TECHNICAL REPORT AND PRE-FEASIBILITY STUDY FOR

UNDERGROUND MINING, MILLING AND CONCENTRATION OF LEAD, SILVER AND ZINC

AT THE BUNKER HILL MINE

COEUR D'ALENE MINING DISTRICT

SHOSHONE COUNTY, IDAHO, USA

REPORT DATE NOVEMBER 21, 2022

EFFECTIVE DATE: AUGUST 29, 2022

PREPARED FOR:

BUNKER HILL MINING CORP.

BY

QUALIFIED PERSONS:

Scott Wilson, C.P.G.
Resource Development Associates, Inc.
10262 Willowbridge Way
Highlands Ranch, CO 80126
303-717-3672

Robert Todd, P.E.
Minetech, USA, LLC
129 Denali Ln
Butte, MT 59701
775-397-4862

Peter Kondos, Ph.D.
YaKum Consulting Inc.
910A Logan Ave., Toronto, Ontario M4K 3E4 Canada
+1 (416) 616-9669

DATE AND SIGNATURE PAGE

Bunker Hill Mining Corp.: Technical Report and Pre-Feasibility Study for Underground Mining, Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA.

Technical Report Effective Date: August 29, 2022

November 21, 2022

(signed/sealed) *Scott E. Wilson*
Scott E. Wilson, SME-RM, CPG
Geologist

(signed/sealed) *Robert "Chip" Todd*
Robert Todd, P.E.
Mining Engineer

(signed/sealed) *Peter Kondos*
Peter Kondos, Ph.D.
Consulting Metallurgist

AUTHOR CERTIFICATE

Scott E. Wilson

I, Scott E. Wilson, CPG, SME-RM, of Highlands Ranch, Colorado, as the author of the technical report entitled "Technical Report and Pre-Feasibility Study for Underground Mining, Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA" (the "Technical Report") with an effective date of August 29, 2022 prepared for Bunker Hill Mining Corp. (the "Issuer"), do hereby certify:

1. I am currently employed as President by Resource Development Associates, Inc., Highlands Ranch, Colorado USA 80126.
2. I graduated with a Bachelor of Arts degree in Geology from the California State University, Sacramento in 1989.
3. I am a Certified Professional Geologist and member of the American Institute of Professional Geologists (CPG #10965) and a Registered Member (#4025107) of the Society for Mining, Metallurgy and Exploration, Inc.
4. I have been employed as both a geologist and a mining engineer continuously for a total of 33 years. My experience included resource estimation, mine planning, geological modeling, geostatistical evaluations, project development, and authorship of numerous technical reports and preliminary economic assessments of various projects throughout North America, South America and Europe. I have employed and mentored mining engineers and geologists continuously since 2003.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I have made several personal inspections of the Bunker Hill Project with the most recent visit September 22, 2021.
7. I am responsible for Sections 1 through 12, 14, 19 through 20 and 23 through 27 of the Technical Report.
8. I am independent of the Issuer as independence is described in Section 1.5 of NI 43-101.
9. Prior to being retained by the Issuer, I have not had prior involvement with the property that is the subject of the Technical Report.
10. I have read NI 43-101 and Form 43-101F1, and this Technical Report was prepared in compliance with NI 43-101.
11. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated: November 21, 2022

(signed/sealed) *Scott Wilson*
Scott E. Wilson, CPG, SME-RM

AUTHOR CERTIFICATE

Robert H. Todd

I, Robert H. Todd, P.E., of Butte, Montana, as the author of the technical report entitled "Technical Report and Pre-Feasibility Study for Underground Mining, Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA" (the "Technical Report") with an effective date of August 29, 2022 prepared for Bunker Hill Mining Corp. (the "Issuer"), do hereby certify:

1. I am currently a principal and co-owner of Minetech, LLC, located in Butte Montana.
2. I graduated with a Bachelor of Science degree in Mining Engineering from the University of Idaho, School of Mines, Idaho.
3. I am a Registered Professional Engineer in the States of Idaho (5327), Nevada (7779) and Montana (10095).
4. I have worked in mining operations, consulting engineering and engineering construction contracting for over 41 years. Prior to forming Minetech my consulting career included serving as General Manager of Engineering for Cementation USA in Sandy Utah, Vice President and Area Manager for Knight-Piesold in Elko, Nevada, and managing numerous independent engineering and construction projects. Mine operations and technical experience include: Technical Services Manager and then General Manager of the Jerritt Canyon Operations in Elko, Nevada, Supervising Engineer for Newmont Mining Corporation in Elko, Nevada, Project Engineer and Project Administrator for Noranda Minerals in Libby, Missoula and Cooke City Montana and Production Supervisor, Chief Engineer and Mine Manager for Echo Bay Minerals at Hawthorne Nevada. I worked for Sunshine Mining in Kellogg Idaho as I was attending the University of Idaho and then after graduation as a mine and project engineer until they closed in 1986.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I have made several personal inspections of the Bunker Hill Project with the most recent visit September 2022.
7. I am responsible for Sections 15, 16, 18, 21 and 22 of the Technical Report.
8. I am independent of the Issuer as independence is described in Section 1.5 of NI 43-101.
9. Prior to being retained by the Issuer, I have not had prior involvement with the property that is the subject of the Technical Report.
10. I have read NI 43-101 and Form 43-101F1, and this Technical Report was prepared in compliance with NI 43-101.
11. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated: November 21, 2022

(signed/sealed) *Robert H. Todd*
Robert H. Todd, P.E.

AUTHOR CERTIFICATE

Peter Kondos, Ph.D.

I, Peter Kondos, Ph.D.., of Toronto, Ontario Canada, as the author of the sections 13 and 17 in the technical report entitled "Technical Report and Pre-Feasibility Study for Underground Mining, Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA" (the "Technical Report") with an effective date of August 29, 2022 prepared for Bunker Hill Mining Corp. (the "Issuer"), do hereby certify:

1. I am currently employed as CEO of YaKum Consulting Inc. with an office at 910A Logan Ave., Toronto, Ontario M4K 3E4 Canada.
2. I am a graduate of McGill University in Montreal, Canada (Master of Engineering in 1983 and Ph. D. in Hydrometallurgical Engineering in 1989).
3. I am a Fellow Member (AusIMM #334726) of the Australian Institute of Mining and Metallurgy and Fellow (#94171) of the Canadian Institute of Mining and Metallurgy.
4. I have 35 years of experience in the areas of metallurgy and mining. I have managed projects in research, process development for new properties and expansions, led multidisciplinary teams and strategic teams, plant troubleshooting, due diligence for acquisitions and overall business management. I have authored over 30 technical publications, 10 patents and several books, and I have been the recipient of three prestigious awards.
5. I have read the definition of "Qualified Person" set out in National Instrument 43-101 ("NI 43-101) and certify that by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.
6. I have not visited the Bunker Hill Mine, however a site visit was not required for my role in this report.
7. I am responsible for Sections 13 and 17 of the Technical Report.
8. I am independent of the Issuer as independence is described in Section 1.5 of NI 43-101.
9. Prior to being retained by the Issuer, I have not had prior involvement with the property that is the subject of the Technical Report.
10. I have read NI 43-101 and Form 43-101F1, and this Technical Report was prepared in compliance with NI 43-101.
11. As of the effective date of this Technical Report, to the best of my knowledge, information and belief, the portions of the Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the portions of the Technical Report for which I am responsible not misleading.

Dated: November 21, 2022

(signed) *Peter Kondos, Ph.D.*
Peter Kondos, Ph.D.

TABLE OF CONTENTS

Tables

Figures

1 SUMMARY

This report entitled "Technical Report and Pre-Feasibility Study for Underground Mining, Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA" (the "Technical Report"), describes the mining and processing operations at the Bunker Hill Mine ("Bunker" or "Bunker Hill" or "the Project" or "the Property") located near the town of Kellogg Idaho for Bunker Hill Mining Corp. ("BHMC" or the "Company"). This Technical Report considers a processing approach at Bunker where Pb, Ag and Zn mineralization is mined underground. Mineralized material will be conventionally milled and then concentrated by flotation of lead and silver (Pb/Ag) followed by flotation of zinc (Zn). Metal rich concentrates will then be sold to smelters in North America or overseas. Mill tailings will be deposited underground in the historic mining voids located throughout the Project.

Table 1-1 lists the Mineral Resource estimate, inclusive of reserves, for Bunker. Mineral Resources are classified according to the CIM Definition Standards of May 10, 2014 ("CIM"). The guidance and definitions of CIM are incorporated by reference in National Instrument 43-101 -*Standards of Disclosure for Mineral Projects within Canada* of the Canadian Securities Administrators ("NI 43-101") Mineral Resources are geologically constrained and defined at economic cutoff grades that demonstrate reasonable prospects of eventual economic extraction. 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.

1.1 RESOURCE ESTIMATES

Geostatistics and estimates of mineralization were prepared by Mr. Scott Wilson, C.P.G., SME. Industry accepted grade estimation techniques were used to develop global mineralization block models for the Newgard, Quill and UTZ zones. Table 1-1 summarizes the Bunker Hill Mineral Resource Estimate, inclusive of Mineral Reserves, classified according to CIM definitions for the Project. Reasonable prospects of eventual economic extraction assume underground mining, mill processing and flotation of Pb and Zn concentrates. Mineral resource estimates are reported at an NSR cutoff of $70 per ton. Metallurgical recoveries are detailed in Section 13 and section 17 of this report.

Net smelter return (NSR) is defined as the return from sales of concentrates, expressed in US$/t, i.e.: NSR = (Contained metal) * (Metallurgical recoveries) * (Metal Payability %) * (Metal prices) – (Treatment, refining, transport and other selling costs). NSR values are estimated using updated using metallurgical recoveries of 85.1%, 84.2% and 88.2% for Zn, Ag and Pb respectively, and concentrate grades of 58% Zn in zinc concentrate, and 67% Pb and 12.13 oz/ton Ag in lead concentrate.

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 to Mineral Reserves

Table 1-1 Bunker Hill Mine Mineral Resource Estimate, Inclusive of Mineral Reserves, – NSR $70/ton cut off – Ag selling price of $20/oz (troy), Lead selling price of $1.00/lb, Zn selling price of $1.20/lb. Effective date of August 29, 2022)

Classification	Ton (x1,000)	NSR ($/Ton)	Ag Oz/Ton	Ag Oz (x1,000)	Pb %	Pb Lbs. (x1,000)	Zn %	Zn Lbs. (x1,000)
Measured (M)	2,374	$ 119.60	1.01	2,404	2.46	116,574	5.37	254,811
Indicated (I)	4,662	$ 119.81	1.00	4,657	2.37	221,295	5.48	510,964
Total M & I	**7,036**	**$ 119.74**	**1.00**	**7,061**	**2.40**	**337,869**	**5.44**	**765,774**
Inferred	6,943	$ 126.28	1.52	10,532	2.87	398,901	4.96	688,482

1.2 PROJECT ECONOMICS

A summary of the Pre-Feasibility level projected financial performance for the Project is listed in Table 1-2. Sensitivities are summarized in Table 1-3.

Table 1-2 Estimated Bunker Hill Production for Life of Mine

	Life of Mine (LOM) Totals/Average
Metal Prices	
Zinc ($/lb)	1.5
Lead ($/lb)	0.95
Silver ($/oz)	22
Mine plan	
Total ore production (kt)	**3,360**
*Average annual ore production	
Average zinc grade (%)	**5.50%**
Average lead grade (%)	**2.50%**
Average silver grade (oz/t)	**1.1**
Metal Production	
Zinc concentrate (t)	**272,995**
Lead concentrate (t)	**109,251**
Zn grade - Zn conc (%)	**58.00%**
Pb grade - Pb conc (%)	**67.00%**
Ag grade - Pb conc (oz/t)	**27.6**
Zn prod. - Zn conc (klbs)	**316,674**
Pb prod. - Pb conc (klbs)	**146,397**
Ag prod. - Pb conc (koz)	**3,020**
Zinc eq produced (klbs)	**475,460**
Cost metrics	
Mining ($/t)	**37**
Processing ($/t)	**21**
G&A ($/t)	**9**
Opex - total ($/t)	**67**
Sustaining capex ($/t)	**21**
Cash costs: by-prod. ($/lb Zn payable)	**0.5**
AISC: by-prod. ($/lb Zn payable)	**0.77**
FCF & Valuation ($000's)	
Zinc revenue	**338,368**
Lead revenue	**129,595**
Silver revenue	**61,337**
Gross revenue	**529,300**
TC - Zinc conc	**-69,105**
TC - Lead conc	**-18,919**
RC - Lead conc	**-3,535**
Land freight	**-11,002**
Net smelter return	**426,739**
Mining costs	**-121,772**
Processing costs	**-69,346**
G&A costs	**-28,496**
EBITDA	**207,126**
Sustaining capex	**-70,450**
Initial capex	**-54,853**
Pre-tax free cash flow	**94,103**
Taxes	-7,884
Free cash flow	**86,219**
NPV (5%)	**62,826**
NPV (8%)	**51,813**
IRR (%)	**36.00%**
Payback (years)	**2.1**

Table 1-2 includes zinc produced from zinc concentrate, lead and silver produced from lead concentrate

Life of mine ("LOM") includes initial capital expenditures.

Note: Cash Cost includes mining, processing, G&A, smelter charges and freight. Mine plan was designed on a net smelter return (NSR) value of 80 ($/t). NSR was calculated by the formula: (Contained metal) * (Metallurgical recoveries) * (Metal Payability %) * (Metal prices) – (Treatment, refining, transport and other selling costs). Mineralized portions of the mine plan external to the Quill, Newgard and UTZ zones were calculated using a zinc equivalent cut off of 5% calculated using the formula: Zn price ($/lb) + (Pb grade (%) * (Zn price ($/lb) / (Pb price ($/lb) + (Ag grade (oz/t) * (Zn price ($/lb) / (ag price ($/toz) * (toz/1lb)).

The economic analysis is based on an 1,800 stpd mine plan utilizing cut-and-fill and long hole open stoping with backfill. Metal recoveries are based on current metallurgical test work and historical mill operational data. Silver will be recovered in the lead concentrate and any silver reporting to the zinc concentrate is considered non-payable. This is consistent with typical smelter treatment charges and agreements. Projected metal prices of $1.20/lb zinc, $1.00/lb lead and $20.00/t-oz silver were used to calculate revenues for the full life of mine. Escalation was not applied to operating or capital costs other than a slight operating cost increase later in the mine life to reflect operating from the deeper-mine levels.

An initial capital investment of $55 million (including variable contingency) is required to restart the mine. Bunker Hill is projected to generate approximately $25 million of annual average free cash flow over an initial 5-year mine life based on the current Probable reserves. It will produce over 316 million pounds of zinc, 146 million pounds of lead, and 3 million ounces of silver at an all-in sustaining cost ("AISC") of $0.77 per payable pound of zinc (net of by-products).

The project is expected to generate pre-tax free cash flow of $94 million over its 5-year mine life and $86 million on an after-tax basis. The Company's goal is to significantly increase the free cash flow by multiple optimization work streams including mill and process throughput and recovery, resource expansion and exploration.

Table 1-3 Economic Sensitivity to Zinc Price, Opex and Capex

			Metal Prices							**Operating & Capital Costs**				
			Zinc Price ($/lb)							**Operating Costs (+/- %)**				
			-0.2	-0.1	-	0.1	0.2			-20%	-10%	-	10%	20%
NPV (8%) ($M)	**Lead Price ($/lb)**	-0.2	-7	13	32	51	68	**Total Capital Costs (+/-)%**	-20%	102	87	72	56	40
		-0.1	4	23	42	60	78		-10%	92	77	62	46	30
		-	14	33	**52**	69	87		-	82	67	**52**	36	19
		0.1	24	43	61	78	96		10%	72	57	42	25	9
		0.2	34	53	70	87	105		20%	62	47	31	15	-1
			Zinc Price ($/lb)							**Operating Costs (+/- %)**				
			-0.2	-0.1	-	0.1	0.2			-20%	-10%	-	10%	20%
IRR (%)	**Lead Price ($/lb)**	-0.2	4%	16%	26%	35%	44%	**Total Capital Costs (+/-)%**	-20%	71%	62%	53%	44%	34%
		-0.1	10%	21%	31%	40%	49%		-10%	60%	52%	44%	35%	26%
		-	16%	26%	**36%**	45%	53%		-	51%	44%	**36%**	28%	19%
		0.1	22%	32%	41%	49%	57%		10%	44%	37%	29%	21%	13%
		0.2	27%	37%	45%	54%	62%		20%	37%	30%	23%	15%	7%

On January 25, 2022, BHMC signed a memorandum of understanding (MOU) with Teck Resources Limited (Teck) for the purchase of the Pend Oreille (PO) process plant. The final Asset Sale and Purchase Agreement was signed on March 30, 2022 for the purchase of the PO mill and process plant for a Purchase Price of 10,416,667 units of unregistered securities of Bunker at a unit price of $0.30 CAD.

1.3 PROPERTY DESCRIPTIONS AND OWNERSHIP

Bunker Hill Mine is located in the cities of Kellogg and Wardner of Shoshone County, Idaho. The mine is 100% owned by Silver Valley Metals Corporation ("SVMC"), a wholly owned subsidiary of BHMC. Bunker was purchased from Placer Mining Corporation ("PMC") on January 7, 2022. The Property consists of four surface parcels, 34 platted parcels with surface rights and 108 mineral parcels without surface rights all together encompassing a total of over 5,802 acres. Surface rights to the mineral parcels lies entirely with private owners, primarily timber harvesting companies. The property is traversed by numerous roads, both maintained and non-maintained, used for timber harvesting. Both portals of the mine (Kellogg Tunnel and the Russell Tunnel in Wardner) are accessible by maintained roadways.

1.4 GEOLOGY AND MINERALIZATION

The Northern Idaho Panhandle Region in which the Bunker Hill Property is located is underlain by the Middle Proterozoic-aged Belt-Purcell Supergroup of fine-grained, dominantly siliciclastic sedimentary rocks which extends from western Montana (locally named the Belt Supergroup) to southern British Columbia (Locally named the Purcell Supergroup) and is collectively over 23,000 feet in total stratigraphic thickness.

Mineralization at the Bunker Hill Mine is hosted almost exclusively in the Upper Revett formation of the Ravalli Group, a part of the Belt Supergroup of Middle Proterozoic-aged, fine-grained sediments. Geologic mapping and interpretation progressed by leaps and bounds following the recognition of a predictable stratigraphic section at the Bunker Hill Mine and enabled the measurement of specific offsets across major faults, discussed in the following section. From an exploration and mining perspective, there were two critical conclusions from this research: all significant mineralized shoots are hosted in quartzite units where they are cut by vein structures, and the location of the quartzite units can be projected up and down section, and across fault offsets, to target extensions and offsets of known mineralized shoots and veins.

Mineralization at Bunker Hill falls in four categories, described below from oldest to youngest events:

Bluebird Veins (BB): W--NW striking, SW-dipping (Fig. 7-11), variable ratio of sphalerite-pyrite-siderite mineralization. Thick, tabular cores with gradational margins bleeding out along bedding and fractures. Detailed description in Section 7.2.2.

Stringer/Disseminated Zones: Disseminated, fracture controlled and bedding controlled blebs and stringer mineralization associated with Bluebird Structures, commonly as halos to vein-like bodies or as isolated areas where brecciated quartzite beds are intersected by the W-NW structure and fold fabrics.

Galena-Quartz Veins (GQ): E to NE striking, S to SE dipping (Fig. 7-11), quartz-argentiferous galena +/- siderite-sphalerite-chalcopyrite-tetrahedrite veins, sinuous-planar with sharp margins, cross-cut Bluebird Veins. Detailed description in Section 7.2.2.

Hybrid Zones: Formed at intersections where GQ veins cut BB veins (Fig. 7-11), with open space deposition of sulfides and quartz in the vein refraction in quartzite beds, and replacement of siderite in the BB vein structure by argentiferous galena from the GQ Vein.

1.5 ENVIRONMENTAL STUDIES AND PERMITTING

Because the mine is on patented mining claims (privately-owned land), only a limited number of permits are required for mining and milling operations. These relate to: (1) air quality and emissions from crushing, milling and processing, (2) any refurbishment of surface buildings that may require construction permits and (3) deposition of waste and/or tailings on surface, if such a deposition were to occur. All surface crushing and milling operations are planned to occur at the Kellogg side of mining operations. The surface parcels containing the crushing and processing facilities are zoned M-1 for light-industrial use under section 11-4-3 of the Kellogg City Code. All surface facilities are planned as enclosed buildings.

The Bunker Hill Mine is located within the Bunker Hill Superfund site (EPA National Priorities Listing IDD048340921). Cleanup activities have been completed in Operable Unit 2 of the Bunker Hill Superfund Site where the mine is located though water treatment continues at the Central Treatment Plant (CTP) located near Bunker Hill Mine. The CTP is owned by US EPA and is operated by its contractors.

BHMC entered into a Settlement Agreement and Order on Consent with the US Environmental Protection Agency (“US EPA”) and the US Department of Justice (“DOJ”) on May 14, 2018. Section 9, Paragraph 33 of that agreement stipulates that BHMC must obtain a National Pollutant Discharge Elimination System (“NPDES”) permit for effluent discharged by Bunker Hill Mine by May 14, 2023. This obligation exists and the deadline will occur at a point in time where restart activities are planned to occur.

BHMC will initiate a voluntary Environmental, Social and Health Impact Assessment ("ESHIA") for the activities described in this PFS and for its business model as a whole. This study is projected for completion in 2024 and will conform to ISO, IFC and GRI standards.

1.6 MINERAL PROCESSING

Lead, silver, and zinc production from Bunker began in 1887, lasted 95 years, and included a zinc refinery beginning in 1927. The mine was the largest producer in the Coeur d'Alene Mining District, with a total historical production of 35 M tons (31.75 M tonnes) of mineralization grading 8.76% lead, 3.67% zinc, and 5.49 oz/ton (188.2 g/t) silver. The Bunker Hill Concentrator ran as a differential flotation circuit producing both a lead and zinc concentrate product. Average grades of the concentrate products ran +/-64% Pb, 40 OPT Ag and 5% Zn for the lead concentrate and +/-55% Zn, 3 OPT Ag, and 1% Pb for the zinc concentrate.

In Q3 of 2021 BHMC initiated a metallurgical testing program with Resource Development Inc (RDi). Additional metallurgical studies were undertaken by SGS Canada Inc at Lakefield beginning in Q2 2022 to confirm and expand on the results from the RDi program. Bunker retained the services of YaKum Consulting Inc to oversee the metallurgical and process studies in 2022. Approximately 500kg of material was sent for testing from two panel samples taken from the UTZ portion of the MRE combined into one master composite. The main objectives of the program were to establish a process flowsheet for differential flotation of lead and zinc, as well as simulate plant operations with locked cycle flotation testing to characterize final concentrates for marketing purposes. Details of the program and final accepted values are as follows:

- Head grade assay: 49.7 g/mt Ag, 4.10% Pb, 6.42% Zn
- Work indices: BWi 13.47 kWh/st and Ai 0.6137 indicating medium hardness and very abrasive.

Table 1-4 Metallurgical Testing and Approved Metallurgical Data

	Units	RDi Final Report LCT April 2022	YaKum Confirmed Model May 2022
Concentrate Mass Pull	%	15.8	15.8
Recovery to Zn Con (Zn)	%	85.1	85.1
Recovery to Pb Con (Pb)	%	88.2	88.2
Recovery to Pb Con (Ag)	%	84.2	84.2
Zn Concentrate (Zn)	%	57.36	58
Pb Concentrate (Pb)	%	46.25	67
Pb Concentrate (Ag)	g/mt	416	416

1.7 MINING METHODS AND MINE ENGINEERING

Long-hole stoping with fill (LHOS), cut-and-fill (CF) and possibly room-and-pillar mining with fill are the only methods viable for sustained operations at the Bunker Hill Mine today. The current mine plan utilized both LHOS for the Quill-Newgard portion of the MRE and CF for the UTZ portion. LHOS are driven transverse to overall trend of mineralization with overall stope dimensions of 20 ft wide by 50 ft high, accessed by both a top and bottom lateral drift. Internal mine development is planned for 100% rubber-tire vehicle access. A central mine ramp will provide access to various sublevels for mining activities. Mineralized material will be brought out of the mine at the 5-level and subsequently transported overland to the crushing and process facility at the 9-level Kellogg yard.

Waste development muck will be transported to internal, underground void spaces, or brought to surface for crushing and use as industrial base on the mine property. Upon the completion of mining, open stopes will be filled with an engineered hydraulic (paste) backfill. The paste backfill plant will have the tailings thickening and filtration equipment located in the Kellogg yard, adjacent to the mill/process building. The paste mixing and pumping station will be located at the mine yard at Wardner. Filtered tailings cake material from the filtration plant will be backhauled up to the paste mixing and pumping station at Wardner from Kellogg on the return trip by the surface ore haul trucks.

Mine design and Mineral Reserve estimates have been completed to a level appropriate for pre-feasibility studies. The Mineral Reserve estimate stated herein is consistent with the CIM Standards on Mineral Resources and Mineral Reserves and is suitable for public reporting. As such, the Mineral Reserves are based on the conversion of Measured and Indicated Mineral Resources.

Mine designs were created in Maptek Vulcan™ software to define access and mining of the stope shapes defined by the Stope Optimizer module within Vulcan™. The defined stope shapes and development excavations were scheduled to produce the basis for this economic analysis.

Mineral Reserves were classified using the 2014 CIM Definition Standards. Mineral Reserves are estimated at an NSR value cutoff of $80/short ton at the reference point of salable mill concentrates with an effective date of August 29, 2022.

Table 1-5 Bunker Hill Mineral Reserves Estimate

Area	Description	Tons (x1,000)	Zn (%)	Pb (%)	Ag (opt)	Contained Ag (koz)	Contained Zn (klbs)	Contained Pb (klbs)	NSR (US$/st)
Newgard and Quill	Probable	3,111	5.87%	2.56%	1.12	3,492	365,118	159,326	133.53
	Plan Dilution	95	-	-	-	-	-	-	-
	Unplanned Dilution	156	-	-	-	-	-	-	-
UTZ	Probable	89	3.93%	3.74%	1.35	95	7,002	6,658	122.66
	Plan Dilution	1	-	-	-	-	-	-	-
	Unplanned Dilution	4			-	-	-	-	-
Total	Probable	3,200	5.81%	2.59%	1.12	3,587	372,120	165,984	133.23
	Plan Dilution	96	-	-	-	-	-	-	-
	Unplanned Dilution	160	-	-	-	-	-	-	-
	Total Plan	***3,360***	***5.30%***	***2.40%***	***1.02***	***3,587***	***186,060***	***82,992***	***126.88***

(1) Plan Dilution is zero grade waste included in the designed stope shapes and probable tonnages.
(2) Unplanned dilution is 5% external dilution added at zero grade.
(3) Mineral Reserves stated are inclusive of all above mentioned dilutions and are factored for ore loss due to mining activities.
(4) Net smelter return (NSR) is defined as the return from sales of concentrates, expressed in US$/t, i.e.: NSR = (Contained metal) * (Metallurgical recoveries) * (Metal Payability %) * (Metal prices) – (Treatment, refining, transport and other selling costs). For the Mineral Reserve Estimate, NSR values were calculated using updated open-cycle metallurgical results including recoveries of 85.1%, 84.2% and 88.2% for Zn, Ag and Pb respectively, and concentrate grades of 58% Zn in zinc concentrate, and 67% Pb and 12.13 oz/ton Ag in lead concentrate.
(5) Mineral Reserves are estimated using a zinc price of $1.20 per pound, silver price of $20.00 per ounce, and lead price of $1.00 per pound.
(6) Historic mining voids, stopes and development drifting have been depleted from the Mineral Reserve Estimate.
(7) Totals may not add up due to rounding.

1.8 RECOVERY METHODS

Historical and on-going current test work shows that the investigated sequential flotation process can produce marketable-grade Pb/Ag and Zn concentrates. Mineral processing and recovery operations will be performed on surface at the Kellogg mine yard. New construction on surface will house the primary grinding and flotation circuits, secondary crushing and final concentrate storage. ROM material will initially be delivered to the surface stockpile via overland haulage from the Wardner mine access. A flow sheet was developed from locked cycle flotation testing. ROM material is delivered to the Kellogg yard stockpile from overland haulage out of the mine at the Wardner portal. Two stages of primary crushing will reduce ROM material to 0.5” through two cone crushers. Material will then be screened and sent to the fine ore bin. The fine ore bin will feed two ball mills for primary grinding down to ~75 micron. Flotation begins with a lead rougher, the overflow of which is separated through a cyclone and coarse fraction sent to a re-grind circuit before joining the undersized overflow though three stages of cleaning. Underflow from the lead rougher is sent to a zinc rougher circuit and on to three stages of cleaner cells. The differential flotation circuit will produce both a lead and silver concentrate, as well as a zinc concentrate. Tailings material will be sent to a thickener and from there on to a filtration plant for use in the paste backfill system.

Concentrates will be stored in a building at the Kellogg yard for transportation to the smelter.

1.9 CURRENT EXPLORATION AND DEVELOPMENT

BHMC has a rare exploration opportunity available at the Mine and has embarked on a new path to fully maximize the potential. A treasure trove of geologic and production data representing 70+ years of mine operations has been organized and preserved in good condition in the mine office since the shutdown in the early 1980s.

From this the company was able to build a 3D digital model of the mine workings and 3D surfaces and solids of important geologic features. To add to this, historic drill core lithology logs and assay data (>2900 holes) were entered into a database and imported with the other data into Maptek Vulcan 3D software.

Continued exploration drilling from both surface and underground over a 2-year period worked to further develop extensions of previously mined structures as well as identify mineralized zones previously unknown to mine operators.

During the summer of 2021, BHMC conducted a 3DIP surface geophysical survey over the southwestern portion of the land package with the goal of identifying future areas of interest outside of the historically worked mining footprint. Response characteristics of mineralized material were inferenced from previous geophysical investigations performed at Bunker Hill and used to guide target assessment on the 2021 program. Additional review from 3rd party groups is required for detailed analysis of the program results.

1.10 CONCLUSIONS

Mineral Reserves are sufficient to warrant the proposed 1,800 stpd underground mine utilizing LHOS and CF mining methods and conventional mining equipment. Mineral processing will take place utilizing a primary and secondary stage of crushing, primary and secondary stage of grinding and differential flotation circuits to produce both lead/silver and zinc concentrate products. Generalized infrastructure arrangements were used to develop the capital and operational costs associated with their respective activities. Mining and development costs were developed from first principals engineering, along with vendor and contractor quotations where possible.

Pre-Feasibility level analyses demonstrate that the project has strong economic viability at the estimated metal prices and costs. Risk analyses demonstrate economic favorability at both decreased metal prices and increased costs as outlined in the sensitivities analysis of this report.

1.11 RECOMMENDATIONS

Continued analysis and interpretation of the geophysical survey results should aid to guide future exploration activities outside of historical mine working areas. Additional exploration drilling with the advancement of underground mine development is also advised due to the proximity of future development to under-explored areas of historical workings. Continued digitization and interpretation of historical mapping and research will aid to guide future underground and surface exploration activities.

Completion of issued for construction (IFC) level drawings for the mineral processing facilities is recommended.

Completion of IFC level engineering drawings related to the paste backfill plant are recommended. Final tails product material generated from additional metallurgical testing will work to optimize binder compositions and have the potential to reduce backfill OPEX costs.

Additional geotechnical studies are recommended with the advancement of underground development. Continued geotechnical diamond drilling associated with future resource delineation and exploration drilling activities will provide a better sample set for rock strength testing and geotechnical logging. Future underground development will also allow for the investigation of previously mined areas and association of historical span allowances based on previous ground support methods.

Additional resource delineation and conversion drilling and mine block modeling should continue to increase the conversion of Inferred to Indicated Resources.

Based on the aforementioned, the authors are not recommending successive phases of work for the advancement of the project

Table 1-6 Proposed Budget for Project Advancement

Activity	Amount
Geophysical Interpretation and Additional Geophysics	$0.05M
Environmental Studies	$0.03M
Geotechnical Studies	$0.15M
Mill and Process Plant Engineering	$1.70M
Hydraulic Backfill and Tailing Placement Engineering	$0.50M
Total Recommended Budget	**$2.43M**

2 INTRODUCTION

2.1 TERMS OF REFERENCE

BHMC retained Resource Development Associates Inc. ("RDA") to complete an independent NI 43-101 Technical Report for Bunker Hill Property located in the Coeur D'Alene Mining District, Shoshone County, Idaho.

BHMC retained the services of Scott Wilson of RDA, Peter Kondos, Ph.D. of YaKum Consulting Inc and Minetech USA, LLC ("Minetech"), Robert Todd, P.E., principal to perform engineering and design services for the Bunker Hill mine (the "Bunker Hill Mine" or "Mine"). BHMC has reported Measured, Indicated and Inferred Mineral Resource estimates for the Project since September 29, 2020.

BHMC has acquired rights to title and purchased the Property from the previous owners, PMC. The Bunker Hill Mine is a well-developed underground mining operation that ceased production in 1991. At cessation of mining, the Project contained mineralization that had been developed but not exploited. BHMC is implementing a plan to bring this brownfields project back into production as a competitive mining operation in the Coeur d'Alene Mining District.

The Project is located adjacent to the town of Kellogg Idaho. Mineralization at the Project is related to a large deposit of anomalous lead, zinc and silver mineralization. Silver, lead and zinc were discovered at the Project in 1885. Production records kept annually from 1887 through 1991 show that the mine produced 35.78 million tons of mineralized material with head grades averaging 4.52 opt Ag, 8.76% Pb and 3.67% Zn, containing 161.72 million ounces of Ag, 3.13 million tons of Pb and 1.31 million tons of Zn.

The Authors have worked closely with the Company to follow the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines, November 29, 2019 and the CIM Mineral Exploration Best Practice Guidelines, November 23, 2018 with respect to the implementation and execution of the collection of scientific data for the Property.

This Technical Report was prepared by the Authors, at the request of Mr. Sam Ash, President and CEO of BHMC, a public company trading on the Canadian Securities Exchange (CSE: BNKR) with its corporate office at 82 Richmond Street East, Toronto, Ontario M5C 1P1.

Mr. Scott E. Wilson, (CPG #10965, SME 4025107RM), an independent qualified person under the terms of NI 43-101, has conducted several site visits of the Property with the most recent visit on September 22, 2021. The most recent site visit was to review the progress on the RDA recommended drilling and channel sampling program. These drilling and sampling campaigns were required by RDA in order to estimate Mineral Resources for the Project.

Mr. Robert Todd, a Registered Professional Engineer in the States of Idaho (5327), Nevada (7779) and Montana (10095), an independent qualified person under the terms of NI 43-101, has conducted several site visits of the Property with the most recent visit September 2022. An August 8-12, 2022 site visit was spent on finalizing operating and capital estimates for the decline excavations, operating levels and review other aspects of the mine plan with the project team.

Mr. Peter Kondos, Ph.D. is a member of the Australian Institute of Mining and Metallurgy (AusIMM #334726) and Fellow (#94171) of the Canadian Institute of Mining and Metallurgy and considered an independent qualified person under the terms of NI 43-101. Mr. Kondos has not conducted a site visit to the Property.

All dollar amounts in this document are United States dollars unless otherwise noted.

2.2 SOURCES OF INFORMATION

This Technical Report is based, in part, on internal company technical reports, and maps, published government reports, company letters, memoranda, public disclosure and public information as listed in the References at the conclusion of this Technical Report. This Technical Report is supplemented by published and available reports provided by the United States Geological Survey ("USGS"), the Idaho Geological Survey, United States Bureau of Land Management and the United States Public Land Survey. Bunker Hill has purchased a majority of the mill and process equipment and several pieces of underground equipment. Budgetary capital equipment quotes were solicited for other outstanding pieces of major equipment. Mine supplies and material costs are from current delivered costs for mining activities or recent vendor quotations. Labor costs are those currently charged by the operator for work in support of mine maintenance, driving of the Newgard ramp and drilling contractor support. YaKum Consulting Inc was responsible for the processing and metallurgical testing. Patterson & Cooke North America provided the tailings and backfill engineering and capital estimates; Barr Engineering provided the milling and process design, capital and operating costs in conjunction with Bunker Hills management team. Tax analysis was performed by Mining Tax Plan, LLC in Colorado. Golder and Associates USA, Inc. toured the property and provided preliminary geotechnical opinions.

Table 2-1 Abbreviations found throughout the report

Term	Description
Ag	Silver
AGP	Acid Generating Potential
AIPG	American Institute of Professional Geologists
AISC	All-in Sustaining Costs
AMD	Acid Mine Drainage
Au	Gold
BHMC	Bunker Hill Mining Corp.
BLP	Bunker Hill Limited Partnership
CAPEX	Capital Expenditure
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act or United States Superfund
cfm	Cubic Feet per Minute
CIA	Central Impoundment Area
CIM	Canadian Institute of Mining, Metallurgy and Petroleum
CPG	Certified Professional Geologist
CTP	Central Treatment Plant
Cu	Copper
CWA	Clean Water Act
DOJ	US Department of Justice
EBIDTA	Earnings before Income Tax, Depreciation and Amortization
EHC	Environmental Health Code
EPA	Environmental Protection Agency
EPCRA	Emergency Planning and Community Right-to-Know Act
ESHIA	Environmental, Social and Health Impact Assessment
GRI	Global Reporting Initiative
ICOLD	International Commission on Large Dams
ICP	Inductively Coupled Plasma
IDEQ	Idaho Department of Environmental Quality
IDL	Idaho Department of Lands
IDWR	Idaho Department of Water Resources
IPDES	Idaho Pollutant Discharge Elimination System
k	Thousand (x000)

Term	Description
kt	Kilo tons
LHOS	Long-hole Open Stoping
LOM	Life of Mine
MIBC	Methyl Isobutyl Carbinol
NEPA	National Environmental Policy Act
NPDES	National Pollutant Discharge Elimination System
NSR	Net Smelter Return
OPEX	Operating Expenditure
Pb	Lead
PEA	Preliminary Economic Assessment
PFS	Pre-Feasibility Study
PMC	Placer Mining Corporation
Property	Bunker Hill Mine
QA/QC	Quality Assurance/Quality Control
QP(s)	Qualified Person(s)
RC or RVC	Reverse Circulation
RDA	Resource Development Associates
Rdi	Resource Development Inc
ROD	Record of Decision
RQD	Rock Quality Designation
SME	Society for Mining, Metallurgy and Exploration
SVMC	Silver Valley Mining Corporation
t	Short Ton
Tonne	Metric Tonne
tpd	Short Tons per Day
UAO	Unilateral Administrative Order
USGS	United States Geological Survey
Zn	Zinc

3 RELIANCE ON OTHER EXPERTS

With respect to land issues, leases and information, the Author of this Technical Report has relied upon the Title Opinion of Lyons O'Dowd Law Firm dated August 12, 2020 as well as written and verbal communication with BHMC in the preparation of Section 4.

