**$0.36**	**$0.29**	**$0.00**
Closure Costs	$M	$20.0	$12.3	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$10.00	$10.00	$0.00
Total Capital Costs	**$M**	**$194.8**	**$169.8**	**$35.18**	**$78.00**	**$27.12**	**$9.93**	**$1.06**	**$18.03**	**$1.06**	**$2.41**	**$0.90**	**$10.67**	**$10.44**	**$0.00**
Initial Capital	$M	$113.2	$106.8	$35.18	$78.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Sustaining Capital	$M	$61.6	$50.7	$0.00	$0.00	$27.12	$9.93	$1.06	$18.03	$1.06	$2.41	$0.90	$0.67	$0.44	$0.00
Closure Capital	$M	$20.0	$12.3	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$10.00	$10.00	$0.00
Total Capital Costs	**$M**	**$194.8**	**$169.8**	**$35.18**	**$78.00**	**$27.12**	**$9.93**	**$1.06**	**$18.03**	**$1.06**	**$2.41**	**$0.90**	**$10.67**	**$10.44**	**$0.00**
Owners Costs	$M	$10.0	$9.5	$5.00	$5.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Working Capital	$M	$2.7	$4.0	$0.00	$0.00	$6.82	$2.28	-$0.72	$0.04	$0.77	$0.53	-$0.52	-$3.72	-$2.45	-$0.35
Pre-tax Net Cashflow	**$M**	**$259.3**	**$176.2**	**-$35.18**	**-$78.00**	**$25.93**	**$76.32**	**$63.50**	**$31.48**	**$47.84**	**$55.29**	**$62.54**	**$14.92**	**-$5.72**	**$0.35**
Corporate Income Tax (real)	$M	$63.8	$46.6	$0.00	$0.00	$0.00	$3.16	$12.79	$8.85	$10.45	$12.31	$14.45	$3.67	$0.00	-$1.25
After-tax Net Cash Flow (Real)	**$M**	**$195.5**	**$129.5**	**-$35.18**	**-$78.00**	**$25.93**	**$73.17**	**$50.72**	**$22.63**	**$37.39**	**$42.98**	**$48.08**	**$11.26**	**-$5.72**	**$1.60**

23 Adjacent Properties

Liberty Gold advised that there are no properties of any relevance adjacent to the Goldstrike Project.

24 Other Relevant Data and Information

SRK is not aware of any other information relevant to this technical report on the Goldstrike Project that is not discussed herein.

25 Interpretation and Conclusions

25.1 Geology and Exploration

The Goldstrike property includes a past-producing heap-leach gold mine that was operated by Tenneco and USMX from late 1988 to 1996. A total of approximately 209,000 ounces of gold and 198,000 ounces of silver were produced during these operations from approximately 8 million tons (7.26 million tonnes) of ore mined from 12 open pits. The average grade was approximately 1.2 g/t Au (0.035 oz/ton Au). A total of 19 million tons (17.24 million tonnes) of waste was also mined.

The Goldstrike mineralization shares many of the characteristics of Carlin-type gold deposits. The mineralization is hosted primarily in conglomerate and limestone of the basal Claron Formation of Tertiary age, as well as with underlying Paleozoic units. The principal controls on mineralization include the generally shallow-dipping unconformity at the base of the Claron Formation, which is extensively mineralized, and high-angle structures of various orientations that appear to be the conduits through which mineralizing fluids circulated. These structural zones can also lead to significant mineralization in the Paleozoic silty limestone of the Pennsylvanian Callville Limestone and Mississippian Redwall Limestone, important hosts of mineralization.

The project drill hole database includes 1,501 holes (96,264 m) drilled by historical operators and 477 holes (74,725 m) drilled by Liberty Gold in late 2015 through 2017 (Section 10). The data include only 28 core holes, with the remainder being RC or rotary holes.

Mr. Gray reviewed the project database as used in the resource estimate and believes the data are acceptable as used in this report, although the locations of many of the historical drill holes are uncertain. Liberty Gold has worked to validate drill hole-locations by using historical data (e.g., drill logs and surface location maps and aerial imagery), as well as by surveying the relatively small percentage of historical drill collars that can still be identified in the field.

While a large number of historical holes have been drilled at the Goldstrike property, most are shallow (the average of the down-hole drill lengths is 64 m) and were drilled within and immediately adjacent to areas that were subsequently mined. Historical holes drilled outside of the limits of the open pits suggest that the mined mineralization extends beyond pit limits and remains open along the seven-kilometer-long mine trend, and this has been confirmed by Liberty Gold’s drilling program and resource estimate.

