NI 43-101 TECHNICAL REPORT

Western Alaska Minerals Inc.

ILLINOIS CREEK PROJECT UPDATE

Illinois Creek Mining District, Western Alaska, USA

PREPARED FOR:

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1 SUMMARY

This Technical Report (Report) provides an update on exploration activities targeting both sulfide and oxide mineralization and resources for the Illinois Creek Property in the State of Alaska, U.S. (Figure 1-1). This report supersedes the April 15, 2021, NI43-101 Technical report on the property and discusses for the first-time sulfide mineralization recognized in the Waterpump area of the property in addition to the oxide Au/Ag resources previously reported.

The Illinois Creek Property is one of five properties controlled by Western Alaska Minerals Inc. (WAM) in the Illinois Creek district. WAM is a public company trading on the TSX-V exchange under the symbol WAM, who through its wholly owned subsidiary Western Alaska Copper and Gold Inc. (WAC&G) owns a 100% interest in the five properties. Since 2010, WAM and its precursor companies have been exploring and advancing its interests in the Illinois Creek mining district located in western Alaska near the Yukon River.

This Technical Report was prepared by Bruce Davis, PhD, Deepak Malhotra. PhD, and Jack DiMarchi, Principal Geologist in accordance with National Instrument 43-101 and Form 43- 101F1 (collectively NI 43-101). All are independent “qualified persons” (QPs) as defined by Canadian Securities Administrators *NI 43-101 Standards of Disclosure for Mineral Projects* and as described in Section 28 (Date and Signature Pages) of this Technical Report.

The effective date of this report is May 22, 2023.

Figure 1-1: Property Location Map (Alaska, U.S.)

Source: WAC&G (2023)

PROPERTY DESCRIPTION AND OWNERSHIP

The Illinois Creek Property is located in the southern Kaiyuh Mountains just east of the Yukon River in western Alaska, approximately 490 km west of Fairbanks, 52 km southeast of the village of Kaltag, and 85 km south-southwest of the community of Galena. The Property is geographically isolated with no current road access or nearby power infrastructure.

On October 17, 2018, Piek Inc. and WAC&G entered into a joint venture agreement to actively explore and develop the Illinois Creek Property owned 100% by Piek Inc., an Alaska-based corporation.

Under the terms of the agreement and amendments to the agreement, a JV Company was established whereby WAC&G could acquire a 100% ownership in the Illinois Creek Property through a series of milestones.

On March 31, 2021, in anticipation of listing WAC&G on the TSX-V exchange, WAC&G completed the purchase of the Illinois Creek property from Joe Piekenbrock (Piekenbrock), the underlying 100% owner of Piek Inc. Under terms of the purchase agreement, WAC&G exercised its option to purchase the remaining 50% interest in the property for 3.698M US$ via promissory note and 120 shares in WAC&G.

In October 2021 as a precursor to going public, the Illinois Creek JV was completed and terminated and WAC&G was vested with 100% interest in the Illinois Creek property by purchasing Piek Inc. WAC&G then went public in November 2022 by completing a reverse takeover of WAC&G using a shell company 1246779 B.C. Ltd which subsequently was renamed Western Alaska Minerals which holds title to both the WAC&G claims and Piek Inc. claims within WAC&G

Subsequent additional claim staking in 2021 and 2022 consolidated WAM's land holdings (though Piek Inc and WAC&G) in the district to 457 State of Alaska mining claims or 114.25 square miles (73,120 acres or approximately 25,590 ha). This total includes the Illinois Creek Property (311 claims), and the Round Top (88 claims), Honker (24 claims), Khotol Ridge (16 claims) and the Pawprint (18 claims) properties.

GEOLOGY AND MINERALIZATION

The Illinois Creek mining district is characterized by intrusion related hydrothermal systems including porphyry copper/molybdenum/silver deposits (PCDs) and surrounding poly-metallic silver/zinc/lead/copper/gold carbonate replacement deposits (CRDs) along with distal low-sulfidation precious-metal veins related to the porphyries. The porphyries in the district are of mid- and late-Cretaceous ages. A Jurassic through mid-Cretaceous fold/thrust event obducts rocks of the Triassic/Jurassic Angayucham terrain and over a thick, poorly documented lower Paleozoic sedimentary stratigraphy which is also foreshortened with deep water stratigraphic units to the east overthrust and stacked on progressively more continental margin rocks to the west.

At the Illinois Creek Property, mineralization is characterized by the extensive development of with Ag/Zn/Pb/Cu/Au carbonate replacement bodies deposited in the over-thickened continental margin carbonate assemblages. The property is divided into two distinct structural blocks herein dubbed the East Block and the West block. Both blocks show distinctive stratigraphic sequences, but both are overprinted by the same 110-114 Ma Illinois Creek mineralization event. That event is metallogenetically related to the relaxation at the end of the compressional event which resulted in the emplacement of the Khotol Mtn suite of intrusions.

Both primary sulfide mineralization and secondary gossan-hosted oxide mineralization are present on the property, and both are viable exploration targets. Current oxide resources are reported herein, and a developing sulfide footprint is in the process of being drill delineated at Waterpump Creek and could be ready for an initial resource estimation by as early as late 2023.

STATUS OF EXPLORATION

Exploration on the Property began in the early 1980's and an open pit mine was built in the late 1990s with limited production through the early 2000's, when mining was halted due to falling metal prices and corporate financial difficulties for the operators at that time.

Historically, the property has been explored and exploited for oxide Au and Ag mineralization in gossans developed from the deep weathering of the sulfide carbonate replacement bodies developed in the dolomites and dolomitic quartzites of both the East and West blocks.

With the consolidation of the district holdings of both Piek Inc and WAC&G in 2019, WAC&G began evaluation of the historic Illinois Creek oxide mineralization and conducted extensive drilling of the leach pad with the corporate strategy to redevelop the oxide mine. The Illinois Creek gossan is a deeply weathered, massive sulfide body oxidized to as much as 400 m below the existing surface which contains exploitable Au/Ag/Cu mineralization.

In 2021, WAC&G began to explore not just for extensions to the oxide gossan mineralization but made its initial test of sulfide mineralization at Waterpump Creek that had been discovered by Anaconda in 1983. Drilling in 2021 first targeted oxide gossan mineralization and then drilled downdip of a few historical Anaconda drill holes that had encountered high-grade sulfide mineralization. Results from WPC21-09 returned 11.5 meters of 522 g/t Ag, 22.5% Zn, and

14.8 % Pb. The impact of this high-grade hole caused the company to pivot its exploration strategy to focus on the sulfide potential of the property.

Since 2021, a major reinterpretation of the Illinois Creek property geology has been ongoing due to this discovery of sulfide mineralization at depths below previous levels of exploration. Utilizing 1) a better understanding of CRD (carbonate replacement deposit) morphologies; 2) a greatly expanded multi-element ICP soil database in 2021 and 2022; 3) re-interpretation and inversions of historical geophysical surveys; 4) a 2022 CSAMT (controlled source audio- magnetotellurics) geophysical survey undertaken to domain resistivity at depth; and 5) ongoing drilling and mapping, a new and more coherent understanding of the property is evolving.

Drilling in 2022 at Waterpump Creek has outlined a CRD containing massive to semi-massive sulfide mineralization dominated by coarse-grained sphalerite, argentiferous galena, and pyrite in recrystalline ferroan dolomite. Drilling to date has outlined a sulfide body roughly 450 meters in strike length by 25 to 75-meters in width, and with thicknesses varying from 5 to over 100 meters.

Mineralization is controlled by the NNE-trending Waterpump Creek fault that down drops and folds the pre-existing schist/dolomite thrust surface into the fault. Mineralization occurs as massive sulfide replacement of the footwall dolomite both at the contact and within upper portions of the dolomite as it rolls into the fault. Mineralization remains open both to the north and south along the structure and at depth along the Waterpump Creek fault. Significant thickening of the sulfide body to >100 m around drill hole WPC22-18 suggests a chimney like expansion of the mineralized body.

In conjunction with the 2022 drill program, WAM also commissioned a property wide CSAMT survey with Zonge International to better understand the overall structural architecture of the system. CSAMT (controlled-source audio-magnetotellurics) is a deep-sounding resistivity technique that effectively defines areas of similar resistivity and highlights structures bounding those discrete resistivity domains.

Profiles from the CSAMT have improved the understanding of the structural framework and stratigraphic sections permissive for CRD mineralization in both the East and West structural blocks.

In the East Block, the mineralization-controlling NNE-trending Waterpump Creek fault is apparent over the entire 6 km strike length of the survey. With the success of 2022 drilling at Waterpump Creek in the East Block and the potential to greatly expand the mineralization footprint, WAM also commissioned a re-inversion of the historical 2005 NovaGold pole-dipole IP survey using an updated 3D inversion algorithm. This survey covers 2 kms of the Waterpump Creek fault south from the WPC21-09 discovery hole including the currently outlined extent of the mineralized body. The new 3D inversion shows a direct correlation between both resistivity and chargeability with the Waterpump Creek sulfide body. The data also shows the conductive anomaly extending over 1.4 km south of the current Waterpump drilling into the Last Hurrah target area. Extensions to the Waterpump Creek sulfide mineralization and the conductive anomaly will be a focus of planned 2023 drilling.

In the West Block, the new CSAMT profiles have led to the recognition of a slightly oblique fault south of the Illinois Creek (IC) fault called the Warm Springs fault. Between the two faults deep oxidation up to 400 meters has formed the Illinois Creek gossan. The oxide resources described in this report occur in the gossan. The low-grade East IC manto extends east and south of the Illinois Creek gossan. The East IC manto appears to lie at or near the contact between the dolomitic quartzites and dolomites.

South of the Warm Springs fault, an extensive greenstone sill caps the permissive stratigraphy and looks to provide an aquitard not unlike that seen with East block where the Kaiyuh pelitic schists cap the dolomites of the East Block. Two exploration holes were drilled late in the 2022 season south of the Warm Springs fault along the eastern margin of the West Block. Though both holes were lost after cutting the uppermost 50 m of the dolomitic quartzites the holes encountered major alteration as multiphase silicification and pyrite with anomalous Pb, Zn and Ag. This permissive stratigraphy occurs in a CRD target area of 4 x 2 km defined by the CSAMT survey. The target lies to east and south of the Illinois Creek oxide resource pit.

In addition to the geophysical support for the Warm Springs target, expanded soil sampling coverage shows a major coincident Cu, Au, Pb, As anomaly covering a 1.5 x 1.5 km area south of the Illinois Creek pit. The soil samples suggest a porphyry target may be developing in this direction.

The Warm Springs CRD target and the possible porphyry target will be the second focus of the planned 2023 drilling.

Potential analogs to the Illinois Creek style of mineralization include: Hermosa and Magma in Arizona, USA; Tintic and Bingham Canyon in Utah, USA; the Leadville and Gilman districts in Colorado, USA; and a series of deposits including Santa Eulalia, Cinco de Mayo, and Naica in Mexico.

Notably, the Hermosa discovery in Arizona and subsequent acquisition by S32, a major Australian mining company, for $1.3B in 2018, has led to a resurgence in CRD exploration.

METALLURGY

Initial metallurgical analysis of the Waterpump Creek sulfide is currently ongoing at ALS In Kamloops, BC with results expected in the 2nd quarter of 2023. Historical metallurgical work undertaken for the development of the Illinois Creek oxide Au/Ag deposit indicates that the highly oxidized rocks are amenable to a relatively low-cost leaching extraction of gold and silver using cyanide solutions. Additional work is now being undertaken by Forte Dynamics and Pro Solv LLC in Lakewood, Co to ascertain the amenability of the oxide resources to Merrill-Crowe and SART (sulfidization, acidification, recycling and thickening) processing to optimize Ag and Cu recoveries, respectively.

SULFIDE MINERALIZED MATERIAL

There is no mineral resource estimate for the sulfide mineralization currently being explored and expanded at Waterpump Creek (WPC). Drilling from late 2021 through the 2022 field season has defined continuous mineralization along a strike length of 450 meters. The mineralization is open both north and south along strike. Drilling is not yet at a density for resource estimation but suggests that with additional supportive drilling could reach a stage for estimation at the end of 2023.

Mineralized intervals from the 2021 and 2022 drilling at WPC are shown Table 1.1.

Table 1.1: Mineralized Intervals 2021 and 2022 Drilling at Waterpump Creek

Drill Hole	From (meters)	To (meters)	Thickness (meters)	Ag g/t	Ag Oz/t	Zn %	Pb %
WPC22-21	**150.0**	**155.1**	**5.1**	**789**	**25.4**	**14.9**	**22.0**
WPC22-22	**161.6**	**184.3**	**22.7**	**293**	**9.4**	**9.0**	**20.3**
including	*161.6*	*168.6*	*7.0*	*557*	*17.9*	*16.7*	*21.8*
WPC22-22	**207.0**	**216.5**	**9.5**	**118**	**3.8**	**3.5**	**8.7**
WPC22-22	**245.7**	**300.3**	**54.6**	**187**	**6.0**	**6.2**	**5.1**
including	*271.1*	*274.6*	*3.5*	*1223*	*39.3*	*32.5*	*8.1*
including	*292.6*	*300.3*	*7.7*	*311*	*10.0*	*10.1*	*1.8*
WPC22-20	**166.6**	**178**	**11.4**	**284**	**9.1**	**14.8**	**10.9**
including	*166.6*	*175*	*8.4*	*322*	*10.6*	*12.1*	*12.8*
including	*166.6*	*168.2*	*1.6*	*474*	*15.2*	*24.7*	*14.3*
including	*173.9*	*175*	*1.1*	*883*	*28.4*	*12.2*	*45.2*
WPC22-20	**185.2**	**205.9**	**20.7**	**171**	**5.5**	**9.4**	**5.8**
including	*187.8*	*189.7*	*1.9*	*272*	*8.7*	*22.3*	7.6
including	*193.4*	*196.1*	*2.7*	*297*	*9.5*	*2.8*	10.6
WPC22-18	**147.2**	**248.9**	**101.7**	**160**	**5.1**	**5.4**	**5.3**
including	*158.6*	*165.8*	*7.2*	*349*	*11.2*	*7.3*	*9.7*
including	*191.7*	*195*	*3.3*	*358*	*11.5*	*7.2*	*10.6*
including	*223.8*	*242.3*	*18.5*	*355*	*10.8*	*2.2*	*13.5*
WPC22-17	**125.5**	**174.3**	**48.8**	**144**	**4.6**	**9.0**	**5.5**

including	*125.5*	*135.3*	*9.8*	*428*	*13.8*	*15.9*	*14.1*
including	*160.6*	*164.7*	*4.1*	*417*	*13.4*	*14.8*	*18.3*
WPC22-13	**150.1**	**152.9**	**2.8**	**1304**	**41.9**	**2.5**	**37.1**
WPC22-13	**158.4**	**160.8**	**2.4**	**820**	**26.4**	**15.0**	**13.0**
WPC22-11	**139.1**	**150.6**	**11.5**	**337**	**10.8**	**16.7**	**10.0**
WPC22-11	**152.7**	**156.3**	**3.6**	**151**	**4.9**	**22.3**	**5.1**
WPC22-08	**114.6**	**125.5**	**10.9**	**157**	**5.0**	**9.9**	**6.4**
WPC22-07	**136.4**	**142.5**	**6.1**	**459**	**14.8**	**12.1**	**14.8**
WPC22-07	**150.1**	**164.4**	**14.3**	**54**	**1.7**	**10.3**	**1.9**
WPC21-09	**109.4**	**120.9**	**11.5**	**522**	**16.8**	**22.5**	**14.4**

Source: WAM (2023)

MINERAL RESOURCE ESTIMATE

In 2019 and again in 2021 after additional drilling on the historic heap leach pad, WAC&G published a NI 43-101 Technical Reports outlining Indicated and Inferred mineral resource estimates for the Illinois Creek oxide deposit and leach pad. The Indicated and Inferred mineral resource estimates and methodologies are stated again in this report.

The mineral resource estimates were generated using drill hole sample assay results and the interpretation of geologic models that relate to the spatial distribution of gold, silver, and copper. Grade estimates are made using ordinary kriging into 3D model blocks measuring 10 × 10 × 5 m (L × W × H) and the effects of anomalous high-grade samples were controlled by a combination of top cutting and outlier limitations, which restrict the distance of influence of high-grade samples during estimation. The results of the modeling process were validated using a combination of visual and statistical methods to ensure the model grades are reasonable representations of the underlying sample data.

Mineral resources delineated by drilling on a maximum nominal spacing of 30 m are included in the Indicated category. In-situ mineral resources within a maximum distance of 100 m from a drill hole are included in the Inferred category. Inferred resources on the leach pad are within a maximum distance of 60 m from a drill hole. To ensure the mineral resources exhibit reasonable prospects for eventual economic extraction, the in-situ resources are constrained within a pit shell generated using projected technical and economic parameters and tabulated at a base case cut-off grade of 0.35 g/t gold equivalent (AuEq). The leach pad mineral resources are tabulated at a zero cut-off grade.

Estimates of the in-situ, leach pad and combined Indicated and Inferred mineral resources are shown in Tables 1.2 through 1.4, respectively.

Table 1.2: Mineral Resource Estimate for In-Situ Mineral Resources

Class	Tonnes (M)	Average Grade				Contained Metal			
		AuEq (g/t)	Au (g/t)	Ag (g/t)		AuEq (Koz)	Au (Koz)	Ag (Moz)	
Indicated	7.4	1.39	0.98	32.7		331	234	7.8	
Inferred	3.1	1.47	1.02	35.9		148	102	3.6	

In-Situ Mineral Resources are constrained within a pit shell developed using metal prices of US$1,600/oz Au and US$20/oz Ag, mining costs of US$2.50/t, processing costs of US$10/t, G&A cost of US$4.00/t, 92% metallurgical recovery Au, 65% metallurgical recovery Ag and an average pit slope of 45 degrees. The cut-off grade for resources considered amenable to open pit extraction methods is 0.35 g/t AuEq. AuEq values are based only on gold and silver values using metal prices of US$1,600/oz Au and US$20/oz Ag.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.

Mineral resources in the Inferred category have a lower level of confidence than that applied to Indicated mineral resources, and, although there is sufficient evidence to imply geologic grade and continuity, these characteristics cannot be verified based on the current data. It is reasonably expected that the majority of Inferred mineral resources could be upgraded to Indicated mineral resources with continued exploration.

Table 1.3: Mineral Resource Estimate for Leach Pad Mineral Resources

Class	Tonnes (000)	Average Grade				Contained Metal			
		AuEq (g/t)	Au (g/t)	Ag (g/t)		AuEq (Koz)	Au (Koz)	Ag (Moz)	
Indicated	1,300	1.00	0.44	44.3		41.8	18.6	1.9	
Inferred	152	0.90	0.37	42.6		4.4	1.8	0.2	

It is assumed that the entire volume of the material on the leach pad will be processed and therefore, no selectivity is possible, and the Mineral Resources are presented at a zero-cut-off grade. AuEq values are based only on gold and silver values using metal prices of US$1,600/oz Au and US$20/oz Ag.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.

Mineral resources in the Inferred category have a lower level of confidence than that applied to Indicated mineral resources, and, although there is sufficient evidence to imply geologic grade and continuity, these characteristics cannot be verified based on the current data. It is reasonably expected that the majority of Inferred mineral resources could be upgraded to Indicated mineral resources with continued exploration.

Table 1.4: Mineral Resource Estimate for Combined In-Situ and Leach Pad Mineral Resources

Class	Tonnes (M)	Average Grade				Contained Metal			
		AuEq (g/t)	Au (g/t)	Ag (g/t)		AuEq (Koz)	Au (Koz)	Ag (Moz)	
Indicated	8.7	1.33	0.90	34.4		373	253	9.6	
Inferred	3.3	1.44	0.99	36.2		152	104	3.8	

In-Situ Mineral resources are stated as contained within a pit shell developed using metal prices of US$1,600/oz Au and US$20/oz Ag, mining costs of US$2.50/t, processing costs of US$10/t, G&A cost of US$4.00/t, 92% metallurgical recovery Au, 65% metallurgical recovery Ag and an average pit slope of 45 degrees. AuEq values are based only on gold and silver values using metal prices of US$1,600/oz Au and US$20/oz Ag. The cut-off grade for resources considered amenable to open pit extraction methods is 0.35 g/t AuEq. It is assumed that the entire volume of the material on the leach pad will be processed and therefore, no selectivity is possible, and the Leach Pad Mineral Resources are presented at a zero-cut-off grade.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.

Mineral resources in the Inferred category have a lower level of confidence than that applied to Indicated mineral resources, and, although there is sufficient evidence to imply geologic grade and continuity, these characteristics cannot be verified based on the current data. It is reasonably expected that the majority of Inferred mineral resources could be upgraded to Indicated mineral resources with continued exploration.

CONCLUSIONS

Based on the evaluation of the data available from the Illinois Creek Project, the authors of this Technical Report conclude the following:

- At the effective date of this Technical Report (May 22, 2023), the Illinois Creek Property consists of 311 contiguous State of Alaska mining claims which are part of a larger mineral tenure package totaling 457 mining claims covering 25,590 ha.
- WAM through its 100% owned WAC&G and Piek Inc. subsidiaries holds a 100% in the Illinois Creek property. WAC&G also maintains a 100% ownership of four additional properties in the Illinois Creek district including the Round Top, Honker, Khotol Ridge and Pawprint claims.
- Exploration in 2021 and 2022 has largely focused on advancing the Waterpump sulfide mineralization first discovered by Anaconda in 1983. Drilling in 2021 and 2022 by WAM has encountered high-grade massive and semi-massive sulfide mineralization with important Ag, Pb, Zn grades. Initial metallurgical investigation of the sulfide mineralization has begun with a series of composites delivered to ALS Labs in Kamloops, BC.

- Drilling through 2022 has outlined sulfide mineralization along 450 meters of strike length with possible widths varying from 25 to 75-meters, and with thicknesses varying from 5 to over 100 meters.
- The Illinois Creek Au/Ag/Cu oxide deposit is characterized as a carbonate replacement deposit (CRD) in which zones of predominantly massive sulfides have been pervasively oxidized to depths approaching 400 m below surface. The remaining iron-oxide gossans contain appreciable amounts of gold, silver and copper plus minor amounts of lead and zinc.
- Exploration on the Property began in the early 1980s. In the late 90s and early 2000s, there was limited production, and exploration was halted due to falling metal prices and corporate financial difficulties for the operators at that time.
- The Illinois Creek deposit is estimated to contain 7.4M tonnes of mineral resources in the Indicated category at a grade of 0.98 g/t Au and 33 g/t Ag plus 3.1M tonnes mineral resources in the Inferred category at an average grade of 1.02 g/t Au and 36 g/t Ag. These mineral resources are constrained within a pit shell generated using a gold price of US$1,600/oz and a silver price of US$20/oz and summarized using a base case cut- off grade of 0.35 g/t AuEq.
- A leach pad area on the Property contains a volume of mineralized material that was stacked during previous mining activities and leached intermittently from 1997 through mine closure. During the summer of 2020, WAC&G drilled and sampled the leach pile. It is estimated to contain 1.3M tonnes of mineral resources in the Indicated category at a grade of 0.44 g/t Au and 44 g/t Ag and 152K tonnes of mineral resources in the Inferred category at a grade of 0.37 g/t Au and 43 g/t Ag.
- Preliminary metallurgical work indicates that the highly oxidized rocks are amenable to relatively low-cost leaching extraction of gold and silver using cyanide solutions.
- There are no known factors related to metallurgical, environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues which could materially affect the mineral resource estimates.

RECOMMENDATIONS

Based on the evaluation of the data available from the Illinois Creek Project, the authors of this Technical Report recommend the following:

- Continued drilling and expansion of the Waterpump Creek mineralization encountered in 2021 and 2022 drilling in order to reach a drill density sufficient for resource estimation. The proposed budget is $1,600,000USD. A minimum total of 2000 meters of core drilling in a minimum of 5 drill holes.
- Initial exploration drilling of the numerous additional targets recognized in the 2022 geophysical and soil geochemical programs. The proposed budget is $1,200,000USD. A minimum total of 1500 meters of core drilling in a minimum of 5 drill holes
- Continued initial re-disking studies for the potential development of the project including initial metallurgical test work on sulfide mineralization. The proposed budget is $100,000.
- Continued environmental baseline monitoring studies to support environmental and permitting activities. The proposed budget is $50,000.

The total estimated direct program costs are approximately $2.95MUSD, which includes site costs such as camp support, overhead and other indirect costs, excluding corporate G&A.

2 INTRODUCTION

2.1 TERMS OF REFERENCE

Western Alaska Minerals Inc. (WAM) is a public exploration company trading on the TSX Venture exchange under the trading symbol WAM. Through its wholly-owned WAC&G and Piek Inc. subsidiaries, it controls the Illinois Creek property. Since 2010, WAC&G has been exploring and advancing its interests in several properties in the Illinois Creek mining district located in western Alaska.

WAM has retained Bruce Davis, PhD, FAusIMM (BMD) to provide an updated NI43-101 technical report on the Illinois Creek property documenting 2021 and 2022 drilling and exploration on the Waterpump Creek sulfide CRD target, in addition to the 2021 estimate of mineral resources for the Illinois Creek oxide gold-silver deposit.

BMD was assisted by Jack DiMarchi, a principal geologist with Core Geoscience LLC. (CG), who provided information related to environmental and permitting, and Deepak Malhotra, PhD, SME-RM, the President of Pro Solv, LLC, who provided information related to metallurgy.

2.2 UNITS OF MEASUREMENT

The coordinate system used in this report is Universal Transverse Mercator (UTM) Zone 4W, and the datum used is the North American Datum 1983 (NAD 83).

All units of measurement in this report are metric, unless otherwise stated. Imperial units are used in Section 6 (History).

All currency is expressed in 2023 U.S. dollars, unless otherwise stated.

2.3 QUALIFIED PERSONS

Bruce Davis, Deepak Malhotra and Jack DiMarchi are independent qualified persons (QPs) as defined in NI 43-101, *Standards of Disclosure for Mineral Projects*, and are responsible for the preparation of this Technical Report on the Project, which has been prepared in accordance with NI 43-101 and Form 43-101F1 (collectively NI 43-101).

Bruce Davis, Deepak Malhotra and Jack DiMarchi have no beneficial interest in WAC&G or the Property. These Consultants are not insiders, associates, or affiliates of WAM or WAC&G. The results of this Technical Report are not dependent on any prior agreements concerning the conclusions of this report, and there are no undisclosed understandings concerning future business dealings between WAC&G and the Consultants. The Consultants are paid a fee for their work in accordance with normal professional consulting practices.

2.4 SITE VISIT

Bruce Davis conducted site visits to the Illinois Creek Project on June 12-14, 2018, and July 15-18, 2021. He reviewed the drilling procedures, site facilities, historical and recent drill core where available, logging procedures, data capture, and sample handling. Jack DiMarchi, and Deepak Malhotra have not visited the property.

2.5 INFORMATION SOURCES

In preparing this Technical Report, the authors reviewed geological reports, maps and miscellaneous technical papers listed in Section 27 (References) of this Technical Report. Additional information was provided by WAM personnel.

This Technical Report is based on information known to the authors as of May 22, 2023.

2.6 ABBREVIATIONS AND ACRONYMS

Abbreviations and acronyms used throughout this report are shown in Table 2.1.

Table 2.1: Glossary

Description	Abbreviation or Acronym
degrees Celsius	°C
degrees Fahrenheit	°F
atomic absorption	AA
atomic absorption spectrometry	AAS
Alaska Biological Research, Inc	ABR
Alaska Department of Environmental Conservation	ADEC
Alaska Department of Fish and Game	ADF&G
Alaska Department of Natural Resources	ADNR
silver	Ag
Annual Hardrock Exploration Activity	AHEA
Alaska Industrial Development and Export Authority	AIDEA
Anaconda Minerals Company	Anaconda
Alaskan Native Claims Settlement Act	ANCSA
argon	Ar
argon-argon	Ar-Ar
Atlantic Richfield Company	ARCO
American Reclamation Group	ARG
Alaska Resources Library and Information Services	ARLIS
arsenic	As
Angayucham/Tozitna/Innoko	ATI
gold	Au
cyanide-soluble gold	AuCN
recoverable gold equivalent	AuEqR
Bruce Davis	BMD
bismuth	Bi
Core Geosciences LLC	CG
Canadian Institute of Mining, Metallurgy, and Petroleum	CIMM
Cook Inlet Region, Inc.	CIRI
cyanide	CN
Certified Professional Geologist	CPG
carbonate replacement deposit	CRD
copper	Cu
Clean Water Act	CWA
Controlled source audio-magnetotellurics	CSAMT

Description	Abbreviation or Acronym
Dakota Mining Corporation	Dakota
diamond drill	DD
diamond drill hole	DDH
Illinois Creek deposit	Deposit
deep penetrating geochemistry	DPG
Environmental Assessment	EA
Echo Bay Mines	Echo Bay
exploratory data analysis	EDA
Exploration Data Consultants	Edcon
Environmental Impact Statement	EIS
electromagnetic	EM
Environmental Protection Agency	EPA
Ertec Western Inc.	Ertec
fire assay	FA
Fellow Australasian Institute of Mining and Metallurgy	FAusIMM
Food and Drug Administration	FDA
iron	Fe
ferruginous gossan	FG
ferruginous manganiferous gossan	FMG
ferruginous manganiferous quartzite	FMQ
ferruginous quartzite	FQ
feet	Ft
general and administrative	G&A
grams per cubic centimeter	g/cc
hectare	Ha
hydrochloric acid	HCl
mercury	Hg
nitric acid	HNO3
hydrothermal quartz	HQ
Illinois Creek	IC
inductively coupled plasma	ICP
inverse distance weighted	ID^2
inch	in.
induced polarization	IP
joint venture	JV
potassium	K
potassium-argon	K-Ar
Kilometer	Km
thousand ounces	Koz
Kilowatt	kW
Pound	Lb
inductively coupled plasma	lCP
nanoteslas	nT
Million	M

Description	Abbreviation or Acronym
Meter	M
million years ago	Ma
meters above sea level	Masl
Magnesium	Mg
milligal	Mgal
McClintock Land Associates	MLA
millimeter	Mm
Manganese	Mn
Molybdenum	Mo
million ounces	Moz
Mineral Resource Development, Inc.	MRDI
North American Datum	NAD
National Environmental Policy Act	NEPA
National Instrument 43-101	NI 43-101
Northern Land Use Research	NLUR
nearest neighbor	NN
NovaGold Resources Inc.	NovaGold
North Pacific Mining Company	NPMC
net smelter return	NSR
nanoTesla	nT
ordinary kriging	OK
osmium	Os
ounce	Oz
ounces per ton	oz/t
100% passing	P_{100}
80% passing	P_{80}
95% passing	P_{95}
Professional Geoscientist	P.Geo.
lead	Pb
porphyry copper deposit	PCD
preliminary economic assessment	PEA
Piek Exploration LLC	Piek Exploration
Plan B Minerals	Plan B
Pro Solv LLC	ProSolv
public-private partnership	PPP
Illinois Creek Project	Project
Illinois Creek Property	Property
quartzite	Q
altered quartzite	Qa
quality assurance/quality control	QA/QC
qualified person	QP
sanded quartzite	Qs
reverse-circulation	RC
rhenium–osmium	Re-Os

Description	Abbreviation or Acronym
run-of-mine	ROM
Salisbury & Associates Inc.	Salisbury & Associates
sulfidize, acidify, recycle and thicken	SART
antimony	Sb
scanning electron microscope	SEM
specific gravity	SG
SIM Geological Inc.	SGI
Silver Predator Inc.	Silver Predator
tin	Sn
SRK Consulting	SRK
short ton	St
tonne	T
U.S. Army Corps of Engineers	USACE
United States Mining Corporation	USMX
Universal Transverse Mercator	UTM
Viceroy Resource Corporation	Viceroy
very low frequency	VLF
Western Alaska Copper & Gold Inc.	WAC&G
Waterpump Creek	WPC
Yukuskokon Professional Services	YKPS
zinc	Zn

3 RELIANCE ON OTHER EXPERTS

This Technical Report was prepared by Bruce Davis, FAusIMM (BMD), Deepak Malhotra, R- SME of Pro Solv LLC (ProSolv) and Jack DiMarchi, CPG of Core Geosciences LLC (CG). Davis, DiMarchi, and Malhotra are qualified persons for the purposes of NI 43-101, and each fulfills the requirements of an “independent qualified person”.

BMD, ProSolv and CG have relied exclusively on information provided by WAM’s management team for matters related to mineral tenure and mining rights permits, surface rights, royalties, agreements and encumbrances relevant to this report.

Active State of Alaska claims and their ownership have been verified at the Alaska Department of Natural Resources website dnr.alaska.gov/. The authors have not researched the property title or mineral rights for the Illinois Creek Project and express no legal opinion as to the ownership status of the Property.

4 PROPERTY DESCRIPTION AND LOCATION

4.1 LOCATION

The Illinois Creek Project is located in the State of Alaska, approximately 490 km west of Fairbanks, 52 km southeast of the village of Kaltag, and 85 south-southwest of the regional supply center of Galena (Figure 4.1). Geographic coordinates of the Property are N64°2' 7.31" latitude and W157° 54' 55.92" longitude [Universal Transverse Mercator (UTM) North American Datum (NAD) 83, Zone 4W coordinates 7101400N, 553000E].

The Property is located in the southern Kaiyuh Mountains of west-central Alaska just east of the Yukon River. The Property is in the Nulato A-4 and A-5 quadrangles, Kateel River Meridian T16S, R4E, sections 13, 14, 23-25, and 36; T16S, R5E, sections 10-36; T16S, R6E, sections 7, 18,19, 30 and 31; T17S, R4E, sections 1, 11-14, 23-26, 35 and 36; and T17S, R5E, sections 1-13, 15-24, and 26-35.

Figure 4.1: Property Location Map

Source: WAC&G (2023)

4.2 MINERAL TENURE

The WAM-controlled lands in the Illinois Creek mining district include five distinct properties: Illinois Creek, Round Top, Honker, Khotol Ridge and Pawprint. The total land tenure package consists of 457 State of Alaska mining claims which include the following claim groups: Illinois Creek (311 claims), Round Top (88 claims), Honker (24 claims), Khotol Ridge (16 claims) and Pawprint (18 claims). The claim holdings cover 114.25 square miles (73,120 acres or approximately 25,590 ha). WAM controls a 100% interest in the claims through their subsidiaries WAC&G and Piek Inc. All claims are on State of Alaska lands and include both mineral and surface rights administered by the State of Alaska Department of Natural Resources (ADNR). All permits related to the claims and required by ADNR are valid through December 31, 2023. They are to be renewed by WAM before November 30, 2023.

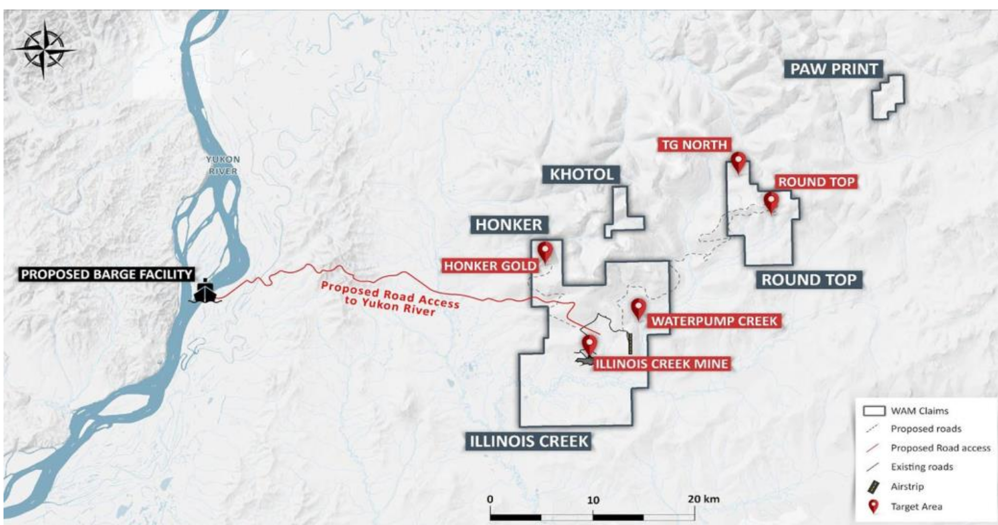
A summary of the WAM land holding is shown in Table 4.1.

Table 4.1: Summary of WAM Lands

Owner	Property	Number	Type	Acres	Hectares
WAC&G	Illinois Creek	201	State Claims	32,160	13,015
	Round Top	88	State Claims	14,080	5,698
	Honker	24	State Claims	3,840	1,554
	Khotol Ridge	16	State Claims	2,560	1,036
	Pawprint	18	State Claims	1,880	1,165
Piek Inc.	Illinois Creek	110	State Claims	17,600	7,122

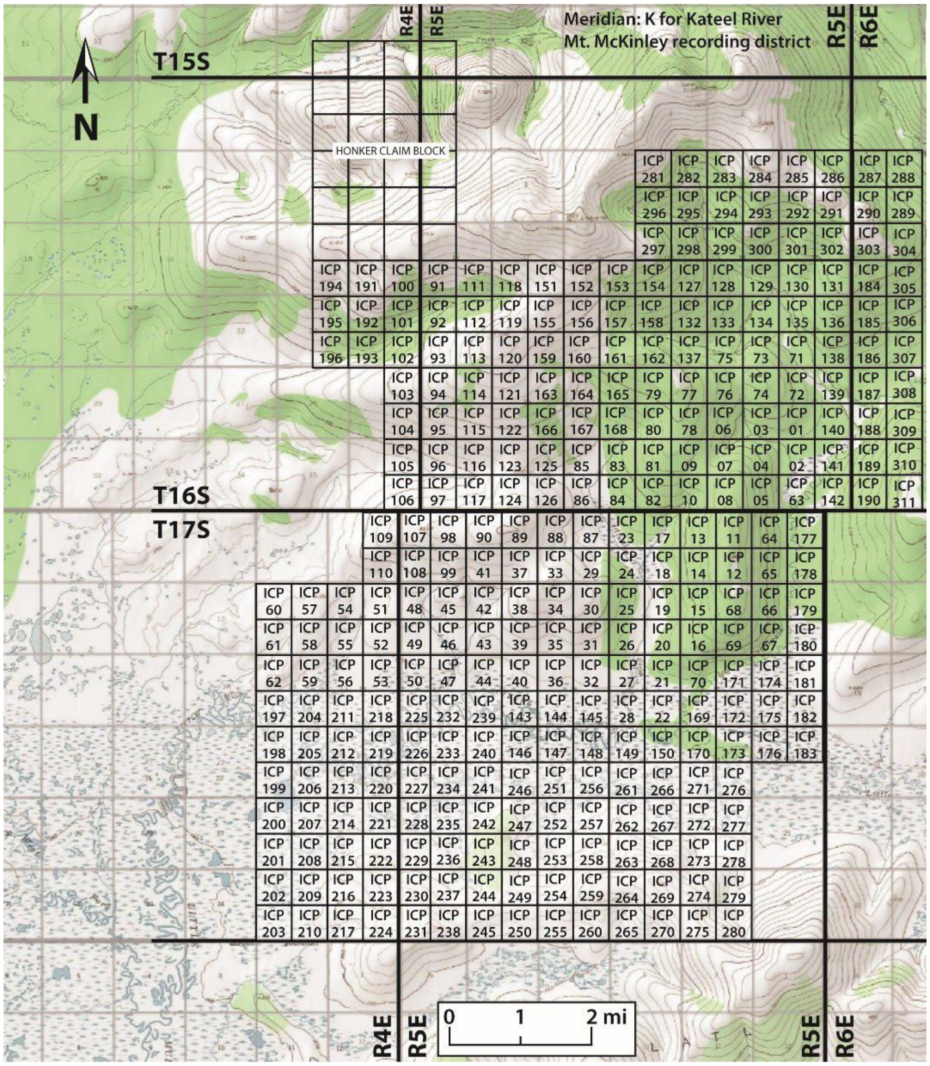
Figure 4.2 shows WAM land holdings within the Illinois Creek Mining District, and Figure 4.3 shows the Illinois Creek Property and claims.

Figure 4.2: Land Holdings of WAM in the Illinois Creek Mining District



Source: WAC&G (2023)

Figure 4.3: Illinois Creek Property and Claims



Source: WAC&G (2023)

4.3 Royalties, Agreements and Encumbrances

4.3.1 State of Alaska Claims

All claims controlled by WAM as well as proposed development infrastructure lie on lands owned by the State of Alaska and are subject to State of Alaska mining claim regulations. As such, the State of Alaska maintains a 3% net income production royalty on all production from state claims, as outlined in Alaska Statute Sec. 38.05.212 Production Royalty.

4.3.2 Illinois Creek Joint Venture Agreement

On October 17, 2018, Piek Inc. and WAC&G entered into a joint venture agreement to actively explore and develop the Illinois Creek Property owned 100% by Piek Inc., an Alaska-based corporation.

Under the terms of the agreement and amendments to the agreement, a JV Company was established whereby WAC&G could acquire a 100% ownership in the Illinois Creek Property through a series of milestones.

4.3.3 Purchase of Piek Inc

On March 31, 2021, in anticipation of listing WAC&G on the TSX-V exchange, WAC&G completed the purchase of the Illinois Creek property from Joe Piekenbrock (Piekenbrock), the underlying 50% owner of Piek Inc. Under terms of the purchase agreement, WAC&G exercised its option to purchase the remaining 50% interest in the property for 3.698M US$ via promissory note and 120 shares in WAC&G.

As of April 15, 2023, under terms of the purchase agreement, WAC&G has completed $998,000 in prescribed payments and accrued interest compounded at the 2%/annum promissory note rate. Remaining installments on the promissory note are $1.5MUS due May 31, 2023, and $1.2MUS + accrued interest due March 31, 2024. The balance of the promissory note as of December 31, 2022, was $2,704,333 with $4,333 being incurred interest.

As a consequence of the purchase WAC&G and Piekenbrock agreed to dissolve the JV and the certificate of cancellation was signed and filed on March 17, 2022.

4.3.4 TSX-V Listing

On November 10, 2021, Western Alaska Minerals Corp. (formerly 1246779 B.C. Ltd.) announced the completion of its business combination transaction whereby WACG Acquisition Co., a wholly owned subsidiary of the Resulting Issuer (WAM), and Western Alaska Copper & Gold Company completed a plan of merger under Alaskan law that resulted in the reverse takeover of the Resulting Issuer by WAC&G.

On November 15, 2021, Western Alaska Minerals Corp under the symbol WAM began trading the TSX Venture exchange.

4.4 Environmental Liabilities

After closure of the historical Illinois Creek mine, the State of Alaska remediated the site through its agreement with American Reclamation Group (ARG). Though there are no current environmental liabilities related to the mine, the State of Alaska continues to monitor water quality at the site. WAC&G purchased a portion of the historical Illinois Creek workforce camp which is used for ongoing exploration. WAC&G maintains responsibility for cleanup and closure of the workforce camp.

4.5 Environmental Studies

This section summarizes the existing environmental information for the Illinois Creek Project area.

There was a concerted effort to collect baseline data for a number of environmental resource categories in the Project area in the early to mid-1990s as part of the mine development efforts of USMX. The mine was eventually closed, and in 2005 it was fully reclaimed by American Reclamation Group (ARG). In 2019, WAC&G initiated surface water-quality sampling. And in 2020, WAC&G updated the wetlands mapping and initiated aquatic biomonitoring in the area. The environmental baseline work is briefly discussed in Sections 4.5.1 to 4.5.7 and includes surface water and groundwater quality, wetlands mapping, aquatic biomonitoring, groundwater hydrogeology, cultural resources, waste rock characterization, and meteorology.

4.5.1 Surface Water and Groundwater Quality

During historical mining operations in the 1990s, USMX monitored surface water and groundwater quality at nine stream sites, four springs, and six monitoring wells in the general mine area. Limited data from that effort are available.

In 2006, Alaska Department of Natural Resources (ADNR) assumed responsibility for monitoring surface water and groundwater quality at the site and conducted various sampling campaigns from 2006 through 2019.

Beginning in 2019, WAC&G initiated a renewed surface water quality sampling campaign at two additional surface sites. No water quality sampling was performed in 2020.

WAC&G initiated a broader program in 2021 and 2022 at a total of 20 sites. Sampling is anticipated to continue in 2023.

4.5.2 Wetlands Mapping

In 2020, WAC&G engaged Alaska Biological Research, Inc. (ABR) to prepare a desktop wetland delineation map for the Project to assess the current existence of wetlands in the Illinois Creek mine area. This was primarily an exercise to update the wetland delineation map that ABR generated in 1995 under contract with USMX.

In 2022, ABR was again engaged to perform desktop wetlands mapping of the area within the Waterpump Creek drainage immediately east of the wetlands area mapped in 2020.

If additional Project plans indicate unavoidable impacts to wetlands or waters, then a site- specific wetland map, supported by field wetland determinations, will be required to support the permitting process required under Section 404 of the Clean Water Act (CWA).

4.5.3 Aquatic Biomonitoring

Beginning in 1995, the Alaska Department of Fish and Game, Habitat Division (ADF&G) were engaged by the mine to conduct fish studies. Work was completed in 1995, 1996, and 1997 with an emphasis on juvenile Coho (silver) salmon. In summary, these earlier fish studies suggest that annual summer populations of Coho and Chum salmon vary significantly but that Illinois Creek provides a healthy habitat for salmon spawning and rearing.

In 2020, WAC&G engaged ADF&G to initiate biomonitoring in streams potentially impacted by a reopening of the Illinois Creek mine or development of the nearby Honker and Round Top prospects. These efforts were repeated in 2021 and 2022 and will continue in 2023.

Biomonitoring efforts included surveys of periphyton (measured by chlorophyll-a) and aquatic macroinvertebrates in Illinois Creek. Juvenile fish were captured in minnow traps in Illinois Creek, as well as streams in the nearby Dome, Minnesota, Colorado, California, and Eddy Creek drainages. One unnamed tributary of the Little Mud River was also trapped. Juvenile Coho salmon from Illinois Creek were analyzed for whole-body concentrations of several metals, and their length frequencies were described. Juvenile Coho population characteristics and metal concentrations in 2020 were compared to historical data.

Baseline periphyton standing crop and aquatic macroinvertebrate population characteristics were described and can be used as an indicator of future environmental changes. Metal concentrations found in juvenile Coho salmon captured in Illinois Creek were generally comparable to those found in the 1990s. The exception was mercury, which was notably elevated compared to the previous collection, though they are still below FDA action levels. Other metal concentrations differed only slightly from those found in the 1990 samples. Catches and length-frequency distributions of juvenile Coho salmon in Illinois Creek were comparable to the historical data.

Fish communities vary depending on stream characteristics, consisting primarily of resident Dolly Varden and slimy sculpin in high-gradient headwater streams, and mixed communities of Alaska blackfish, slimy sculpin, Arctic grayling, and juvenile salmon in the lower reaches. Abundant large beaver dam complexes in these drainages alter fish distribution on a decades- long timescale.

4.5.4 Groundwater Hydrogeology

In 1995, SRK completed a hydrogeologic evaluation of the site for USMX. The study relied on the results of groundwater-level monitoring in six wells, falling-head and pump tests, and the site geology to conclude the presence of an aquifer (termed the Illinois Creek aquifer) which is roughly coincident with the geologic fold that trends east-west and envelopes the Illinois Creek gold deposit.

Between 1995 and 2004, during historical mine operations, USMX monitored water levels in monitoring wells.

In 2006, ADNR assumed responsibility for post-closure monitoring, and it monitored water levels periodically until 2019.

At this time, the volume of any potential pit water or excess pumped water and the potential need for water treatment and permitting, such as discharge permits, have not been evaluated for any new mine development on the Illinois Creek property. But these will be included, as necessary, in future mine planning.

4.5.5 Cultural Resource Surveys

Owen Mason and Howard Maxwell conducted cultural resource surveys for NPMC in 1991 and 1992, respectively, for a proposed laydown area on the Yukon River, the proposed transportation corridor, and the Illinois Creek mine area. In 1994, Northern Land Use Research (NLUR) conducted work in the Illinois Creek mine area at six specific sites that Maxwell had previously identified as having high archaeological potential. In addition, NLUR conducted work at the Macho Grande prospect and along the route of the then-proposed new road connecting the mine site with the airstrip; all at the request of USMX. The survey combined a pedestrian survey, intensive and extensive surface examinations, and subsurface testing where appropriate (NLUR, 1995).

In 1994, NLUR identified one archaeological site on Quartzite Knob (NUL-076). NLUR evaluated this site through intensive surface survey, subsurface testing and monitoring of sediments removed in preparation of this locality for drilling. The site overlooks the Little Mud River and a broad open section of the Innoko River flood plain. No artifacts were recovered that were sufficient to confidently assess temporal or cultural affiliation nor can the artifacts be directly attributed to a possible historical Native group (either Holikachuk or Koyukon Athabaskan). Based on other interior Alaskan archaeological chronologies, the microblade technology could date anywhere between 8,000 and 12,000 years ago or as late as 1,500 years ago. NLUR determined the site was not eligible for the National Register of Historic Places (NLUR, 1995). At the time, NLUR recommended that mine development work be allowed to proceed, but it recommended that any additional areas within the Illinois Creek mining lease boundary be considered to have potential for the discovery of archaeological or historical resources and should be field examined at a reconnaissance level prior to any work in those areas.

WAC&G will likely be required to conduct additional cultural resource surveys depending on the footprint of any new mine and access road proposed for the Project. In 2023, WAC&G has engaged NLUR Alaska to perform a desktop Cultural Resource study of a broad corridor coincident with the potential access road from the Yukon River and pedestrian surveys of the proposed barge lands, Khotol River crossing and a number of potential material sites along the road corridor.

4.5.6 Waste Rock Characterization

In 1995, SRK conducted waste rock characterization studies and assessed the potential for acid generation from these rocks. To characterize waste rock, SRK used both static and kinetic testing, including saturated paste, Acid-Base Accounting (ABA), and humidity cell tests. SRK (1995) concluded that the testing completed to date indicated that any waste rock produced at Illinois Creek (USMX mine plan) would have a very low potential for acid-generation.

WAC&G may need to complete additional waste rock characterization studies depending on any new mine plan proposed for the site.

4.5.7 Meteorology

In the early 1990s, USMX maintained an on-site meteorological monitoring station. Between August 19, 1992. and August 18, 1993, data were collected and used by consultant TRC Environmental Corporation for modeling to obtain the air quality control permits required for the historical mine.

WAC&G will likely need to collect additional meteorological data to support air permitting for any future mine development at Illinois Creek. New air dispersion modeling will be required to obtain new air permits for construction and operations that incorporate the meteorological data with WAC&G's updated mine plans and an inventory of all expected emission sources at the new mine.

WAC&G is presently finalizing plans to install a meteorological monitoring station near the existing runway to collect: wind, temperature, humidity and snow depth data on a year-round basis.

4.5.8 Additional Baseline Data Requirements

As mentioned in each of the environmental resource categories shown here, WAC&G will likely need to continue and expand baseline environmental monitoring to support permitting for a new mine at Illinois Creek. WAC&G has initiated formal engagement with the regulatory agencies and other Project staff to identify any additional data requirements as the Project design advances.

4.6 PERMITTING

This section describes the major permits during the exploration phase and those potentially required to develop the Project into a mine.

4.6.1 Exploration Permits

WAC&G is presently authorized to explore at Illinois Creek under authority of ADNR Miscellaneous Land Use Permit #9831, also referred to as an "APMA" permit, which has an issue date of July 1, 2019, and expires on December 31, 2023. The permit has reclamation stipulations and includes requirements for filing an annual work plan and an Annual Reclamation Report with ADNR, describing reclamation activities.

4.6.2 Major Mine Permits

The following discussion identifies the major permits and approvals that will likely be required for the development of a new mine at Illinois Creek. "Major" mine permits are somewhat subjectively defined here, but these permits specifically authorize mining activities, including construction of facilities, mine operations, and mine closure. A significant number of other permits are also required for items such as camp operations and explosives handling that are not discussed here. A list of likely required major mine permits is shown in Table 4.2.

Table 4.2: Mine Permits

Agency	Authorization
State of Alaska	
ADNR	Plan of Operations Approval (including Reclamation Plan and Financial Assurance)
	Upland Mining Lease
	Mill Site Lease
	Reclamation Financial Assurance
	Certificate of Approval to Construct a Dam
	Certificate of Approval to Operate a Dam
	Water Use Authorization to Appropriate Water
ADF&G	Title 16 Permits for Fish Passage (authorize stream crossings, if required)
ADEC	APDES Water Discharge Permit (if required)
	Alaska Multi-Sector General Permit (MSGP) for Stormwater
	Stormwater Discharge Pollution Prevention Plan (requirement of MSGP)
	Section 401 Water Quality Certification of the CWA Section 404 Permit (for CWA Section 404 permit)
	Integrated Waste Management Permit
	Air Quality Control – Construction Permit
	Air Quality Control – Title V Operating Permit
	Reclamation Financial Assurance (shared with ADNR)
Federal Government	
EPA	Spill Prevention, Control, and Countermeasure (SPCC) Plan (fuel transport and storage)
USACE	CWA Section 404 Dredge and Fill Permit (if required)

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

5.1 ACCESSIBILITY

The Illinois Creek Property is located in western Alaska, approximately 490 km west of Fairbanks, 52 km southeast of the village of Kaltag, and 85 south-southwest of the regional supply center of Galena.

5.1.1 Air

Primary access to the Property is by air using either fixed-wing aircraft or helicopters.

There is a 1,340 m (4,400 ft), well-maintained gravel airstrip located on the Property that can accommodate charter fixed-wing aircraft, up to and including C-130 and DC-6 aircraft. There is daily commercial air service from Fairbanks to the nearby village of Galena (largest local community) and from Galena to Kaltag (closest community to the Property).

5.1.2 Water

There are no direct water routes that provide access to the Property. Following the discovery of the Illinois Creek deposit in 1980 by Anaconda Minerals Company (Anaconda), a winter ice- road was built from the Yukon River to the Project to transport heavy machinery into the Project area to help construct the Illinois Creek airstrip. This access corridor was again used during construction and decommissioning of the Illinois Creek mine in 1996 and 2003, respectively.

During operation of the mine, the Alaska Industrial Development and Export Authority (AIDEA) commissioned an engineering study of the Yukon River access route. The study proposed a 47.5 km (29.5 mile) access road that connected to a port located on the river with a greater than 40 ft draft and serviceable by deep-water barges for five months of the year from either upstream at Nenana or downstream at Saint Mary's/Emmonak deep-water port (NPMC, Hughes, R. and Smith, M., 1993).