Tax assumptions for the economic model underpinning the PFS, finalized shortly before the Company's news release regarding the PFS of September 06, 2022, were developed by Scott Farmer of Mining Tax Plan LLC. These tax assumptions were used for the economic analysis of the Project.

RDA has relied on and included data provided by the Company and its consultants and its contractors and has drawn its own conclusions therefrom.

Patterson & Cooke North America provided the tailings and backfill engineering and capital estimates; Barr Engineering provided the milling and process design, capital and operating costs in conjunction with Bunker Hills management team. Golder and Associates USA, Inc. toured the property and provided preliminary geotechnical opinions. All personnel related or employed by the above companies and had involvement with the Bunker project and studies are considered professionals and not Qualified Persons to this report under NI 43-101 definitions.

The Authors of this Technical Report have examined and take responsibility for the above stated information related to this Technical Report.

No other experts were relied upon in the preparation of this Technical Report.

4 PROPERTY DESCRIPTION AND LOCATION

The Bunker Hill Mine is located in Shoshone County, Idaho with portions of the mine located within the cities of Kellogg and Wardner, Idaho in northwestern USA. The Kellogg Tunnel, which is the main access to the mine, is located at 47.53611°N latitude, 116.1381W longitude. The approximate elevation for the above cited coordinates is 2366 ft. The patented mining claims depicted in Figure 4-1, below, cover an area of 5,802 acres.

On December 15, 2021 BHMC signed a Purchase and Sale Agreement (PSA) with Placer Mining Corporation and both William and Shirley Pangburn to acquire full ownership of the subsequently listed mineral titles in addition to other Surface Rights and Real Property associated with land and structures of the Bunker Hill Mine. BHMC became the owner of Bunker Hill Mine on January 7, 2022.

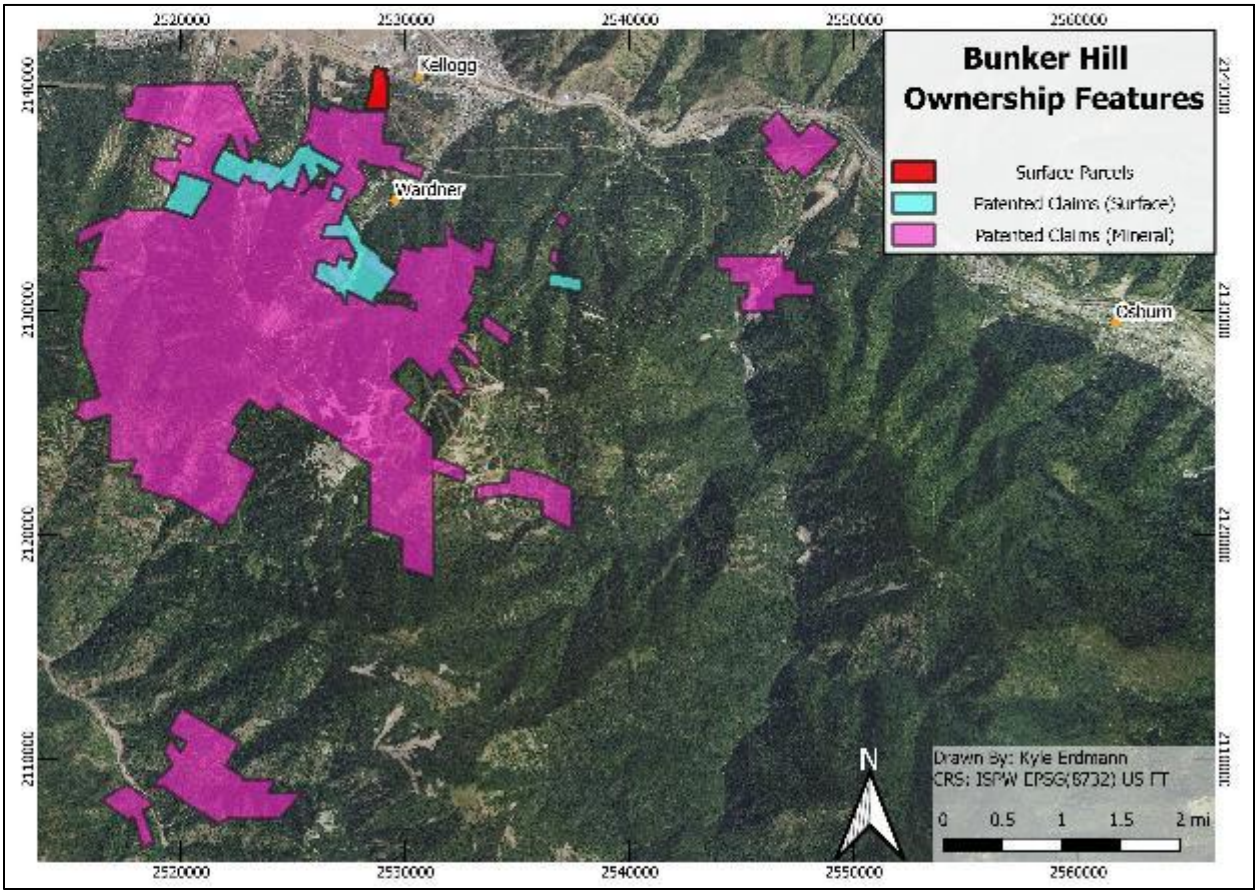


Figure 4-1 Property Map of Bunker Hill Mine Land Ownership

From its early days in the 1890s and through two World Wars, the Bunker Hill Company ("BMC") operated as an independent and well-known mining and smelting company. BMC was listed on the New York Stock Exchange. On June 1, 1968, Bunker Hill became a wholly owned subsidiary of Gulf Resources & Chemical Corp.

Growing public concern with the environment in the 1970s compelled Bunker Hill to spend large sums on plant improvements in order to comply with newly enacted federal air and water pollution laws. The Company also made major efforts to reclaim surrounding hillsides which had been impacted by the effects of decades of airborne smelter effluents and timbering for mining purposes.

Ultimately the combination of high costs of environmental compliance and declines in metal prices in the early 1980s led to the decision by Gulf Resources in August 1981 to cease operations at Bunker Hill and to sell the mine. In 1982, the company was sold to the Bunker Limited Partnership ("BLP"). The principal owners of BLP were Harry Magnuson, Duane Hagadone, Jack Kendrick and Simplot Development Corporation. Simplot Development Corporation sold its share of the partnership in 1987.

The mine was reopened from 1988 to 1990 by BLP during which time exploration, resource definition, mine development and small-scale production occurred. A decline in metals prices in the early 1990s led BLP to close the mine in January of 1991. Shortly thereafter BLP filed for bankruptcy.

On May 1, 1992, the Bunker Hill Mine was sold to PMC. The sale related to Bunker Hill Mine only. Pintlar, Inc., a subsidiary of Gulf Resources & Chemical Corporation, remained responsible for the environmental cleanup of the portion of the Bunker Hill Superfund Site related to the smelter site. Title to all patented mining claims included in the transaction was transferred from Bunker Hill Mining Corp. (U.S.) Inc. by Warranty Deed in 1992. The sale of the property was properly approved of by the U.S. Trustee and U.S. Bankruptcy Court.

BHMC's land package purchased from PMC, includes a mix of patented mining claims and ownership of surface parcels. The transaction also includes certain parcels of fee property which includes mineral and surface rights but are not patented mining claims. Mining claims and fee properties are located in Townships 47, 48 North, Range 2 East, Townships 47, 48 North, Range 3 East, Boise Meridian, Shoshone County, Idaho. The patented mining claims described by Figure 4-1, above, cover an area of 5,802.132 acres. BHMC now owns all claims that lie within the tax parcels and fee parcels listed in Table 1-1.

4.1.1 BUNKER HILL MINE MINERAL TENURE

On January 7, 2022, BHMC, through its wholly owned subsidiary Silver Valley Metals Corp. ("SVMC"), purchased the Bunker Hill Mine from PMC and other private landowners. The property consists of a combination of patented mining claims with surface rights and mineral rights ("Surface Parcels"), patented mining claims without surface ownership rights ("Mineral Parcels" as more particularly described below), and additional land not patented as mining claims under the General Mining Act of 1872 ("Platted Parcels"). The Platted Parcels and Surface Parcels are more particularly described below.

At the time of SVMC's purchase of the Bunker Hill Mine, SVMC obtained an Owner's Policy of Title Insurance ("Owner's Policy") and a Mineral Guarantee ("Mineral Guarantee") from First American Title Company in Kellogg, Idaho (the "Title Company") through Old Republic National Title Insurance Company.

The Owner's Policy insures title to the Surface Parcels and Platted Parcels is vested with SVMC, subject to the exclusions, exceptions, and conditions to coverage listed therein, with an amount of insurance of up to $7,700,000. Subject to these limitations, the Owner's Policy insures against loss or damage sustained by SVMC by reason of "Covered Risks," which include (among other things) any defect in, lien or encumbrance on the title to the Surface Parcels or Platted Parcels which is disclosed in a Public Record (as defined therein) as of the date of the policy and not otherwise excluded/excepted from coverage.

The Mineral Guarantee insures title to the surface of the Mineral Parcels, which is vested in owners other than SVMC, subject to the exceptions to coverage listed therein, in an amount of up to $4,000. The Mineral Guarantee provides information on the severance of the mineral estate from the surface rights and insures, subject to the liability exclusions, limitations, conditions, and stipulations set forth therein, against actual loss, not exceeding the liability amount, which SVMC shall sustain by reason of any incorrectness in the title to the surface of the Mineral Parcels. Research and records obtained through the Mineral Guarantee were used to determine the title owner of the Mineral Parcels.

SVMC obtained a title opinion from the law firm of Lyons O'Dowd, PLLC (the "Firm"). The Firm reviewed and relied upon the commitment for title insurance (the "Title Commitment") provided by the Title Company pertaining to the Surface Parcels and Platted Parcels and concluded that, as of the date of the opinion, PMC and the other private sellers had good and merchantable title to the Surface Parcels and Platted Parcels, subject to the qualifications, exceptions, reservations, assumptions, limitations and disclaimers identified in the Firm's opinion, the Title Commitment, and the Mineral Guarantee.

With respect to the Mineral Parcels, the Firm reviewed and relied upon the information included in the Mineral Guarantee and, as of the date of the opinion, provided a limited opinion that PMC had good and merchantable title to the Mineral Parcels, subject to the qualifications, exceptions, reservations, assumptions, limitations and disclaimers contained in the Firm's opinion, the Title Commitment, and the Mineral Guarantee.

Patented mining claims in the USA are described with respect to the Section, Township, and Range system employed throughout the country. The Surface Parcels, Mineral Parcels and Platted Parcels that comprise the Bunker Hill Mine land position are located in Townships 47, 48 North, Range 2 East, Townships 47, 48 North, Range 3 East, Boise Meridian, Shoshone County, Idaho. All the Surface Parcels, Mineral Parcels and Platted Parcels are patented (either through the General Mining Act or another fee-based patent act) and owned by SVMC as outlined herein; therefore, other than annual property taxes assessed by Shoshone County, there are no ongoing maintenance fees that would be paid for maintenance of unpatented mining claims through the Bureau of Land Management. There are no expiration dates associated with SVMC controlled mineral and land tenure, or associated property ownership rights.

DESCRIPTION OF SURFACE PARCELS AND PLATTED PARCELS

PARCEL 1:
Being a tract of land situated in the Northeast ¼ of the Southeast ¼ of Section 1,
Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho more particularly
described as follows:
Beginning at the East ¼ corner of said Section 1, Township 48 North, Range 2 East, B.M.,
Shoshone County, State of Idaho marked by a concrete monument and also the point of
beginning, thence
South 87°28'34" West 165.92 feet; thence
South 30°34'59" West, 220.96 feet; thence
Along a curve right, radius = 40 feet, the long chord bears South 66°18'09" West, 75.71 feet;
thence
North 78°22'26" West, 36.16 feet; thence
South 10°52'21" West, 204.04 feet; thence
North 75°18'39" West, 252.91 feet; thence
South 17°22'44" West, 1124.08 feet; thence
North 87°41'35" East, 1007.62 feet; thence
North 00°12'22" West, 1389.14 feet to the point of beginning.

PARCEL 2:
Being a tract of land lying in the Northeast ¼ and the Southeast ¼ of Section 1,
Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho and more
particularly described as follows:
Beginning at a point from whence the East ¼ corner of Section 1, Township 48 North,
Range 2 East, B.M., Shoshone County, State of Idaho bears South 10°03'11" East, 409.83
feet distant; thence
South 21°46'03" West, 150.17 feet; thence
North 65°43'21" West, 407.49 feet; thence
South 01°10'02" West, 94.54 feet; thence
South 27°17'34" West, 90.00 feet; thence
South 39°32'35" East, 342.19 feet; thence
South 17°00'49" West, 108.69 feet; thence
South 09°45'56" East, 92.08 feet; thence
Along a curve right, radius = 40 feet, the long chord bears North 68°36'01" East, 43.86 feet;
Thence
North 30°34'41" East, 331.46 feet; thence
Along a curve right, radius = 100 feet, the long chord bears North 48°38'04" East, 62.13
feet; thence
Along a curve left, radius = 161 feet, the long chord bears North 16°29'47" East, 198.94 feet; thence
North 31°27'01" West, 84.16 feet to the point of beginning and sometimes referred to as Lot
2, Mine Short Plat No. 1 as shown on the official recorded plat thereof recorded as

Instrument No. 350327, records of Shoshone County, State of Idaho.

PARCEL 3:
Being a tract of land situated in the Northeast ¼ of the Southeast ¼ of Section 1, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho more particularly described as follows:
Beginning at a point whence the East ¼ corner of Section 1, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho bears North 59°22'09" East, 395.37 feet distant; thence
Along a curve left, radius = 40 feet, the long chord bears South 15°24'18" West, 27.50 feet; thence
North 78°22'26" West, 36.16 feet; thence
South 10°52'21" West, 204.04 feet; thence
North 75°18'39" West, 252.91 feet; thence
North 02°48'24" West, 383.22 feet; thence
North 31°43'07" East, 271.88 feet; thence
South 39°32'35" East, 342.19 feet; thence
South 17°00'49" West, 108.69 feet; thence
South 09°45'56" East, 92.08 feet to the point of beginning and sometimes referred to as Lot 3 Mine Plant Short Plat No. 1.

PARCEL 4:
Saxon, M.S. 2067 Patented Mining Claim situated in Yreka Mining District in Section 11 & 12,
Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 553, records of Shoshone County, State of Idaho.

PARCEL 5:
Link, M.S. 2123 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 601, records of Shoshone County, State of Idaho.

PARCEL 6:
Spur, M.S. 2124 Patented Mining Claim situated in Yreka Mining District in Sections 11 and 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 48, Deeds, at page 479, records of Shoshone County, State of Idaho.

PARCEL 7:
Spear, M.S. 2496 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 43, Deeds, at page 49, records of Shoshone County, State of Idaho.

PARCEL 8:
Marion, M.S. 2583 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 47, Deeds, at page 196, records of Shoshone County, State of Idaho.

PARCEL 9:
Ben Herr, Kruger and Philippine, M.S. 2599 Patented Mining Claims situated in Yreka Mining District in Sections 12 and 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 47, Deeds, at page 27, records of Shoshone County, State of Idaho.

PARCEL 10:
Hough, M.S. 2611 Patented Mining Claim situated in Yreka Mining District in Sections 12 and 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 56, Deeds, at page 99, records of Shoshone County, State of Idaho.

PARCEL 11:
California, M.S. 2627 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 45, Deeds, at page 503, records of Shoshone County, State of Idaho.

PARCEL 12:
Check, M.S. 2840 Patented Mining Claim situated in Yreka Mining District in Sections 1 and 12, Township 48, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 54, Deeds, at page 465, records of Shoshone County, State of Idaho.

PARCEL 13:
That portion of Florence, M.S. 2862 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho and more particularly described in those certain deeds recorded November 30, 1966 as Instrument Nos. 208505 and 208506, records of Shoshone County, State of Idaho. Patent recorded in Book 55, Deeds, at page 585, records of Shoshone County, State of Idaho.

PARCEL 14:
Billy, M.S. 3111 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 96, Deeds, at page 398, records of Shoshone County, State of Idaho.

PARCEL 15:
Lucky, M.S. 3470 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., and in Section 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 91, Deeds, at page 283, records of Shoshone County, State of Idaho.

PARCEL 16:
Moat, M.S. 3503 Patented Mining Claim situated in Yreka Mining District in Sections 17, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 96, Deeds, at page 356, records of Shoshone County, State of Idaho.

PARCEL 17:
Bunker Hill, M.S. 579 Patented Mining Claim situated in Yreka Mining District in Sections 12 & 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 101, records of Shoshone County, State of Idaho.

PARCEL 18:
Sullivan, M.S. 580 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 190, records of Shoshone County, State of Idaho.

PARCEL 19:
Important Fraction, M.S. 581 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 285, records of Shoshone County, State of Idaho.

PARCEL 20:
Phil Sheridan, M.S. 604 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 281, records of Shoshone County, State of Idaho.

PARCEL 21:
Reed Fraction, M.S. 607 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 246, records of Shoshone County, State of Idaho.

PARCEL 22:
Bunker Hill Millsite, M.S. 608 Patented Millsite Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 4, Deeds, at page 181, records of Shoshone County, State of Idaho.

PARCEL 23:
Small Hopes, M.S. 609, Amended Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 325, records of Shoshone County, State of Idaho.

PARCEL 24:
Bottom Dollar Fraction, M.S. 629 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 252, records of Shoshone County, State of Idaho.

PARCEL 25:
Chestnut Fraction, M.S. 632 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 339, records of Shoshone County, State of Idaho.

PARCEL 26:
Emma & Last Chance Millsite, M.S. 703 Patented Millsite claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 4, Deeds, at page 179, records of Shoshone County, State of Idaho.

PARCEL 27:
Ontario, M.S. 755 Patented Mining Claim situated in Yreka Mining District in Sections 11 & 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 382, records of Shoshone County, State of Idaho.

PARCEL 28:
Carbonate, M.S. 764 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 325, records of Shoshone County, State of Idaho.

PARCEL 29:
Silver Casket, M.S. 790 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 15, Deeds, at page 25, records of Shoshone County, State of Idaho.

PARCEL 30:
Turkey Buzzard, M.S. 836 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in book 6, Deeds, at page 243, records of Shoshone County, State of Idaho.

PARCEL 31:
Snowslide Fraction, M.S. 837 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 249, records of Shoshone County, State of Idaho.

PARCEL 32:
Silver, M.S. 1085 Patented Mining Claim situated in Yreka Mining District in Sections 12 and 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 38, Deeds, at page 479, records of Shoshone County, State of Idaho.

PARCEL 33:
Johannesburg, M.S. 1192 Patented Mining Claim situated in Yreka Mining District in Sections 12 & 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 232, records of Shoshone County, State of Idaho.

PARCEL 34:
Puritan, M.S. 1328 Amended Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 196, records of Shoshone County, State of Idaho.

PARCEL 35:
No. 5, M.S. 1357 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 18, Deeds, at page 234, records of Shoshone County, State of Idaho.

PARCEL 36:
Omaha, M.S. 1409 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents at page 190, records of Shoshone County, State of Idaho.

PARCEL 37:
Legal Tender, M.S. 1639 Amended Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 304, records of Shoshone County, State of Idaho.

PARCEL 38:
Triangle Fraction, M.S. 2065 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 604, records of Shoshone County, State of Idaho.

PARCEL 39:
A parcel of land situated in the Northwest Quarter of Section 6, Township 48 North, Range 3 East, B.M., Shoshone County, Idaho, and more particularly described as follows:
Using the Bunker Hill Triangulation System Meridian and coordinates and beginning at Corner No. 1, a point identical with the West Quarter Corner of said Section 6 (N9667.57, E687.41), and running thence
North 0°42'20" East, 372.46 feet along the West boundary line of said Section 6 to Corner No. 2; thence
South 20°36' East, 59.71 feet to Corner No. 3, a point identical with Corner No. 4 of the Washington Water Power Company (WWP Co.) tract as described in Document No. 302109, recorded November 2, 1982, records of Shoshone

County, Idaho from The Bunker Hill Company to Bunker Limited Partnership, Parcel 28 of Exhibit "A", pages 12 and 13; thence
South 69°24' West, 12.87 feet to Corner No. 4, identical with Corner No. 3 of said WWP Co. tract; thence
South 14°20' East, 118.05 feet to Corner No. 5, identical with Corner No. 2 of said WWP Co. tract; thence
South 2°23'30" West, 187.00 feet to Corner No. 6, identical with Corner No. 1 of said WWP Co. tract; thence
South 80°00' East, 53.98 feet along the Southerly boundary line of said WWP Co. tract to its point of intersection with the South boundary line of the Northwest Quarter of said Section 6; thence
South 88°55'25" West, 88.05 feet along said boundary line of said Section 6 Northwest Quarter to Corner No. 1 and place of beginning.

DESCRIPTION OF MINERAL PARCELS

PARCEL 1:
Reeves, M.S. 1412 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 8, Deeds, at page 66.

PARCEL 2:
Packard, M.S. 1413 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 193.

PARCEL 3:
Quaker, M.S. 1414 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 388.

PARCEL 4:
Danish, M.S. 1503 Amended Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 north, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded as Instrument No. 209774, records of Shoshone County, State of Idaho.

PARCEL 5:
Alfred (shown of record as Alfred) and Maggie, M.S. 1628 Patented Mining Claims situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 247.

PARCEL 6:
Princess, M.S. 1633 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 301.

PARCEL 7:
Royal Knight and Silver King, M.S. 1639 Amended Patented Mining Claims situated in Yreka Mining District in Sections 2 and 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 304.

PARCEL 8:
Phillippine, M.S. 1663 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 322.

PARCEL 9:
Harrison, M.S. 1664 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 307.

PARCEL 10:
Ninety-Six (96), M.S. 1715 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 349.

PARCEL 11:
Lydia Fraction, Mabel, Manila, O.K., O.K. Western, Sunny and Whippoorwill, M.S. 1723 Patented Mining Claim situated in Yreka Mining District in Sections 2 and 3, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 28, Deeds, at page 446.

PARCEL 12:
William Lambert Fraction, M.S. 1945 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 1, Deeds, at page 580.

PARCEL 13:
Band, M.S. 2507 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 41, Deeds, at page 251.

PARCEL 14:
Maine, M.S. 2626 Patented Mining Claim situated in Yreka Mining District in Sections 2 & 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 45, Deeds, at page 180.

PARCEL 15:
Venture, M.S. 3164 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 62, Patents, at page 72.

PARCEL 16:
Goth, L-2, L-3 M. S. 3214 Patented Mining Claims Patent Mining Claim situated in Yreka Mining District in Sections 2 and 9, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 64, Deeds, at page 284.

PARCEL 17:
Castle, M.S. 3503 Patented Mining Claim situated in Yreka Mining District in Section 17, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 96, Deeds, at page 356.

PARCEL 18:
Silver King Millsite, M.S. 3563 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 123, Deeds, at page 166.

PARCEL 19:
Tyler, M.S. 546 Amended Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 34, Deeds, at page 546

PARCEL 20:
Emma, M.S. 550 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded as Instrument No. 209775, records of Shoshone County, State of Idaho.

PARCEL 21:
Last Chance, M. S. 551 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 1, Deeds, at page 433

PARCEL 22:
Sierra Nevada, M.S. 554 Patented Mining Claim situated in Yreka Mining District in Sections 11 & 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 1, Deeds, at page 358.

PARCEL 23:
Viola, M.S. 562 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 619.

PARCEL 24:
Oakland, M.S. 569 Patented Mining Claim situated in Yreka Mining District in Sections 11 & 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 235.

PARCEL 25:
Jackass, M.S. 586 Amended Patented Mining Claim situated in Yreka Mining District in Sections 12 & 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Deeds, at page 75.

PARCEL 26:
Lackawanna, M.S. 614 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 6, Patents, at page 260.

PARCEL 27:
Skookum, M.S. 615 Patented Mining Claim situated in Yreka Mining District in Sections 11 & 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book X, Deeds, at page 313

PARCEL 28:
Rolling Stone, M.S. 619 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., and in Section 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 38, Deeds, at page 484.

PARCEL 29:
Fairview, M.S. 621 Patented Mining Claim situated in Yreka Mining District in Section 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 301.

PARCEL 30:
San Carlos, M.S. 750 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 535.

PARCEL 31:
Ontario Fraction, M.S. 755 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 382.

PARCEL 32:
Sold Again Fraction, M.S. 933 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 9, Deeds, at page 207.

PARCEL 33:
Republican Fraction, M.S. 959 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 301.

PARCEL 34:
Likely, M.S. 1298 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book B, Patents, at page 25.

PARCEL 35:
Apex, Rambler and Tip Top, M.S. 1041 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 139.

PARCEL 36:
Butte, Cariboo, Good Luck, Jersey Fraction and Lilly May, M.S. 1220 Patented Mining Claim situated in Yreka Mining District in Sections 11 and 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 24, Deeds, at page 23.

PARCEL 37:
Mabundaland, Mashonaland, Matabelaland, Stopping and Zululand, M.S. 1227 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 38, Deeds, at page 481.

PARCEL 38:
Alla, Bonanza Fraction, East, Ironhill, Lacrosse, Miners Delight, No Name, Ollie McMillin, Schofield, Sullivan Extension and Summit, M.S. 1228 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., and in Section 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 301.

PARCEL 39:
Allie, Blue Bird, Bought Again, Josie, Maple, Offset, Rookery and Susie, M.S. 1229 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 20, Deeds, at page 580.

PARCEL 40:
Hornet M.S. 1325 Amended Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 607.

PARCEL 41:
King, M.S. 1325 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 295

Parcel 42:
Sampson, M.S. 1328 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 196.

PARCEL 43:
Comstock, Daisy, Dandy, Jessie, Julia, Justice, Ophir and Walla Walla, M.S. 1345 Patented Mining Claim situated in Yreka Mining District in Section 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 20, Deeds, at page 584.

PARCEL 44:
Lucky Chance, M.S. 1349 Patented Mining Claim situated in Yreka Mining District in Section 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 15, Deeds, at page 494.

PARCEL 45:
Excelsior, M.S. 1356 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 157.

PARCEL 46:
No. 1, No. 2, No. 3 and No. 4, M.S. 1357 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 18, Deeds, at page 234.

PARCEL 47:
Carter, Coxey, Deadwood, Debs, Hamilton, Hard Cash and Nevada, M.S. 1466 Patented Mining Claim situated in Yreka Mining District in Sections 11 and 14, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 20, Patents, at page 577.

PARCEL 48:
Arizona, M. S. 1488 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 199.

PARCEL 49:
Wheelbarrow, M.S. 1526 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 442.

PARCEL 50:
New Era, M.S. 1527 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 478.

PARCEL 51:
Hamilton Fraction, M.S. 1619 Patented Mining Claim situated in Yreka Mining District in Sections 11 & 14, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 289.

PARCEL 52:
Berniece, Mountain King, Mountain Queen, Southern Beauty and Waverly, M.S. 1620 Patented Mining Claim situated in Yreka Mining District in Section 14, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 292.

PARCEL 53:
Good Enough, M.S. 1628 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 247.

PARCEL 54:
McLelland, M.S. 1681 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 622.

PARCEL 55:
Stemwinder, M.S. 1830 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 35, Deeds, at page 437.

PARCEL 56:
Utah, M.S. 1882 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 415.

PARCEL 57:
Butternut and Homestake, M.S. 1916 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 38, Deeds, at page 434.

PARCEL 58:
Overlap, M.S. 2052 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book A, Patents, at page 532.

PARCEL 59:
Bee, Combination, Hawk, Idaho, Iowa, Oregon, Scorpion Fraction and Washington, M.S. 2072 Patented Mining Claim situated in Yreka Mining District in Sections 1 & 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 33, Deeds, at page 459.

PARCEL 60:
Eighty-Five (85), Iowa No. 2, K-10, K-11, K-12, K-13, K-16, K-17, K-18, K-19, K-20, K-21, K-22, K-23, K-28, K-29, K-30, K-31, K-32, K-39, Minnesota, Missouri No. 2, Ninety-One (91) and Ninety-two (92), M.S. 2077 Patented Mining Claim situated in Yreka Mining District in Sections 14, 15 and 22, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 34, Patents, at page 425.

PARCEL 61:
Chain, M.S. 2078 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 38, Deeds, at page 432.

PARCEL 62:
K-1, K-2, K-3, K-4, K-5, K-6, K-7, K-8, K-9, K-14, K-15, K-24, K-25, K-26, K-27, K-33, K-34, K-35, K-36, K-37, K-38, Kansas, Missouri and Texas, M.S. 2080 Patented Mining Claim situated in Yreka Mining District in Sections 14 and 23, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 34, Patents, at page 440.

PARCEL 63:
Bear, Black, Brown, Dewey, Ito, Oyama, S-1, S-2, S-3, S-4, S-5, S-6, S-7, S-8, S-9, S-10, S-11, S-12, S-13, Sampson, Sarnia and Star, M. S. 2081 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., and Sections 18 and 19, Township 48 North, Range 3 East, B.M., , Shoshone County, State of Idaho. Patent recorded in Book 34, Patents, at page 456.

PARCEL 64:
Sims, M.S. 2186 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book B, Patents, at page 23.

PARCEL 65:
Lincoln, M.S. 2187 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 40, Deeds, at page 126.

PARCEL 66:
Brooklyn, New Jersey and Schute Fraction, M.S. 2201 Patented Mining Claim situated in Yreka Mining District in Section 10, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 38, Deeds, at page 52.

PARCEL 67:
Cheyenne, M.S. 2249 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 42, Deeds, at page 505.

PARCEL 68:
Buckeye, M.S. 2250 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho.

PARCEL 69:
Timothy Fraction, M.S. 2274 Patented Mining Claim situated in Yreka Mining District in Section 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 43, Deeds, at page 36.

PARCEL 70:
Confidence and Flagstaff, M.S. 2328 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., and in Section 7, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book B, Patents, at page 27.

PARCEL 71:
Norman, M.S. 2368 Patented Mining Claim situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 41, Deeds, at page 410.

PARCEL 72:
Grant, M.S. 2369 Patented Mining Claim situated in Yreka Mining District in Sections 11 & 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 41, Deeds, at page 408.

PARCEL 73:
Cypress, M.S. 2429 Patented Mining Claim situated in Yreka Mining District in Sections 12 & 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 41, Deeds, at page 255.

PARCEL 74:
Hickory and Spruce Fraction, M.S. 2432 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 41, Deeds, at page 253.

PARCEL 75:
Helen Marr and Hemlock, M.S. 2452 Patented Mining Claim situated in Yreka Mining District in Sections 12 and 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 41, Deeds, at page 415.

PARCEL 76:
Spokane, M.S. 2509 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 41, Deeds, at page 305.

PARCEL 77:
Heart, Jack, Key, Queen and Teddy, M.S. 2511 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 45, Deeds, at page 21.

PARCEL 78:
Ace, Club, Diamond, Nellie, Roman and Spade, M.S. 2583 Patented Mining Claim situated in Yreka Mining District in Sections 11 and 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 47, Deeds, at page 196.

PARCEL 79:
Brady, M.S. 2584 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 43, Deeds, at page 135.

PARCEL 80:
A, B, C, D, E, F, Drew, Edna, Emily Grace, Foster, K-40, Lilly, Medium, Missing Link, No. 1, No. 2, Peak, Penfield, Sliver, Snowline, Yreka No. 10, Yreka No. 11, Yreka, No. 12, Yreka No. 13, Yreka No. 14, Yreka No. 15, Yreka No. 16, Yreka No. 17, Yreka no. 18, Yreka No. 19, Yreka No. 20, Yreka no. 21, Yreka No. 22, Yreka No. 23, Yreka No. 24, Yreka No.

25 and Yreka No. 26, M.S. 2587 Patented Mining Claim situated in Yreka Mining District in Sections 13, 24 and 25, Township 48 North, Range 2 East, B.M., and in Sections 19 and 30, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 57, Deeds, at page 597 and in Book 57, Deeds, page 85.

PARCEL 81:
Boer and Grant, M.S. 2599 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 45, Deeds, at page 27.

PARCEL 82:
Asset, Childs, Eli, Evans, Gun, Nick, Ox, Ruth, Sherman, Simmons, Taft and Yale, M.S. 2611 Patented Mining Claim situated in Yreka Mining District in Sections 12 and 13, Township 48 North, Range 2 East, B.M., and in Sections 18 & 19, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 56, Deeds, at page 99.

PARCEL 83:
African, Gus, Roy and Trump, M.S. 2624 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 43, Deeds, at page 561.

PARCEL 84:
Kirby Fraction, McClellan, Miles and Pitt, M.S. 2654 Patented Mining Claim situated in Yreka Mining District in Section 12, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 47, Deeds, at page 632.

PARCEL 85:
Bonanza King Millsite, M.S. 2868 Patented Mining Claim situated in Yreka Mining District in Section 8, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 61, Deeds, at page 112.

PARCEL 86:
Flagstaff No. 2, Flagstaff No. 3, Flagstaff No. 4, Scelinda No. 1, Scelinda No. 2, Scelinda No. 3, Scelinda No. 4, Scelinda No. 5, Scelinda No. 7 and Scelinda No. 8, M.S. 2921 Patented Mining Claim situated in Yreka Mining District in Sections 1 and 12, Township 48 North, Range 2 East, B.M., and in Section 7, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 59, Deeds, at page 120.

PARCEL 87:
Ethel, Katherine, Manchester, McRooney, Stuart No. 2, Stuart No. 3, Sullivan and Switzerland, M.S. 2966 Patented Mining Claim situated in Yreka Mining District in Sections 10 and 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 56, Deeds, at page 482.

PARCEL 88:
Hoover No. 1, Hoover No. 2, Hoover No. 3, Hoover No. 4 and Hoover No. 5, M.S. 2975 Patented Mining Claim situated in Yreka Mining District in Sections 13, 14, 23 & 24, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 56, Deeds, at page 490.

PARCEL 89:
Adath, Al-kyris, Anna Laura, Atlas, Atlas No. 1, Fraction, Gay, Panorama, Red Deer and Setzer, M.S. 2976 Patented Mining Claim situated in Yreka Mining District in Sections 22 and 23, Township 48 North, Range 2 East, B.M., and in Section 7, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 56, Deeds, at page 493.

PARCEL 90:
Lesley, Lesley No. 2, Lesley No. 3, Little Ore Grande, North Wellington, Ore Grande No. 1, Ore Grande No. 2, Ore Grande No. 3, Ore Grande No. 4, Ore Grande no. 5 and Wellington M.S. 2977 Patented Mining Claim situated in

Yreka Mining District in Sections 23 and 26, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 56, Deeds, at page 496.

PARCEL 91:
Marko, V.M. No. 1 and V.M. No. 2, M.S. 3051 Patented Mining Claim situated in Yreka Mining District in Sections 7 and 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 59, Deeds, at page 78.

PARCEL 92:
Army and Navy, M.S. 3096 Patented Mining Claim situated in Yreka Mining District in Section 22, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 60, Deeds, at page 223.

PARCEL 93:
Oracle, Orbit, Oreano, Ore Shoot, Orient, Oriental Orphan and Orpheum, M.S. 3097 Patented Mining Claim situated in Yreka Mining District in Section 23, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 60, Deeds, at page 255.

PARCEL 94:
East Midland, Midland, Midland No. 1, Midland No. 3, Midland No. 4, Midland No. 5, Midland No. 6, Midland No. 7, Midland No. 8 and North Midland, M.S. 3108 Patented Mining Claim situated in Yreka Mining District in Sections 13 & 24, Township 48 North, Range 2 East, B.M., and in Section 19, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 60, Deeds, at page 319.

PARCEL 95:
Monte Carlo No. 1, Monte Carlo No. 2, Monte Carlo No. 3, Monte Carlo No. 4 and Monte Carlo No. 5, M.S. 3177 Patented Mining Claim situated in Yreka Mining District in Sections 7 and 18, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 63, Deeds, at page 183.

PARCEL 96:
Long John, M.S. 3179 Patented Mining Claim situated in Yreka Mining District in Section 7, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 63, Deeds, at page 611.

PARCEL 97:
L-1, M.S. 3214 Patented Mining Claim situated in Yreka Mining District in Section 2, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 64, Deeds, at page 284.

PARCEL 98:
Pete, Prominade, Sam and Zeke, M.S. 3389 Patented Mining Claim situated in Yreka Mining District in Section 10, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 77, Deeds, at page 173.

PARCEL 99:
Battleship Oregon, Charly T., Lucia, Marblehead, Margaret, Nancy B., Olympia and Phil, M.S. 3390 Patented Mining Claims situated in Yreka Mining District in Sections 11 and 14, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 77, Deeds, at page 338.

PARCEL 100:
Beta, M.S. 3471 Patented Mining Claim situated in Yreka Mining District in Section 13, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded as Instrument No. 168414, records of Shoshone County, State of Idaho.

PARCEL 101:
Spokane Central No. 1, Spokane Central No. 2, Spokane Central No. 3, Spokane Central No. 3 Fr., Spokane Central No. 4 and Spokane Central No. 5, M.S. 3472 North Fork Coeur d'Alene Patented Mining Claim situated in Yreka Mining District in Sections 19, 20 and 29, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patents recorded as Instrument No. 179430 and as Instrument No. 219606, records of Shoshone County, State of Idaho.