25.2 Metallurgical Testing

The Goldstrike property was a past producing crush/ROM heap leach operation that successfully recovered gold and silver from the mineralization types. Improvements to the process operations were made after start-up and included: 1. Adding agglomeration to the primary crushed leach feed to minimize channeling and improve the rate of gold recovery. 2. Converting from Merrill-Crowe to CIC carbon recovery for gold and silver and 3. Modifying heap leach operating practice to be able to successfully leach gold and silver with less than 50% on normal water requirements for an operation of this type.

The current project will be processing material types from the same Main Zone pit areas as previous operations and from new materials found in current exploration activities. No significant change in the geo-metallurgical resource material types have been identified. The current oxide resource at Goldstrike appears to be readily amenable to conventional crush or ROM heap leaching practice.

Process/metallurgy risks include:

- Water quantity and quality.
- Amount of fine/clayey material that may require crush/agglomeration before being placed on the heap leach

25.3 Mine Development and Operations

25.3.1 Pit Slope Design

The planned pits will be developed in the same geologic units as the existing pits developed by Tenneco and USMX during past open pit mining activities. These existing pits appear to have been developed at inter-ramp slopes of approximately 50 degrees in all pit slopes; however, some of these slopes became unstable during or after the past open pit mining. Since the planned pits are expected to be developed in the same geologic conditions with the same geotechnical properties of the existing pits, slope performance of the planned pits is expected to be similar to that of the existing pits. That is, where conditions in the planned pits are similar to the conditions that resulted in stable 50-degree inter-ramp pit slopes in the existing pits, it is assumed a similar 50-degree inter-ramp slope can be obtained in the planned pits. These 50-degree inter-ramp slopes are located in the Paleozoic rocks with favorable structure orientation, as well as in the Tertiary Claron Formation.

Where conditions in the planned pits is similar to conditions that resulted in slope instability in the existing pits, 50-degree inter-ramp slopes are not appropriate for use in pit optimization studies as they may result in slopes becoming unstable to the extent that the leach material in the bottom of the pit cannot be accessed. Based on past pit slope performance, lower inter-ramp slopes (ranging from approximately 46 to 40 degrees based on location) are appropriate. These conditions typically exist where bedding planes or other geologic structures dip into pits at moderate angles in the Paleozoic rocks and in the highly weathered and altered Tertiary Volcanic rocks.

25.3.2 Mine Design and Operation

The Goldstrike Mine is to be an open pit truck-loader operation feeding a heap leach facility at a rate of 22,500 t/day. The resource is sufficient for a 7.5-year mine life.

Assumptions have been made in this PEA with regard to the development of pits and placement of WSFs which will need further investigation to confirm viability. There are risks associated with pits and WSFs in drainages that should be mitigated with investigations to confirm appropriate water management strategies (i.e. diversions). Where such investigations result in costs that exceed the value of the pits as proposed, alterations to the mine plan may be required.

There are further risks associated with placement of WSFs on slopes or in locations where no foundation investigations have been conducted. Further investigation is required to confirm the suitability of the WSFs as proposed.

25.3.3 Heap Leach Facility

The conceptual design of the HLF provides suitable capacity to store and leach the 59 Mt of leach feed identified through this PEA.

For the planned HLF design, the 60 Mt of leach storage capacity requires a heap height of 100 m. The heap leach pad as conceptually designed, is at its limit with respect to storage capacity the proposed site, constrained by surrounding topography and the planned location of the proposed Moosehead Pit, as well as geometry of the heap itself. No additional capacity exists beyond the 59 Mt, and an increase in leach feed will require the development of a second HLF.

The leach pad as proposed is in close proximity to the planned Moosehead Pit. If the pit limits are expanded toward the HLF as a result of subsequent mine planning, the volume capacity of the designed heap could fall below 59 Mt, requiring the development of a second HLF.

Golder has developed the conceptual design of the HLF based on a surface reconnaissance of proposed HLF site. While site geology from the surface appears to provide a suitably strong foundation for stability of the heap, a true understanding of the risks associated with the HLF foundation can only be through subsurface characterization.

The column tests performed by KCA for this project indicated the heap could be stacked to 100 m, but there were three tests out of the twenty that failed and the tests were only performed on crushed leach material and crushed and agglomerated leach material. If the material cannot be leached at the 100 m heap heights used for design, the cost model for the project would require updating to include a second leach pad.

25.3.4 Water Supply

An adequate water supply system must be developed from an offsite source. Development of a system of four wells, a booster station and 9-km pipeline is envisioned. The target area for drilling wells in alluvium is near the East Fork Beaver Dam Wash about 10 km southwest of the central project site. Currently, Liberty Gold does not control the surface or water rights to install the water supply system, a portion of which will be offsite. Based on a preliminary hydrogeologic assessment, it is expected that the water supply system described will satisfy the water demand as currently understood for the PEA. However, the water resource is not certain; a work plan for groundwater development is recommended. In the event insufficient water is located, deeper wells may be utilized in a similar location, or additional wells may be utilized, or other nearby locations may be evaluated. As such, it is critical to the project to locate and obtain a sufficient water supply and the water rights within a reasonable distance of the project boundary.