AIDEA is a public-private partnership (PPP) whose mission is to promote, develop, and advance economic growth and diversification in Alaska by providing various means of financing and investment. AIDEA has the authority to own and operate facilities which advance this goal.

5.2 CLIMATE

The climate in the region is typical of a subarctic environment. Exploration is generally conducted from late May until late September. Weather conditions on the Property can vary significantly from year to year and can change suddenly. During the summer exploration season, average maximum high temperatures reach up to 20 °C (68 °F), and average low temperatures in January reach -28 °C (-18 °F) (Western Regional Climate Center, 2019). By early October, unpredictable weather conditions can limit safe helicopter travel on the Property. Winter temperatures are routinely below -25 °C (-13 °F) and can occasionally exceed -50 °C (- 58 °F). Precipitation in the region averages 335 mm (13.2 in.) per year with the most rainfall occurring from June through September, and the most snowfall occurring from November through January.

5.3 LOCAL RESOURCES

Galena (population 472; 2020 U.S. Census), Nulato (population 237; 2020 U.S. Census) and Kaltag (population 158; 2017 U.S. Census) are the nearest communities and, as was the case during operation of the Illinois Creek mine, they provided a significant portion of the workforce at the mine.

Galena is a potential source of limited mining-related supplies; it is the nearest center serviced by regularly scheduled, large commercial aircraft (via Fairbanks). Fairbanks Northstar Borough (population 97,149; 2020 U.S. Census) has a long mining history and can provide most mining-related supplies and support that cannot be sourced closer to the Property.

Drilling and mapping programs are seasonal and supported out of the Illinois Creek mine camp which WAC&G purchased in 2013 from NovaGold Resources Inc. (NovaGold). The camp provides office space and accommodations for the geologists, drillers, pilots, and support staff.

In 2022, the Illinois Creek camp provided housing for approximately 35 people. Historical ATCO trailer facilities were used for cooking, dining, administration, housing, and hygiene. Additional housing and bathroom facilities were provided by Weatherport tents. The same style of tents were utilized for core logging, cutting and sampling in a 15m x 40m area immediately adjacent to camp. Diesel generators (two 8kw and one 50kw) powered small electrical grids. The historic mine camp used a well to provide drinking water to camp. This well was put back into service in 2022 and currently provides all of the Illinois Creek Camp's water supply.

Planned upgrades for the 2023 field season include sleeper cabin construction and additional sleeper tents, raising the camp capacity to approximately 60 people. The core logging facility will expand to approximately 50m x 100m to facilitate additional throughput. An expanded electrical grid to run the larger camp will be powered by (2) 125kw diesel generators and fuel storage will increase commensurately to >25,000 gallons, supplying larger generators, additional heavy equipment and drill rigs.

5.4 INFRASTRUCTURE

5.4.1 ROAD/BARGE

In 1993, during operation of the Illinois Creek mine, AIDEA conducted an engineering study of the Yukon access route from a laydown area south of Kaltag to the mine titled the *Illinois Creek Transportation Study*. That study proposed a 47.5 km (29.5 mile) access road that connected to a port located on the river with a greater than 40 ft draft and serviceable by deep-water barges for five months of the year from either upstream at Nenana or downstream at Saint Mary's/Emmonak deep-water port (NPMC, Hughes, R. and Smith, M., 1993).

The 1993 AIDEA Transportation Study outlined costs to build the access route, including laydown area, two 100-ft bridges, and a ferry at $12.2M.

AIDEA is a public corporation of the State of Alaska, created in 1967 by the Alaska Legislature, whose mission is to promote, develop, and advance economic growth and diversification in Alaska by providing various means of financing and investment. AIDEA has the authority to own and operate facilities which advance this goal.

WAM is currently updating the transportation corridor studies to a pre-feasibility level. Final costing is expected from Recon LLC, Anchorage, AK in the second quarter of 2023.

5.4.2 Power

During the mine operation, diesel fuel was transported by DC-6 or C-130 aircraft from Galena to the mine site (fuel was barged down the Yukon River from Nenana near Fairbanks and then staged in Galena). The 1993 AIDEA Transportation Study also looked at the impact of direct shipping to the Kaltag laydown site and outlined a >26% cost savings for fuel. Capital costs (1993) for proposed tankage at the laydown area were $650,000. Current exploration activities rely on the delivery of diesel fuel to the Illinois Creek airstrip by various aircraft; DC-6s are most cost effective.

5.5 PHYSIOGRAPHY

The Illinois Creek Project is located adjacent to the confluence of the Illinois Creek and the Little Mud River at the southern edge of the Kaiyuh Mountains in west-central Alaska. Topography in the area is gentle with the maximum relief in the Kaiyuh Hills of approximately 800 masl (2,800 ft). The Illinois Creek mine camp lies at roughly 230 masl (750 ft), and the confluence of the Illinois Creek and the Little Mud River lies at approximately 45 masl (150 ft). Talus covers the upper portions of the Kaiyuh Mountains; glacial and fluvial sediments cover low-lying hills and occupy the valleys.

The Kaiyuh Mountains are located at the transition between boreal forest and Arctic tundra. Spruce, birch, and poplar are found in portions of the valley, with a ground cover of lichens (reindeer moss). Willow and alder thickets and isolated cottonwoods follow drainages, and

alpine tundra is found at higher elevations. Tussock tundra and low, heath-type vegetation covers most of the valley floor.

Wildlife in the area is typical of arctic and subarctic fauna and includes larger animals such as moose, grizzly and black bears, wolves, lynx, and fox. Fish species include salmon and arctic grayling.

6 HISTORY

6.1 HISTORICAL EXPLORATION

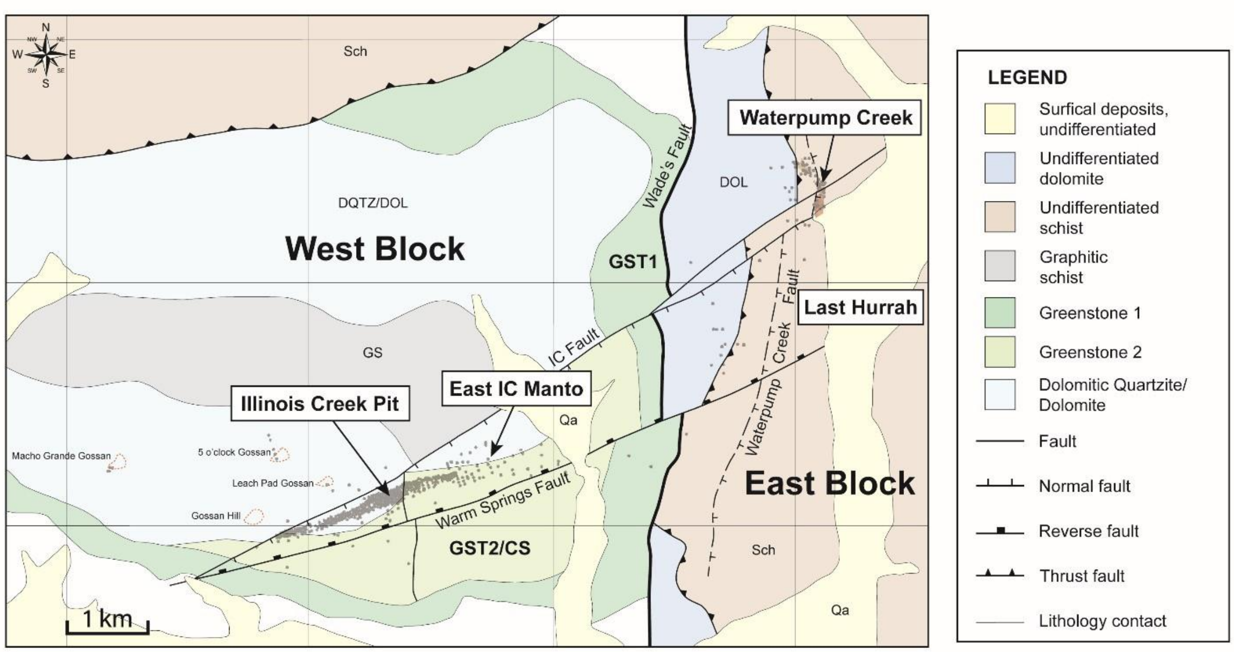
Regional exploration in the Kaiyuh Hills began with the Anaconda Minerals Company (Anaconda)/Cook Inlet Region, Inc. (CIRI) joint venture. CIRI is one of the 13 regional native corporations defined in ANCSA (Alaskan Native Claims Settlement Act). The Anaconda/CIRI joint venture identified prospective mineral-endowed lands for CIRI to select under that federal legislation.

In July 1980, an Anaconda/CIRI reconnaissance team, headed by Gorol Dimo, made a series of gossan discoveries, initially at the Round Top porphyry prospect located 24 km to the northeast of the Illinois Creek deposit. Continued reconnaissance silt sampling led to the recognition of six anomalous areas, and follow-up of a 0.6 ppm Ag and 38 ppm Pb anomaly led to the discovery of the Illinois Creek gossan.

At that time, monthly reporting by Anaconda field geologists recorded “A very large, high-grade polymetallic massive sulfide gossan has been discovered near Illinois Creek. The gossan is exposed in a 3.2 km (2 mile) long linear zone of rubble float and outcrop. The width of the zone varies from 120 to at least 450 feet. Preliminary assays from 12 grab samples of the gossan are as follows: copper 1,000 ppm to 2%, lead 1,000 ppm to 1%, silver 6 to 100 ppm, zinc less than 650 ppm, and gold 50 ppb to 3,075 ppb” (Dimo, 1980).

Figure 6.1 shows the distribution of the various mineralized occurrences and exploration drilling on the Illinois Creek property that has taken place between 1980 and 2023. The image is annotated with local terminology and place names to aid the reader.

Figure 6.1: Plan Showing Mineralized Zones and Drill Collars



Source: WAC&G (2023)

In 1981, Anaconda completed extensive soil sampling and mapping at Illinois Creek and completed nine initial diamond drill holes (DDHs) totaling 1,427.60 m. Five of the drill holes encountered significant intervals of oxidized gossanous mineralization to depths approaching 350 m below surface. Soil sampling in 1981 outlined a 2,000 m by 50 m anomaly with very high values of lead, zinc, copper, silver, gold and arsenic with zinc zoned to the east and copper zoned to the west (Brewer, 1982).

Anaconda also drilled 1,668.4 m at the nearby Round Top porphyry prospect in seven DDHs. Ongoing exploration led to the discovery of the nearby high-grade Honker gold vein with rock chip samples up to 31.5 g/t Au.

In the spring of 1982, heavy equipment was mobilized by Cat train to Illinois Creek, and a major expansion of the airstrip and camp was completed. Exploration in 1982 included four additional DDHs totaling 1,586 m, 18 reverse-circulation (RC) drill holes totaling 2,344 m, and 11 bulldozer and backhoe trenches.

Approximately 1,000 m of drilling at Honker was also completed in 10 short drill holes. Five holes intersected mineralization from 0.08 oz/t to 0.21 oz/t Au, varying in thickness from 0.5 m to 4.5 m. Reports from the drilling program state that overall sample recoveries were poor (Brewer and Millholland, 1982).

In 1983, follow-up drilling of a 500 m by 150 m soil anomaly located northeast of the Illinois Creek gossan intersected a 28.9 m interval grading 16.2 oz/t Ag and 28.3% Pb. Adjacent trench sampling returned a 70 m interval of 12.8% Zn. The prospect, named Waterpump Creek, quickly became the focus of ongoing exploration by Anaconda along with the continued evaluation of the gold potential of the gossan.

During 1983 and 1984, a total of 38 drill holes totaling 5,166.5 m were completed at the Waterpump Creek prospect. At Illinois Creek, seven additional trenches were cut and 10 drill holes, totaling 1,264 m, were completed. Six DDHs, totaling 254 m, were also completed at Macho Grande, a major gossan-showing located roughly 2 to 3 km west-northwest of the Illinois Creek gossan. IP and resistivity surveys were also completed in selected areas (Gillerman and Brewer, 1985).

In 1985, the Illinois Creek Project went into a hiatus following ARCO's decision to close and liquidate Anaconda.

After Anaconda closed, the Illinois Creek Property was taken over by CIRI, Anaconda's JV partner on the Project. In 1988, CIRI entered into a JV agreement to explore the Illinois Creek Property with the Goldmor Group, Ltd. (Goldmor), an Alaskan-based corporation.

During 1988, the Goldmor JV completed 49 short RC holes and 1 DDH for a total of 1,115 m of drilling targeting the central area of the Illinois Creek deposit to depths of about 30 m (100 ft) below surface.

In 1990, the Goldmor JV drilled an additional 38 RC holes totaling 1,815.8 m that also targeted the central area of the Illinois Creek deposit to depths of about 60 m (200 ft) below surface (Goldmor, 1990).

In 1991, North Pacific Mining Company (NPMC), a wholly owned subsidiary of CIRI, began the process of purchasing Goldmor's JV ownership in the Property and completed the transaction in June 1992 to again control 100% of the Property.

In 1991, NPMC drilled 21 DDHs totaling 1,560.5 m that primarily targeted the central area of the Illinois Creek deposit.

In 1992, an additional 21 DDHs, totaling 1,528.9 m, tested the western and eastern extensions of the Illinois Creek deposit (NPMC, 1991).

In January 1993, NPMC and Echo Bay Mines (Echo Bay) entered into a JV agreement whereby Echo Bay could earn a 70% interest in the Project subject to certain performance requirements until a production decision was reached.

In 1993, Echo Bay drilled 166 RC holes totaling 18,849.2 m. This program delineated most of the 3.5 km strike length of the Illinois Creek deposit to depths approaching 200 m below surface with holes spaced at approximately 30 m to 60 m (100 to 200 ft) intervals. In 1993 to 1994, after a series of major gold acquisitions, Echo Bay elected to withdraw from the Project (Kirkham and Apel, 1993).

In July 1994, NPMC entered into a JV agreement to develop the Illinois Creek mine with United States Mining Corporation (USMX) with the option for NPMC to revert to a participating interest or net smelter return (NSR) royalty when a production decision was reached.

In 1994, USMX drilled 37 additional DDHs totaling 2,364.3 m on the Illinois Creek deposit and also initiated a feasibility study. A series of water-monitoring and geotechnical holes were also completed, and, although the collar locations of these holes are known, the majority of drill logs and assay results are missing (USMX, 1994).

In 1995, an additional 84 drill holes (10 DDHs and 74 RC holes, totaling 5,961.3 m) were completed that further delineated the western and eastern parts of the Illinois Creek deposit. Additional geotechnical and monitoring wells were also completed.

In February 1996, USMX published a feasibility study on the Property. In the summer of 1996, construction began resulting in limited ore production that fall (USMX, 1996a; Fluor Daniel, 1996).

In early 1997, USMX merged with Dakota Mining Corporation (Dakota), and USMX became a wholly owned subsidiary of Dakota. Mining began in May 1997, and heap leaching was initiated. Mining ceased through the 1997 winter, but heap leaching of run-of-mine (ROM) ore continued year-round.

In 1998, hampered by early cost overruns, falling gold prices, and corporate financial difficulties, USMX and Dakota were forced to close the mine and declare bankruptcy. At that time, the State of Alaska took control of the Project.

In 1999, Viceroy Resource Corporation (Viceroy) entered into an agreement with the State of Alaska to lease and manage the Property pending a March 2000 decision-date to either develop a reclamation and mining plan to exploit the remainder of the deposit or return the Project to the State of Alaska.

As a result, Viceroy commissioned Mineral Resource Development, Inc. (MRDI) to complete the following:

- audit the drill-hole sample database supporting mineral resource estimates.
- evaluate geological interpretations of ore controls.
- review the current mineral resource model.
- assist in revising the mineral resource model to meet industry standards.

Based on the results of the MRDI audit and review, Viceroy declined to develop a reclamation and mining plan with the State of Alaska (MRDI and Viceroy, 2000).

In 2001, American Reclamation Group (ARG), under the direction of a former head of the ADNR, entered into an agreement with the State of Alaska to develop a reclamation and mining plan to exploit the remainder of the deposit. Though the agreement and production figures during this time were not made public, ARG continued mining and remediation efforts through early 2003 when, under the terms of the agreement, the mine was closed.

In 2002, Piek Exploration LLC (Piek Exploration) began to acquire the lands surrounding the Illinois Creek mining leases while the Property was in remediation and closure by ARG. Unfortunately, during this period, ARG destroyed all the Illinois Creek core and core storage facilities, except for a handful of core holes from one of the late USMX drill campaigns.

In 2003, as part of an agreement to purchase components of the Illinois Creek mine for its Rock Creek mine development outside of Nome, Alaska, NovaGold agreed to scan and provide to the state all of the data files stored in the Illinois Creek mine offices.

In 2004, Piek Exploration optioned its portion of the Property to NovaGold, who then actively explored the Waterpump Creek area. During that option period, NovaGold staked claims and re-staked the core claims as the ARG mining lease was terminated.

In 2006, NovaGold returned the Property, the scanned files, drill core, and results of its exploration to Piek Exploration.

In June 2011, Piek Exploration optioned the Property to Silver Predator Inc. (Silver Predator) who expanded the claim block and completed limited compilation, largely rebuilding the dataset contained within the scanned data files captured by NovaGold.

In 2013, hampered by deteriorating market conditions, Silver Predator sub-optioned the Property to Plan B Minerals (Plan B) who began preparations for an updated preliminary economic assessment (PEA) based on the historical drilling. Plan B contracted with Yukuskokon Professional Services (YKPS) to complete an updated PEA who in turn completed a draft NI 43-101 mineral resource estimation and then contracted Lyntek Inc., the process plant design team for the original mine, to cost out a rebuild of the original plant. Although work by Plan B was never published in any technical reports, it made some of its draft studies available to Piek Exploration and WAC&G.

In 2014, as market conditions continued to worsen, Plan B returned the Property to Silver Predator who in turn returned it to Piek Exploration.

In 2018, Piek Exploration dropped the claims, and they were re-staked by Piek Inc. to rectify some potential technical discrepancies in filings from a decade earlier.

In October 2018, Piek Inc. and WAC&G entered into a JV agreement to explore and develop the Illinois Creek Property.

6.2 GEOCHEMISTRY

Due to the relatively flat topography and abundance of wind-blown loess, surface mapping has had only limited impact in exploration targeting beyond the few discovery outcrops that were originally found by Anaconda. Most importantly, deep-soil sampling through the wind-blown loess layer and up slope from alluvial-filled creek bottoms has been the preferred exploration targeting tool.

In 2001, ARG compiled a database of all the known soil programs conducted on the Property between 1980 and the development of the mine in 1997.

Between 1980 and 1984, Anaconda completed more than 14 individual surveys totaling 2,624 soil samples. These surveys are summarized in Table 6.1.

Table 6.1: Anaconda Soil Surveys 1980–1984

Company	Survey	#	Year	Sample Density	Analyzed Elements
Anaconda	IC Recon	44	1980	400 ft by 50 ft	Cu Pb Zn Au Ag
	IC Detail	1,011	1981	100 m by 50 m to 50 m by 10 m	Cu Pb Zn Au Ag As
	IC Regional	727	1981	200 m by 100 m	Cu Pb Zn Au Ag As Sb Mn
	Last Hurrah Recon	--	1981	Recon lines	Cu Pb Zn Au Ag As Sb
	Waterpump Creek Recon	61	1981	50 m by 25 m	Pb Zn Ag
	Airstrip 'Sinter' Recon	38	1982	Recon lines	Cu Pb Zn Au Ag As
	IC Detailed Bulk Soils	138	1982	10 m by 10 m	Cu Pb Zn Au Ag As Sb Mn
	Last Hurrah Recon	--	1982	Recon lines	Unknown
	Waterpump Creek Hand	42	1982	50 m by 25 m	Pb Zn Ag As
	Waterpump Creek Power	40	1982	50 m by 25 m	Pb Zn Ag
	Waterpump Creek Detail	173	1983	Miscellaneous	Cu Pb Zn Au Ag As Sb
	5 o’clock Detail	44	1984	100 m by 50 m	Cu Pb Zn Au Ag As Sb Mn
	5 o’clock Recon	12	1984	Recon lines	Cu Pb Zn Au Ag As Sb Mn
	Last Hurrah	97	1984	200 m by 100 m to 50 m by 50 m	Cu Pb Zn Au Ag As Sb Mn
	Macho Grande Detail	17	1984	100 m by 100 m	Cu Pb Zn Au Ag As Sb Mn
	Macho Grande Recon	--	1984	Recon lines	Cu Pb Zn Au Ag As Sb Mn
	Waterpump Creek Detail	180	1984	Miscellaneous	Cu Pb Zn Au Ag As Sb Mn

In 1993, Echo Bay completed 41 soil test pits. In 1995, USMX completed six surveys totaling at least 340 samples. These surveys are summarized in Table 6.2.

Table 6.2: Echo Bay and USMX Soil Surveys 1993–1995

Company	Survey	#	Year	Sample Density	Analyzed Elements
Echo Bay	East and West Test Pits	41	1993	Miscellaneous	Cu Pb Zn Au Ag Mo Hg
USMX	5 o'clock	294	1995	200 by 50 ft	Au Ag As some Cu
	West Recon	29	1995	50 ft spacing	Au Ag As
	West BL Lines	?	1995	25 ft spacing	Au Ag
	4,200 M Line	?	1995	50 ft spacing	Au Ag
	West Extension	?	1995	25 and 50 ft spacing	enzyme leach package
	Test Pits	17	1995	Miscellaneous	Au Ag and some Cu As Sb

In 2006, NovaGold completed a detailed survey along the Waterpump Creek to Last Hurrah CRD trend. For the first time, a multi-element ICP analyses was used.

In 2015, Piek Exploration conducted a single line of deep penetrating geochemistry (DPG) using two separate low-detection leach techniques to determine if there was a geochemical response over the West Illinois porphyry target under valley colluvial and alluvial cover, west of the Illinois Creek mine. DPG is an ultra-trace ion leach technique designed to detect oxidizing sulfide ore bodies below deep cover.

Also, in 2015, Piek Exploration captured an additional 44 ICP sample analyses along four short lines over projections of the fault offset west extension of the Illinois Creek deposit. Results are discussed in Section 9 (Exploration).

The NovaGold and Piek Exploration surveys are summarized in Table 6.3.

Table 6.3: NovaGold and Piek Exploration Soil Surveys 2006–2015

Company	Survey	#	Year	Sample Density	Analyzed Elements
NovaGold	Waterpump Creek /Last Hurrah	500	2006	100 m x 50 m	ICP multi-element
Piek Exploration	West Illinois Creek Mag	26	2015	50 m	DPG leach miscellaneous
	West Extension	44	2015	4 lines roughly 10 m spacing	ICP multi-element

6.3 Geophysics

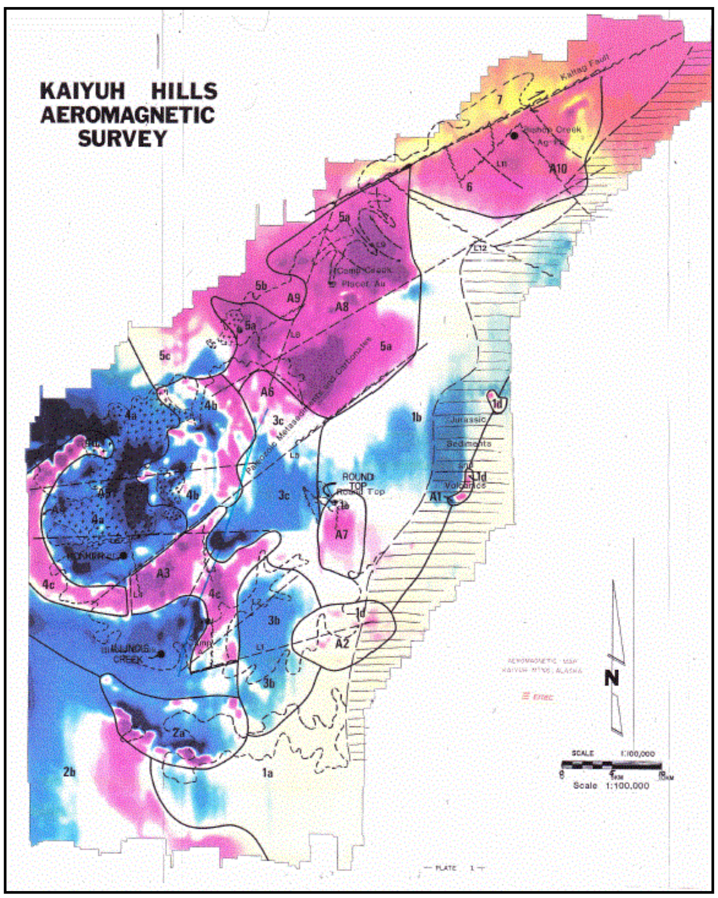
Since Anaconda's initial discovery, a series of magnetic, electric and gravitational techniques have been used to explore the Property, all with varying levels of success.

The following subsections outline most of the programs implemented over time. WAM has limited documentation on many of the programs conducted prior to 2000. In many instances, where data are available in these earlier surveys, the lack of details in data acquisition, coordinate systems, and data reduction procedures limit their usefulness.

6.3.1 Ground and Aeromagnetic Surveys

In September 1981, Anaconda, under the direction of John Wilson, engaged Ertec Western Inc. (Ertec) to complete an aeromagnetic survey of the Kaiyuh Hills. Line spacing was approximately 500 m with an optimal altitude of 150 m (Kilty and McDermott, 1981). The survey effectively recognized the magnetic anomalies related to the Round Top porphyry intrusion and the strong magnetic signatures related to magnetite schists at or near the contact between the Illinois Creek formation carbonate and the overlying Kaiyuh schists. The relatively coarse scale of the survey did not allow any direct detection of targets, but it provided a rough spatial location of the significant lithologic domains in the district. The original data were lost, but a scanned plot of the data is shown in Figure 6.2.

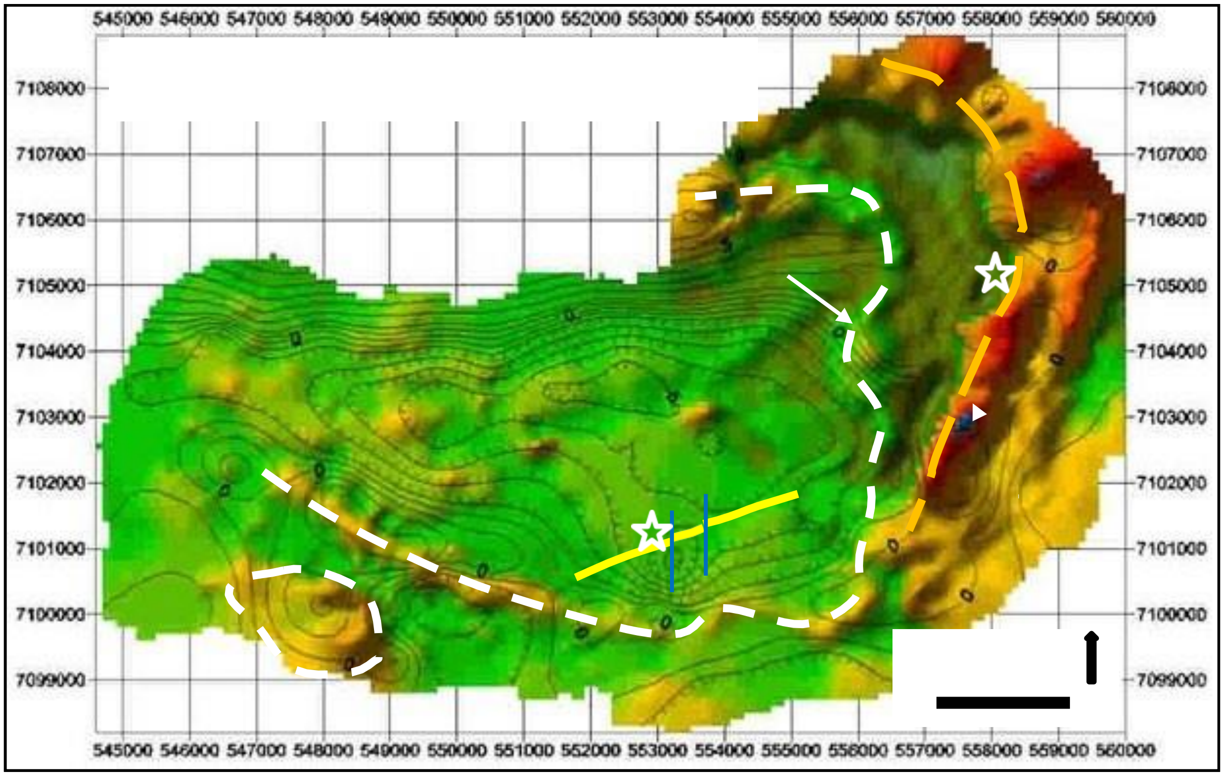
Figure 6.2: Total Field Magnetics – Kaiyuh Hills (Ertec, 1982)



Source: Ertec (1982)

In 1984, a subsequent, much more detailed survey combining aeromagnetic and electromagnetic (EM) surveys of the Illinois Creek area was completed by Aerodat Limited (Aerodat) for Anaconda. Lines were spaced every 200 m in three separate areas or blocks: each oriented roughly perpendicular to the underlying stratigraphy. The optimized flight height is unknown (Kilty and McDermott, 1981; Aerodat, 1984). Figure 6.3 shows the colored and shaded results of the 1984 Aerodat magnetic survey and contours of the 1983 Edcon gravity survey.

Figure 6.3: Total Field Magnetics (Aerodat, 1984) and Regional Gravity Survey (Edcon, 1983)



Source: WAC&G (2020) compiled from Aerodat (1984) and Edcon (1983)

In 1984, a ground magnetic survey of the Waterpump Creek area was also completed. The survey used varying line spacing from 50 m to as much as 200 m with 100 m stations and covered an area of approximately 2 km by 2 km.

In 2015, Piek Exploration completed a short (4-line) ground magnetic survey to follow-up the West Illinois Creek magnetic target, first recognized in the Aerodat survey in 1984. This area was suspected as the possible porphyry center responsible for the Illinois Creek CRD system, but subsequent drilling in 2019 by WAC&G showed the anomaly to be the result of a Jurassic mafic intrusion.

Magnetic surveys are summarized in Table 6.4.

Table 6.4: Airborne and Ground Magnetic Surveys at Illinois Creek

Company	Year	Survey	Type	Area
Anaconda	1981	Ertec	Airborne	Kaiyuh Mountains
	1984	Aerodat	Airborne	Illinois Creek
	1984	In-house	Ground	Waterpump Creek
Piek Exploration	2015	In-house	Ground	West Illinois Creek Magnetic Anomaly

6.3.2 IP and Other Electrical Technique Surveys

Numerous electrical geophysical techniques have been used at the Property and are summarized in Table 6.5 (McDermott, 1981; McDermott, 1984).

Table 6.5: Various Electrical Geophysical Surveys at Illinois Creek

Company	Survey	km	Year	Line Spacing	Target
Anaconda	MaxMin, VLF	--	1980	Recon lines	Illinois Creek
	IP/Resistivity	9.2	1981	Pole/Dipole Dipole/Dipole 50 m a-spacing	Illinois Creek
	MaxMin	3.6	1982	--	Waterpump Creek
	IP/Resistivity	--	1983	Test line Dipole/Dipole 25 m a-spacing	Waterpump Creek
	MaxMin	--	1984	Check	Waterpump Creek
	IP/Resistivity	--	1984	Check	Waterpump Creek
NovaGold	IP/Resistivity	17.7	2005	Pole/Dipole 100 m a-spacing	Waterpump Creek Last Hurrah

In general, the techniques have been very effective at mapping various lithological units but have not been effective in directly targeting sulfides. This is likely due to the local depth of oxidation and the use of narrow a-spacings. The term a-spacing refers to the distance between electrodes used in IP surveys; it effectively controls the depth of information gathered. The narrow a-spacings used at Illinois Creek preclude significant depth penetration of the surveys (Aurora Geosciences, 2005).

6.3.3 Gravity Surveys

The 2005, a NovaGold survey, conducted by Aurora Geosciences, used 100 m a-spacing which very effectively mapped the CRD ore-hosting contact between the underlying dolomite and the overlying graphitic, chloritic and quartz chlorite muscovite schists (QCMS) of the Kaiyuh formation along the Waterpump Creek fault. Significant, highly conductive chargeable features occur at this contact over the 2 km extension of the survey. A 3D reinversion of these sections and their ongoing exploration implications will be discussed in Section 9 (Exploration). Gravity Surveys

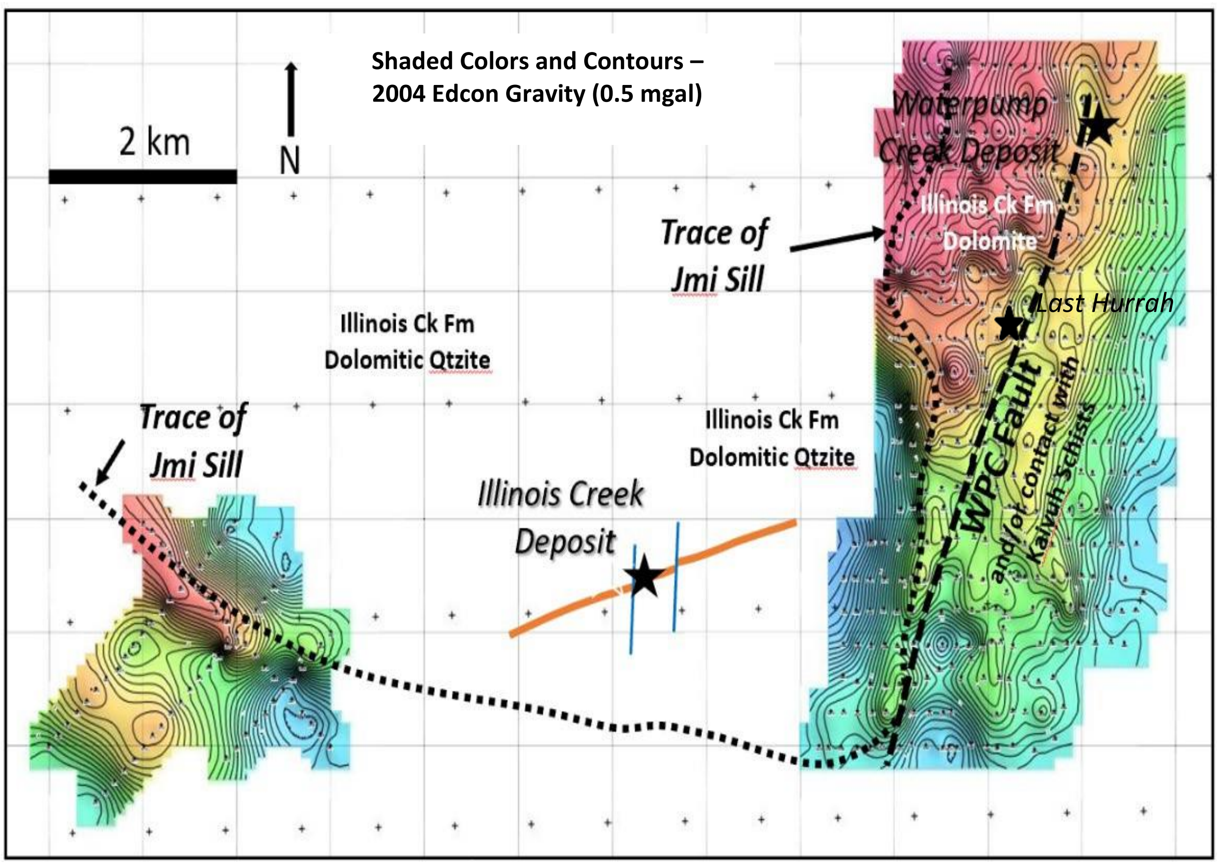
A series of gravity surveys have been conducted on the Property.

In 1983, Anaconda contracted Exploration Data Consultants (Edcon) to complete a helicopter-supported gravity survey of the southern Kaiyuh Hills in and around the Illinois Creek and Round Top deposits. A portion of the survey results specifically from the Illinois Creek property are shown in Figure 6.3 as 1 milligal gravity contours.

In 1984, Anaconda conducted a detailed survey of Waterpump Creek deposit with 50 m line spacing and individual stations every 10 m.

In 2004, NovaGold, again using Edcon, completed a detailed gravity survey of an approximately 6 km by 3 km area from just north of the Waterpump Creek deposit to south of the Last Hurrah anomaly about 2-3 kms east of the end of the Illinois Creek oxide drilling. The survey used east-west lines spaced roughly 250 m with sample interval stations approximately every 150 m. In addition, a few reconnaissance lines with similar spacing were conducted in and around the West Illinois Creek magnetic anomaly. Figure 6.4 shows the results of the 2004 NovaGold/Edcon survey.

Figure 6.4: 2004 NovaGold/Edcon Gravity Survey



Source: Edcon (2004) and WAC&G (2020)

Gravity surveys undertaken at Illinois Creek are summarized in Table 6.6

Table 6.6: Gravity Surveys at Illinois Creek

Company	Year	Survey	Type	Area
Anaconda	1983	Edcon	Recon density	Southern Kaiyuh Mountains
	1984	Edcon	50 m x 10 m	Waterpump Creek
NovaGold	2004	Edcon	250 m x 150 m	Waterpump Creek/Last Hurrah
			Recon lines	West Illinois Creek Magnetic Anomaly

Implications of all of the geophysical techniques used at Illinois Creek and how each impacted ongoing exploration targeting and vectoring on the Property are discussed in Section 9 (Exploration).

6.4 DRILLING

Extensive historical drilling at the Illinois Creek Property has largely targeted the oxidized gossans at Illinois Creek and, to a far lesser extent, the Waterpump Creek and Last Hurrah CRD targets. Only minimal exploration has targeted the remainder of the Property, and the potential to find additional mineralized zones is considered by WAM to be very good.

Table 6.7 summarizes the mineral resource delineation and exploration drill campaigns on the Property between 1980 and 2006 conducted by the previous operators of the Property.

Table 6.7: Drill Campaigns 1980–2006 at Illinois Creek

Company	Years	# Core Holes	# RC Holes	Core (m)	RC (m)	Total (m)
Anaconda	1980–1984	73	18	10,132.7	2,266.1	12,398.8
Goldmor	1988–1990	1	87	16.8	2,914.0	2,930.8
NPMC	1991–1992	42	0	3,089.4	0.0	3,089.4
Echo Bay	1993	0	166	0.0	18,739.5	18,739.5
USMX	1994–1995	65	78	4,657.9	5,054.3	9,712.2
Viceroy	1999	0	23	0.0	731.6	731.6
ARG	2002	5	0	215.3	0.0	215.3
NovaGold	2005–2006	20	0	2,746.8	0.0	2,746.8
Total		206	372	20,858.9	29,705.5	50,564.4

6.5 OTHER STUDIES

6.5.1 Petrology, Mineralogy and Research

Several studies have reviewed the geology and geochemistry of the Illinois Creek Property. Most notable are Anaconda's Tucson research lab's efforts throughout its tenure on the Property. Important contributions include a series of internal Anaconda memos in 1984 and 1985 by Hossein Salek. Most notable are two summaries: "Mineralogical and Alteration Study of Samples from the Waterpump Creek Prospect, AK, 1984" and "Mineralogy and Gold/Silver Occurrence Studies of Samples from the Illinois Creek Project, AK, 1984" (Salek, 1984a; Salek, 1984b).

In 1984, Anaconda also completed lead isotope studies using Teledyne Isotopes Inc. In addition to the geological and mineralogical studies at Illinois Creek, Anaconda also completed some age-dating of rocks in the district.

In 1994, Brian P. Flanigan completed an MS thesis at the University of Alaska Fairbanks titled "Genesis and Mineralization of Ore Deposits in the Illinois Creek Region, West-Central, Alaska". The thesis summarizes mineralogical zonation studies across the Illinois Creek deposit and clearly establishes the distinct zonation of copper, bismuth, arsenic and gold to the west and lead, zinc and manganese to the east. The thesis used reflected light microscopy and scanning electron microscope (SEM) analyses to complete a comprehensive compilation of the ore mineralogies at Illinois Creek and Waterpump Creek. The thesis also looked at oxygen isotopes and completed additional age dating. Flanigan concluded by suggesting timing and mineralization events for prospects and deposits across the district (Flanigan, 1994).

6.5.2 Geotechnical and Hydrological

Between 1994 and 1996, in the run-up to construction of the Illinois Creek, USMX compiled earlier studies and completed a series of studies to support the feasibility study and required permits. In addition, during 1994 and 1995, USMX completed a series of geotechnical and water-monitoring holes.

Many though not all of the historical mine permitting studies were given to WAM by the ADNR.

The following significant studies were completed for and by USMX:

- Consolidated Permit Application, Volume I, Application, USMX, 1996b.
- Consolidated Permit Application, Volume II, Hydrogeology Report: Pollution Prevention Plan, USMX, 1996c.
- Consolidated Permit Application, Volume III, Heap Leach Design Report, USMX, 1996d.
- Consolidated Permit Application, Volume IV, Ore and Waste Rock Characterization Report, Assessment of Acid Generating Potential Report, and Reclamation Plan, USMX, 1996e.
- Illinois Creek Gold Mine Project Archaeological Survey Kaiyuh Hills, Alaska, NLUR, September 1995.
- Illinois Creek Gold Mine Project profile, RTR, February 1995.
- Illinois Creek Gold Mine Project Aquatic Resources Analysis, Morsell, 1991/1994.

- Illinois Creek Gold Mine Project Fisheries Study, ADF&G, November 1995.
- Illinois Creek Gold Mine Project Water Quality Reconnaissance, Montgomery Watson, November 1994.
- Illinois Creek Gold Mine Project Wetlands and Wildlife report, ABR and Montgomery Watson, October 1994.
- Wetlands Survey of the proposed Illinois Creek Mine and Barge Site, ABR, 1995.
- Soil Survey of Proposed Illinois Creek Mine Site, ABR, November 1995.
- USMX Illinois Creek Project, Alaska Air Quality Permit Application, TRC, October 1995.
- Illinois Creek Project Assessment of Acid Generating Potential, SRK, July 1995.

6.5.3 Metallurgical

Anaconda initiated a series of early studies to determine the overall metallurgical characteristics of the Illinois Creek and Waterpump Creek mineralization types. Early studies looked at cyanidation, flotation, gravity and magnetic separation characteristics of the ores.

The following Anaconda internal memos and reports summarize these studies:

- Summary of Illinois Creek Metallurgical Test Results, P.R. Engelhardt and L.J. Garcia, Anaconda internal memo, March 7, 1984.
- Summary of the Flotation and Gravity Characteristics of the Waterpump Creek Mineralization, P.R. Engelhardt, L.J. Garcia, and D.A. Norrigran, Anaconda internal memo, March 14, 1984.
- Metallurgical test work continued with NPMC after Anaconda left the project. Between 1988 and 1991, Goldmor and then NPMC contracted McClelland Laboratories to complete a series of tests related to cyanidation of the ores including the following reports and memos:
  - Preliminary Cyanidation Test Work – Illinois Creek Cuttings Composites, McClelland Laboratories Inc., March 15, 1990.
  - Column Leach Test Work – Illinois Creek, McClelland Laboratories Inc., June 29, 1990.
  - Report on Direct Cyanidation of Agglomerate Strength and Stability Test Illinois Creek Bulk Ore Samples, McClelland Laboratories Inc., November 11, 1991.
  - Metallurgical Environmental Test Work and Analyses Illinois Creek Core and Bulk Composites, McClelland Laboratories Inc., July 10, 1995.
  - Consolidated Permit Application, Volume IV, Ore and Waste Rock Characterization Report, Assessment of Acid Generating Potential Report, and Reclamation Plan, USMX, 1996e.

6.6 Historical Mineral Resource Estimates

Historical mineral resource estimates for the Illinois Creek oxide Au/Ag deposit were made prior to mine development and after mine closure. These two historical resource estimates were considered sufficiently relevant and reliable to make economic decisions concerning project development and continued operation of the project by the concerned parties at the time. A historical mineral resource estimate also exists for the Waterpump Creek CRD Deposit. It indicates the presence of sulfide mineralization was recognized during the early exploration of the area. These resource estimates were made prior to the implementation of NI 43-101.

6.6.1 Illinois Creek Mine Feasibility Study (USMX, 1996)

In 1996, USMX completed a feasibility study for the development of the Illinois Creek mine. The mining reserve estimate is summarized in Table 6.8. A QP has not reviewed or verified this historical estimate, and it is not considered as a current mineral resource or mineral reserve.

Table 6.8: Illinois Creek Deposit Historical Mining Reserve Estimate (USMX Feasibility Study, 1996)

Tons	Au Cut-off (oz/t)	Au Cut-off (g/t)	Au (oz/t)	Au (g/t)	Ag (oz/t)	Ag (g/t)	Waste:Ore Strip Ratio
7,761,000	0.02	0.69	0.063	2.16	1.38	47.31	2.01:1

6.6.2 Illinois Creek Deposit Historical Resource (Viceroy/MRDI, 2000)

Viceroy Resource Corporation (Viceroy) entered into an agreement with the State of Alaska to lease and manage the Property pending a March 2000 decision-date to develop a reclamation and mining plan to exploit the remainder of the deposit or return the Project to the State of Alaska.

In early 2000, Viceroy commissioned Mineral Resource Development, Inc. (MRDI) to audit the drill-hole sample database supporting mineral resource estimates, evaluate geological interpretations of ore controls, review the resource model in progress, and assist in revising the resource model to meet industry standards at that time.

Table 6.9 shows the results of the MRDI historical resource estimate at varying cut-offs, and a base case cut-off grade was not provided. These results were not pit-constrained, and MRDI used the gold price and mining costs from the ongoing operation, which were not stated in the report.

A QP has not reviewed or verified this historical estimate, and it is not considered as a current mineral resource or mineral reserve.

Table 6.9: Illinois Creek Deposit Historical Mineral Resource Estimate (MRDI, 2000)

Au Cut-off (oz/t)	KTons	Au (oz/t)	Ag (oz/t)	Contained Au (Koz)	Contained Ag (Moz)
0.000	45,671.0	0.010	0.432	448	19 ,712
0.005	14,905.3	0.026	0.733	388	10,930
0.010	9,603.6	0.037	0.847	354	8,135
0.015	7,849.9	0.043	0.902	334	7,084
0.020	6,627.7	0.047	0.942	313	6,245
0.025	5,624.8	0.052	0.986	291	5,548
0.030	4,756.8	0.056	1.028	268	4,891
0.035	4,024.8	0.061	1.062	245	4,275
0.040	3,387.2	0.065	1.092	221	3,699
0.045	2,800.7	0.070	1.113	197	3,117
0.050	2,316.4	0.075	1.137	174	2,634
0.055	1, 898.5	0.080	1.161	152	2,203
0.060	1,561.2	0.085	1.187	133	1,853
0.065	1,254.6	0.091	1.214	114	1,523
0.070	1,001.6	0.097	1.227	97	1,228
0.075	783.8	0.104	1.239	81	971
0.080	616.I	0.111	1.292	68	796
0.085	506.4	0.117	1.336	59	676
0.090	411.8	0.124	1.402	51	577
0.095	339.6	0.131	1.457	44	495
0.100	285.5	0.138	1.453	39	415

6.6.3 Waterpump Creek Historical Resource (Anaconda, 1984)

In 1984, G.E. Wilson of Anaconda conducted a polygonal mineral resource estimate of the Waterpump Creek prospect. The estimate focused on both an upper oxide pod and a lower down-dip sulfide pod. The estimates were based on drilling intercepts spaced no more than 50 m apart. In a 1984 Waterpump Creek Summary report (Teller, 1984), Anaconda suggested that width estimation of the pods was very conservative and the likely potential suggested 500,000 tons. A summary of the historical mineral resource estimate is shown in Table 6.10. A QP has not reviewed or verified this historical estimate, and it is not considered as a current mineral resource or mineral reserve.

Table 6.10: Waterpump Creek Deposit Historical Resource Estimate (Anaconda, 1984)

Type	Tonnes	Ag (oz/t)	Pb (%)	Zn (%)
Oxide	110,800	11.9	21.2	3.2
Sulfide	55,210	4.8	5.8	10.0
Total	166,010	9.5	16.1	5.5

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

The Illinois Creek Project is located within the Ruby Terrane, a sequence of mostly late Proterozoic to middle Paleozoic continental margin rocks that make up the Kaiyuh Mountains (see Figure 7.1). Lithologies within the belt include metapelites, quartzites, carbonates and greenstones. Thinly bedded, carbonate-rich dolomitic quartzite and dolomite host and the Waterpump Creek sulfide silver-zinc-lead CRD deposits the Illinois Creek oxide gold-silver, respectively.

The Cretaceous Khotol pluton, the Round Top porphyry, and the interpreted Illinois Creek porphyry intrude metasediments north, northeast and west of Illinois Creek. Age-dating suggests that mineralization from the Illinois Creek hydrothermal system is temporally related to the emplacement of the 112 Ma Khotol granite pluton.

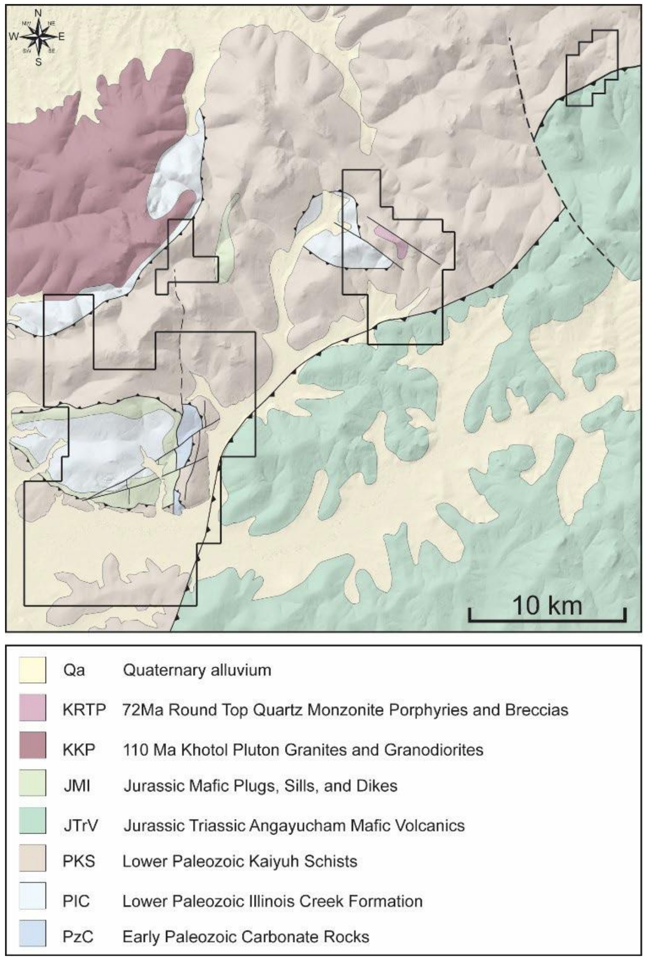
Regional structure is dominated by east-northeast-trending faults oriented subparallel to the Kaltag fault—a large, trans-current shear zone located 24 km (15 miles) north of the deposit. Post-Laramide movement on the Kaltag fault is characteristically right lateral taking up rotation along the Tintina trench into central Alaska as a consequence of north-northwest directed subduction under the Aleutians.

Structural and stratigraphic interpretations suggest that the pre-Laramide Cretaceous motion on the Kaltag fault was likely left-lateral with north-northeast-trending extensional faults forming pull-apart zones between left stepping offsets along the east-northeast trans-current shears. This local northeast-directed extension appears to have controlled elongation of the Khotol pluton and emplacement of the Round Top porphyry.

Broad east-northeast to east-southeast-directed folds appear to be a consequence of east-southeast-directed compression perpendicular to the north-northeast extension. These folds play a critical role in the erosional level of permissive carbonate stratigraphy which hosts the carbonate replacement mineralization developed adjacent to the porphyry intrusions within the district.

The Illinois Creek deposit (a deeply oxidized CRD) is located within an east-northeast-trending shear zone analogous to the Kaltag fault orientation. Mineralization occurs as both a filling within the fault structure and as a replacement within and along selective bedding planes and stratigraphic contacts particularly at or near the uppermost contact of the dolomitic quartzite stratigraphy with overlying metapelitic schists.

Figure 7.1: Generalized Geologic Map of the Southern Kaiyuh Mountains



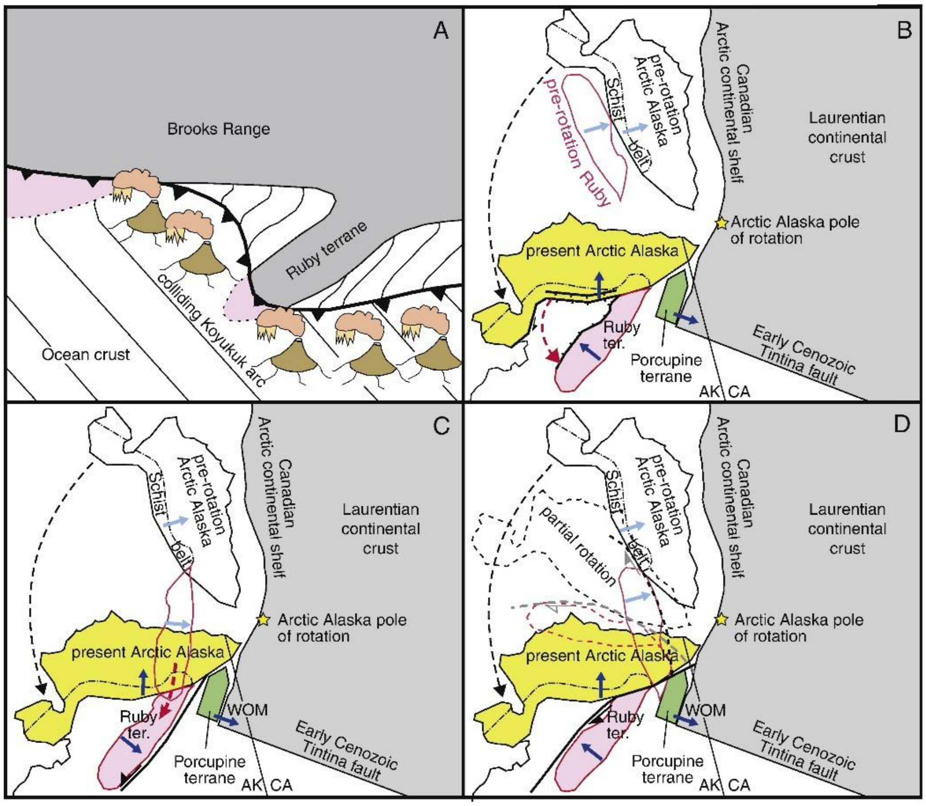
Source: Modified after Anaconda (1981), Geologic Map of the Nulato A-4 Quadrangle, WAM (2023)

7.1.1 Tectonic History

The deformation and tectonic history of the Kaiyuh Mountains remains poorly understood. The Project area underwent regional deformation and metamorphism during the Middle Jurassic to Early Cretaceous Brooks Range orogeny. The collision of the Ruby Terrane and Koyukuk Arc Terrane from present-day south caused north-directed imbrication and partial subduction of the Arctic Alaska passive margin sedimentary sequence.