PARCEL 102:
Anaconda, Apex, Apex no. 2, Apex No. 3, Blue Bird, Blue Grouse, Bob White, Butte, Butte Fraction, Cougar, Galena, Huckleberry No. 2, Leopard, Lynx, MacBenn, Martin, Pheasant, Robbin and Sonora, M.S. 3361 Patented Mining Claims situated in Yreka Mining District in Sections 1 and 2, Township 47 North, Range 2 East, B.M., and in Section 35, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 76, Deeds, at page 626.

PARCEL 103:
A 1/6 interest only in the Baby, Keystone, Van and Woodrat, M.S. 2856 Patented Mining Claims situated in Yreka Mining District in Sections 2 & 3, Township 47 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 56, Deeds, at page 52.

PARCEL 104:
Evening Star, Evening Star Fraction, Maryland, Monmouth, Oregon, Oregon No. 2 and Silver Chord, M.S. 2274 Patented Mining Claims situated in Yreka Mining District in Section 15, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 43, Deeds, at page 36.

PARCEL 105:
Spring, M.S. 3298 Patented Mining Claims situated in Yreka Mining District in Section 15, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 73, Deeds, at page 394.

PARCEL 106:
Milo Millsite, M.S. 2869 Patented Mining Claims situated in Yreka Mining District in Sections 8 and 17, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 61, Deeds, at page 111.

PARCEL 107:
Black Diamond, Carbonate, Enterprise, Enterprise Extension, Gelatin, Giant and Rolling Stone, M.S. 3423 Patented Mining Claims situated in Yreka Mining District in Sections 3 and 10, Township 48 North, Range 3 East, B.M., Shoshone County, State of Idaho.

PARCEL 108:
Chief No. 2 and Sugar, M.S. 2862 Patented Mining Claims situated in Yreka Mining District in Section 11, Township 48 North, Range 2 East, B.M., Shoshone County, State of Idaho. Patent recorded in Book 55, Deeds, at page 585.

4.1.2 OTHER BUNKER HILL PROPERTY CONSIDERATIONS

Patented mining claims in the State of Idaho do not require permits for underground mining activities to commence on private lands. Other permits associated with underground mining may be required, such as water discharge and site disturbance permits. Water discharged from Bunker Hill Mine is being treated at the Central Treatment Plant ("CTP"), which is located across the street from Bunker Hill Mine. The facility is owned by US EPA. Water discharged from the CTP meets the requirements of an existing NPDES permit for discharge into the South Fork of the Coeur d'Alene River. The company is required to obtain its own NPDES water discharge permit by May 14, 2023. Engineering work is expected to be completed in 2022 for a water treatment system at Bunker Hill Mine that will meet NPDES discharge limits (now Idaho Pollutant Discharge Elimination System, or "IPDES").

The land package included purchase of Bunker Hill Mine by BHMC includes approximately the same land and mine infrastructure that was transferred to PMC in 1992. Over 90% of surface ownership of patented mining claims not owned by PMC is owned by different landowners. These include: Stimpson Lumber Co.; Riley Creek Lumber Co.; Powder LLC.; Golf LLC.; C & E Tree Farms; and Northern Lands LLC.

4.2 ENVIRONMENTAL LIABILITIES

On May 14, 2018, Bunker Hill Mining Corp. ("BHMC"), the U.S. Environmental Protection Agency ("EPA") and the Department of Justice ("DOJ") entered into an administrative settlement agreement and order on consent. Concurrent with this administrative settlement agreement, on March 12, 2018, EPA and DOJ lodged a consent decree with the owner of the mine at the time, Placer Mining Corporation ("PMC"). The settlement package was essential for the redevelopment of Bunker Hill Mine that is now beginning because it established specific limitations on liability for past environmental damage related to CERCLA, also known as the United States Superfund, for the Bunker Hill Mine.

The Settlement Agreement and Order on Consent (the "Settlement" or "Settlement Agreement") specifically limits BHMC's liability for past environmental damage in exchange for performance of obligations that are described later in the agreement. The "Settlement" can be found and read in its entirety on the US EPA's website under CERCLA Docket No. 10-2017-0123. These obligations include $20 million in recovery of past EPA response costs for the mine's water treatment through a schedule of payments that were to occur over a 7-year period starting in 2018. BHMC also became liable for ongoing water treatment costs incurred by the EPA at the water treatment facility located across the street from the Mine, known as the Central Treatment Plant ("CTP"). The agreement also specified a range of care and maintenance activities within the mine that would be required jointly with PMC.

On December 18, 2021 BHMC signed an amendment to the Settlement Agreement along with the EPA, US DOJ and the Idaho Department of Environmental Quality ("IDEQ"). Material changes to the Settlement Agreement included a rescheduling of the payments so that $17 million of the historical cost recovery payments BHMC anticipates making from projected future cash flow from sales of concentrate produced by the mine.

BHMC's environmental liabilities are limited with respect to past environmental damage by paragraph II.5. of its Settlement Agreement. This paragraph states:

> "In view of the complex nature and significant extent of the work to be performed in connection with the response actions at the Mine and the Site, and the risk of claims under CERCLA being asserted against Purchaser as a consequence of Purchaser's activities at the Site pursuant to this Settlement Agreement, one of the purposes of this Settlement Agreement is to resolve, subject to the reservations and limitations contained in Section XVIII ("Reservations of Rights by United States"), any potential liability of Purchaser under CERCLA for the Existing Contamination and Work as defined by Paragraph 10."

The Work program defined in Paragraphs 9 of the Settlement Agreement is described in the "Environmental Activities" section of this study as "Ongoing Work Required by US EPA." The liabilities of BHMC are further described in the Settlement Agreement in paragraph 2 of the Settlement Amendment between US EPA and Bunker Hill Mining corp. This was executed on December 18, 2021. Section of that document stipulates as follows:

> "BHMC is exercising its option to purchase the Mine. As the owner and operator of the Mine, BHMC shall pay to EPA, as a portion of the purchase price, and in satisfaction of EPA's claim for cost recovery against Placer Mining Company 'PMC' as set forth in the Complaint filed by the United States on March 17, 2004 in the United States District Court for the District of Idaho (2:04-cv-00126), $19,000,000, plus Interest, in accordance with the following payment schedule:

Table 4-1 Water Treatment Cost Recovery Schedule

Date	Amount
Within 30 days of the Effective Date of the Settlement Agreement	$1,000,000 (Paid by BHMC in 2018)

Within 30 days of the First Amendment Effective Date	$2,000,000 (Paid by BHMC in Jan 2022)
November 1, 2024	$3,000,000
November 1, 2025	$3,000,000
November 1, 2026	$3,000,000
November 1, 2027	$3,000,000
November 1, 2028	$3,000,000
November 1, 2029	$2,000,000 plus accrued interest

BHMC is responsible for making all future cost recovery payments to US EPA now that it has purchased the Bunker Hill Mine from PMC.

BHMC's liability for such payments does not extend to any year in which BHMC no longer owns and/or occupies the Mine after July 1.

Beginning on the first day of the month following the First Amendment Effective Date, BHMC shall additionally make monthly payments in the amount of $140,000 to IDEQ, unless otherwise directed by EPA, for the estimated costs at the CTP associated with the treatment of water from the Mine. One year after the First Amendment Effective Date, BHMC shall make monthly payments in the amount of $200,000 to IDEQ, unless otherwise directed by EPA, for the estimated costs at the CTP associated with the treatment of water from the Mine. Two years after the First Amendment Effective Date, BHMC shall make monthly payments of the estimated mean average costs over the previous two years associated with the treatment of water from the Mine to IDEQ, unless otherwise directed by EPA. EPA and IDEQ will determine actual costs incurred and attributable to the Mine based on the following: (1) water treatment costs for lime and flocculants will be determined based on the Mine waters relative proportion of lime demand per month; (2) all other water treatment costs, including on-call maintenance and emergency responses (OMERs) except those that meet the criteria of number (3) will be determined based on the Mine's relative percentage of hydraulic load per month; and (3) OMERs attributable to changes in the Mines water chemistry and/or hydraulic load will be 100% billed to BHMC. IDEQ will send written notification to BHMC with a copy to EPA annually to reconcile water treatment costs paid with actual costs incurred, along with a bill for any owed costs, as appropriate. Within 30 days of receipt of the annual notification and bill, BHMC may request to meet with EPA and IDEQ to discuss the amounts billed. If BHMC disagrees with any amount billed, BHMC may utilize dispute resolution pursuant to Section XIV of the Settlement Agreement. Payment of any undisputed owed costs as indicated in such notification and bill shall be paid 60 days after the date of such bill. BHMC shall continue to make all of the foregoing water treatment payments for so long as EPA and/or IDEQ are treating water from the Mine. The above stated costs are currently under review by IDEQ and the EPA and costs of subsequent mine water treatment performed at the CTP have been scheduled into the Project economics as such.

The activities planned in this Technical Report will create minimal surface disturbance and are low environmental impact in nature. As currently conceived, crushing, milling and processing will be done in a manner that does not create additional disturbance and generates no negative impact of significance. If for any reason waste and/or tailings are required to be deposited on surface at any point in the future, the design, engineering and construction of the facility will meet ICOLD (International Commission on Large Dams) standards as well as all applicable environmental laws and regulations.

No additional environmental liabilities are anticipated as a result of the activities planned by BHMC. The company will initiate a voluntary Environmental Social and Health Impact Assessment that conforms to ISO and IFC standards. The study will commence in Q4 of 2022 and is expected to conclude in Q1 of 2024. The study contains 13 component studies that will measure a broad range of impacts. The study will be used to development plans and activities that maximize positive impacts of the mine's production and mitigate any negative impacts.

No permits are required for the initiation of mining activities on the Property. Permits will be required for air emissions associated with certain milling and processing activities. Mine water discharge will be processed at the CTP.

Other changes included a modification of payment for current ongoing water treatment services provided to the mine by EPA and IDEQ. Rather than two semi-annual payments of $480,000, BHMC will make a monthly payment of $140,000 for the first 12 months after execution of the amendment. From months 13 onward, the monthly payment will increase to $200,000. The increase in annualized costs of water treatment is the result of recently completed upgrades of the water treatment system at the CTP that allow it meet more stringent discharge standards. If and when BHMC develops its own water treatment system that is capable of meeting water discharge standards, these payments will cease. BHMC will also make an addition payment to EPA of approximately $2.9M within 90 days of the effective date of the Settlement Amendment.

These constitute the current environmental obligations and responsibilities of BHMC related to Bunker Hill mine site.

4.2.1 HISTORY OF SUPERFUND LIABILITIES

In 1983, Bunker Hill Mine was included in the 21-square mile box (the “Site”) listed on the Environmental Protection Agency’s National Priorities List as a Superfund Site. In 1992, PMC purchased a portion of the Site, which includes underground workings, mineral rights, and much of the land surface above the Mine, from Bunker Limited Partnership. PMC did not purchase the entire Complex nor the Central Treatment Plant (“CTP”) that was constructed by Gulf Resources in 1974 and operated until the sale of Bunker Hill to BLP.

At the time of purchase, PMC assumed liability for Bunker Hill Mine for environmental response costs and any claims under the Comprehensive Environmental Response, Compensation, and Liability Act (“CERCLA”), also known as Superfund.

In November 1994, Federal and State governments assumed operation of the CTP for ongoing treatment of Acid Mine Drainage.

Two years after PMC purchased Bunker Hill Mine, in 1994, EPA issued a Unilateral Administrative Order ("UAO") to PMC directing PMC to meet three main obligations related to Bunker Hill Mine effluent and water management in and around the mine site. These included:

- Keeping the mine pool (flooded workings within the mine) pumped to an elevation below the level of the South Fork of the Coeur d'Alene River (at or below Level 11 of the Mine)
- To convey mine water to the EPA’s Central Treatment Plant for treatment unless an alternative form of treatment was approved,
- Provide for emergency mine water storage within the mine.

In 2017, EPA issued an additional UAO to PMC directing PMC to:

- Control mine water flows to the CTP during needed upgrades at the CTP
- In high flow periods, to conduct operation and maintenance of the Reed Landing Flood Control Project,
- To file an environmental covenant on a portion of the Mine property regarding access and operation and maintenance,
- Allowing PMC to fill the mine pool to Level 10 during specific events.

EPA has incurred costs in operating the CTP, which treats the approximately 1,300 to 1,400 gallons-per-minute of acid mine drainage released from the mine on an ongoing daily basis.

The consent decree of 2018 and administrative settlement agreement, mentioned above, embody a settlement package involving PMC, BHMC, and the United States at the Bunker Hill Mining and Metallurgical Superfund Site. The consent decree and administrative settlement agreement work in tandem. The Settlement Amendment does not include PMC. It was signed only between BHMC, US EPA, DOJ and IDEQ.

4.3 OBSERVATIONS

To the extent known, the Authors know of no other royalties, back-in rights, payments or other agreements and encumbrances to which the property is subject.

The Author knows of no other environmental liabilities to which the Property is subject.

The Author is unaware of any other permits that must be acquired to conduct work on the Property.

The Author knows of no other significant factors and risks that may affect access, title, or the right or ability to perform work on the Property.

4.4 ROYALTIES, PAYMENTS AND AGREEMENTS

On December 20, 2021, the Company executed a non-binding term sheet outlining a $50,000,000 project finance package with Sprott Private Resource Streaming and Royalty Corp. ("SRSR"). The non-binding term sheet with SRSR outlined a project financing package that the Company expects to fulfill the majority of its funding requirements to restart the Mine. The term sheet consisted of an $8,000,000 royalty convertible debenture (the "RCD"), a $5,000,000 convertible debenture (the "CD1"), and a multi-metals stream of up to $37,000,000 (the "Stream"). The CD1 was subsequently increased to $6,000,000, increasing the project financing package to $51,000,000.

On June 17, 2022, the Company consummated a new $15,000,000 convertible debenture (the "CD2"). As a result, total potential funding from SRSR was further increased to $66,000,000 including the RCD, CD1, CD2 and the Stream (together, the "Project Financing Package").

The Company closed the $8,000,000 RCD on January 7, 2022. The RCD bears interest at an annual rate of 9.0%, payable in cash or Common Shares at the Company's option, until such time that SRSR elects to convert a royalty, with such conversion option expiring at the earlier of advancement of the Stream or July 7, 2023 (subsequently amended as described below). In the event of conversion, the RCD will cease to exist and the Company will grant a royalty for 1.85% of life-of-mine gross revenue from mining claims considered to be historically worked, contiguous to current accessible underground development, and covered by the Company's 2021 ground geophysical survey (the "SRSR Royalty"). A 1.35% rate will then apply to claims outside of these areas. The RCD was initially secured by a share pledge of the Company's operating subsidiary, Silver Valley Metals Corp, until a full security package was put in place concurrent with the consummation of the CD1. In the event of non-conversion, the principal of the RCD will be repayable in cash.

Concurrent with the funding of the CD2 in June 2022, the Company and SRSR agreed to a number of amendments to the terms of the RCD, including an amendment of the maturity date from July 7, 2023, to March 31, 2025. The parties also agreed to a Royalty Put Option such that in the event the RCD is converted into a royalty as described above, the holder of the royalty will be entitled to resell the royalty to the Company for $8,000,000 upon default under the CD1 or CD2 until such time that the CD1 and CD2 are paid in full.

The Company closed the $6,000,000 CD1 on January 28, 2022, which was increased from the previously announced $5,000,000. The CD1 bears interest at an annual rate of 7.5%, payable in cash or shares at the Company's option, and matures on July 7, 2023 (subsequently amended, as described below). The CD1 is secured by a pledge of the Company's properties and assets. Until the closing of the Stream, the CD1 was to be convertible into Common Shares at a price of C$0.30 per Common Share, subject to stock exchange approval (subsequently amended, as described below). Alternatively, SRSR may elect to retire the CD1 with the cash proceeds from the Stream. The Company may elect to repay the CD1 early; if SRSR elects not to exercise its conversion option at such time, a minimum of 12 months of interest would apply.

Concurrent with the funding of the CD2 in June 2022, the Company and SRSR agreed to a number of amendments to the terms of the CD1, including that the maturity date would be amended from July 7, 2023, to March 31, 2025, and that the CD1 would remain outstanding until the new maturity date regardless of whether the Stream is advanced, unless the Company elects to exercise its option of early repayment. The Company determined that amendments to the terms should not be treated as an extinguishment of CD1, but as a debt modification.

The Company closed the $15,000,000 CD2 on June 17, 2022. The CD2 bears interest at an annual rate of 10.5%, payable in cash or shares at the Company's option, and matures on March 31, 2025. The CD2 is secured by a pledge of the Company's properties and assets. The repayment terms include 3 quarterly payments of $2,000,000 each beginning June 30, 2024, and $9,000,000 on the maturity date.

In light of the Series 2 Convertible Debenture financing, the previously permitted additional senior secured indebtedness of up to $15 million for project finance has been removed.

A minimum of $27,000,000 and a maximum of $37,000,000 (the "Stream Amount") will be made available under the Stream, at the Company's option, once the conditions of availability of the Stream have been satisfied including confirmation of full project funding by an independent engineer appointed by SRSR. If the Company draws the maximum funding of $37,000,000, the Stream will apply to 10% of payable metals sold until a minimum quantity of metal is delivered consisting of, individually, 55 million pounds of zinc, 35 million pounds of lead, and 1 million ounces of silver (subsequently amended, as described below). Thereafter, the Stream would apply to 2% of payable metals sold. If the Company elects to draw less than $37,000,000 under the Stream, the percentage and quantities of payable metals streamed will adjust pro-rata. The delivery price of streamed metals will be 20% of the applicable spot price. The Company may buy back 50% of the Stream Amount at a 1.40x multiple of the Stream Amount between the second and third anniversary of the date of funding, and at a 1.65x multiple of the Stream Amount between the third and fourth anniversary of the date of funding. As of November 21, 2022, the Stream has not been advanced.

Concurrent with the funding of the CD2 in June 2022, the Company and SRSR agreed that the minimum quantity of metal delivered under the Stream, if advanced, will increase by 10% relative to the amounts noted above.

5 ACCESSIBILITY, CLIMATE, LOCAL RESOURCES, INFRASTRUCTURE AND PHYSIOGRAPHY

The Bunker Hill Mine Project is located at Kellogg, Idaho within the Coeur d'Alene mining district, Shoshone County, Idaho. The area is accessed from Spokane, Washington via Interstate 90 east, to the mile 50 exit. Access to the Kellogg Tunnel is via McKinley Avenue, a public road, then using the Bunker Mine Road to the Kellogg tunnel entrance. The elevation of the mine is approximately 2,300 feet above sea level.

The Bunker Hill Mine Project is in a sub-alpine mountainous region of the state and is deeply incised by the Coeur d'Alene river. Average annual rainfall is approximately 25 inches (635 mm), and average annual snowfall is approximately 1,220 mm). Summers are generally dry and warm while winter can bring heavy accumulations of snow in the mountains. Vegetation is composed mainly of grass lands on south facing slopes and conifer forest on north facing slopes. The climate is favorable for year-round mining operations.

The closest major airports to the Bunker Hill Mine Project are in Spokane, Washington, 32 miles (51.5 km) west of Coeur d'Alene on I-90 and Missoula, Montana, 108 miles (174 km) east of Lookout Pass on I-90. Necessary supplies, equipment, and services to carry out exploration and mine development projects are available in Kellogg, Wallace, Mullan, Coeur d'Alene, and Wardner, Idaho, as well as Spokane, Washington. A trained mining workforce is available in the above-mentioned communities.

6 HISTORY

The Bunker Hill Mine is one of the most storied base metal and silver mines in American history. Initial discovery and development of the property began in 1885, and from that time until the mine closed for the final time in 1991 total production from the mine totaled 42.77 million tons at an average grade of 8.43% Pb, 3.52 oz Ag/ton and 4.52% Zn. Through its history the area encompassing the Bunker Hill mine accounts for nearly 42% of the total lead, 41% of the zinc and 15% of the silver production in the Coeur d'Alene Mining District. Only the Sunshine and Galena mines have produced more silver. Over this long history, over 40 separate mineralized zones were exploited at the Bunker Hill mining complex.

6.1 DISCOVERY AND HISTORICAL OWNERSHIP

Discovery of Bunker Hill occurred in the summer of 1885 when Noah Kellogg, a prospector from Murray Idaho, discovered the Bunker Hill outcrop. Through a series of partnerships and sales, The Bunker Hill and Sullivan Mining and Concentrating Company was incorporated in July of 1887. Operations focused on the upper levels easily accessed by means of surface portals. Mined material was transported by aerial tramway to the mill site in Kellogg. By 1893 mining had progressed to the creek level near Wardner, ID where it became evident that continued operations would require a significant investment to access down dip extension to mineralized veins and bedding. Work began on the eponymous Kellogg Tunnel during 1893 which was completed in 1902. The tunnel provided access to the 9-Level (2,406 msl) of the mine which became the main area of operations for the mining operation. A series of shafts provided access down-dip where exploitation of the resource reached the 28-Level (-1,200 msl). The company began public trading in 1905. In 1912 construction of a lead smelter commenced which became operational five years later in 1917 followed by an electrolytic zinc smelter in 1927. In 1956 the corporate name was shortened to The Bunker Hill Company where operations continued until 1968 when, as result of a hostile merger, the Bunker Hill Company became a wholly owned subsidiary of Gulf Resources and Chemical Corporation.

In 1981 a decline in metal prices led to a slow-down in operations at the mine and resulted in significant lay-offs. Continued uncertainty about metal prices, the unlikelihood of winning wage rollbacks from labor, and increasingly stringent environmental regulations contributed to Gulf Resources' decision in August 1981 to close its Bunker Hill operations and put the company up for sale. In 1982 the company was sold to the Bunker Limited Partnership. BLP reopened the mine while keeping the lead and zinc operations closed. The mine operated from 1988 to 1991 at which point BLP filed for bankruptcy. On May 1, 1992, mineral rights were transferred to Robert Hopper, owner of Placer Mining Co., of Bellevue, Washington.

On August 28, 2017, Bunker Hill Mining entered into a definitive agreement with Placer Mining Corp. (PMC) on a lease with an option to purchase the Bunker Hill Mine. The agreement included mining claims, surface rights, fee parcels, mineral interests, existing infrastructure, machinery and buildings at the Kellogg Tunnel portal in Milo Gulch, or anywhere underground at the Bunker Hill Mine Complex; except exclusions of the Machine Shop Building and Parcel, unprocessed mineralization on deck and residual lead/zinc mineralization mined and broken, but not removed from the Bunker Hill Mine. The lease period was able to have been extended a further 12 months at the Company's discretion. During the term of the lease, the Company was obligated make US$60,000 monthly mining lease payments. Bunker Hill Mining had an option to purchase the Bunker Assets at any time before the end of the lease for $11M ($M5.9 cash, $M4.9 stock). There were no other royalties or other encumbrances in the modified lease terms. After the purchase of the Bunker Hill Mine by BHMC on January 7, 2022, the terms and obligations of the lease have been replaced by the terms of a sale and purchase agreement between PMC and BHMC.

6.2 HISTORIC OPERATIONS

The Bunker Hill lode, in Milo Gulch, was discovered by prospector Noah S. Kellogg on September 9, 1885. Legend has it that Kellogg's wandering burro found the mineralized outcrop. Grubstaking a prospector was common in the early days of the Coeur d'Alene Mining District and it was under these arrangements that local Murray merchants John T. Cooper and Origin O. Peck outfitted Noah Kellogg when he set out to look for gold up the South Fork of the Coeur d'Alene River in August of 1885.

Soon after the discovery, the partners entered into an agreement with Jim Wardner whereby he secured capital for development of the mine and construction of a mill. After negotiating a contract with Selby Smelting Company to treat the process plant product, Wardner was able to interest a syndicate who organized the Helena Concentrating Co. This company built the first process plant on the Sullivan side of the gulch in July of 1886.

In 1887 Simeon Gannet Reed purchased the claims and process plant for a total of $750,000 and, in partnership with Martin Winch and Noah Kellogg, incorporated the Bunker Hill and Sullivan Mining and Concentrating Company. The financial headquarters of the company was transferred to San Francisco in September 1891. The Oregon corporation was dissolved on March 24, 1924, and the company was reincorporated in Delaware. In 1956 that the name was shortened to The Bunker Hill Company.

As the mine production increased, a process plant of larger capacity was needed, and in 1891 a 400 ton (363 tonne) per day process plant was built in the main valley below the confluence of Milo Creek with the South Fork of the Coeur d'Alene River. To transport mineralization to the process plant, an aerial tramway, with a horizontal length of 10,000 ft (3,048 m), was constructed from Wardner. This tramway served to transport all mine mineralization until the two-mile (3.2 km) Kellogg Tunnel was completed in 1902. In 1898 the Bunker Hill and Sullivan Mining and Concentrating Co. and the Alaska Treadwell Company each purchased 31.34 percent of the stock of the Tacoma Smelter on Puget Sound, rehabilitated the plant, and thereby provided a facility for smelting. When the smelter closed its lead plant in 1912, lead from the Bunker Hill Mine was shipped to Selby, California, and East Helena, Montana for processing. In 1916 the company began the construction of a lead smelter at Kellogg which went into operation in July 1917.

The Kellogg Tunnel, started in 1893 and completed in 1902, permitted exploration work to take place on the tunnel level and the intervening ground between the tunnel and the surface. This resulted in the opening up of the Carey and July stopes on the 7th and 8th levels and the March stope on the tunnel or No. 9 level. These were three of the highest grade and most productive stopes in the history of the mine.

At Kellogg, the company operated the Bunker Hill lead-zinc-silver Mine and the Crescent Silver-Copper Mine, a lead smelter and refinery, electrolytic zinc reduction plant, cadmium plant, zinc fuming plant, sulfuric acid plant and a phosphoric acid plant. Historically, the Bunker Hill Mining Company accurately recorded the production grades from individual mining areas. In the early mine life, a portion of the mining was carried out by contractors or “leasers” who were paid for the mineral content of the mineralization shipped to the process plant by sampling each carload of mineralization shipped. Accurate records of their production are documented and represent the grade of mineralization shipped for processing.

Pre-development exploration drilling and assaying was limited the early years of production and accelerated later in the mine’s life with a total sum of over 3500 drill holes representing over 200,000 feet of drilling. Early exploration was primarily done by exploratory drifting and cross-cutting. Over the course of several years in the late 1970s, a dedicated team of geologists conducted ground-breaking research on the mineralized controls of the veins. The research for the first time defined distinct stratigraphic horizons in the upper Revett formation that could be correlated and mapped over distances of thousands of feet. The 1970s research ended shortly before the mine closed, and the new concepts were never fully applied to exploration.

6.3 PAST PRODUCTION

Total production from the past-producing Bunker Hill Mine from 1885 through 1981 is 35,779,448 tons (32,458,578.5 t) grading 8.76% lead, 3.67% zinc and 4.52 oz/ton (155 g/t) silver (Meyer and Springer 1985, Bingham 1985).

The largest individual zones include the March with 4,735,795 tons (4,296,242 tonnes) grading 12.03% lead, 2.25% zinc and 5.22 oz/ton (179 g/t) silver, and the Emery with 3,744,798 tons (3,397,224.5 tonnes) grading 10.31% lead, 3.86% zinc and 6.17 oz/ton (211.5 g/t) silver (Meyer and Springer 1985).

The highest-grade silver zones include the Caledonia mine with 263,182 tons grading 12.6% lead and 30.75 oz/ton silver, the Senator Stewart mine with 1,014,814 tons grading 7.9% lead and 6.34 oz/ton silver, the J-Vein with 1,130,414 tons grading 9.8% lead and 7.59 oz/ton silver, and the Truman-Ike vein with 1,861,295 tons grading 10.31% lead and 7.47 oz/ ton silver.

These historical production figures do not include production from the 18-month period when the mine was re-opened between 1989 and 1991.

Following its discovery in 1885, the Bunker Hill Mine operated continuously until 1981, except in times of labor stoppages. The mine was also operated from 1989 until January 1991 by the Bunker Limited Partnership.

During the mine operations, production came from 15 or more separate deposits mined over a vertical range of 4,800 ft (1,463 m) from 3,200 ft (975 m) above sea level to 1,600 ft (488 m) below sea level (Figure 6.1). The main entry was through the Kellogg Tunnel at 2,400 ft (732 m) elevation, (on nine level) and access to deposits below that level was by means of three major inclined shafts and other auxiliary inclines. In total, well over 100 miles (161 km) of major horizontal openings were maintained, as well as six miles (9.7 km) of shafts and raises.

Table 6-1 Mine Production by Zone

Mineral Zone	Final Year of Production	Tons Mined	Pb %	Ag opt	Zn %
Emery	1981	3,744,798	10.31	6.17	3.86
Truman - Ike	1967	1,861,295	9.79	7.47	2.10
Mac	1981	1,226,038	9.58	5.34	4.39
Roger (Pb)	1980	253,511	8.20	3.56	3.09
Shea	1981	2,088,383	7.31	4.27	3.55
Tallon	1980	1,270,295	2.13	1.06	7.71
Veral	1975	357,765	8.86	4.81	0.43
Pate	1967	322,271	9.42	4.36	6.80
Miscellaneous	1900	388,060	8.72	4.85	3.25
Tony	1979	362,393	1.94	1.24	9.72
South Chance	1980	7,175	3.41	1.85	1.77
Orr	1981	323,359	5.91	2.87	2.24
Forrest	1963	9,273	2.41	1.01	0.43
Francis	1981	972,315	11.84	5.68	4.47
FW Francis	1981	117,604	8.20	4.47	1.56
J	1980	1,130,434	9.88	7.59	0.59
Rosco	1981	563,340	1.60	1.24	5.93
Brown	1981	80,846	1.33	1.00	5.35
New Landers	1981	78,347	2.25	1.30	3.21
S. Tallon	1981	426,694	0.98	0.63	4.42
Barr	1981	254,016	8.50	3.76	0.88
Frank	1973	6,006	1.00	0.71	1.23
Jersey	1981	26,333	5.88	2.61	0.42
Towers	1979	636,033	13.26	5.44	2.46
Newgard	1981	1,204,015	1.27	0.72	3.10
Small Hopes	1980	825,634	2.46	1.61	2.98
Motor	1904	30,191	5.77	2.71	1.60
Dobbins	1976	429,656	12.05	4.64	3.09
Atkins	1981	245,323	3.44	2.06	5.49
Dull	1977	191	1.12	1.37	3.90
Guy	1946	99,105	3.76	1.84	14.26
Quill	1981	388,462	2.26	1.34	4.32
Henry	1979	35,172	7.83	5.08	1.90
Steve	1981	18,884	1.90	1.01	8.45
Roger (2n)	1979	665,549	2.64	1.50	7.24
Stanley	1957	1,891,285	7.80	3.30	9.23
March	1936	4,735,765	12.03	5.22	2.25
Dobbins Cave	1953	22,705	2.17	0.85	0.63
Guy Cave	1953	1,039,020	0.93	0.40	1.94
-9 Level Miscellaneous Pb	1970	2,725,251	12.80	5.99	2.62
+3 Level Misc Pb	1914	917,940	12.90	6.19	1.04
4 Level Misc Pb	1917	350,191	10.57	5.18	1.55
5 Level Misc Pb	1919	600,573	10.82	5.62	1.57
6 Level Misc Pb	1943	580,676	11.20	5.52	2.26
7 Level Misc Pb	1926	478,687	11.34	4.21	1.69
8 Level Misc Pb	1942	1,849,625	12.38	5.44	4.90

Mineral Zone	Final Year of Production	Tons Mined	Pb %	Ag opt	Zn %
9 Level Misc Pb	1922	135,042	13.61	6.10	2.60
Miscellaneous (Zn)	1968	44	0.19	0.32	0.54
Miscellaneous [Pb-Zn)	1958	1,560	3.70	2.20	1.40
Andy	1970	22,318	1.16	0.92	6.35
Total Mine Production		**35,799,448**	**8.84**	**4.55**	**3.66**

6.4 HISTORIC MINING AT BUNKER HILL

The primary access to the Bunker Hill Mine is the 10,000-foot (3,048 m) Kellogg Tunnel at the 9 Level elevation. A shaft extends down to the 31 level with the 29 level being the deepest developed level. The 29 level is 4,000 ft (1,220 m) below the Kellogg Tunnel. Over the 100 years of production, various mining methods have been used at the past producing Bunker Hill Mine. These include:

- Square set cut and fill;
- Captive cut and fill with classified mine tailings as backfill (below 8 Level only);
- Shrinkage mining without backfill (above 8 Level);
- Sub-level blast hole (Long hole) mining;
- Sub-level caving (Guy Cave)

Square-set cut and fill was likely the original mining method from the 1880s. The veins were mined with sets of timbers used as ground support which were then buried by sand fill pumped down from the surface. After backfilling, the next level above the sand was mined. The broken material was slushed to chutes where it dropped into passes to the level below. In other areas, a pillar mining method was used. Instead of timber as support, rib pillars were established. Sand fill was pumped in to provide the floor for the next cut. As the material was blasted, compressed air operated mucking machines transported it to a chute in the stope where it dropped into a pass to the lower level.

In the upper areas of the mine, sub-level blasthole stoping was used. Trackless equipment was used to cut levels at 40 foot (12.2 m) spacing. Long holes were drilled in the pillars between levels. The holes were blasted, allowing the material to fall to the bottom of the stope, where it was scooped by LHDs, which, depending on the area of the mine, either transported it to passes connected to the mine rail haulage system or place it on trucks for transport directly to the surface.

For mining areas above the Kellogg Tunnel, broken material was hauled by trackless equipment to one of two central passes which stored the material until it could be chute loaded into the main track haulage system operating in the Kellogg Tunnel.

For mining areas below the Kellogg Tunnel, trains powered by battery locomotives transported the material to bins located at the inclined hoisting shaft. In the shaft, skips were loaded and hoisted to skip dumps located above the Kellogg Tunnel level where the material was dumped into two large concrete bins until it could be chute loaded into the main track haulage system operating in the Kellogg Tunnel. Drawn from these storage areas by gravity, the material was chute loaded into 22 car trains pulled by 15-ton diesel locomotive and trammed two miles (3.2 km) to the surface process plant bins. The material was then processed by the Bunker Hill process plant to produce concentrates.

After 1970, diesel-powered equipment was utilized in parts of the lower mine to improve productivity and access to selected areas. In 1972, major production was resumed using bulk mining methods in the upper mine (above 9 Level), the portion above the Kellogg Tunnel, which had not been worked since the 1930s. The upper mine was partially mechanized with diesel equipment. This area of the mine produced approximately 7,000 tons (6,350 tonnes) per week (45% of total mine production) through April 1977. The upper mine was then placed on a care and maintenance basis pending improvement in the zinc market. Some production was obtained from the upper mine in the period 1978 to 1981 by extracting previously broken mineralization.

Following a 1977 strike, the lower mine resumed operations at a production rate of approximately 9,000 tons (8,165 tonnes) per week. Through April 1977, the flotation process plant operated on a three-shift basis, seven days a week, at approximately its full capacity milling rate of 2,300 tons (2,087 tonnes) per day. The concentrates produced were transported to Bunker Hill Mining Company's lead smelter and zinc plant by railway.

The Mine and Smelter Complex were closed in 1981 as result of weak commodity prices, failure to renew labor contract, and increased environmental regulation. The Bunker Hill lead smelter, electrolytic zinc plant and historic milling facilities were demolished about 25 years ago, and the area became part of the "National Priority List" for cleanup under EPA regulations, thereby pausing development of the Bunker Hill Mine for over 30 years. All of the cleanup of the old smelter, zinc plant, and associated sites has now been completed.

The Bunker Hill Mine main level is the nine level and is connected to the surface by the Kellogg Tunnel. Three major inclined shafts with associated hoists and hoistrooms are located on the nine level. These are the No. 1 shaft, which was used for primary muck hoisting for all locations below the nine level; the No. 2 shaft, which was a primary shaft for men and materials in the main part of the mine; and the No. 3 Shaft, which was used for men and materials hoisting for development in the northwest part of the mine. The Company believes that all three shafts remain in a condition that they are repairable and can be bought back into good working order and is in the process of beginning the engineering work to evaluate the strategic optionality of this infrastructure.

The water level in the mine is held at approximately the 11 level of the mine, 400 ft (122 m) below the nine level. The mine was historically developed to the 29 level, although the 27 level was the last major level that underwent significant development and past mining.

6.5 HISTORIC DRILLING

Over the 100-year history of active operations at Bunker Hill over 3,500 drill holes were drilled, logged and assayed. The first drillhole was drilled on the 5 level in 1889. All drill hole information including assays, lithology, and structure was recorded in hand-written drill logs. Bunker Hill has painstakingly digitized the entire body of historic drill hole data and created a digital drill hole database. During the digitization process a collection of assay pulps was located and able to be associated with a subset of the historic drill holes. These pulps were re-assayed and compared to the historic assay data to verify the accuracy of the assay information.

6.6 HISTORICAL ESTIMATES

Mining operations ceased in January 1991. The Property hosted historical estimates which were categorized using categories other than those set out in NI 43-101. Estimates were categorized as Proven Reserves, Probable Reserves, Possible Reserves and Drill-Indicated Reserves. The main difference between the Historical Estimate classifications and NI 43-101 classifications is that NI 43-101 reserves are based on the conversion of resources to reserves. Historically, US mining operations such as Bunker Hill were prohibited from disclosing resources.

> **Proven Reserves.** Mineralization is Proven when it has been so exposed by development that its existence as to tonnage and tenor is of a high degree of certainty. A block developed and sampled on two or more sides in which continuity is established to the satisfaction of the mine's technical staff will be considered proven. Similarly, a block developed and sampled on one side as by horizontal or vertical development through which continuity can be established, will be considered proven for a distance of 50 feet (15.25 m) from that development.

> **Probable Reserves.** Mineralization is assigned to the Probable category when its continuity can be reasonably projected beyond the proven classification boundary. A Probable block extends between Proven blocks provided the distance between them does not exceed 100 feet (30.5 m). For a block developed on one side as by horizontal or vertical development and/or close spaced diamond drilling, the total of Proven and Probable mineralization will not exceed 100 feet (30.5 m) from the sampled side.

> **Possible Reserves.** Mineralization is considered to be in the Possible category when its continuity can be reasonably expected to extend beyond the Probable boundary. A Possible block extends between Probable boundaries provided the distance between Probable Blocks does not exceed 200 feet (61 m). For a block developed on one side as by horizontal or vertical development and/or close spaced diamond drilling, the total of Proven, Probable and Possible will not exceed 200 feet (61 m) from the sampled development.