25.4 Marketing

Marketing for the gold doré product is expected to be straightforward. The price of $1300/oz (2018 Real USD) used for the optimization and evaluation is appropriate for a PEA.

Note on Silver Revenue

The project modelling and evaluation did not model any revenue from silver. It is noted that historically, minor amounts (from an economic perspective) of silver have been recovered along with the gold. If this trend is continued, the revenue for the project may be slightly increased.

25.5 Environmental Studies, Permitting, and Social or Community Impact

There are currently no known environmental conditions associated with the Goldstrike Mine Project.

Environmental permitting for mines in Utah is predicated on land status. Because the Goldstrike Mine and infrastructure will be located on both public land administered by the Department of the Interior - U.S. Bureau of Land Management, state land controlled by SITLA, and private land controlled by Liberty Gold, the permitting path will involve multiple state and federal agencies. Issues that may be associated with federal and state permitting include potential impacts to:

- surface and ground water resources including seeps and springs, jurisdictional waters, and water rights
- the Beaver Dam Wash ACEC
- nearby wilderness areas and lands with wilderness characteristics

Each agency, BLM, UDOGM, and SITLA, will require that baseline environmental surveys be conducted. The same level of detail for information is generally required by each agency. On-the-ground surveys will typically include: cultural resources; cave and karst; vegetation and animal biological resources, including threatened, endangered, and sensitive species and migratory birds; soils resources; noxious and invasive species; jurisdictional waters; and water quality and quantity, including geochemistry. These surveys, prepared in accordance with federal and state protocols, will identify the presence or absence of a particular resource and be used as the baseline to assess potential impacts. The same level of study will be required for any new/improved access roads and water/power line corridors on public land outside of the PoO boundary.

The most likely level of NEPA analysis for this project will be an EIS which is intended to disclose any environmental impacts that may occur from the project and guide the decisions of the public land managers.

Because the mining and processing operations will be located within the drainage of the East Fork Beaver Dam Wash, the agencies will focus on changes to water quality and quantity from runoff from the dumps, haul roads, and processing operations. The agencies will also scrutinize the geochemistry of the waste rock in dumps and remaining rock in the pit walls and floors and spent leach material on the heap.

Liberty Gold has not yet initiated a geochemical characterization program for waste rock and spent leach material to guide waste rock management and closure of the dumps, pits, and heaps. The characterization must also consider the rock types that will remain in the pit walls and floors due to potential interactions with seasonal pit lakes as a result of snowmelt and direct precipitation.

Liberty Gold will have to characterize both surface and ground water resources within the project area and the area of potential effect outside of the project area. The water studies are long-lead items and will be used to identify baseline conditions and measure potential impacts to seeps and springs and groundwater drawdown during the EIS process.

Liberty Gold has not yet conducted a study to determine in these waters are jurisdictional under Section 404 of the *Clean Water Act*. The results of the jurisdictional determination will direct subsequent federal permitting. Because a jurisdictional determination has not been conducted, no conclusions can be made at this time as to the level of 404 permitting that may be required.

Risks

The Hamburg 5 Pit located in East Fork Beaver Dam Wash presents a risk of interrupting sub-surface flows in the wash and creating a seasonal pit lake. Depending on the outcome of the jurisdictional determination, the presence of this pit directly in the wash may elevate the level of 404 permitting and NEPA scrutiny.

The presence of dumps and the heap and process facility in East Fork Beaver Dam Wash drainage presents a risk associated with fuel and reagent spills and sedimentation from pits, dumps, haul roads, and ancillary disturbances. This risk can be mitigated by robust stormwater controls and operating practices, concurrent reclamation to stabilize soils, and well-designed final reclamation and monitoring practices.

25.6 Costs & Economic Analysis

In general, costs have been estimated to a level of accuracy suitable for a PEA.

The positive NPV of $128.5M is indicative of a project that has the potential for economic extraction. Sensitivity analysis has confirmed that potential across a broad range of price and cost outcomes. It must be noted that the valuation has been undertaken only from the point of construction and that costs prior to that time are excluded.

26 Recommendations

26.1 Geology and Exploration

As discussed in Section 10, Liberty Gold has potential to outline mineralization of economic interest within the Goldstrike property and the project therefore warrants additional investment. Based on results to date, the drilling program that is presently underway should continue through at least the remainder of 2018. This drilling should focus on extensions to mineralization outlined in the resource estimate, and additional drilling should also be carried out to test other targets, both drilled and undrilled, that Liberty Gold is in the process of identifying and prioritizing.