A recent review of the tectonic history is summarized by Moore et al. (Moore and Box, 2016) who present a series of tectonic reconstructions and deformational styles related to the Brooks Range orogeny. Figures 7.2 shows existing models for emplacement of the Ruby Terrain due to the opening of the Arctic Canada Basin and Figures 7.3 through 7.5 show the evolution of the Ruby Terrane and the timing of the Illinois Creek and Round Top deposits. The reconstructions show the accretion of the ATI (Angayucham/Tozitna/Innoko) Terrane immediately to the east and overlapping the Ruby Terrane in latest Jurassic times. The deformation continues into the Cretaceous with northwest-directed thrusting until 113 Ma.

Figure 7.2: Existing Tectonic Models for the Ruby Terrane

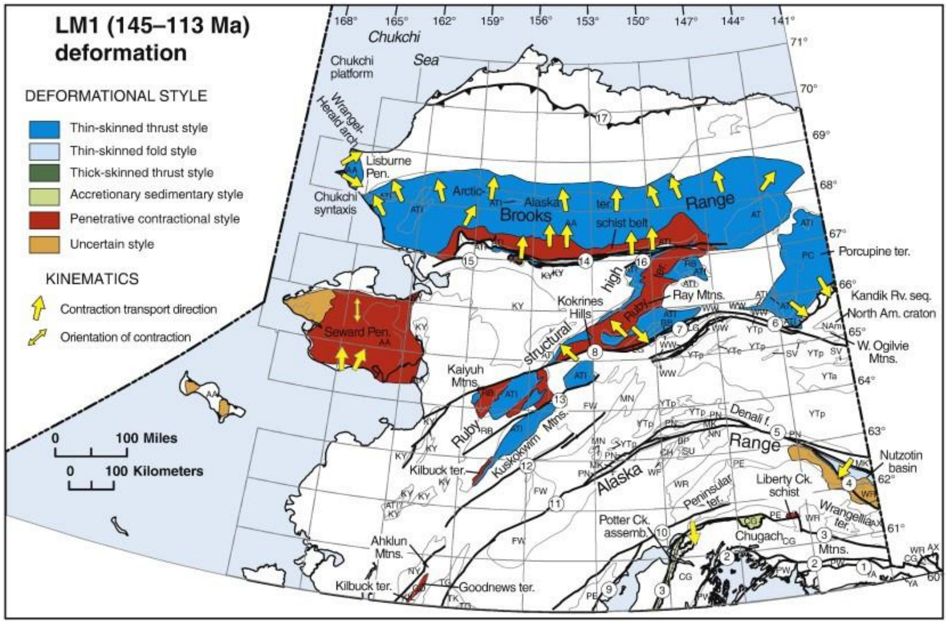


Source: Moore and Box (2016)

This compressive foreshortening has resulted in a series of thrust plates juxtaposing deeper water ATI Terrane mafic volcanics over progressively shallowing continental slope deep-water pelitic rocks in turn thrust over platform carbonate and continental derived quartzites of the Ruby Terrain host for the Waterpump Creek CRD deposit and the Illinois Creek deposit.

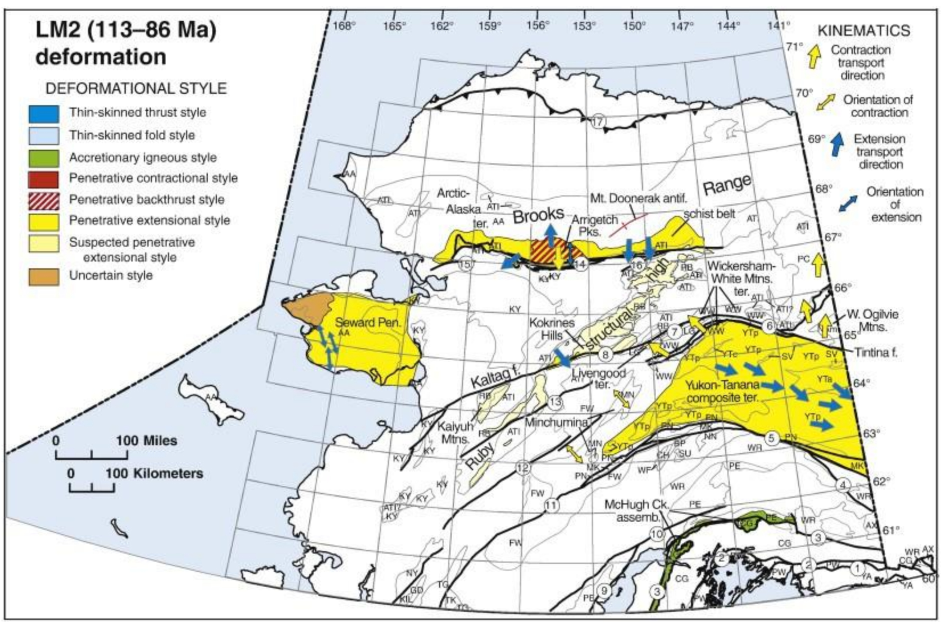
North-northeast to northeast-directed extension then dominates the deformational history through the emplacement of both the Illinois Creek and Round Top porphyry systems in the mid to earliest Cretaceous times.

Figure 7.3: West-Central Alaska Deformation 145–113 Ma



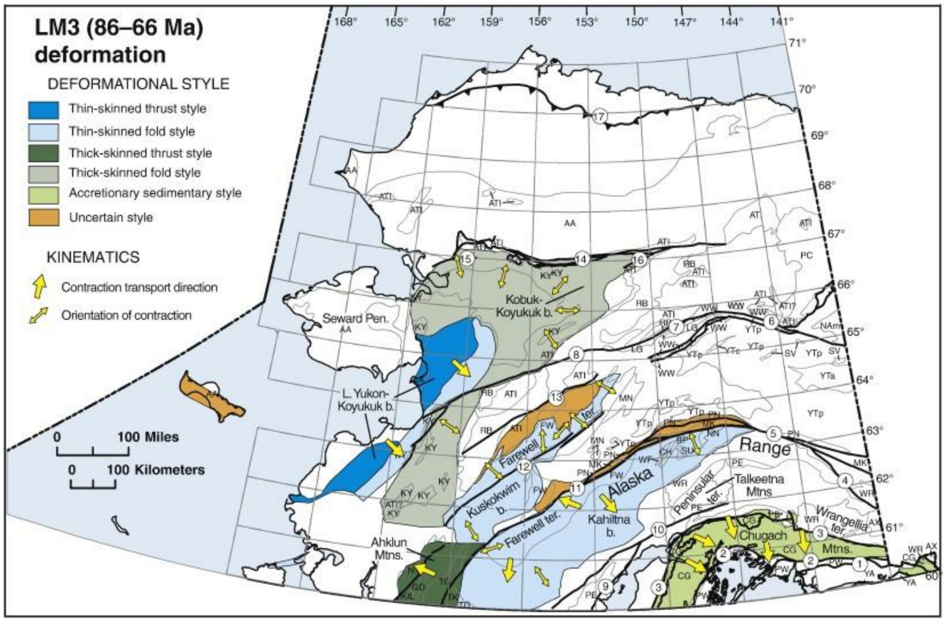
Source: Moore and Box (2016)

Figure 7-4: West-Central Alaska Deformation 113–86 Ma



Source: Moore and Box (2016)

Figure 7-5: West-Central Alaska Deformation 86–66 Ma



Source: Moore and Box (2016)

7.1.2 Regional Stratigraphy

The stratigraphy of the Kaiyuh Mountains is poorly documented and is only partially based on regional mapping by both the U.S. Geological Survey and Anaconda. The Illinois Creek district is largely covered with overburden, with only limited outcrops on ridge lines. This is even more evident on the Illinois Creek Property where stratigraphic interpretation is based largely on geophysics and limited deep drilling by Anaconda at both Illinois Creek and Waterpump Creek further discussed in section 7.2.2.

7.1.3 Magmatism

Igneous rocks within the Illinois Creek Property are limited in distribution. Most important are a series of greenstone or diabase sills. The units are typically fine- to coarse-grained and composed of chlorite, actinolite, plagioclase and quartz. These intrusive rocks are likely part of the Jurassic ophiolitic rocks of the Rampart group to the east.

A few highly altered felsic porphyry dikes are also found in the Waterpump Creek area and are characteristically unfoliated, cream to tan in color with 10% to 15%, 1 mm feldspar phenocrysts and trace quartz set in an aphanitic matrix (Teller and Wilson, 1985).

The nearby 111 to 113 Ma Khotol pluton is characteristically equigranular to sub-porphyritic biotite granite to granodiorite containing up to 15% biotite and abundant quartz. Plagioclase dominates over potassium feldspar and makes up to 60% of the rock.

The Round Top stock and intrusive complex lies 19.3 km (12 miles) to the northeast and is characterized by a complex series of quartz monzonite intrusion and high-level breccia diatremes emplaced into the lower Paleozoic sequence. A high-level lithocap with sheeted copper-bearing veins and a well-developed enrichment blanket overlie porphyry copper/molybdenum/silver mineralization at depth.

7.1.4 Timing of Mineralization in the District

Two significant periods of porphyry and associated CRD development are evident in the Illinois Creek district:

- K-Ar and Ar-Ar dating of sericites at both Waterpump Creek and Illinois Creek by Anaconda and Flanigan support a temporal tie between the Khotol pluton type magmatism (108 to 113 Ma) and the mineralization at Illinois Creek.
- K-Ar, Ar-Ar and Re-Os dating by Anaconda, Flanigan and Antofagasta all suggest timing of emplacement of the Round Top porphyries and copper porphyry mineralization at 72 to 75 Ma.

All mineralization ages postdate the extensive 134 to 153 Ma metamorphic dates related to Brooks Range orogeny and obduction of the ATI Terrane.

K-Ar age dates in the district are summarized in Table 7.1.

Table 7.1: Age Dates – Illinois Creek District

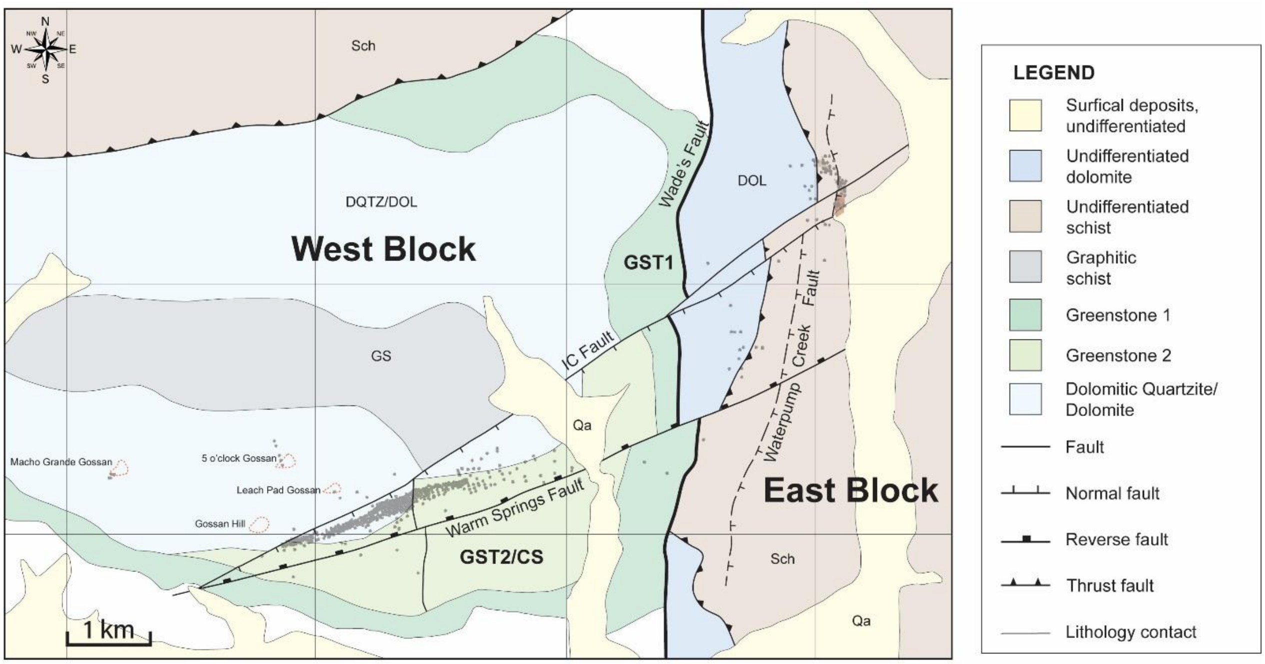
Company	Location	Year	Type	Material	Date Ma	+/- Ma
Metamorphic Dates						
Anaconda	Waterpump Creek	1984	K-Ar	Muscovite (schist)	157	6
	Waterpump Creek	1984	K-Ar	Muscovite (schist)	153	6
	Waterpump Creek	1984	K-Ar	Muscovite (schist)	149	5
Flanigan	Waterpump Creek	1995	Ar-Ar	Whole Rock	145.4	1.9
	Honker	1995	Ar-Ar	Whole Rock	139.3	1.8
	Illinois Creek	1995	Ar-Ar	Muscovite	137.9	1.3
Patton et al.	Kaiyuh Mtns	1979	K-Ar	Muscovite	136	4.1
	Kaiyuh Mtns	1979	K-Ar	Muscovite	134	4.0
Flanigan	Illinois Creek	1995	Ar-Ar	Muscovite	127.9	2.2
Intrusive Dates						
Patton et al.	Khotol	1979	K-Ar	Biotite	112	3.4
Anaconda	Khotol	1982	K-Ar	Biotite	111	4.0
	Khotol	1982	K-Ar	Biotite	108	4.0
Flanigan	Khotol	1995	Ar-Ar	Biotite	107.3	1.4
Anaconda	Round Top	1984	K-Ar	Feldspar	74.8	2.8
	Round Top	1984	K-Ar	Feldspar	72.9	2.8
Mineralization Dates						
Flanigan	Illinois Creek	1995	Ar-Ar	Sericite	113.1	0.4
Anaconda	Waterpump Creek	1982	K-Ar	Sericite	113.0	4.0
Antofagasta	Round Top	2018	Re-Os	Molybdenite	72.7	0.3

7.2 PROPERTY GEOLOGY

Since 2021, a major reinterpretation of the Illinois Creek property has been ongoing as a consequence of the discovery of significant sulfide mineralization at depths below previous levels of exploration. Utilizing 1) a better understanding of CRD (carbonate replacement deposit) morphologies; 2) a greatly expanded multi-element ICP soil database; 3) re- interpretation and inversions of historical geophysical surveys; 4) a 2022 CSAMT survey undertaken to outline resistivity domains at depth; 5) ongoing drilling and mapping; and 6) a better understanding of the stratigraphy and structure, a new and more coherent understanding of the property is evolving.

The newly reinterpreted geologic map of the property is presented in Figure 7.6. The map shows that two distinct structural/stratigraphic geologic domains herein dubbed the East and West blocks.

Figure 7.6: Geologic Map of the Illinois Creek Property



Source: WAM (2023)

7.2.1 Temporal-Structural Considerations

The Illinois Creek property shows effects of the regional tectonic deformational history discussed previously in section 7.1. Jurassic to mid-Cretaceous compressional tectonics is manifest on the property as a series of east-verging thrust faults juxtaposing progressively deeper water assemblages on top of continental margin assemblages to the west. ATI

(Angayucham/Tozitna/Innoko) Terrane volcanics occur immediately east of the project as an upper plate over the metasedimentary continental margin assemblages of the Ruby Terrane.

In the East block, continental slope clastic schists of the Ruby Terrane are thrust onto WPC dolomitic platform carbonates. Additional internal thrust plates with the Ruby Terrane are likely evidenced as thin chlorite schists interleaved with the Waterpump Creek dolomites.

In the West block, additional thrusting is likely corroborated by the sill-like intrusion of the Jurassic diabase/greenstone unit.

Broad, ENE to ESE-trending folds in the Illinois Creek district, occur as a result of the compression most notably, the ENE-northeast-trending Illinois Creek antiform which cores the West block.

Relaxation immediately post-compression resulted in granitic magmatism of the Khotol pluton intrusive suite, and its associated porphyry/CRD/intermediate sulfidation vein mineralization seen at Illinois Creek and the adjacent Honker prospect. This relaxation is manifest as steep NNE -trending tensional faults such as the Waterpump Creek fault and Wades fault that are syn-mineral in nature. These faults could be listric nature and verge east into pre-existing shallow angle thrusts. The NE-trending Illinois Creek and Warm Springs faults have complex movements and are yet only partially resolved. Syn-mineral movement on the Illinois Creek fault appears as normal down-drop to the south but with later post-mineral strike-slip movement. Warm Spring appears to reverse movement suggesting a rotation of the structural block between the Illinois Creek and Warm Springs faults.

7.2.2 Stratigraphy

CSAMT (controlled-source audio-magnetotellurics), a deep sounding resistivity geophysical technique undertaken in 2022 has recognized two discrete structural/stratigraphic blocks on the property herein dubbed the East and West blocks. Distinctly different stratigraphic sections occur in both blocks at the erosional levels seen. Stratigraphic sections for both blocks are based on deep drill holes by Anaconda: WPC84-16 for the East Block and ICDH10 in the West Block. These stratigraphic sections are likely impacted by additional thrust fault overthickening but are good approximations of existing stratigraphic thicknesses in both blocks. Tables 7.1 and **7.2** show apparent stratigraphy and approximate thickness for the East Block and West Block, respectively.

7.2.3 Lithology Units – East Block

Table 7.2 summarizes the approximate stratigraphic section of the East Block and is based drill hole WPC84-16. The overthrust Kaiyuh schist include a thick QCMS schist package overlying a section of graphitic schists indeterminate in thickness. The QCMS unit contains a distinctive magnetite-rich chlorite schist at or near its base which has been interpreted as a re-crystalline Fe formation. This unit is easily discernible in the 1984 Aerodat aeromagnetic survey. Below the overlying Kaiyuh Schist sequence is the Waterpump Creek dolomite which appears to be in excess of 600 meters in thickness. A few thin interleaved chlorite schist zones might represent additional thrust plates. The overthickened section provides a significant opportunity for additional manto-form CRD mineralization.

Table 7.2: East Block Stratigraphic Units

	Unit	Lithology	Approximate Thickness
Kaiyuh Schist	Kaiyuh Schist	Quartz Chlorite Muscovite Schists (QCMS) Thin 5 m to 10 m magnetite/chlorite schist units at or near base	>1,000 m
	Basal Kaiyuh Graphitic Schist	Graphitic schist Possible angular unconformity at base	50 m
Illinois Creek Formation	Waterpump Creek Dolomite	Massive Dolomite and Dolomitic Quartzite	~100 m
	Lower Schist	Thin Chlorite Schist	10-20 m
	Waterpump Creek Dolomite	Massive Dolomite and Dolomitic Quartzite	~450 m
	Unknown		

Source: Modified from Brewer and Millholland (1982) and Teller (1984)

7.2.4 Lithology Units – West Block

Table 7.3 summarizes the approximate stratigraphic section of the West Block and is based on drill hole ICDH-10. Although the Kaiyuh schist is apparent in the far north portion of the West Block, the section in the area of interest, is dominated by the thick dike and sill-like diabase/greenstones rooted against Wades fault to the east side of the West Block. Distinctions between the two greenstone phases are largely based on differing magnetic signatures of the two units. Importantly, the sill-like greenstone 2 appears to act as an aquitard with fluids trapped below it. Two exploration holes, IC22-01 and -02 tested that concept and exhibit intense alteration, multiphase massive pyrite mineralization with low grade base and precious metals.

Below the capping Greenstone 2 unit, a thin graphitic schist (Upper Graphitic Schist) is recognized overlying a very thick section or calcareous and dolomitic quartzite and dolomite. This roughly 400 m package is apparent in ICDH-10 and is the host for the Illinois Creek oxide mineralization as well as the East IC manto. This stratigraphy is also the principal mineralization target south the Warm Springs fault. Historical drilling other than Anaconda that targeted the oxide resources at Illinois Creek did not differentiate between the quartzites and dolomites making detailed understanding of the internal stratigraphy of the overall permissive carbonate- rich stratigraphy difficult. As such thicknesses are approximate.

Below the permissive carbonate stratigraphy. a thick section of graphitic schist (Lower Graphitic Schist) is apparent in turn underlain by a thick chlorite/graphitic schist package.

Table 7.3: West Block Stratigraphic Units

	Unit	Lithology	Approximate Thickness
Kaiyuh Schist	Kaiyuh Schist	Quartz Chlorite Muscovite Schists (QCMS) Thin 5 m to 10 m magnetite/chlorite schist units at or near base	>1,000 m
	Unknown		
Illinois Creek Formation	Diabase/Greenstone 1	Dike-like along Wades fault	Up to 350 m+
	Diabase/Greenstone 2	Sill-like mass of greenstone Jurassic	100 – 250 m+
	Illinois Creek Graphite Schist	Upper Graphitic schist	10 m to 30 m
	Illinois Creek Calcareous Quartzite	Calcareous Quartzite with thin phyllite horizons	~100 m
	Illinois Creek Dolomitic Quartzite	Dolomitic Quartzite with thin phyllite horizons	~100 m
	Illinois Creek Dolomite	Dolomite	~200 m
	Illinois Creek Calcareous Graphitic Schist	Lower Graphitic Schist	~200 m
	Basal Schists	Mixed Chlorite and Graphitic Schists	>200 m

Source: Modified from Brewer and Millholland (1982) and Teller (1984)

7.2.5 Lithology Units – Illinois Creek mine and Oxide Resource

The main gossan body at the Illinois Creek oxide Au/Ag deposit is hosted in a sequence of calcareous quartzite, dolomitic quartzite and dolomite overlain by a thin graphitic schist and a property-wide diabase greenstone sill. Since much of the primary lithology is broadly homogenous without any easily observable distinctions, efforts to domain lithology have been largely ineffectual. NPMC and Echo Bay devised a domain logging scheme incorporating the relative abundance to three variables: quartz, iron and manganese as their "lithologies" (Tolbert, 1992).

The following descriptions of the "lithology" domains are from Tolbert (1992) and are summarized in Table 7.4.

Quartzite (Q): white, light gray to tan, fine- to medium-grained. Several textural varieties of the quartzite occur and have been logged. Quartzite ranges from relatively pure, blocky massive (Q) to limy (Ql) and dolomitic (Qd) varieties. Carbonate-bearing quartzite is gradational between two fabrics, 1) mottled (Qlt and Qdt), and 2) carbonate/quartz banded (Qlb and Qdb). Unaltered quartzite comprises the country rock in the vicinity of the gossan but seldom directly borders mineralization.

Altered Quartzite (Qa): cloudy, pale yellow green with weak to strong carbonate and clay alteration and possibly weak propylitic alteration. Qa is soft and chalky, occasionally sanded and generally highly calcareous. Blue-gray quartz stock work veins are usually abundant. Qa directly borders gossan in the footwall and sometimes forms a narrow screen between gossan and Qs in the hanging wall. Potentially mineralized variants included quartzite stained with secondary iron oxide (Qf) or manganese oxide (Qm).

Sanded Quartzite (Qs); quartzite decomposed to sand and ranging from very fine powder to medium-sized grains. Locally highly calcareous, commonly stained with secondary iron oxide, manganese oxides and copper carbonates.

Ferruginous Quartzite (FQ): granular white quartz quartzite and hydrothermal quartz) with <50% brown, yellow or red brown iron oxide, variably brecciated and or cut iron oxide +/- quartz stock work veins. Earthy cellular and botryoidal iron oxide (goethite, limonite and hematite) are present as breccia matrix and irregular masses. The unit is massive to extremely vuggy in texture.

Ferruginous Manganiferous Quartzite (FMQ): similar to FQ but contains significant manganese oxide to impart a sooty black or dark gray color to all or portions of the rock (Mn generally >1%). Manganese oxide occurs as purple-gray stain/flooding, earthy/sooty bands and clots, botryoidal psilomelane masses or rarely as acicular pyrolusite needles lining cavities. FMQ is often distinctly banded with alternating <0.4 in. bands of granular quartz, iron oxide and manganese oxide.

Ferruginous Gossan (FG): massive gossan with >50% iron oxide as earthy, cellular and botryoidal limonite, goethite and rare hematite. Locally abundant rhombohedral pseudomorphs suggest much of the gossan has replaced massive coarse-grained carbonate (siderite, ankerite, dolomite and rhodochrosite) in some areas. Quartz comprises up to 50% of the rock as milky veins, quartzite clasts or granular masses. Primary textures are highly obscured. FG occasionally contains copper oxides and bindheimite veins.

Ferruginous Manganiferous Gossan (FMG): similar to FG with prominent dark gray to black manganese oxide coloration in addition to brown iron oxide. Both oxides usually occur as distinct alternating bands or as wormy intergrowths. Coarse-grained rhombohedral pseudomorphs are locally present.

Hydrothermal Quartz (HQ): Massive, vuggy, prismatic or granular hydrothermal quartz as veins, pods, or masses. Sometimes contains pseudomorphs and iron oxide veins. HQ is rare accounting for <2% of the material within the gossan.

Table 7.4: Lithology Domains at the Illinois Creek Deposit

Code	Unit
Q	Quartzite
Qa	Altered Quartzite
Qs	Sanded Quartzite
FQ	Ferruginous Quartzite
FMQ	Ferruginous Manganiferous Quartzite
FG	Ferruginous Gossan
FMG	Ferruginous Manganiferous Gossan
HQ	Hydrothermal Quartz

7.2.6 Detailed Structure - Illinois Creek Oxide Deposit

In 2000, MRDI, under the direction of Viceroy, audited the USMX database and model. At that time, MRDI concluded that although the "lithology" codes reflected host domains thought to control the distribution of gold/silver mineralization, the mineralization clearly crossed those lithologic domains. Sections constructed during the review suggest that the gold and silver zones meandered in and out of individual rock units, much as would be expected if mineralization were controlled by a shear zone that roughly followed the strike of bedding of the host rocks. The common thickening and bifurcation of gold zones that are seen in the hanging wall and strike extensions of the deposit are common to braided shear systems (MRDI and Viceroy, 2000).

MRDI concluded that the primary control of mineralization was the presence of bedding plane shears, with local zones of dilation (and thickening of ore zones) occurring at favorable changes in the strike of individual shears. Shearing preferentially occurred within sandy dolomite, calcareous to dolomitic quartzite, and calcareous phyllite.

7.3 Mineral Deposits

Known mineralization at Illinois Creek occurs both as a CRD Ag/Zn/Pb sulfide replacement mineralization and as Au/Ag/Cu oxide gossan mineralization formed as a consequence of deep surficial oxidation of the primary sulfide mineralization. Mineralization occurs as: 1) replacement mineralization within and along selective bedding planes and stratigraphic contacts in the Illinois Creek carbonate rocks including dolomite and dolomitic quartzite stratigraphy and fillings within syn-mineral fault structure such as the Illinois Creek fault.

At Waterpump Creek in the East block, sulfide mineralization is particularly focused at or near the uppermost contact of the dolomite stratigraphy with overlying metapelitic Kaiyuh schists. The Kaiyuh schists are characterized by a complex section of graphitic, chloritic and quartz muscovite schists within which occurs a thin marker horizon of chlorite/magnetite schist possibly of banded iron formation genesis. This marker horizon is a strong aeromagnetic feature traceable through much of the district. The Kaiyuh schist/Waterpump Creek dolomite contact is an apparent pre-mineral thrust fault. Mineralization occurs along the Waterpump Creek fault, an

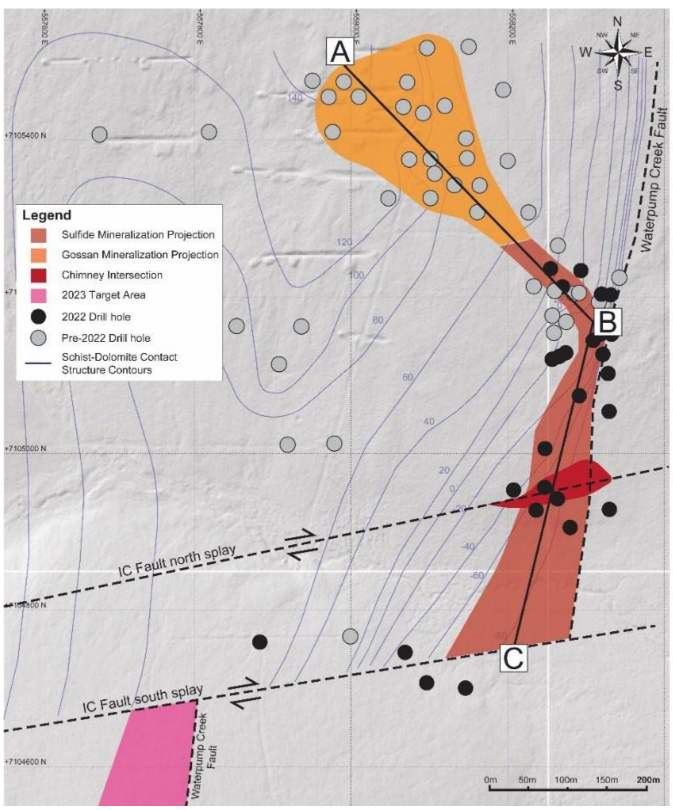
NNE-trending fault showing down drop to the east resulting in a steepening of the thrust fault surface into the Waterpump Creek fault. The overlying Kaiyuh schists serve as an aquitard with fluid migrating up the Waterpump Creek fault and replacing dolomite at or within the footwall dolomite of the fault.

At Illinois Creek, very deep and poorly understood oxidation of the original CRD mineralization has resulted in the extensive development of gossan to depths up to 400 m below the surface between the Illinois Creek and the Warm Springs faults. Original primary mineralization is assumed to have been in part analogous to that seen at the Waterpump Creek deposit.

7.3.1 Sulfide Mineralization Distribution – Waterpump Creek

Current exploration at Waterpump Creek has expanded the footprint of the sulfide mineralization over a roughly 450 meter strike length, with widths varying from 25 to 75 meters, and thicknesses varying from 5 to over 100 meters. Figure 7.7 is a plan map of all Waterpump drill holes through the end of the 2022 drill season. The image also shows structure contours of the Kaiyuh schist/Waterpump Creek dolomite thrust contact and the rollover into the Waterpump Creek fault, the feeder for the mineralizing fluids. The Waterpump Creek fault can be traced for over 6 km in the East block.

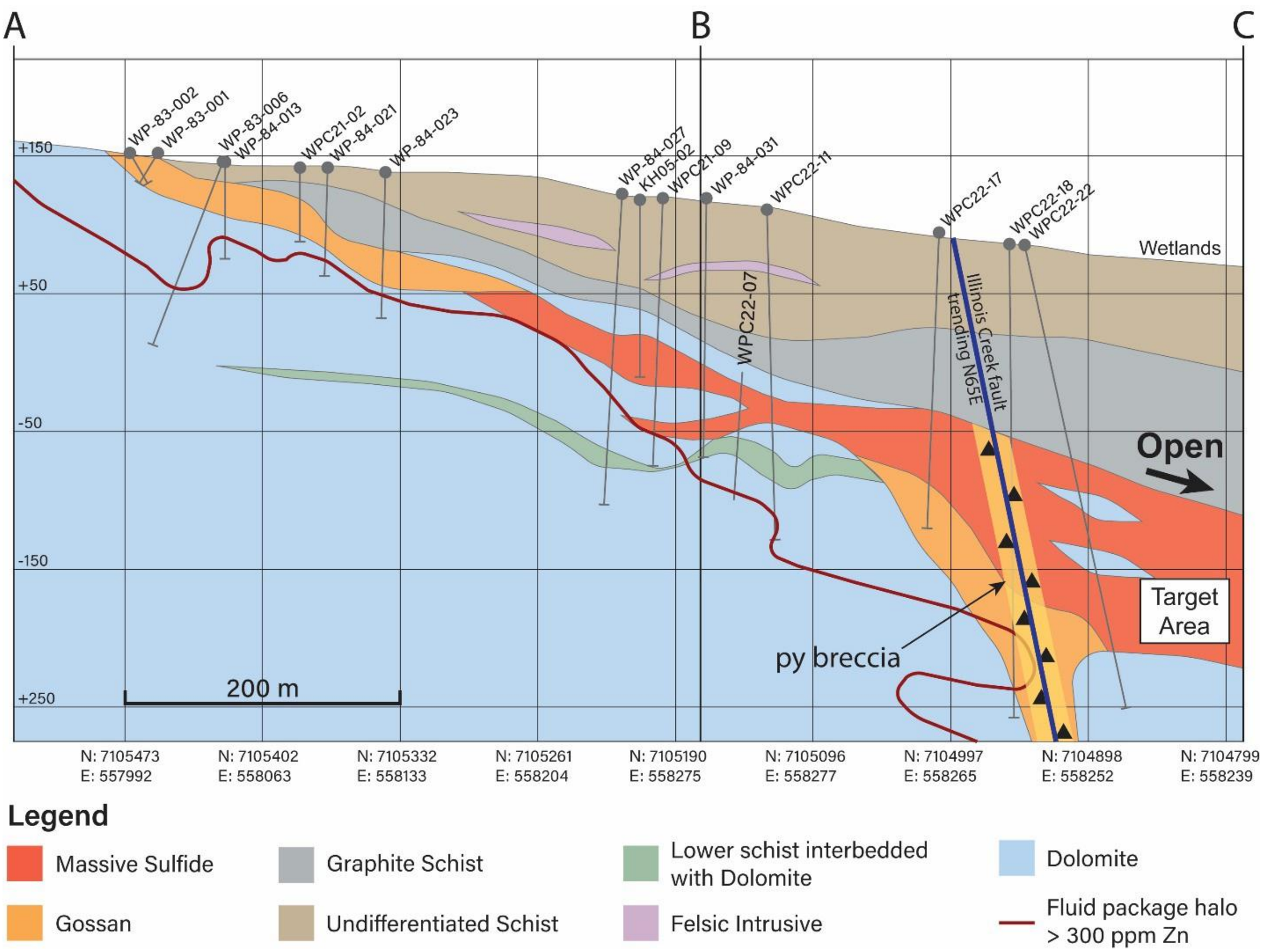
Figure 7.7: Plan Map of the Waterpump Creek Drill Collars



Source: WAM (2023)

Figure 7.8 shows a longitudinal section down the axis of the Waterpump mineralization. The body is dominated by an upper high grade manto that dips to the south at approximately 15 degrees. In and around DH's WPC22-17 and 18, the manto thickness expands significantly possibly as a result of the intersection with an ENE splay of the Illinois Creek fault resulting in a chimney like mineralized column with more complex multiphase mineralization highlighted by late pyrite-dominant brecciated zones. To the south of the intersection, a series of possibly three mantos continue to the south under wetlands. These wetlands, inaccessible during 2022 drilling will be the focus of early 2023 drilling.

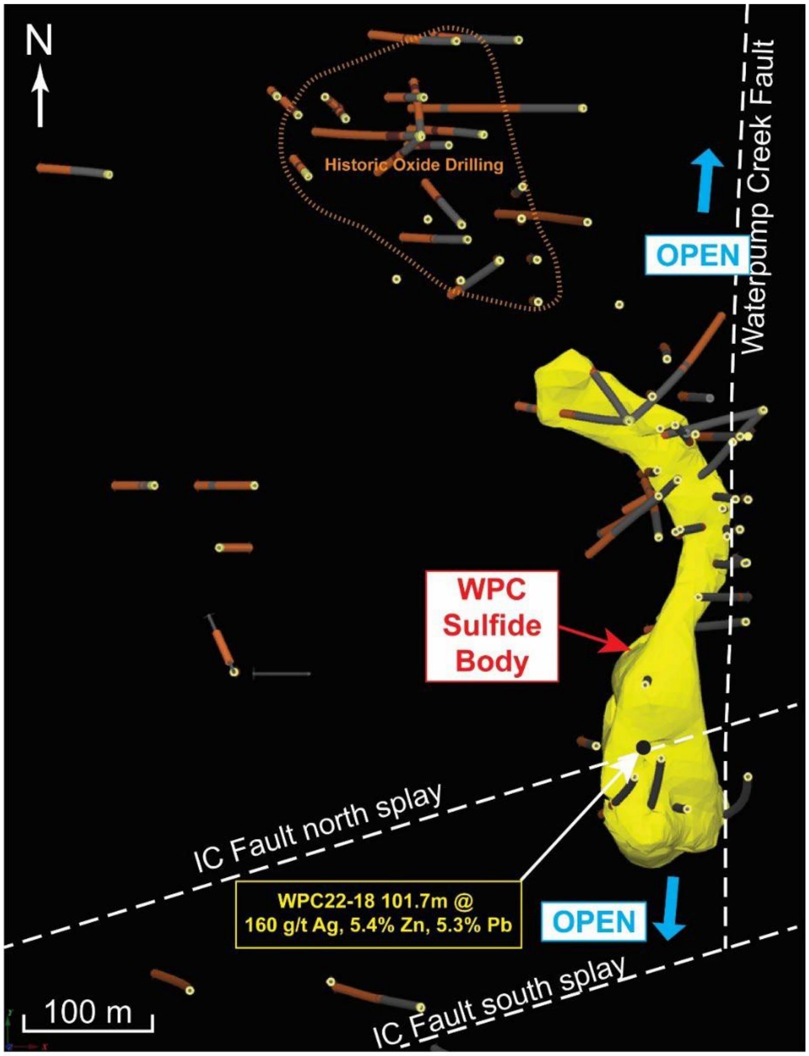
Figure 7.8: Longitudinal Section Down Axis of Waterpump Creek Manto



Source: WAM (2023)

Figure 7.9 shows a plan 3D projection of the Waterpump Creek sulfide body with traces of the NNE Waterpump Creek fault and ENE projections of fault strands of the Illinois Creek fault. The blue shape is a modelled sulfide mineralization shape of massive and semi-massive sulfides. The body is roughly 1 million cubic meters in volume and remains open to expansion along projections of the Waterpump Creek fault.

Figure 7.9: 3D Plan Map projection of the Waterpump Creek Sulfide Body



Source: WAM (2023)

Table 7.5 reports all sulfide intervals encountered by WAM during drilling in 2021 and 2022. Silver equivalencies are based on metal price assumptions of $22/oz Ag, $1.30/lb Zn and $1/lb Pb. No recoveries are yet assumed. Ongoing initial metallurgical studies are in progress and will provide initial recovery data during the 2nd quarter of 2022.

The length weighted average of all WAM's 2021 and 2022 sulfide intervals is 217 g/t (7.0 opt) Ag, 8.6% Zn, 7.7% Pb.

Table 7.5: 2021 and 2022 Sulfide Intervals form Waterpump Creek

Drill Hole	From (meters)	To (meters)	Thickness (meters)	Ag g/t	Ag Oz/t	Zn %	Pb %
WPC22-21	**150.0**	**155.1**	**5.1**	**789**	**25.4**	**14.9**	**22.0**
WPC22-22	**161.6**	**184.3**	**22.7**	**293**	**9.4**	**9.0**	**20.3**
including	*161.6*	*168.6*	*7.0*	*557*	*17.9*	*16.7*	*21.8*
WPC22-22	**207.0**	**216.5**	**9.5**	**118**	**3.8**	**3.5**	**8.7**
WPC22-22	**245.7**	**300.3**	**54.6**	**187**	**6.0**	**6.2**	**5.1**
including	*271.1*	*274.6*	*3.5*	*1223*	*39.3*	*32.5*	*8.1*
including	*292.6*	*300.3*	*7.7*	*311*	*10.0*	*10.1*	*1.8*
WPC22-20	**166.6**	**178**	**11.4**	**284**	**9.1**	**14.8**	**10.9**
including	*166.6*	*175*	*8.4*	*322*	*10.6*	*12.1*	*12.8*
including	*166.6*	*168.2*	*1.6*	*474*	*15.2*	*24.7*	*14.3*
including	*173.9*	*175*	*1.1*	*883*	*28.4*	*12.2*	*45.2*
WPC22-20	**185.2**	**205.9**	**20.7**	**171**	**5.5**	**9.4**	**5.8**
including	*187.8*	*189.7*	*1.9*	*272*	*8.7*	*22.3*	7.6
including	*193.4*	*196.1*	*2.7*	*297*	*9.5*	*2.8*	10.6
WPC22-18	**147.2**	**248.9**	**101.7**	**160**	**5.1**	**5.4**	**5.3**
including	*158.6*	*165.8*	*7.2*	*349*	*11.2*	*7.3*	*9.7*
including	*191.7*	*195*	*3.3*	*358*	*11.5*	*7.2*	*10.6*
including	*223.8*	*242.3*	*18.5*	*355*	*10.8*	*2.2*	*13.5*
WPC22-17	**125.5**	**174.3**	**48.8**	**144**	**4.6**	**9.0**	**5.5**
including	*125.5*	*135.3*	*9.8*	*428*	*13.8*	*15.9*	*14.1*
including	*160.6*	*164.7*	*4.1*	*417*	*13.4*	*14.8*	*18.3*
WPC22-13	**150.1**	**152.9**	**2.8**	**1304**	**41.9**	**2.5**	**37.1**
WPC22-13	**158.4**	**160.8**	**2.4**	**820**	**26.4**	**15.0**	**13.0**
WPC22-11	**139.1**	**150.6**	**11.5**	**337**	**10.8**	**16.7**	**10.0**
WPC22-11	**152.7**	**156.3**	**3.6**	**151**	**4.9**	**22.3**	**5.1**
WPC22-08	**114.6**	**125.5**	**10.9**	**157**	**5.0**	**9.9**	**6.4**
WPC22-07	**136.4**	**142.5**	**6.1**	**459**	**14.8**	**12.1**	**14.8**
WPC22-07	**150.1**	**164.4**	**14.3**	**54**	**1.7**	**10.3**	**1.9**
WPC21-09	**109.4**	**120.9**	**11.5**	**522**	**16.8**	**22.5**	**14.4**

Source: WAM (2023)

7.3.2 Sulfide Mineralization Characterization – Waterpump Creek

Mineralization at Waterpump Creek is characterized by massive and semi-massive sulfide replacement of the host Waterpump Creek dolomite by argentiferous galena, Fe-rich sphalerite and pyrite hosted in a matrix of recrystalline dolomite. Historical reflected light studies of the Waterpump Creek sulfide mineralization by Anaconda shows additional sulfide species including arsenopyrite, chalcopyrite, argentite and tetrahedrite. WAM is currently funding a Colorado School of Mines thesis to better understand the entire assemblage and paragenetic relationships within the sulfide mineralization.

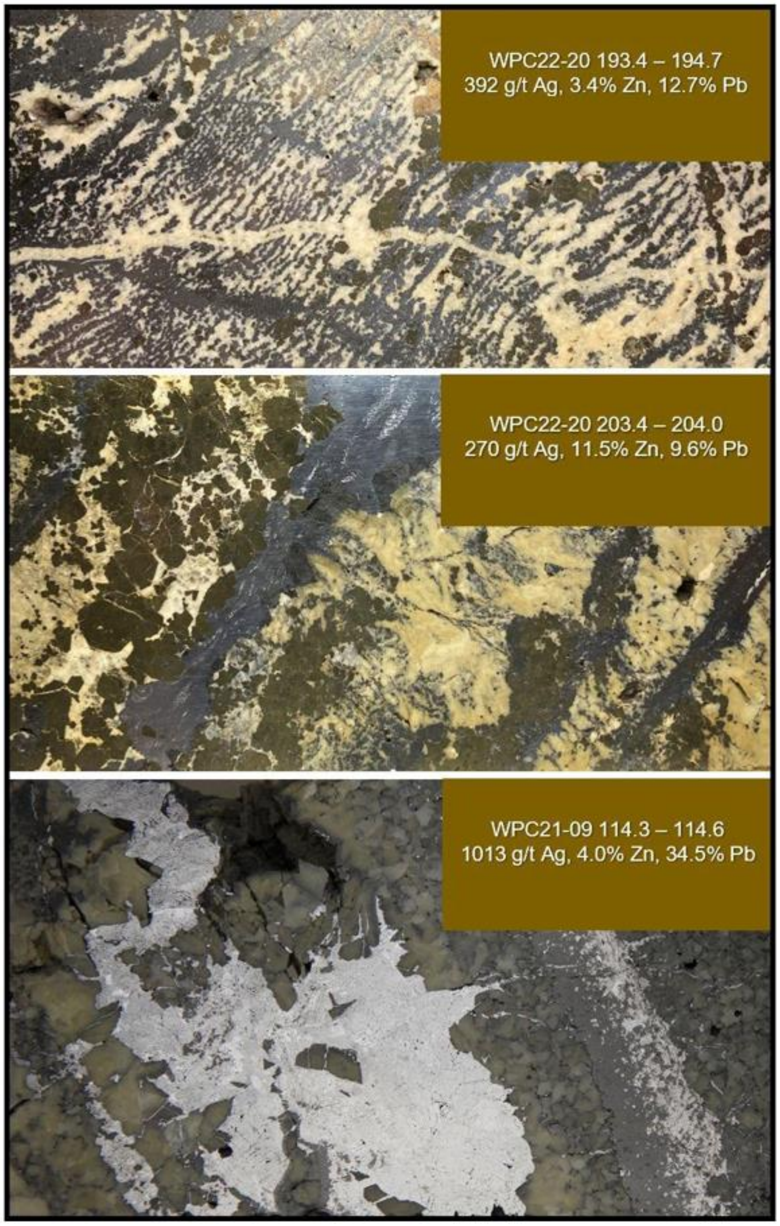
Figure 7.10 shows argentiferous galena characterized by extreme deformation of the galena's crystal structure due to the substitution of silver within the galena lattice. The substitution results intense deformation of the galena's characteristic cubic cleavage resulting in a ribbon-like texture to the galena.

Figure 7.10: Argentiferous Galena with Pyrite, Fe-Rich Sphalerite and Dolomite

Source: WAM (2023)

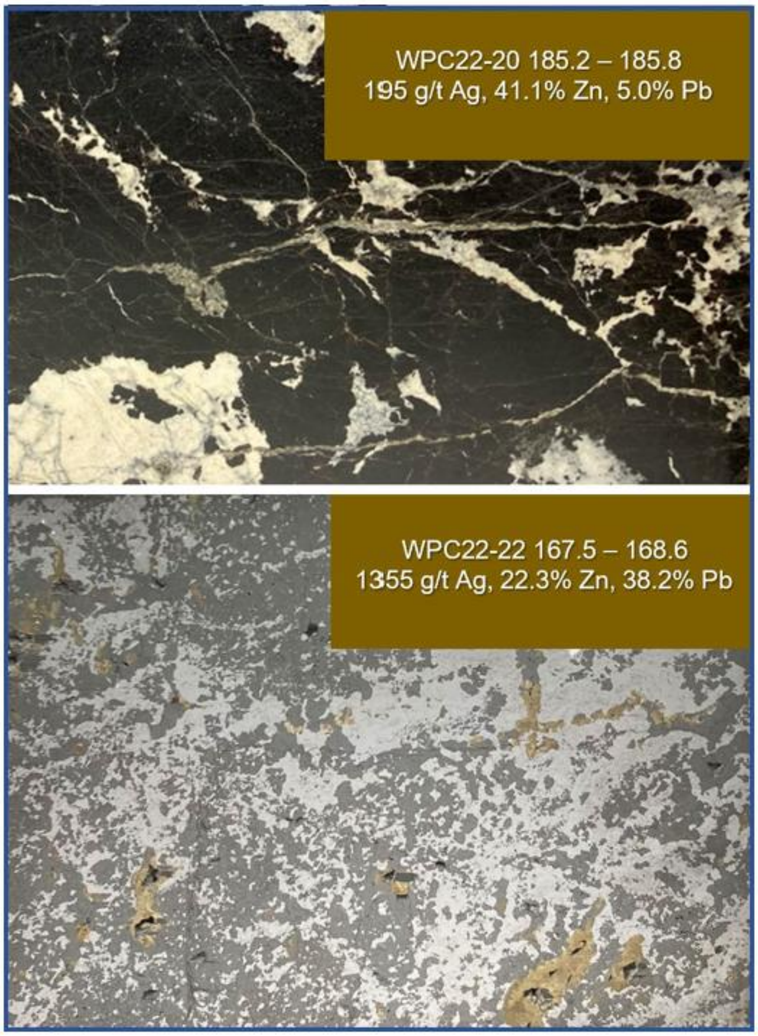
Figures 7.11 and 7.12 show typical partial to complete replacement textures and grades encountered in the manto-form mineralized bodies. Figure 7.13 shows complex breccia textures indicative of the chimney mineralization encountered in DH's WPC22-17 and 18.

Figure 7.11: Partial Replacement Textures showing Primary Bedding



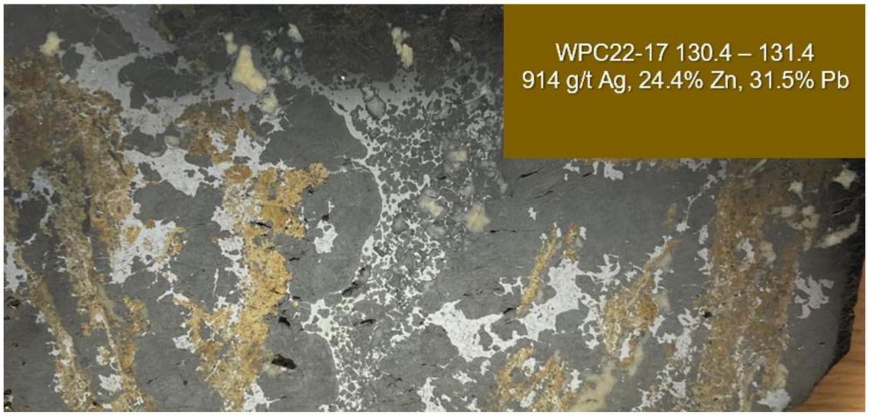
Source: WAM (2023)

Figure 7.12: Complete Massive Replacement Textures



Source: WAM (2023)

Figure 7.13: Complex Brecciated Chimney Mineralization



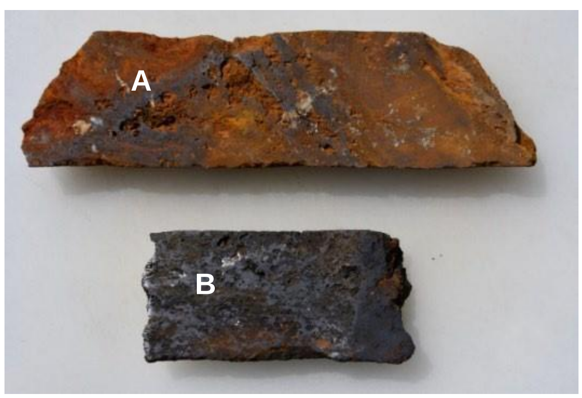
Source: WAM (2023)

7.3.3 Oxide Mineralization Distribution – Illinois Creek

Gold and silver mineralization occur throughout the zone of gossanous material that strikes east-northeast and dips from 40 to 70 degrees south at the Illinois Creek mine. Drilling and trenching have defined mineralization and anomalous gold values over a total strike length of about 3,600 m, a true thickness of up to 100 m, and a vertical depth of 400 m. Individually recognized subunits mostly consist of massive hematite and limonite, strongly ferruginous quartzite, manganiferous-ferruginous quartzite and manganiferous iron oxides.

Figure 7.14 shows typical core intervals for both FG and FMG (Ferruginous and Ferruginous Manganiferous Gossan) from Illinois Creek deposit.

Figure 7.14: Core Sample Photograph of FG and FMG

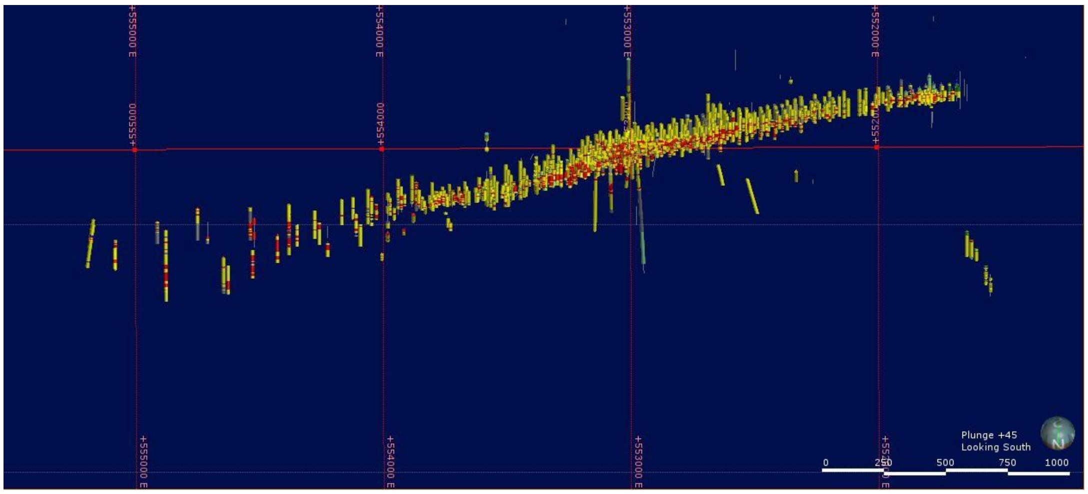


A) Ferruginous Gossan (FG) - Sample IC95-025 188 m grading 0.3 ppm Au and 45.3 ppm Ag.
B) Ferruginous Manganiferous Gossan (FMG) - Sample IC95-040A 93 m grading 1.31 ppm Au and 6.2 ppm Ag

Source: WAC&G (2019)

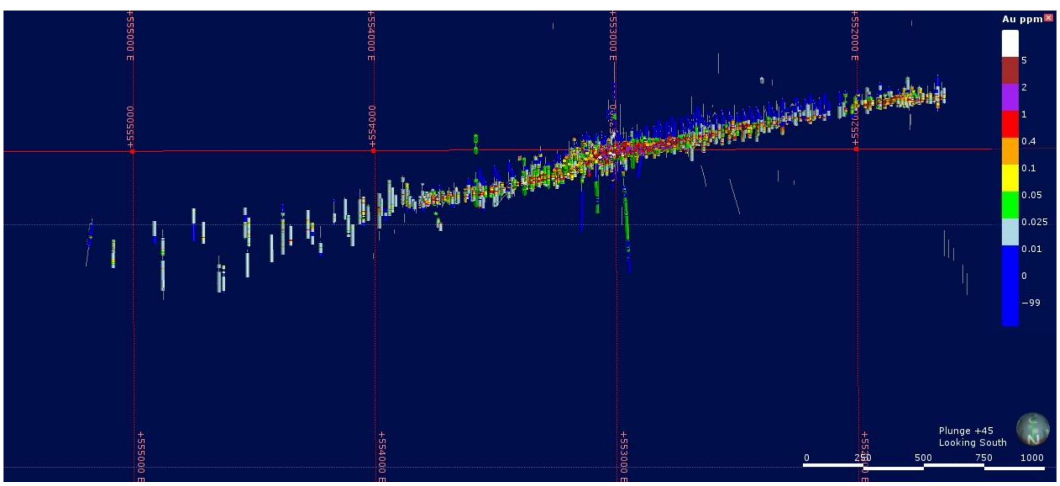
Figure 7.15 shows a 3D perspective view of the FG and FQ units within the surrounding calcareous and dolomitic quartzites at the Illinois Creek deposit looking south at 45 degrees. Figures 7.16 and 7.17 show similar perspectives with gold and silver grades.