Meyer (1990) included mineralized material in the historical estimates on the basis of a cut-off equivalent to the production cost of mining. This was established at $23.00 per ton for material mined below the nine level. For material mined above the nine level the production cost was set at $20.00 per ton. Metals prices used were $0.40 / lb. for lead, $5.00/oz for silver and $0.65/lb for zinc. Net smelter values were calculated for the three metals using the then current metallurgical recoveries and net smelter payable values. Meyer's (1990, 1991) historical estimates were calculated by the following method: Volumes (and subsequent tonnage) were calculated by vertical projection from level plans of mined out areas. Grades were calculated by averaging the grades on the stope assay map from which the projections were made. The Bunker Hill Mine was an active mine at the time of Meyer's estimations and the procedures used were consistent with mineralization estimates made in other similar operations.

Meyer (1990) has reported on the historical estimate for the Bunker Hill Mine as of July 1, 1990. Meyer's (1990) report estimated that proven and probable reserves totaled 8,266,430 tons (7,499,181 tonnes) grading 2.13% lead, 1.12 oz/ton (38.4 g/t) silver and 4.73% zinc. Possible reserves totaled 2,588,081 tons (2,347,868 tonnes) grading 2.55% lead, 1.39 oz/ton (47.7 g/t) silver and 4.48% zinc. The possible "reserves" included drill indicated material at the Quill and Guy Cave zones.

Meyer (1991) estimated the historical estimates for the Bunker Hill Mine as of January 1, 1991. Meyer's (1991) report estimated that historical proven and probable reserves totaled 5,421,387 tons (4,918,200 tonnes) grading 2.46% lead, 1.37 oz/ton (47.0 g/t) silver and 5.17% zinc. Possible reserves totaled 3,719,722 tons (3,374,475 tonnes) grading 2.20% lead, 1.17 oz/ton (40.1 g/t) silver and 4.94% zinc. The possible reserves included drill indicated material at the Quill and Guy Cave zones.

The Author has reviewed supporting documentation including the date of the historical reserve estimate and the reliability of the estimate. The key assumptions, parameters and methods used to prepare the historic estimates have been reviewed, verified and are understood. The Historic Estimate used categories other than those referenced in NI 43-101 Standards of Disclosure for Mineral Projects, May 9, 2016, which are disclosed in this Technical Report. There are no more recent mineral historic resource estimates available.

The Issuer has not done sufficient work to classify the historical estimate as current mineral resources. The historic estimate is not being treated as the current mineral resource.

7 GEOLOGICAL SETTING AND MINERALIZATION

7.1 REGIONAL GEOLOGY

7.1.1 REGION STRATIGRAPHY

The Northern Idaho Panhandle Region in which the Bunker Hill Property is located is underlain by the Middle Proterozoic-aged Belt-Purcell Supergroup of fine-grained, dominantly siliciclastic sedimentary rocks which extends from western Montana (locally named the Belt Supergroup) to southern British Columbia (Locally named the Purcell Supergroup) and is collectively over 23,000 feet in total stratigraphic thickness. The Belt-Purcell Supergroup comprises, from oldest to youngest:

- Black, pyritic argillites of the Pritchard formation, up to 13,100 ft thick.
- Quartzites, siltite, and argillites of the Ravalli Group, subdivided into the Burke, Revett and St. Regis formations, up to 8,200 ft total thickness. The Revett formation is the almost exclusive host unit to mineralization at Bunker Hill.
- Shallow-water dolomitic quartzites and arenaceous dolomites of the Middle Belt Carbonate Group, up to 6,560 ft thick.
- Interbedded quartzites and argillites of the Missoula Group, up to 1,640 ft thick.

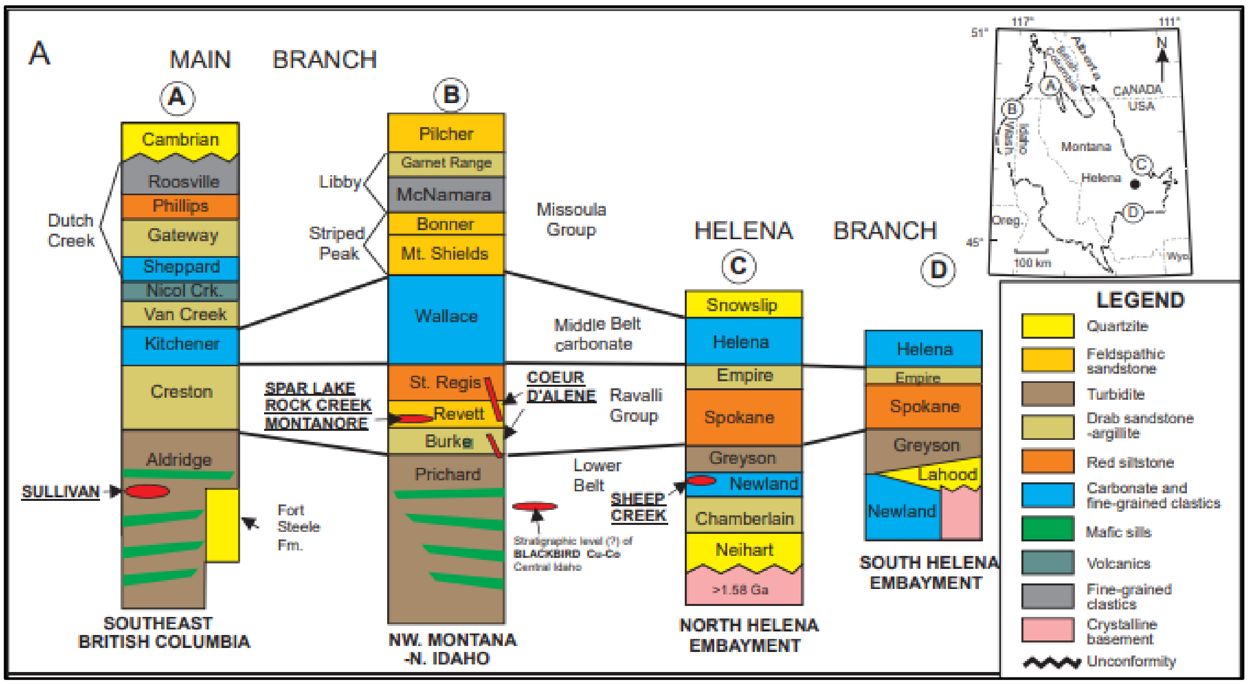


Figure 7-1 Stratigraphic section of Belt-Purcell Supergroup across northern Idaho and western Montana. Mineral deposits noted in red at stratigraphic position of host rocks (from Lyndon, 2007).

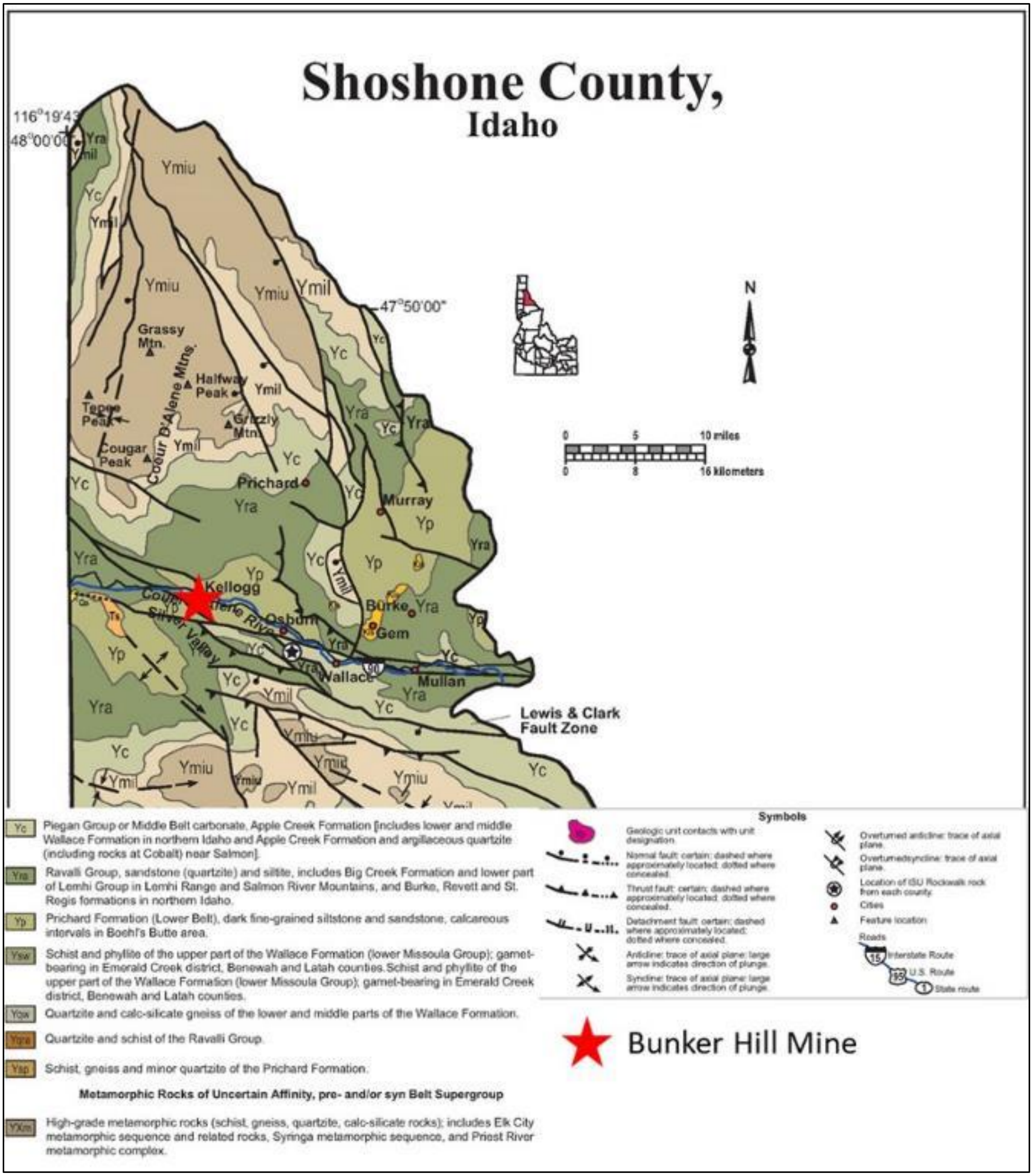


Figure 7-2 Geologic map of Shoshone County, clipped and centered on Coeur d'Alene Mining District, Bunker Hill Mine highlighted in red (IGS 2002).

The sediments of the Belt-Purcell rocks were deposited in an intra-cratonic basin associated with rifting in the interior of the Rodinia Supercontinent. As no known volcanism is associated with this rifting, it appears to be related to lithospheric tension and not the ascent of a magmatic plume in the crust shoving overlying sediments aside, making it a passive rather than an active rift system (Lyndon, 2007).

Contacts between rock units and progression between lithologies show a continuously aggrading sequence of deposition, largely from flooding in fluvial and tidal systems, with no erosional contacts or large-scale channel-scouring bedforms. This indicates deposition in a low-energy, shallow-water environment in a rapidly subsiding, sediment-starved basin with ample accommodation space for sediment inflow. Carbonate units in the Supergroup show periodic connections between the depositional basin and the open ocean allowed for shallow flooding of the entire basin by seawater, although lack of tidal and wave scouring textures or transgressive-regressive depositional and erosional sequences indicate that the connection was never large enough for transmission of tidal or oceanic storm forces.

Individual sedimentary beds and units within the Belt-Purcell Supergroup do not display strong lateral continuity, reflecting active subsidence in the basin and varying sediment sources. Thickening of the stratigraphic units to the south suggests that the basin in which they were deposited was growing at depth and laterally with down-to-the-south normal fault movement of crustal blocks within the basin (White, 1977). Sources for sediments have been identified as coming from the south and southwest for the majority of the life of the Basin.

Burial of the Belt Basin under later sedimentary and igneous rock packages, all now eroded away, lithified and preserved the entire stratigraphic section. Deep burial resulted in low-grade metamorphism, fusing the grains of sandstone together into hard, competent quartzites, and altering clay-rich shales into argillites and siltites (Herendon, 1983). Age dates for deposition of the Belt rocks have been established at 1400-1470 million years ago from U-Pb age dating of detrital volcanic zircon grains (Hobbs, et al, 1965).

7.1.2 REGIONAL STRUCTURE

The rocks of the Belt Supergroup have been subjected to a complex series of deformational events over the 1.4 billion years since deposition, with the focal point of many of these forces roughly underlying the current Coeur D'Alene Mining District ("CDA"). Regardless of which detailed geologic interpretation one chooses to define individual deposits, it is clear that the rocks have seen a complex structural history of folding, shearing and faulting that have given the entire District a deep-seated plumbing system for ascending, mineral-bearing hydrothermal fluids.

The following figures and much of the interpretation are taken from United States Geologic Survey Professional Paper 478: Geology of the Coeur d'Alene District, Shoshone County, Idaho (Hobbs, et al 1965). Structure-1 through Structure-6 are the insets showing progression of structural events in Figures 7-3 and 7-4 below.

The first structural event to affect the Belt Rocks in the CDA ("D1") was compressive forces coming from the southwest and northeast which formed northwest oriented anticline and syncline pairs with a moderate plunge to the northwest, with local overturned folds and thrust faulting (Fig 7-4: Structure-1). Following the formation of the NW trending folds, crustal stresses changed from SW-NE compression to west-northwest and east-southeast ductile shearing ("D2"). This bent and rotated the limbs of the D1 folds, creating kink-folds along the axial planes (Fig 7-4: Structure-2).

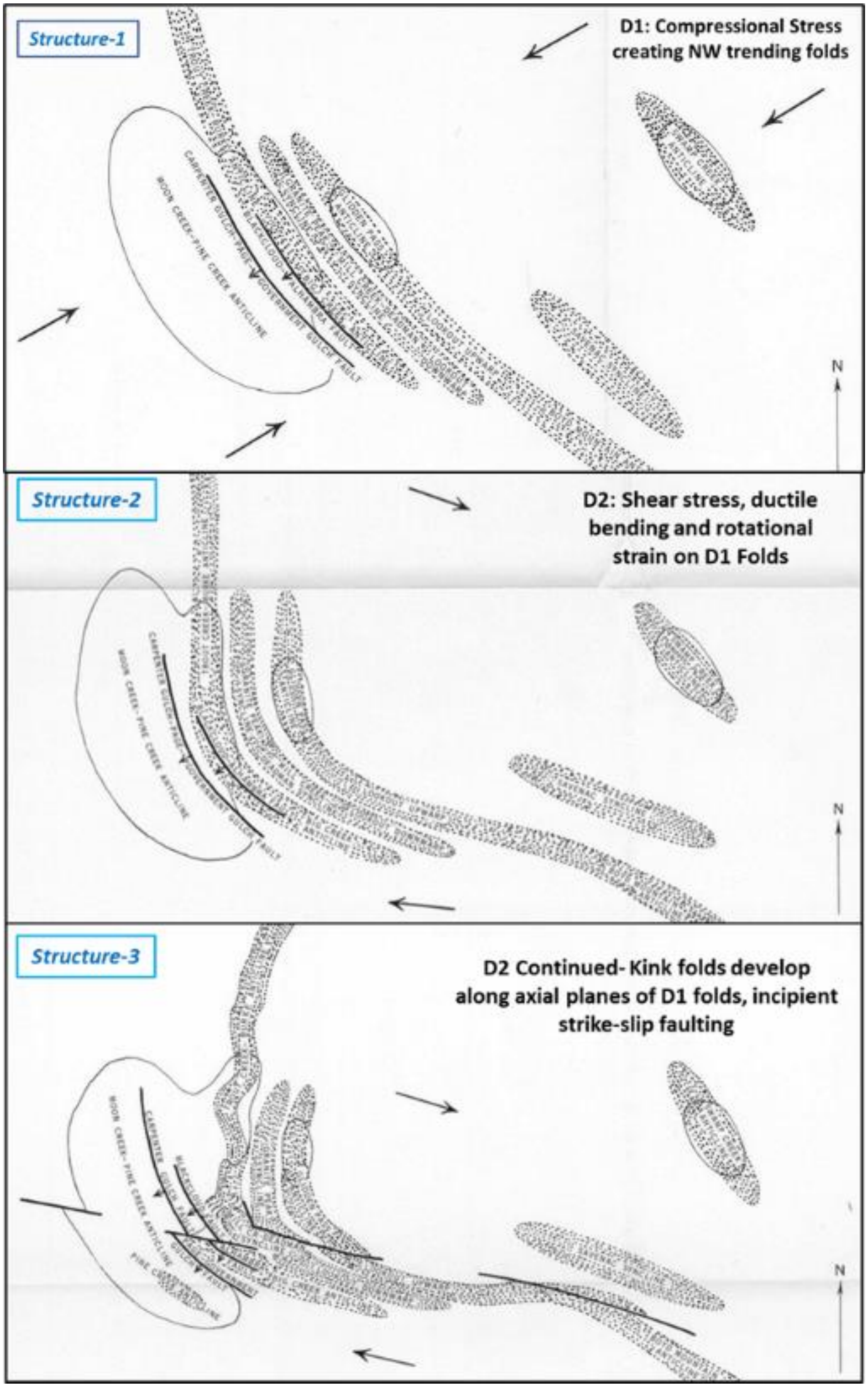


Figure 7-3- (1 of 2) Diagrammatic sequence of large-scale events in the structural history of CDA District rocks

Folding and rotation continued to intensify in a structural knot centered over the current CDA Mining District, with incipient strike-slip faulting beginning to accommodate stress within the plunging hinges and along the axial planes of the D2 folds and rotation centers (Fig 7-4, Structure-3). This was followed by emplacement of monzonite stocks in elongate bodies, roughly parallel to the rotated N-S fold axes, north of the ancestral Osburn Fault (Fig 7-4, Structure-4). These monzonite stocks have been dated at roughly 100 million years old by lead-alpha methods (Hobbs, et al, 1965), placing them in the same Cretaceous age range as the rocks of the Atlanta and Bitterroot lobes of the Idaho Batholith to the south. Much of the mineralization in the CDA Mining District was likely emplaced during this episode of maximum folding and stretching, along with the added heat source of the intrusions. Although there have been many theories regarding the timing, formation and source of mineralization in the CDA Mining District over the 140 years of mining and exploration, the culmination of fold intensity and intrusive emplacement agrees with most all further, more-detailed interpretations.

With continued crustal stresses, discontinuous fractures propagated through the stratigraphic section to become through-going structures. Ductile folding of the rock package ceased as strike-slip movement along these W-NW striking faults accommodated crustal stresses (Fig 7-4, Structure-5). This corridor corresponds with the Lewis and Clark Structural Zone, a long-lived, apparently basement-rooted, westerly trending structural zone cutting across northern Idaho and western Montana (White 2015). Further movement along these westerly faults coalesced into the Osburn Fault, the major structure throughout the Silver Valley and CDA District, which at present position shows as much as 16 miles of right-lateral, strike-slip displacement. The Structure-6 inset in Figure 7-4 shows the current position of the fold axes, faults and intrusive bodies.

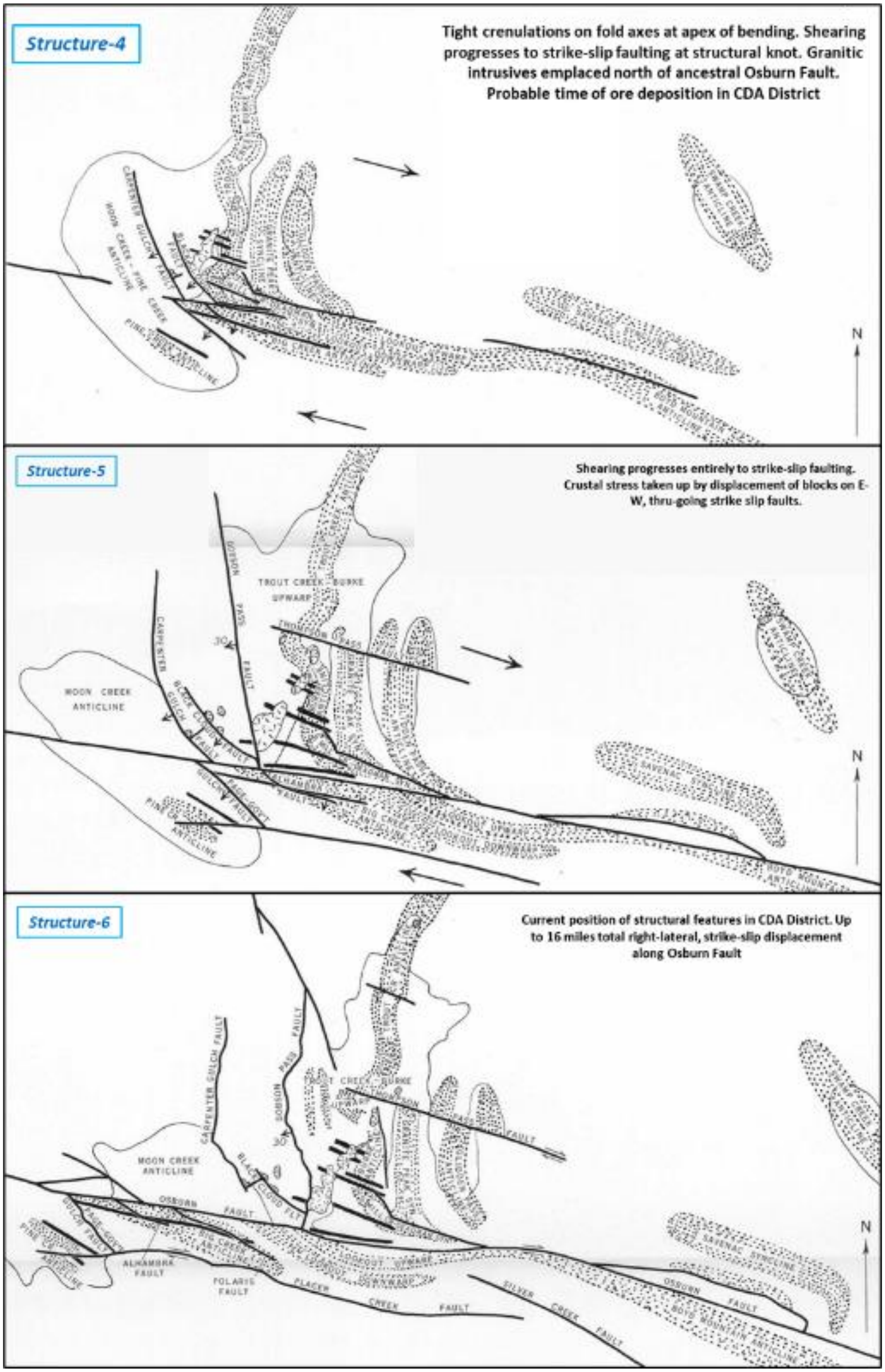


Figure 7-4 (2 of 2) Diagrammatic sequence of large-scale events in the structural history of CDA District rocks Property Geology

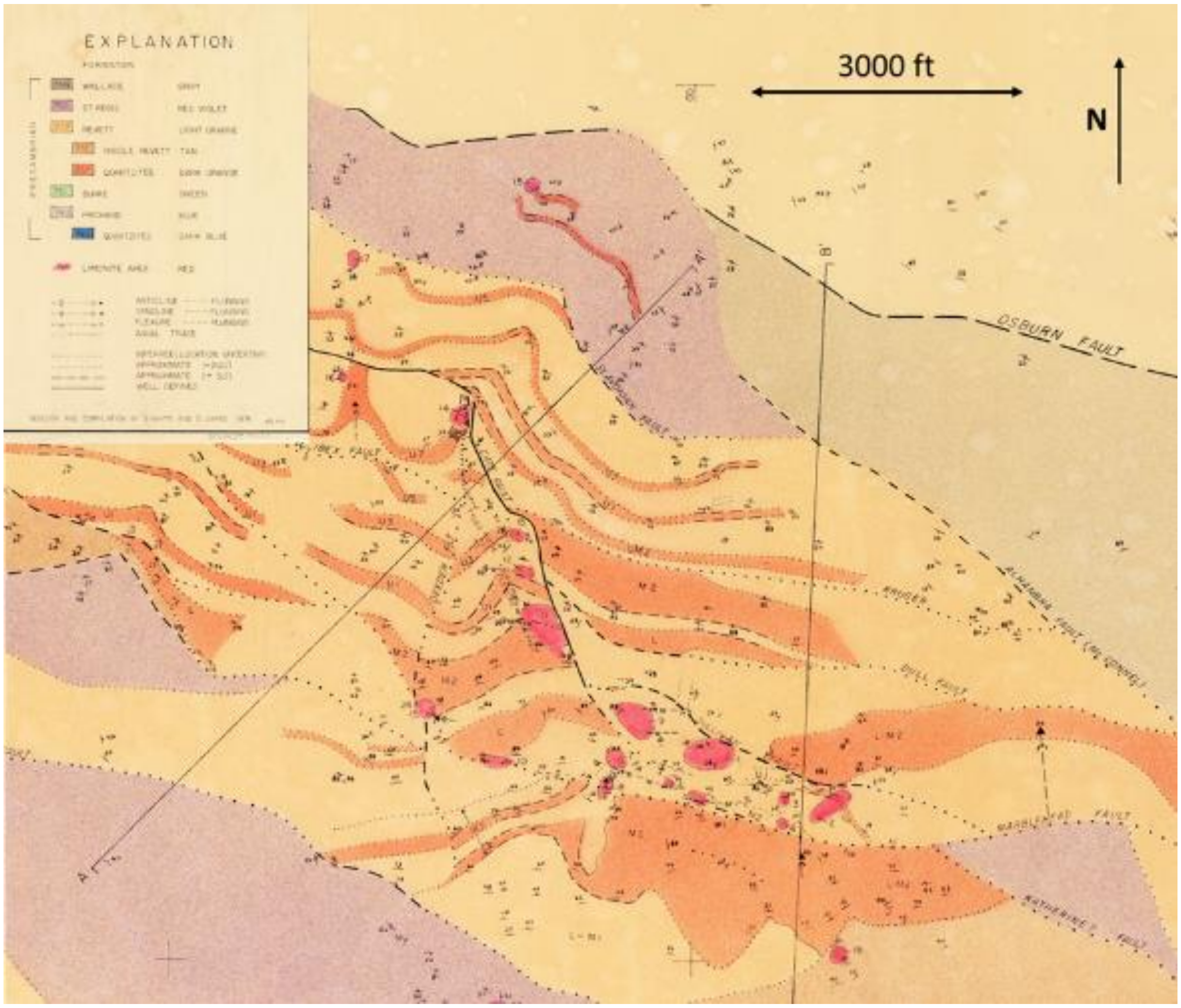


Figure 7-5 Surface geology over Bunker Hill Mine. Cross-Section A-A' shown below in Fig. 7-10. (White and Juras 1976)

7.1.3 LOCAL STRATIGRAPHY

Mineralization at the Bunker Hill Mine is hosted almost exclusively in the Upper Revett formation of the Ravalli Group, a part of the Belt Supergroup of Middle Proterozoic-aged, fine-grained sediments (Fig. 7-5). As the Middle and Lower Units of the Revett formation and the stratigraphically overlying St. Regis formations do not host appreciable mineralization, mine geologists at Bunker Hill did not spend a great deal of time mapping or interpreting these units. As this is still the case as far as known mineralization or exploration targets, the local rock package is restricted to the Upper Revett formation sediments. One west-northwest striking mafic dike has been noted on mine maps in development drifts to the north of any known mineralization, but little is known of this feature and no mineralization or alteration is associated with it.

Given the ubiquitous fine-grained nature of Belt Group sediments in the CDA District, putting together a proper stratigraphic section had always proved enigmatic to area geologists, with correlation between adjacent mines difficult due to discontinuity of units and differences in nomenclature. It was recognized that there are fairly abrupt lateral gradations of compositions and textures within the stratigraphic package, reflecting active subsidence of the Belt Basin and the changing influx of sediments. As has long been informally recognized by mine operators in the Bunker Hill area, preferential host rocks for mineralization are the more competent quartzite units within the Upper Revett formation.

For much of the history of the Bunker Hill, mining focused on mineralized zones and veins that outcropped on surface, and so little geologic knowledge was needed to find or follow these structures. By the mid 1970's, these large mineral bodies (such as the March) had been mined out, and the Company had to develop an exploration plan to locate additional resources.

Following extensive mapping, measured stratigraphic sections and comparison with drill core and mine level mapping during a research program in the 1970's, Brian White developed a detailed stratigraphic section for the Upper Revett formation in the immediate Bunker Hill Mine area that greatly simplified interpretations of structural offsets and eliminated needless ranges of description for rocks of the same lithologic facies (Fig. 7-6).

White delineated the rocks in the Bunker Hill Mine area into three lithologic types:

(**Q**) Quartzite: fine-grained, clean and well sorted with a vitreous appearance on fractures, almost entirely quartz with minor feldspar, thick bedded to massive, local crossbedding. Quartz grains fully fused, continuous metal streak with nail scratcher, ideal host to mineralization. Generally white to light gray color.

(**SQ**) Sericitic Quartzite: dominantly fine-grained quartz sand protolith, feldspar and clay content altered and mobilized to interstitial sericite during burial metamorphism. Fairly competent, intermittent streak with metal scratcher, thick to thin bedded, decent to marginal host rock to mineralization. Light to dark gray in color, distinct light green-gray in weathered outcrop.

(SA) Siltite-Argillite: anything that is a dominantly mud, silt or clay protolith, representing a distinct lower-energy, deeper water depositional facies than the shallow-water to sub-aerial, relatively high-energy quartzite units. Thin, planar bedding with local ripple marks and sediment loading textures. Very poor host rock for mineralization unless cut obliquely by vein structures. Highly variable color, generally shades of green with occasional shades or red and purple.

A series of distinct sediment packages were identified in the Upper Revett formation across the mine workings. From bottom to top of the section (Fig. X6), these are the:

Lower **L-0** though **L-6** quartzites

Middle **M-1** siltite-argillite, **M-2** quartzite and **M-3** siltite-argillite

Upper **U-1,2,3,4** and **5** quartzites and **U-6** siltite-argillite

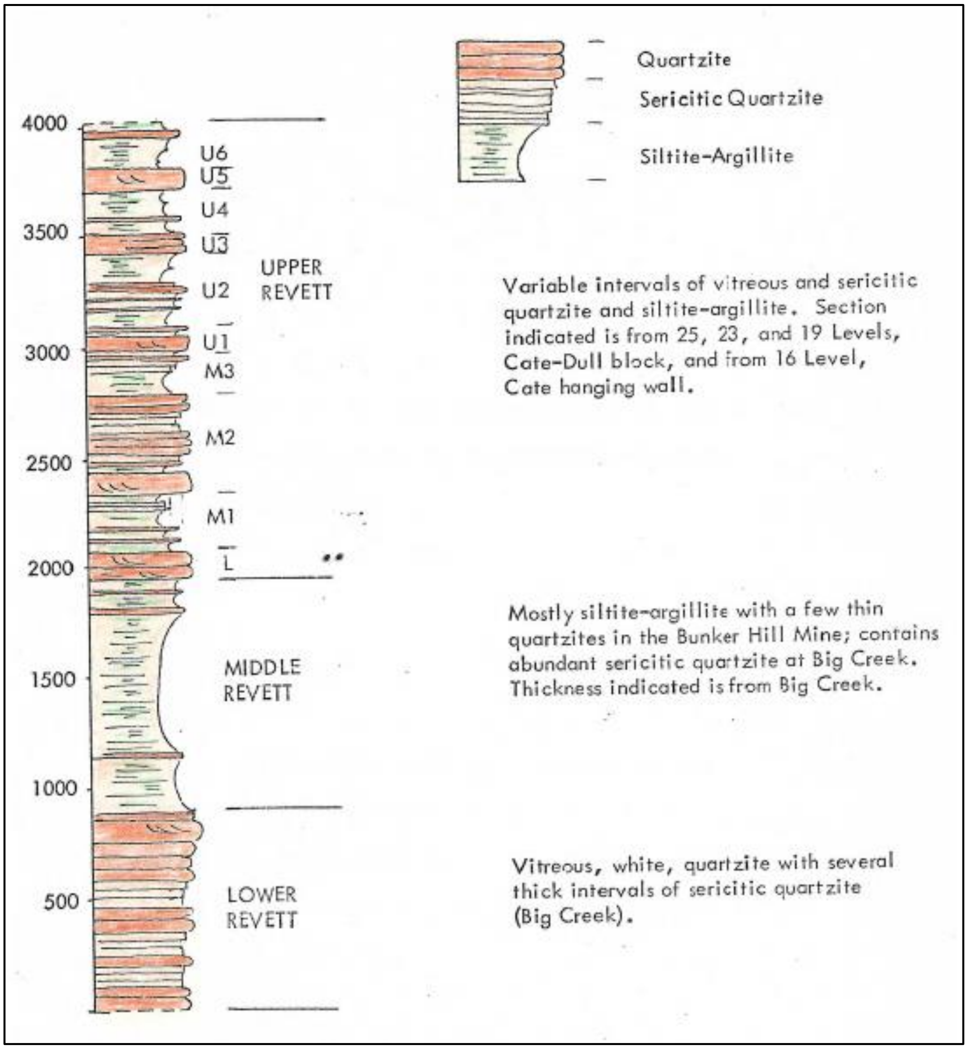


Figure 7-6 Stratigraphic section of Revett formation in Bunker Hill area (White, 1976)

Geologic mapping and interpretation progressed by leaps and bounds following the recognition of a predictable stratigraphic section at the Bunker Hill Mine and enabled the measurement of specific offsets across major faults, discussed in the following section. From an exploration and mining perspective, there were two critical conclusions from this research: all significant mineralized shoots are hosted in quartzite units where they are cut by vein structures, and the location of the quartzite units can be projected up and down section, and across fault offsets, to targets extensions and offsets of known mineralized shoots and veins.

An example of mine level mapping from Bunker Hill Level 17 is shown in Figure 7-7 below. Quartzite packages are the orange-colored units, and the outline of mine workings is in black along the right half of the image. As one can see from the drill holes shown in the center with lithology logging drawn on, exploration efforts in the 1970's were targeting quartzite units at fold hinges and intersections with mineralized structures.

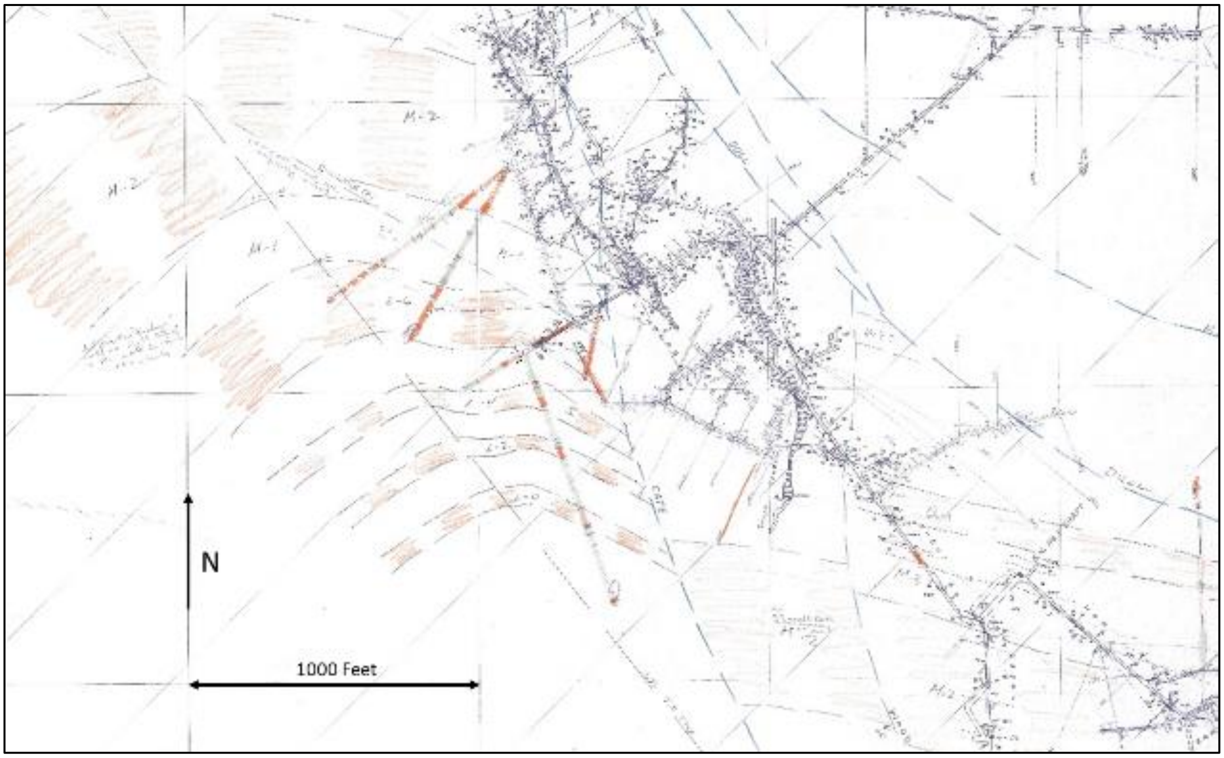


Figure 7-7 Geologic Map of Bunker Hill Mine 17 Level showing quartzite units and exploration drill holes

7.1.4 LOCAL GEOLOGIC STRUCTURE

The rocks of the Bunker Hill Mine have a very complex geologic history, as described in Section 7.1.2 of this Technical Report. On a mine scale, many of the regional patterns are evident in local folding and fault offsets.

7.1.4.1 FOLDING

The oldest structural feature evident on the Property is the Tyler Ridge flexure, the anticlinal portion of a parasitic fold on the north flank of a large-scale, northwest-trending fold to the southwest that formed from the D1 event described in Section 7.1.2 (Figure 7-3, Inset Structure-1). This fold originally trended W-NW, and plunged gently NW (Juras, 1977).