In SRK's opinion, this property has merit warranting additional exploration expenditures. Liberty Gold has outlined a US $4,446,000 2018 Phase I work program (including land holding costs) that includes 2,000 m of core drilling and 14,900 m of RC drilling. The goals of RC drilling would be to:

1) Assess the gold content of historic heap leach and low grade stockpile areas.

2) Conduct infill and step-out drilling to expand the known resource areas.

3) Test advanced drill targets, both drilled and undrilled, throughout the property. The primary purpose of core drilling would be to provide material for additional metallurgical testing in areas outside of the Main Zone resource area, which were tested in 2016.

Metallurgical testing should be expanded to include areas of the resource not previously tested, with samples derived from large-diameter core drilling in the Peg Leg, Dip Slope, Moosehead, Beavertail and Covington areas. Testwork is in early stages and additional systematic sampling and metallurgical testing is required as the project progresses. Larger diameter core/bulk samples should be considered to test P_{80} feed sizes greater than 12.5 and 25 mm to confirm current recovery projections.

A revision to the PoO is recommended to access areas with insufficient access in order to increase drill hole density pursuant to a revised resource estimate.

Details of the costs of the recommended program are tabulated in Table 26-1.

Table 26-1: Estimated cost for the Phase 1 exploration program proposed for the Goldstrike Project

Category	USD	Comments
Labor (est)	585,000	Liberty Employees
Environmental	316,000	pursuant to PoO amendment
Geology consulting	200,000	
PEA	260,000	including engineering, reporting, etc.
Core Drilling	400,000	all-in cost for PQ for metallurgical testing; 2000 m @ $200/m
RC Drilling	1,560,000	all-in cost; 20,000 m averaging ~$78/m
Surveying	30,000	includes aerial topographic mapping
Field support	84,000	housing, food, fuel, etc.
Property	299,000	holding costs
Assaying	371,000	primary for drilling; 20,000 samples @ $54/sample
Resource estimation	101,000	current, update and PFS related
Admin	120,000	travel costs, accounting, etc.
3% contingency	120,000	
Total	**4,446,000**	

Liberty Gold is unaware of any other significant factors and risks that may affect access, title, or the right or ability to perform the exploration work recommended for the Goldstrike Project.

26.2 Metallurgical Testing

Metallurgical sampling and testing has been limited to the Main Zone of mineralization and requires sampling and testing of new zone area resources and infill into current areas that are sparsely sampled. Simmons Consulting has estimated that an additional 60 variability metallurgical composites are needed to support a PFS. Additional metallurgical test data needed to support pre-feasibility engineering include:

- Testing of approximately 60 new variability metallurgical composites to include:
    - Geochemical assaying, whole rock and XRD characterization
    - Bottle roll and column leach testing
- Environmental characterization of leach residues and process solutions.
- Mineralogy testing to determine gold deportment.

- Additional load permeability testing to support future mine/process planning needs and provide additional data for heap leach pad design engineering.
- Crush/agglomeration testing as needed.

Past operations used a combination of ROM and crush/agglomeration heap leaching. The current plan is to proceed with ROM heap leaching mainly due to the lower-grade resource.

Current resource geo-metallurgical characterization is in early stages of development and efforts to fill information gaps are needed to update the geology/mine database before pre-feasibility level studies can be completed. Additional geo-metallurgical data include:

- Gold cyanide solubility data is lacking in many areas and is needed to better identify oxide, transition and sulfide zones of mineralization.
- Develop more refined clay, jasperoid and breccia matrix models.

It is anticipated that future metallurgical composite test results will be sufficient to separate the Goldstrike resources into more than one geo-metallurgical type to accommodate projection of gold and silver recovery, by material type, rather than the single model currently being used for this PEA.

The estimated costs for this metallurgical testing is $757,000. Another $25,000 should be allocated for process plant layout optimization.

26.3 Mine Development and Operations

26.3.1 Pit Slope Design

The open pit slope design recommendations for the planned pits are based on comparisons between geologic conditions assumed to exist in the planned pits with similar conditions observed in the existing pits. In areas where the planned pits are distant from existing pits or where no existing pits or rock exposures are available, the geotechnical properties of the rock mass forming the pit slopes is only assumed to be similar to that which resulted in stable pit slopes during past mining. To confirm whether geologic and groundwater conditions are similar, additional studies should be performed. The purpose of these studies is to better understand the geologic, groundwater, and geotechnical conditions in the most economically important pit slopes and thus allow pit slope design recommendations be developed that reduce the risk of instability of the planned pit slopes so that instability would not greatly impact access to ore.