Figure 7.15: 3D Perspective View of Illinois Creek Deposit showing FG and FQ Units (red) and Calcareous & Dolomitic Quartzites (yellow)



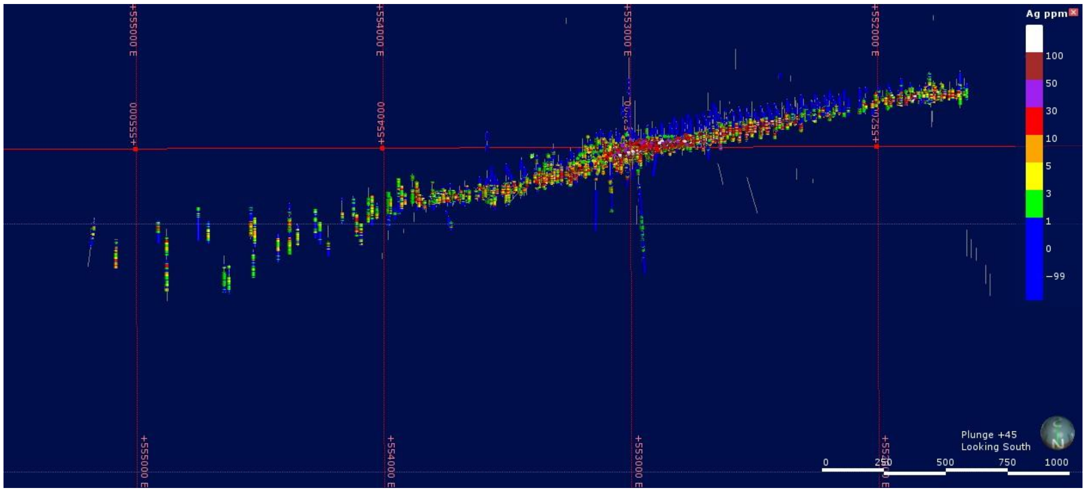
Source: WAC&G (2019)

Figure 7.16: 3D Perspective View of Illinois Creek Deposit showing Gold Grades



Source: WAC&G (2019)

Figure 7.17: 3D Perspective View of Illinois Creek Deposit showing Silver Grades



Source: WAC&G (2019)

7.3.4 Oxide Mineralization Characterization – Illinois Creek

In the zone of oxidation, ore consists of hematite, goethite, limonite, jarosite, psilomelane (wad) and manganite. Iron oxides show a variety of textures ranging from in-situ crystals derived from oxidation of sulfides and carbonates to botryoidal growths and acicular needles of transported iron. Earthy, hematitic gossan and quartzite contain the highest gold grades. According to Kirkham and Apel (1993), quartz veining and groundmass silicification is spatially related to better gold mineralization.

Analysis of polished sections and scanning electron microscope (SEM) measurements by Anaconda and NPMC suggest that the gold is present in its native state and as electrum in grains less than 20 microns in diameter. Gillerman et al. (1985), note that high gold grades are associated with visible copper oxides and brick red, hematitic limonites. SEM work by Hossein Salek (Gillerman and Brewer, 1985) found micron-size native gold grains in iron oxides. MRDI's evaluation of theoretical grain sizes, based on duplicate assays of sample pulps, supports a relatively small grain size.

Silver is present as electrum, argentojarosite and native silver and is strongly associated with the occurrence of manganese oxides.

Deep holes drilled by Anaconda in 1982 provide some limited information regarding the nature of unoxidized mineralization located down-dip from the gossan ore zones. At a depth of >400 m below surface, unoxidized mineralization consists of iron and manganese-rich carbonate, with arsenopyrite, pyrite, quartz, base-metal sulfides and sulfosalts.

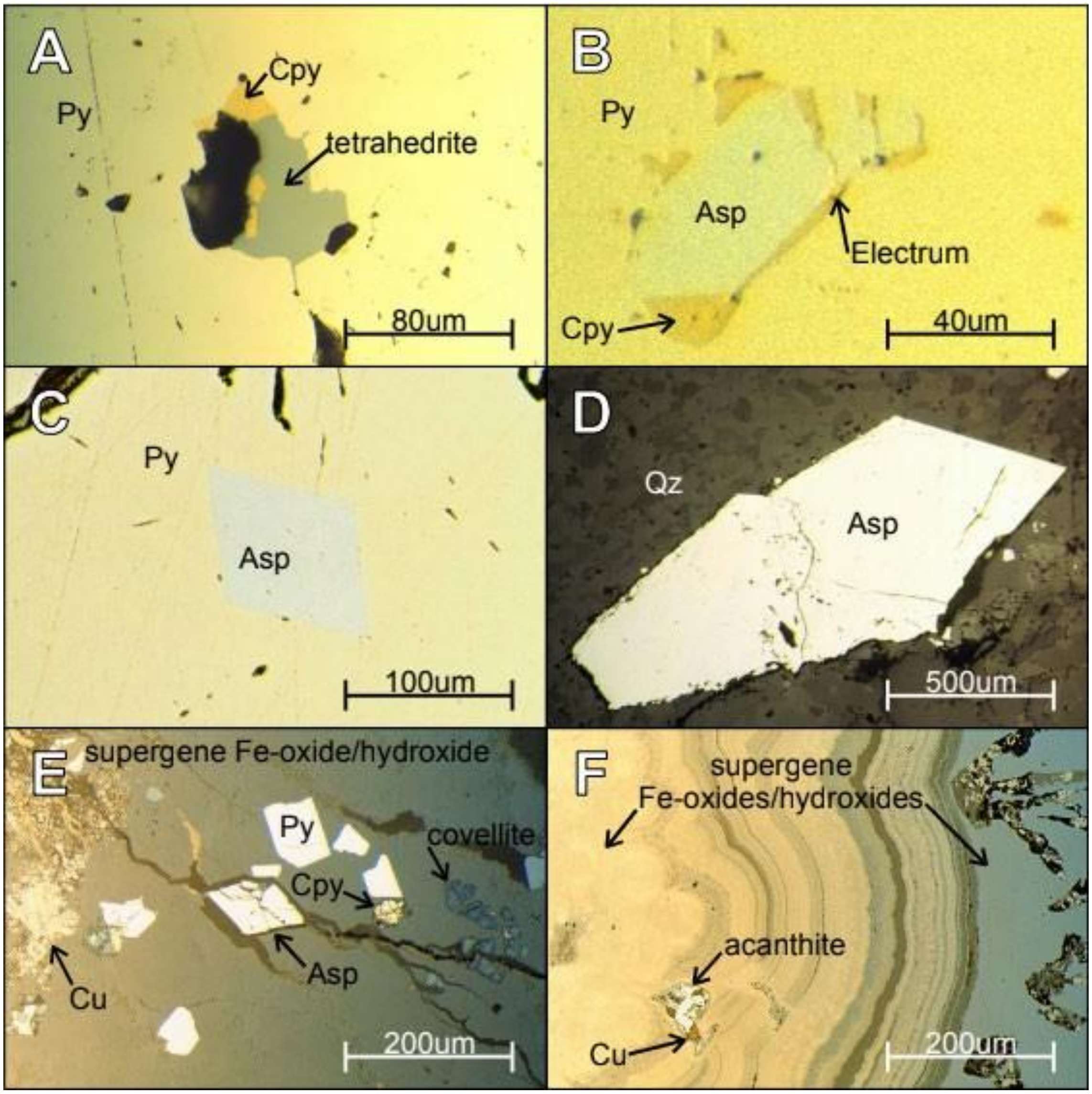
In addition to the information gleaned from the deep Anaconda holes at Illinois Creek, Anaconda drilling at Waterpump Creek encountered classic carbonate replacement mineralization with sulfides dominated by sphalerite, galena, argentite, chalcopyrite, boulangerite, pyrite, and arsenopyrite.

Flanigan (1998), as a part of his thesis, conducted detailed reflected-light and SEM analyses to further define the mineralogy of the Illinois Creek and Waterpump Creek deposits. Though the Illinois Creek deposit is almost entirely oxidized, a few intervals with trace primary sulfides remain and, even in the most highly oxidized samples, some microscopic sulfides are present.

At Illinois Creek, pyrite appears to be the most abundant primary sulfide, with most other primary sulfide minerals occurring as inclusions in pyrite or on pyrite-grain boundaries. These include sphalerite, chalcopyrite, arsenopyrite, tetrahedrite, and electrum. Additional minerals, too fine-grained to be recognized petrographically, were identified using the electron microprobe and include native bismuth, bismuthinite, stannite, tetrahedrite, stibnite, boulangerite, and galena.

Figure 7.18 shows photomicrographs of typical albeit rare, primary mineralization at the Illinois Creek deposit.

Figure 7.18: Reflected Light Photomicrographs of Rare Primary Minerals at Illinois Creek



A) Sample IC9103-195.5'showing tetrahedrite with associated chalcopyrite included in pyrite.
B) Sample IC9103-195.5' showing arsenopyrite with associated chalcopyrite and electrum included in pyrite.
C) Sample IC9103-195.5' showing euhedral arsenopyrite in pyrite.
D) Sample IC10-862m showing euhedral arsenopyrite in vein quartz.
E) Sample from trench 9109 showing remnant sulfides in a highly supergene oxidized matrix.
F) Sample from trench 9109 showing varying degrees of hydration in limonite with supergene related native copper and acanthite.

Source: Teller and Wilson (1985)

Additional results from mineralogical studies conducted by Hossein Salek from Anaconda's Tucson research lab are documented in a series of internal memos (1984 and 1985). Table 7.6 shows recognized oxide zone minerals at the Illinois Creek deposit (Salek, 1984a; Salek, 1984b).

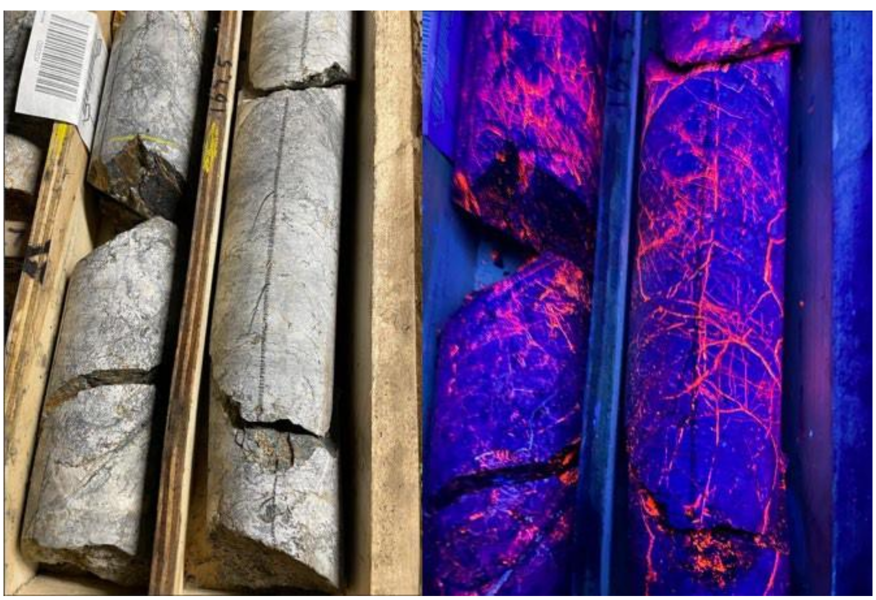
Table 7.6: Mineralogy of the Illinois Creek Oxide Deposit

Oxide Zone Minerals
Anglesite Argentojarosite Arsenobrackenbushite Azurite
Beudantite Bindheimite Carminite Cerrusite Cornwallite
Delafossite Electrum Fluorite Fraipontite Hemimorphite
Hopeite Malachite Massicot Mimetite Native Gold
Plattnerite Plumbojarosite Schultenite Scorodite
Geothite Hematite Todorokite Psilomelane Pyrolusite

7.3.5 Alteration

Alteration at Illinois Creek varies considerably from proximal to more distal environments. At and adjacent to distal Waterpump Creek Ag/Zn/Pb mineralization, alteration is subtle at best. Broadly bleached zones of dolomite occur immediately in contact with high grade massive and semi-massive sulfide mineralization. Slightly elevated Zn values to ~300 ppm form a halo varying from 50-100 meters around the mineralization. A weak halo of manganiferous calcite veins is often present extending up to 50 meters above and laterally from the mineralization. Dubbed fugitive calcite veins, these veins represent spent ore fluids still enriched in Mn. The veins fluoresce bright red under in shortwave ultraviolet (UV) light. Figure 7.19 shows bright red fluorescing fugitive calcite veining next to the Waterpump Creek sulfide body.

Figure 7.19: Fugitive calcite veins under natural light and SWUV Light



Source: WAM (2023)

At Last Hurrah and the more proximal Illinois Creek oxide deposit, alteration is considerably more widespread and intense than that seen at the distal Waterpump Creek deposit. Wide alteration haloes characterized by 10 to >100 meters of sanding are evident with widespread anomalous Zn and Pb geochemistry to >1000ppm. This disaggregation of the dolomite and dolomitic quartzites suggests increasingly acidic fluids as the core of the system is approached. Figure 7.20 shows strong sanding in the footwall of the Illinois Creek fault and gossan.

Figure 7.20: Strong sanding in the Illinois Creek central pit

Source: WAM (2023)

7.4 Adjacent Properties

No information from any adjacent properties owned by WAM was used in the estimate of mineral resources at the Illinois Creek Property.

In addition to the Illinois Creek deposit, WAC&G is actively exploring its wholly owned Round Top and Honker properties located about 23 km northeast and 10 km north-northwest, respectively, of the Illinois Creek deposit.

7.4.1 Round Top Property

At Round Top, a high-level molybdenum- and silver-based porphyry copper deposit (PCD) has been identified with sheeted chalcopyrite/covellite and minor base metal veins with illite alteration in a high-level lithocap dominated by argillic alteration as kaolinite. Deep surficial oxidation has resulted in the development of an extensive chalcocite-enrichment blanket with several enriched horizons. An extremely complex diatreme brecciation event precedes primary mineralization. A total of 38 drill holes were completed at the Round Top porphyry copper deposit. Initial deeper drilling has recognized early higher temperature stockwork, molybdenum- enriched mineralization. Magnetic susceptibility modeling along with alteration and geochemical vectoring suggests primary biotite/magnetite/chalcopyrite/trace-bornite mineralization that lies north of current deep-drilling, which has reached depths of 750 m.

In addition to the Round Top porphyry mineralization, widespread carbonate replacement mineralization and attendant soil anomalies lie immediately west of the Round Top porphyry system in the Illinois Creek formation at the TG and TG North (TGN) occurrences. A total of 13 drill holes targeting the TG/TGN carbonate replacement mineralization were completed on this property.

7.4.2 Honker Prospect

The Honker prospect is a north-northeast-trending low-sulfidation vein prospect discovered by Anaconda in the early 1980s. During its tenure, approximately 1,000 m were drilled in 10 short drill holes. Five holes intersected mineralization, three of which intersected the main vein, returning intervals averaging 2.6 m at 5.3 g/t Au with a maximum intercept of 4 m of 6.6 g/t Au. The remaining five holes were drilled in either the footwall or hanging wall. The vein which occurs in rubble crop over an 800 m interval shows numerous surface and channel samples often in excess of 10 g/t Au with many samples in excess of 1.0 oz/t Au. Depths of oxidation are in excess of 150 m. Initial Anaconda metallurgical work on the vein mineralization suggest gold recoveries of >90% by leaching (Brewer, 1981).

In its 1982 annual report, Anaconda estimated that the Honker target could easily contain 1M to 2M tons at a grade of 0.25 oz/t (250k oz or greater). The Honker prospect provides important synergies and a valuable upside to increasing the mineral resource and throughput in any future Illinois Creek mine development (Brewer and Millholland, 1982).

WAM minerals drilled a short 6-hole program at Honker in 2021.

8 DEPOSIT TYPES

The Illinois Creek district hosts a series of deposits related to Cretaceous-age magmatism, including porphyry Cu/Mo/Ag systems as well as marginal CRDs and low to intermediate sulfidation gold veins.

The Illinois Creek property is best described as a CRD system which has added potential to host a yet undiscovered causative porphyry Cu/Mo/Ag system. The property exhibits both primary sulfide CRD mineralization best exemplified by the Waterpump Creek Ag/Zn/Pb deposit, and secondary oxidized gossan mineralization as seen at the Illinois Creek oxide Au/Ag/Cu deposit.

Property wide mineralization zonation is characterized with Cu/Au/Pb/Ag/As/Bi zoned to the south and west and Pb/Zn/Ag/Sb/Mn zoned to the north and east.

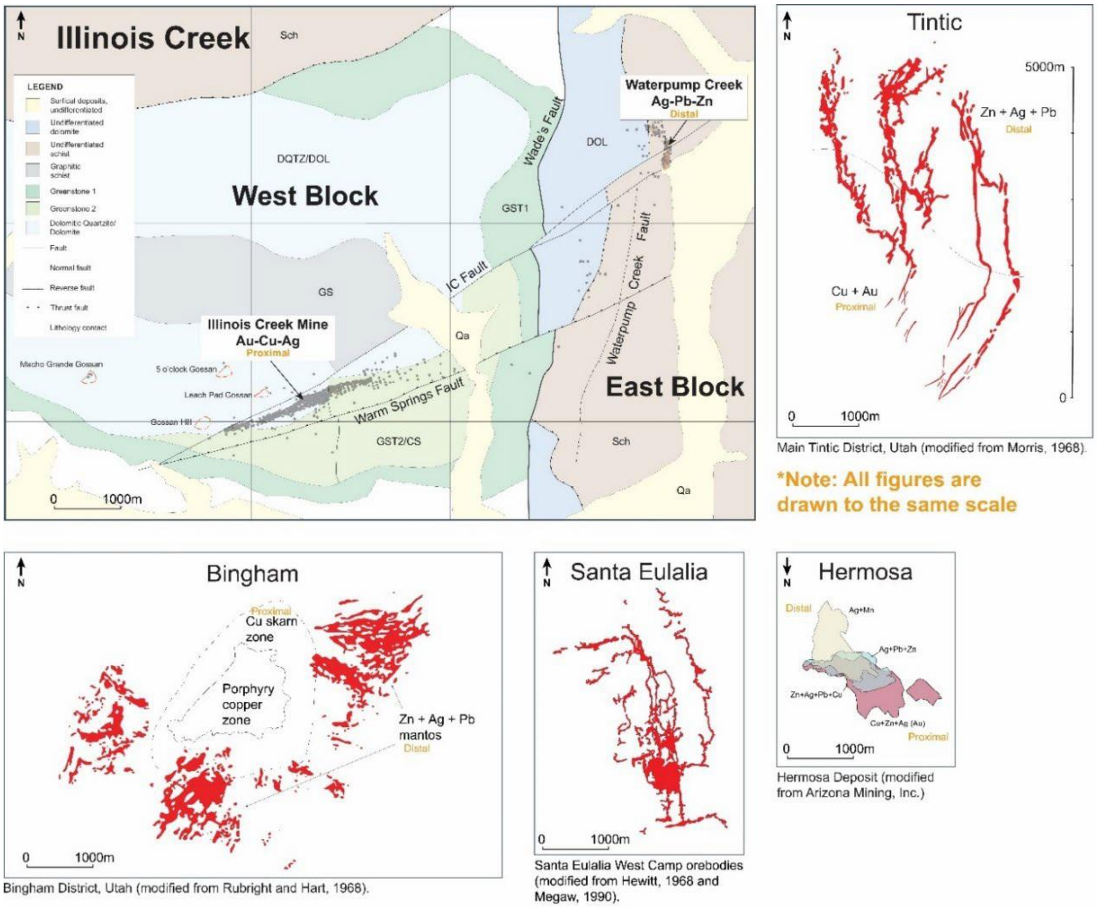
CRD's are best described as carbonate-hosted, intrusion-related, high-temp (>250°), multiphase, zoned polymetallic deposits formed as a consequence of the direct continuous replacement of limestones or dolomites. They can be part of continuum into Zn-rich skarns and porphyries though not all CRD's systems contain productive skarns or porphyries. Fluid pathways are characterized by the lateral replacement of selective beds (mantos) or structural cross cutting bodies (chimneys).

Metal transport in CRD systems is by chloride (Cl)-complexes in acidic, highly saline fluids. Deposition is due to the breakdown of the Cl-complexes as a result of acid neutralization of the highly acidic saline fluids. The volumetric decrease during dissolution of the carbonates allows for continued expansion of the fluid into the surrounding carbonates, a process also known as self-stoping. The overall gradual temperature decrease of the mineralizing fluids along the strike of mineralization imparts classic porphyry metal zonation from proximal to distal as Au, Cu, Zn, Pb, Ag, Mn.

An important implication of these depositional controls is that in closed systems, where the fluids are constrained below aquitards or within selective stratigraphic units, temperature gradients can be very low with only acid neutralization having a significant impact on high-grade deposition. This results in often very long and very continuous rods or tubes of replacement mineralization that may be kilometers in length and extend outward from the core of the systems and primary porphyry fluids.

This results in classic CRD ore body distribution often labelled skeletal or spoke distribution patterns. Figure 8.1 shows the Illinois Creek system and four notable comparative CRD systems some with economic porphyries and some without. These comparison include: Santa Eulalia in Mexico; Tintic and Bingham Canyon in Utah, USA; and Hermosa in Arizona, USA. The systems are all shown at the same scale and also show both skeletal and spoke like manto distributions.

Figure 8.1: Comparison of Illinois Creek CRD system with Major Worldwide CRD systems



Source: WAM (2023)

Notably, the Hermosa discovery and subsequent acquisition by S32, a major Australian mining company in 2019, has led to a resurgence in CRD exploration. The Hermosa deposit lies in the Red Mountain porphyry mining district in the Patagonia Mountains of southern Arizona where the Hermosa (Taylor) zinc-lead-silver CRD system flanks the Sunnyside porphyry. Other important CRD systems include the Leadville and Gilman districts in Colorado, the Superior mining district of central Arizona, where the Magma Mine replacement deposits flank the Resolution porphyry Cu/Mo deposit, and a series of Mexican deposits including Cinco de Mayo, Naica and Platosa.

9 EXPLORATION

9.1 INTRODUCTION

Summaries of the exploration conducted by the previous operators of the Illinois Creek Property are shown in Section 6 (History). This section of the report mainly summarizes the exploration completed by Piek Exploration and WAC&G. Some of these studies are a continuation of exploration initiated by the various previous operators.

9.2 Geochemistry

In 2015, Piek Exploration compiled all the available historical soil surveys. A total of 27 discrete surveys by five companies were completed at Illinois Creek resulting in an overall database of 3,575 samples. Unfortunately, the majority of the soils were analyzed for only a limited number of elements, primarily copper, lead, zinc, gold, silver, antimony, arsenic, and manganese. In some cases, only gold and silver values are available.

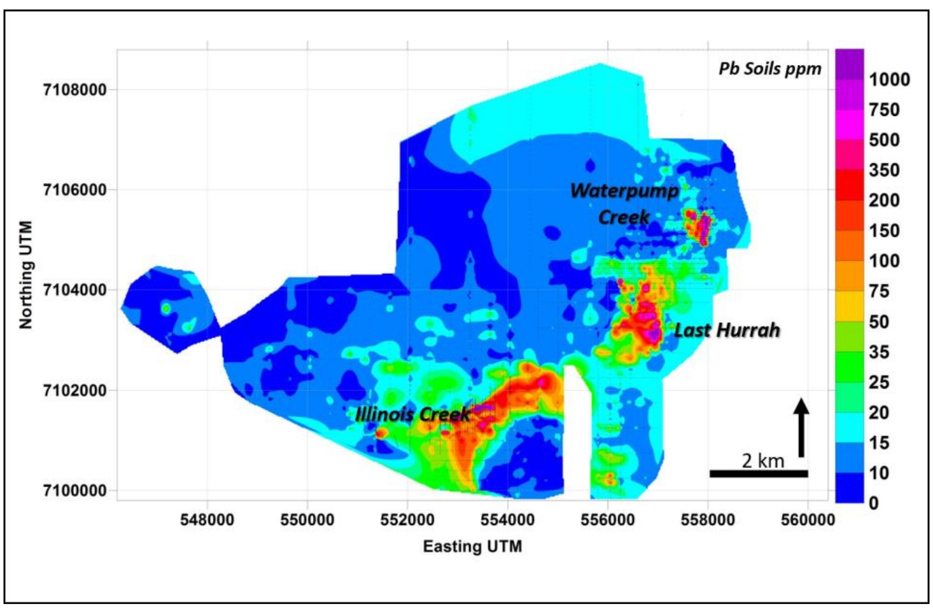
In 2015, Piek Exploration collected another 44 samples for ICP assay along four short lines over projections of the west extension of the Illinois Creek deposit. The results produced values as high as: 219 ppm Cu, 988 ppm Zn, 425 ppm Pb, 22 ppb Au, and 8 ppm Ag.

In 2020, 2021 and 2022, WAC&G completed three major soil surveys directed at additional multielement ICP geochemistry augmented by 4-acid digestion of the samples to better quantify not just anomalous mineralization but lithogeochemistry to better map surface geology. Total samples acquired for the respective years are 182, 877, and 518. The total soil database for all known soil surveys on the property now totals 5,196 samples.

9.2.1 Soil Geochemistry - District Soils

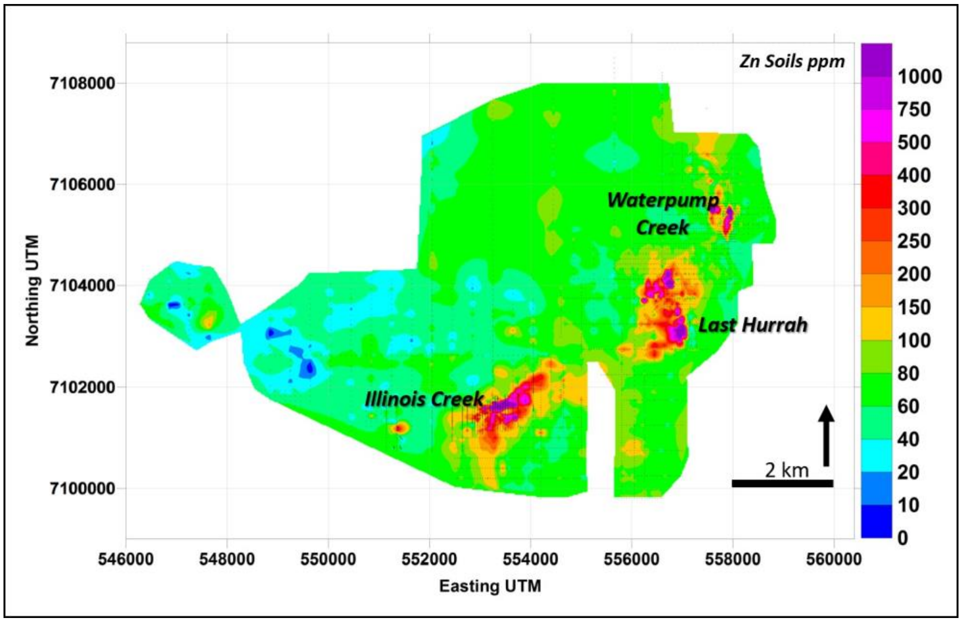
Plots of the consolidated district soil database are seen in Figures 9.1 to 9.5. The plots show lead, zinc, arsenic, gold and copper, respectively, along with major target areas on the Property.

Figure 9.1: Lead Soil Geochemistry – Illinois Creek Property



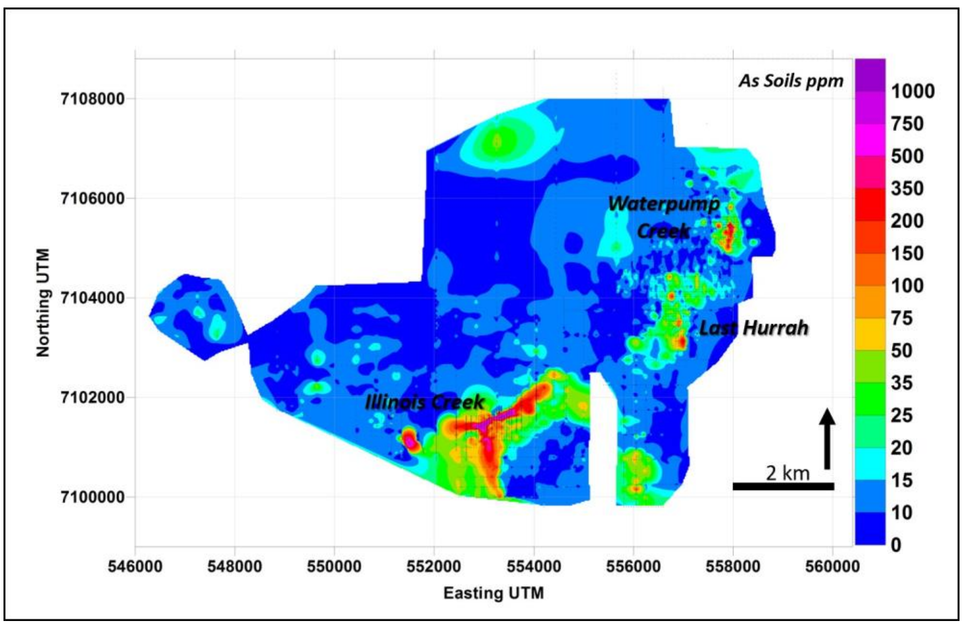
Source: WAC&G (2023)

Figure 9.2: Zinc Soil Geochemistry – Illinois Creek Property



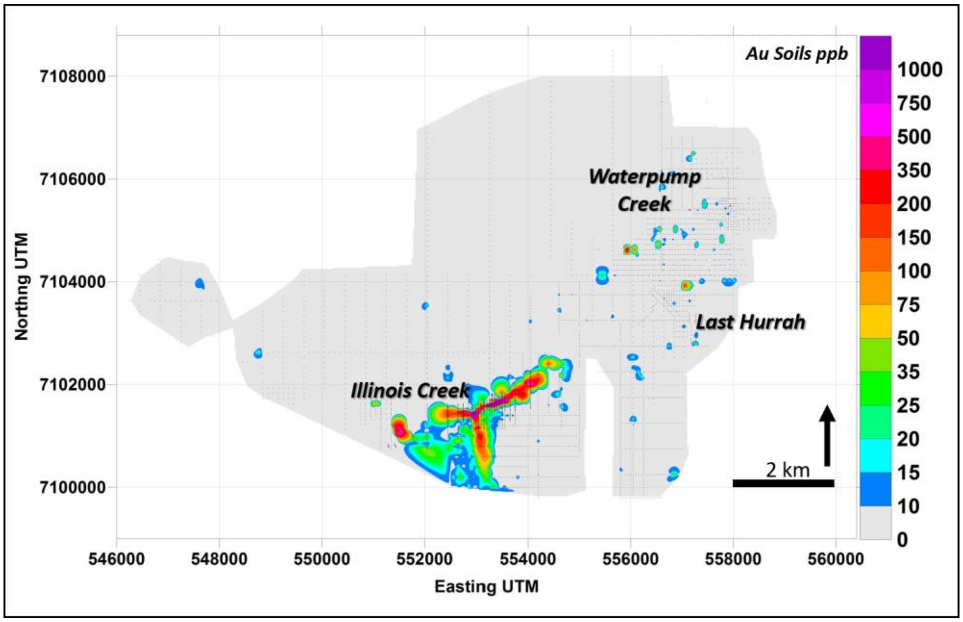
Source: WAC&G (2023)

Figure 9.3: Arsenic Soil Geochemistry – Illinois Creek Property



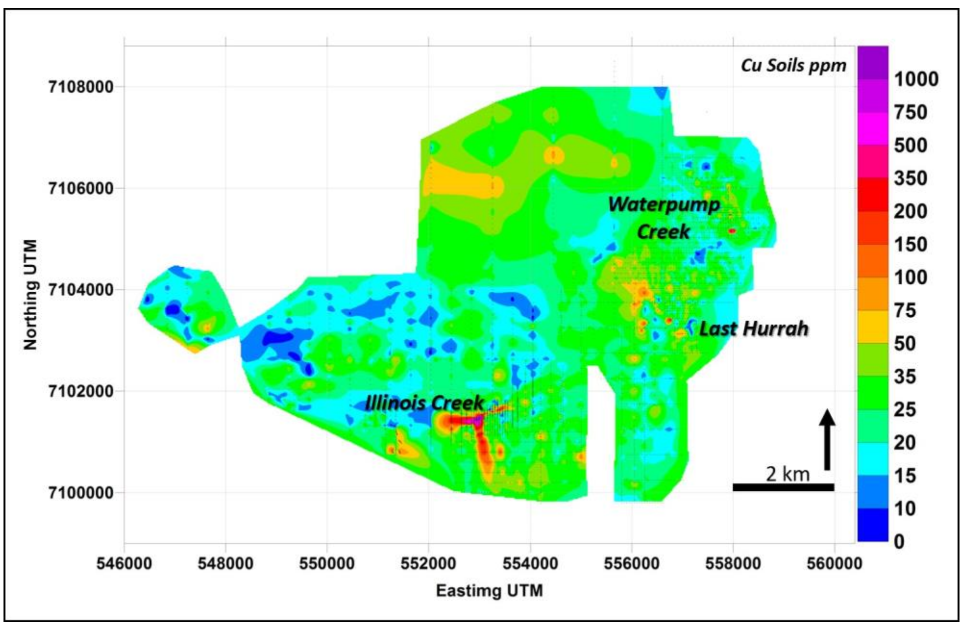
Source: WAC&G (2023)

Figure 9.4: Gold Soil Geochemistry – Illinois Creek Property



Source: WAC&G (2023)

Figure 9.5: Copper Soil Geochemistry – Illinois Creek Property



Source: WAC&G (2023)

The soil plots show the gross property-wide metal zonation with Pb and Zn zoned to the NE and As, Cu and Au zoned to the SW.

9.2.2 Soil Geochemistry - District Soils - Implications

In the East Block very significant Pb, Zn, and As anomalies are shown (Sb, Mn and Ag are not shown though anomalous). These anomalies lie up dip from the CRD-controlling WPC fault structure and reflect fluid leakage along select bedding planes and as mineralization pooled below the overlying pelitic schist thrust plate which serves as an aquitard to fluid flow.

In the West Block, the same anomalous geochemistry is apparent but with significant Au and Cu present both along the Illinois Creek fault structure and as a large 1.5 x 1.5 km anomaly extending south from the Illinois Creek pit and disappearing under alluvial cover in the Little Mud River valley. This anomaly appears to crosscut the property wide greenstone sill that elsewhere (drillholes IC22-01 and 02) acts as an aquitard constraining fluid below the unit.

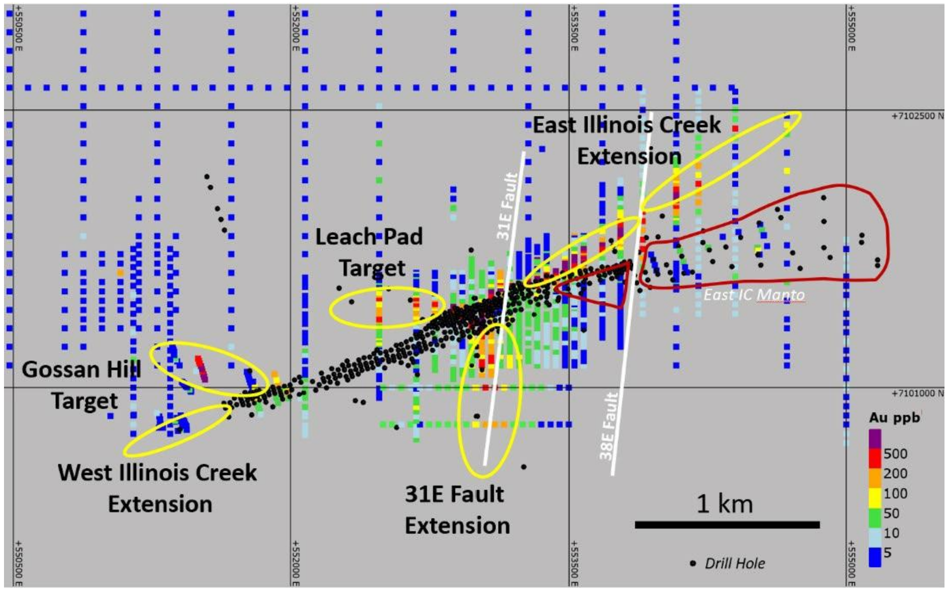
South of the pit, the anomalous soil geochemistry usually confined within permissive carbonate stratigraphy crosscuts all units. Sheeted veining first observed in drill holes IC21-07 and 08 collared immediately south of the pit also suggests a vertical component to mineralization. The presence of sheeted veins may indicate hydrofracturing from an over-pressured open-system porphyry environment versus the closed systems environments of the distal CRD mineralization.

The hypothesis is further substantiated by the increasingly proximal copper and gold values seen in the soil geochemistry. These gradients suggest that the causative porphyry source of the fluids may be somewhere to the south and west of the Illinois Creek pit.

9.2.3 Soil Geochemistry - Extensions of the Illinois Creek Oxide Deposit

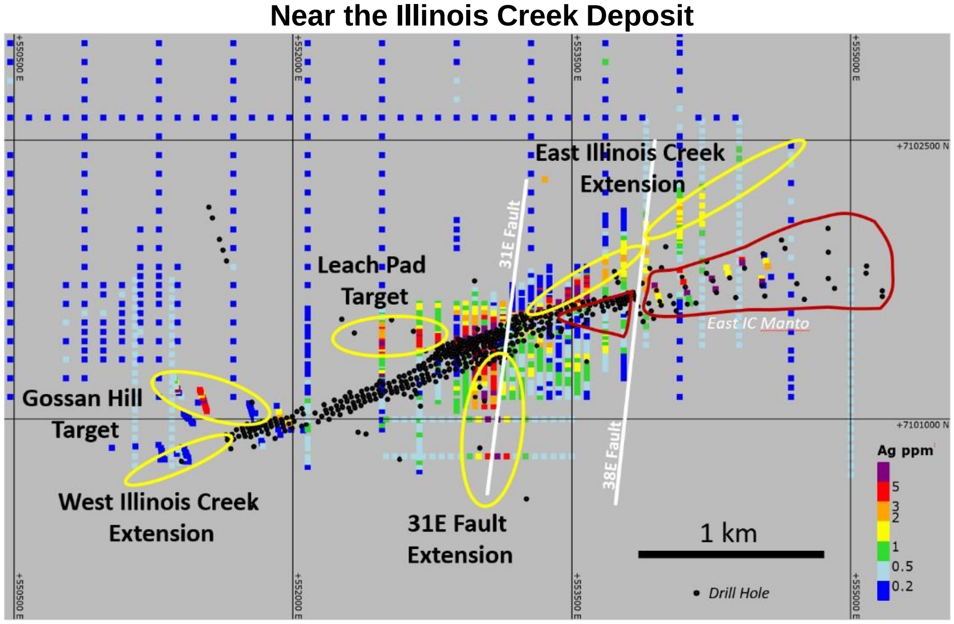
In 2020, to better understand and quantify the potential for additional oxide mineral resources adjacent to the Illinois Creek oxide deposit, WAC&G completed an additional the 182 multi-element ICP soil samples. The compiled soil geochemistry data, together with the recompiled 2001 ARG mapping and sampling, have resulted in the identification of several exploration targets extending from the Illinois Creek oxide deposit as shown in Figures 9.6 through 9.11. The targets shown on the figures include the East and West IC fault extension targets, the South 31E fault target and the Gossan Hill and Leach pad targets.

Figure 9.6: Gold Soil Geochemistry and Oxide Exploration Targets Near the Illinois Creek Deposit



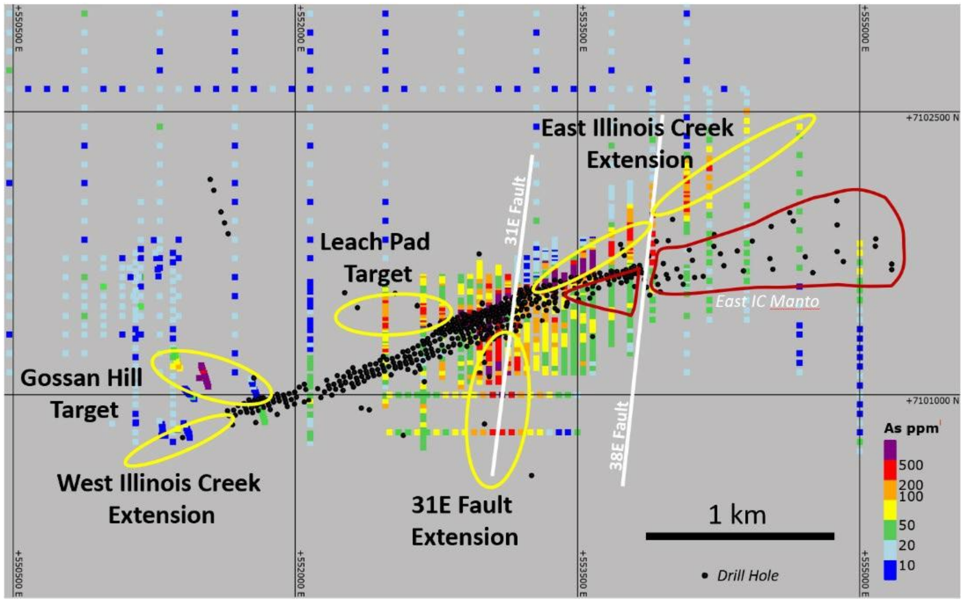
Source: WAC&G (2020)

Figure 9.7: Silver Soil Geochemistry and Oxide Exploration Targets Near the Illinois Creek Deposit



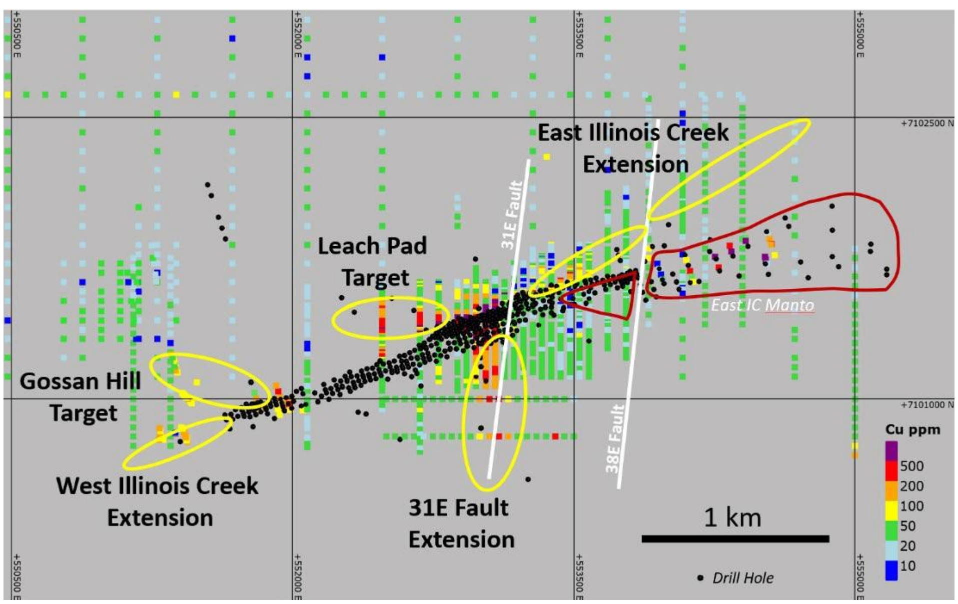
Source: WAC&G (2020)

Figure 9.8: Arsenic Soil Geochemistry and Oxide Exploration Targets Near the Illinois Creek Deposit



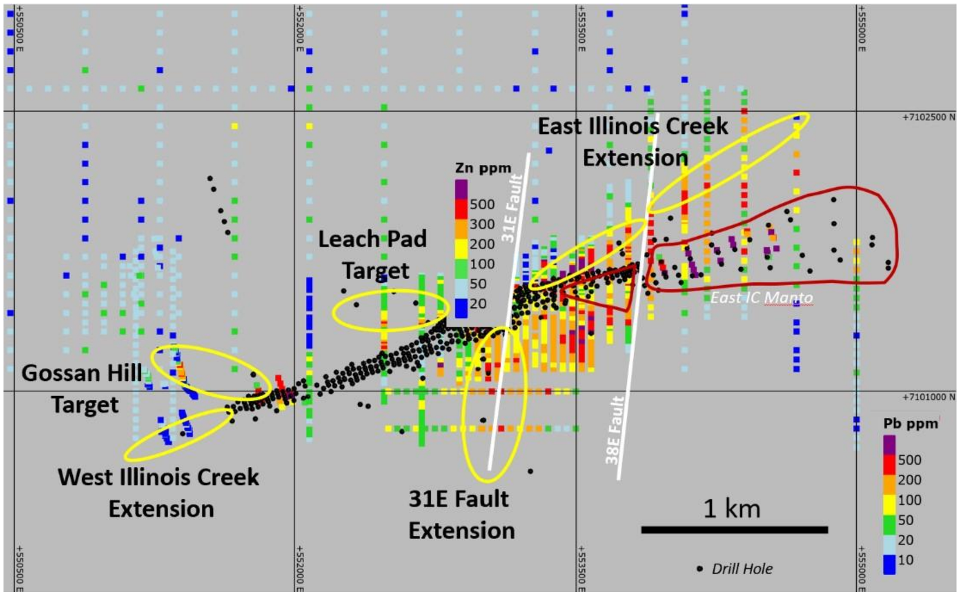
Source: WAC&G (2020)

Figure 9.9: Copper Soil Geochemistry and Oxide Exploration Targets Near the Illinois Creek Deposit



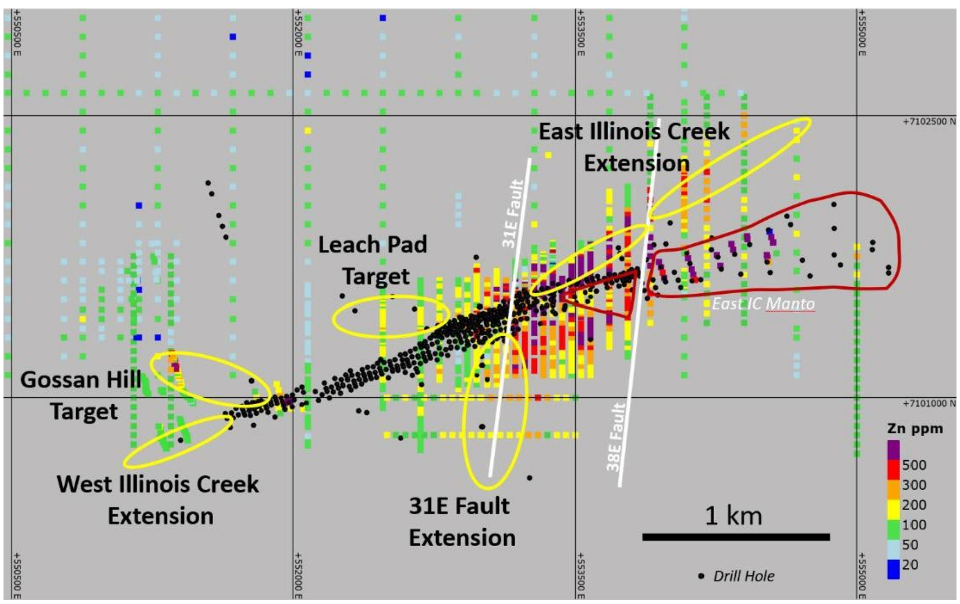
Source: WAC&G (2020)

Figure 9.10: Lead Soil Geochemistry and Oxide Exploration Targets Near the Illinois Creek Deposit



Source: WAC&G (2020)

Figure 9.11: Zinc Soil Geochemistry and Exploration Targets Near the Illinois Creek Deposit



Source: WAC&G (2020)

Though no longer an immediate focus of the exploration, these targets remain viable for expansion of the oxide resources discussed herein in Section 14.

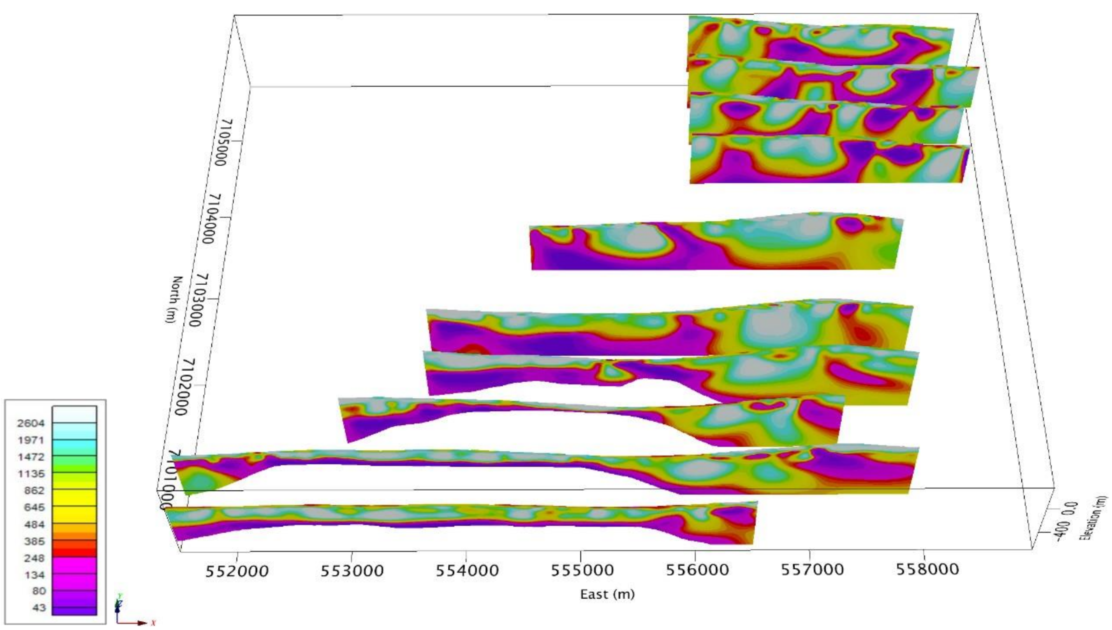
9.3 GEOPHYSICS

9.3.1 2022 CSAMT Survey

In 2022, because of the recognition of the WPC as a potential major CRD target, WAM contracted with Zonge International to undertake a comprehensive CSAMT survey of the Illinois Creek property to better understand the overall structural architecture of the system primarily the major lithologic domains and any apparent pre-, syn- or post-mineral faulting. CSAMT (controlled-source audio-magnetotellurics) is a deep-sounding resistivity technique that effectively delimits areas of similar resistivity and highlights structures bounding those discrete resistivity domains.

Due to limited helicopter availability, only 11 of the 13 lines were completed. Lines are spaced every 500 meters with 100-meter stations between 7106250N on the north and 7100250N on the south. Data for lines 7102750N and 7103750N was not acquired. Total line kilometers of data acquired is 41.7 kms. Figure 9.12 is an oblique view from the south of the 2022 CSAMT survey with resistivity shown in ohms.

Figure 9.12: 2022 CSAMT Survey



Interpretation of the CSAMT resistivity along with the 2004 Edcon gravity survey and the 1983 Aerodat aeromagnetic survey along with the ICP multi-element soil database and the limited surficial mapping provides much of the basis for the updated geologic map (see Figure 7.6).

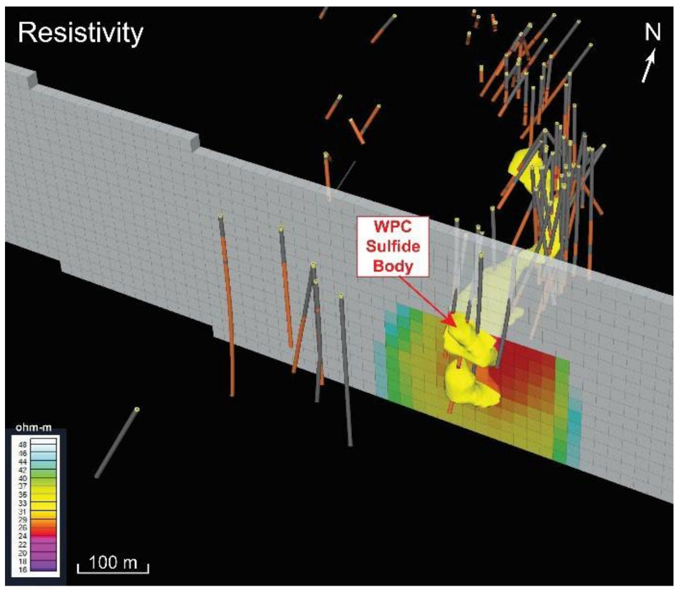
In addition to the 2022 CSAMT survey, WAM has begun a systematic review and reinterpretation of the numerous but piecemeal geophysical surveys undertaken through the life of the project. Most notably a 3D re-inversion of 2005 pole/dipole IP survey completed by Aurora Geosciences for NovaGold Inc, was reprocessed.