The next significant structural event to affect the rocks was the upwarping of the Big Creek anticline, an E-W trending fold with a slight dip E. The rocks of Bunker Hill are in the north limb of this anticline, which has been overturned to the north due to compressive stress from the south. The axial plane of the Tyler Ridge Flexure has thus been rotated to plunge to the W-NW at -20 to -35 degrees (Fig. 7-8), and the local bedding rotated to be overturned and dipping steeply to the S-SW (Juras, 1977). The Bunker Hill Mine workings lie in the north limb of both the Flexure and the Big Creek Anticline, and mineralization roughly parallels the plunge of the apex of the Tyler Ridge Flexure.

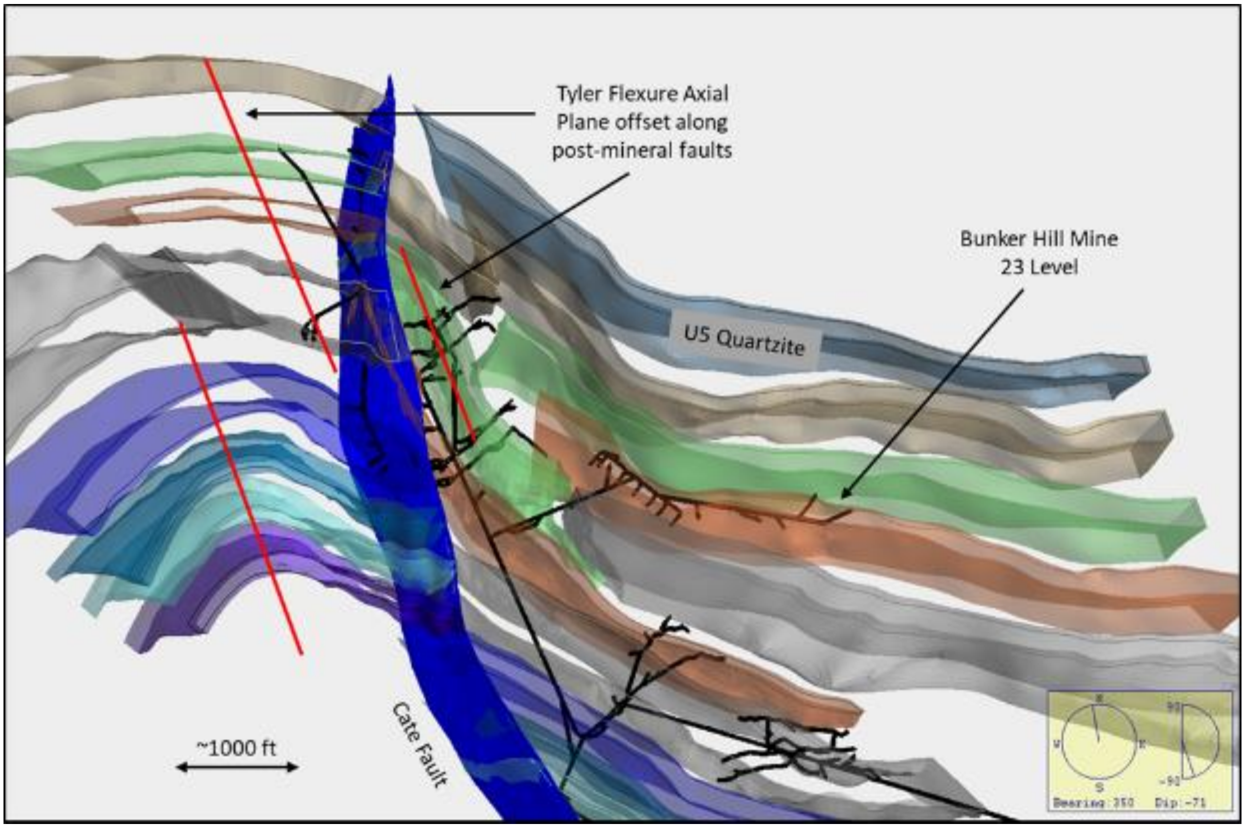


Figure 7-8 Isometric view of Vulcan 3D model of L-0 through U-5 Quartzite units, looking nearly down-plunge on the Tyler Ridge Flexure axial plane, shown as red lines offset by faults. Only Cate fault is shown for simplicity.

Structural preparation in the form of brecciation along the apexes of folds, bedding-plane shearing and faulting, axial planar fracturing, and flexural cracks in quartzite beds of the Upper Revett formation during these two structural events, shown diagrammatically in Figure 7-9 below, was undoubtably critical for the emplacement of mineralization. Some workers have concluded that mineralization at Bunker Hill was emplaced contemporaneously with these folding events. Reports by Dwight Juras (1977, 2020) have indicated that siderite-pyrite-sphalerite veins (Bluebird Veins) formed during this W-NW folding event, and later, cross-cutting argentiferous galena-chalcopyrite-pyrite-quartz veins (Galena-Quartz Veins) were emplaced during formation of the E-W trending, north-verging Big Creek Anticline. Others have argued that metals in the CDA District sourced from a shear-zone type base metal + silver mineralizing system, similar to a shear-zone hosted gold deposit, associated with later movement in the Lewis and Clark Structural Zone, with mineralizing fluids taking advantage of the same structural preparation in the quartzite host rocks (White 1994, 2015).

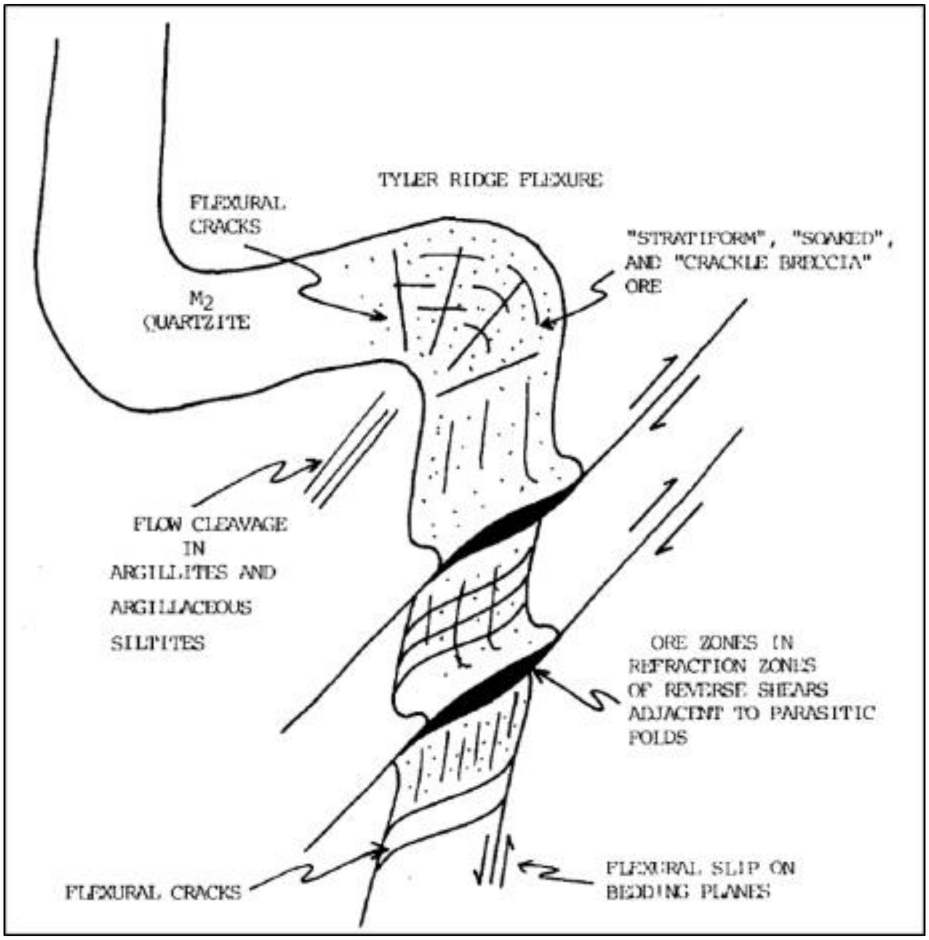


Figure 7-9 Diagram of structural preparation of a quartzite bed from folding stresses (Juras and Duff, 2020)

7.1.4.2 FAULTING

The district-scale Osburn Fault lies immediately to the north of the Bunker Hill Mine workings, striking E-W and dipping steeply south. This fault has had the most recent and significant movement in the CDA District, with up to 16 miles of right-lateral displacement. Because of this movement, and the likely rotation of other fault surfaces and bedding that are cut by it, many of the faults at Bunker Hill appear, in plan view, to be S-SE horsetail splays out of the Osburn Fault (Fig. 7-5). This is not the case however, as the other faults in the Mine area pre-date the Osburn Fault and resulted from entirely separate and different stress regimes.

The oldest faults at Bunker Hill are N-NW striking, flat to gently SW dipping, and have from 100-1600 ft of reverse offset, generally to the north or east (Towers, Motor, Sierra Nevada and others). These structures host vein mineralization in some areas where crossing preferential quartzite units, but otherwise cut and offset all vein types in the mine (Juras and Duff, 2020). These are the least understood of the faults at the mine, as it is difficult to represent flat-lying structures with traditional geologic mapping methods, and difficult to drill-test these structures from mine workings at similar elevations.

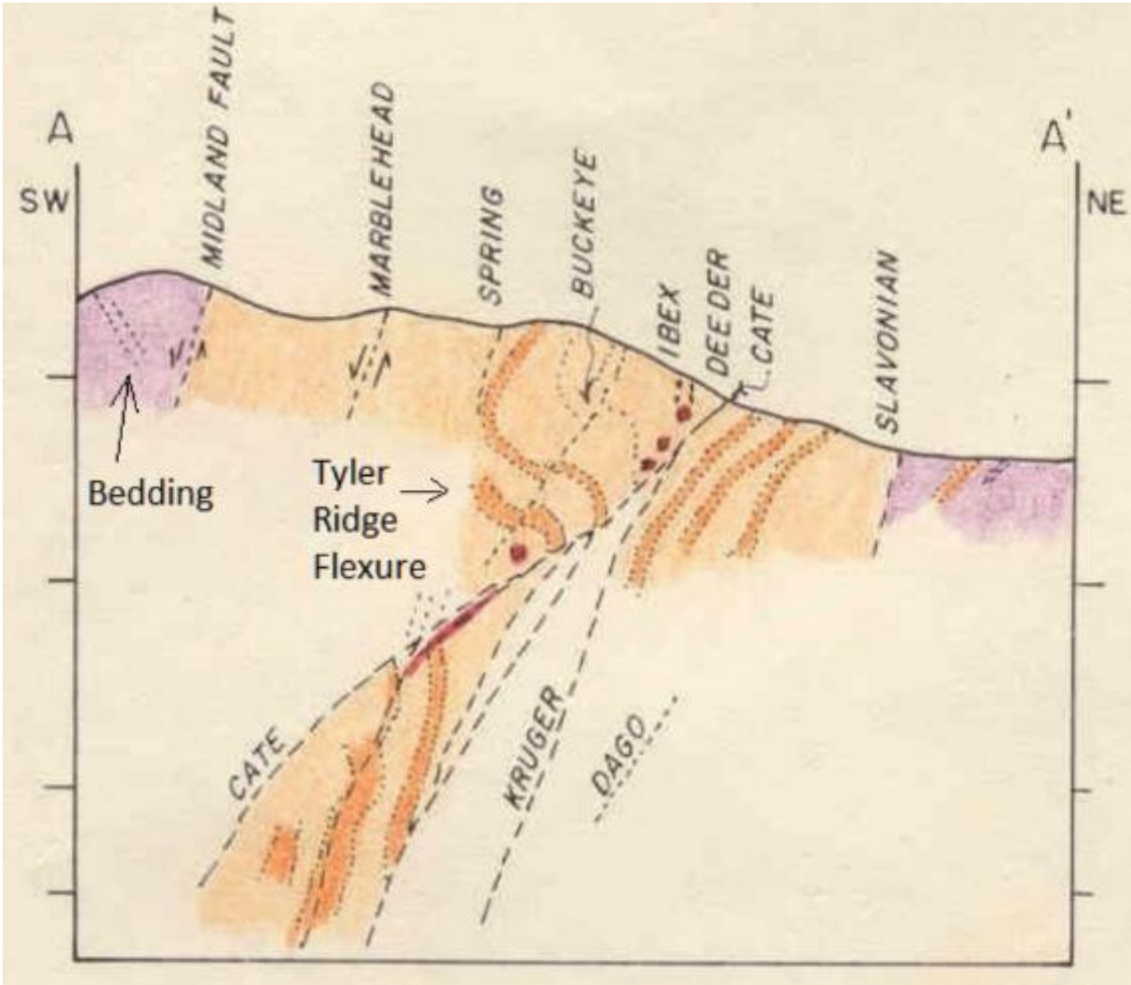


Figure 7-10 Cross-section A-A' looking W-NW, not to scale, from surface geology map Fig. 7-5 (White and Juras 1976). Darker orange is quartzite bed in Upper Revett Formation, legend on Fig. 7-5

The next faulting event is a series of steeply W-NW striking, south-dipping normal faults with significant offset down to the south. The most prominent of these, the Kruger, Slavonian and Dull Faults from east to west (Fig. 7-10, Slavonian and Dull are unlabeled fault traces between Kruger and Cate Faults), each have +1000 ft of displacement, and combined with other subparallel faults, the total displacement across these structures is estimated at more than 6000 ft (Farmin, 1977). These faults run subparallel to bedding in the Upper Revett formation, generally staying in the same siltite-argillite bed for great distances until they cross a structural inflection and jump up or down in the section. This factor, along with conspicuously thin zones and limited fault gouge given the amount of displacement, indicates these are largely bedding-slip faults resulting from differential movement between beds during folding. There is a similar set of faults in the hanging wall of the younger Cate Reverse Fault (Marblehead, Buckeye, Ibex and others) that also show down-to-the-south, normal-fault offset. These are likely directly related to the faults in the footwall of the Cate Fault, at least in age and genesis, but the large reverse offset along the Cate Fault has obscured this relationship.

The youngest and most prominent major fault in the Mine is the Cate Fault, a NW-striking, SW-dipping reverse fault with 400 vertical feet of up-to-the-north displacement and some rotational movement (Fig. 7-8). This fault likely formed at the waning stages of the northward-verging folding that produced the Big Creek Anticline and seems to have accommodated a transition from ductile to brittle deformation, possibly due to a shallower depth within the crust after up-warping from folding. The Cate Fault is younger than all major folds, faults and veins in the Mine. Movement along the Cate Fault, and more recent movement along the Osburn Fault, has caused slight remobilization along many older structures, resulting in small-scale structural textures that have been troublesome to placing actual structural events in the proper chronological order.

Much of the historic production at Bunker Hill came from W-NW trending, SW dipping veins with sphalerite-pyrite-siderite mineralization ("Bluebird Veins") and hybrid mineral bodies where these veins are cut by later NE striking, SE dipping Galena-Quartz Veins, discussed in next section. Because the Cate Fault follows the trend of the Bluebird Veins, it was thought that the Cate Fault and related structures were the plumbing and driving mechanism behind vein emplacement for the first 90 years of mining. Geologic studies towards the end of major mining operations at Bunker Hill in the late 1970's established that movement along the major faults mapped on surface and underground cuts and offsets all know types of mineralization (Juras 1977).

7.1.4.3 VEINING

The Bunker Hill Mine has largely exploited mineralization that, in a general sense, can be defined as vein deposits. These will be discussed in detail in the following section of this Technical Report but are also included here to provide proper structural context. The vein deposits can be divided into two groups based on cross-cutting relationships, orientation and mineralogy (Juras and Duff, 2020):

Bluebird Veins: Earlier event, W-NW striking, SW-dipping (Fig. 7-11), variable ratio of sphalerite-pyrite-siderite mineralization. Associated with axial planar fracturing, flexural cracks, and brecciation in quartzite beds along the hinge line of W-NW trending folds. Where mined, these are thick, tabular zones that have abrupt but gradational margins, with fairly solid zones of sulfide mineralization laterally grading to mineralized sheeted fractures and thin stringers along bedding in adjacent sediments. These "Stringer" zones can be large enough to constitute economic mineralization, as in the Guy Cave, UTZ, Newgard and Quill Zones, but they reflect a second-order control on mineralization.

Galena-Quartz Veins: E to NE striking, S to SE dipping (Fig. 7-11), quartz-argentiferous galena +/- siderite-sphalerite-chalcopyrite veins, sinuous-planar with sharp margins, cross-cut Bluebird Veins. Large, Hybrid mineralized zones are formed at the intersection of Galena-Quartz Veins with Bluebird Veins, where the Bluebird Vein is enriched in lead and silver by the replacement of siderite by galena.

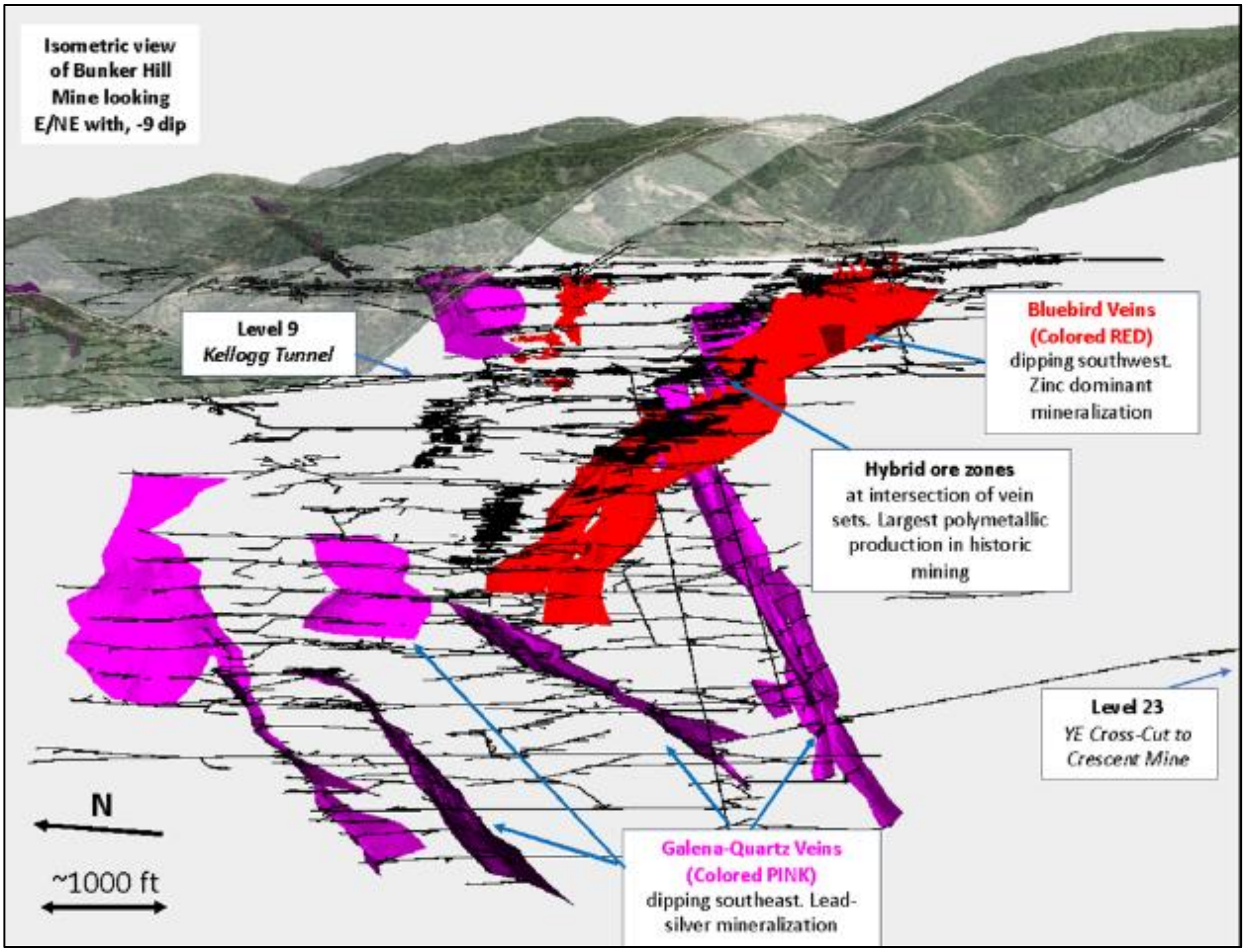


Figure 7-11 Bunker Hill Mine workings with 3D vein models showing difference between Bluebird and Galena-Quartz Vein systems and location of hybrid mineralized zones.

7.2 MINERALIZATION

The Coeur d'Alene (CDA) Mining District has produced phenomenal quantities of silver, lead and zinc, with significant copper, antimony and cadmium byproducts, and a peripheral belt of small gold deposits to the north. This production has come from a spectrum of deposits that reflect the varying structural, pressure-temperature and geochemical characteristics of the mineralizing systems. Mineralization at Bunker Hill has similarities to other mines in the District such as the Sunshine, Crescent and Galena, but represents a distinct suite of structural controls and mineralogy that is probably part of a large-scale zonation pattern.

The Bunker Hill Mine workings extend 8,600 feet along strike of the overturned beds of the Upper Revett formation that host the mineralization, extending 7,000 feet downdip parallel to the axial plane of the plunging anticline, covering 5,200 vertical feet from ~3,500 ft msl to -1,700 ft msl. More than 30 individually named deposits were mined historically in separate stopes, with two distinct types of deposits exploited: tabular Bluebird (BB) zones that parallel bedding and are associated with the fold structures, and later Galena-Quartz (GQ) Veins cutting through bedding with sharp walls. The Bluebird Deposits, such as the March, have been mined for up to 1,400 ft along strike, 4,000 ft downdip, covering 2,400 ft in elevation, with thicknesses of the generally tabular zones up to 150 ft. Galena-Quartz Veins were historically mined along strike lengths of up to 800 ft, and downdip up to 3,700 ft, with mined thicknesses from 5-15 ft.

Virtually all modern metal production at Bunker Hill has come from lead (galena) and zinc sulfide (sphalerite) mineralization, with silver a by-product of lead refining. Historic production in the upper levels of some of the GQ veins came from tetrahedrite (copper-iron-antimony sulfosalt, silver can substitute for copper to create very high Ag values) and cerussite mineralization (lead carbonate, surface weathering product of galena), and silver values in these working likely had some degree of supergene enrichment.

Stopes on the Jersey vein at Bunker Hill encountered oxidized lead-silver mineralization with abundant world-class pyromorphite crystals near their northern extent. Attempts were made to process this material through an oxide circuit at the mill, but the attempts proved to be non-economic. The pyromorphite zone was mined for mineral specimens after the close of major mining operations, and fine pieces from this are undoubtably some of, if not the highest value-per-ton material that has ever been extracted at Bunker Hill, gracing cabinets at most prestigious mineral museums across the world.

Mineralization at Bunker Hill falls in four categories, described below from oldest to youngest events:

> **Bluebird Veins ("BB"):** W--NW striking, SW-dipping (Fig. 7-11), variable ratio of sphalerite-pyrite-siderite mineralization. Thick, tabular cores with gradational margins bleeding out along bedding and fractures. Detailed description in Section 7.2.2.
>
> **Stringer/Disseminated Zones:** Disseminated, fracture controlled and bedding controlled blebs and stringer mineralization associated with Bluebird Structures, commonly as halos to vein-like bodies or as isolated areas where brecciated quartzite beds are intersected by the W-NW structure and fold fabrics.
>
> **Galena-Quartz Veins ("GQ"):** E to NE striking, S to SE dipping (Fig. 7-11), quartz-argentiferous galena +/- siderite-sphalerite-chalcopyrite-tetrahedrite veins, sinuous-planar with sharp margins, cross-cut Bluebird Veins. Detailed description in Section 7.2.2.
>
> **Hybrid Zones:** Formed at intersections where GQ veins cut BB veins (Fig. 7-11), with open space deposition of sulfides and quartz in the vein refraction in quartzite beds, and replacement of siderite in the BB vein structure by argentiferous galena from the GQ Vein.

Mining efforts at Bunker Hill focused on different types of mineralization as discovery, technology and metal prices demanded and allowed. Early mining in the late 1800's was focused on outcropping or near-surface, silver-rich Hybrid Zones and Galena-Quartz Veins. With the construction of a lead smelter in 1917 and an electrolytic zinc recovery plant in the 1920's, the Company began to mine larger tonnage, zinc-dominant Bluebird zones such as the Guy Cave and the UTZ, Quill and Newgard Zones. All galena at Bunker Hill is argentiferous, and the vast majority of the silver that has been recovered over the life of the mine has come from smelting galena. Silver-rich tetrahedrite (freibergite) has been found in some of the shoots on the GQ veins but has not been a major constituent of the overall tonnage.

The four types of mineral zones listed above are truly only two separate structural events: the NW trending Bluebird Veins and the E-NE trending Galena-Quartz Veining. Initial 3D modeling (Rangefront Technical Services 2020) and structural + mineral zonation analysis (Juras and Duff, 2020) has indicated the various vein segments are likely post-mineral offsets of two vein systems that initially comprised four distinct Bluebird Veins and three to five Galena-Quartz Veins.

Although the mineralogy of the two vein types is distinct, and there are significant differences in vein textures and structures that are not germane to this Technical Report, the physical mechanism of both types of mineralization is sulfide minerals filling open spaces (Duff, personal communication, 2020). The creation of intra-bed open space by differential movement of a folded rock package leading to a structurally prepared host rock, as shown in Figure 7-9, is one of the main theories regarding the origins of mineralization along these structures (Juras and Duff, 2020).

Quartzite is the primary host to mineralization in all vein types, deposited in open-space caused by refraction of the vein structure as it passes from softer siltite-argillite packages into quartzite units. The vein deflects to cross the quartzite unit more orthogonally, bending to normal with the bedding plane, in essence decreasing the length of quartzite that needs to fracture to continue propagation. Mineralizing fluids ascending the vein structure deposited sulfides in the open-spaces and pressure shadow created by these refractions. Although the veins are commonly mineralized to some degree along their entire length, economic shoots in historic mining operations were largely hosted in these dilated zones in quartzite beds, with the shoot plunging up and down at an orientation defined by the intersection between the vein and bedding (Juras and Duff, 2020).

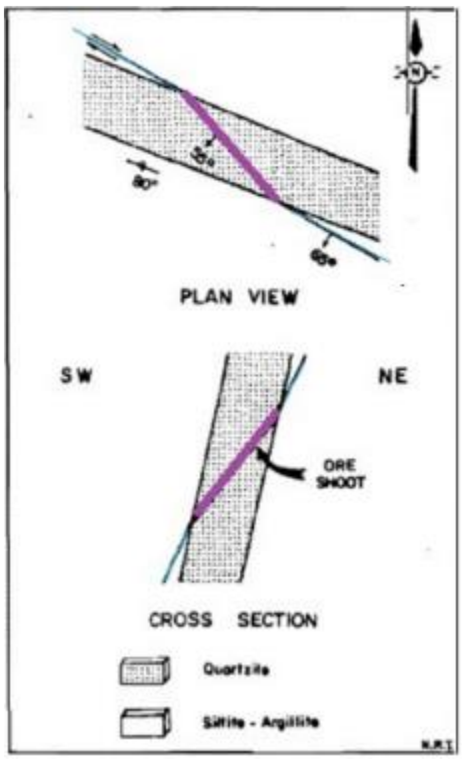


Figure 7-12 Plan view and cross-sectional diagram of formation of mineralized shoot along vein in quartzite unit where rheologic contrast between argillite and quartzite causes refraction of vein surface (Juras, 1977)

The largest historically mined stopes were on Hybrid Zones such as the March, which was mined for more than 40 straight years (Fig. 7-11). The large size reflects the open space available to mineralizing fluids, in the form of the refraction shoot created in the quartzite as shown above, and the replacement of siderite (iron carbonate) in the original Bluebird Vein by argentiferous galena from the Galena-Quartz Vein. This essentially replaces portions of the Bluebird vein that are non-metal bearing with lead-silver mineralization, while leaving the zinc deposited during the BB vein event, creating high-value polymetallic grades of mineralization.

7.2.1 ALTERATION

Alteration in the CDA Mining District in general is not as obvious or pronounced as large, predictable zonation patterns that are commonly found around porphyry Cu, epithermal vein Ag-Au, Carlin-Type gold and many other deposit types. There are halos of disseminated sulfide minerals and siderite in wallrock surrounding both BB and GQ vein types, diminishing rapidly away from the vein contact, typically along bedding or pre-existing fractures. Some bleaching is associated with mineralized structures, and limonite staining where they outcrop on surface, but these are largely weathering features on sulfide bearing rocks.

Elsewhere in the CDA District, disseminated carbonate zonation has been observed in vein wallrock, progressing from proximal siderite (iron carbonate) to ankerite (iron-calcium carbonate) to distal calcite (White, 2015). This has not been well documented or commonly observed at Bunker Hill and so is not currently mapped or modeled.

As it is currently understood and observed, there are no distinct alteration patterns at Bunker Hill that can be used for detailed exploration targeting, nor any alteration types that would impede potential future mining operations.

8 DEPOSIT TYPES

The metallic deposits in the Coeur d'Alene Mining District (the "District") are amongst the most studied in the world due to the prodigious metal production and long history of mining. There are large scale similarities between the deposits as a whole, but each deposit has its own specific structural, lithologic and mineralogical zonation controls. These controls became increasingly well understood at mine-scale across the District in the 1970's and 80's, but regional-scale controls remain enigmatic, conceptual and subject to much academic debate.

In the most general sense, deposits in the District are orogenic, polymetallic veins with lesser disseminated mineralization emanating from the principal veins. There are clearly multiple phases of mineralization, with different causative structural events for each, hosted across the Ravalli Group stratigraphy (St. Regis, Revett and Burke formations) within the District. lead, zinc and silver in varying ratios are the principal metals at all of these deposits, with lesser copper, antimony and cadmium historically recovered.

The veins in the District have been divided into two groups based on metallic mineralogy: a low-silver galena-sphalerite-pyrrhotite-pyrite type, and a high-silver galena-tetrahedrite type (Leach et al., 1998). Prior studies had given ages of 1400-1500 Ma by Pb/Pb isotope modeling of galena from a low-silver type vein (Zartman and Stacey, 1971). In the 1998 Leach Report, gangue minerals from a high-silver type vein were age dated using Ar/Ar and Rb/Sr methods and gave ages as young as ~90-110 Ma). These disparate age dates were explained in that report by two mineralizing events: an earlier low-silver, lead-zinc-silver event during diagenesis and folding in the mid-Proterozoic, and a later high-silver galena-tetrahedrite event in the Cretaceous, associated with emplacement of the Idaho Batholith and smaller, stocks of similar age and composition to those north of the Osburn Fault in the CDA District.

Reports on Bunker Hill Mine Geology by Juras and Duff (2020) note two vein types as well (BB and GQ as described in Section 7), that roughly match the compositional differences and have the same age relationships as the two types described by Leach. Juras interprets emplacement of the earlier Bluebird series of veins at Bunker Hill to be contemporaneous with early W-NW fold development (see section 7), and the later NE Galena-Quartz veins to represent a separate, more brittle structural event, likely related to the E-W Big Creek Anticline uplift.

Both vein sets at Bunker Hill exhibit textures typical of orogenic veins, with no boiling textures or sharp textural differences from pressure-temperature changes, nor any significant wallrock alteration other than disseminations of the vein minerals. The huge vertical extent (3,000-6,00ft+) of mineralization typical of all the vein types in the District strongly indicates that all mineralization was emplaced at moderate to deep crustal levels. Juras and Duff note examples of open-space-filling textures in sulfide minerals in veins in their 2020 report, and classify all of the veins at Bunker Hill as open space fissure veins. If all of these observations hold true, an active fold system is one of the few ways to geologically explain the spaces and pressure shadows necessary to form those open-space cavity-fill textures under the pressures and temperatures present at the time of vein emplacement.

As noted earlier in Section 7, Brian White (1994) has suggested that the entire CDA District is the base metal equivalent of a Shear-Zone hosted gold deposit, with shearing along the Osburn Fault splay of the Lewis and Clark Structural Zone, and heat supplied by the Cretaceous-aged intrusive rocks. In this model the mineralizing fluids travel up metamorphic lineations and take advantage of the same structurally prepared quartzite host rocks and structural pathways as the Juras-Duff model. Since the Juras-Duff Model is built on the same data set currently available to the Company and actively being used for geologic modeling, the fold-associated vein emplacement theory is the geologic model currently being employed to aid exploration and resource delineation drill planning.

9 EXPLORATION

BHMC has a rare exploration opportunity available at the Mine and has embarked on a new path to fully maximize the potential. A treasure trove of geologic and production data has been organized and preserved in good condition in the mine office since the shutdown of major mine operations in the early 1980s. This data represents 70+ years of proper scientific data and sample collection with high standards of accuracy and precision that were generally at or above industry standards at the time.

The Company saw the wealth of information that was available, but not readily usable, and embarked on a scanning and digitizing program. From this they were able to build a 3D digital model of the mine workings and 3D surfaces and solids of important geologic features. To add to this, all of the historic drill core lithology logs and assay data (>2900 holes) were entered into a database and imported with the other data into Maptek Vulcan 3D software.

By digitizing geologic maps of the mine levels, and connecting major faults, veins and stratigraphic blocks, it was possible to put into three dimensions ideas that had previously been confined to the brains of Company geologists, plan maps and paper cross-sections with data projected by hand. See an example in Figure 9-1 below, an isometric view of a cross section along the Bunker Hill #2 shaft, with slices of maps from Brian White's 1977 stratigraphic research program shown in proper georeferenced location for the 9, 11, 13, 15, 17, 19, 21, 23, 25 and 27 Levels.

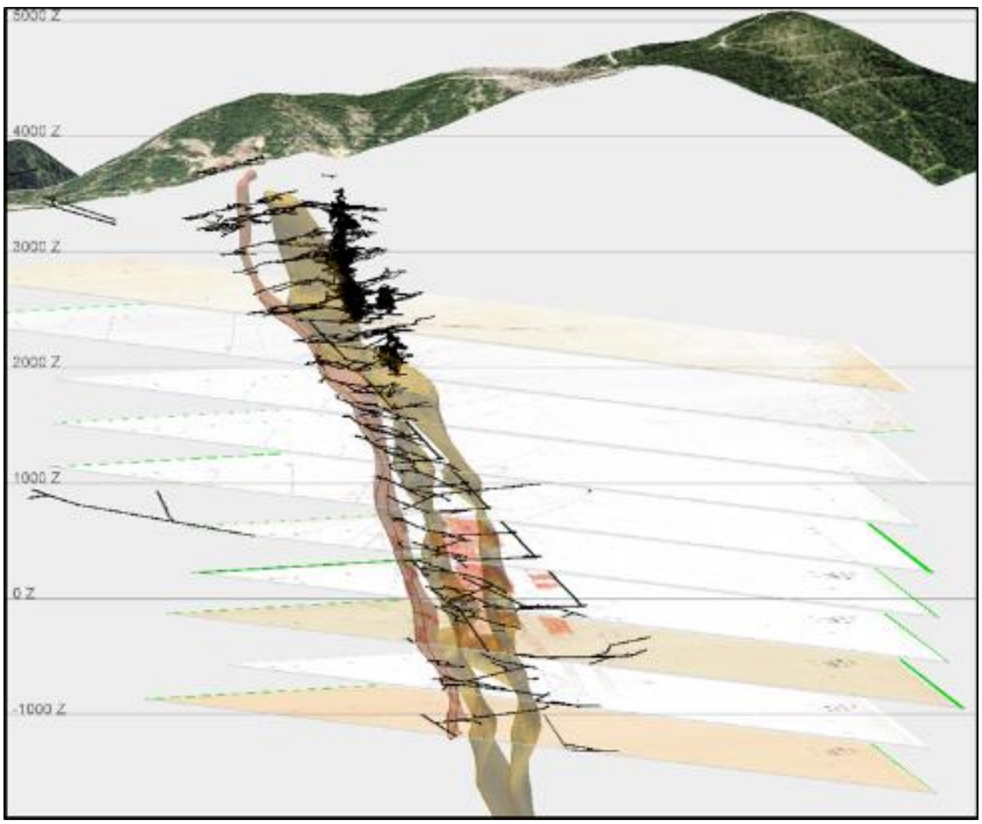


Figure 9-1 1500 ft thick cross-section along BH #2 Shaft, looking at 106 azm, -12 degrees. Mine levels and shafts are black lines, thin dark orange shape between levels on left is 3D model of U-1 quartzite unit of the upper Revett formation, thick orange shape is M-3 siltite-argillite unit. Shapes built directly from original field mapping.

There were a number of research programs at Bunker Hill undertaken in the 1970's to discern lithologic and structural controls on mineralization so as to conduct more effective exploration programs to replace diminishing reserves, discussed in Section 7 and 8 of this Technical Report (White, 1976, Juras, 1977). The Company is now able to apply the knowledge and conclusions from these studies in a far easier and more accurate manner than those which were available to prior generations.

The important lithologic control to mineralization is the quartzite units of the Revett formation. These have now been modeled in 3D from level maps and drill hole data, and post-mineral fault offsets can be reversed to reconstruct the folded position of the host rocks at the time of vein emplacement. Bedding patterns can be matched up at scales that were not noticeable in small-scale detailed field mapping in limited mine drift access. Fault offsets can now readily be determined and measured by positions of stratigraphic blocks. Flat faults that cut all types of mineralization, and were previously difficult to map or project, are now readily apparent in horizontal bends and offsets along units. Not enough work has been done to refine any of the above ideas down to an exact model yet, but the Company has the original data set almost entirely converted to 3D digital format. Figure 9-2 shows models of quartzite beds with offsets along modeled fault planes, cutting through the 9 Level stratigraphic map by White at 2405 ft elevation.