Recommended additional pit slope studies would include:

- Completing a geologic model that includes the individual Paleozoic and Tertiary formations and new faults identified in the most current drilling
- Laboratory testing of rock core to obtain geotechnical properties of the intact rock and natural fractures

- Structure orientation measurements on oriented core or from televiewer images of drill hole walls

- Structure orientation measurements and collection of geotechnical property data from surveys of natural fractures in rock exposures in the existing pits and from existing outcrops near the planned pits.

For a project of this size, approximately six to seven geotechnical coreholes with orientation measurements drilled to an average depth of 130 meters would be required to provide geotechnical information for the planned pits. Where practical, these geotechnical coreholes should be combined with core holes drilled for other purposes for efficiency. The cost of this program is estimated to be approximately $600,000.

26.3.2 Waste Storage Facilities

SRK recommends that, in conjunction with the environmental studies suggested below, Liberty Gold undertake field investigations to confirm the foundation conditions of the proposed WSF locations. Alternate locations should also be considered should there be fatal flaws found for the sites considered for this PEA. Suggested cost of such recommendations is $150,000.

26.3.3 Heap Leach Facility

Golder recommends:

- A detailed geotechnical characterization of the HLF to reduce the risks associated with the potential for weak foundation geology that could preclude use of the proposed site or affect geometry of the HLF. This characterization would also be designed to address cost risks associated with earthworks construction of the HLF. The characterization should include a foundation investigation of the HLF, determination of the extent and depth of the low permeable soils within the vicinity of the HLF site, and be used to confirm sufficient volume of low permeability soils for the proposed HLF lining systems. A geotechnical laboratory testing program would involve evaluation of soils and rock samples from the investigations, as well as load-permeability testing on crushed ROM leach feed (depending on the process selected for production) to confirm that mineralized material can be leached at pressures imposed by heap heights up to 100 m. The estimated cost for this characterization would be $100,000 to $150,000.

- Advancing the design of the HLF to the PFS level would involve refinement of the design concepts developed for the PEA. Such a design would include refinement of the capital cost model, and the need to develop a detailed survey of the HLF site, preferably with an accuracy of 0.25 m (contour interval) or less. The estimated cost for this work would be $150,000 to $200,000, depending on the level of accuracy of the topographic survey.

- The close proximity of the proposed HLF to the proposed Moosehead Pit may pose a stability risk of the pit walls to the Phase 1 heap leach pad as it is currently proposed. Further stability analyses will be needed to determine if the risk is acceptable or if further stabilization efforts will be needed. The estimated cost of this review is included in the pit slope design recommendations in Section 26.3.1.

- The currently-proposed mine plan requires that the northeast portion of the Moosehead Pit be backfilled with mine waste for preparation of placement of the Phase 3 leach pad liner. This fill will require placement and compaction of approximately 1,500,000 m^3 of mine waste in controlled lifts to prevent severe differential settlement that could damage the liner or reverse gravity solution collection pipe flows. This will also require careful mine planning to ensure the pit is excavated early enough during the mine plan to allow sufficient time for fully backfilling the northeast portion of the pit prior to Phase 3 leach pad construction. There should be no additional cost associated with this level of planning at the PFS level over and above that expected of PFS-level mine planning.

26.3.4 Processing

KCA Recommends a study to optimize the process plant layout. It can be conducted during the PFS at a cost of $25,000.

26.3.5 Site Wide Water Balance

A meteorological station should be constructed at the leach pad site to gather sufficient data to compare with the weather station used for the site wide water balance. This comparison is necessary to confirm the climate variables used for the study. A Class A pan and shielded weather station is recommended on site and recorded in time steps of days if possible. Supply and installation of a station would be $10,000 to $20,000.

26.3.6 Water Supply

Institute a work plan for siting, drilling, and testing of supply wells. The plan will cost between $750,000 and $1,050,000 and includes $50,000 for permitting, $100,000 for design, and between $600,000 and $900,000 for drilling, testing, and reporting during the well drilling phase. The work plan included is appropriate for the PEA to identify and test likely sources of water. In the event the drilling phase does not locate adequate supply, deeper wells, additional wells in the immediate area, or additional locations possibly further from the project may need to be investigated to provide an adequate water supply for the project.

Given the location of the project in an area where water is limited, water supply is critical and consequently may be a significant economic risk to the project. As such, a drilling investigation and aquifer testing program should be initiated as soon as practical.

26.4 Marketing

There are no specific recommendations at this time. As the product is readily sold into a liquid and transparent market, forward sales or any sort of take-agreement, metal strip or private royalty are not required nor recommended.