9.3.2 Re-inverted 2005 IP survey

With the potential to greatly expand the mineralization footprint, WAM commissioned a re-inversion of the historical 2005 NovaGold pole-dipole IP survey by Bolin Geophysical Services LLC (BGS). In December BGS completed a proprietary 3D re-inversion of the 2D data originally acquired by Aurora Geosciences in 2005.

Figure 9.13 shows a profile of the re-inverted resistivity data for resistivity from the survey. The data shows a direct correlation between both the resistivity and chargeability with the sulfide mineralization at Waterpump Creek.

Figure 9.13: Resistivity Profile through the Waterpump Creek Sulfide Body

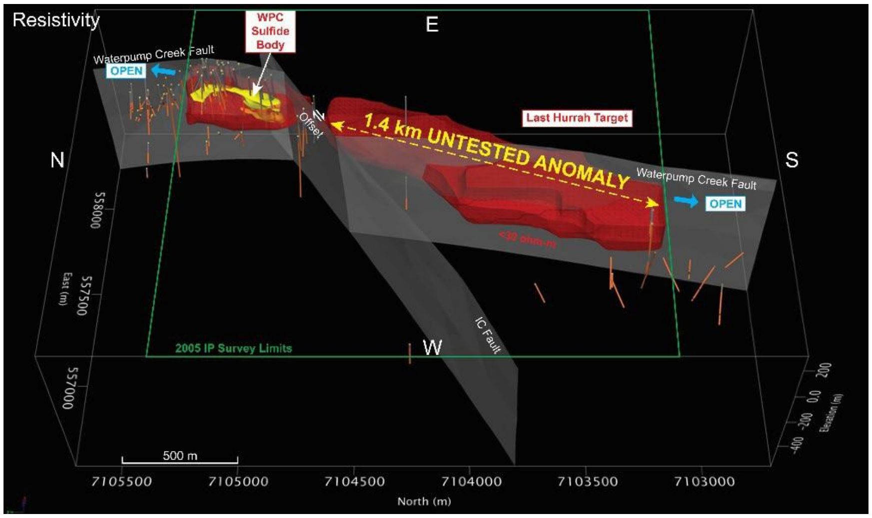


Source: WAM (2023)

The entire 2 km north-south limits of the 2005 IP survey shows that the Waterpump resistivity anomaly continues to the limits of the survey. To the south the anomaly is truncated by a fault roughly 150 m south of the limits of current drilling. The anomaly is then offset to the west where it continues south over 1.4 kms to the limits of the survey in the Last Hurrah target area. The resistivity anomaly continues to the 2 km limits of the current survey both north and south. A 2023 3D IP survey is planned for the entire 6 km strike length of the Waterpump Creek fault.

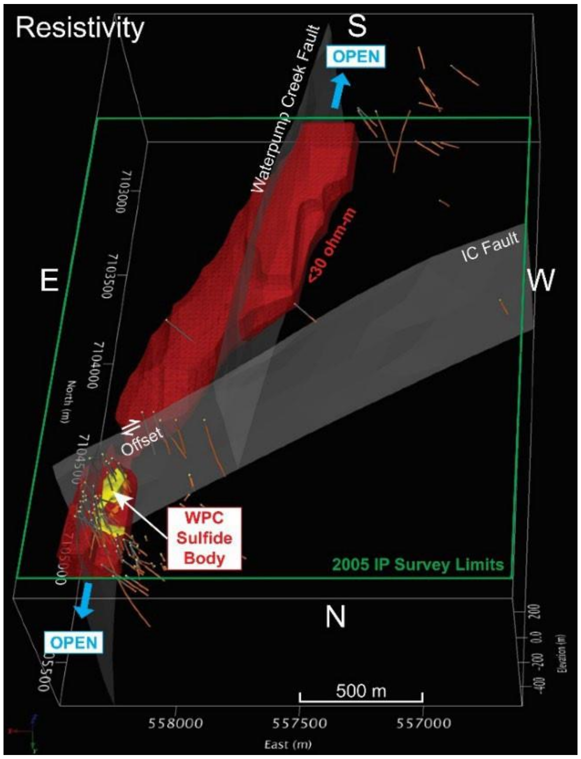
Figures 9.14 and 9.15 are east and south looking views of the IP 30-ohm low-resistivity anomaly from Waterpump Creek sulfide body through the Last Hurrah target area.

Figure 9.14: East-looking View of the Waterpump Creek/Last Hurrah Resistivity Anomaly



Source: WAM (2023)

Figure 9.15: South-looking View of the <30-ohm IP resistivity anomaly looking from Waterpump Creek through the Last Hurrah target area



Source: WAM (2023)

Additional support for this exploration target is based on previous exploration drilling at Last Hurrah which encountered widespread highly anomalous geochemistry as well as numerous thin gossan zones with grades >5% Pb+Zn and >1 opt Ag. Widespread sanding and clay alteration of the host dolomite is common in these drill holes. These altered and mineralized intervals appear to be up-dip leakage mineralization in the footwall dolomites west of the Waterpump Creek feeder fault.

9.4 EXPLORATION TARGETS

The Illinois Creek Property represents a major epigenetic porphyry-centered system which presents opportunities to find both the causative porphyry driving the system and distal CRD mineralization focused within carbonate-rich clastic sediments and carbonates within the lower Paleozoic Illinois Creek formation. Deep leaching in the district has also allowed for extensive oxidation and the development of the Illinois Creek deposit oxide gossans.

Since 2021, a major reinterpretation of the Illinois Creek property geology has been ongoing due to the discovery at Waterpump Creek of sulfide mineralization at depths below previous levels of exploration.

In the East Block the mineralization-controlling NNE-trending Waterpump Creek fault and the look alike Wades fault trend are apparent over the entire 6 km N-S strike length of the CSAMT survey. Immediate extensions to the Waterpump Creek sulfide mineralization and the 1.4 km low resistivity anomaly will be a focus in the planned 2023 drilling.

In the West Block, south of the Warm Springs fault, an extensive greenstone sill caps the permissive stratigraphy and looks to provide an aquitard not unlike that seen in the East Block where the pelitic schists provide an aquitard to trap mineralization. The mineralization permissive stratigraphic section below the greenstone sill identified by the CSAMT profiles outline an approximate 4 x 2 km CRD target area southeast of the Illinois Creek pit.

A Cu, Au, Pb, As soil anomaly covering a 1.5 x 1.5 kms area extending south of the Illinois Creek pit suggests a developing porphyry target in that area.

In addition to the sulfide targets which are the current focus of exploration, additional oxide Au/Ag targets extend in and around the Illinois Creek mine pit. Those targeted anomalies are discussed in depth in section 9.2.3. A summary of the principal exploration targets on the property are outlined Table 9.1.

Table 9.1: Major Exploration Targets – Illinois Creek Property

Target	Style of Mineralization	Exploration Opportunity
Waterpump Creek	Primary Ag/Zn/Pb sulfide CRD mineralization	Test for extensions to the Waterpump Creek deposit.
Waterpump Creek/Last Hurrah Trend	Primary Ag/Zn/Pb sulfide CRD mineralization	Untested IP chargeability and resistivity anomaly striking south from Waterpump Creek through the Last Hurrah area - up dip geochemical support
Wades Fault Trend	Primary Ag/Zn/Pb sulfide CRD mineralization	WPC fault look-alike with known geophysical and geochemical support
Warms Springs Target	Primary Ag/Zn/Pb/Cu/Au sulfide CRD mineralization	Major 2 x 4 km target below West Block greenstone sill in 400m perspective stratigraphy
South IC Porphyry Target	Primary Cu/Mo/Au/Ag porphyry	1.5 x 1.5 km soil anomaly south of the Illinois Creek pit
Extensions of the Illinois Creek Deposit	oxide Au/Ag	Test the eastern extension of Illinois Creek structure soil anomaly.
	oxide Au/Ag	Test the geochemical soil anomaly related to the 31E Fault.
	oxide Au/Ag	Test west soil extensions of the Illinois Creek deposit including the main structure and the Gossan Hill and Leach Pad targets.
Macho Grande/5 o’clock/Nates Gossans	oxide Au/Ag	Limited exploration was completed on these adjacent gossan zones.

10 DRILLING

10.1 INTRODUCTION

A total of 704 drill holes (62,023.7 m) have been completed on the Illinois Creek Property: 259 diamond core holes (31,672.0 m) and 445 reverse-circulation (RC) rotary drill holes (30,351.7 m).

Nineteen different annual campaigns dating from 1981 through to 2022 were conducted by nine different operators. Table 10.1 summarizes the operators, annual campaigns, number of drill holes and total meters drilled on the deposit.

Table 10.1: Drill Campaigns 1981 through 2020

Company/Operator	Year	Drill Hole (DH)	# Drill Holes	Area	Type	Meters
Anaconda	1981	DH-001 to DH-009, DH-007B, DH-007A	11	Illinois Creek	Core	1,433.4
Anaconda	1982	DH-010 to DH-023	14	Illinois Creek	Core	2,862.7
Anaconda	1982	82-301 to 82-318	18	Illinois Creek	RC	2,266.1
Anaconda	1983	WP-83-001 to WP-83-007	7	Waterpump Creek	Core	427.7
Anaconda	1984	WP-84-008 to WP-84-038	31	Waterpump Creek	Core	4,738.8
Anaconda	1984	MG-1 to MG-6	6	Macho Grande	Core	254.0
Goldmor	1988	88-001 to 88-049	49	Illinois Creek	RC	1,098.2
Goldmor	1988	88-006A	1	Illinois Creek	Core	16.8
Goldmor	1990	90-001 to 90-038	38	Illinois Creek	RC	1,815.8
NPMC	1991	91-001 to 91-021	21	Illinois Creek	Core	1,560.5
NPMC	1992	92-001 to 92-021	21	Illinois Creek	Core	1,528.9
Echo Bay	1993	93-001 to 93-166	166	Illinois Creek	RC	18,739.5
USMX	1994	94-001 to 94-041	41	Illinois Creek	Core	2474
USMX	1994	Miscellaneous geotech/monitoring	1	Illinois Creek	Core	91.4
USMX	1995	95-001, 95-006A, 95-003 to 95-024, 95-028 to 95-033, 95-035 to 95-039, 95-044 to 95-082	74	Illinois Creek	RC	4,684.3
USMX	1995	95-002, 95-025 to 95-027A, 95-034, 95040A, 95-040 to 95-043	15	Illinois Creek	Core	1693.1
USMX	1995	Miscellaneous geotech/monitoring	4	Illinois Creek	RC	370.0
USMX	1995	Miscellaneous geotech/monitoring	13	Illinois Creek	Core	815.5
Viceroy	1999	99-001 to 99-023	23	Illinois Creek	RC	731.6
ARG	2002	IC02-01 to IC02-05	5	Illinois Creek	Core	215.3
NovaGold	2005	KH05-001 to KH05-009	9	Waterpump Creek/Last Hurrah	Core	1,215.0
NovaGold	2006	KH06-010 to KH06-020	11	Waterpump Creek/Last Hurrah	Core	1,531.8
WAC&G	2019	IC19-001 to IC19-003	3	West Illinois Creek Mag Anomaly	Core	365.8
WAC&G	2020	L20-001 to L20-073	73	Illinois Creek Leach Pad	RC	646.2
WAC&G	2021	WPC21-01 to WPC21-09 IC21-01 to IC21-08	17	Waterpump Creek/Illinois Creek	Core	1604.4
WAC&G	2022	WPC22-01 to WPC22-28 IC22-01 to IC22-03 LH22-01	32	Waterpump Creek/Illinois Creek	Core	8536.3
Subtotal (RC)					RC	30,351.7
Subtotal (Core)					Core	31,372.0
Total			704		All	62,023.7

Table 10.2 summarizes the drill campaigns, core sizes, and contractors, where known.

Table 10.2: Summary of Illinois Creek Drill Hole Campaigns by Drill Contractor

Year	Total Drill Holes	Meters	Reverse Circulation	Core Size	Drilling Contractor
1981	10	1,433.4	--	HQ/NX	Arctic Resources – core
1982	32	5,128.8	4 ⅞” Tricone 5” Hammer	HQ/NX	Arctic Resources - core SDS – rotary
1983	7	427.7	--	HQ/NX/BX	Nana-Coates?
1984	42	5,408.9	--	HQ/NX/BX	Nana-Coates
1988	50	1,115.0	4” Tricone 4” Hammer	--	M and W Drilling
1990	38	1,815.8	4” Tricone 4” Hammer	--	M and W Drilling?
1991	21	1,560.5	--	HQ/NX	Boyles Bros.
1992	21	1,528.9	--	HQ/NX	Boyles Bros.
1993	166	18,739.5	5.5” Hammer	--	Becker
1994	42	2,565.4	--	HQ/NX	Boyles Bros.
1995	101	7,146.8	4 ⅞” Tricone 4 ⅞” Hammer	HQ/NX	Boyles Bros. Tester
1999	23	731.6	5 ⅜” Tricone 5 ⅜” Hammer	--	Tester
2002	5	215.3	Unknown	Unknown	Unknown
2005	9	1,215.0	--	NQ & HQ	Boart Longyear
2006	11	1,531.8	--	NQ & HQ	Boart Longyear
2019	3	365.8	--	NQ	More Core
2020	73	646.2	2 ⅝” Hammer		More Core
2021	17	1604.4	--	NQ & HQ	More Core
2022	32	8842.9	--	NQ & HQ	More Core
Total	704	62,023.7	--	--	--

Figure 10.1 is a plan map showing the drill campaigns in the Waterpump Creek/Last Hurrah trend. Figure 10.2 is plan showing the drill campaigns in the Illinois Creek trend and used in the mineral resource estimate and Figure 10.3 is a plan map showing RC versus core drill holes used in the mineral resource estimate.

Figure 10.1: Plan Map Showing Drill Campaigns in the Waterpump Creek/Last Hurrah Trend Illinois Creek

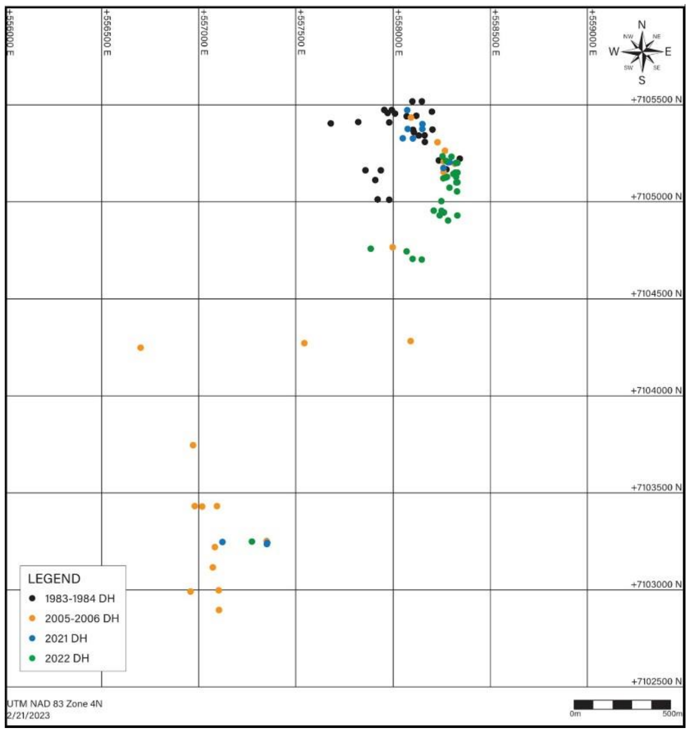
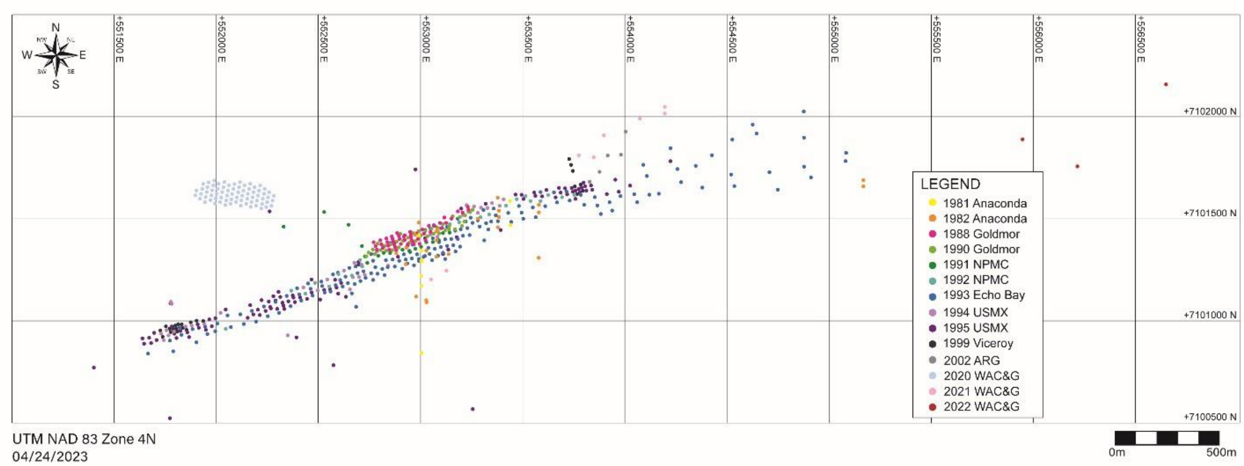
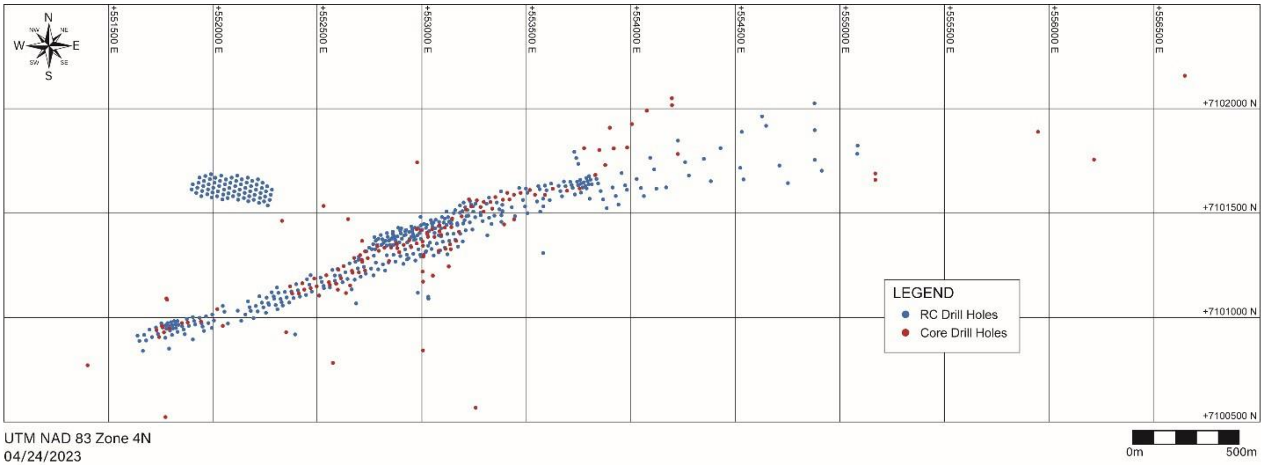


Figure 10.2: Plan Map Showing Drill Campaigns in the Illinois Creek Deposit Area



Source: WAC&G (2023)

Figure 10.3: Plan Map Showing RC and Core Drill Holes in the Illinois Creek Deposit Area



Source: WAC&G (2023)

10.2 DRILLING PROCEDURES

10.2.1 Diamond Drilling Procedures 2021-2022

Western Alaska Copper & Gold uses conventional diamond core drilling methods, utilizing 10-foot drill runs. Each hole is cored from the surface, using HQ (7.78 cm) rods with the option to reduce to NQ (6.03 cm) rods, and even further BQ (4.61 cm) rods if necessary. Drill core is extracted from the core tubes by the drilling contractors and placed in wood core boxes, with wood run blocks placed at the end of the drill run designating depth in feet. Drill core is recovered from the drill rigs by 4x4 vehicles when on access roads, or by helicopter when access is unavailable.

Upon drill core arrival at the core logging facilities, the core is washed, core block locations are marked on the core box, and run blocks are converted from feet to meters. Trained geotechnicians then measure the from-to for each core box and mark the meterage at the top and bottom of the box using permanent marker. Subsequent to the initial intake geotechnicians then complete recovery and rock quality designations (RQD), which are recorded into the logging program GeoSpark Core®. Metal tags are then placed on each wood core box denoting the box number, and the from-to interval on the front of each core box.

Logging geologists will designate lithologies and sample intervals. Sample intervals are set on approximately 1.5-meter intervals and do not cross lithologic boundaries. Samples are denoted by sample tags which are stapled to the core box, with one being saved on the core box and one being sent to the lab. Additionally, geologists will insert quality control (QA/QC) samples in the form of a standard, a blank, or a duplicate, with one of each QA/QC inserted per 27 samples. In conjunction with lithologic and sample breaks, geologists also record structures, mineralization, and alteration in the GeoSpark logging software. Once all geologic logging is completed, photos are taken of all drill core. Cut lines are then drawn on the core perpendicular to the dominant bedding, foliation, or veining. Geologists designate samples for specific gravity testing on a basis of one per lithology, or one every 10 meters for lithologies greater than 10 meters. For intercepts containing sulfide, each competent sample is measured for specific gravity to aid in future resource estimates. Specific gravity measurements are taken on half core following the core cutting process.

Following the completion of all geologic logging, the wood core boxes are sent to the core cutting facilities. Core cutting is completed using diamond core saws. Core cutters will cut each core designated sample in half along the already designated cut lines placing half in a 6mm, 18" x 24" polypropylene sample bags. The poly sample bags are secured with a zip tie and brought to the staging facility.

Once in the staging facility geotechnicians will remove the selected samples for specific gravity measurement. WAC&G utilizes a digital scale and water displacement on site to perform the systematic SG measurements. Upon completion of specific gravity measurements, all samples are re-sealed with zip ties. Once a drill hole has been logged and cut, the samples are placed into labeled rice bags and secured with locking zip ties with corresponding identification numbers. Rice bags are then placed in plastic totes for preparation for air shipment to the ALS Lab facility in Fairbanks, Alaska. A chain of custody is issued with every delivery to the ALS facility in Fairbanks.

10.2.2 Reverse-Circulation Drilling Procedures- 2020

WAC&G drilled all of the 2020 RC holes that test the leach pad area. Other diamond drilling by WAC&G in 2020 tested other exploration targets located away from the Illinois Creek deposit.

WAC&G drilled 73 RC holes using a 2 ⅝ in. conventional hammer in dry drilling conditions. Each 1.5 m (5 ft) sample was collected in its entirety and placed in a labeled bag, sealed and transported to camp and then weighed. At camp, sample batches with a minimum 60 samples or >60 samples needed to complete a hole were assembled. A total of eight QA/QC samples, including two blanks, two duplicates and four standard samples (three different standards: OREAS 153b, 235, and 601b) were placed in each batch and sample numbers were assigned.

A Jones splitter was then used to reduce the original sample to an 8 to 10 kg split, placed in a pre-labeled bag with a perforated sample card number and zip tied. Split samples were again weighed to provide moisture content after lab drying. Any remaining reject from the Jones splitter was saved in the original bag and again labeled with the sample number and stored on site. A double split in consecutive bags with consecutive samples numbers was completed for the duplicate intervals. Both blank samples and standards were inserted in the sample sequencing.

The samples were then placed in pre-labeled rice bags, sealed and securely stored pending air transport back to Fairbanks. ALS Chemex was notified at the time of each shipment and met the samples to take custody from the air transport contractor.

10.2.3 MRDI Procedures Audit 1999

Viceroy contracted MRDI to produce an audit report of the drilling and sampling methods, including sample preparation and assaying processes used during Viceroy's 1999 option with the State of Alaska to mine and then reclaim the remaining mineral resources.

MRDI used reports prepared by Gillerman and Brewer (1985; covering a portion of Anaconda work), Salisbury & Associates (1989; covering Goldmor work), Kirkham and Apel (1993; covering Echo Bay work), USMX (1996; covering USMX work and summarizing all previous work), and an audit report by Fluor Daniel (1996).

Where possible, MRDI confirmed descriptions of the sampling with more detailed reports on file. During its review, MRDI could not locate all of the historical data and reports regarding drilling methods, sampling methods and sample recovery, as described in Kirkham and Apel's report and the Fluor Daniel audit; at that time, USMX had dissolved into bankruptcy proceedings and could not provide the information to MRDI.

Though aspects of the USMX data were lost, NPMC did provide MRDI with a large number of original records (logs, assay certificates, survey records and density test results) for Anaconda, Goldmor, NPMC and Echo Bay work. These were sufficient for MRDI to conduct a complete audit of the drilling and sampling work. Copies of all drill logs, including all the USMX holes, were present at the mine office during MRDI’s review and are most likely the source of the data scanned by NovaGold in 1992 for the State of Alaska.

During the audit, MRDI compiled and imported all available sample assays, check assays, sampling recovery, logs, density measurements and survey data into a Medsystem® database. MRDI extracted assays, geological codes, collar surveys and down-hole surveys which were the basis for its audit and review. Unfortunately, the Medsystem® database did not survive the mine reclamation by ARG.

The current project database was compiled from scanned files of assay certificates, drill logs and memos, compiled annual summaries, miscellaneous reports, and various internal compilations in the scanned data provided to Piek Exploration by NovaGold. Assay data, where available, were entered by hand directly from assay certificates and, where unavailable, were taken from assay-annotated drill logs, seasonal compilations and tabulated data. Though the majority of assay certificates are available, the author recommends that the database is brought up to date with all data sources.

Although extensive trench data was collected and used in previous historical mineral resource estimations, this type of data has not been used in the estimate of mineral resources contained in this Technical Report. WAC&G personnel believe most of the trench sample data were derived from areas in the deposit that were already mined-out.

All drilling and trenching at the Illinois Creek deposit were oriented to a mine grid in which mine grid north is N17°07'15"W and mine grid east follows the strike direction of mineralization at N71° 53'45" E. A majority of diamond and RC holes were inclined at -60 to -70 degrees which is roughly perpendicular to the dip of mineralization with the exception of the Goldmor RC holes which were drilled vertically and generally to depths of only 30 m to 45 m below surface.

Trenches were cut by a backhoe or tracked excavator along a line perpendicular to the strike of mineralization. MRDI reviewed trench maps prepared by Anaconda and NPMC and found that, in all cases, the trenches used in the database reached bedrock at depths ranging from 1 m to 3 m below the surface.

The water table is approximately at the 75 masl elevation throughout the Project site. The surface elevation ranges from 235 masl to as low as 90 masl on the western limit of the drilling.

10.2.4 Historical Diamond Drilling Procedures

There is limited information about specific drill core handling procedures.

Core drilling was used by Anaconda, NPMC and USMX. This comprises approximately 30% of the total assay footage reviewed and used by MRDI in its audit and estimate of the Illinois Creek deposit. Drilling elsewhere on the Property at 5 o'clock, Macho Grande, Waterpump Creek and Last Hurrah used only core drilling; these holes were not used in the mineral resource estimation contained within this technical report.

Core holes in the Illinois Creek area were drilled almost entirely with core rigs producing either HQ (2.5 in. diameter) or NX (2.155 in. diameter) core. In 1984, Anaconda drilled three short BX (1.655 in. diameter) holes.

Anaconda

Anaconda core holes DDH01 to DDH23 are located entirely within the central portion of the Illinois Creek oxide deposit, and these core assays comprise about 11% of the total amount of drilling used for mineral resource estimation at Illinois Creek. At least half of Anaconda's holes were drilled to intersect the gossan at deep levels, testing the upside potential for sulfide mineralization below the oxide deposit. Subsequent core drilling by NPMC and USMX emphasized shallow (< 120 m) holes to delineate the deposit on spacing of 30 m or less.

Minimal documentation exists with respect to Anaconda's sampling methods. Drill logs show that core was sampled at geological contacts on nominal 1.5 m intervals, and some sample intervals are considerably shorter. Core was not photographed, and existing core was destroyed during mine reclamation by ARG.

"Low" recoveries were reported for Anaconda holes in Echo Bay's (Kirkham and Apel, 1993) and USMX's (USMX, 1996a) evaluation of drilling data. MRDI's inspection of core logs revealed recoveries from 60% to 90% in mineralized gossan. MRDI plotted recovery versus gold grade for holes DDH04 and DDH22. Gold values exhibit no relationship to recovery in DDH04. Depressed gold values are associated with low recovery at 26, 44, 55, 88 and 94 m in DDH22. Results suggest that grades may have been somewhat under-estimated in intervals of low recovery.

Anaconda core drilling meets industry standards for drilling this type of deposit.

North Pacific Mining Company

Data for 41 North Pacific Mining Company (NPMC) core holes comprise about 7% of the total amount of drilling used to estimate mineral resources for the Illinois Creek deposit. Core was logged and then split for sampling on 0.3 m to 1.5 m (1 ft to 5 ft) intervals. Core was not photographed. MRDI inspected all drill logs and found that core recovery (obtained by measuring cored intervals) was 90% or greater for all but a few intervals of mineralized gossan.

NPMC core drilling meets industry standards for drilling this type of deposit.

USMX

USMX drilled 65 core holes in 1994 and 1995 to provide nominal 30 m (100 ft) drill spacing for the deposit. A series of monitoring and geotechnical holes was drilled in addition to the holes for mineral resource estimation. A total of 4,657.9 m (15,281.7 ft) of core drilling was completed, comprising about 8% of the drilling used for mineral resource estimation. Drill core was logged for geological and geotechnical parameters, photographed and marked for sampling. Samples nominally measuring 1.5 m (5 ft) were sampled within major lithologies. The core was split with a hydraulic splitter or sawed in half. One half was sent to a laboratory for assay. The other half was retained in core boxes on the Property, and that was subsequently destroyed during mine reclamation.

USMX did not compile or evaluate core recoveries. MRDI's inspection of core logs revealed generally poor (<60%) core recoveries in mineralized gossan. Consequently, MRDI constructed recovery versus grade plots for nine holes with “ore-grade” intercepts. These plots generally show no correlation between grade and recovery.

USMX’s relatively poor core recoveries during drilling does not meet typical industry standards for drilling this type of deposit; however, the degree to which this may influence the estimation of mineral resources appears to be limited. The thickness and grade of mineralized intervals appear to be similar to holes drilled nearby using other methods.

10.2.5 Historical Reverse-Circulation Drilling Procedures

Some RC holes were drilled below the water table along the western margin of the deposit.

RC drilling programs carried out by Anaconda, USMX and Viceroy used water injection to stabilize drill holes. Echo Bay and Goldmor drilled dry, except when water injection was required for drill hole stabilization or when hammer bits plugged in soft material (which was noted to occur frequently). MRDI did a review of the RC drilling in its 1999 study and concluded they were similar in character to the diamond drill sample results. Comparisons made by QP’s and SGI found that RC and DDH samples in proximity compare favorably. There is no reason to believe there is any bias in the RC drill results.

There is only partial knowledge of specific drill sample handling procedures.

Anaconda

The holes were reportedly drilled with either a 4⅞ in. tricone or 5-in. hammer bit. Samples weighing 9 kg to 12 kg (20 lb to 26 lb) were collected on 1.5 m (5 ft) intervals, representing a 13% to 30% cut of the entire sample (Miller, 1982). Anaconda RC holes are all located away from the Illinois Creek deposit and, as a result, none of these data were used in the mineral resource estimation for the Illinois Creek deposit.

Kirkham and Apel (1993) reported that the Anaconda RC holes produced poor recoveries, ranging from 25% to 85% in the gossan. MRDI did not locate Anaconda reports or drill logs that confirmed this, and it did not allow for an independent calculation of recovery versus grade. MRDI stated that RC recoveries of 40% to 60% are normal for drilling in dry conditions or drilling with limited water injection and that Anaconda sample weights were adequate for mineral resource estimations. The QPs for this report agree with these comments.

Goldmor

Goldmor drilling was completed without water injection and above the water table at depths less than 45 m. Goldmor drill holes comprise about 9% of the total meters of drilling used to estimate the in-situ mineral resources at the Illinois Creek deposit.

Kirkham and Apel (1993) reported that the Goldmor drilling experienced "fair to good" recoveries. This was apparently based on a subjective assessment by the rig geologist and not on accurately measured sample weights.

MRDI did not find documentation regarding the size of samples collected or the range of recoveries obtained. Therefore, it is not known if the RC sampling met industry standards.

MRDI inspected assays for intervals of Goldmor holes where those intervals were crossed later by inclined Echo Bay RC and USMX core holes. This assessed the quality of Goldmor drilling relative to drilling for which sample quality was documented. Gold grades were found to be comparable between Goldmor RC holes and Echo Bay RC or USMX core holes. The QPs of this report also noted reasonable comparison of the older, predominantly RC drilling with the more recent diamond core drilling results.

Echo Bay

Echo Bay RC drilling comprises about 49% of the total meters of drilling used for mineral resource estimation for the Illinois Creek deposit. Echo Bay's RC drilling program was carried out to confirm previous drilling and to fill in the gaps in drilling data. Drilling equipment, ground conditions, sample weights, split fraction, water flow and sampling problems were recorded for each sample interval. This information was preserved in Illinois Creek files as photocopies of spreadsheet printouts only. Echo Bay did not tabulate all recovery data, but recoveries varied from 20% to 120%. The average was approximately 40% to 50% based on MRDI’s inspection of the drill logs, which is normal for an RC drill program in highly oxidized rocks.

Echo Bay used a conventional hammer bit in the hanging wall of mineralization and switched to a skirted tricone bit within mineralization. The cyclone discharge was riffle split to 0.125 or 0.25 of the original mass to produce a nominal sample weight of 4.5 kg to 7 kg (10 lb to 15 lb) for 1.5 m (5 ft) sample intervals. Sample weights from 2.3 kg to 11 kg (5 lb to 25 lb) were obtained from a rotary wet splitter for samples below the water table or when water injection was used for drill hole stabilization.

MRDI compared recovery data and gold grades for a series of Echo Bay RC holes. Plots show that gold grades within mineralized sections are generally depressed in intervals with low recovery. Therefore, low recoveries may have resulted in a local under-estimation of grades rather than over-estimation of grades.

Echo Bay found that holes drilled beneath the water table exhibited a loss in collected sample weight and a loss of fines, mostly due to high-water flows that could not be managed with the available sampling equipment. Echo Bay's test sampling determined that the fines are preferentially mineralized and that from 5% to 10% of the gold was lost in unrecovered fines (Kirkham and Apel, 1993). Echo Bay did not find evidence of grade spikes or down-hole contamination.

Unfortunately, RC recovery data are not available in the current sample database. MRDI appears to have conducted a thorough review of the information it had available at that time and come to the conclusion that some gold was likely lost in zones of poor RC recoveries.

Echo Bay's drilling method and recorded data meet industry standards except for holes drilled beneath the water table at the west end of the deposit. The results for 12 holes drilled below the water table in the western end of the Illinois Creek deposit are average for these conditions, and these have relatively little impact on the overall estimate of mineral resources.

USMX

USMX RC holes comprise about 11% of the total amount of drilling used for mineral resource estimation for the Illinois Creek deposit. The RC holes cover a majority of the strike length of the deposit. USMX used a 4⅞ in. hammer or tricone bit. Drilling was dry except when water injection was required due to hole conditions. Samples were collected from a cyclone or rotary splitter at 1.5 m (5 ft) intervals and reduced to a nominal 2.3 kg (5 lb) with a Jones splitter. MRDI determined the USMX sample size was adequate for mineral resource estimation, and the QPs agree with this comment.

USMX geologists visually estimated sample recovery because there was a lack of actual sample weights to calculate the relationship between grade and recovery. MRDI questioned USMX procedures but concluded sample results were adequate given the particle size and distribution of gold within samples.

Viceroy

Viceroy RC drilling represents only about 2% of the total amount of drilling used for mineral resource estimation at the Illinois Creek deposit. Viceroy RC drill holes used a 5⅜ in. conventional hammer bit in the hanging wall of gossan and a 5⅜ in. tricone bit through gossan and adjacent, highly altered rocks (such as sanded, dolomitic quartzite). All drilling was completed with water injection.

Samples were collected with a rotary wet splitter. The primary sample was discharged into a micro-pore sample bag within a 5-gallon bucket. A split, representing between ⅛ to ¼ of the total volume, was used to maintain a sample weight of about 4.5 kg (10 lb). Fifty percent of the outer shell discharge of the splitter was collected as a rig duplicate and stored at the mine. Total sample weight was not recorded; therefore, sample recovery was not calculated. Some fines were lost in the primary sample due to water overflow from the sample bucket but, again, given the fine-grain size of gold in the Illinois Creek deposit, the Viceroy samples are considered to be adequate.

10.3 DRILLING RECOVERIES

Core recoveries by WAM during its 2021 and 2022 drill seasons are respectively 68.5% and 83.2%. Poor recoveries in 2021 reflect the preponderance of drilling in the oxidized zone at Waterpump Creek and in strongly altered and sanded dolomite quartzites in extension drilling along the IC fault on the eastern margins of the IC Creek oxide resource. Additional recovery problems have been encountered at the schist/dolomite thrust contact where broken ground and voids have resulted in poor recovery. Drill core procedures were subsequently modified with significantly improved recoveries in 2022 drilling at Waterpump Creek. Drill recoveries through the mineralized massive sulfide intervals at Waterpump Creek in 2022 averaged 82.1%.

Historical Core Recoveries

To understand the relationship between sample recovery and grade more clearly, MRDI created an electronic spreadsheet of sample recoveries during its historical audit. MRDI used recoveries recorded on logs from Anaconda core holes, NPMC core holes, Echo Bay RC holes and USMX core holes. Detailed recovery information does not exist for RC holes for Anaconda, Goldmor and USMX.

MRDI analyses show the following:

Core Drilling

- Core drilling by Anaconda and USMX exhibits low (less than 90%) recoveries in “ore” zones.
- NPMC core holes were drilled with core recoveries exceeding 90%.
- MRDI's inspection of core recovery versus gold grades shows that there is no correlation between core recoveries and gold grade.

Reverse-Circulation (RC) Drilling

- Echo Bay was the only company that accurately measured RC sample weights. Average sample recovery was about 50%, which is adequate for RC drilling above the water table.
- Anaconda, Goldmor, USMX and Viceroy did not measure sample weights but qualitatively estimated recoveries from the sample size. These companies reported "good" recoveries in most cases.
- The water table was only encountered in the far western portion of the deposit where the static water level is 30 m below the surface.
- MRDI’s evaluations indicate that intervals of poor RC recovery have lower gold grades suggesting that some gold may have been lost during drilling and sampling.

MRDI also reviewed five twinned holes representing twins of core holes and RC holes or different campaigns of RC holes. Its review, although very limited in scope, noted the following:

- The position of gold zones is nearly identical in all twins.

- RC and core holes, or RC holes from different drill campaigns, intersected the same mineralized sections.
- Though one twin pair showed slightly higher values in core relative to RC, the encountered zones were the same in both holes. In general, agreement is remarkably good for the five twins.

MRDI concluded that the drilling method, sample size and average recovery were generally adequate to support mineral resource estimations. The lack of coarse gold compensates for relatively low core recoveries in two of the drill campaigns. Poor sample recovery, however, has most likely led to local under-estimation of gold grades. The QP of this report agrees with the conclusions made by MRDI.

WAC&G leach pad RC drilling in 2020 used a 2.675 in. hammer and 5 ft sample intervals with an assumed 2.3 specific gravity yield 28 lb/samples. Sample recoveries averaged 37 lb/sample. It is not unusual to have some sloughing when RC drilling in unconsolidated material. It is unlikely that these overweight samples have biased the results.

10.4 Collar Surveys

The following collar survey procedures were used by WAM in the 2020 thru 2022 drill seasons:

In 2022, WAM again contracted RECON LLC dba Rowland Engineering Consultants (RECON) to execute a drill collar survey of all drill holes completed during the 2022 field program. RECON personnel used two Leica GS16 multi-frequency Global Navigation Satellite System (GNSS) receivers. RECON surveyors conducted multiple GNSS Real-Time Kinematic (RTK) measurements and static occupations for all reference monuments. RECON tied into the 2021 survey using the HV-8 control point for vertical and horizontal control of all collar location measurements. Collar locations were post processed using Leica Infinity version 3.3 seeding the local datum. All collar locations were surveyed with a vertical and horizontal accuracy of under 3 cm.

In 2021, WAC&G contracted with RECON. During the 2021 field program RECON set and surveyed eight survey reference monuments utilizing two Leica GS16 multi-frequency GNSS receivers. RECON surveyors then conducted multiple GNSS RTK measurements and static occupations for all reference monuments. The raw data was processed in Leica Infinity version 3.3 to correct the collar locations for the local datum; NAD83 UTM Zone 4 North and the local vertical datum acquired from the reference monuments. The RTK survey of all drill collars yielded at least 6 cm positional quality, with 91% of surveyed points having positional quality of less than 3 cm.

In 2020, WAC&G contracted with McClintock Land Associates (MLA) to set control points and locate proposed drill hole locations. All drill holes completed during the 2020 drill program were located and marked with survey lath, and collar horizontal and vertical coordinates were recorded and corrected using the local datum, NAD83, UTM Zone 4 North.

Historical Collar Surveys

The drill collar locations and trench locations during Anaconda exploration were established using Brunton (compass) and tape surveys. No survey records for Goldmor RC holes were found. In 1992, NPMC contracted McClintock Land Associates (MLA), a licensed surveyor, to resurvey the mine grid system and all drill collar and trenches that existed at that time (MLA, 1992). MLA used a Topcon GTS-302D total station. Drill collar locations are quoted as accurate to 0.1 m or less.

MLA was able to relocate and survey the location of all but 34 drill holes. Most of these were from the earliest work by Anaconda. MLA used Anaconda's location records for the 34 holes relative to grid cross lines and readjusted the locations relative to the new grid survey. MLA estimated the accuracy of these drill collars to be about ± 3 m (10 ft). This level of accuracy is considered sufficient for use in the estimation of mineral resources.

In 1994, USMX contracted MLA to update the survey to include Echo Bay and USMX holes to that date (MLA, 1994). Subsequent holes by USMX and Viceroy were surveyed using the mine's total station survey equipment (Scott Bennett, pers. comm.). Data were entered into the MRDI Medsystem® database electronically; therefore, a written survey report does not exist for 1995 and 1999 drill holes.

Where required, the drill hole collar database was subsequently rotated by Piek Exploration to UTM NAD83 coordinate system which is the basis for the current mineral resource study.

Leach pad drill holes were surveyed and staked by MLA prior to the 2020 drill program.

The collar surveys meet industry standards and are adequate to support this mineral resource estimation.

10.5 Down-Hole Surveys

During the 2021 and 2022 drill programs WAM utilized the REFLEX EZ-TRACK downhole survey tool provided by IMDEX. The REFLEX EX-TRACK collects both magnetic and gravimetric measurements using three fluxgate magnetometers aligned in orthogonal directions to measure the azimuth; and three orthogonal accelerometers to measure the dip. During the 2021 program, downhole surveys were collected once the drill hole had reached the total depth and collected as single shot measurements when pulling drill tooling at 50-foot intervals. During the 2022 drilling program, surveys were collected as single shot measurements every 50 feet while advancing each drill hole, and again were collected when pulling the drill tooling once each hole had reached the total depth. All azimuths were then corrected for the magnetic declination of the property as reported by NOAA during each field season.

Historical Down-hole Surveys

Only 56% of core holes (Anaconda and NPMC campaigns) and none of the RC holes were surveyed down hole. Surveyed holes show strong deviations in early Anaconda core holes, but minimal deviations in subsequent NPMC core holes.

Due to the relatively shallow depth of drilling (<120 m), it is not expected that any down-hole deviations have had a material impact on the mineral resource estimation. In addition, ore shapes in the 1998 mineral resource model reviewed by MRDI compared very well with the outline of actual ore zones mined in 1996 and 1997.

11 SAMPLE PREPARATION, ANALYSES, AND SECURITY

11.1 SAMPLE PREPARATION

Aspects of the field sampling procedures are described in Section 10 (Drilling) of this Technical Report.

11.1.1 Protocols

Sample preparation protocols, where known, are shown in Table 11.1.

Table 11.1: Sample Preparation Procedures Drill Campaigns 1981 through 2020

Company	Year	Laboratory	Preparation Protocols
Anaconda	1981–1984	Rainbow Resource Lab, Anchorage, AK Bondar-Clegg, Vancouver, B.C.	Crush Pulverize -100 mesh
Goldmor	1988–1990	Acme Labs	Unknown
NPMC	1991–1992	Chemex, Spark, NV	Crush -10 mesh 250 g split Pulverize 90% passing -150 mesh (208)
Echo Bay	1993	Bondar-Clegg, Vancouver, B.C.	Crush and split Specifics unknown
USMX	1994–1995	Chemex, Spark, NV	Crush -10 mesh 300 g split Pulverize 90% passing -150 mesh (208)
Viceroy	1999	Mine site	Crush -10 mesh 500 g split Pulverize 90% passing -150 mesh
ARG	2002	Mine site	Unknown
NovaGold	2005–2006	Chemex, Spark, NV	Crush -10 mesh 250 g split Pulverize 90% passing -150 mesh (208)
WAC&G	2020	ALS, Fairbanks, AK	ALS Sample Preparation Procedure: Crush to 70% passing 2 mm 1,000 g split Pulverize 85% passing 75 microns
WAC&G	2021	SGS, Burnaby, BC	PRP89 Special: Weigh <10kg, Dry 105°C, Crush to 75% passing 2mm 250 g split Pulverize 85% passing 75 microns
WAC&G	2022	ALS Global, Vancouver, BC	ALS Sample PREP-31 Crush entire sample 70% passing 2 mm 250 g split Pulverize 85% passing 75 microns

11.1.2 Specific Gravity Determinations

WAM 2021 and 2022 SG Measurements

Beginning in 2021, WAM began on site specific gravity (SG) measurements of drill core. SG's were performed on assay sample intervals to eliminate bias and correlate assay results with SG measurements. SG's were measured using a digital scale stationed above a water tank that allows for water displacement measurements of samples after they have been cut. Additionally, specific gravity measurements were taken on a basis of one per lithology, or one every 10 meters for lithologies greater than 10 meters.

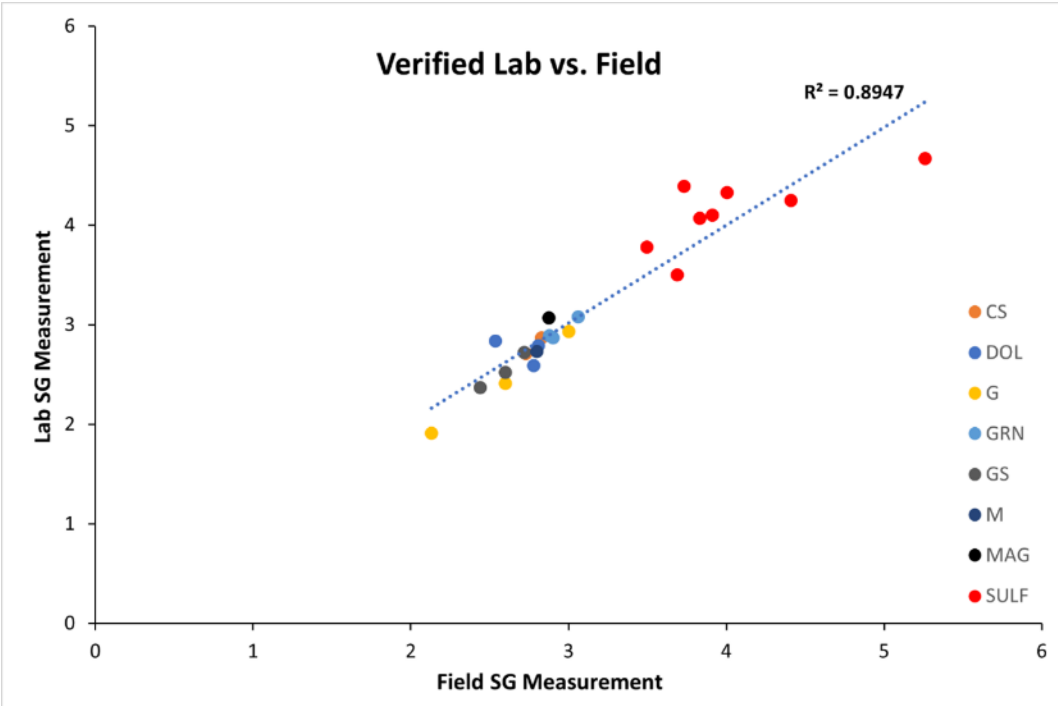
For intercepts containing significant sulfide mineralization, each competent sample is measured for specific gravity to aid in future resource estimates. It is important to note, specific gravity measurements are taken on the most competent intervals, any fine particulates that may be present are left in the sample bag and not used in the SG measurement.

To assess any drift in the scale, standards were selected and measured prior to performing any SG measurements on drill core and repeated prior to the start of measurements on a new drill hole.

During the 2022 field campaign, 10 to 20 cm samples were collected from various lithologies and sent to ALS Labs for water displacement measurements to verify WAM's specific gravity methodology. These samples were individually tested on site three times prior to being sent to ALS. In addition to the verification tests performed by ALS, a suite of samples was sent to Zonge Int. for rock properties testing which included specific gravity analyses.

There are a total of 24 samples pairs with both field measured SG's and lab verified SGs by either ALS or Zonge. The linear regression for all 24 samples gives an R^2 of 0.89 indicating reasonable correlation between the on-site and commercial specific gravity measurements (Figure 11.1).

Figure 11.1: Plot showing ALS and Zonge SG's vs. Field-measured SG's



Source: WAM (2023)

Results from the SG study are reported in an internal WAM report dated February 23, 2023, by Zach Mahaffey. This report outlines results and suggests changes to practices and/or added QA/QC testing.

To date WAM has performed 1,274 specific gravity measurements on 14 different lithologies observed at the Waterpump Creek, Last Hurrah, and the Illinois Creek prospects. Dolomite (DOL) and Massive Sulfide (SULF) are the most frequently measured SG's, with samples populations of 360 and 195, respectively.

Table 11.2 shows calculated statistical values for all lithologies for on-site specific gravity measurements.

Table 11.2: Summary of On-site Specific Gravity Measurements

	Mean	Median	Standard Deviation	Q1	Q3	Min	Max
CS (n = 149)	2.72	2.73	0.47	2.67	2.78	2.49	2.95
DOL (n = 360)	2.69	2.70	0.47	2.63	2.77	2.43	2.93
DQ (n = 24)	2.69	2.70	0.08	2.64	2.73	2.59	2.78
FI (n = 11)	2.41	2.37	0.46	2.25	2.75	1.97	2.83
G (n = 50)	2.74	2.71	0.46	2.60	2.90	2.32	3.15
GRN (n = 58)	2.83	2.89	0.18	2.78	2.93	2.62	3.06
GS (n = 185)	2.70	2.73	0.45	2.65	2.77	2.49	2.91
HBx (n = 4)	2.56	2.56	0.02	2.53	2.58	2.52	2.58
HQ (n = 4)	2.60	2.60	0.51	2.51	2.68	2.49	2.71
M (n = 11)	2.70	2.71	0.13	2.59	2.78	2.47	2.82
MAG (n = 33)	2.71	2.71	0.47	2.54	2.86	2.40	3.10
Q (n = 12)	2.64	2.64	0.17	2.55	2.73	2.41	2.78
QMS (n = 149)	2.58	2.60	0.47	2.48	2.68	2.20	2.95
SULF (n = 195)	3.69	3.63	0.49	3.43	3.89	2.87	4.57

WAM 2022 Leach Pad Density

Several test pits, dug and filled with water, provided the SG values: the larger test pits (dug by backhoe) showed SG ranges from 2.1 to 2.6 with an average of 2.3; the several smaller test pits (dug by hand) showed SG ranges from 1.8 to 2.2 with an average of 2.0. Historical production records indicate a total of 1.59M tonnes of ore was stacked on the leach pad. With a pad volume estimated to be 631,360 cubic meters, this gives an average SG of 2.5. Although some of the rocks at Illinois Creek contain high-sulfide contents, and the leach pad appears to be well compacted, an average SG of 2.5 is considered too high for material of this type. Therefore, an average SG of 2.3 is considered reasonable for determining the mineral resource tonnage on the leach pad.

Historical Specific Gravity Determinations

Specific gravity determinations were derived for a total of 220 samples by NPMC between 1991 and 1994 and by USMX in 1994. MRDI found records of NPMC measurements in Project files. NPMC data account for 143 measurements or 68% of the total 220 measurements.

Specific gravity (SG) was determined using the caliper method. This is an appropriate method for Illinois Creek ores because the vuggy, porous nature of the gossan is not conducive to using the process of wax- or lacquer-coatings and water emersion.

No records were found documenting the procedure used for USMX measurements. MRDI checked USMX values for each rock type and found the mean of USMX SG values to be no more than ±5% of the mean of NPMC values for the same rock type.

Table 11.3 shows the SG values outlined in USMX's 1996 Feasibility Study.

Table 11.3: Specific Gravity – USMX 1996 Feasibility Study

Lithology Code	#	Maximum g/cc	Minimum g/cc	Mean g/cc
FG – ore	40	3.10	2.00	2.48
FQ – ore	67	2.99	2.02	2.47
FQ, high pyrite – ore	2	3.14	2.67	2.91
FMG – ore	17	2.96	1.90	2.41
MFG – ore	4	2.99	2.74	2.81
FMQ – ore	25	3.07	2.07	2.50
HQ – ore	2	2.53	2.36	2.45
Q – waste	11	2.75	2.51	2.67
Total	168			

The 168 SG values (Table 11.2) suggest, for reasons unknown, that USMX did not use some of the currently available SG measurements.

USMX derived one SG for “ore” and one for “waste” using a volume weighting of SG measurements. This assumed that the ore units FQ, FG and FMG+FMQ+MFG, comprise 67%, 17% and 16% of the deposit, respectively. This produces an average SG of 2.48 g/cc for the “ore” or mineralized units. Q and Qa were assigned weightings of 85% and 15% waste, respectively, giving an average SG of 2.63 g/cc for the “waste” or less mineralized units. Note that the intense oxidation of the “ore” units results in lower SG values compared to the “waste” units.

MRDI could not easily check the volume percent assigned to each unit. Drill hole sections show that FQ and FG are the dominant ore hosts; therefore, the weightings of these units are reasonable. The weightings are not really significant, however, because the SG of most ore units varies no more than ±3% from the mean. FQ with high-pyrite content is rare. Values obtained for ore units and wall rocks are reasonable for these rock types.