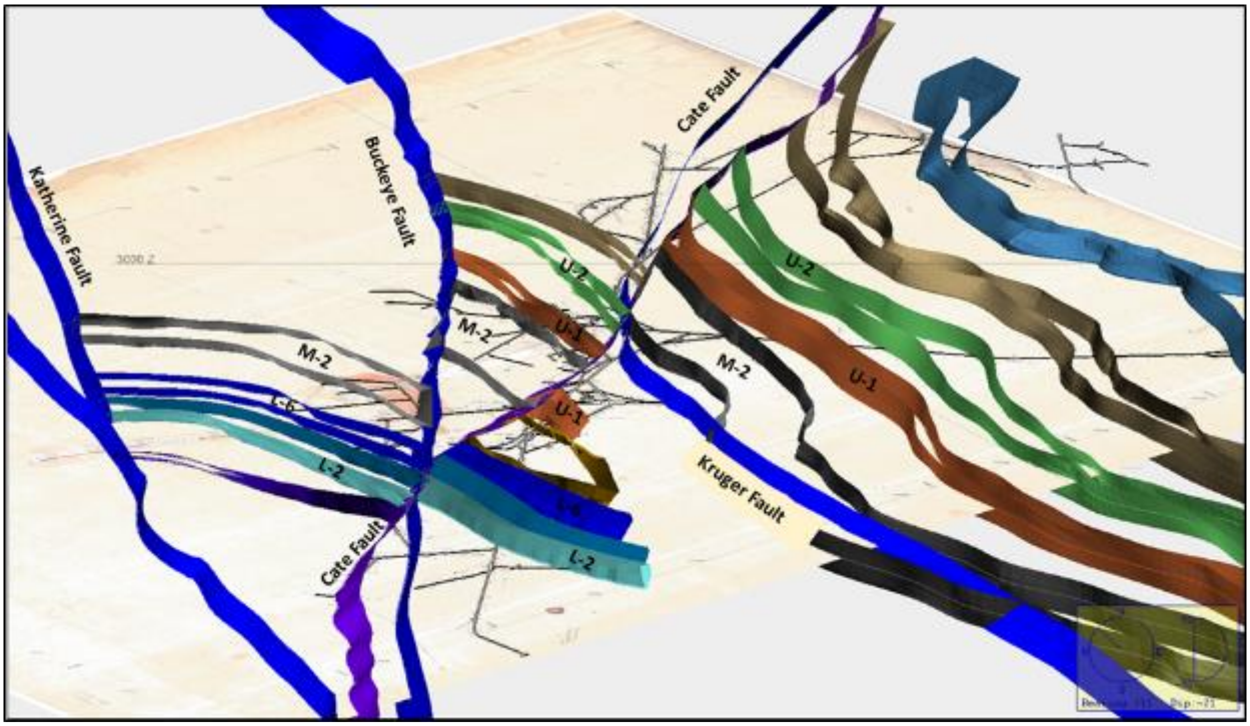


Figure 9-2 Isometric view of plan section through 3D lithology and Fault Models at BH 9 Level. View is looking 311 azm, -21 dip, with 100' window on either side of stratigraphy map at 2405' elevation.

Reversing fault offsets to reconstruct original positions has shown that the Bluebird and Galena-Quartz vein segments are offsets of original master structures for each type. Modeling is currently on-going to determine the proper offsets to reconstruct the original geometry of these vein systems at time of emplacement, which will likely identify previously unrecognized vein segments, and provide clues to locate offset segments of historically mined veins that were never found with exploratory drifting or drilling from underground.

The conversion of so many years of geologic work into a format in which all possible data can be isolated and looked at in 3D at the same time, same scale and same color scheme has allowed Bunker Hill Mining Company to rapidly employ the concepts and ideas of prior generations in exploration targeting, and has allowed comparison of data that was not possible with historic, paper-based geologic techniques. The Company intends to evaluate all of the exploration targets proposed in the waning stages of mining with the newly compiled dataset, and test as many of them as fit within the current realities of access and water levels.

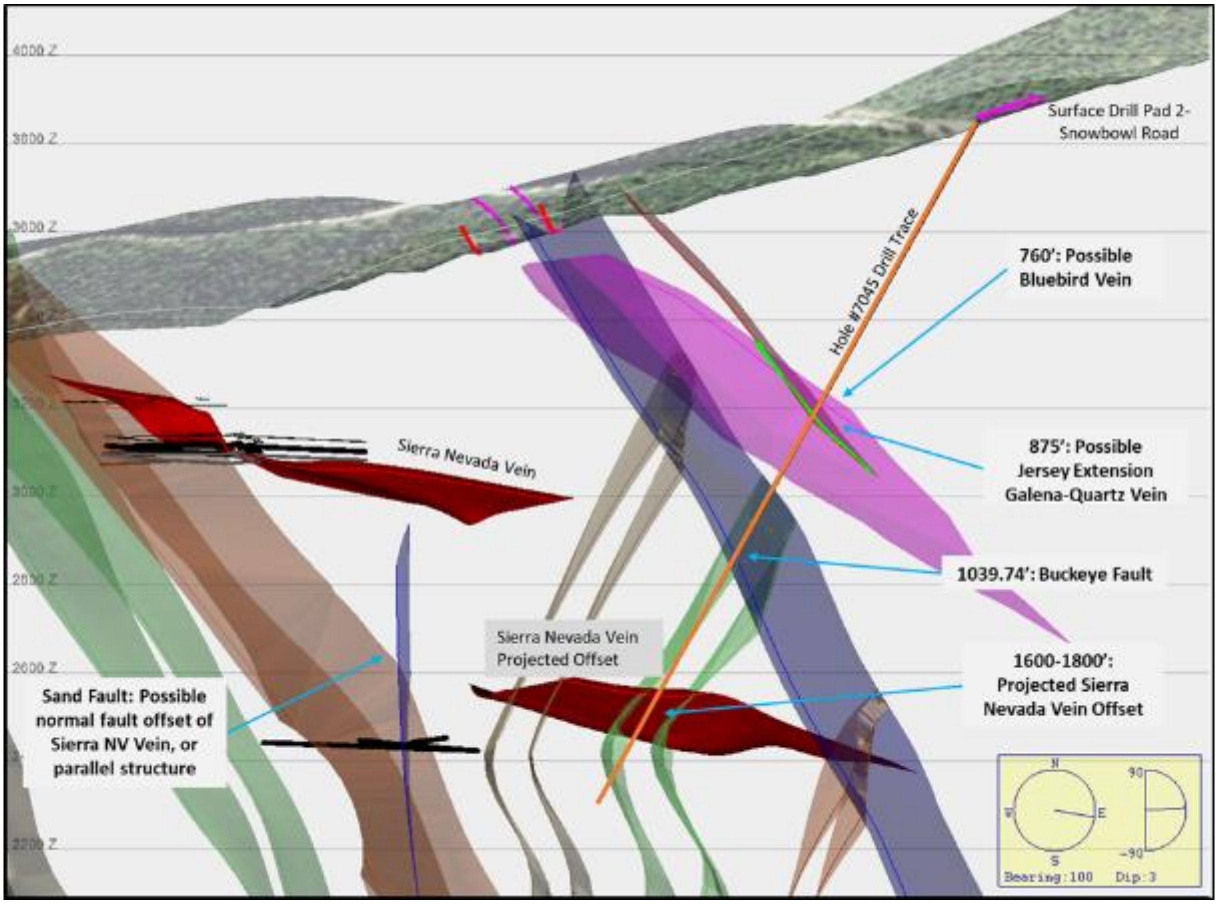


Figure 9-3 Cross-section through Vulcan 3D models along planned drill hole trace showing expected downhole depths of projected geologic features. Historic Sierra Nevada Mine levels in black center right.

Through the use of the now-digitized geologic data, BHMC has been able to conduct exploration drilling between 2020 and 2021, testing some of the proposed structural features. Details on the drilling related to the Quill, Newgard and UTZ zones of mineralization are detailed in section 10 of this report. In addition to both continued geologic digitization and the completed 2021 exploration drill program, the Company has performed a geophysical survey over the summer of 2021.

The survey was conducted as a ground geophysical 3DIP survey through DIAS Geophysical Ltd out of Saskatoon, SK. The Pole-Dipole array featured electrode spacing of 50m, with current injections completed on 100m spacing. Lines were run NE/SW with a spacing of 150m between receiver lines. Survey specifications can be seen in Figure 9-4.

General Specifications	
Survey Mode:	Distributed Asymmetric 3D survey with CVR
Array Type:	Pole-Dipole
Receiver	Specifications
Electrode 'a' spacing:	50 m
Electrodes per injection:	Approximately 90 to 110
Receiver Sampling Interval:	150 samples per second
Transmitter	Specifications
Current injection spacing:	100 m
Current Remote Location (WGS84Z11N):	565668E/5258958N/1625m
Transmitter waveform:	50 % duty cycle, square wave
Transmitter base frequency:	0.125 Hz (8 s cycle)
Transmitter Injection Location:	Between receiver lines

Figure 9-4 Geophysical Survey Details

The survey was planned to cover a total of ~1,500 acres, but due to delays with challenging terrain, ended up covering just over 1,200 acres. The location of the survey was over the far southwest portion of BHMC's land package, south of all previous historic mine workings and over an area previously un-tested with either geophysical or conventional drilling methods. It is a lithologically diverse section of the property showing outcrops of both lower and middle Belt rocks of the Prichard, Burke, Revett and St. Regis formations. Large reverse and normal faults cross the survey area as well. The dominant structural fabric runs in a NW/SE direction, mirroring that of the known, mapped faults within the historic mine working's footprint to the north. Survey lines were run in a NE/SW direction to traverse this structural orientation as close to perpendicular as possible.

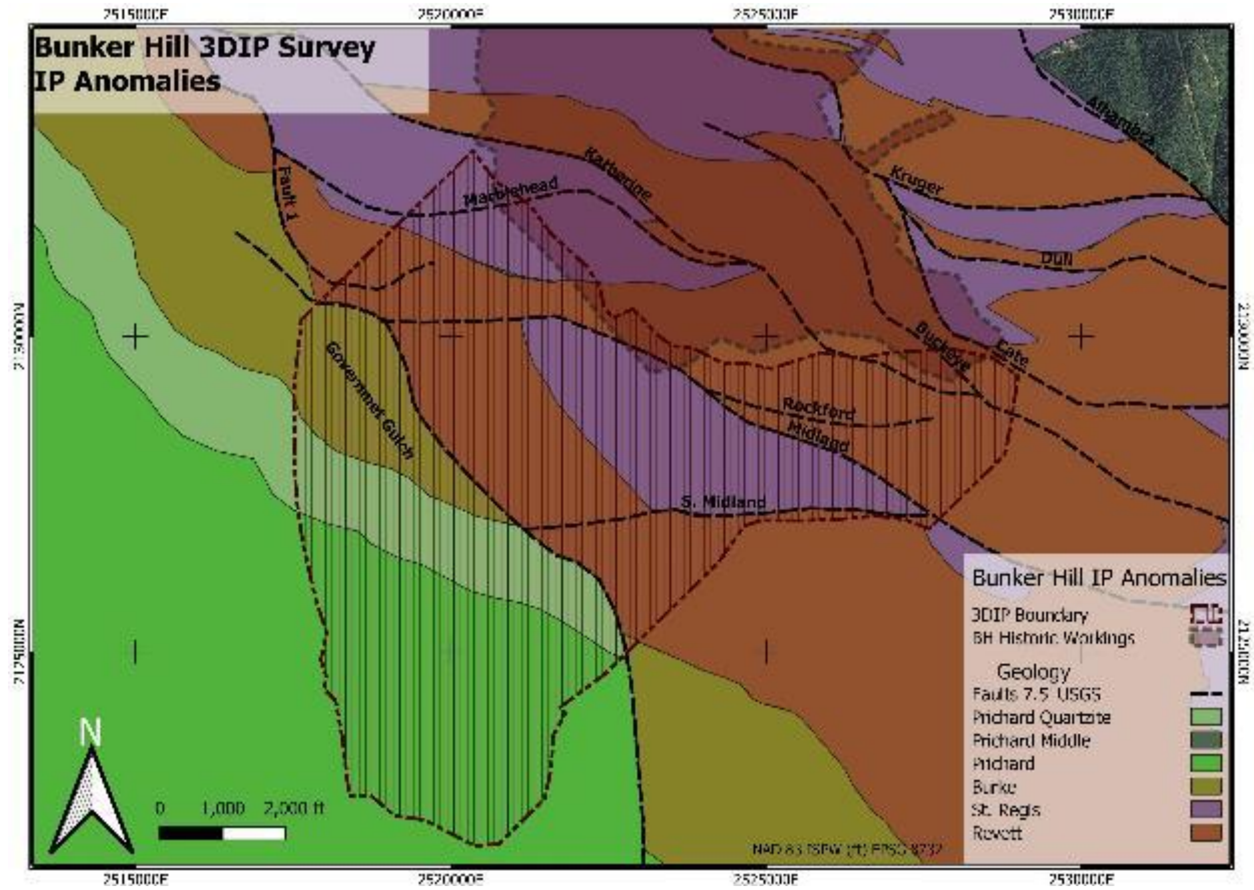


Figure 9-5 Geological Map Showing IP Survey Boundary and Major Lithology and Structure

The relatively tight line spacing and 3D nature of the survey allowed for investigation of both Bluebird and Quartz-Galena Vein styles of mineralization. For details on each, please see the previous chapters of this report. Through initial inversion models, multiple zones of interest were identified. Previous IP surveys conducted on the Property in both 1969 (surface over the Cate fault and Upper Bluebird mineralization) and 1968 (down-hole IP on 2 drill holes in the J-Vein area of the mine), indicated that both Quartz-Galena and Bluebird styles of mineralization share a similar IP response of increased conductivity with low resistivities.

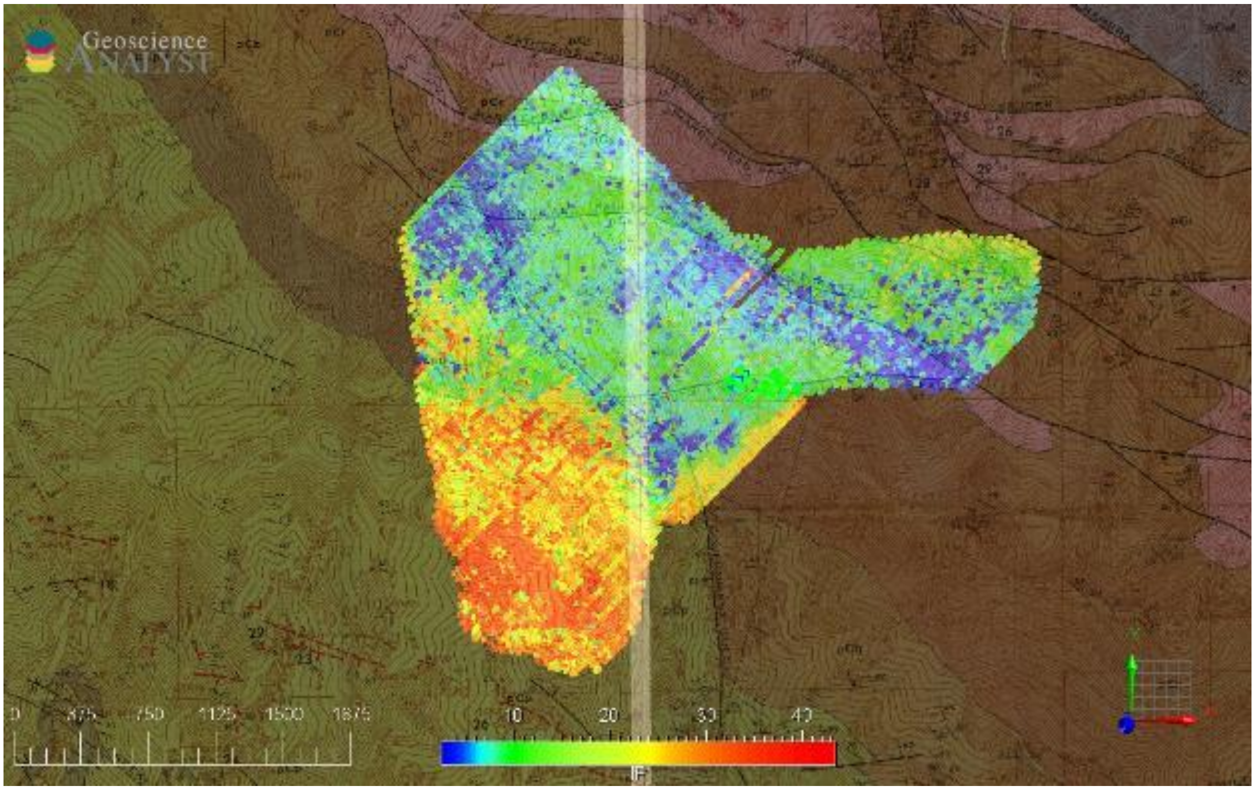


Figure 9-6 Raw Dipole IP Data Over Compilation of Smelterville and Kellogg 1965 USGS Geologic Quadrangle Maps Showing Correlation of IP Response and Lithology. Note IP Response to Major Mapped Fault Structures. Distance Scale in Meters, IP Scale in mVs/V.

Initial data seems to correlate well with previous surface mapping over the surface area both lithologically and structurally. A heightened IP response can be seen in Figure 9-6 to the southwest of the program associated with the rocks of the Prichard formation, a dominantly argillitic sequence of lower Belt rocks. Rocks of the Revett and St. Regis formations lie to the northeast of the Government Gulch fault and can be seen as a variety of IP response levels.

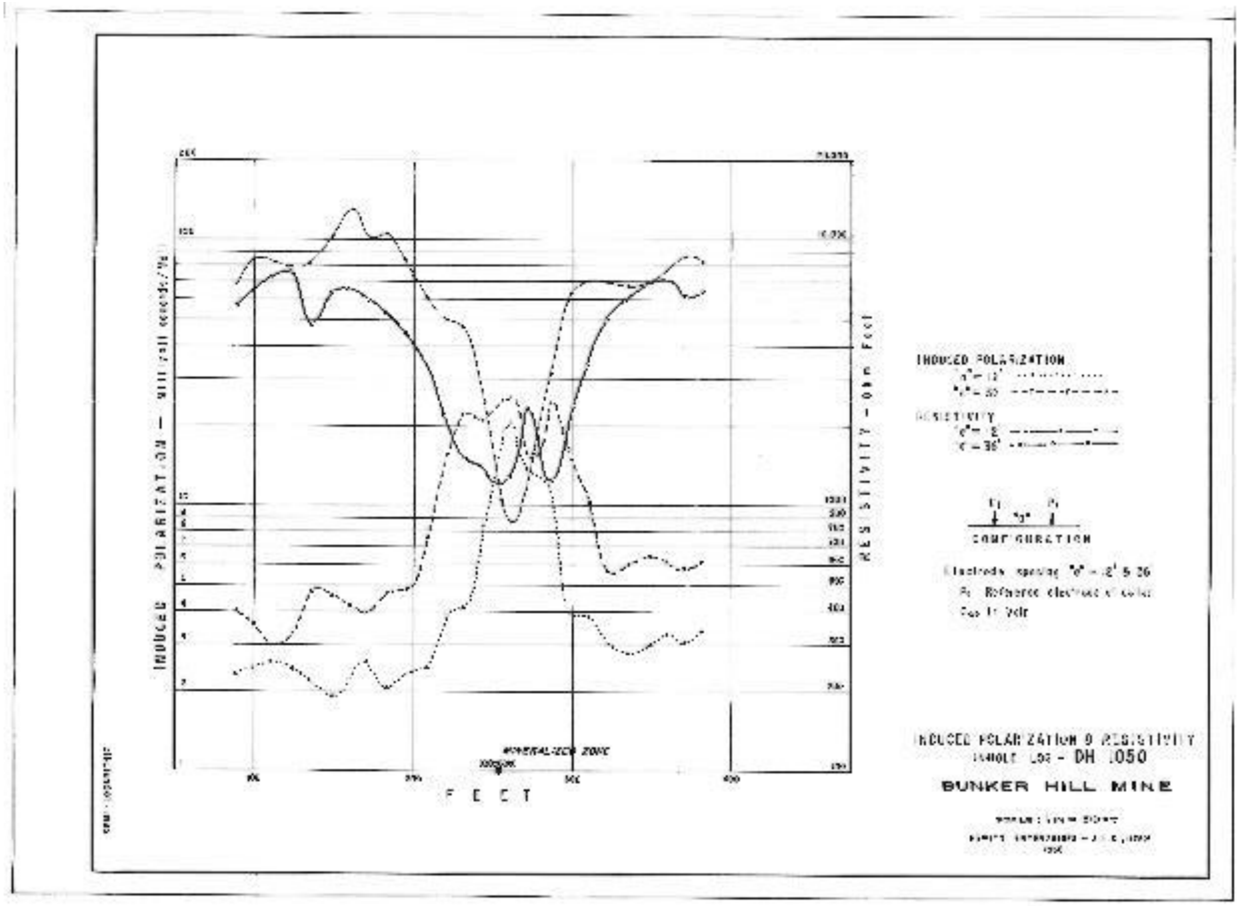


Figure 9-7 1968 Drill Hole IP Survey of DDH 1050. 251'-255.1' Zone of "Scattered to Abundant Dark Sulfide."

It is recommended that the Company continues with further investigations of additional inversion models and target identification over the program area. It is also recommended that the program be followed up with additional EM geophysical survey methods to further correlate known lithology to EM responses. Additional surface exploration activities including conformation of previous Company surface outcrop and float maps, along with trenching of road cuts could work to corroborate shallow mineralization expressions with buried rocks associated with the target responses.

10 DRILLING

10.1 BUNKER HILL DRILLING PROGRAM

Drilling began in September of 2020 and in several locations and definition drilling to expand the Bunker Hill Resources in the UTZ started in September of 2020 and continued into assay cutoff date of October 10, 2021, 2021. This drill program produced 55 holes that were drilled in either the UTZ or Quill-Newgard areas of the mine comprising 20,689 feet of core drilled. Holes were typically drilled at HQ diameter, but for future use as utility passes select holes were drilled at PQ diameter. Much of the drilling was related to the data verification described later in this report. Some exploration drilling occurred from multiple surface locations, with several holes drilled at the historic Homestake portal to expand the UTZ. Also drilled were definition and exploration targets on the 5-level accessed from the Russell tunnel, and exploration targets on the 9-level accessed via the Kellogg tunnel.

Drill pad prep and drill rig mobility logistics were managed on site by a drilling manger from Bunker Hill, supervisory staff from American Drilling Company (“ADC”) and the onsite Rangefront geologists. A Reflex TN14 gyroscope assisted in lining up the drill rig at the collar. A 50’ survey shot was taken during drilling to allow geologists to determine hole viability. Upon reaching the target depth, a geologist observed the core and determined whether to terminate the hole or continue drilling. Upon completion, the survey tool was sent down to take an end of hole survey shot plus one shot every 100’ on the way out of the drill hole. These surveys were then approved by the geology team in accordance with industry standard practices and uploaded into the database along with collar locations picked up by the survey team. Throughout the program, Vulcan software was used to plan and modify holes, check proximity to historic workings, evaluate deviation, and assess assay results. At the end of the program, surface holes were grouted in accordance with the Idaho Water Department guidelines.

Rangefront employees and ADC employees ensured security of the core throughout the program. Core was initially held by ADC at the drill rig with the rigs both on the surface and underground on the 5 level. Rangefront employees made daily trips to pick up core and receive a signed chain of custody. On the 9 level, ADC brought the core out the Kellogg Tunnel and it would be signed over to Rangefront at the morning shift change. Winter conditions on mountainous roads eventually necessitated the deposition of core into the core shed by ADC employees.

The core was housed on site in a secure core shed where it was washed, logged, photographed, cut, sampled, and then shipped to an assay lab (see Section 11 for details on sampling and assaying details). Geologic characteristics noted during the logging process included lithology, color, hardness, structure, alteration, observed mineralization, point data and geotechnical data. Rangefront employees ensured Chain of Custody during the entire process.

A portion of one hole was drilled prior to the drill program beginning in September. The hole was re-entered and completed in October of 2020.

11 SAMPLE PREPARATION, ANALYSIS AND SECURITY

This section does not describe sample preparation, analysis or security measures taken prior to the initiation of the 2020-2021 Bunker Hill drill program. Drilling prior to 2020, actually prior to 1991, was conducted by the owners of the mine beginning in 1898. Drilling records have been maintained since that time. Sample preparation, analysis and security records do not exist. Only assay results and geological logging remain as the records. As noted throughout the report, the Bunker was among the premier mining companies in the United States. Drilling, muck sampling and data analysis was carried out to the highest standards of the time. Review and approval of results went through a hierarchy of engineers and other professional before being used to estimate mineralization for the mine.

This following describes sample preparation, analysis and security activities conducted by Bunker Hill through 2020-2021.

Drill core samples are cut and prepared by Rangefront employees prior to shipment. Half of the core was returned to the core boxes for archive purposes, while half was inserted into sample bags for shipment to the labs for analysis. Drill core and channel samples were stored in the locked core shed located on the mine site and kept until dispatched to the lab. Access to the core shed is monitored at all times.

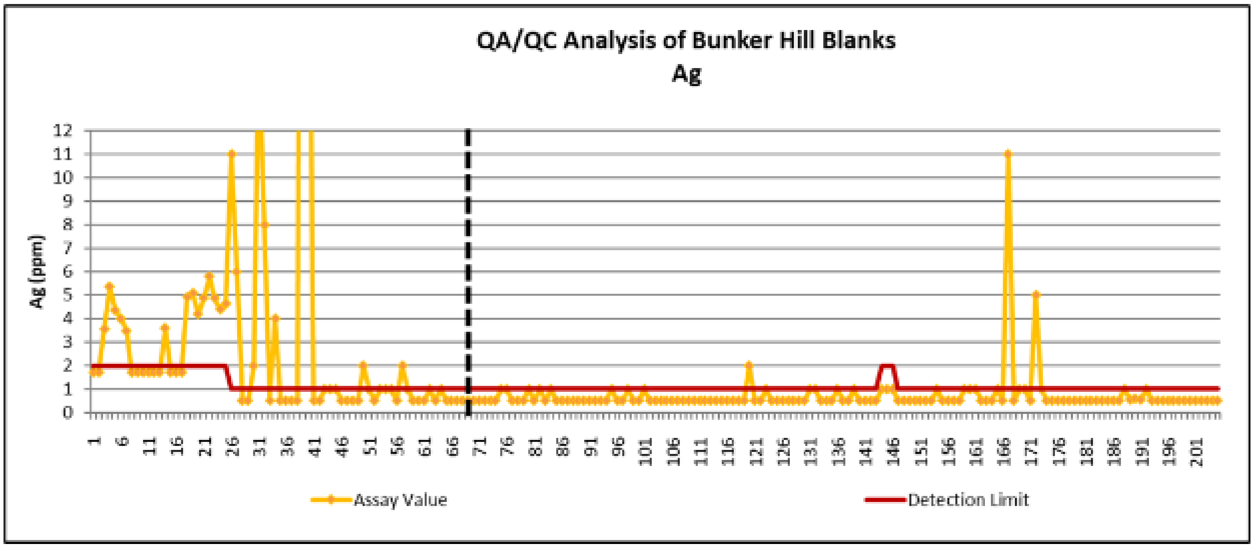
Prior to dispatch, core is measured for recovery and sample identification numbers are associated and assigned. Core intervals are photographed for posterity and accuracy. Half core is cut and bagged with the same sample identification number. Assay results are compared against the submitted sample numbers before acceptance of the results.

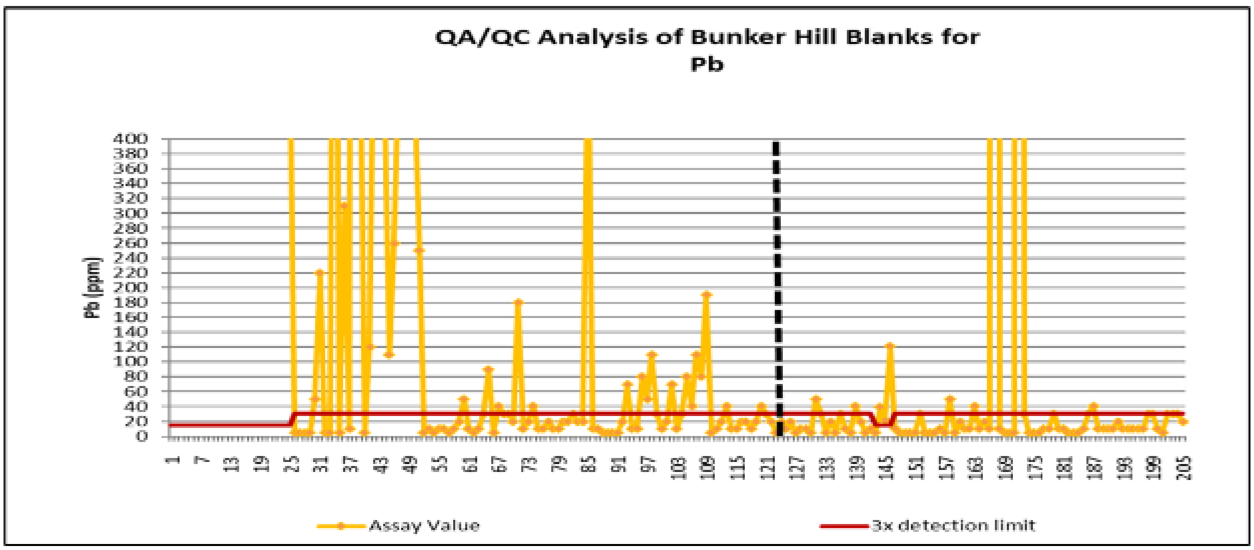
Throughout the project, multiple analytical laboratories performed assays on the 5,067 drill core and channel samples collected. The QA/QC protocol in place, in conjunction with the data collected from the laboratories, determined that ALS Global “ALS” (ISO/IEC 17025:2005) provided the most accurate and repeatable results. Both Paragon Geochemical (ISO/IEC 17025:2017) and American Analytical Services, INC “American” (ISO 17025:2005) were used in the early and mid-stages of the project but failed to yield timely and repeatable results.

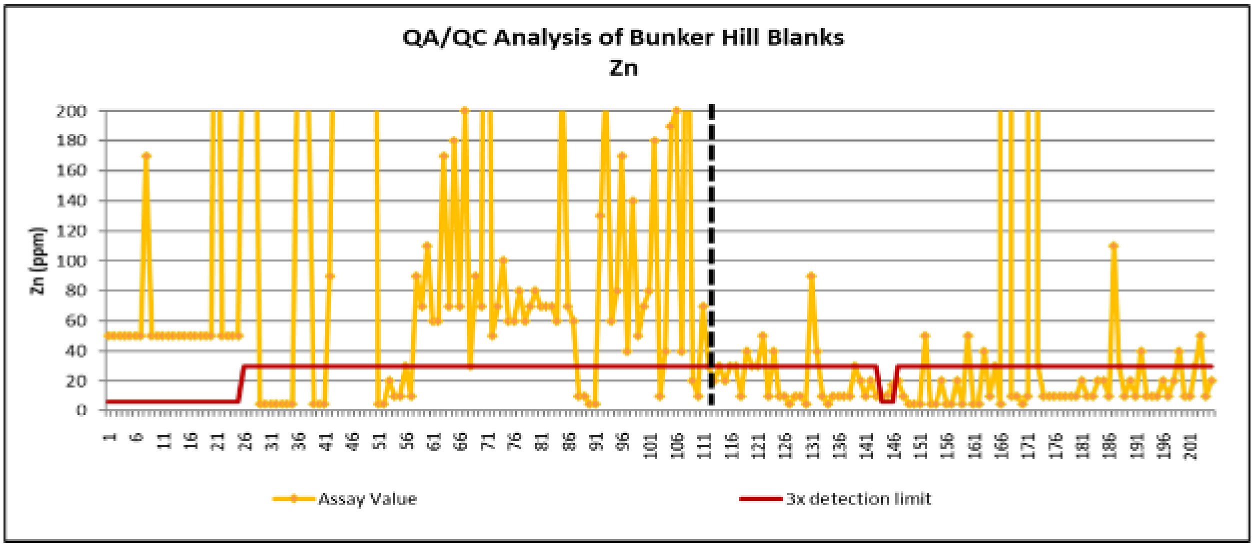
Upon arrival, the laboratory crushed, split, pulverized and screened all samples at 200 mesh. ALS then performed a 4-acid digestion assay (ME-OG62) for silver, lead and zinc on the drill core and channel samples. Finalized results reported to an onsite Rangefront Geologist then entered into the geologic database managed by an independent entity. All results in this Technical Report are based on and published with a high level of confidence in the work performed by ALS Global.

Blank material:

Blank material was inserted into the sample sequence at a ratio of 1:20 or roughly every 100’ of core/channel sampling. At the start of the project the blank material used was marble Landscaping chips from Ace Hardware. This material failed QAQC due to contamination. Silica sand replaced the marble chips but still showed material contaminations as well. At Bunker Hill’s request, the samples sent to Paragon had blank material inserted by the lab. The samples material used were rock chips from a quarry located outside of Sparks, NV. These too had a high baseline for Pb and Zn. Finally, a lab certified blank, OREAS-21e, was used and produced satisfactory and repeatable results. The Ag element did not have the contamination as much as Pb and especially Zn did. The dashed vertical line represents the transition to the OREAS-21e material that is currently being used (right of line). The below figures represent blank data for all drill holes completed between 2020 and 2021 used in the updated December 29, 2021 Mineral Resource Estimate. OREAS-21e arrives in pre-sized packets of pulverized material and therefore did not undergo the preparatory work done on coarse material. It is recommended that Bunker utilize both lab-certified blank material and work to acquire bulk blank reference material that will require a comparable preparation and analysis suite as the non-check material submitted for assay.

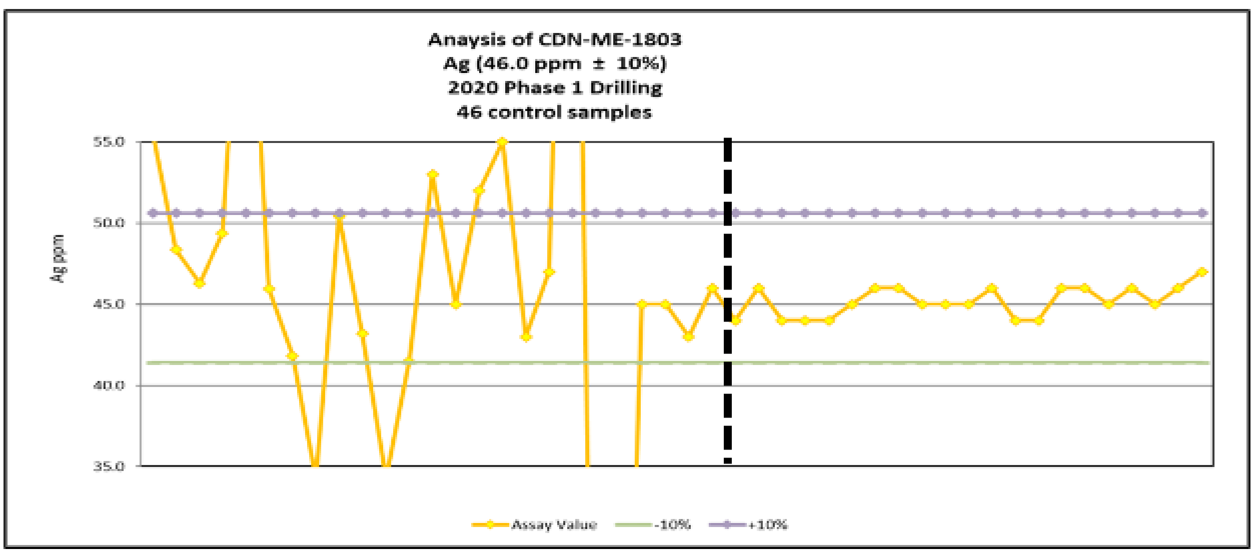

QA/QC Analysis of Bunker Hill Blanks
Ag
Ag (ppm)
Assay Value
Detection Limit

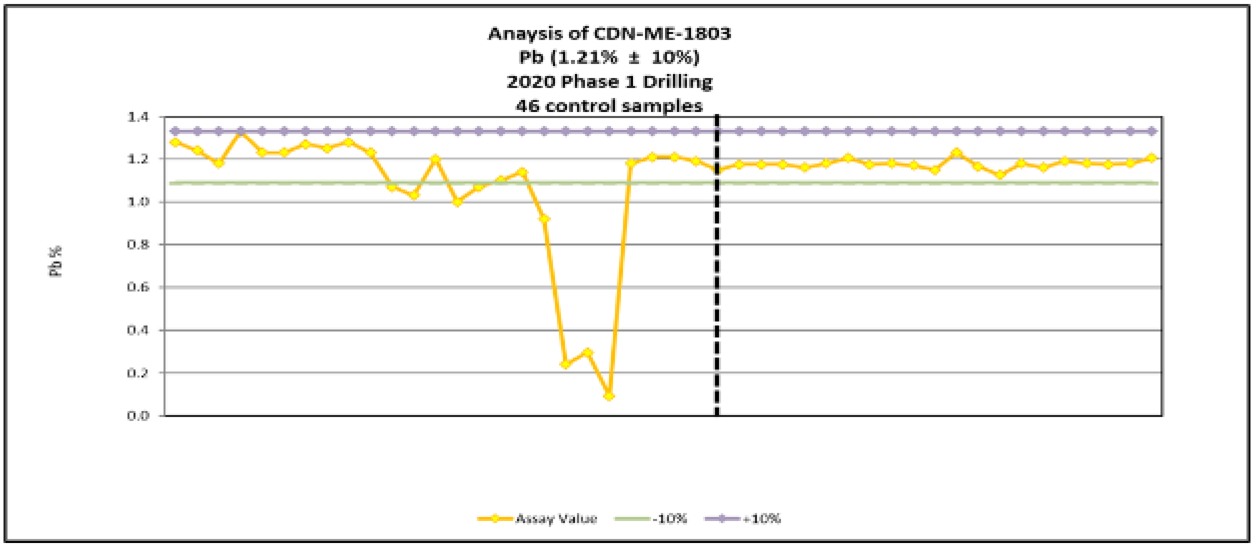

QA/QC Analysis of Bunker Hill Blanks for
Pb
Pb (ppm)
Assay Value
3x detection limit

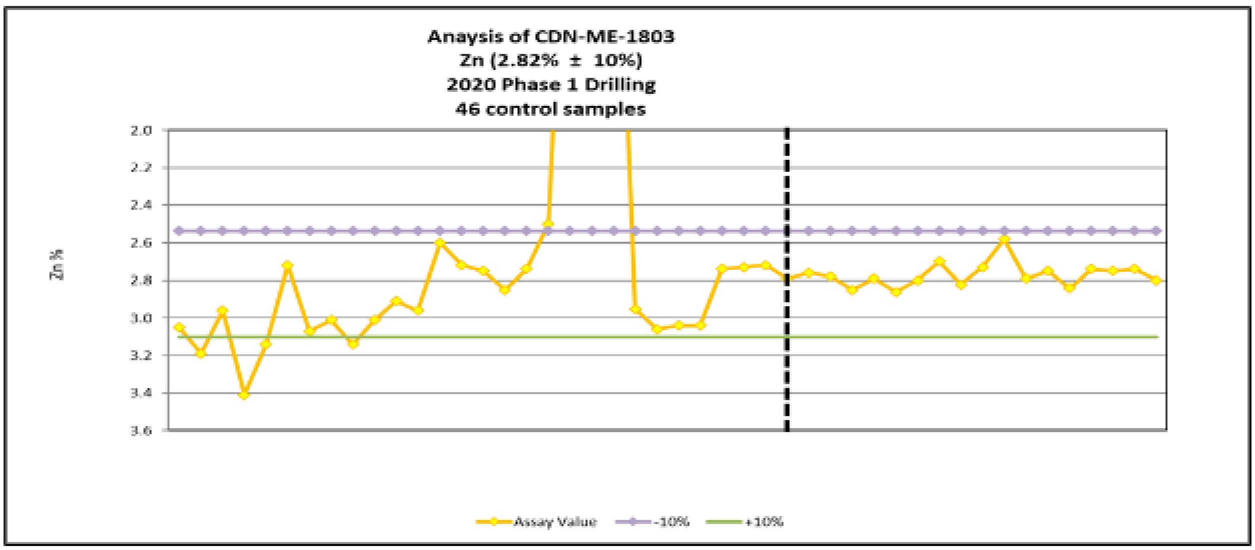


Certified Reference Materials

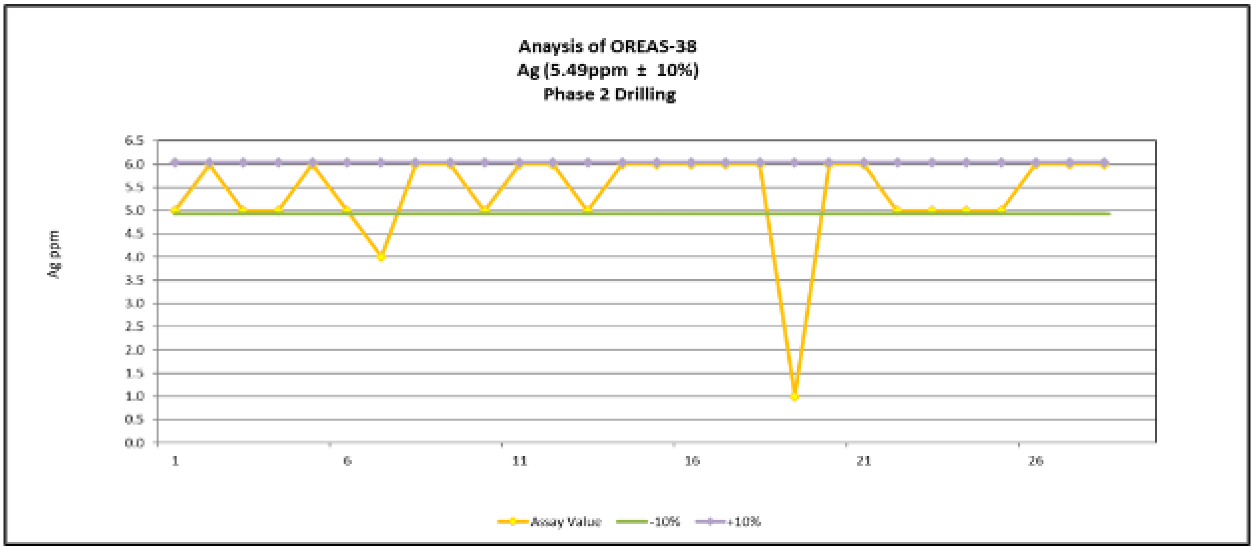
Certified Reference Materials ("CRMs," "standards") were used to monitor the accuracy of the assay results reported by all labs. Standards were inserted into the sample sequence at a ratio of 1:20 or roughly every 100' of core/channel sampling. At the start of the project, two different VMS (volcanic hosted massive sulfide) standards were used from CDN Resource Laboratories Ltd. The below graphs show the accuracy and repeatability issues with the first two labs that analyzed the samples. The dashed vertical line represents the division between the QAQC at American and Paragon (left of line) vs ALS (right of line). The below figures represent CRM data for all drill hole assays completed between 2020 and 2021 with a data cutoff date of October 10, 2021 and subsequently used in the Mineral Resource Estimate with an effective date of November 29, 2021.