26.5 Environmental Studies, Permitting, and Social or Community Impact

In SRK's opinion, Liberty Gold should identify long-lead environmental studies such as geochemical characterizations of mined materials, surface and ground water hydrology, and jurisdictional waters to identify the presence or absence of jurisdictional waters within and upstream and downstream of the project area. The geochemical characterization program should include static and kinetic testing for ore, waste rock, and spent leach material to assess acid rock drainage and metals leaching potential from the dumps, spent heap, and pit walls and floor. The surface water study should also include a comprehensive review to identify pre-mining flows from East Fork Beaver Dam Wash and contributing streams upstream and downstream of the project area. The groundwater study should address water chemistry and water level elevations within the project area. This study will be used to identify baseline conditions and measure potential impacts to seeps and springs and groundwater drawdown during the EIS process. The total cost of the described studies is $565,000

After an in-house review of potential environmental study needs, Liberty Gold should meet with representatives of Washington County, the UDOGM, SITLA, and the BLM to introduce these agencies to the proposed project and identify their concerns and baseline information requirements. Liberty Gold may also want to consider reaching out to the Shivwits Band of Paiutes on an informal basis to assess what concerns they may have.

Liberty Gold should also assess the need to conduct golden eagle nesting studies within ten miles of the project boundary. Nests that have direct line-of-sight or could be affected by noise or human activity may require that Liberty Gold institute mitigation measures during design and operations.

26.6 Costs & Economic Analysis

SRK considers that this study has indicated the potential for the project to be economic. SRK recommends that the project be progressed to a Pre-feasibility study. Cost estimates and economic analysis will be upgraded to a greater degree of precision at subsequent phases of study. SRK does not recommend that a decision to construct be made on the basis of this PEA.

The modelling of taxes and royalties should be undertaken in a more detailed fashion during pre-feasibility. It is recommended that at feasibility, specialist accounting advice is sought to ensure appropriate modelling of these factors.

SRK recommends that the potential for silver to contribute revenue be considered. If appropriate, silver should be included in the resource modelling and the associated revenue considered. Note that the consideration of silver is not likely to be so significant so as to alter strategic decisions.

27 Acronyms and Abbreviations

Distance	
µm	micron (micrometer)
cm	centimeter
ft	foot
in	inch
km	kilometer
m	meter
mm	millimeter
Area	
km^2	square kilometer
ac	acre
ha	hectare
Volume	
m^3	cubic meter
t/m^3	tonne per cubic meter
Mass	
kg	kilogram
g	gram
t oz	troy ounce
t	tonne
Elements and Compounds	
Au	gold
Ag	silver
Al	aluminum
As	arsenic
B	boron
Ba	barium
Be	beryllium
Bi	bismuth
Ca	calcium
Cd	cadmium
Ce	cerium
Co	cobalt
Cr	chromium
Cs	cesium
Cu	copper

Elements and Compounds cont'd	
Fe	iron
Ga	gallium
Ge	germanium
Hf	hafnium
Hg	mercury
In	indium
K	potassium
La	lanthanum
Mg	magnesium
Mn	manganese
Mo	molybdenum
Na	sodium
NaCN	sodium cyanide
Nb	niobium
Ni	nickel
P	phosphorus
Pb	lead
Rb	rubidium
Re	rhenium
S	sulfur
Sb	antimony
Sc	scandium
Se	selenium
Sn	tin
Sr	strontium
Ta	tantalum
Te	tellurium
Th	thorium
Ti	titanium
Tl	thallium
U	uranium
V	vanadium
W	tungsten
Zn	zinc
Zr	zirconium

Other	
°C	degrees Celsius
DWi	drop weight index
ENE	east north east
ID	inverse distance
ID^2	inverse distance squared
kWh	kilowatt hour
Ma	Millions of years ago
masl	meters above sea level
ppb	parts per billion
ppm	parts per million
sg	specific gravity
usgpm	US gallon per minute
W	west
Acronyms	
AG	autogenous mills
Ai	abrasion index
APLIC	Avian Power Line Interaction Committee
AuCN	cyanide solubility
BEV	Beavertail deposit
BLM	U.S. Bureau of Land Management
BV	Inspectorate/Bureau Veritas Laboraties
Capex	Capital Expenditure
CDN	Canadian
CFR	Code of Federal Regulations
CIM	Canadian Institute of Mining
ERM	Environmental Resources Management Inc.
ESA	environmental site assessment
G&A	general and administrative (with respect to budget)

Acronyms cont'd	
IP	induced polarization
ISO	International Organization for Standardization
KCA	Kappes, Cassiday Associates
LOM	life of mine
MDA	Mine Development Associates
MEG	Minerals Exploration and Environmental Geochemistry
MOP	mean of the pairs
MOS	Moosehead deposit
NI 43-101	National Instrument 43-101
NOI	notice of intent
NSR	net smelter return
NW	North west
UDOGM	Utah Division of Oil, Gas, and Mining
Opex	Operating Costs
PoO	plan of operations
QA/QC	quality assurance/quality control
RC	reverse circulation
RQD	rock quality designation
RTP	reduced to the pole
SAG	semi-autogenous mills
SCC	Standards Council of Canada
SIRIS	single-beam visible/infrared intelligent spectro-radiometer
SITLA	School and Institutional Trust Lands Administration
SMC	sag mill comminution testing
S/O	solution:ore ratio
SRK	SRK Consulting (Canada) Inc.
TG_{Au}	Tail grade, Au
USACE	United States Army Corps of Engineers