MRDI grouped samples using their core-hole ID and found that only three FQ samples and one FG sample were from the West Illinois Creek deposit area. All other samples were from the main central part of the Illinois Creek deposit. There are no SG samples from the east area of the deposit. Drill logs suggest that rock units do not change significantly along strike of the gossan zone. However, MRDI recommended that at least 30 SG measurements should be obtained from “ore and waste” units in each deposit so that tonnage calculations are supported by local values. Due to the often highly oxidized state of the mineralized units at the Illinois Creek deposit, it is likely difficult to obtain appropriate or representative material for additional SG determinations at this time. Further SG determinations are recommended during all future drilling programs.

SG values were assigned to sample intervals based on the lithology type designations. Not all sample intervals have associated lithology codes, and, as a result, approximately 90% of the sampled intervals in the database have assigned SG values. The QP believes the approach used to assign SG values is reasonable for use in the estimation of mineral resources.

11.2 Security

During the 2021 and 2022 field programs, WAC&G maintained a high standard for handling drill core sample security. Once the drill core has been halved and placed in the labeled poly bag with the sample tag and sealed with a zip tie, samples are staged by hole and in sequential order. Once all samples for a specific drill hole have been cut, the poly sample bags are placed inside rice bags that are labeled with the hole number and lab address on the front, and the bag number and weight on the back. The rice bags are then sealed with a tamper proof locking zip tie with a unique identification number. The rice bag number, the samples contained within the rice bag, the weight, and the locking zip tie identification number all recorded on the sample sheet and saved for future reference and tracking.

Samples are loaded on regularly scheduled charter flights and transported back to Fairbanks, Alaska from the Illinois Creek camp. Once the samples have arrived in Fairbanks, Horst Expediting and Remote Operations collects the samples and transports them to their facility to stage for delivery to the appropriate lab.

During the 2021 field season samples were staged on pallets and shrink wrapped prior to shipment to the SGS Minerals Geochemistry preparation facility in Whitehorse, Yukon Territory. The palletized and secured rice bags containing the core samples were then shipped via Greenstone Station Inc., a shipping contractor from the Horst facility to the SGS preparation lab. A signed chain of custody (COC) was issued by SGS and returned to WAC&G, ensuring none of the locking zip ties were tampered with.

For the 2022 field season, rice bags containing drill core samples were again retrieved from the scheduled charter flights by Horst Expediting and staged at their facility. Horst Expediting would then deliver the rice bags containing the drill core samples to the ALS preparation facility in Fairbanks, Alaska. Upon delivery to ALS, a COC was issued and returned to WAC&G again ensuring none of the rice bags and samples were tampered with prior to delivery to the ALS facility.

Security measures taken during historical programs are not known to WAC&G; however, WAC&G has no reason to suspect that any of these samples were tampered with prior to analysis.

11.3 Assaying and Analytical Procedures

The laboratories and assay procedures used during the various exploration and infill drill campaigns are summarized in Table 11.4.

Table 11.4: Analytical Labs and Protocols Drill Campaigns 1981 through 2020

Company	Year	Laboratory	Analytical Procedures
Anaconda	1981–1984	Rainbow Resource Lab, Anchorage, AK Bondar-Clegg, Vancouver, B.C.	Au – 1 assay ton FA/AA Aqua Regia finish Ag, Cu, Pb, Zn – AA with HNO3/HCL digestion Select As, W – colorimetric Select Sn, Sb XRF
Goldmor	1988–1990	Acme Labs	Au – 1 assay ton FA/Unknown finish Ag – 1 assay ton FA/Unknown finish Select AA? Cu Pb Zn Sb
NPMC	1991–1992	Chemex, Spark, NV	Au – 1 assay ton FA/Gravimetric finish Ag – AA with Aqua Regia digestion ICP - 32 element Aqua Regia digestion (229)
Echo Bay	1993	Bondar-Clegg, Vancouver, B.C.	Au – 1 assay ton FA/AAS finish Ag – 1 assay ton FA/AAS finish
USMX	1994–1995	Chemex, Spark, NV and Chemex, Vancouver, B.C.	Au – 1 assay ton FA/AAS finish Ag – 1 assay ton FA/AAS finish Cu – AA with Aqua Regia digestion Select 32 element ICP
Viceroy	1999	Mine site	Au – 1 assay ton FA/AAS finish Ag – 1 assay ton FA/AAS finish >10 g/t – Gravimetric finish
ARG	2002	Mine site	Unknown
NovaGold	2005–2006	Chemex, Spark, NV	ICP – 32 element 4-acid digestion
WAC&G	2020	ALS, Sparks, NV	Au-AA23 – 30g FA/AAS finish ME-ICP61- 33 element, ICP-AES, 4-acid digestion AA13 – 30g cyanide leach Au Cu and Ag Au-Gra21 overage with Gravimetric finish ME-OG62 overages ICP
WAC&G	2021	SGS Minerals, Burnaby, BC	GE FAA30V5 – 30g FA/AAS finish GE ICP40Q12 – 33 element, ICP-AES, 4-acid digestion GO ICP42Q100 – Pb, Zn, Ag overages ICP-AES
WAC&G	2022	ALS Global, Vancouver, BC	Au-AA23 – 30g FA/AAS finish ME-ICP61 – 33 element, ICP-AES, 4-acid digestion ME-OG62 – Pb, Zn, Ag overages, ICP-AES Ag-GRA21 – Overlimit on ME-OG62, 30g FA with gravimetric finish Zn-VOL50 – Overlimit on ME-OG62, Zinc by titration Pb-VOL70- Overlimit on ME-OG62, Lead by acid dissolution and titration

11.4 QUALITY ASSURANCE/QUALITY CONTROL

11.4.1 WAM 2021-2022 Core Drilling QAQC

WAM has maintained a consistent QA/QC protocol for all drill cores sampling through the 2021 and 2022 field seasons. WAM's protocol calls for insertion of 11% QA/QC check samples by inserting a blank, a duplicate, and a standard into each set of 27 core samples.

During the 2021 field program, blank material consisted of sand that had previously been tested by SGS using the same analytical suite as 2021 drill core to determine baseline values of the material. During the 2022 drill program, WAC&G acquired blank material from the ALS prep lab in Fairbanks, which also analyzed and certified the material.

For both the 2021 and 2022 drilling campaigns, WAC&G collected field duplicates of drill core. Each designated duplicate sample was collected by halving the primary sample interval such that the primary sample and duplicate sample were quarter core segments of the entire sample interval.

The 2021 drill program utilized four certified reference materials (CRMs) as standards, for the Waterpump Creek and Last Hurrah prospects These samples shown in Table 11.42 included OREAS 141 (low-grade), OREAS 620 (low to mid-grade), OREAS 136 (mid-grade), and OREAS 134b (high-grade). Standards were inserted to approximate the grade of sample intervals inferred by visual inspection of sulfide and/or oxide mineralization. During 2022, OREAS 317 was substituted for OREAS 134b due to a shortage of the OREAS 134b standard.

The Illinois Creek prospect used the same three CRMs (Figure 11.5) as standards for both the 2021 and 2022 drilling programs and include OREAS 600b (low-grade), OREAS 905 (mid- grade), and OREAS 602b (high-grade). These CRMs reflected the differences in the metal zoning between the Waterpump Creek and Illinois Creek target areas with CRM's reflecting the increased Cu and Au content of the Illinois Creek target versus the high-grade Ag, Pb and Zn mineralization at Waterpump Creek.

Table 11.5: Certified Reference Materials utilized by WAC&G during the 2021/22

	Au	Ag	Cu	Pb	Zn
OREAS 141	-	1.58 ppm	2453 ppm	59 ppm	3637 ppm
OREAS 620	0.685 ppm	40 ppm	0.173%	0.772%	3.15%
OREAS 136	-	151 ppm	306 ppm	4.76%	3.63%
OREAS 134b	-	209 ppm	1337 ppm	13.36%	18.03%
OREAS 317	-	232 ppm	0.421%	12.13%	17.45%
OREAS 600b	0.204 ppm	25.1 ppm	499 ppm	119 ppm	404 ppm
OREAS 905	0.391 ppm	0.518 ppm	1533 ppm	30.4 ppm	138 ppm
OREAS 602b	2.29 ppm	118 ppm	0.496%	493 ppm	764 ppm

As the core samples are prepared for shipment each sample and quality control sample is assigned and tagged with a unique sequenced number. The assigned sample number, type of sample, i.e., half cut core, quarter cut core, blank, duplicate or CRM, is recorded. On the sample list to the laboratory only the sample numbers are provided. There is a quality control sample per nine (9) core samples, which averaged to about 1 control sample for 15 meters of sampled core. For each batch of 27 core samples three quality control samples, a blank, a duplicate and a certified reference (CRM) sample are inserted. The placement of the quality control sample is at the discretion of the geologist with some conventions. Where applicable a blank sample is placed within or after an interval of notable mineralization. The duplicates and CRM are inserted before or within a multi-sampled interval of mineralization. Table 11.6 shows a summary of all core and quality control samples for 2021 and 2022.

Table 11.6: Core and Quality Control Materials 2021 and 2022

	# Sample
Core Samples	5,196
QC Samples	599
Blanks	206
Duplicates	192
CRMs	201
Total	5795
Core Samples/QC Sample	8.7

The details and recommendations of the 2021 and 2022 Waterpump Creek drill core assay QA/QC programs are reported in the January 19, 2022, S. K. Morris memo: Waterpump Creek 2021 Diamond Drill Sample Assay QA/QC, and April 3, 2023, S. K. Morris memo: 2022 Waterpump Creek Drill Core Assay Quality Control and Quality Assurance.

The QC sample assay results are evaluated for accuracy and repeatability. The Laboratory's sample preparation process is checked for contamination and carry over with the blank samples. The blank assays results are compared against the certified value then compared with the preceding and following samples results. The original and duplicate core sample results are compared to assess sample to sample variability. The certified reference material results are compared with the certified lab value to check for an analytical bias, drift, or variation scatter. Values falling outside quality control limits are noted for closer examination including resampling and assaying.

Analysis of 2021 and 2022 QA/QC values identified eight (8) sampled intervals where the QC results were out of compliance. These intervals were re-sampled and assayed in 2023.

The failure rates for blanks and CRM control samples are less than one percent. The preparation and assay procedures for 2021 and 2022 are well controlled and produce valid assay results. The OREAS 141 standard is being replaced to better reflect anticipated silver grades from 2023 drilling.

11.4.2 WAC&G 2020 Leach Pad Drilling QAQC

Three standards certified by Ore Research were used to validate the assays for leach pad drill samples. The three standards, OREAS 153b, OREAS 235, and OREAS 601b, are shown in Table 11.7. No assay results from standard material fell outside of control limits.

Blank material was also submitted at a rate of two per batch. All assays of blank material fell within the control limit.

Two coarse reject duplicates were assayed in every batch, and results suggested the sample preparation protocol produced more heterogeneity than was desirable. There was no evidence that variation introduced bias in the results, and, therefore, there was no reason to reject assay results.

Table 11.7: Certified Reference Materials utilized by WAC&G during the 2021/22

	Au	Ag	Cu	Pb	Zn
OREAS 153b	0.313 ppm	1.45 ppm	0.678%	13.1 ppm	122 ppm
OREAS 235	1.59 ppm	0.135 ppm	24 ppm	8.57 ppm	75 ppm
OREAS 601b	0.775 ppm	50.1 ppm	0.101%	318 ppm	318 ppm

11.4.3 Historical QAQC Procedures

Historical quality assurance/quality control (QA/QC) programs are lacking or poorly documented. MRDI and Viceroy, in the 1999 audit of the Property, documented and outlined the following historical QA/QC procedures. No additional documentation is available.

Goldmor

The earliest documented check assays were performed by Acme Labs on 20 pulps originally assayed by Bondar-Clegg and likely from Anaconda drilling. Results are shown in Table 11.8 and indicate good agreement between lab results because the relative difference of the means for gold and silver is less than 5%.

Table 11.8: Acme Check Assays Bondar-Clegg

oz/t	Average Original Pulps	Average Check Pulps	Relative Difference (%)
Au	0.1068	0.1028	3.8
Ag	2.423	2.429	-0.2

North Pacific Mining Company

In 1992, North Pacific Mining Company (NPMC) reported it had selected samples from coarse rejects and submitted them for pulp preparation and assaying to Chemex. Selections were reportedly made from Goldmor (1988 and 1990) rotary drilling and Anaconda (1981 to 1984) core drilling. NPMC reported that there was "no overall variance" suggesting that large differences were not observed between the original assays and re-assays.

A Chemex (Sparks, Nevada location) assay certificate (A9113093) from 1991 shows 189 assays for portions of some of Goldmor's 1988 drill holes. These one assay-ton gold and silver reassays were made on pulps, and it is unclear whether this is a separate study from the 1992 coarse rejects described here. MRDI entered the gold and silver data from the Chemex assay report and matched it to the data in the assay database. The laboratory providing the original assays is undocumented. Results are shown in Table 11.9. The data show consistently good agreement across the entire grade range of checked data.

Table 11.9: Chemex Check Assays 1991

oz/t	Average Original Pulps	Average Check Pulps	Relative Difference (%)
Au	0.0554	0.0545	1.7
Ag	2.328	2.361	-1.4

NPMC also had Chemex insert a laboratory standard every 20 samples, a duplicate pulp every 40 samples, and a blank sample every 40 samples during its programs. Results of these checks are not documented.

Echo Bay

In 1993, Echo Bay selected from stored rejects of NPMC core that had been drilled in 1991 and 1992. These rejects were submitted to Bondar-Clegg for check assays and were reported to have "excellent correlation" with NPMC results (USMX, 1996a), although no data or correlations are presented.

Echo Bay also reportedly twinned seven of Goldmor's rotary drill holes with RC drills; the results were presented in USMX's 1996 Feasibility Study. No statistical analysis was provided. Visual inspection of these graphs suggests reasonable agreement.

USMX

According to the USMX Feasibility Study, USMX "twinned several existing drill holes with good confirmation." It is not clear whether these are twins of NPMC drilling, Echo Bay drilling, or both. No distinction was made between twins of Echo Bay and NPMC drilling. Therefore, results cannot be interpreted.

Finally, in 1994 or 1995, USMX carried out a check assay program of all previous drill assays: 10% of the drill holes within the proposed pit plan were checked (173 pulps). The population of selected holes covered all areas of the proposed pit, and all drill campaigns, to the extent that pulps were available.

A comparison of means in Table 11.10 shows very close agreement between the results from Chemex and Bondar-Clegg.

Table 11.10: USMX Bondar-Clegg vs Chemex Check Assays 1996

oz/t	Average Bondar-Clegg Pulps	Average Chemex Pulps	Relative Difference (%)
Au	0.1499	0.1505	-0.4%
Ag	1.451	1.439	0.8%

Viceroy

Duplicate samples were collected on every 10th sample during drilling conducted by Viceroy in 1999. These duplicates capture all the sampling and measurement errors introduced from the point of sample collection to the instrument reading. These field duplicate results show very close agreement for both gold and silver.

11.5 Conclusion

The QP believes the sample preparation, security, and analytical procedures were properly executed and controlled, and sample data are adequate to support mineral resource estimation.

12 DATA VERIFICATION

12.1 INTRODUCTION

The original USMX mine dataset was lost during the reclamation of the mine, so the current database was reconstructed using historical scans made from available files from the mine office during reclamation.

Anaconda assay results were entered directly from either available assay certificates or Anaconda logs accompanying its annual reports.

Goldmor assay certificates are unavailable for 1988, but the 1988 drill logs report assay values for each sample interval. The 1990 Acme Lab assay certificates are all available. The 1991 and 1992 Chemex assay certificates for NPMC are also available. Sample summary forms with gold and silver assays by Bondar-Clegg for Echo Bay's 1993 program are also complete; original assay certificates are available for most, but not all, of the drill holes. The 1994 and 1995 assays by Chemex for USMX are largely complete; where assay certificates are missing, some drill logs report assay values. A few USMX drill holes have not been recovered. The 1999 Viceroy assay certificates are available and complete.

The 1994 and earlier collar data are based on Illinois Creek Drill Grid Survey Report conducted and written by McClintock Land Associates (McClintock, 1994) for USMX. The 1994 and 1995 collars are based on scanned USMX spreadsheet summaries of survey data. As described in Section 10, all subsequent collar and down-hole surveys are sufficiently accurate and precise to support mineral resource estimation.

Piek Exploration conducted two 5% data verification checks of the assay and collar databases. In both instances, only two errors in the assay values were encountered and those appeared to be transcription errors. The QP verified that errors identified by Piek and others had been corrected in the data base.

The QP randomly selected the sample data from 15 drill holes including results from across the Illinois Creek area gold drilling programs. The number of samples represent over 4% of the data used in the estimate of mineral resources. A typical industry procedure is to compare approximately 5% of the assay sample results in the database to certificates. If the error rate is less than 1%, then no further action is taken. If the error rate exceeds 1%, a more extensive review is undertaken. The grades in these holes were compared to those contained in the certified assay certificates provided by the laboratories. In this suite of 818 individual samples, there were four errors found in the gold data and three errors in the silver data, an error rate of less than one percent. These results are similar to those achieved during previous database audits. The QP reviewed the historical metallurgical studies to understand why the historic heap leach process did not work efficiently. Those studies represented valuable background needed to develop a process that could efficiently handle both gold and copper metallurgy as the project progresses.

The sample data from an additional four drill holes from the leach pad area were randomly selected, and the assay results were compared to the values contained in the assay certificates. There were no errors identified.

The sample data from two drill holes from the WPC area were randomly selected, and the assay results in the database were compared to the values contained in the assay certificates. There were no errors identified.

12.2 CONCLUSION

The QP believes the database was generated using accepted industry standards, and the contained data are appropriate for the estimation of Indicated and Inferred mineral resources for the Illinois Creek oxide gold and silver project and appropriate for the disclosure of exploration results for the Waterpump Creek mineralization.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

Initial metallurgical analysis of the Waterpump Creek sulfide mineralization is currently ongoing at ALS In Kamloops, BC with results expected in the 2nd quarter of 2023. Historical metallurgical work undertaken for the development of the Illinois Creek oxide Au/Ag deposit indicates that the highly oxidized rocks are amenable to a relatively low-cost leaching extraction of gold and silver using cyanide solutions. Additional work is now being undertaken by Forte Dynamics and Pro Solv LLC in Lakewood, Co to ascertain the amenability of the oxide resources to Merrill-Crowe and SART processing to optimize Ag and Cu recoveries, respectively.

Available historical metallurgical test work was reviewed, and conceptual process flowsheets were developed for the deposit.

13.1.1 Anaconda Mineral Company (1982–1985)

In 1981, Anaconda drilled three holes, and several metallurgical studies were completed on individual depth intervals or composites prepared from these drill hole samples. These samples were designated as RD81-345, and the holes were designated as IC 4, 5 and 6. The objective of these studies was to evaluate different processing options, including gravity, flotation, agitated leach and heap leach for recovery of gold and silver minerals.

The highlights of these studies indicated the following:

- Three high-grade composites were prepared from selected intervals of the three holes. These composites assayed 0.05 to 0.08 oz/t Au and 0.6 to 2.7 oz/t Ag.
- The samples were not amenable to gravity concentration.
- The samples were amenable to agitated cyanide leach at primary grind of P_{80} of 100 mesh. The gold and silver extractions ranged from 83.2% to 90.5% and 23.5% to 42.3%, respectively, in 24 hours. However, the cyanide consumption was high at ±11.6 lb/t, and the lime consumption was ±8 lb/t.
- Additional test work completed on a high-grade bulk sample, assaying 0.394 oz/t Au and 9.61 oz/t Ag (1983–1984), included gravity concentration, magnetic separation, flotation and agitated cyanidation leach tests. The ore was not amenable to flotation, magnetic separation or gravity concentration. The agitated cyanidation leach tests recovered more than 96% of gold in 24 hours at three grind sizes: 10 mesh, 100 mesh and 200 mesh. However, the maximum silver extraction of 26.1% was obtained at a grind size of 200 mesh. Preliminary test work had also indicated that the ore was amenable to heap leaching with gold extraction of ±80% and silver extraction of ±20% at P_{80} of 10 mesh. The material was agglomerated before loading the column. Again, the cyanide consumption was high at 4.5 lb/t.
- Bottle roll tests were completed (1984–1985) on additional bulk ore samples (designated as RD84-106). Twenty-four agitated leach tests at P_{95} of 200 mesh resulted in gold extraction ranging from 84.2% to 97.7% and averaged 93.6%. The silver extraction ranged from 13.2% to 45.4% and averaged 29.7%. The average feed grade was 0.271 oz/t Au and 8.85 oz/t Ag. The average sodium cyanide consumption was 12.4 lb/t of ore, and average lime consumption was 7.1 lb/t of ore.

13.1.2 Goldmor Group (1988–1990)

Goldmor completed metallurgical testing in several laboratories including Bondar Clegg; Salisbury and Associates; Bacon, Donaldson and Associates; and McClelland Laboratories, Inc.

The highlights of these studies are as follows:

- The results from the 24-hour cyanidation leach tests on seven samples assaying 0.1 to 0.2 oz/t Au showed excellent leachability of gold with extraction ranging from 87% to 92%. Silver extractions ranged from 33% to 46%. The cyanide consumptions were high.
- Cyanidation tests on two composites samples assaying 3.16 and 3.4 g/t Au had gold extraction of ±85%. The "as received" material had P_{90} of 10 mesh. The silver extraction ranged from 35% to 45%. The NaCN consumption was extremely high and ranged from 7.7 to 11 lb/t.
- Bacon, Donaldson and Associates (1989) evaluated the historical test work on the deposit and concluded that higher cyanide strength resulted in increased gold extraction. However, the presence of copper minerals in the ore is responsible for the lower gold extraction with lower cyanide strength. They also concluded: the higher the feed grade, the higher the gold extraction. The copper values in the selected historical samples ranged from 0.26% to 2.10%.
- McClelland Laboratories, Inc. performed agitated leach and heap leach tests on a 5-ton bulk ROM sample assaying 0.094 oz/t Au, 1.67 oz/t Ag and 0.45% Cu. Gold and silver extractions of 78.4% and 19.7%, respectively, were obtained at P_{100} of 0.25 in. Copper recovery was 11.4%. Cyanide consumption and lime requirements were 2.69 lb/t and 18.9 lb/t, respectively.
- Both gold and silver extraction improved (84.8% and 27%, respectively) with higher concentration of cyanide (2 g/L versus 1 g/L, respectively). Cyanide consumption was much higher at 4.79 lb/t.
- Column percolation tests were performed at P_{100} of 6 in. (ROM) and P_{80} of 1.5 and 0.5 in. The ore charges in all tests were agglomerated with 5 lb/t of lime and 10 lb/t of cement. The metallurgical tests indicated that precious metal recovery and cyanide consumption increased with decreasing feed size. Gold recoveries of 81.0, 83.3, 86.4 and 91.6% were achieved from the ROM, 6 mesh, 1.5 in. and 0.5 in. feed sizes, respectively. Respective silver recoveries were 24.7, 28.0, 24.9 and 34.1%. Copper recovery was about 12% for all feed sizes. The respective cyanide consumptions were 1.86, 2.40, 2.92 and 3.08 lb/t.
- Based on this study, the optimum leach size was determined to be P_{80} of 0.5 in. The study concluded that leaching of ore at ROM feed size was not practical, even though high recovery was achieved, because agglomeration pre-treatment is required. Silver-to- gold ratio in solution was high (up to 5:1) and the copper solution grades were also high (more than 200 ppm). Therefore, zinc precipitation process should be considered.

13.1.3 North Pacific Mining Company (1991–1992)

McClelland Laboratories completed agitated cyanidation (bottle roll) and heap leach (column) tests on three ROM bulk samples designated high-grade, Mn/Sb and SQB for North Pacific Mining Company.

The highlights of the test program indicated the following:

- The head grades of the three composites are shown in Table 13.1. The high-grade sample contained significant amounts of copper.
- The bulk ore samples were amenable to direct agitated cyanidation treatment at a 90% passing minus ¼ in. feed size. Gold recoveries of 79.2, 86.2 and 84.4% were achieved from high-grade, Mn/Sb and SQB feeds, respectively, in 96 hours of leaching. Respective silver recoveries were 29.6, 27.3 and 42.4%.
- The deep zone high-grade composite was marginally amenable to agitated cyanidation treatment at the “as received” feed size. The other composites were amenable at that feed size. Gold recoveries of 51.6, 76.2 and 82.6%, respectively, were achieved in 96 hours of agitated cyanidation. Respective silver recoveries were 29.2, 34.8 and 30.2%.
- Reagent consumptions were high, ranging from 3.30 to 13.36 lb/t for sodium cyanide and 10.6 to 18.9 lb/t for lime.
- Optimum agglomerating conditions required 15 to 20 lb of cement per ton of ore. The agglomerates for Mn/Sb bulk sample did not markedly degrade under simulated freeze/thaw conditions.
- Column testing was mentioned, but no report was available for review. However, a memorandum dated March 11, 1991, did indicate problems with maintaining pH in the columns. The gold and silver extractions for agglomerated minus 1 in. material for three bulk samples are summarized in Table 13.2. The results were reasonable with gold extraction ranging from 69.2% to 84%. The cyanide consumption was reasonable ranging from 1.87 to 2.93 lb/t.

Table 13.1: Feed Analyses of Three Bulk Samples

Sample	Head Grade		
	Au (oz/t)	Ag (oz/t)	Cu (%)
High-Grade	0.123	4.76	0.91
Mn/Sb	0.025	0.38	0.08
SQB	0.056	0.60	0.32

Table 13.2: Column Leach Test Results for Three Bulk Samples

Parameters	Composite		
	FG	FMG/FMQ	FQ
Feed Grade			
Au (oz/t)	0.095	0.75	0.10
Ag (oz/t)	2.56	3.32	0.71
Cu (%)	0.96	0.78	0.20
Extraction % (110 days)			
Au	73.3	69.2	84.0
Ag	11.2	10.8	25.4
Cyanide Consumption (lb/t)	2.93	2.19	1.87
Cement (lb/t)	15	15	15

13.1.4 USMX (1994–1995)

USMX entered into a letter agreement with North Pacific Mining Company (NPMC) to evaluate the Illinois Creek Project. It prepared a year-end report (1994) summarizing the activities on the Project.

Some relevant highlights extracted from the report are summarized here:

- The deposit occurs as a large gossan zone which was intersected over a strike length of 14,500 ft to a depth of greater than 2,000 ft. Oxidation of the mineralization which originally contained arsenopyrite, pyrite and lesser base-metal sulfides and sulfosalts in a variable silicious matrix is nearly complete to a depth of about 1,400 ft below the present surface.
- Economic gold-silver mineralization is present in portions of the gossan and is associated with elevated copper and/or lead content.
- The gossan is broken into three lithologies: ferruginous quartzite (FQ), ferruginous gossan (FG) and ferruginous/manganiferous quartzite/gossan (FMQ/FMG). FQ unit constitutes about 67% of the mineralized portion, and the remaining is split equally between the other two lithologies.
- Mineralogically, gossan contains several oxide minerals, including hematite, goethite, jarosite, psilomelane and manganite. Gold is present in the native phase and to a lesser degree as electrum, forming small grains (<20 microns) intimately associated with amorphous iron limonites. Silver occurs as argentojarosite and less commonly in the native phase and is closely associated with manganese oxides.
- Though copper assays were available in the drill hole database, they were neglected in the initial evaluation.
- McClelland Laboratories performed tests in 1994–1995 on the three bulk samples representing ore types: FG, FQ and FMG/FMQ. Bottle roll tests for 96 hours on P_{100} of 0.25 in. feed resulted in gold extraction of 74% to 79% for the three ore types. The

column tests on ROM ore resulted in gold extraction of ±90% for FQ and FMQ/FMG material and 77.5% for FG material. The average recovery projected for the deposit was 80.5% for gold and 28.9% for silver. The feed for the columns assayed 0.066 oz/t to 0.173 oz/t Au and 0.70 to 6.31 oz/t Ag.

- The ROM ore screen analyses indicated that 20% to 25% of the material is finer than 65 mesh. This amount of fines could potentially cause permeability issues, especially during winter months. This has been noted by MRDI in the audit report in 2000.

13.1.5 Conceptual Process Flowsheet

A review of all the metallurgical studies indicated that the following factors should be considered in order to develop a reliable extraction process for the climatic conditions in Alaska:

- The ore is amenable to both heap leaching and agitated leach process.
- The ore is friable and will produce sufficient fines to warrant agglomeration before stacking on the heap.
- The ore contains sufficient oxide copper to consume high quantities of cyanide; therefore, it would be economical to recover cyanide. The incorporation of a SART process is recommended in either of the two processing options selected.
- Approximately 30% to 50% of the silver will be recovered in the heap leach process. Remaining silver is refractory (argentojarosite) and will require additional processing steps in the circuit to improve extraction.
- Silver-to-gold ratio in the pregnant solution is greater than 5:1. Therefore, Merrill Crowe process should be selected for recovery of gold and silver from pregnant solution.
- Metal recoveries for a milling/cyanidation process with Merrill Crowe are estimated at 92% for gold and 65% for silver. Additional metallurgical testing is required to confirm these recovery projections.

14 MINERAL RESOURCE ESTIMATE

14.1 INTRODUCTION

This section of the Technical Report describes the mineral resource estimation methodology and summarizes the key assumptions considered by the QP to prepare the mineral resource model for the gold, silver and copper mineralization for the Illinois Creek deposit. This includes estimates of the in-situ mineral resources (Section 14.2) and estimates of the mineral resources located on the leach pad area (Section 14.3), where mineralized material was stacked during previous mining activities and leached intermittently from 1979 through mine closure.

In the opinion of the QP, the mineral resource estimate reported herein is a reasonable representation of the mineralization found at the Illinois Creek Project at the current level of sampling. The mineral resources were estimated in conformity with generally accepted CIM *Estimation of Mineral Resources and Mineral Reserves Best Practices Guidelines* (November 29, 2019) and is reported in accordance with National Instrument (NI) 43-101.

Mineral resources are not mineral reserves, and they do not have demonstrated economic viability. There is no certainty that all or any part of the mineral resources will be converted into mineral reserves upon application of modifying factors.

Estimations are made from 3D block models based on geostatistical applications using commercial mine planning software (MinePlan® v15.7). The project limits are based in the UTM coordinate system (NAD83) using a nominal block size measuring 10 m × 10 m × 5 m (l × w × h).

The mineral resource estimate was generated using drill hole sample assay results and the interpretation of a geological model which relates to the spatial distribution of gold, silver and copper. Interpolation characteristics were defined based on the geology, drill hole spacing, and geostatistical analysis of the data.

The mineral resources were classified according to their proximity to the sample data locations and are reported according to the CIM *Definition Standards on Mineral Resources and Mineral Reserves* (May 2014), as required by NI 43-101.

These are the first estimates of mineral resources produced for WAC&G for the Illinois Creek deposit.

14.2 APPROACH TO ESTIMATION OF IN-SITU MINERAL RESOURCES

This section of the report describes the approach used to estimate the in-situ mineral resources at the Illinois Creek deposit.

14.2.1 Available Data

On March 20, 2019, WACG provided the updated drill hole sample data for the Illinois Creek deposit. Since that time, there has been no additional exploration in the area of the in-situ mineral resources.

The data comprised a series of ASCII files (.csv spreadsheet) containing collar locations, down-hole survey results, geologic information and assay results for a total of 583 drill holes representing 51,558 m of drilling. Of these, 505 drill holes, totaling 41,488 m of drilling, test the Illinois Creek deposit and contribute to the estimation of the in-situ mineral resources. The other 78 drill holes are exploratory in nature and test for extensions east of the Illinois Creek deposit or other satellite deposits on the Property. Note: These drilling statistics are derived from the database used to generate the estimate of mineral resources and may differ slightly from those presented in Section 10 (Drilling) of this report. WAC&G has made some changes to the drilling database since March 2019 that accounts for these differences. These minor changes have no impact on the estimate of mineral resources for the Illinois Creek deposit.

It should be noted that the drilling data for the Illinois Creek deposit were initially reported in the imperial system using a local “drill grid” coordinate system. All of this information was converted to metric units (in other words, feet to meters), and the coordinates were rotated to UTM grid coordinates (UTM NAD83 Zone 4W).

Of the 505 holes that test the Illinois Creek deposit, 145 are diamond drill (DD) holes and the other 360 holes are reverse circulation (RC) drill holes. Comparisons were made between the data produced from each type of drilling. DD holes tend to provide higher gold grades than RC drilling, but these differences are inconsistent and may only be local occurrences. Previous studies conducted by MRDI suggest that the RC drilling may not effectively capture all of the gold in some areas. DD and RC results show local variations, but, overall, they seem to correspond quite well. There were no modifications made to the database based on the type of drill hole.

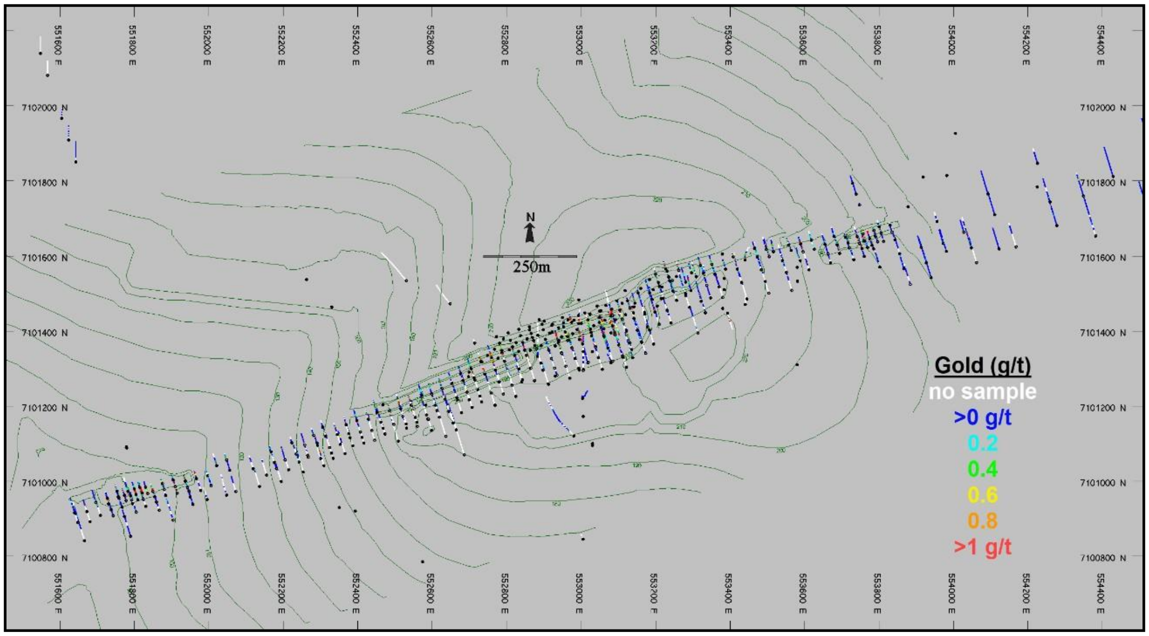
There are no recovery data included in the database. MRDI, as part of its March 2000 audit, reported that recoveries tend to be quite good in most cases, but some gold losses were observed in holes that encountered poor recoveries.

Drilling on the Illinois Creek deposit was conducted between 1981 and 2006 with the majority of holes completed during campaigns run from 1990 through 1995. Drill holes penetrate the south-southeast dipping Illinois Creek deposit over a strike length of more than 2,500 m and to depths that exceed 200 m below surface.

The distribution of gold grades in drill holes that are proximal to the Illinois Creek deposit is shown in plan view in Figure 14.1.

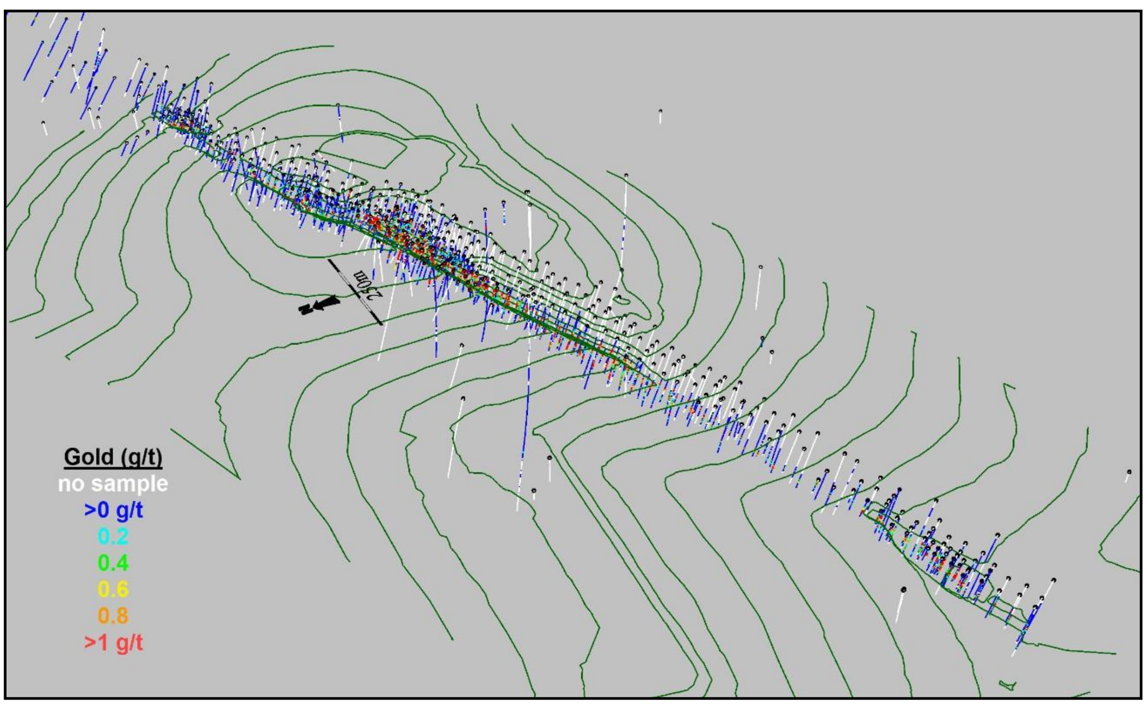
In the Illinois Creek sample database, a total of 16,936 individual samples, representing 25,611 m of drilling, were analyzed for gold and silver content. About 50% of these samples were also analyzed using a multi-element (whole-rock, 26-element) package. The results for copper, lead and zinc were selected for potential inclusion in this mineral resource evaluation. Further evaluation of the available data show that only about 30% of samples were tested for lead and zinc content, and based on these results, the distributions of lead and zinc data are considered insufficient to support estimates of mineral resources. The distributions of available gold, silver and copper sample data in the vicinity of the Illinois Creek deposit are shown Figures 14.2 to 14.4, respectively.

Figure 14.1: Plan View of Gold Grades in Drilling



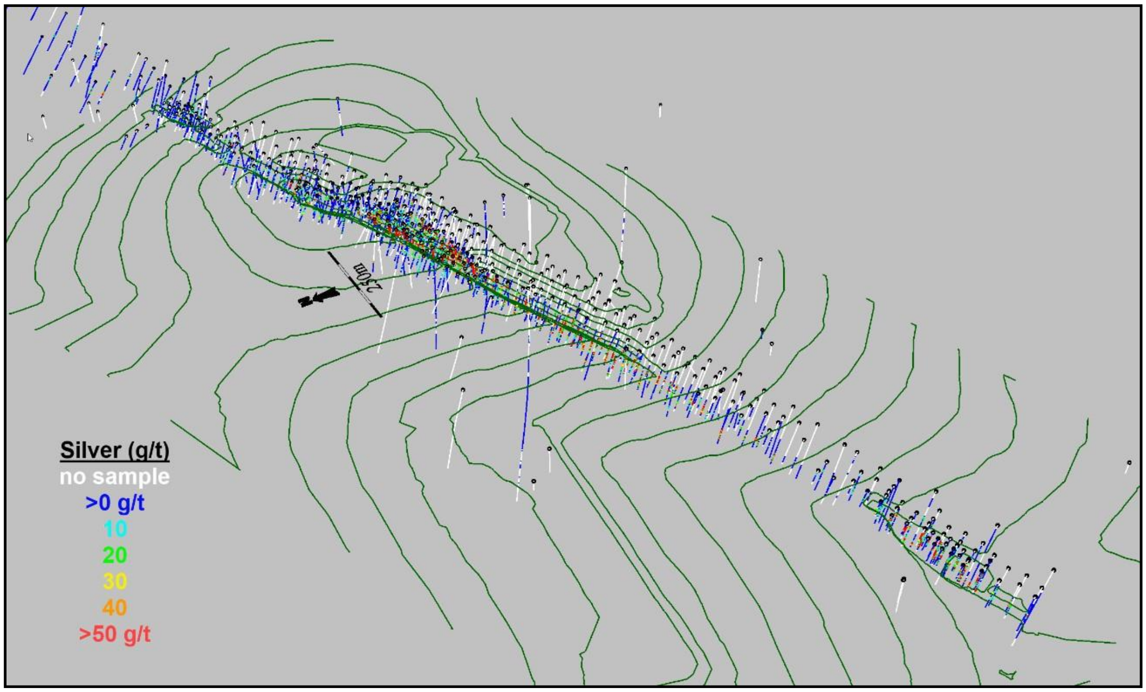
Source: SGI (2021)

Figure 14.2: Isometric View of Available Gold Data in Drilling



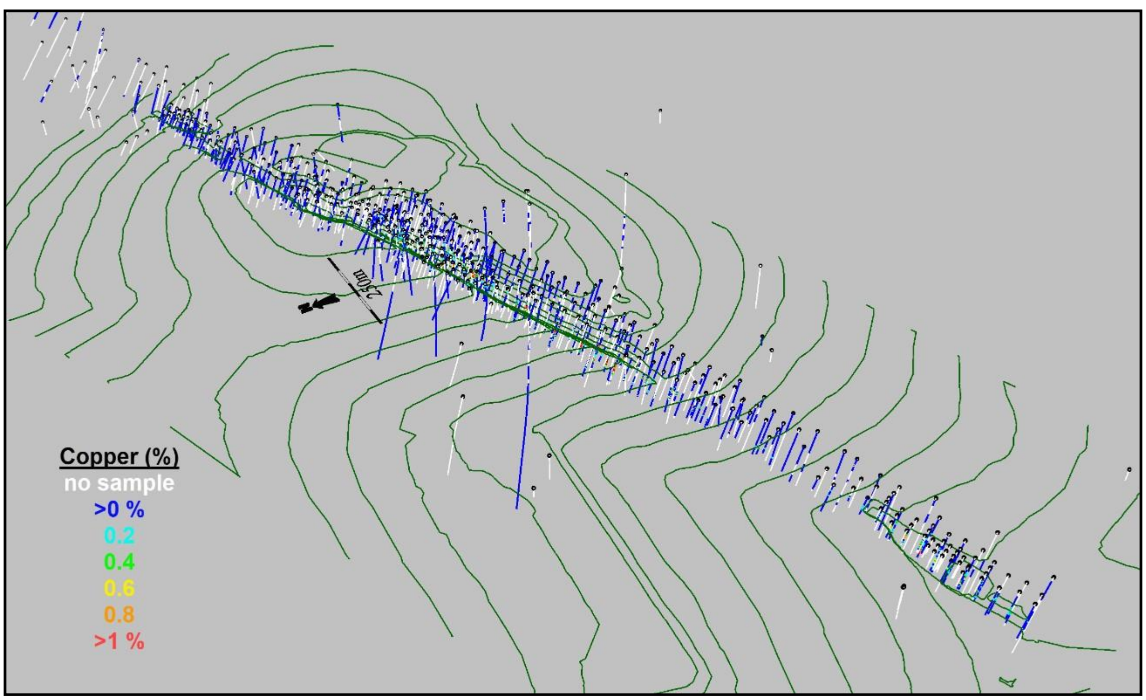
Source: SGI (2021)

Figure 14.3: Isometric View of Available Silver Data in Drilling



Source: SGI (2021)

Figure 14.4: Isometric View of Available Copper Data in Drilling



Source: SGI (2021)

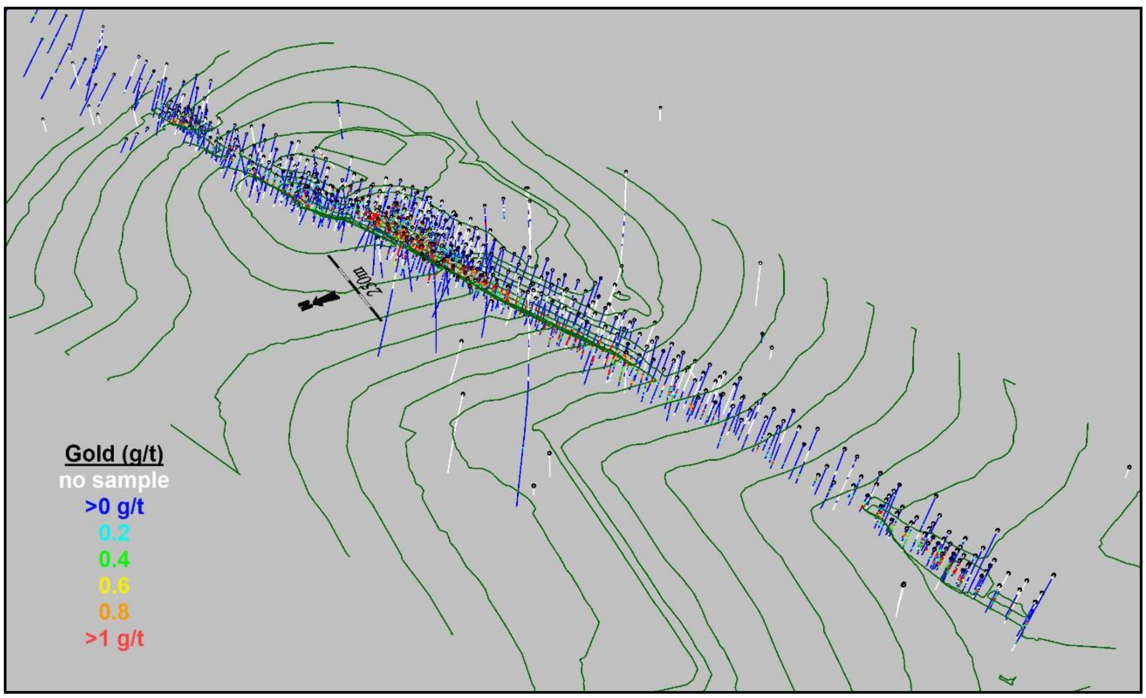
As shown in Figures 14.1 through 14.4, it is not uncommon to have drill hole intervals that have no associated assay data. The drill hole logging information was reviewed in an attempt to identify why some sample data may not be present.

Unsampled drilling intervals that represent no recovery, overburden, lost assay data, or logged intervals that appear to represent some potential for mineralization (ferruginous or manganiferous quartzite) are shown as "missing" in the sample database.

Unsampled drilling intervals that, based on the logging descriptions, show no visible signs of the presence of mineralization, have been identified and assigned zero grade values for gold and silver content. This represents a total of 5,655 m of drill hole intervals that have been assigned default zero grade values for gold and silver.

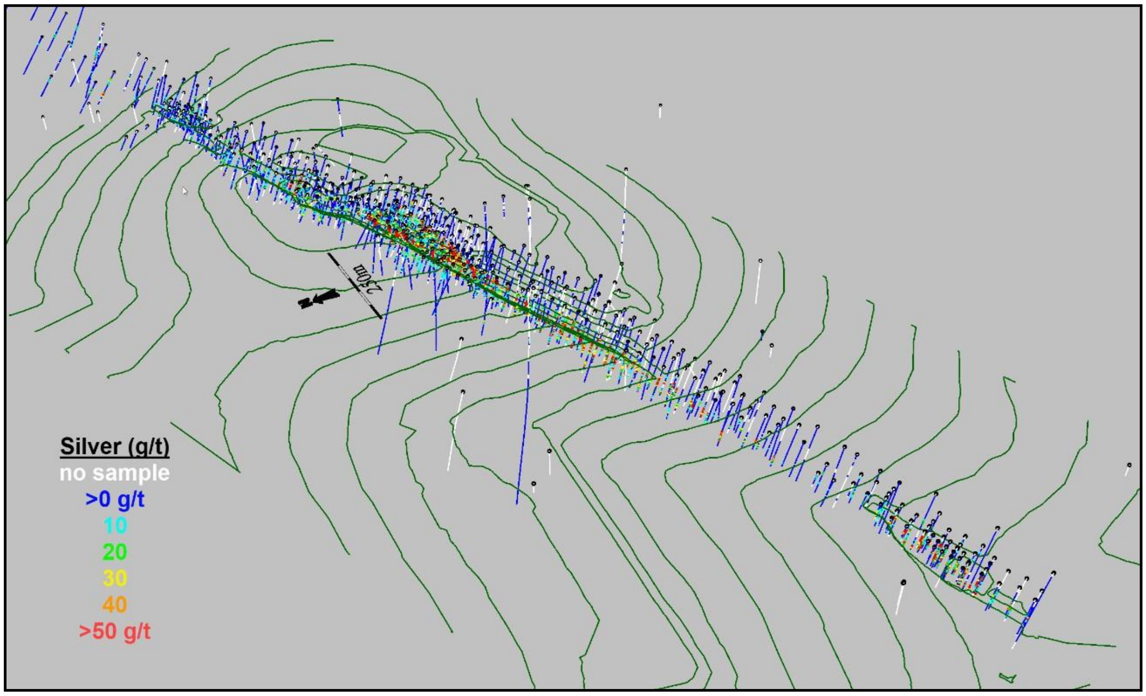
Figures 14.5 and 14.6 show the distribution of gold and silver sample data, respectively, following the treatment of unsampled intervals. Note the differences between Figures 14.2 and 14.5 for gold sample data and between Figures 14.3 and 14.6 for silver sample data.

Figure 14.5: Isometric View of Gold Data in Drilling following Treatment of Unsampled Intervals



Source: SGI (2021)

Figure 14.6: Isometric View of Silver Data in Drilling following Treatment of Unsampled Intervals



Source: SGI (2021)

The distribution of missing copper data is not consistent, and, as a result, there have been no modifications to the copper database to account for missing copper assay results.

Individual sample intervals range from a minimum of 0.06 m to a maximum of 28.35 m and average 1.58 m long.

Essentially, all of the RC samples (>99%) were taken on 5 ft (1.52 m) sample intervals. The length of DD samples is more variable, but the majority of these samples (33%) were also taken over 5 ft (1.52 m) intervals, and the overall average of DD samples is 1.42 m long.

As described in Section 11 (Sample Preparation, Analyses and Security) of this report, a series of 220 samples were selected for specific gravity (SG) determinations by NPMC and USMX between 1991 and 1994. Based on these results, average SG values were assigned to the various lithology units. This provides SG values for approximately 90% of the sample intervals in the database (approximately 10% of the sample intervals do not have defined lithology types, and, therefore, do not have associated SG values).

SG values range from 2.29 to 2.67 and average 2.56. The mineralized core of the deposit tends to have lower SG values due to the intense oxidation that is present. The available SG data are considered sufficient to support the estimation of mineral resources, and the distribution of SG data are considered sufficient to support the interpolation of SG values into blocks in the resource block model.

A topographic surface was provided in the local "drill grid" imperial coordinate system that represents the topographic surface as of May 2013 (Note: Since the mine closed in 2003, there has been some minor remedial reclamation work, but it appears that this topographic surface represents the extent of mining that has taken place at Illinois Creek). The topographic surface was converted to metric coordinates and translated to the NAD83 projection. The current surface is represented by the topographic contours shown in Figures 14-1 through 14-8. Note: The topographic surface in the leach pad area was updated using the surveyed RC collar locations and a series of additional proximal point locations.

An additional topographic surface was generated using the drill hole collar locations that represent the "pre-mining" surface. The resource block model was generated to include the portions of the deposit that have already been mined out (for comparison purposes). However, the estimate of in-situ mineral resources presented in this report was truncated by the May 2013 topographic surface.

Geologic information, derived from observations during core and RC chip logging, provide lithology code designations for the various rock units present on the Property.

The statistical properties of the data in the vicinity of the Illinois Creek deposit, excluding exploration drill holes, are shown in Table 14.1.

Table 14.1: Summary of Basic Statistics of Data Proximal to the Mineral Resource Model

Element	# of Samples	Min	Max	Mean	Std. Dev.
Gold (g/t)	19,330	0	91.749	0.444	1.895
Silver (g/t)	19,327	0	2,564.6	15.2	53.93
Copper (%)	9,836	0	11.40	0.07	0.270
SG	17,864	2.29	2.67	2.56	0.090

Note: Original sample data are weighted by sample length. The data used in Table 14.1 are restricted to drill holes in the vicinity of the Illinois Creek deposit. Default zero-grade values are assigned to unsampled intervals that do not show signs of the presence of mineralization.

14.2.2 Compositing

Compositing the drill hole samples helps standardize the database for further statistical evaluation. This step eliminates any effect that inconsistent sample lengths might have on the data.

To retain the original characteristics of the underlying data, a composite length was selected that reflects the average, original sample length. The generation of longer composites can result in some degree of smoothing which could mask certain features of the data.