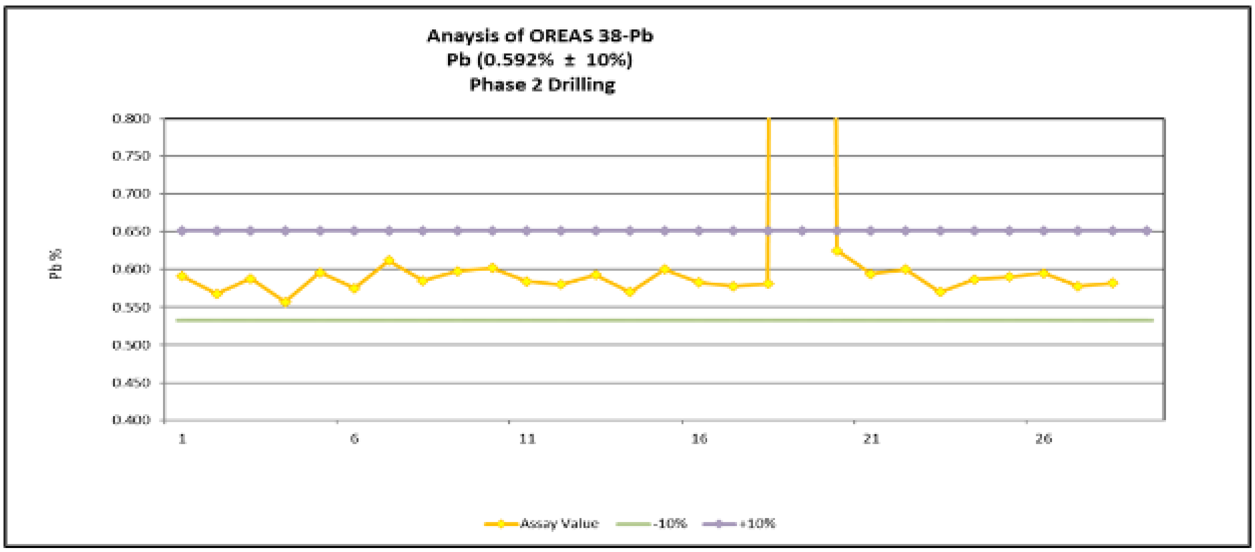


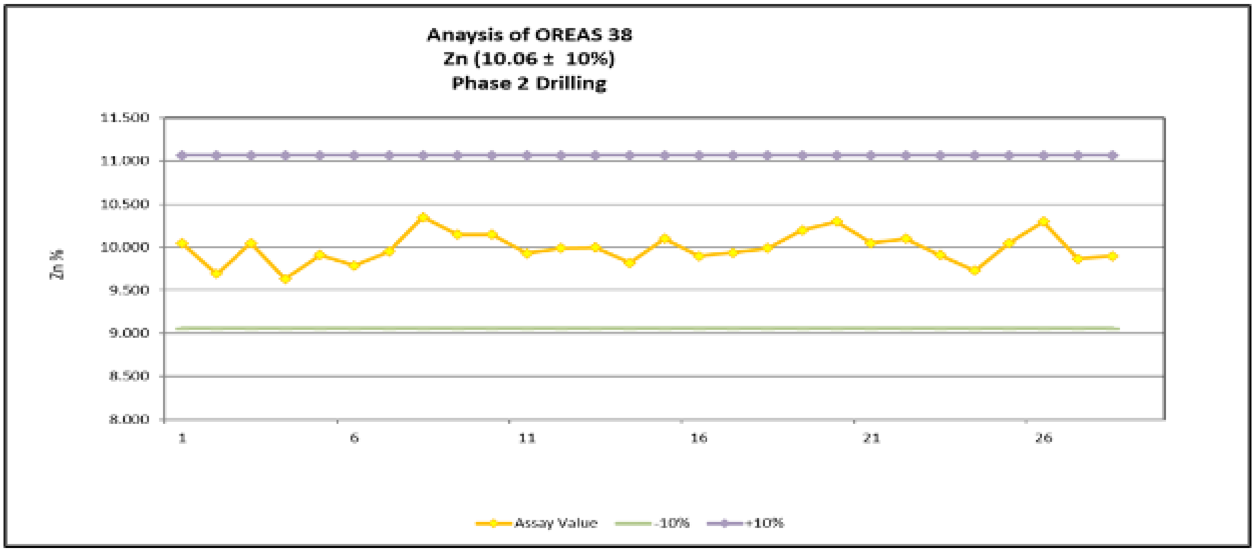




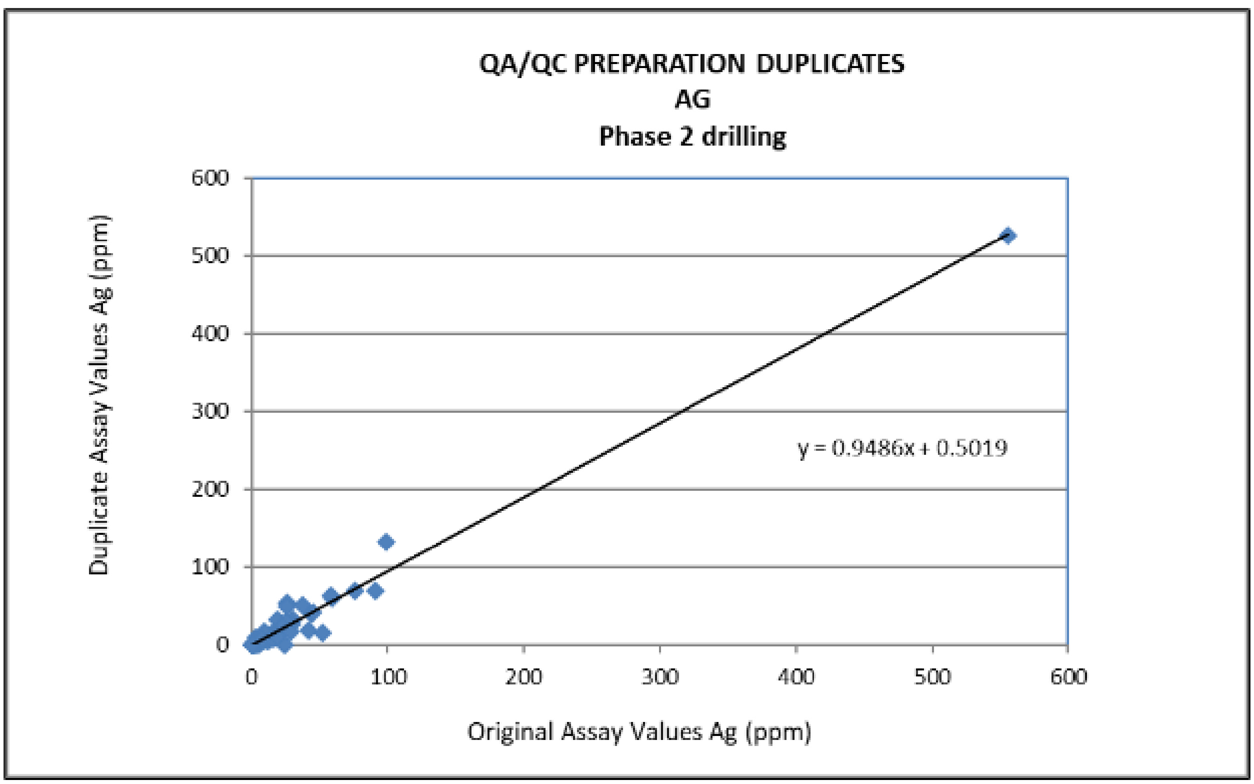
In October 2020, Bunker Hill discontinued the CDN standard reference material and began using four different standard materials from Ore Research & Exploration PTY LTD. This material was of meta sedimentary origin and matched theoretical metal grades from Bunker Hill. Below are the charts that represent the QAQC of the most widely used standard throughout phase 2 of the drill program, OREAS-38.

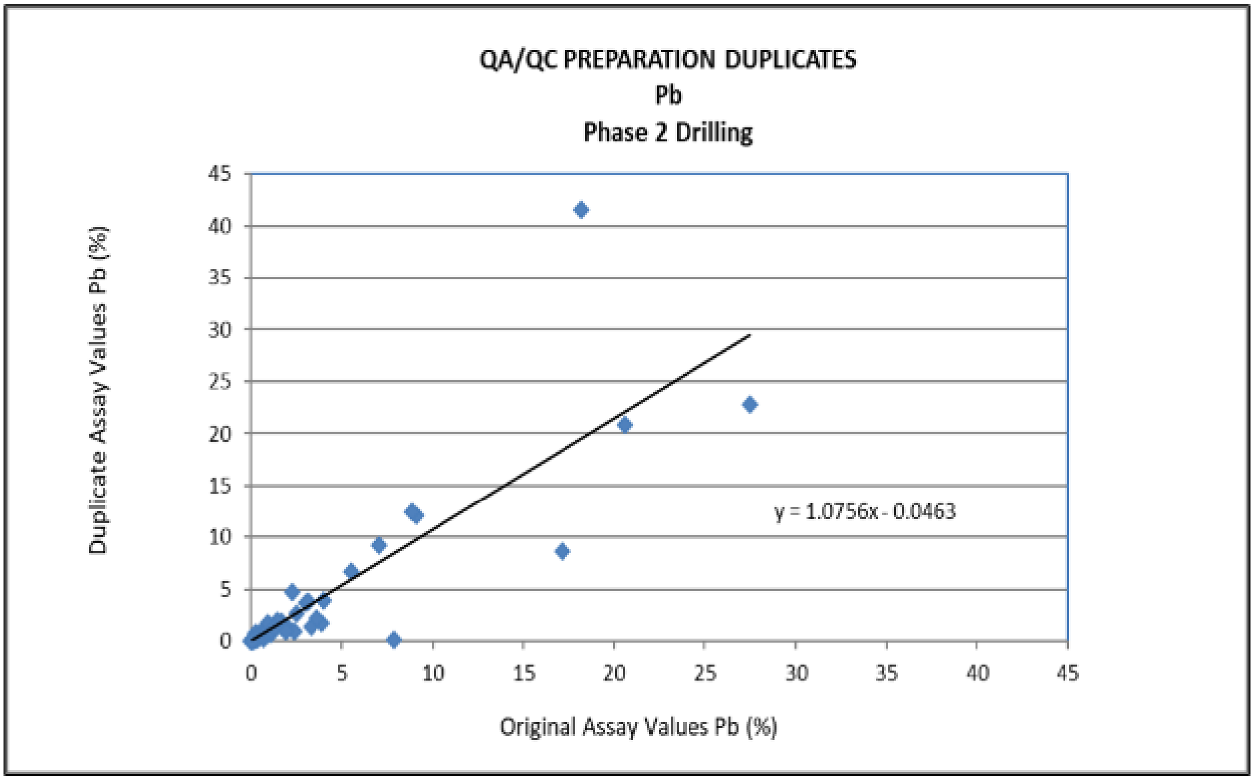

Anaysis of OREAS-38
Ag (5.49ppm ± 10%)
Phase 2 Drilling
Ag ppm
6.5
6.0
5.5
5.0
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
1
6
11
16
21
26
Assay Value
-10%
+10%

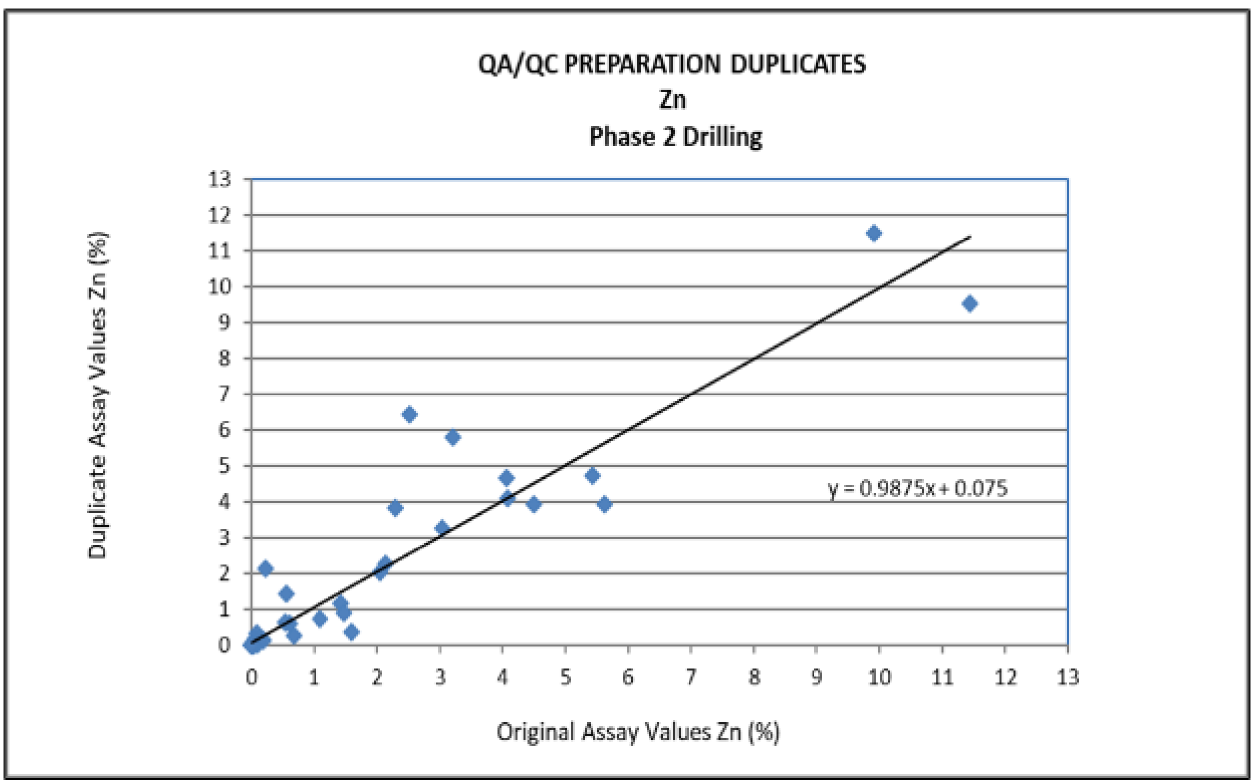

Anaysis of OREAS 38-Pb
Pb (0.592% ± 10%)
Phase 2 Drilling
Pb %
0.800
0.750
0.700
0.650
0.600
0.550
0.500
0.450
0.400
1
6
11
16
21
26
Assay Value
-10%
+10%



Bunker has initiated a duplicate prepping procedure that involves quartering the core. Half the quarter would be grabbed by hand and put into one bag and the half into another. Due to the nuggety and fractured nature of the mineralization, obtaining an exact duplicate was not achievable. After investigating these results, the core shed obtained a crusher and riffle splitter to make a more homogenic sample for a more accurate duplicate that will tests the labs repeatability. The below figures represent duplicate data for all drill holes completed between 2020 and 2021 with a data cutoff date of October 10, 2021 and subsequently used in the Mineral Resource Estimate with an effective date of November 29, 2021. All material not passing QAQC variance limits was re-run through the same analysis suite, along with the preceding and following samples adjacent to the failed sample. It is recommended that Bunker maintain a protocol for handling of QAQC failures and work with laboratory personnel to run samples sequentially based on sample number assigned by Bunker geologists.




QA/QC PREPARATION DUPLICATES
Pb
Phase 2 Drilling
Duplicate Assay Values Pb (%)
Original Assay Values Pb (%)
y = 1.0756x - 0.0463
0
5
10
15
20
25
30
35
40
45


QA/QC PREPARATION DUPLICATES
Zn
Phase 2 Drilling
Duplicate Assay Values Zn (%)
Original Assay Values Zn (%)
y = 0.9875x + 0.075
0
1
2
3
4
5
6
7
8
9
10
11
12
13

It is the opinion of the author that security of the samples remained uncompromised throughout the sampling program. Adequate sample preparation methods and QA/QC protocols are followed. Laboratories performed proper analyses on the samples, and the author has full confidence in the validity of the published results.

ALS Global testing laboratories are located at 4977 Energy Way, Reno NV 89502.

ALS has no relationship other than that of a vendor to BHMC.

12 DATA VERIFICATION

Mineralization at Bunker Hill was exploited for over 100 years prior to being shut down due to environmental concerns as described in Section 4 and Section 6. A producing polymetallic mine stopped production with blasted mineral inventories in the ground. Documentation of a century of historic estimates remain intact to this day. Production records from hundreds of stopes exist to this day. Quarterly and yearly records of depletion, addition and tracking of material produced and delivered to a mill and two smelters is factual and supported by existing records. The bulk of the mine, known mineralization, and hundreds of production stopes are flooded up to the 11 level. Thousands of records of sampling and drilling exist.

The dilemma for the author, or any QP, at this particular deposit, is how to prove that existing data may be used for estimation of mineral resources. Sampling and drilling assay results were collected to the best standards throughout the history of the mine. Drilling records including surveyed collar coordinates. Driller names and geologist names are recorded. The actual hand-written log from drillhole # 1, drilled in 1898, is still kept on record at the mine. QAQC protocols are not documented. Based on the author's experience reviewing and working at older projects, QAQC protocols were never historically utilized at mines until the 1980's and 1990's. It is understood that these protocols are necessary in terms of documenting proof of results in order to detect errors or even fraud, as is so important in the mining business of the 21st century.

Item 12 of NI43-101F1 requires three steps of the qualified person to describe verification procedures employed:

(1) The data verification procedures applied by the qualified person (described in this section)
(2) Any limitations on or failure to conduct such verification, and the reasons for any such limitations or failure; and
(3) The qualified person's opinion on the adequacy of the data for the purposes used in the technical report.

The following sections describe verification procedures recommended by the author; namely stope block sampling and core drilling. BHMC expended in excess of $4 million for verification of the nature and existence of mineralization at the mine. There were no limitations placed on the QP's requirements for data verification. In the opinion of the author, the results of the data verification program conducted at Bunker Hill are adequate and can be relied upon to estimate mineral resources for the mine.

Three important items were evaluated that give the author confidence that results are appropriate to be used for mineral resource estimates at Bunker Hill.

1. Existing stope block validation
2. Core drilling through known historic areas of mineralization which is described in Section 10
3. The re-assaying of un-oxidized pulps left over from the last drilling in the late 1980's

12.1 STOPE BLOCK VALIDATION

In order to gather data in areas inaccessible to drilling (specifically, historic stopes), BHMC implemented an underground sampling program under the strict guidance of the author. Beginning in March 2020, BHMC launched a significant underground sampling program with the intent of verifying historic assays and data located on the mine site. PMC, owner of the Bunker Hill Mine, granted access to the onsite historic data, as well as underground portions of the mine. Underground channel sample collection began on March 28, 2020. Over the following 3 months, a total of 753 samples were collected across ten levels and sub-levels of the mine. Underground sampling concluded on the June 24, 2020. The underground channel, or chip samples, in conjunction with diamond drilling described in Section 11, substantiated the well-documented mineralization of the historic mine.

12.1.1 SAMPLING TEAMS

Initially, two samplers began sampling using methods described below. Within three weeks, the sampling crew grew from two samplers to a team comprising a sample crew chief and six samplers. As the number of samplers increased, a geologist began to accompany samplers underground daily to perform sample layout, assist with the organized collection of samples and review the work performed.

12.1.2 METHODOLOGY

Collection of samples underground involved a multi-step process beginning with the identification of possible sample locations using historic maps. Targeted stopes fell within the boundaries of the UTZ, Newgard and Quill deposits. Scanned mylar maps provided excellent information about underground sample areas. Occasionally, the sample crew discovered an unmapped drift or finger. However, the maps proved to be roughly 95% accurate.

Upon arrival at a sampling location, the geologist began the orientation process by labeling mined out areas and designating each drift, finger, or pillar with a number using spray paint on the ribs. All such labeling was carefully recorded on field maps created from the mylar scans. In several sampling locations, room and pillar methods of mining left pillars that proved both useful in navigating large pillared “rooms” and simultaneously provided opportune sample locations. Once comfortably oriented, the geologist identified specific sampling locations on ribs (and where appropriate, on the back), where samples could be collected perpendicular to the bedding planes of the rock to accurately define the width of a mineralized interval. Inspection of the orientation of the bedding took place at every interval sampled.

While the geologist identified sampling locations within the designated area, samplers barred down loose rock and mitigated for a variety of potential safety hazards. Occasionally, historic mining clutter (pipes, old equipment, timber, etc.) blocked potential sample sites, necessitating its removal prior to sampling.

Sample layout commenced with the geologist and a sampler using a measuring tape reel and spray paint to indicate 5 ft. sample intervals. Vertical lines were painted 5’ apart on the ribs, and a single horizontal line connected the two, to indicate to the samplers where to perform the chip sampling (see Figure 12-1 below). Samples were laid out perpendicular to bedding in 5’ sections for as long as there was rock to sample. Prior to painting the ribs, the geologist assessed the stability/safety of each interval. Occasionally, poor ground conditions required skipping an interval where the possibility of rockfall existed. The sampling crew assessed the potentiality for back samples where gaps between the ribs existed. All sample intervals and footages were carefully recorded on field maps.

Initially, samplers approached the sample location with a tarp, a hand sledge and chisel, sample bag, aluminum sample ID tags and a sample tag book. Prior to sampling, the sampler recorded information regarding the sample location including the date, sampler, level and stope, finger/rib/pillar as designated by the geologist, sample interval footage, and rock/mineral description. The sampler wrote the sample ID number on the bag and inserted the paper tag from the sample tag book with the same sample ID into the bag.

Samplers carefully laid the tarp on the sill (floor) beneath the interval to be sampled. Chiseled rock chips removed from the rib or back would fall onto the tarp. Once a sampler removed the appropriate amount of material (between 1 and 10 lbs.) from the sample interval, the chips were collected from off the tarp and placed in the sample bag. The sampler placed the filled sample bag below the sample interval to be photographed and nailed an aluminum tag with the appropriate sample ID number on the right-hand side of the sample interval. Finally, the tarp was removed and cleaned to not cross-contaminate samples, and then moved on to the next sampling interval.

The sampling team quickly realized, however, that the hardness of the host rock (quartzite) significantly hindered the pace of sample collection. The team acquired two battery-operated, hand-held rock saws and, after the geologist performed sample layout, a sampler with the saw made two, 1-inch-deep cuts in the rock roughly an inch apart, providing samplers a consistent edge to chisel easily along the entire sample interval. The rock saw significantly improved the rate of sample collection. And as the number of samplers and rate of sample collection increased, the crew chief, with assistance of the geologist, became responsible for preparing sample bags, recording the sample information, and photographing each interval to streamline the process.

Figure 12-1 Rib sample collected from the 082-25-80 sublevel

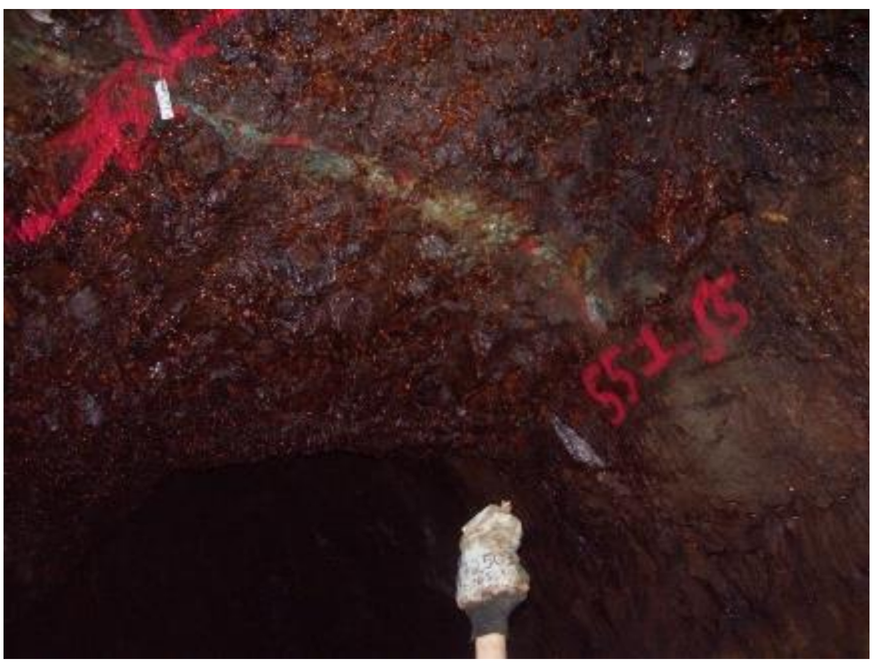


Figure 12-2 Back Sample collected from the 082-25-80 sublevel

At the end of a day of sampling, the sampling crew removed channel samples from the mine and transferred them to the core shed. As soon as the sampling crew accounted for each sample collected, standards and blanks were prepared and inserted in with the channel samples at a 1:20 interval for both standards and blanks.

After the samples were secured, the sample crew chief and geologist entered the data about each sample taken during the day's sampling into an excel spreadsheet. Furthermore, they documented the precise location of each sample using georeferenced AutoCAD DWG files (see Figures 12-3 below) to generate a sample's X, Y, and Z coordinates. Merging the sample's physical location with the assay data proved useful in following mineralization trends and comparing current data to the historic results.

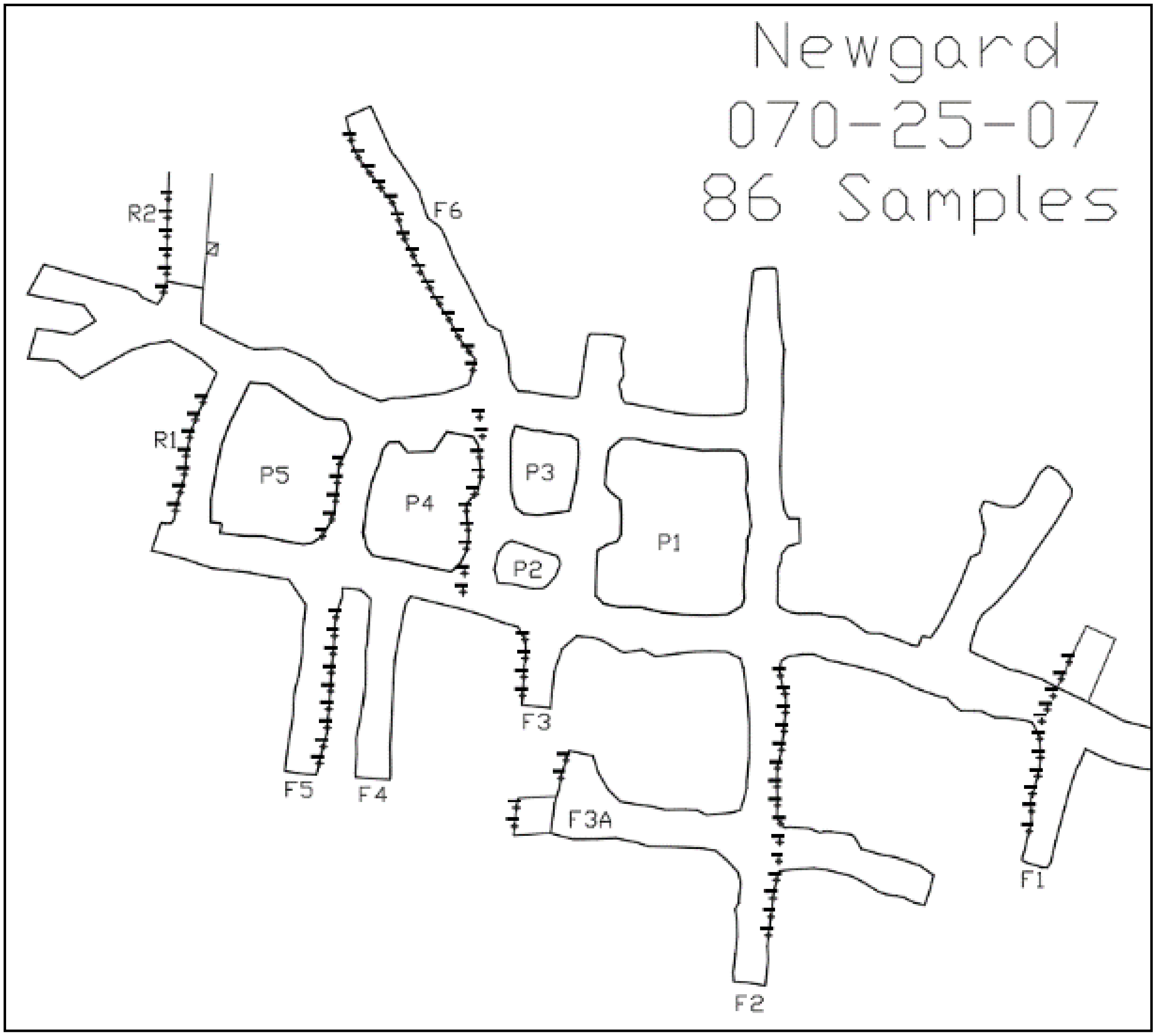


Figure 12-3 Sample locations on the 070-25-07 sublevel using geo-referenced AutoCAD files

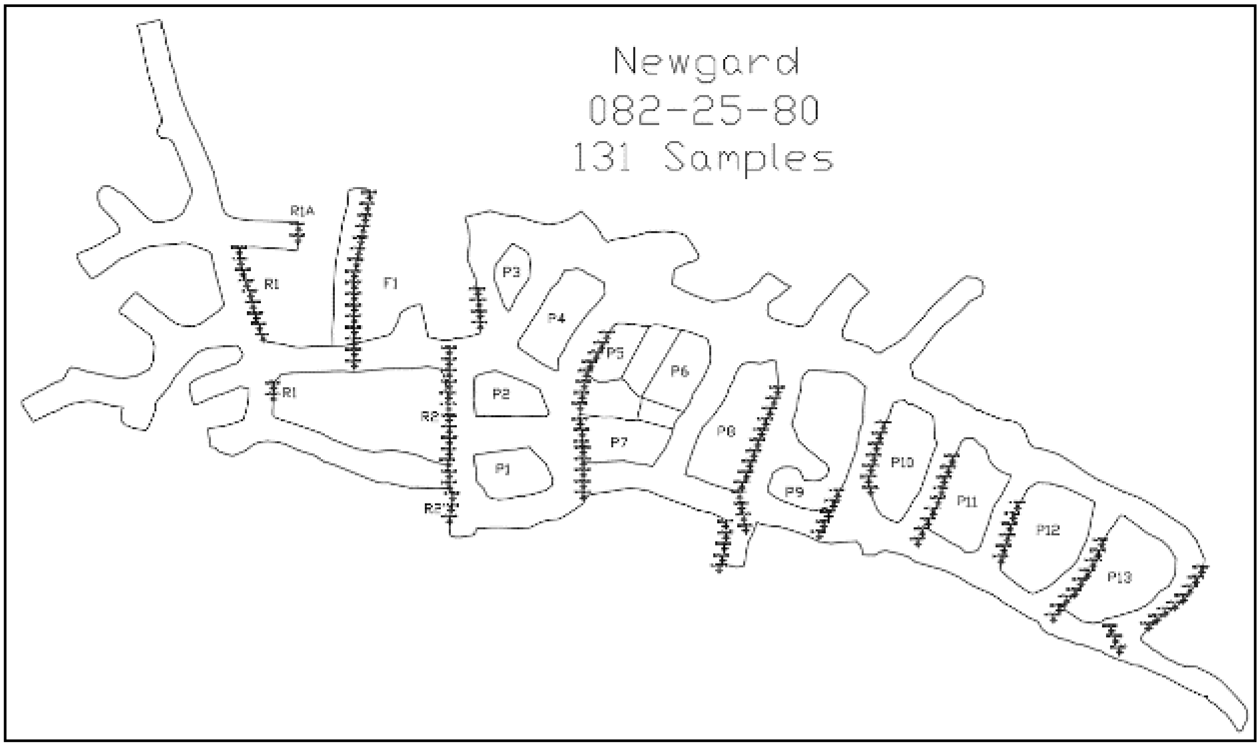


Figure 12-4 Sample locations on the 082-25-80 sublevel using geo-referenced AutoCAD files

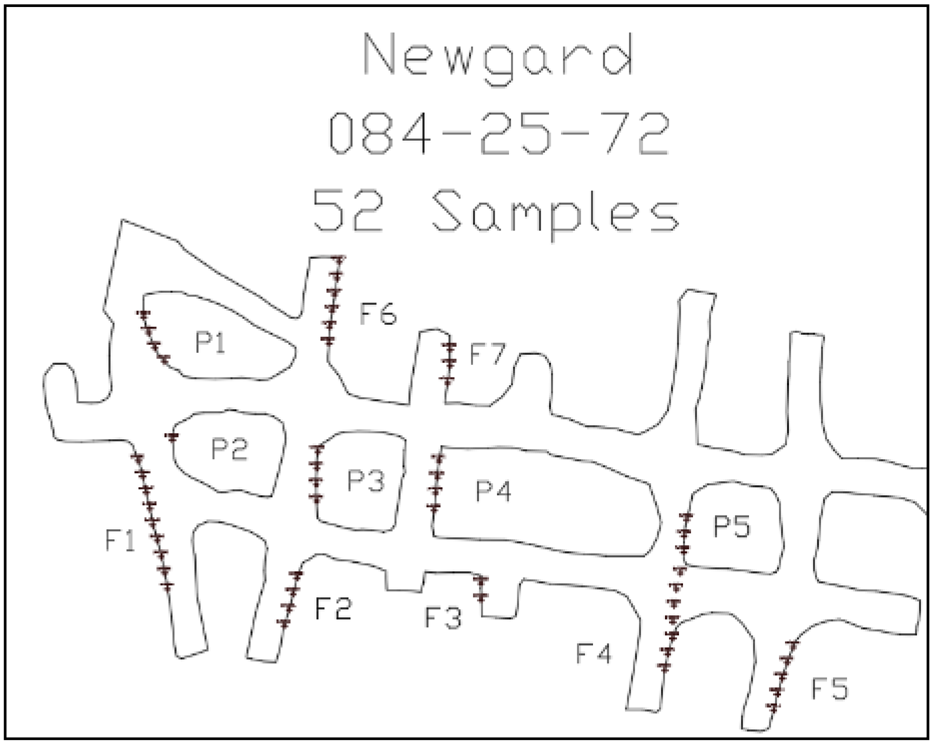


Figure 12-5 Sample locations on the 084-25-72 sublevel using geo-referenced AutoCAD files

A breakdown of sampled areas and the number of samples collected is shown in Table 12-1.