GPS	global positioning system
GRI	Gold Resources Inc.
HDPE	High-density polyethylene
HG_{Au}	Head grade, Au
ICP	inductively coupled plasma atomic emission
ICP-MS	inductively coupled plasma atomic emission and mass spectrometry
IDS	International Directional Services
IEC	International Electrotechnical Commission
UBC-GIF	University of British Columbia Geophysical Inversion Facility
USGS	United States Geological Survey
USMX	United States Mineral Company
UTM NAD	universal transverse Mercator north American datum
XRD	x-ray diffraction
Conversion Factors	
1 tonne	2,204.62 lbs
1 (troy) oz	31.1035 g

28 References

Adair, D.H., 1988, Geologic map of the Goldstrike Mine area: unpublished map prepared for Tenneco Minerals Co.

Best, M.G., Christiansen, E.H., Blank, H.R., Jr., 1989b, Oligocene caldera complex and calcalkaline tuffs and lavas of the Indian Peak volcanic field, Nevada and Utah: Geological Society of America Bulletin, v. 101, pp. 1076 – 1090.

Bureau of Land Management (BLM). Bull Valley Exploration Project Washington County, Utah Environmental Assessment DOI-BLM-UT-C030-2016-0049-EA, June 2017.

Callaway, R.Q. and Gates, E.E., 1981, Goldstrike Project including geological evaluation of Beaver Claims: Unpublished internal report for HIMCO, 96 pp.

Cline, J.S., Hofstra, A.H., Muntean, J.L., Tosdal, R.M. and Hickey, K.A., 2005, Carlin-Type Gold Deposits in Nevada: Critical Geologic Characteristics and Viable Models: Economic Geology 100th Anniversary Volume, pp. 451-484.

De Witt, H.C., 2015, Geology and mineralization of the Goldstrike District, Washington County, Utah: M.Sc. thesis, University of Arizona, 63 pp.

Effner, S.A., 1992, The geology, hydrothermal alteration and minor element geochemistry of the Goldstrike Mine, Washington County, Utah: M.S. Thesis, University of Idaho, 110 pp.

Environmental Resources Management Inc., 2014, Phase I Environmental Site Assessment, Goldstrike Mine and Surrounding Area, Washington County, Utah, 126 pp.

Erwin, T., 2014, Goldstrike Project: Mineral Status Report prepared for Cadillac Mining Corporation, dated Aug. 26, 2014, 48 pp.

Erwin, T., 2016, Goldstrike Project: Mineral Status Report prepared for Pilot Gold Inc., dated Nov.16, 2016, 103 pp.

Erwin, T., 2017, First Supplement to mineral Status Report; Goldstrike Project; Washington County, Utah; prepared for Liberty Gold Corp., Dated Dec. 11, 2017, 116 pp.

Erwin, T., 2018, Second Supplement to mineral Status Report; Goldstrike Project; Washington County, Utah; prepared for Liberty Gold Corp., Dated Jan. 26, 2018..

Enns, J., 2017, Logistics report prepared for Pilot Gold, Inc., Volterra 2DIP on the Goldstrike Property: unpublished report for Pilot Gold, prepared by SJ Geophysics Ltd. 29 pp.

Golder, 2018, Goldstrike Project, Scoping Level Pit Slope Recommendations, report dated 29 June 2018 prepared for Pilot Gold USA 29 June 2018, Project No. 1896132.

Goldstrand, P.M., 1991, Tectonostratigraphy, petrology and paleogeography of Upper Cretaceous to Eocene rocks of southwest Utah: Ph.D. Thesis, University of Nevada, Reno, 205 pp.

Goldstrand, P.M., 1994, Tectonic development of Upper Cretaceous to Eocene strata of southwestern Utah: Geological Society of America Bulletin, v. 106, pp. 145-154.

Greenan, D.M., 1985, Geology and remote sensing of the Goldstrike District, Washington County, Utah: An integrated study: Bachelor's thesis, University of Maryland, 171 pp.

Gustin, M.M., and Smith, M.T., 2016, Technical report on the Goldstrike Project: Canadian National Instrument 43-101 technical report, 106 pp.

Hazen Laboratories, 2016, Comminution Testing: Hazen Project 12319, November 18, 2016. Unpublished report for Pilot Gold.