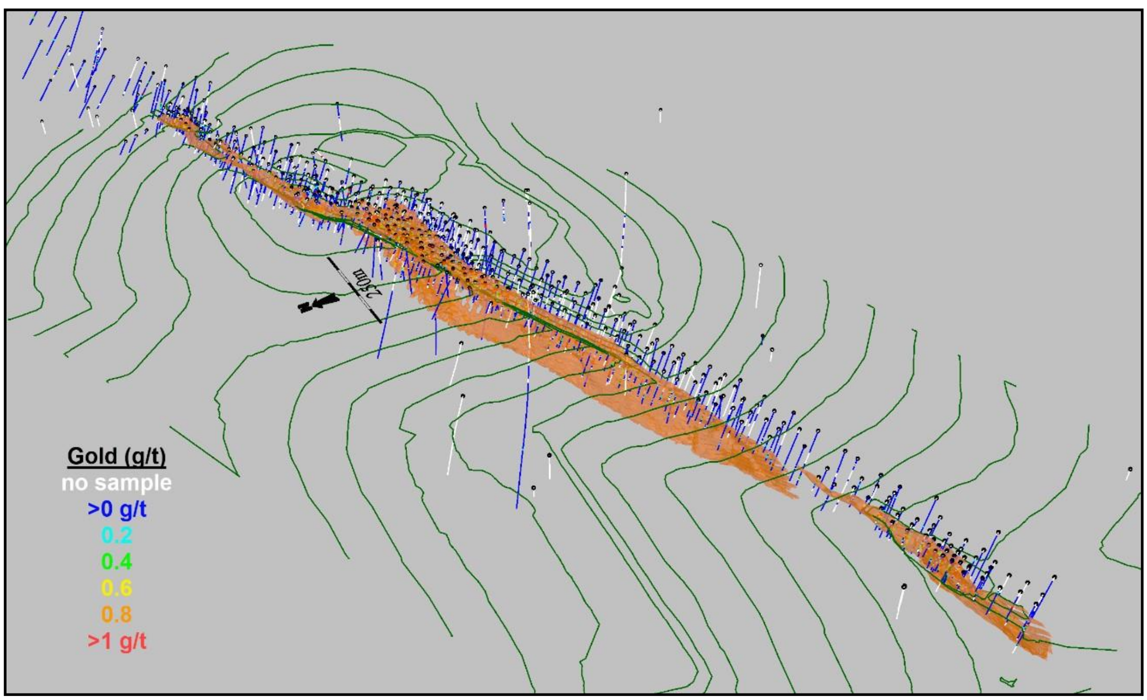
A composite length of 1.5 m was selected for the Illinois Creek deposit, reflecting the fact that the vast majority of samples were collected on 1.5 m intervals.

Drill hole composites are length-weighted and were generated down-the-hole; this means that composites begin at the top of each hole and are generated at 1.5 m intervals down the length of the hole.

Generation of Gold and Silver Probability Shell Domains

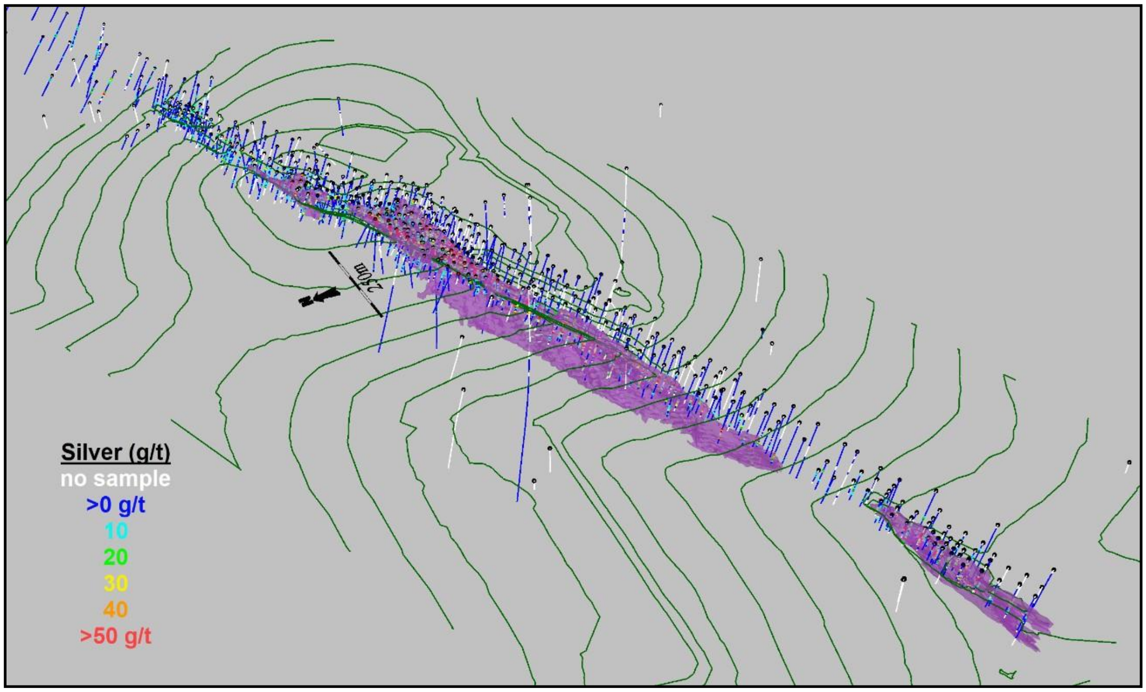
The distributions of gold and silver (and copper) are similar, but there are areas where gold is present and silver grades are low (or vice versa). As a result, separate probability shell domains were generated based on the distributions of gold and silver in the deposit. Indicator values are assigned to 1.5 m composited sample data based on a threshold grade of 0.10 g/t Au and 10 g/t Ag. Probability estimates are made in model blocks for both metals using ordinary kriging. During interpolations, a dynamic search approach was used in which the search orientations are controlled using an interpreted plane that represents the center of the mineralized zone. This approach retains the stratigraphic sequence of the mineralization and replicates any inherent banding in the deposit's grade distributions in the block model. Following interpolation, 3D domains were produced in which the areas inside the probability shells represent areas where there is a >50% probability that the grade will be above the defined threshold grade limits. The shape and extent of the grade probability shell domains are shown in Figures 14.7 and 14.8.

Figure 14.7: Isometric View of Gold Probability Grade Shell Domain



Source: SGI (2021)

Figure 14.8: Isometric View of Silver Probability Grade Shell Domain



Source: SGI (2021)

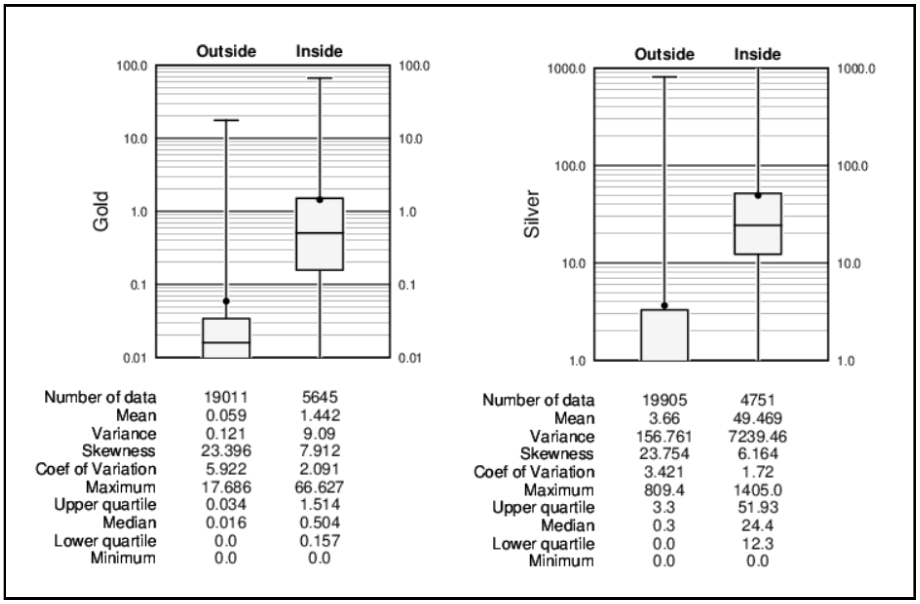
14.2.3 Exploratory Data Analysis

Exploratory data analysis (EDA) involves the statistical summarization of the database to better understand the characteristics of the data that may control grade. One of the main purposes of this exercise is to determine whether there is evidence of spatial distinctions in grade which may require the separation and isolation of domains during interpolation. The application of separate domains prevents unwanted mixing of data during interpolation, and, therefore, the resulting grade model will better reflect the unique properties of the deposit. However, applying domain boundaries in areas where the data are not statistically unique may impose a bias in the distribution of grades in the model.

A domain boundary, which segregates the data during interpolation, is typically applied when the average grade in one domain is significantly different from that of another domain. A boundary may also be applied if there is evidence that a significant change in the grade distribution has occurred across the contact.

A series of boxplots were generated to compare the statistical properties of sample data inside versus outside of the probability shell domains. Figure 14.9 shows the distribution of gold and silver data located inside versus outside of their respective probability grade shell domains. Note the very distinct differences in the data with very little overlap of the contained data.

Figure 14.9: Boxplots of Gold and Silver Data Inside vs Outside of the Probability Grade Shell Domains

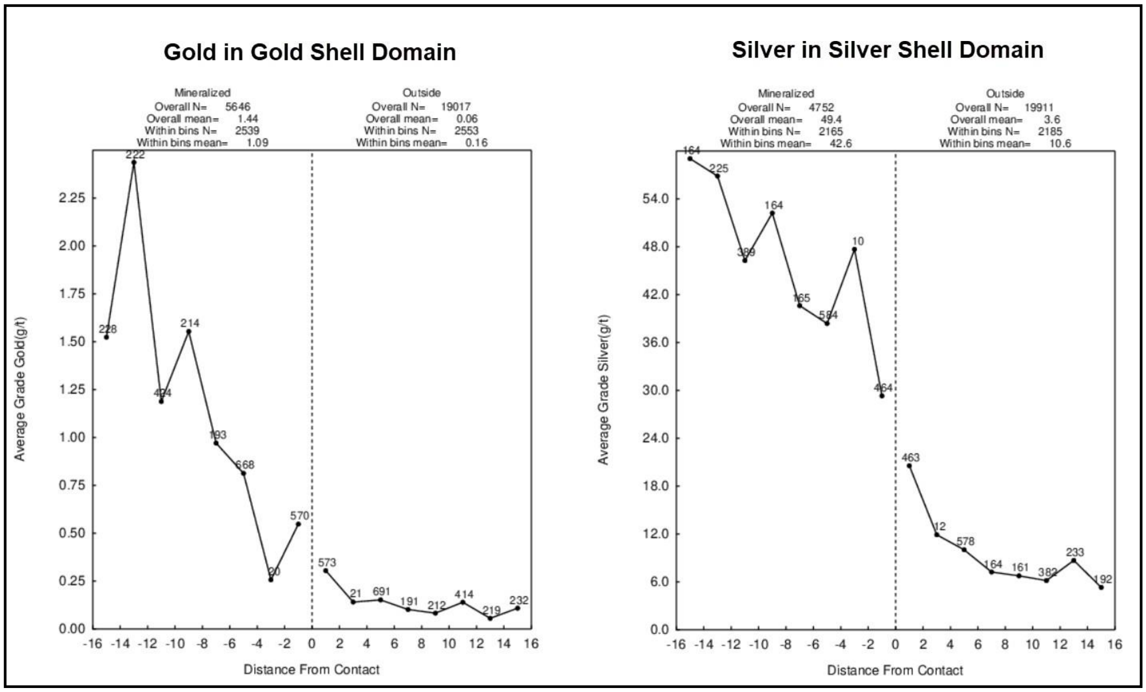


Source: SGI (2021)

Comparison of copper data contained inside versus outside of both the gold and silver probability grade shell domains show that the distribution of copper is more distinct inside and outside of the silver shell, with less overlap of the grade distributions and more distinct differences between the mean grades inside and outside of the silver domain.

A series of contact profiles were also generated that evaluate the nature of grade changes across the various domain boundaries. The example in Figure 14.10 shows somewhat transitional grade changes, as grades tends to decrease near the contacts inside the shell domains. These figures are generated using 1.5 m composite sample data. At the scale of blocks in the model (10 × 10 × 5 m), the grade transition at the contact is much more abrupt, indicating that these domains have segregated two distinct populations of sample data.

Figure 14.10: Contact Profiles of Gold and Silver Grades Across Grade Shell Domains Boundaries



Source: SGI (2021)

Conclusions and Modeling Implications

The results of the EDA indicate that the gold and silver grades within their individual probability shell domains are significantly different than those in the surrounding area, and that the probability shell domains should be treated as distinct or hard domains during block grade estimations for these metals.

The distribution of copper is more closely related to that of silver, and, therefore, the silver grade probability shell domain was used during the estimation of copper grades in the block model.

14.2.4 Evaluation of Outlier Grades

Histograms and probability plots for the distribution of gold, silver and copper were reviewed to identify the presence of anomalous outlier grades in the composited (1.5 m) database. Following a review of the physical location of potentially erratic samples in relation to the surrounding sample data, it was decided that these would be controlled during block grade interpolations using the application of outlier limitations. An outlier limitation controls the distance of influence of samples above a defined grade threshold. During grade interpolations, samples above the outlier thresholds are limited to a maximum distance of influence of 20 m (approximately ½ the distance between drill holes). The grade thresholds for gold, silver and copper are shown in Table 14.2.

Overall, these applications result in a 5% reduction in both contained gold and silver and a 4% reduction in contained copper. These measures are considered appropriate for a deposit with this distribution of delineation drilling.

Table 14.2: Treatment of Outlier Sample Data

Element	Domain	Maximum	Outlier Limit
Gold (g/t)	Inside Shell	66.627	20
	Outside Shell	17.686	5
Silver (g/t)	Inside Shell	2,307.0	800
	Outside Shell	809.4	100
Copper (%)	Inside Shell	9.28	2
	Outside Shell	6.86	1

Note: Table 14.2 reflects 1.5 m composited drill hole data.

14.2.5 Variography

The degree of spatial variability in a mineral deposit depends on both the distance and direction between points of comparison. Typically, the variability between samples increases as the distance between those samples increases. If the degree of variability is related to the direction of comparison, then the deposit is said to exhibit *anisotropic* tendencies which can be summarized with the search ellipse. The semi-variogram is a common function used to measure the spatial variability within a deposit.

The components of the variogram include the nugget, the sill and the range. Often samples compared over very short distances, even samples compared from the same location, show some degree of variability. As a result, the curve of the variogram often begins at some point on the y-axis above the origin: this point is called the *nugget*. The nugget is a measure of not only the natural variability of the data over very short distances but also a measure of the variability which can be introduced due to errors during sample collection, preparation, and the assay process.

The amount of variability between samples typically increases as the distance between the samples increases. Eventually, the degree of variability between samples reaches a constant, maximum value: this is called the *sill*, and the distance between samples at which this occurs is called the *range*.

In this report, the spatial evaluation of the data was conducted using a correlogram rather than the traditional variogram. The correlogram is normalized to the variance of the data and is less sensitive to outlier values, generally giving better results.

Variograms were created using the commercial software package Sage 2001© developed by Isaaks & Co.

Multidirectional variograms for gold, silver and copper were generated from the distributions of data located inside the respective probability shell domains. The same variograms are used to estimate the grades both inside and outside of the domains. Variograms were generated using a z-coordinate relative to the interpreted central trend plane of the mineralization. This approach represents the dynamic search orientation approach described previously that retains any stratigraphic banding that may be present in the deposit. The variograms are summarized in Table 14.3.

Table 14.3: Variogram Parameters

Element				1st Structure			2nd Structure		
	Nugget	Sill 1	Sill 2	Range (m)	Azimuth (°)	Dip	Range (m)	Azimuth (°)	Dip
Gold	0.350	0.554	0.096	23	56	22	514	66	1
	Spherical			18	13	-62	165	336	1
				7	139	-18	19	220	88
Silver	0.325	0.480	0.195	20	26	67	196	51	-2
	Spherical			10	187	22	61	142	-18
				4	100	-7	28	134	72
Copper	0.289	0.550	0.161	48	100	16	1,231	87	3
	Spherical			22	219	59	286	177	17
				9	2	26	66	348	73

Note: Correlograms were conducted on 1.5 m composite sample data.

14.2.6 Model Setup and Limits

A block model was initialized in MinePlan®, and the dimensions are defined in Table 14.4. The selection of a nominal block size measuring 10 × 10 × 5 m (l × w × h) is considered appropriate with respect to the current drill hole spacing as well as the selective mining unit (SMU) size typical of an operation of this type and scale.

Table 14.4: Block Model Limits

Direction	Minimum	Maximum	Block Size (m)	# of Blocks
X (east)	551400	555400	10	400
Y (north)	7100700	7102200	10	150
Z (elevation)	-200	300	5	100

Blocks in the model were coded on a majority basis with the gold and silver probability grade shell domains. During this stage, blocks along a domain boundary are coded when more than 50% of the block occurs within the boundaries of that domain.

The proportion of blocks that occur below the topographic surface is also calculated and stored within the model as individual percentage items. These values are used as weighting factors to determine the in-situ mineral resources for the deposit. Note: Grades were estimated into all model blocks below the pre-mining topographic surface. The current (remaining) mineral resources were calculated below the current topographic surface that accounts for the portion of the deposit that has already been mined out.

14.2.7 Interpolation Parameters

The in-situ block model grades for gold, silver and copper were estimated using ordinary kriging (OK). The results of the OK estimation were compared with the Hermitian Polynomial Change of Support model (also referred to as the Discrete Gaussian Correction). This method is described in more detail in Section 14.2.8.

The Illinois Creek OK model was generated with a relatively limited number of samples to match the change of support or Herco (*Her*mitian *Co*rrection) grade distribution. This approach reduces the amount of smoothing or averaging in the model, and, while there may be some uncertainty on a localized scale, this approach produces reliable estimates of the recoverable grade and tonnage for the overall deposit.

Estimates for SG are made using the inverse distance weighting (ID^2) interpolation method.

The estimation parameters for the various elements in the mineral resource block model are shown in Table 14.5. All grade estimations use length-weighted composite drill hole sample data.

Table 14.5: Interpolation Parameters for In-Situ Mineral Resources

Element	Search Ellipse Range (m)			# of Composites			Method
	X	Y	Z[1]	Min/block	Max/block	Max/hole	
Gold	200	200	7	5	40	10	OK
Silver	200	200	7	5	40	10	OK
Copper	200	200	7	5	40	10	OK
SG	200	200	10	5	32	8	ID^2

[1] The vertical search range is relative to the interpreted trend of the mineralized zone.

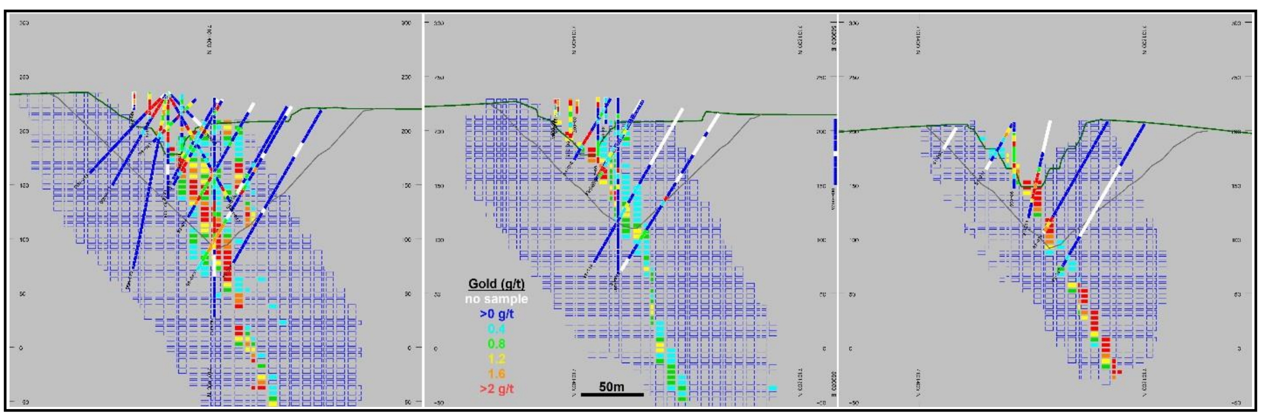
14.2.8 Validation

The results of the modeling process were validated using several methods. These include a thorough visual review of the model grades in relation to the underlying drill hole sample grades, comparisons with the change of support model, comparisons with other estimation methods and grade distribution comparisons using swath plots.

Visual Inspection

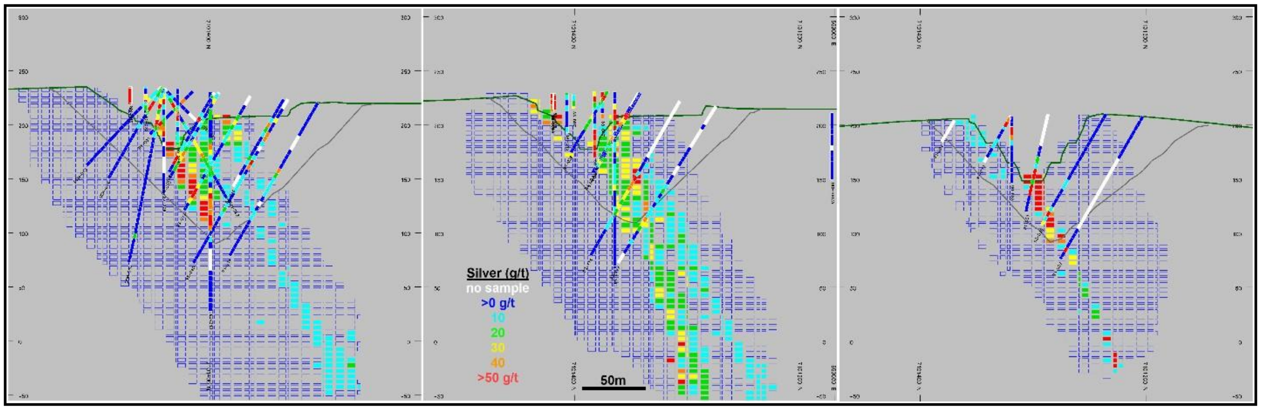
A detailed visual inspection of the block model was conducted in both section and plan to ensure the desired results following interpolation. This includes confirmation of the proper coding of blocks within the grade probability shell domains. The estimated gold, silver and copper grades in the model appear to be valid representations of the underlying drill hole sample data. Examples of the distribution of gold and silver grades in model blocks compared to the drill hole sample data are shown in several selected vertical cross sections oriented at an azimuth of 340 degrees in Figures 14.11 and 14.12. Figure 14.13 shows gold equivalent grades in model blocks for comparison purposes.

Figure 14.11: Gold Grades in Drilling and Block Model



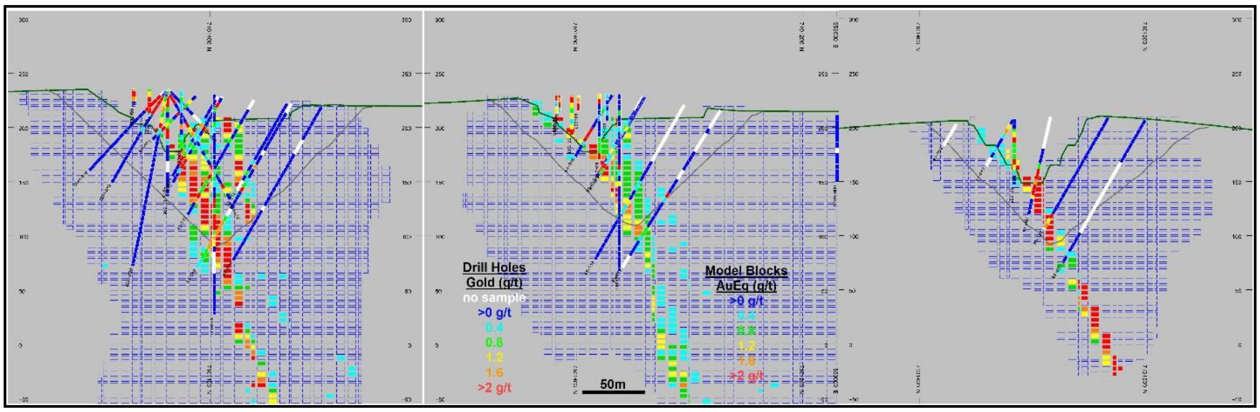
Source: SGI (2021)

Figure 14.12: Silver Grades in Drilling and Block Model



Source: SGI (2021)

Figure 14.13: Gold Equivalent Grades in Block Model



Source: SGI (2021)

Model Checks for Change of Support

The relative degree of smoothing in the block model estimates were evaluated using the Discrete Gaussian of Hermitian Polynomial Change of Support method (described by Rossi and Deutsch, Mineral Resource Estimation, 2014).

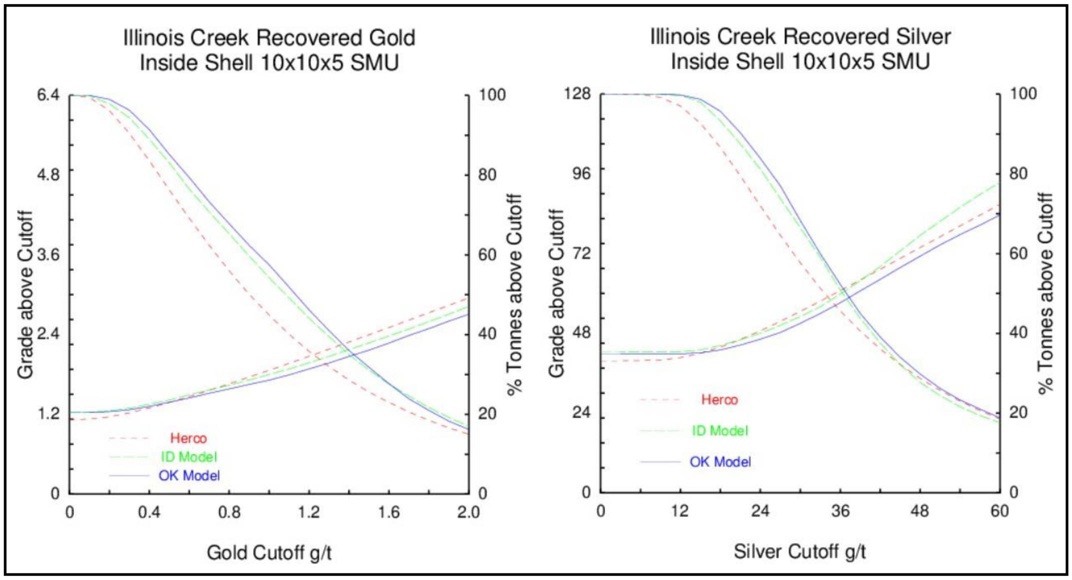
With this method, the distribution of the hypothetical block grades can be directly compared to the estimated (OK) model through the use of pseudo-grade/tonnage curves. Adjustments are made to the block model interpolation parameters until an acceptable match is made with the Herco distribution. In general, the estimated model should be slightly higher in tonnage and slightly lower in grade when compared to the Herco distribution at the projected cut-off grade. These differences account for selectivity and other potential ore-handling issues which commonly occur during mining.

The Herco distribution is derived from the declustered composite grades which were adjusted to account for the change in support, going from smaller drill hole composite samples to the large blocks in the model. The transformation results in a less skewed distribution but with the same mean as the original declustered samples.

The Herco analysis was conducted on the distribution of gold and silver in the block model and level of correspondence was achieved in all cases.

Examples showing the distributions of the gold and silver models inside their respective probability grade shell domains are shown in Figure 14.14.

Figure 14.14: Herco Grade/Tonnage Plot for Gold and Silver Models



Source: SGI (2021)

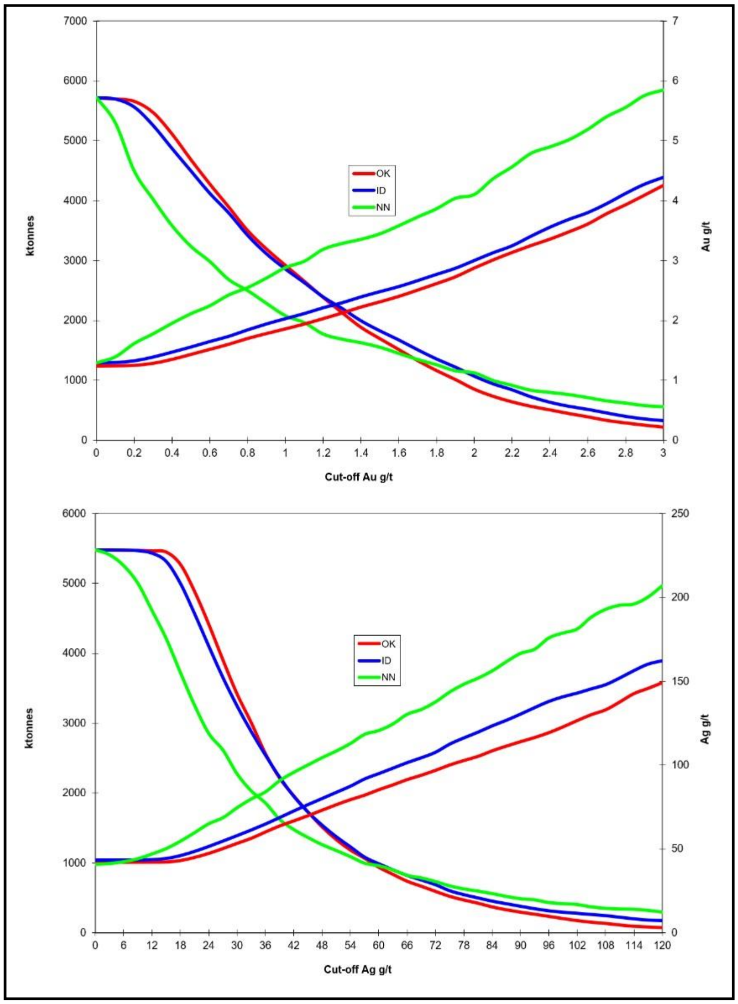
Comparison of Interpolation Methods

For comparison purposes, additional models for gold, silver and copper were generated using both the inverse distance weighted (ID^2) and nearest neighbor (NN) interpolation methods (the NN model was generated using data composited to 5 m intervals).

Comparisons are made between these models on grade/tonnage curves. Examples of the grade/tonnage curves for gold and silver are shown in Figure 14.15 (these are restricted to model blocks within their respective probability shell domains and in the Indicated category). There is good correlation between the OK and ID^2 models throughout the range of cut-off grades. The NN distribution, generally showing less tonnage and higher grade, is the result of the absence of smoothing in this modeling approach. Similar results were achieved with the copper model.

Reproduction of the model using different methods tends to increase the confidence in the overall mineral resource estimate.

Figure 14.15: Grade/Tonnage Comparison of Gold and Silver Models



Note: restricted to Indicated class blocks inside grade shell domains.

Source: SGI (2021)

Swath Plots (Drift Analysis)

A swath plot is a graphical display of the grade distribution derived from a series of bands, or swaths, generated in several directions through the deposit. Grade variations from the OK model are compared using the swath plot to the distribution derived from the declustered (NN) grade model.

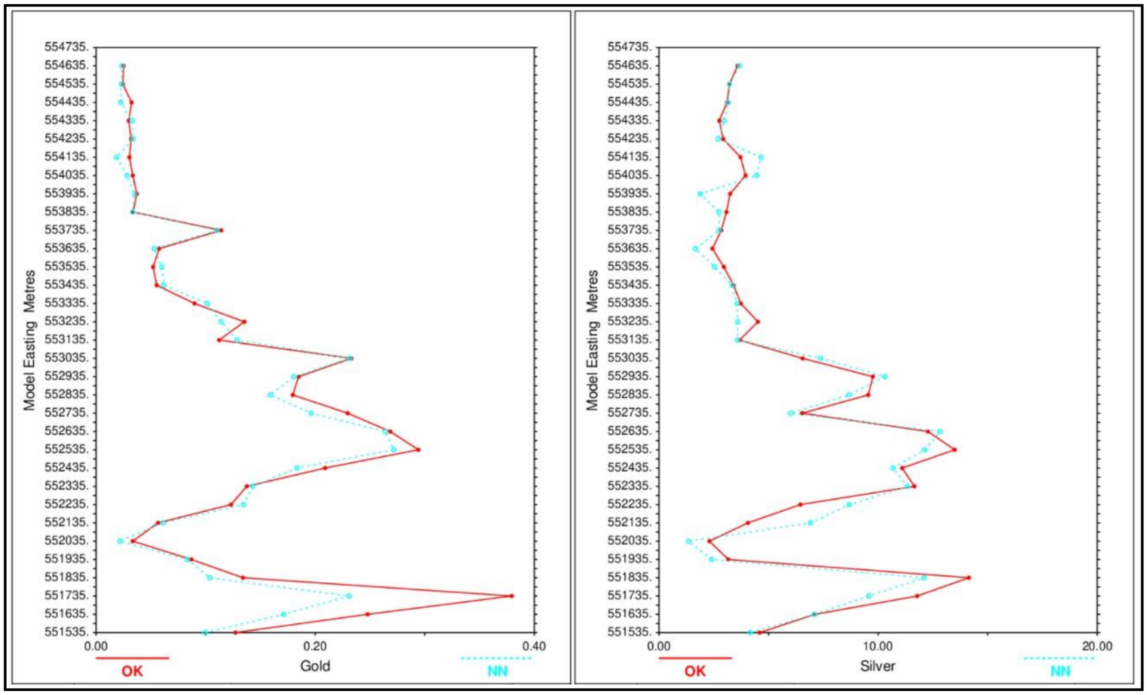
On a local scale, the NN model does not provide reliable estimations of grade, but, on a much larger scale, it represents an unbiased estimation of the grade distribution based on the underlying data. Therefore, if the OK model is unbiased, the grade trends may show local fluctuations on a swath plot, but the overall trend should be similar to the NN distribution of grade.

Swath plots were generated in three orthogonal directions for all models. An example of the gold and silver distributions in north-south swaths is shown in Figure 14.16.

There is good correspondence between the models in most areas. The degree of smoothing in the OK model is evident in the peaks and valleys shown in the swath plots. Areas where there are large differences between the models tend to be the result of "edge" effects, where there is less available data to support a comparison. Note: The majority of the mineral resources occur in three separate zones: West (between 551600E to 552000E), Central (between 552300E to 553400E) and East (between 553600E to 553800E).

The validation results indicate that the OK model is a reasonable reflection of the underlying sample data.

Figure 14.16: Swath Plot of Gold and Silver OK and NN Models by Easting



14.2.9 Mineral Resource Classification

The in-situ mineral resources for the Illinois Creek deposit were classified in accordance with the CIM *Definition Standards on Mineral Resources and Mineral Reserves* (May 2014). The classification parameters are defined relative to the distance between gold sample data and are intended to encompass zones of reasonably continuous mineralization that exhibit the desired degree of confidence. These parameters are based on visual observations and statistical studies. Classification parameters are based primarily on the nature of the distribution of gold data as it is the main contributor to the relative value of this polymetallic deposit.

The following criteria were used to define in-situ mineral resources in the Indicated and Inferred categories.

Indicated Mineral Resources (In-situ)

Mineral resources in this category exhibit good continuity of mineralization in which there is a consistent pattern or distribution of drill holes that are on a maximum nominal spacing of 30 m.

Inferred Mineral Resources (In-situ)

Mineral resources in this category include model blocks that are located within a maximum distance of 100 m from a drill hole.

A domain was interpreted that encompasses model blocks that are included in the Indicated category. This step ensures consistency of classification of Indicated resources across the deposit.

At this stage of project evaluation, there are no in-situ mineral resources included in the Measured category.

14.3 Approach to Estimation of Leach Pad Mineral Resources

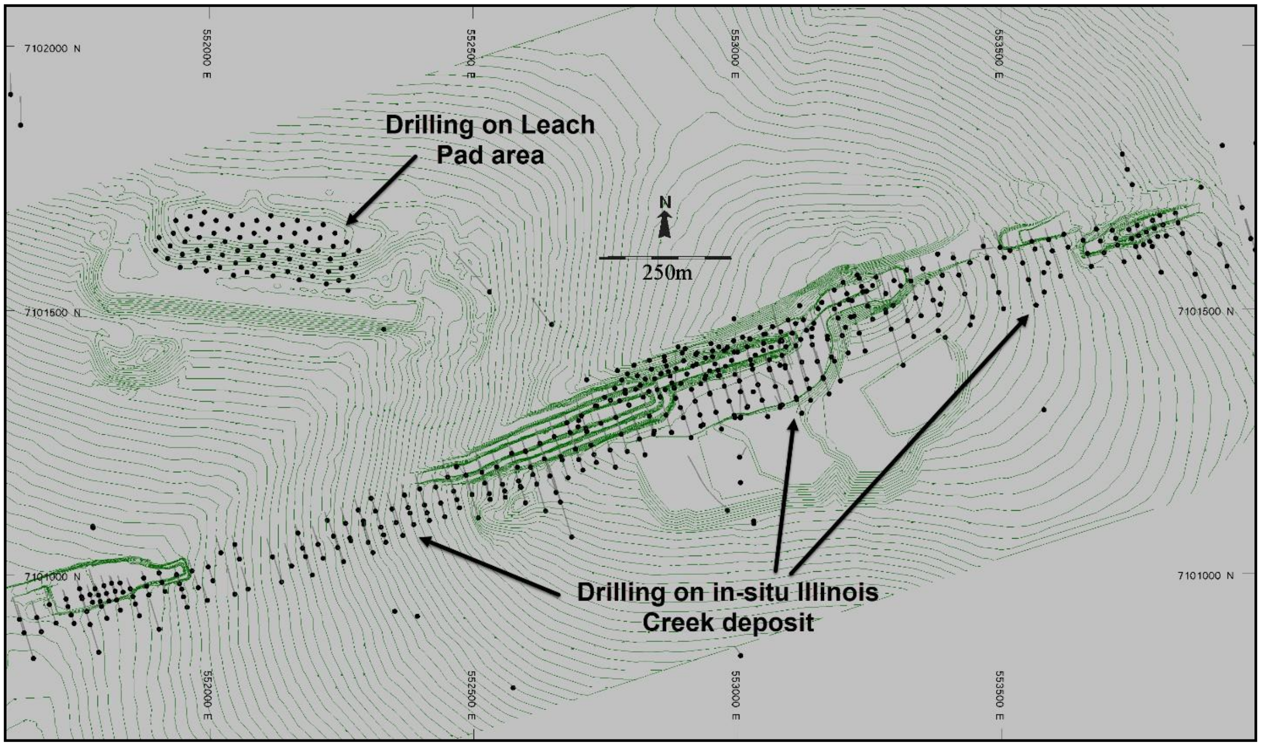
This section of the report describes the approach used to estimate the mineral resources on the leach pad at the Illinois Creek deposit. This is the first estimate of mineral resources for the material located on the leach pad at the Illinois Creek deposit.

The leach pad material was stacked and leached intermittently starting in 1979 through mine closure. Recovery problems were encountered due to the change from a crush/agglomeration process envisioned in the feasibility study to a run-of-mine (ROM) scenario and, as a result, very little of the contained gold was ever extracted from the material on the leach pad. During reclamation, the pad was slightly recontoured and covered with a thin 1 m topsoil cap.

In the summer of 2020, WAC&G tested the leach pad area by drilling a series of 73 vertically oriented reverse circulation (RC) drill holes spaced on a regular 25 to 30 m grid pattern. The RC drill holes were stopped approximately 2 to 3 m above the impermeable liner location at the bottom of the leach pad.

Figure 14.17 shows the location of drilling in the leach pad area in relation to the drill holes that test the in-situ Illinois Creek deposit. The leach pad mineral resource estimate was generated using the RC drill hole sample assay results. Interpolation characteristics were defined based on the assumption that the leach pad material was stacked in a series of horizontal lifts.

Figure 14.17: Plan View Showing Drilling on the Illinois Creek Deposit and in the Leach Pad Area



Source: SGI (2021)

14.3.1 Available Data

On October 16, 2020, WAC&G provided the updated drill hole sample data for the Illinois Creek deposit.

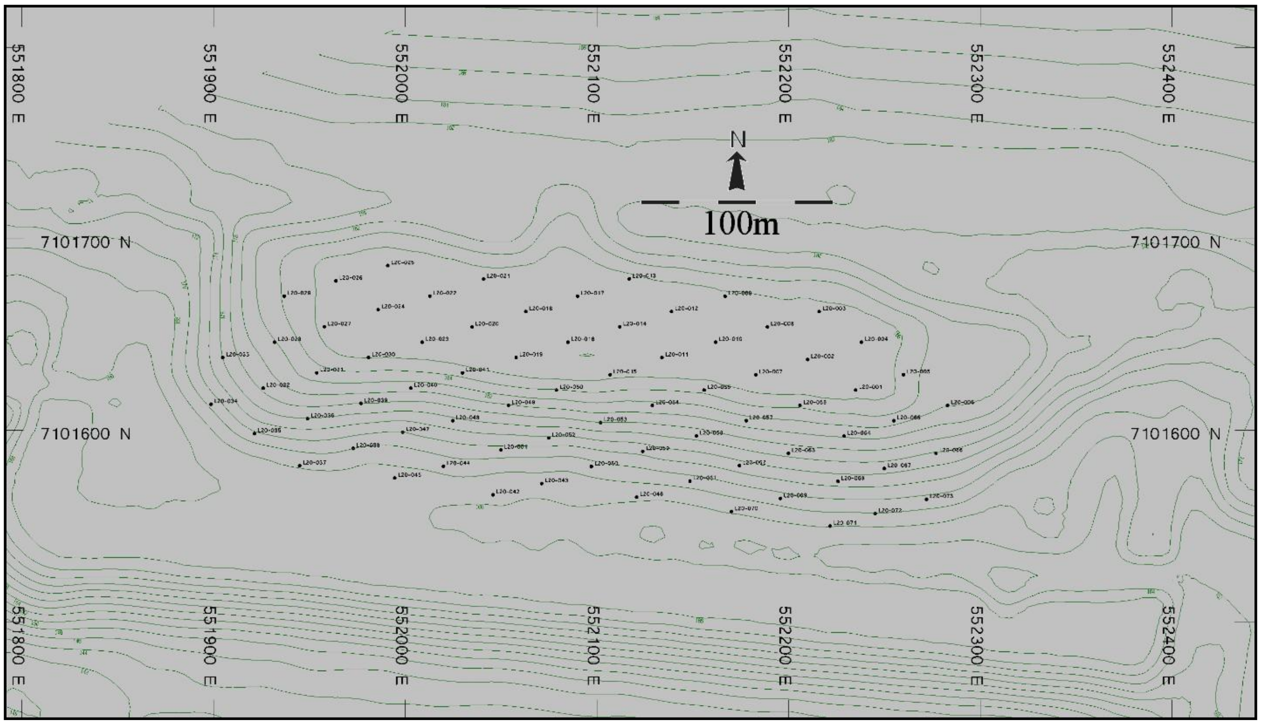
The data comprised a series of Excel files (.xls spreadsheet) containing collar locations and assay results for a total of 73 drill holes representing 643.15 m of drilling. There was no associated geologic information provided with this drilling.

As stated previously, all of the drilling on the leach pad was completed using RC drilling equipment. Drilling was conducted in imperial units and the from-to intervals have been converted to metric equivalents for mineral resource estimation purposes. All holes are vertically oriented and range from a minimum of 3.05 m (10 ft) long to a maximum of 18.29 m (60 ft) long. Samples are taken on 1.52 m (5 ft) intervals.

All drilled intervals were sampled and analyzed using a multi-element ICP package plus fire assay for gold and additional analyses for cyanide-soluble gold, silver and copper. Sample data for gold, silver, copper, lead and zinc plus cyanide-soluble gold, silver and copper values were exported and retained for mineral resource estimation purposes. At this stage of project evaluation, it is likely that lead, zinc or copper would not be effectively extracted from the leach pad, but estimates are retained for information purposes. Assay results for copper, lead, zinc and cyanide-soluble copper are expressed in parts per million (ppm) units; these have been converted to percentage values for this study. Note: 15 samples exceed the maximum ICP grade ranges for lead (values occur as “>10,000 ppm Pb in the original database). These have been assigned default values of 1.01% Pb.

The distribution of drill holes on the leach pad is shown in plan view in Figure 14.18.

Figure 14.18: Plan View of Drilling on the Leach Pad Area



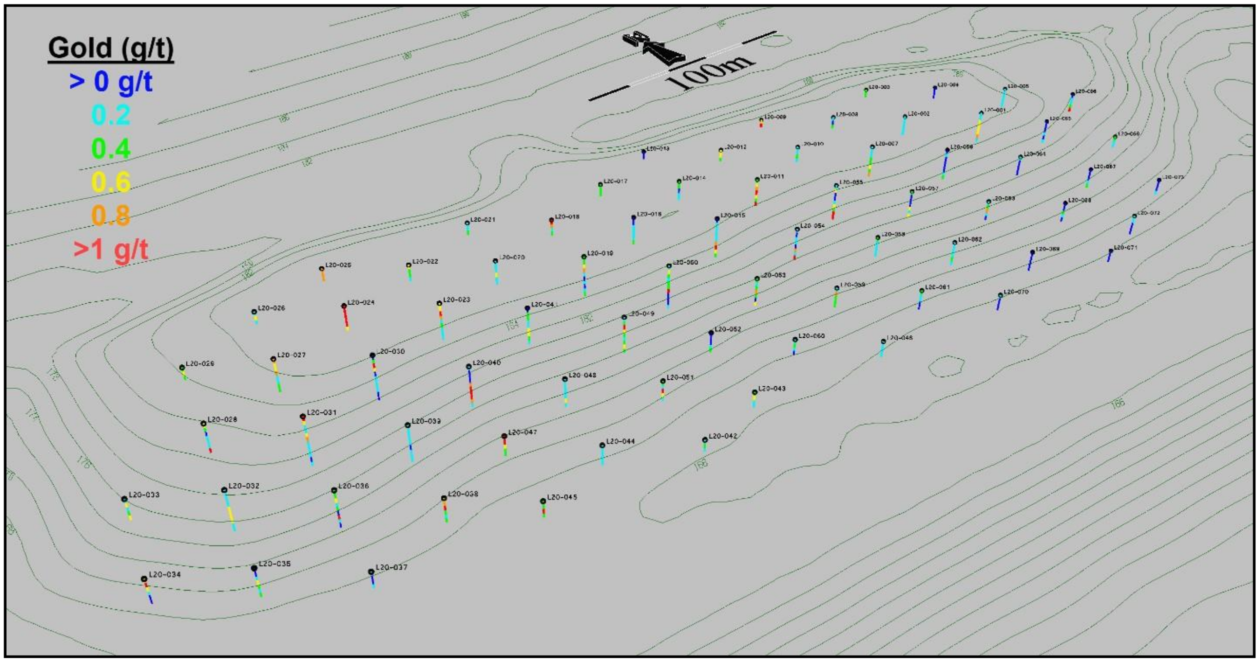
Source: SGI (2021)

The leach pad sample database contains a total of 422 individual samples, each of which represents a 1.52 m (5 ft) sample interval.

The distributions of available gold, silver, copper, lead and zinc sample data are shown in Figures 14.19, 14.20, 14.21, 14.22 and 14.23, respectively.

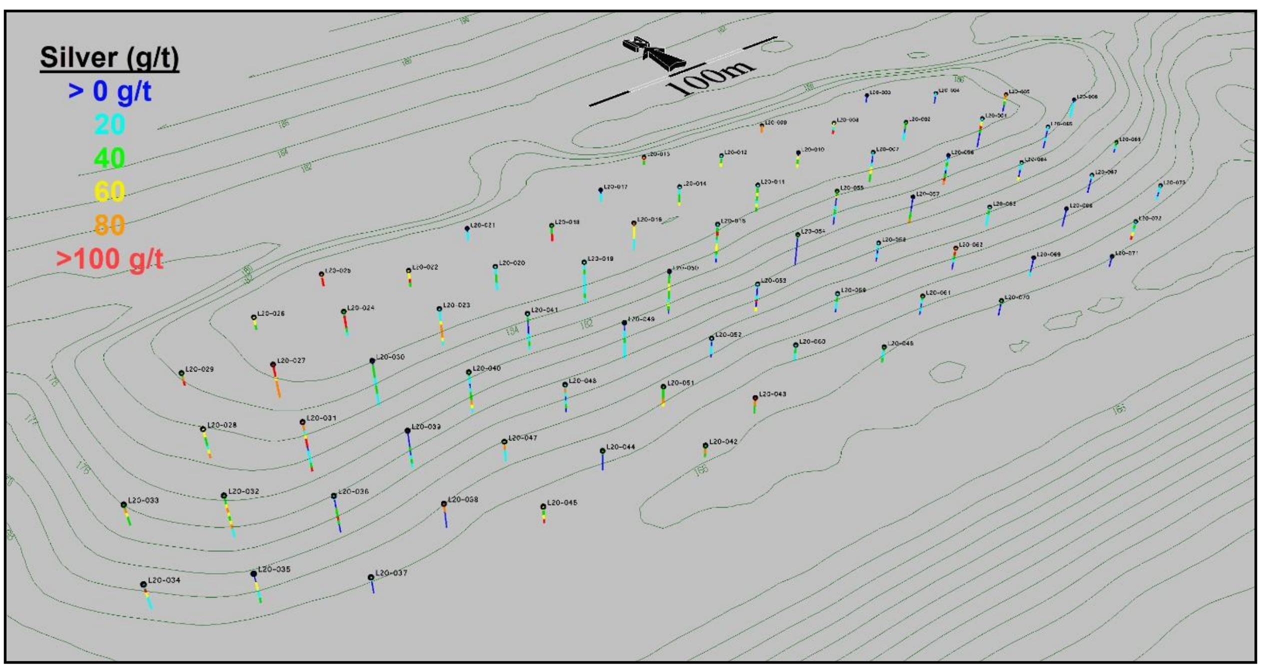
The ratio of cyanide-soluble gold to total gold (AuCN/AuTotal) was also calculated from the sample data to provide some information regarding the solubility of the material on the leach pad. These ratios, shown in Figure 14.24, tend to be quite variable over the leach pad.