Hebert, J.P., 1988, Geologic ore reserves, Hassayampa Zone, Goldstrike Project: unpublished Tenneco Minerals Co. Interoffice Communication, 4 pp.

Hintze L.F., Anderson, R.E., and Embree, G.F., 1994, Geologic map of the Motoqua and Gunlock quadrangles: US Geological Survey Miscellaneous Investigations Series, Map I-2427.

Kappes, Cassiday and Associates, 2017, Goldstrike Project Report of Metallurgical Test Work. Project No. 9059C, Report I.D. KCA060096_02. Unpublished report for Pilot Gold – April 2017.

Knudsen, T.R. and Biek, R.F., 2014, Interim geologic map of the Cedar City NW Quadrangle, Iron County, Utah: Utah Geological Survey Open-File Report 627, 20 pp.

LaRocque, A., 1960, Molluscan faunas of the Flagstaff Formation of central Utah: Geological Society of America Memoir 78, 100 pp.

MEG MineSearch, 2012, Goldstrike Project Profile Report, 8 pp.

Moorhead, R., 2014, Title Report, Patented Mining Claim Groups, Goldstrike Project, Washington County, Utah: Title Memorandum prepared for Pilot Gold, 2 pp.

Parsley, G.P., 1994, Exploration work summary, lease year 1993-1994, Jedediah (GS) Claims, Goldstrike Mining District, Washington County, Utah: Unpublished internal company report, 362 pp.

Pilot Goldstrike Inc. 2017, Pilot Goldstrike Inc. Bull Valley Exploration Project Goldstrike District, February 2017.

Puchlik, K.P., 2010, Technical Report, Mineral Mountain Project, Washington County, Utah, USA: Canadian National Instrument 43-101 Technical Report prepared for Tonogold Resources Inc., by Puchski GeoConsultants, 69 pp.

Robert, F., Brommecker, R., Bourne, B.T., Doback, P.J., McEwan, C.J., Rowe, R.R. and Zhou, X., 2007, Models and exploration methods for major gold deposit types: *in* Milkereit, B., ed., Ore Deposits and Exploration Technology, Paper 48, Proceedings of Exploration 07: Fifth Decennial International conference on Mineral Exploration, pp. 691-711.

Rowley, P.D., Steven, T.A., Anderson, J.J. and Cunningham, C.G., 1979, Cenozoic stratigraphy and structural framework of southwestern Utah: U.S. Geological Survey Professional Paper 1149, 27 pp.

Rowley, P.D., Anderson, R.E., Hacker, D.B., Boswell, J.T., Maxwell, D.J., Cox, D.P., Willden, R. and Adair, D.H., 2007, Interim geologic map of the Goldstrike Quadrangle and the east part of the Docs Pass Quadrangle, Washington County, Utah: Utah Geological Survey, Open-File Report 510, 34 pp.

Schaubs, M., 1981, Goldstrike Project, Annual Report 1980: Unpublished report for HIMCO, 120 pp.

Schurman, S.R., 1987, Goldstrike Project, Washington County, Utah: Unpublished report for Goldsil Resources, 19 pp.

SRK, 2018, Independent Technical Report and Resource Estimate for the Goldstrike Project, Washington County, Utah USA, NI 43-101 Technical Report – March 21, 2018.

USMX Goldstrike Project Final Report on Column Leach Tests on MOS and BEV Bulk Samples. Kappes, Cassiday & Associates - December 8, 1993.

U.S. Census Bureau. 2018, https://www.census.gov/quickfacts/fact/table/stgeorgecityutah/PST045216, accessed June 15, 2018.

U.S. Environmental Protection Agency. 2018, Superfund National Priorities List, https://www.epa.gov/superfund/search-superfund-sites-where-you-live#map, accessed May 7, 2018.

U.S. Fish and Wildlife Service. 2018, National Wetlands Inventory, https://www.fws.gov/wetlands/Data/Mapper.html, accessed May 7, 2018.

Utah Department of Workforce Services. 2018, http://jobs.utah.goc, accessed June 15, 2018.

Washington County Utah. 2018, Washington County Resource Management Plan (www.washco.utah.gov) accessed June 13, 2018.

Wilderness Connect, 2018, www.wilderness.net, accessed June 15, 2018.

Willden, R., 2006, Goldstrike Mining District, Washington County, Utah: Utah Geological Association Publication 32, p. 458 – 477.

Willden, R., and Adair, D.H., 1986, Gold deposits at Goldstrike, Utah: Utah Geological Association Publication 15, p. 137 – 147.

Wright, J.L., 2017, Goldstrike Property Airborne Magnetic/Radiometric Survey, Gradient Array Resistivity Survey, GIS Database: Internal Report prepared for Liberty Gold, April, 2017, 28 p and digital data files.

29 Date and Signature Page

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional engineering and environmental practices.