Figure 14.19: Isometric View of Available Gold Data in Leach Pad Drilling



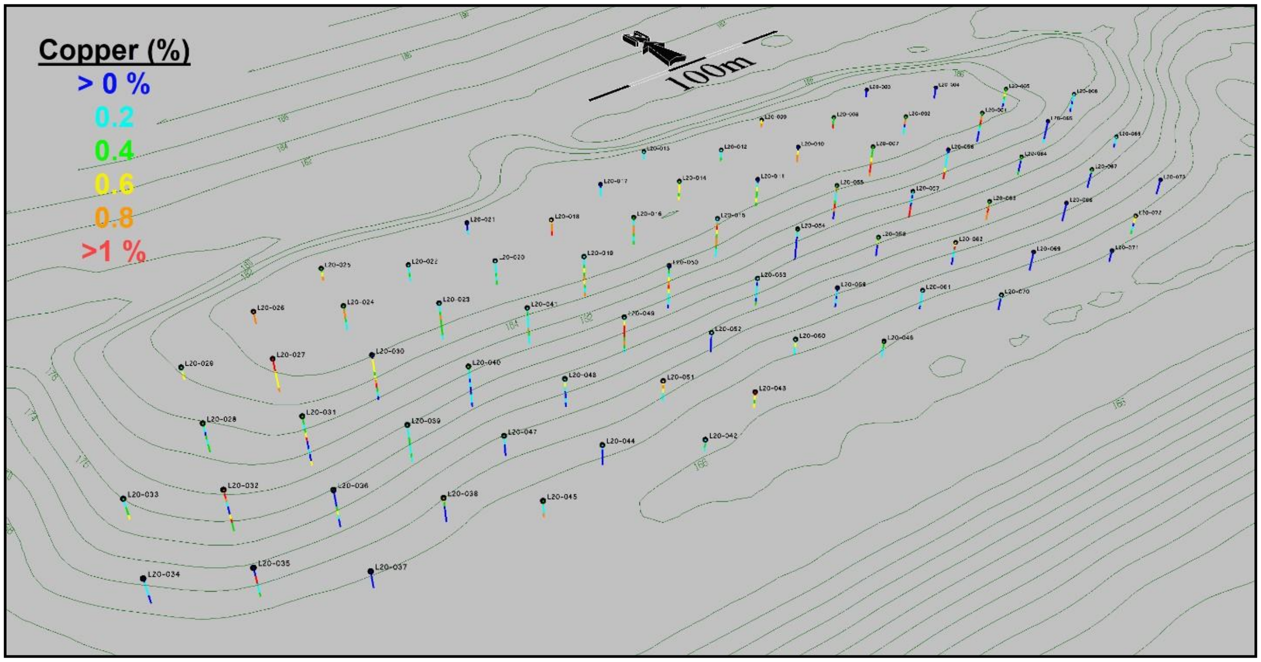
Source: SGI (2021)

Figure 14.20: Isometric View of Available Silver Data in Leach Pad Drilling



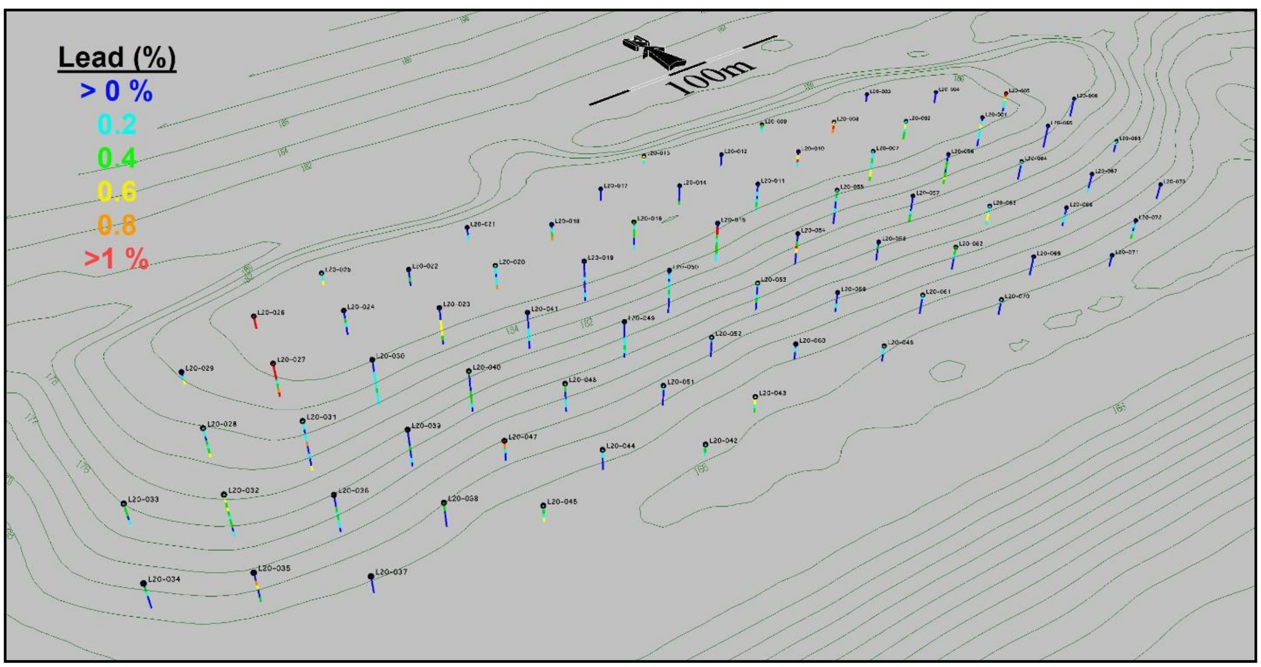
Source: SGI (2021)

Figure 14.21: Isometric View of Available Copper Data in Leach Pad Drilling



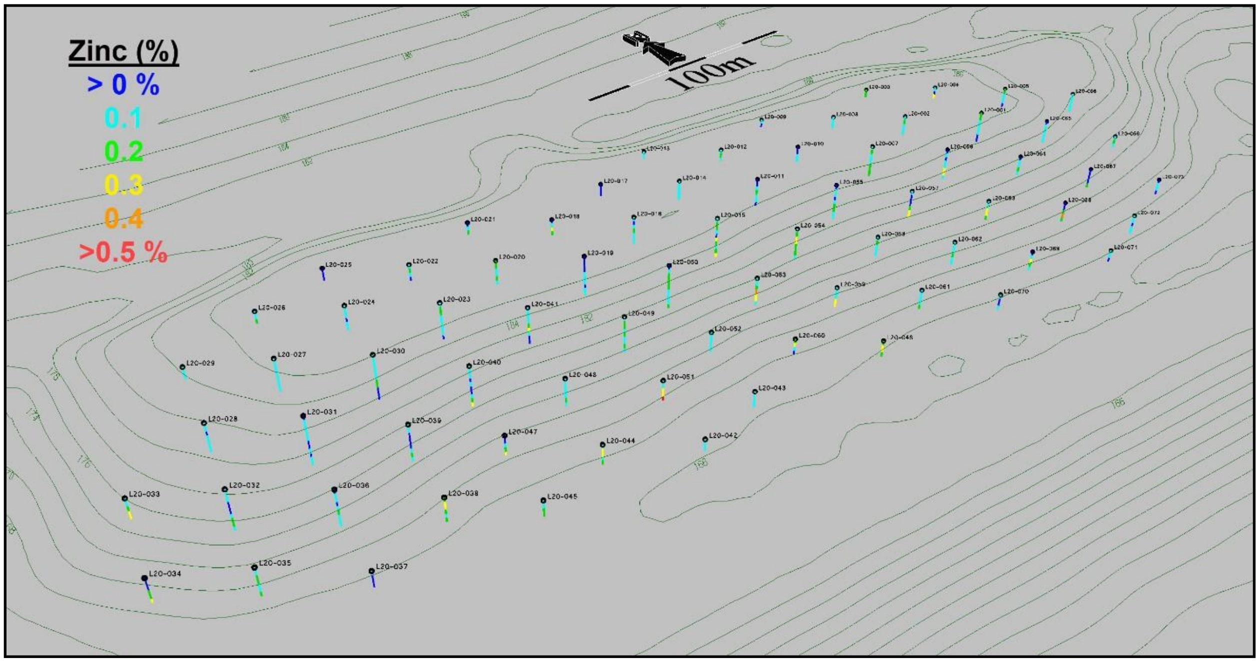
Source: SGI (2021)

Figure 14.22: Isometric View of Available Lead Data in Leach Pad Drilling



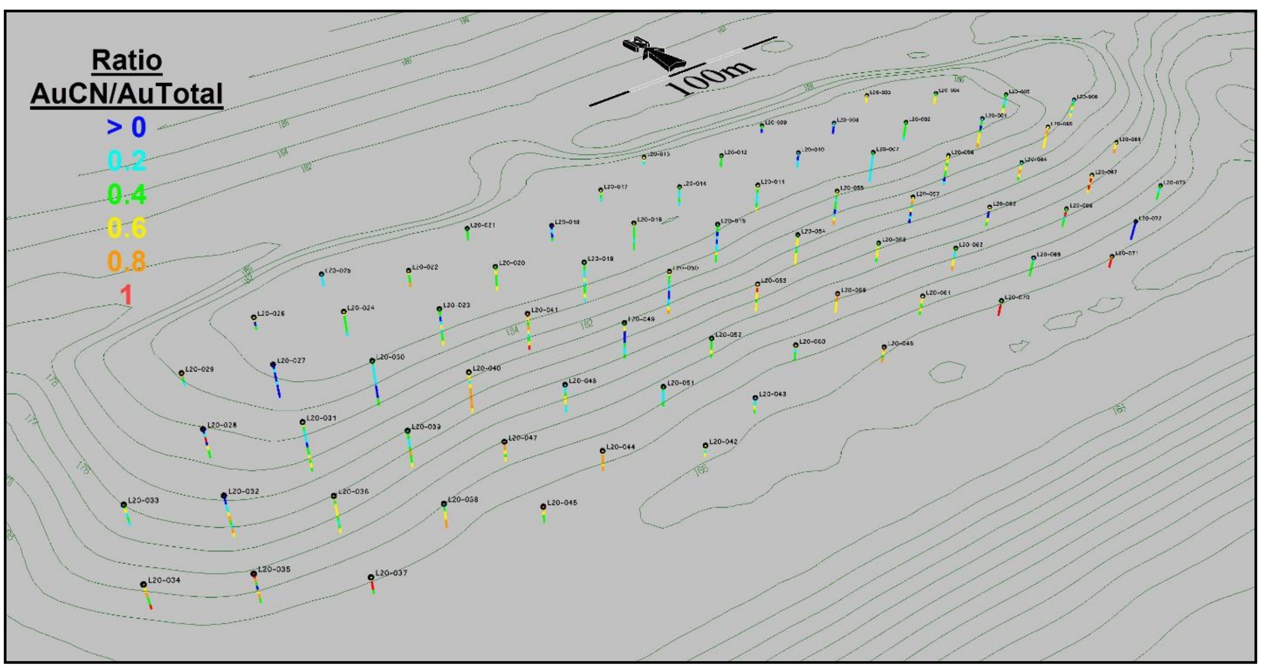
Source: SGI (2021)

Figure 14.23: Isometric View of Available Zinc Data in Leach Pad Drilling



Source: SGI (2021)

Figure 14.24: Isometric View of AuCN/AuTotal Ratios in Leach Pad Drilling



Source: SGI (2021)

A 3D topographic surface in the area of the leach pad was generated using the drill hole collar locations plus a series of additional points surveyed by McClintock Land Associates. The topographic contours shown in Figures 14-18 to 14-24 have been generated from the updated topographic surface. A surface representing the base of the leach pad was created using the "as-built" information originally generated by SRK Consulting (SRK). During drilling of the leach pad, drill holes were stopped 2 to 3 m above the base of the leach pad to prevent damage to the liner.

Several test pits, dug and filled with water, provided the specific gravity (SG) values: the larger test pits (dug by backhoe) showed SG ranges from 2.1 to 2.6 with an average of 2.3; the several smaller test pits (dug by hand) showed SG ranges from 1.8 to 2.2 with an average of 2.0. Historical production records indicate a total of 1.59M tonnes of ore was stacked on the leach pad. With a pad volume estimated to be 631,360 cubic meters, this gives an average SG of 2.5. Although the rocks at Illinois Creek contain high-sulfide contents, and the leach pad appears to be well compacted, an average SG of 2.5 is considered too high for material of this type. Therefore, an average SG of 2.3 was considered reasonable to determine the mineral resource tonnage on the leach pad.

The statistical properties of the leach pad sample data are shown in Table 14.6.

Table 14.6: Summary of Basic Statistics of Leach Pad Sample Data

Element	# of Samples	Min	Max	Mean	Std. Dev.
Gold (g/t)	422	0	3.740	0.467	0.444
Silver (g/t)	422	0	409.0	46.2	43.04
Copper (%)	422	0	4.37	0.44	0.406
Lead (%)	422	0	1.01	0.29	0.237
Zinc (%)	422	0	1.00	0.16	0.089
CN Soluble Gold (g/t)	422	0	3.29	0.239	0.325
CN Soluble Silver (g/t)	422	0	78.3	8.9	9.825
CN Soluble Copper (%)	422	0	0.20	0.07	0.060

Note: Original sample data are weighted by sample length.

There is quite a high amount of variability in the sample weights, but there is no evidence that a relationship exists between sample size and grade.

14.3.2 Compositing

See Section 14.2.2 for the description of compositing.

A composite length of 1.5 m was selected for the leach pad samples, reflecting the fact that all samples were collected on 1.52 m (5 ft) intervals.

Drill hole composites are length-weighted and were generated down-the-hole; this means that composites begin at the top of each hole and are generated at 1.5 m intervals down the length of the hole.

14.3.3 Exploratory Data Analysis

See Section 14.2.3 for the description of exploratory data analysis (EDA).

A series of histograms and cumulative probability plots were generated for the various elements of interest. In essentially all cases, the sample data exhibit skewed distributions and pseudo-lognormal trends. A series of scatterplots were also generated that show weak to moderate correlation between gold and the other metals.

There are no geologic domains related to the mineralized material located on the leach pad. Historical data suggests the material was placed on the pad in horizonal lifts, which would suggest there may be weak lateral trends present but limited-to-no vertical continuity of sample grades.

14.3.4 Evaluation of Outlier Grades

Histograms and probability plots for the distribution of gold, silver, copper, lead and zinc were reviewed to identify the presence of anomalous outlier grades in the composited (1.5 m) database. Following a review of the physical location of potentially erratic samples in relation to the surrounding sample data, it was decided that these would be controlled during block grade interpolations using a combination of top-cutting plus the application of outlier limitations. An outlier limitation controls the distance of influence of samples above a defined grade threshold. During grade interpolations, samples above the outlier thresholds are limited to a maximum distance of influence of 20 m (approximately ½ the distance between drill holes). The grade thresholds for all elements are shown in Table 14.7.

Overall, these applications result in a 3.3% reduction in contained gold, 3.5% reduction in contained silver, 2.1% reduction in contained copper, and 1.4% and 1.8% reductions in contained lead and zinc, respectively. These measures are considered appropriate for this leach pad area.

Table 14.7: Treatment of Outlier Samples in Leach Pad Data

Element	Maximum	Top-Cut Limit	Outlier Limit
Gold (g/t)	3.640	-	1.500
Silver (g/t)	409.0	300.0	150.0
Copper (%)	4.24	2.50	1.70
Lead (%)	1.01	-	0.90
Zinc (%)	1.00	0.50	0.40

Note: Table 14.7 reflects 1.5 m composited drill hole data.

14.3.5 Variography

See Section 14.2.5 for the description of variography.

Multidirectional variograms for gold, silver, copper, lead, zinc and the ratio of AuCN/AuTotal were generated using the composited (1.5 m) sample data. Variograms were “flattened” in the horizontal directions to restrict or limit the amount of smoothing in the vertical direction (this approach is in response to the horizontal stacking approach used to build the leach pad). The variograms are summarized in Table 14.8.

Table 14.8: Variogram Parameters of Leach Pad Sample Data

Element	Nugget	Sill 1	Sill 2	1st Structure Range (m)	1st Structure Azimuth (°)	1st Structure Dip	2nd Structure Range (m)	2nd Structure Azimuth (°)	2nd Structure Dip
Gold	0.062	0.805	0.133	37	96	0	2203	0	0
	Spherical			16	6	0	23	90	0
				6	90	90	9	90	90
Silver	0.226	0.364	0.410	53	341	0	411	62	0
	Spherical			17	71	0	47	332	0
				5	90	90	18	90	90
Copper	0.075	0.625	0.300	48	104	0	88	4	0
	Spherical			17	14	0	30	94	0
				5	90	90	9	90	90
Lead	0.033	0.741	0.226	34	80	0	201	28	0
	Spherical			31	350	0	47	118	0
				5	90	90	10	90	90
Zinc	0.260	0.545	0.195	26	33	0	1669	65	0
	Spherical			19	123	0	57	335	0
				8	90	90	9	90	90
Ratio AuCN/AuTotal	0.328	0.608	0.065	65	44	0	874	34	0
	Spherical			28	134	0	786	124	0
				10	90	90	21	90	90

Note: Correlograms were conducted on 1.5 m composite sample data.

14.3.6 Model Setup and Limits

The block model described in Table 14.4 not only covers the area of the in-situ mineral resources but also extends to the area of the leach pad. The nominal block size, measuring 10 × 10 × 5 m (l × w × h), is considered appropriate with respect to the current drill hole spacing in the leach pad area. Grade estimates used to estimate the leach pad mineral resources are restricted to model blocks that intersect the volume of material located on the leach pad.

The proportion of blocks that occur within the volume of material on the leach pad is also calculated and stored within the model as individual percentage items. These values are used as weighting factors to determine the volume (tonnage) of mineral resources located on the leach pad.

14.3.7 Interpolation Parameters

The block model grades for gold, silver, copper, lead, zinc and the ratio of AuCN/AuTotal were estimated using ordinary kriging (OK). The results of the OK estimation were compared with the Hermitian Polynomial Change of Support model (also referred to as the Discrete Gaussian Correction described previously in Section 14.2.8 of this report).

The Illinois Creek OK model for the leach pad mineral resources was generated with a relatively limited number of samples to match the change of support or Herco (*Her*mitian *Co*rrection) grade distribution. This approach reduces the amount of smoothing or averaging in the model, and, while there may be some uncertainty on a localized scale, this approach produces reliable estimates of the recoverable grade and tonnage for the overall deposit.

The estimation parameters for the various elements in the mineral resource block model are shown in Table 14.9. All grade estimations use length-weighted composite drill hole sample data.

Table 14.9: Interpolation Parameters for Leach Pad Area Mineral Resources

Element	Search Ellipse Range (m)			Number of Composites			Comments
	X	Y	Z[1]	Min/block	Max/block	Max/hole	
Gold	100	100	7	3	20	5	1 DH per Octant
Silver	100	100	7	3	20	5	1 DH per Octant
Copper	100	100	7	3	20	5	1 DH per Octant
Lead	100	100	7	3	20	5	1 DH per Octant
Zinc	100	100	7	3	20	5	1 DH per Octant
Ratio AuCN/AuTotal	100	100	7	3	20	5	1 DH per Octant

[1] The vertical search range is relative to the interpreted trend of the mineralized zone. DH = drill hole.

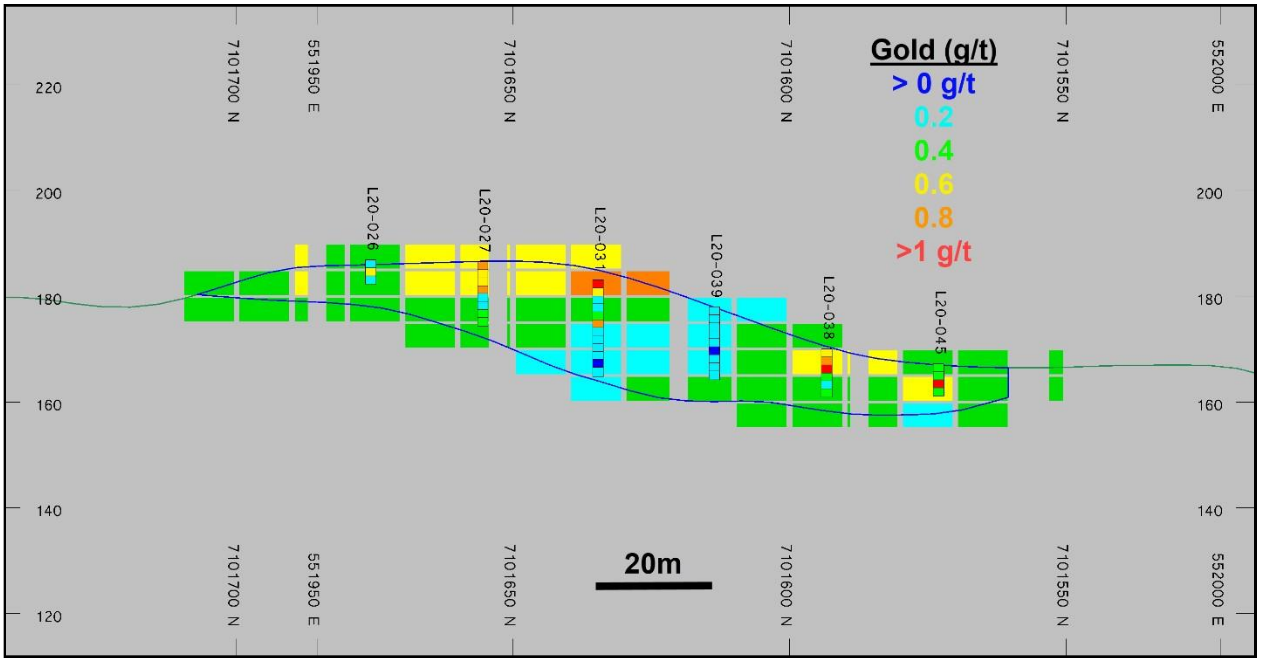
14.3.8 Validation

The results of the modeling process were validated using several methods. These include a thorough visual review of the model grades in relation to the underlying drill hole sample grades, comparisons with the change of support model, comparisons with other estimation methods and grade distribution comparisons using swath plots.

Visual Inspection

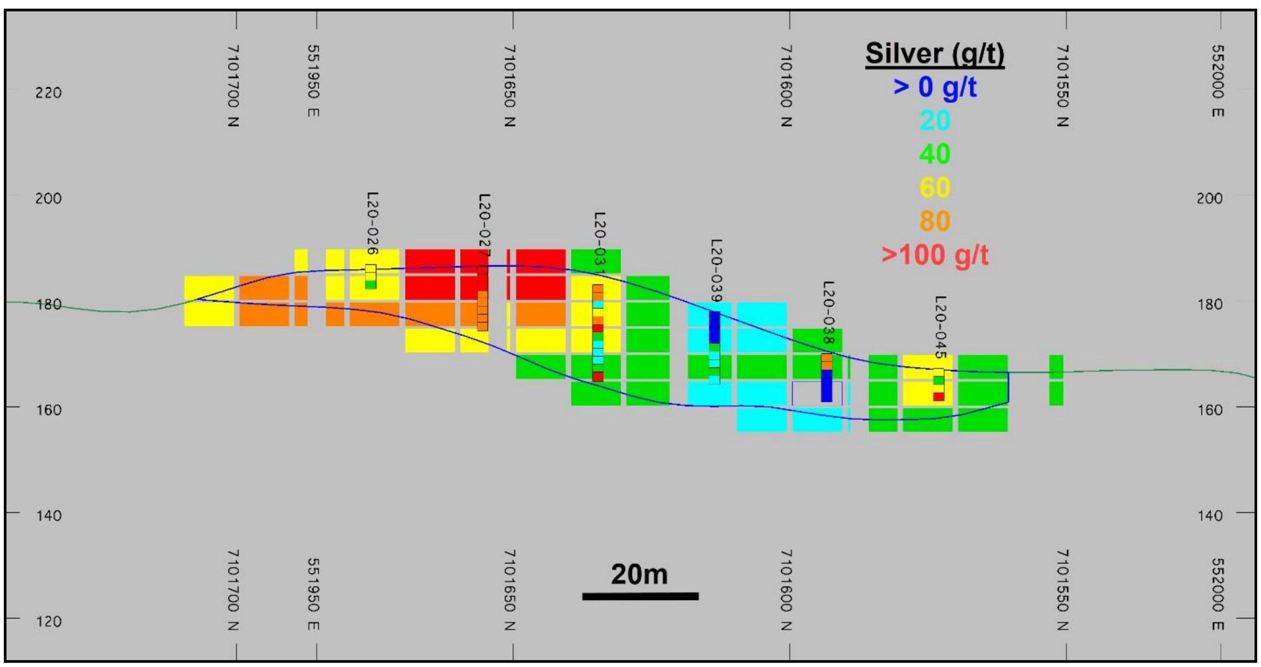
A detailed visual inspection of the block model was conducted in both section and plan to ensure the desired results following interpolation. The estimated gold, silver, copper, lead and zinc grades in the leach pad area appear to be valid representations of the underlying drill hole sample data. Examples of the distribution of gold and silver grades in model blocks compared to the drill hole sample data are shown in several selected vertical cross sections oriented at an azimuth of 340 degrees in Figures 14.25 and 14.26.

Figure 14.25: Gold Grades in Drilling and Block Model in the Leach Pad Area



Source: SGI (2021)

Figure 14.26: Silver Grades in Drilling and Block Model in the Leach Pad Area



Source: SGI (2021)

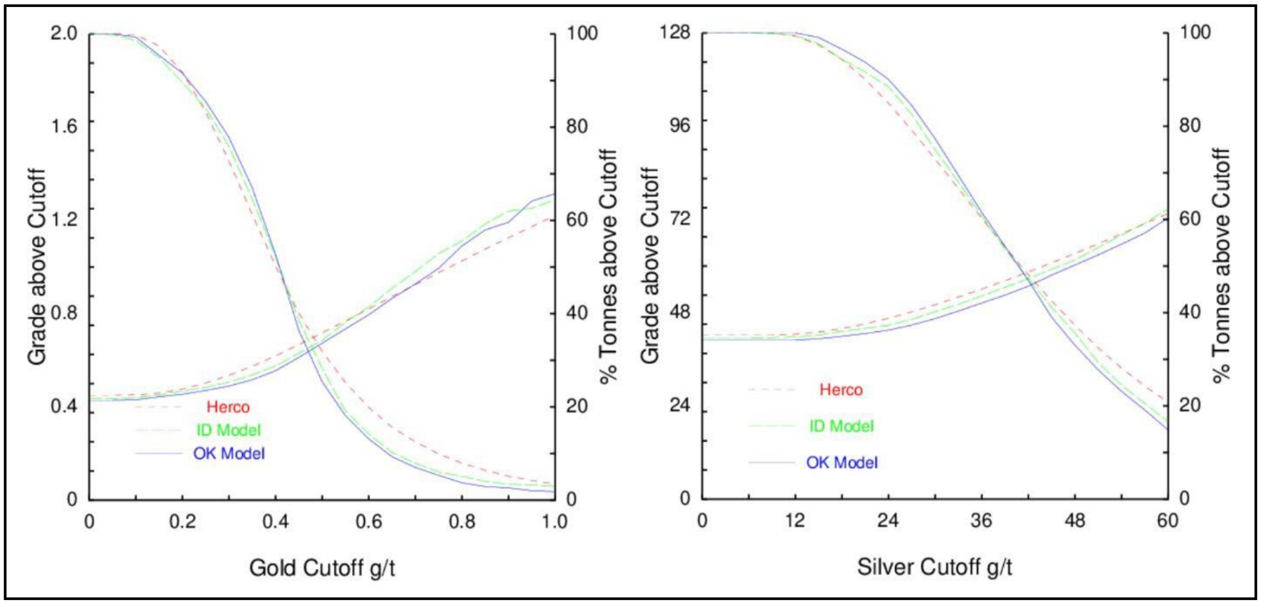
Model Checks for Change of Support

See Section 14.2.8 for the description of model checks for change of support.

The Herco analysis was conducted on the distribution of all five metals estimated in the block model and level of correspondence was achieved in all cases.

Examples showing the distributions of the gold and silver models are shown in Figure 14.27.

Figure 14.27: Herco Grade/Tonnage Plot for Gold and Silver Models in the Leach Pad Area



Source: SGI (2021)

Swath Plots (Drift Analysis)

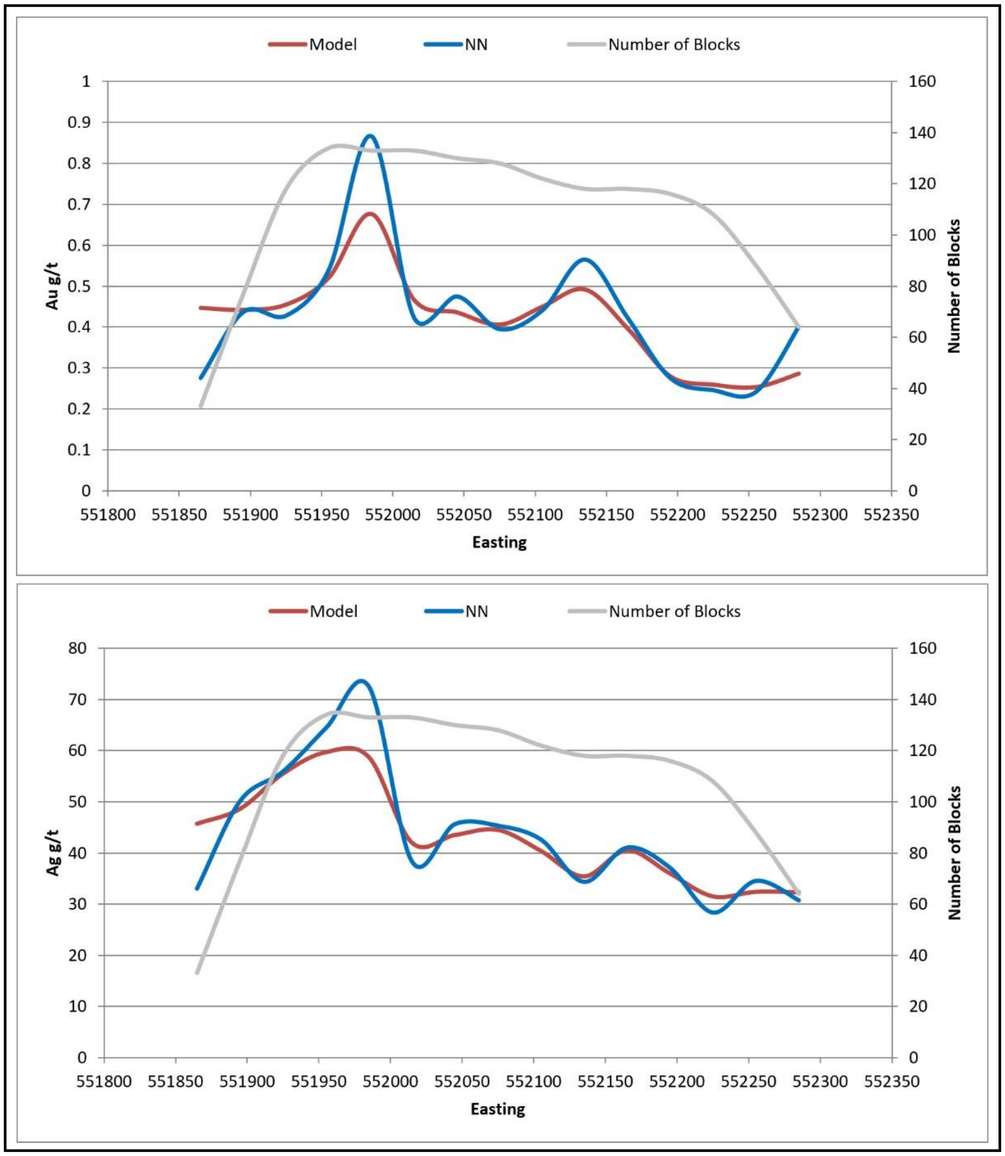
See Section 14.2.8 for the description of swath plots.

Swath plots were generated in three orthogonal directions for all models. An example of the gold and silver distributions in north-south swaths is shown in Figure 14.28.

There is good correspondence between the models in most areas. The degree of smoothing in the OK model is evident in the peaks and valleys shown in the swath plots.

The validation results indicate that the OK model is a reasonable reflection of the underlying sample data.

Figure 14.28: Swath Plot of Gold and Silver OK and NN Models by Easting in the Leach Pad Area



Source: SGI (2021)

14.3.9 Mineral Resource Classification

The mineral resources located in the leach pad area at the Illinois Creek deposit were classified in accordance with the CIM *Definition Standards on Mineral Resources and Mineral Reserves* (May 2014). The classification parameters are defined relative to the distance between gold sample data and are intended to encompass zones of reasonably continuous mineralization that exhibit the desired degree of confidence. These parameters are based on visual observations and statistical studies. Classification parameters are based primarily on the nature of the distribution of gold data as it is the main contributor to the relative value of this polymetallic leach pile.

The following criteria were used to define leach pad mineral resources in the Indicated and Inferred categories.

Indicated Mineral Resources (Leach Pad)
Mineral resources in this category are areas of the leach pad where there is a consistent pattern or distribution of drill holes that are on a maximum nominal spacing of 30 m.

Inferred Mineral Resources (Leach Pad)
Mineral resources in this category include model blocks that are located within a maximum distance of 60 m from a drill hole.

A domain was interpreted that encompasses model blocks that are included in the Indicated category. This step ensures consistency of classification across the deposit. The remainder of the leach pile material that is not included in the Indicated category is included in the Inferred resource category.

At this stage of project evaluation, there are no mineral resources on the leach pad that can be included in the Measured category.

14.4 ESTIMATION OF IN-SITU AND LEACH PAD MINERAL RESOURCES

CIM *Definition Standards on Mineral Resources and Mineral Reserves* (May 2014) define a mineral resource as: “[A] concentration or occurrence of solid material of economic interest, in or on the Earth’s crust in such form, grade or quality and quantity, that there are reasonable prospects for eventual economic extraction. The location, quantity, grade or quality, continuity and other geological characteristics of a Mineral Resource are known, estimated or interpreted from specific geological evidence and knowledge, including sampling.”

The requirement with respect to “reasonable prospects for eventual economic extraction” generally implies that quantity and grade estimates meet certain economic thresholds and that mineral resources are reported at an appropriate cut-off grade that takes into account extraction scenarios and processing recovery. It is assumed that the in-situ mineral resources would be mined using open pit extraction methods. It is also assumed that there would be no selectivity (i.e., no cut-off grade threshold) of the material located in the leach pad area and that all of the material currently located on the leach would be treated with cyanide leaching solution.

Reasonable prospects for eventual economic extraction of the in-situ mineral resources were tested by constraining it within a floating cone pit shell with the following parameters (US$):

- Mining (open pit) $2.50/t
- Processing $10/t
- G&A $4/t
- Gold price $1,600/oz
- Silver price $20/oz
- Gold process recovery 92%
- Silver process recovery 65%
- Copper process recovery 0% (no CN-leach recovery of copper)
- Pit slope 45 degrees

Based on the metal prices and recoveries listed here, recoverable gold equivalent (AuEqR) grades are calculated using the following formula:

$$AuEqR = (Au\ g/t \times 0.92) + (Ag\ g/t \times 0.0125 \times 0.65)$$

The pit shell is generated using a floating cone algorithm based on the recoverable gold equivalent block grades. There are no adjustments for mining recoveries or dilution. This test indicates that some of the deeper mineralization may not be economic due to the increased waste-stripping requirements. It is important to recognize that discussions surrounding surface mining parameters are used solely to test the “reasonable prospects for eventual economic extraction,” and they do not represent an attempt to estimate mineral reserves. There are no mineral reserves calculated for this Project. These preliminary evaluations are used to prepare a Mineral Resource Statement and to select appropriate reporting assumptions.

The estimate of in-situ mineral resources, contained within the $1,600/oz Au pit shell, is shown in Table 14.10. Based on the assumed metal prices, operating costs and projected metallurgical recoveries, the base case cut-off grade for mineral resources is estimated to be 0.35 g/t gold equivalent (AuEq). Note that the average SG of the in-situ mineral resources is 2.52.

The estimate of mineral resources located on the leach pad is shown in Table 14.11. It is assumed that all of the material currently located on the leach pad exhibits reasonable prospects for eventual economic extraction considering the same prices and costs used for the floating cone analysis above. It is also assumed that there will be no selective mining and that the whole volume of material on the pad will be processed using leaching solutions. Therefore, mineral resources located on the leach pad are presented at a zero cut-off grade.

The combined mineral resources for the Illinois Creek Project are shown in Table 14.12.

There are no known factors related to environmental, permitting, legal, title, taxation, socio-economic, marketing, political or other relevant factors which could materially affect the mineral resource. Mineral resources in the Inferred category have a lower level of confidence than that applied to mineral resources in the Indicated category, and, although there is sufficient evidence to imply geologic grade and continuity, these characteristics cannot be verified based on the current data. It is reasonable to expect that the majority of Inferred mineral resources could be upgraded to Indicated mineral resources with continued exploration.

Table 14.10: Mineral Resource Estimate for In-Situ Mineral Resources

Class	Tonnes (M)	Average Grade				Contained Metal			
		AuEq (g/t)	Au (g/t)	Ag (g/t)		AuEq (Koz)	Au (Koz)	Ag (Moz)	
Indicated	7.4	1.39	0.98	32.7		331	234	7.8	
Inferred	3.1	1.47	1.02	35.9		148	102	3.6	

In-Situ Mineral Resources are constrained within a pit shell developed using metal prices of US$1,600/oz Au and US$20/oz Ag, mining costs of US$2.50/t, processing costs of US$10/t, G&A cost of US$4.00/t, 92% metallurgical recovery Au, 65% metallurgical recovery Ag and an average pit slope of 45 degrees. The cut-off grade for resources considered amenable to open pit extraction methods is 0.35 g/t AuEq. AuEq values are based only on gold and silver values using metal prices of US$1,600/oz Au and US$20/oz Ag.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.

Mineral resources in the Inferred category have a lower level of confidence than that applied to Indicated mineral resources, and, although there is sufficient evidence to imply geologic grade and continuity, these characteristics cannot be verified based on the current data. It is reasonably expected that the majority of Inferred mineral resources could be upgraded to Indicated mineral resources with continued exploration.

Table 14.11: Mineral Resource Estimate for Leach Pad Mineral Resources

Class	Tonnes (000)	Average Grade				Contained Metal			
		AuEq (g/t)	Au (g/t)	Ag (g/t)		AuEq (Koz)	Au (Koz)	Ag (Moz)	
Indicated	1,300	1.00	0.44	44.3		41.8	18.6	1.9	
Inferred	152	0.90	0.37	42.6		4.4	1.8	0.2	

It is assumed that the entire volume of the material on the leach pad will be processed and therefore, no selectivity is possible, and the Mineral Resources are presented at a zero-cut-off grade. AuEq values are based only on gold and silver values using metal prices of US$1,600/oz Au and US$20/oz Ag.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.

Mineral resources in the Inferred category have a lower level of confidence than that applied to Indicated mineral resources, and, although there is sufficient evidence to imply geologic grade and continuity, these characteristics cannot be verified based on the current data. It is reasonably expected that the majority of Inferred mineral resources could be upgraded to Indicated mineral resources with continued exploration.

Table 14.12: Mineral Resource Estimate for Combined In-Situ and Leach Pad Mineral Resources

Class	Tonnes (M)	Average Grade				Contained Metal			
		AuEq (g/t)	Au (g/t)	Ag (g/t)		AuEq (Koz)	Au (Koz)	Ag (Moz)	
Indicated	8.7	1.33	0.90	34.4		373	253	9.6	
Inferred	3.3	1.44	0.99	36.2		152	104	3.8	

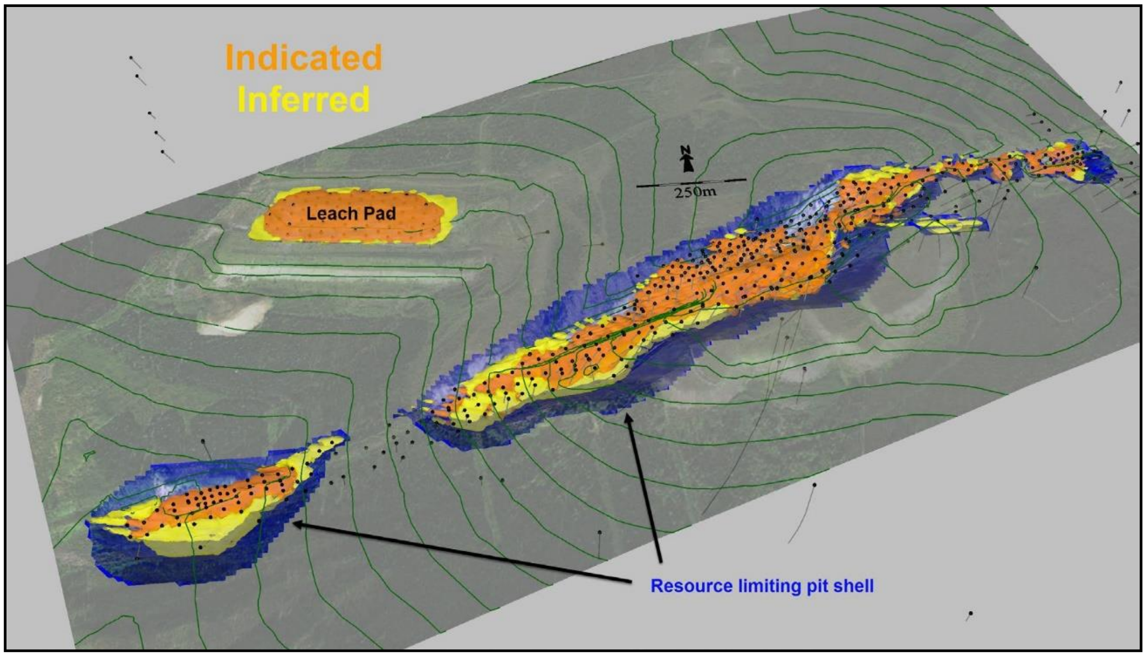
In-Situ Mineral resources are stated as contained within a pit shell developed using metal prices of US$1,600/oz Au and US$20/oz Ag, mining costs of US$2.50/t, processing costs of US$10/t, G&A cost of US$4.00/t, 92% metallurgical recovery Au, 65% metallurgical recovery Ag and an average pit slope of 45 degrees. The cut-off grade for resources considered amenable to open pit extraction methods is 0.35 g/t AuEq. It is assumed that the entire volume of the material on the leach pad will be processed and therefore, no selectivity is possible, and the Leach Pad Mineral Resources are presented at a zero-cut-off grade. AuEq values are based only on gold and silver values using metal prices of US$1,600/oz Au and US$20/oz Ag.

Mineral Resources are not Mineral Reserves and do not have demonstrated economic viability. There is no certainty that all or any part of the Mineral Resources will be converted into Mineral Reserves.

Mineral resources in the Inferred category have a lower level of confidence than that applied to Indicated mineral resources, and, although there is sufficient evidence to imply geologic grade and continuity, these characteristics cannot be verified based on the current data. It is reasonably expected that the majority of Inferred mineral resources could be upgraded to Indicated mineral resources with continued exploration.

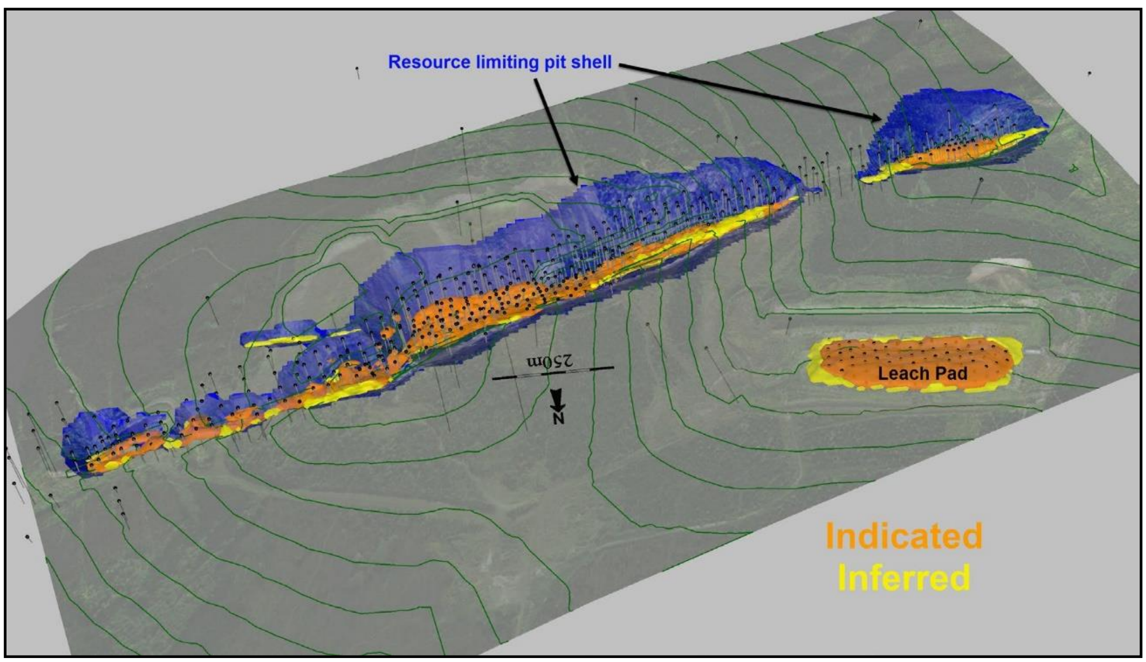
The distribution of the in-situ base case mineral resource within the $1,600/oz Au pit shell as well as the material in the leach pad area is shown from a series of isometric viewpoints in Figures 14.29 and 14.30.

Figure 14.29: Isometric View of Base Case Mineral Resources (North)



Source: SGI (2021)

Figure 14.30: Isometric View of Base Case Mineral Resources (South)



Source: SGI (2021)

14.4.1 Sensitivity of In-Situ Mineral Resources to Gold Price

The sensitivity of the in-situ mineral resources to varying gold prices is demonstrated by listing mineral resources contained within pit shells generated at each defined metal price, and with cut-off grades that are determined based on the gold price and the operating costs and process recovery factors listed previously. The results are summarized in Table 14.13.

There is relatively little change in the volume of mineral resources in the Indicated category with changing gold price. This is because the majority of Indicated class model blocks occur within the base case pit shell, and there is little difference in the size of other pit shells generated using lower gold prices. The volume of mineral resources in the Inferred category is more variable, with a significant increase in the depth extent of the pit shell and the size of the mineral resource, when the gold price reaches $1,900/oz.

Table 14.13: Sensitivity of In-Situ Mineral Resources to Gold Price

Gold Price ($/oz)	Cut-off Grade AuEq (g/t)	Tonnes (M)	Average Grade				Contained Metal			
			AuEq (g/t)	Au (g/t)	Ag (g/t)		AuEq (Koz)	Au (Koz)	Ag (Moz)	
Indicated										
1,200	0.46	6.10	1.57	1.13	35.4		308	221	6.9	
1,300	0.43	6.54	1.51	1.08	34.6		318	227	7.3	
1,400	0.40	6.85	1.47	1.04	33.9		323	230	7.5	
1,500	0.37	7.18	1.42	1.00	33.2		328	232	7.7	
base case 1,600	**0.35**	**7.40**	**1.39**	**0.98**	**32.7**		**331**	**234**	**7.8**	
1,700	0.33	7.60	1.37	0.96	32.2		334	235	7.9	
1,800	0.31	7.81	1.34	0.94	31.7		336	236	8.0	
1,900	0.29	8.08	1.31	0.92	31.1		339	238	8.1	
2,000	0.28	8.21	1.29	0.91	30.8		340	239	8.1	
Inferred										
1,200	0.46	1.53	1.65	1.16	39.1		81	57	1.9	
1,300	0.43	2.11	1.61	1.13	38.3		109	77	2.6	
1,400	0.40	2.44	1.54	1.07	38.2		121	84	3.0	
1,500	0.37	2.74	1.50	1.04	36.9		132	92	3.3	
base case 1,600	**0.35**	**3.13**	**1.47**	**1.02**	**35.9**		**148**	**102**	**3.6**	
1,700	0.33	3.51	1.43	1.00	34.9		162	112	3.9	
1,800	0.31	3.85	1.40	0.97	34.2		173	120	4.2	
1,900	0.29	6.39	1.33	0.93	31.9		273	191	6.5	
2,000	0.28	7.19	1.30	0.91	31.7		301	209	7.3	

Note: The estimates in Table 14.13 are constrained within individual pit shells generated using the defined gold prices, and using cut-off grades that are calculated based on the projected operating costs, process recoveries and varying metal prices (gold price varies from $1,200/oz to $2,000/oz at $1,000/oz increments, mining costs of US$2.50/t, processing costs of US$10/t, G&A cost of US$4/t, 92% metallurgical recovery Au, 65% metallurgical recovery Ag and an average pit slope of 45 degrees). The base case gold price is $1,600/oz with a cut-off grade of 0.35 g/t gold equivalent (AuEq). Mineral resources are not mineral reserves because the economic viability has not been demonstrated.

15 MINERAL RESERVE ESTIMATES

The Illinois Creek Project is an early exploration project; there are presently no mineral reserves at the Project.

16 MINING METHODS

The Illinois Creek Project is an early exploration project; no mining methods have been investigated for the Project.

17 RECOVERY METHODS

The Illinois Creek Project is an early exploration project; no recovery methods have been investigated for the Project.

18 PROJECT INFRASTRUCTURE

The Illinois Creek Project is an early exploration project; Project infrastructure is discussed in section 5.4.

19 MARKET STUDIES AND CONTRACTS

The Illinois Creek Project is an early exploration project; no market studies or contracts have been completed.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

The Illinois Creek Project is an early exploration project; existing environmental studies are discussed in section 4.4 and exploration permitting is discussed in section 4.5.

21 CAPITAL AND OPERATING COSTS

The Illinois Creek Project is an early exploration project; no capital or operating costs have been estimated.

22 ECONOMIC ANALYSIS

The Illinois Creek Project is an early exploration project; no economic analysis has been completed.

23 ADJACENT PROPERTIES

No properties controlled by any third parties are adjacent to the Illinois Creek property. WAM is actively exploring its other properties in the Illinois Creek mining district which are referenced in sections 4.2 and 7.4.

24 OTHER RELEVANT DATA AND INFORMATION

There are no other relevant data or information with respect to the Illinois Creek Project.

25 INTERPRETATION AND CONCLUSIONS

Based on the evaluation of the data available from the Illinois Creek Project, the authors of this Technical Report conclude the following:

- At the effective date of this Technical Report (May 22, 2023), the Illinois Creek Property consists of 311 contiguous State of Alaska mining claims which are part of a larger mineral tenure package totaling 457 mining claims covering 25,590 ha.
- WAM through its 100% owned WAC&G and Piek Inc. subsidiaries holds a 100% in the Illinois Creek property. WAC&G also maintains a 100% ownership of four additional properties in the Illinois Creek district including the Round Top, Honker, Khotol Ridge and Pawprint claims.
- Exploration in 2021 and 2022 has largely focused on advancing the Waterpump sulfide mineralization first discovered by Anaconda in 1983. Drilling in 2021 and 2022 by WAM has encountered high-grade massive and semi-massive sulfide mineralization with important Ag, Pb, Zn grades. Initial metallurgical investigation of the sulfide mineralization has begun with a series of composites delivered to ALS Labs in Kamloops, BC.
- Drilling through 2022 has outlined sulfide mineralization along 450 meters of strike length with widths of25 to 75-meter in width, and with thicknesses varying from 5 to over 100 meters.
- The Illinois Creek Au/Ag/Cu oxide deposit is characterized as a carbonate replacement deposit (CRD) in which zones of predominantly massive sulfides have been pervasively oxidized to depths approaching 400 m below surface. The remaining iron-oxide gossans contain appreciable amounts of gold, silver and copper plus minor amounts of lead and zinc.
- Exploration on the Property began in the early 1980s. In the late 90s and early 2000s, there was limited production, and exploration was halted due to falling metal prices and corporate financial difficulties for the operators at that time.
- The Illinois Creek deposit is estimated to contain 7.4M tonnes of mineral resources in the Indicated category at a grade of 0.98 g/t Au and 33 g/t Ag plus 3.1M tonnes mineral resources in the Inferred category at an average grade of 1.02 g/t Au and 36 g/t Ag. These mineral resources are constrained within a pit shell generated using a gold price of US$1,600/oz and a silver price of US$20/oz and summarized using a base case cut- off grade of 0.35 g/t AuEq.
- A leach pad area on the Property contains a volume of mineralized material that was stacked during previous mining activities and leached intermittently from 1997 through mine closure. During the summer of 2020, WAC&G drilled and sampled the leach pile. It is estimated to contain 1.3M tonnes of mineral resources in the Indicated category at a

grade of 0.44 g/t Au and 44 g/t Ag and 152 Ktonnes of mineral resources in the Inferred category at a grade of 0.37 g/t Au and 43 g/t Ag.

- Preliminary metallurgical work indicates that the highly oxidized rocks are amenable to relatively low-cost leaching extraction of gold and silver using cyanide solutions.
- There are no known factors related to metallurgical, environmental, permitting, legal, title, taxation, socio-economic, marketing or political issues which could materially affect the mineral resource estimates.

26 RECOMMENDATIONS

Based on the evaluation of the data available from the Illinois Creek Project, the authors of this Technical Report recommend the following:

- Continued drilling and expansion of the Waterpump Creek mineralization encountered in 2021 and 2022 drilling in order to reach a drill density sufficient for resource estimation. The proposed budget is $1,600,000USD. A minimum total of 2000 meters of core drilling in a minimum of 5 drill holes is recommended.
- Initial exploration drilling of the numerous additional targets recognized in the 2022 geophysical and soil geochemical programs. The proposed budget is $1,200,000USD. A minimum total of 1500 meters of core drilling in a minimum of 5 drill holes.
- Continued initial studies for the potential development of the project including initial metallurgical test work on sulfide mineralization. The proposed budget is $100,000.
- Continued environmental baseline monitoring studies to support environmental and permitting activities. The proposed budget is $50,000.

The total estimated direct program costs are approximately $2.95M USD, which includes site costs such as camp support, overhead and other indirect costs, excluding corporate G&A.

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28 DATE AND SIGNATURE PAGES

CERTIFICATE OF QUALIFIED PERSON
Bruce M. Davis, FAusIMM, BD Resource Consulting, Inc.

I, Bruce M. Davis, FAusIMM, do hereby certify that:

1. I am an independent consultant and have an address at 2921 Brodick Way, Grand Junction, Colorado USA 81504.add new address.
2. I graduated from the University of Wyoming with a Doctor of Philosophy (Geostatistics) in 1978.
3. I am a Fellow of the Australasian Institute of Mining and Metallurgy, Number 211185.
4. I have practiced my profession continuously for 40 years and have been involved in mineral resource and reserve estimations and feasibility studies on numerous underground and open pit base metal and gold deposits in Canada, the United States, Central and South America, Europe, Asia, Africa and Australia.
5. I have read the definition of "qualified person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
6. I am responsible for the preparation of all Sections except 4.5, 4.6 and 13 of the technical report titled *NI 43-101 Technical Report, Western Alaska Minerals Inc., Illinois Creek Project Update*, *Illinois Creek Mining District, Western Alaska, USA* dated May 22, 2023 with an effective date of May 22, 2023 (the "Technical Report").
7. I visited the Illinois Creek Project June 12-14, 2018 and July 15-18, 2021.
8. I am independent of Western Alaska Minerals applying all of the tests in Section 1.5 of NI 43-101.
9. I am an author of the prior technical report titled *NI 43-101 Technical Report, Western Copper & Gold Inc., Illinois Creek Project*, *Illinois Creek Mining District, Western Alaska, USA* dated July 21, 2021 with an effective date of January 15, 2021.
10. I have read NI 43-101, Form 43-101F1 and the Technical Report, and confirm the portions of the Technical Report for which I am responsible have been prepared in compliance with that instrument and form.
11. As of the effective date of the Technical Report, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated this 22nd day of May 2023.

"Bruce Davis"

Bruce M. Davis, FAusIMM

CERTIFICATE OF QUALIFIED PERSON
Jack DiMarchi, Certified Professional Geologist, Core Geoscience LLC

I, Jack DiMarchi, CPG, of Seattle, Washington, do hereby certify:

1. I am Owner and Principal Consultant with Core Geoscience LLC, with a business address of 5319 NE 62nd Avenue, Seattle, WA 98115.
2. This certificate applies to the technical report titled *NI 43-101 Technical Report, Western Alaska Minerals Inc., Illinois Creek Project Update*, *Illinois Creek Mining District, Western Alaska, USA* dated May 22, 2023 with an effective date of May 22, 2023 (the "Technical Report").
3. I am a graduate of Colorado State University, (BS Geology 1978). I am a member in good standing of the American Institute of Professional Geologists, Certification #9217. I am a Registered Professional Geologist in Alaska, Registration #403. My relevant experience is having served in several capacities in mine development, permitting and regulating mines including 10 years as Chief Geologist with Teck Resources on the Pogo Mine Project, 5 years as Large Mine Coordinator with the State of Alaska Department of Natural Resources Office of Permitting and Project Management, more than 5 years as a consultant responsible for authoring Environmental Chapters in other 43-101 reports including the Preliminary Economic Assessment of the Arctic Project, and Technical Reports for the Sun Project, Oracle Ridge Project and Rosemont Copper Project and other environmental permitting work on projects that include the Red Dog Mine, Greens Creek Mine, and Livengood. Palmer, Johnson, Niblack, Herbert Gold and Lost River projects in Alaska. I am a "Qualified Person" for purposes of National Instrument 43-101 (the "Instrument").
4. I have not visited the Illinois Creek Property.
5. I am responsible for Section 4.5 and 4.6.
6. I am not independent of Western Alaska Copper & Gold. as defined by Section 1.5 of the Instrument.
7. I have no prior involvement with the Property that is the subject of the Technical Report.
8. I have read the Instrument and the section of the Technical Report that I am responsible for has been prepared in compliance with the Instrument.
9. As of the date of this certificate, to the best of my knowledge, information and belief, the sections of the Technical Report that I am responsible for contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 22nd day of May 2023 at Seattle, WA.

"Jack DiMarchi"

____

Jack DiMarchi, Principal Geologist
Core Geoscience, LLC

CERTIFICATE OF QUALIFIED PERSON
Deepak Malhotra, PhD, SME-RM

I, Deepak Malhotra, PhD, of Lakewood, Colorado, do herby certify that:

1. I am currently employed as Director of Metallurgy for Forte Dynamics with an office at 12600 W Colfax Ave., Suite A-540, Lakewood, Colorado 80215.
2. This certificate applies to the technical report titled *NI 43-101 Technical Report, Western Alaska Minerals Inc., Illinois Creek Project Update*, *Illinois Creek Mining District, Western Alaska, USA* dated May 22, 2023 with an effective date of May 22, 2023 (the "Technical Report").
3. I am a graduate of Colorado School of Mines in Colorado, USA (Masters of Metallurgical Engineering in 1973 and PhD in Mineral Economics in 1978). I am a registered member in a good standing of the Association of Society of Mining and Metallurgical Engineers (SME) and a member of the Canadian Institute of Mining and Metallurgy (CIM). I have 48 years of experience in the area of metallurgy and mineral economics.
4. I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI 43-101.
5. I have not visited the Illinois Creek Project site.
6. I am responsible for Section 13 of the Technical Report.
7. I am independent of the Issuer and related companies applying all of the tests in Section 1.5 of the NI 43-101.
8. I have had prior involvement with the Property that is the subject of the Technical Report. I was responsible for preparing Section 13 of the 2021 Technical Report.
9. I have read NI 43-101, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.
10. As of the effective date of the Technical Report and the date of this certificate, to the best of my knowledge, information and belief, this Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Dated: May 22, 2023

"Deepak Malhotra"

Deepak Malhotra, PhD, SME-RM