Table 12-1 Channel Sample Breakdown

Stopes Samples	Number of Samples
UTZ	111
071-25-05	30
070-25-07	86
071-25-07	52
082-25-80	131
080-25-25	62
080-25-23	101
9 Level I-drift	68
10 Level	70
11 Level	42

Throughout the underground sampling program, a number of safety and logistical constraints dictated sampling locations. The sampling crew navigated issues such as high backs, unstable or faulted ribs and pillars, poor air quality and gases, ground support, standing bodies of water, areas filled with waste rock, poor ground conditions, undetonated historic explosives, and gaping holes in the back or sill. Samplers frequently consulted with the mine safety manager and, where possible, found a way to safely collect samples. Occasionally, no viable solution to remedy safety issues required samplers to forego sampling in a desired location. Despite the obstacles, no safety incidents occurred during the 3 months of underground sampling.

12.2 RESULTS OF STOPE VERIFICATION SAMPLES

Of the 753 channel samples collected, 749 samples contained measurable amount of mineralization. The grades of Ag, Zn and Pb very closely matched the historic production car sample grades. Table 12-2 summarizes the results of the channel data verification program. Of note the coefficients of variance are low which gives the author confidence that the data may be used of mineral resource estimation.

Variable	Sample Count	Minimum Grade	Maximum Grade	Average Grade	Standard. Deviation	Coefficient of Variance
Zn	749	0.001%	36.9%	3.92%	4.98	1.27
Ag	749	0.015(opt)	9.99(opt)	0.66(opt)	1.00	1.50
Pb	749	0.001%	19.00%	1.68%	2.35	1.39

12.3 HISTORIC DRILLING PULP RE-ASSAYS

During a cleanup of a storage warehouse, 758 unoxidized, well-kept pulp envelopes were discovered. The pulps were labeled and associated with the final drilling programs at Bunker prior to closure. The pulps are associated with the Quill and Newgard deposits which are the subject of this report. The pulps were submitted for assaying along with standards and duplicates to ensure proper QAQC protocols were followed. As an example, results Figure 12-6 of the analysis for Zn, shows a one-to-one correlation which gives comfort that the historic drilling assays can be used for mineral estimation purposes at Bunker Hill.

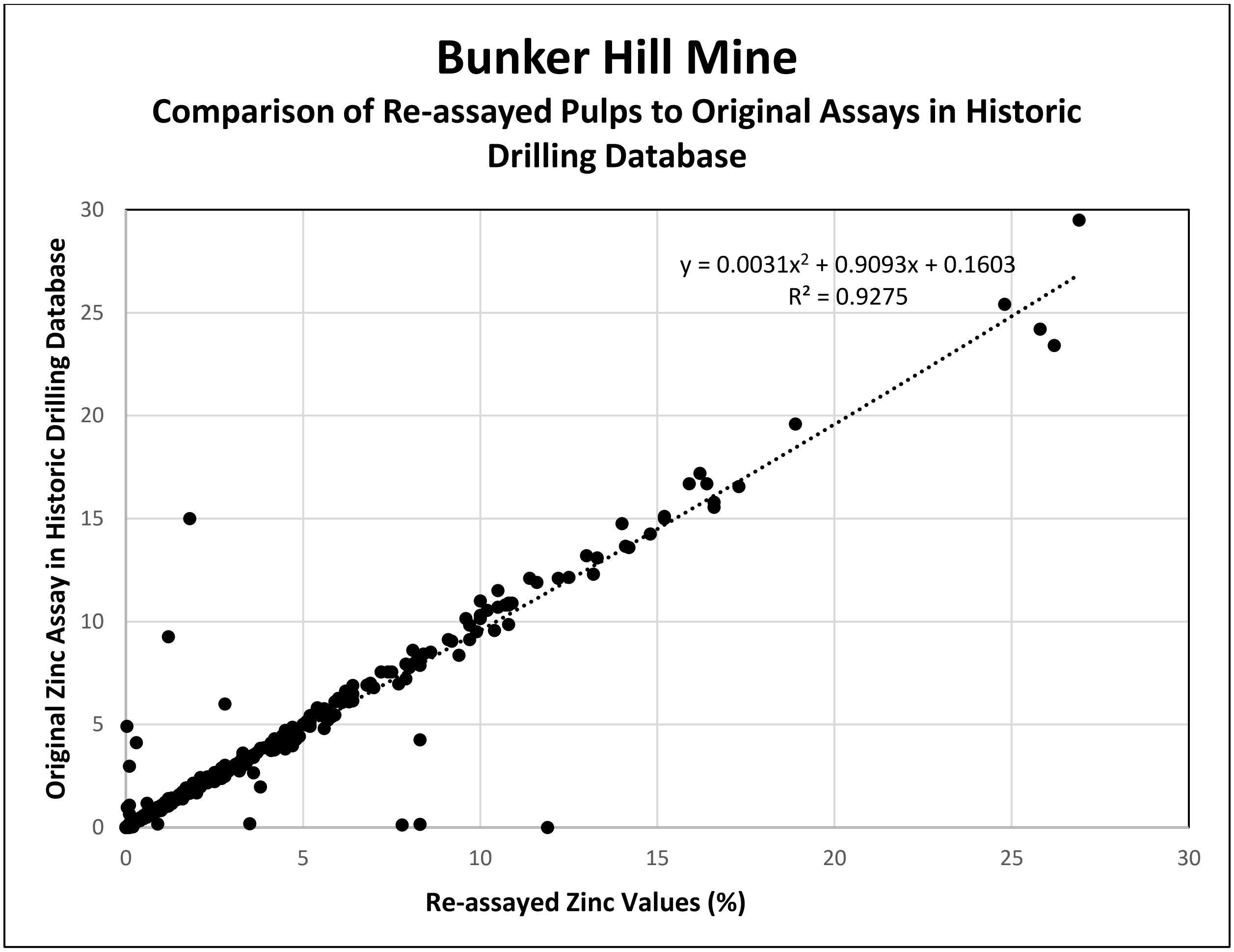


Figure 12-6 Original Assays Compared to Re-assaying of Pulps.

13 MINERAL PROCESSING AND METALLURGICAL TESTING

This chapter summarizes and provides documentation for the metallurgical and process design work that has been performed on the Bunker Hill Project through to May 2022. This includes a review of the operating history, a review of historical metallurgical test work used to support various studies, an analysis of the current test work program results as well as recommendations for future testing.

13.1 GEOLOGY

The Bunker Hill Property is located in the Coeur d'Alene mining district of northern Idaho. The mineralization of the Coeur d'Alene district consists of veins with variable proportions of sphalerite, galena, argentiferous tetrahedrite in either a quartz or siderite gangue. The past producing Bunker Hill Mine is part of the Galena-Page mineral belt and marks the transition from silver-copper mineralization to lead-zinc-silver mineralization. The individual deposits that form the Bunker Hill Mine are numerous and relatively large with strike lengths up to 900 ft (274 m) with plunge lengths up to 3,000 ft (914 m).

Models for the origin of the Coeur d'Alene mineralization range from magmatic hydrothermal to mobilization of sediment-hosted stratiform or strata-bound mineralization. Most recently, genetic models have focused on the mineralization being hosted by mesothermal veins related to metamorphic/hydrothermal events that sourced metals from the Belt sediments.

13.2 HISTORICAL OPERATIONS

Production at the lead, silver, and zinc Bunker Hill Mine began in 1887, lasted 95 years, and included a zinc refinery beginning in 1927. The mine was the largest producer in the Coeur d'Alene Mining District, with a total historical production of 35 M tons (31.75 M tonnes) of mineralization grading 8.76% lead, 3.67% zinc, and 5.49 oz/ton (188.2 g/t) silver.

The Bunker Hill Concentrator, which processed 2,400 tpd, consisted of two-stage crushing circuit to produce feed for the ball mills. The ground product was sequentially floated, namely lead first followed by zinc minerals. Both lead and zinc rougher concentrates were cleaned twice to produce marketable-grade products. Figure 13-1 provides a high-level description of a process flow diagram of the historical Bunker Hill Mining concentrator.

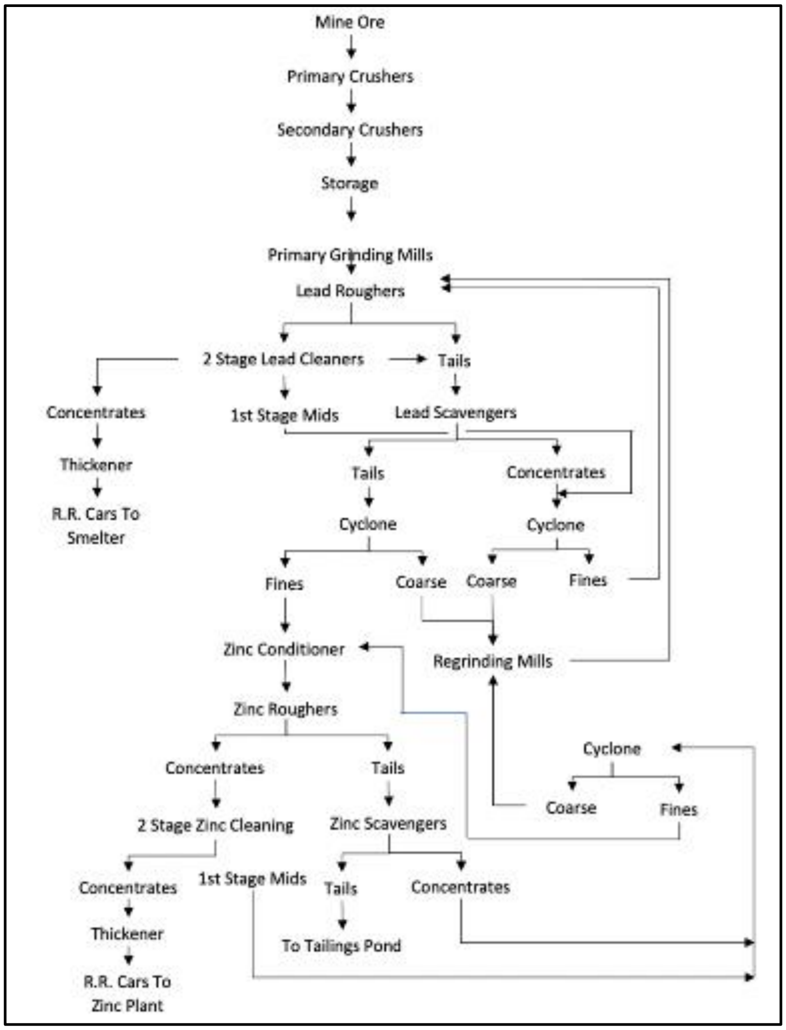


Figure 13-1 Historical Process Plant Block Diagram of the Bunker Hill Mining Concentrator

The plant description indicated the flotation reagents employed were sodium cyanide, zinc sulfate, lime, copper sulfate, xanthate and methyl isobutyl carbonyl. The same reagents are commonly used today for processing of polymetallic mineralization.

The production data are summarized in Table 13-1. The lead concentrate assayed ±64% Pb, 40 opt Ag and 5% Zn. The zinc concentrates assayed ±55% Zn, 3 opt Ag and 1% Pb. The feed grades were not reported.

Table 13-1 Historical Production Data for Bunker Hill Mining Concentrator

Process Parameter	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981
Tons Milled, 000	535	601	745	797	819	456	571	583	592	642
Recoveries, %										
Lead	94.8	94.1	92.4	91.3	90.8	90.3	90.7	90.1	89.4	90.1
Silver	94.7	94.7	92.7	90.9	89.8	90.1	90.3	88.1	87.2	88.7
Zinc	93.8	94.1	91.1	90.3	91.4	90.1	92.2	89.6	91.3	92.9

13.3 METALLURGICAL TEST WORK – (RDI – 2021)

Bunker Hill Mining Corporation contracted Resource Development Inc. (RDi) to conduct a scoping level metallurgical study to evaluate metal recovery for the Bunker Hill Project. The primary objective of the test program was to complete metallurgical test work to be included in the Pre-feasibility Study (PFS) for the Bunker Hill Project. The test program built upon knowledge gained during initial scoping level testing and historical production data.

The main objectives of the test work included the following:

1. Establish a process flowsheet for lead and zinc recovery that maximizes recovery while maintaining high concentrate grades

2. Simulate plant operations with locked cycle flotation testing and characterize final concentrates for marketing purposes.

13.3.1 SAMPLE SOURCE

RDi received approximately 500 kilograms of sample for metallurgical testing from the UTZ portion of the mine, collected by hand from 2x 4' deep, 12' wide panel shots off the rib. The UTZ sample location represents the standard style of mineralization to be expected throughout the remainder of the UTZ, Newgard and Quill mineralized zones. Spatial variation, both along strike and down plunge, of the mineralized zones show little to no variation in relative abundance of certain metal-bearing minerals versus other locations outside of the inherent grade variabilities further discussed in section 14 of this Technical Report. Host rock and structural features in the UTZ are also representative of the mineral deposit as a whole. 10x 5-gallon buckets of sample were collected from each panel, which were subsequently split in half to produce a master composite for testing. The other half of each bucket was retained for variability testing. Representative pieces of rock were selected from each bucket for in-place bulk density testing. The master composite sample was crushed to nominal 1 inch and a representative split was taken for abrasion testing. The remaining sample was crushed to P_{100} passing 6 mesh, blended, and split into charges for testing. A representative sample of the master composite was pulverized and submitted for head analysis. A summary of the assay results is given in Table 13.2.

The head assay results indicate the following:

The master composite sample contained 4.1% lead and 6.4% zinc. Precious metals are present with approximately 0.45 g/mt Au and 49.7 g/mt Ag. The sample is high in sulfur with most of the sulfur present as sulfide sulfur. Arsenic content was significantly higher than previously tested samples at 0.86% As.

13.3.2 COMPOSITE MINERALOGY

The master composite sample was submitted for mineralogical analysis. The sample consists of mostly sericitic quartzite, but nearly half of the sample is made up of sulfides. Sphalerite is the dominant sulfide and occurs in liberated grains at several millimeters in size and as inclusions in quartz, pyrite, and galena at 1 to 50 microns.

Galena and pyrite are found in similar quantities. Large galena grains exhibit inclusions of pyrite, chalcopyrite, and tetrahedrite up to 50 microns in size. Galena is also found as inclusions in quartz, pyrite, and sphalerite of up to 75 microns. Arsenopyrite occurs in quartz, pyrite, sphalerite, and galena, with grain sizes ranging from 1 to 100 microns. Few large aggregates of arsenopyrite are present.

The in-place bulk density was determined for each received bucket by weighing each sample after drying and then weighing the sample while it was submerged under water to determine the volume of water displaced. The samples were coated in wax to ensure water did not penetrate the samples. The bulk density (SG) averaged 2.79 for the NE samples, and 2.77 for the SW samples.

Table 13-2 Head Analysis of the Master Composite Sample (Including ICP)

Au, g/mt	0.449
Ag, g/mt	49.7
Sulfide S %	6.78
Sulfate S %	0.80
Total S %	7.58
%	
Al	1.04
Ca	0.08
Fe	5.76
K	0.43
Mg	0.06
Na	0.16
P	0.17
Pb	4.10
Ti	0.02
Zn	6.42
ppm	
As	8590
Ba	25
Be	<2
Bi	10
Cd	216
Co	56
Cr	344
Cu	353
Hg	8.96
La	14
Li	<2
Mn	487
Mo	3
Ni	31
Sb	330
Sc	<5
Se	<5
Sn	<10
Sr	<5
Ta	<10
Te	24
Tl	<10
U	<10
V	11
W	278

13.3.3 BOND’S BALL MILL WORK INDEX / ABRASION INDEX

A Bond's Ball Mill Work Index (BWi) was determined for the master composite sample at a closed size of 100 mesh (150 microns). In addition, a sample was submitted for Bond Abrasion Index testing at Hazen Research Inc. The BWi result was 13.47 kWh/st, while the Ai was determined to be 0.6137. The results indicate that the sample would be considered medium hardness and very abrasive. Subsequent BWi tests conducted by SGS Canada Inc at Lakefield (SGS) resulted in similar results.

Table 13-3 Bond Work Index (BWi) Analyses of the Master Composite Sample

Test Source	Bond Work Index (BWi), kWhr/ton
RDi, composite sample as received	13.47
SGS, BH - MC	12.6
SGS, BH – L9	11.9
SGS, BH - UTZ	13.4

13.3.4 FLOTATION TESTS

13.3.4.1 ROUGHER FLOTATION TESTS

Initial rougher flotation tests were completed with 1-kilogram charges of the master composite sample. Testing utilized a differential flotation approach to produce separate lead and zinc concentrates. The zinc was depressed with a variety of reagents while the lead was floated. After the lead flotation, zinc was activated with copper sulfate and then collected with SIPX. The primary grind was varied from P_{80} 100 mesh to P_{80} 200 mesh to determine liberation characteristics. Additional rougher flotation tests were conducted without sodium cyanide and with the use of premade zinc cyanide instead of the standard separate additions of sodium cyanide and zinc sulfate. All test products were submitted for assay of gold, silver, lead, and zinc.

The scoping level rougher flotation test results indicate the following:

- The differential flotation approach was successful at producing separate lead and zinc concentrates. Finer grinding produced slight improvements in lead, silver, and gold recovery in the lead rougher concentrate. The amount of zinc reporting to the lead rougher concentrate also slightly increased, while the grade of the zinc in the zinc concentrate also increased. Rougher concentrate lead grades in the lead concentrate ranged from 13.8% Pb to 17.6% Pb, while the zinc grades in the rougher zinc concentrate ranged from 29.0% Zn to 34.6% Zn.
- All tests exhibited similar overall zinc recovery of >98%. Zinc reporting to the zinc concentrate ranged from 71.2% to 80.3%, with the highest values at the finer particle sizes and without the addition of Aero 3418A to the lead circuit.
- All tests exhibited similar total lead recovery of >92%. Lead reporting to the lead concentrate ranged from 84.1% to 92.8%, the highest values at the finer particle sizes and with the addition of AP242 to the lead circuit.
- The majority of precious metals reported to the lead concentrate. Total recovery of silver was >97% with approximately 87% reporting to the lead concentrate. Total gold ranged from 85.8% to 94.4%, with as much as 78% reporting to the lead concentrate. Caution should be raised that this gold could routinely be associated with the entrained arsenic, as arsenopyrite. The high arsenic content in the lead concentrate creates placement challenges and penalties. Ongoing test work will focus on arsenic depression and further characterize gold deportment.
- The addition of more zinc depressants did not significantly affect the overall flotation results but did slow the kinetics in the lead circuit (FT5). The substitution of AP242 in place of Aero 3418A increased the mass pull and recovery of all metals into the lead concentrate, including zinc (FT4). The exclusion of Aero 3481A provided a slight decrease in the amount of zinc reporting to the lead concentrate and slowed the kinetics in the lead circuit (FT6).
- Kinetic samples indicate the majority of lead is floated in the first minute of flotation time and approximately 89% of the lead can be floated in three minutes of flotation time with a grade of 20.3% Pb at a particle size of P_{80} 150 mesh. The zinc grade continues to increase as the lead flotation continues. It would be best to limit the rougher lead flotation to three minutes and additional flotation residence time would be considered the rougher scavenger that is sent to the regrind circuit.

- Zinc cyanide was as effective at depressing zinc in the lead circuit as the combination of sodium cyanide and zinc sulfate utilized in previous tests. Overall metal recoveries and the amount of lead and zinc reporting to the zinc circuit were also similar. The removal of cyanide resulted in approximately 7% additional zinc reporting to the lead concentrate.

Additional rougher flotation tests were completed with 1-kilogram charges of the master composite sample to investigate the addition of all depressants directly to the grinding mill instead staged addition to the mill and rougher flotation stages. Testing utilized the standard differential flotation approach to produce separate lead and zinc concentrates at a primary grind to P_{80} 200 mesh. The zinc was depressed with the standard dosage of depressants (FT22), and 1.5X depressants (FT23). All flotation products were submitted for assay of gold, silver, lead, zinc, arsenic, iron, and sulfide sulfur.

The results from additional rougher tests were similar to previous tests with slightly higher lead grade and lower zinc grade in the lead rougher concentrate. Additional depressants made another slight improvement to concentrate grades. Metal recoveries were similar to previous rougher flotation tests.

13.3.4.2 CLEANER FLOTATION TESTS

Cleaner flotation tests were completed to evaluate various primary grinds, reagents, regrinds, and splitting of the rougher and scavenger concentrates. Initial cleaner tests were completed with individual lead and zinc rougher concentrates to simulate the historic operation flotation process. Rougher concentrate was produced from 2-kilogram charges at grinds of both P_{80} 150 mesh and P80 200 mesh. Lead promoters 3418A and AP242 were also evaluated. The rougher concentrates for both lead and zinc were collected for 2 minutes of flotation time, while the rougher scavenger concentrates were collected for an additional 3 minutes of flotation time. The lead and zinc rougher concentrates were then individually cleaned with two stages of cleaners without regrind. The lead and zinc rougher scavenger concentrates were combined and reground to P80 325 mesh. The reground, combined scavenger concentrate was then refloated utilizing rougher flotation conditions to simulate recirculation back to the rougher cells. The process flow diagram utilized for the first set of cleaner testing is given in Figure 13.2.

A second set of cleaner tests were completed that combined the rougher and scavenger concentrates for both lead and zinc. Concentrate was produced with 2-kilogram charges at primary grinds of P80 200 mesh and P80 270 mesh and lead promoter AP242. The combined rougher scavenger concentrates were then cleaned with three stages of cleaners, with and without regrind to P_{80} 325 mesh. The process flow diagram utilized for the second set of cleaner testing is given in Figure 13.3. All test products were submitted for assay of gold, silver, lead, and zinc.

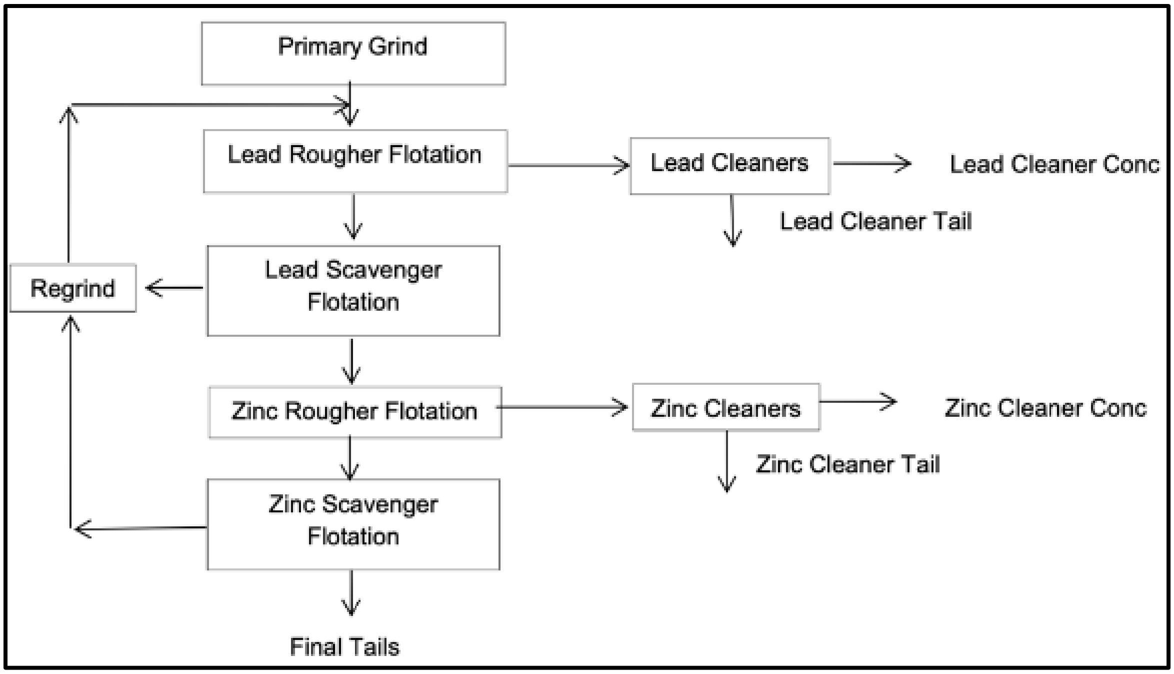


Figure 13-2 Cleaner Flotation Process Flowsheet (Tests 7-9)

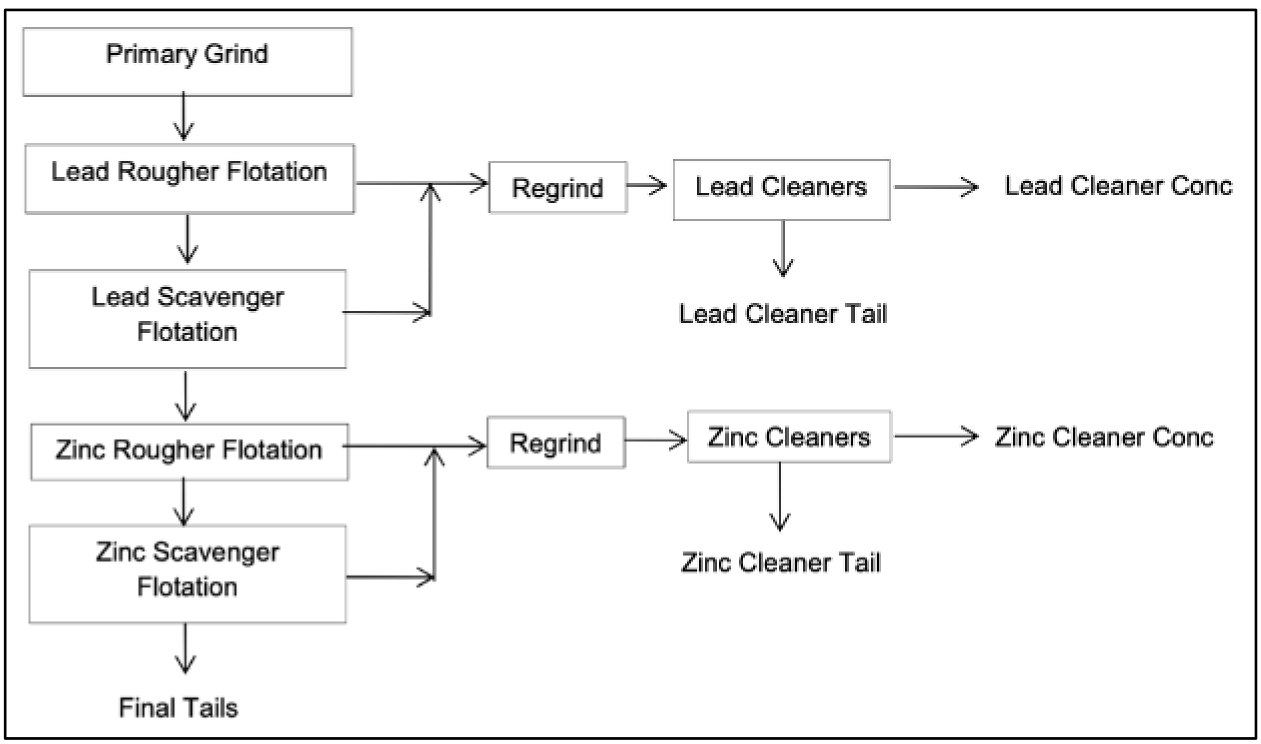


Figure 13-3 Cleaner Flotation Process Flowsheet (Tests 12-13)

A third set of flotation tests were completed to investigate increased depression of arsenic and other gauge minerals during the rougher and cleaning stages. Combined rougher/scavenger concentrate was produced during bulk flotation testing utilizing the standard flotation conditions (primary grinds of P_{80} 270 mesh SIPX, AP242, $CuSO_4$) for tests FT15-FT17. The lead and zinc concentrates were cleaned with three stages of cleaners, with a lead circuit regrind to approximately P_{80} 400 mesh. Depressants in the lead regrind/1st cleaner were added at the standard amount for the first test (FT15), 1.5 times the standard amount for the second test (FT16), and 2 times the standard amount for the third test (FT17). Depressant additions were doubled in the 2nd stage of lead cleaners for all tests. The pH was adjusted to 12 with hydrated lime during all zinc cleaner stages for all tests in this series to depress arsenopyrite and pyrite. Lead rougher and cleaner tests were completed utilizing the standard conditions to evaluate soda ash as a pH modifier and to develop baseline arsenic grades for additional composites with various arsenic head grades (FT18-21). All of these test products were submitted for assay of gold, silver, lead, zinc, and arsenic. Full ICP metals and XRF analysis were completed on the final lead and zinc concentrates.

The cleaner flotation test results indicate the following:

- Cleaner flotation tests with non-reground rougher concentrates indicate higher metal recovery and higher concentrate grades were produced at a primary grind of P_{80} 200 mesh. Two stages of cleaners at the finer grind produced overall lead recovery in the second lead cleaner concentrate of 78.7% at a grade of 43.6% Pb and zinc recovery in the second zinc cleaner concentrate of 66.7% at a grade of 51.0% Zn.
- Cleaner flotation tests with combined rougher/scavenger concentrates indicate slightly higher metal recovery and higher concentrate grades with reground concentrates as compared to finer primary grind and no regrind. A primary grind of P_{80} 200 mesh and regrind to P_{80} 325 with three stages of cleaners produced lead concentrate of 48.5% Pb and zinc concentrate of 58.1% Zn as compared to 44.3% Pb and 52.8% Zn with a primary grind of P_{80} 270 mesh and no regrind. Less zinc reported to the lead concentrate with the primary grind at P_{80} 270 mesh. Primary grind of P_{80} 270 mesh and regrind to P_{80} 325 mesh produced a lead grade of nearly 60% Pb with three stages of cleaners, but only 40% of the lead reported to the cleaned concentrate.
- Rougher flotation results for the cleaner tests produced similar overall recoveries to the initial rougher flotation series, with approximately 95% lead and 98% of the zinc recovered into concentrates. Finer primary grinds collected more lead and less zinc into the lead rougher concentrate and more zinc into the zinc rougher concentrate. The use of AP242 increased the recovery of lead and zinc into the lead concentrate and decreased the metal grades due to the additional mass. Approximately 95% of the lead and 22% of the zinc were recovered into the lead rougher concentrate and 75% of the zinc into the zinc rougher concentrate at a primary grind of P_{80} 200 mesh and the use of AP242.
- Regrinding the combined lead and zinc rougher scavenger concentrates and re- floating to simulate recycle to the rougher flotation did not significantly improve the concentrate grade. The majority of the lead and zinc reported to the lead concentrate since the activated zinc could not be depressed to the zinc concentrate with high dosages of reagents. Approximately a third of the rougher scavenger mass was rejected to the rougher tail which accounts for approximately 0.5% of the overall metal recovery.
- Arsenic test work indicates that arsenic grade in the final lead concentrate is similar to the grade observed in the lead rougher concentrate for the current master composite as well as the Quill and UTZ composites from the previous test program. Approximately 50%-60% of the arsenic is recovered into the lead rougher concentrate even with additional depressants in the rougher circuit.
- Higher depressant additions in the lead cleaner circuit of the master composite increased the lead grade in the 3rd Pb cleaner concentrate from a baseline grade of 43.3% Pb to 50.8% Pb. Arsenic grade in the cleaned lead concentrates was not significantly changed with additional depressants in the lead rougher or cleaner circuits, or with the use of soda ash for pH control. Slight improvements in lead and zinc recovery were observed with higher depressants.

13.3.4.3 LOCKED CYCLE FLOTATION TESTS

A locked-cycle flotation test was completed with the optimum cleaner flotation flow sheet to forecast concentrate grade and precious metal recovery expected during plant operation. The locked-cycle test consists of running multiple flotation tests and recycling each cleaner tail into the previous flotation stage during the next flotation test/cycle. A total of six cycles were completed to ensure that the process was at steady state. In addition to the locked-cycle test, a one cycle open-cycle test (FT14) was completed to correlate open-cycle results to locked-cycle results. The same conditions were utilized for both open-cycle and locked-cycle tests.

The open-cycle and locked-cycle tests were completed at a primary grind of P_{80} 270 mesh for rougher flotation. Rougher scavenger flotation was included in both the lead and zinc circuits to increase the amount of value sent to the cleaner stages. Regrind of the lead rougher concentrate with a pebble mill was completed to a particle size of approximately P_{80} 400 mesh for cleaner flotation. No regrind was completed with the zinc rougher concentrate.

The lead and zinc circuits were separated during the locked-cycle testing with the exception of the lead cleaner 1 tails recycled to the zinc rougher flotation to increase the zinc recovery. The rougher concentrate was then fed to the 1st cleaner flotation. The 1st cleaner flotation included a scavenger flotation stage in which the concentrate would be recycled back to the 1st cleaner flotation for the next cycle. The concentrate from the 1st cleaner was then cleaned during the 2nd cleaner flotation. The 2nd cleaner tails were recycled back to the 1st cleaner flotation for the next cycle. The concentrate from the 2nd cleaner was then cleaned during the 3rd cleaner flotation. The 3rd cleaner tails were recycled back to the 2nd cleaner flotation for the next cycle.

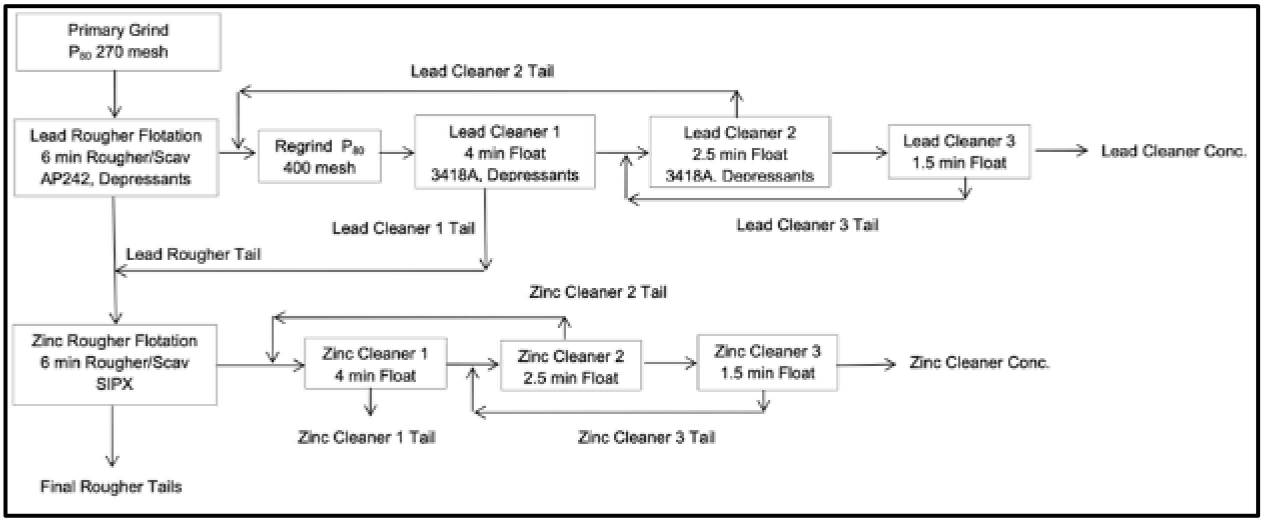


Figure 13-4 Locked-Cycle Test Process Flowsheet

Table 13-4 Open-Cycle Flotation Results (FT14)

Product	Overall Recovery %					Product Grade			
	Wt	Au	Ag	Pb	Zn	Au (g/mt)	Ag (g/mt)	Pb (%)	Zn (%)
Cleaner Test FT-14 (270 mesh, AP242, 325 mesh regrind for Pb Conc.)									
Lead 3rd Cleaner Conc.	4.4	20.3	58.4	65.5	5.2	1.65	482	48.60	5.40
Zinc 3rd Cleaner Conc.	6.6	7.4	5.5	1.3	71.8	0.40	30.0	0.66	49.44
Rougher Tail	78.3	16.5	6.1	4.6	2.7	0.08	2.8	0.19	0.16
Zinc 1st Cleaner Tail	1.3	1.4	0.8	0.4	0.9	0.40	22.8	0.91	3.14
Combined Tails	79.6	17.9	6.8	4.9	3.6	0.08	3.1	0.20	0.21
Calculated Head	100	100	100	100	100	0.36	36.2	3.26	4.57

Table 13-5 Summary of Locked-Cycle Flotation Test Results (Average of Last 3 Cycles)

Product	Overall Weight %	Overall Pb Recovery %	Overall Zn Recovery %	Overall Au Recovery %	Overall Ag Recovery %	Conc. Grade Pb (%)	Conc. Grade Zn (%)	Conc. Grade Au (g/mt	Conc. Grade Ag (g/mt)
Lead 3rd Cleaner Conc.	7.1	88.2	9.2	47.8	84.2	47.6	6.91	2.16	410
Zinc 3rd Cleaner Conc.	8.7	3.5	85.1	16.7	10.9	1.55	52.4	0.62	43.5
Rougher Tail	80.7	5.3	3.2	25.5	0.9	0.25	0.21	0.10	0.40
Zinc 1st Cleaner Tail	3.6	2.9	2.5	9.9	3.9	3.14	3.71	0.89	37.7
Combined Tails	84.2	8.3	5.7	35.5	4.9	0.38	0.36	0.13	1.99
Calculated Head	100.0	100.0	100.0	100.0	100.0	3.78	5.25	0.32	34.0

Table 13-6 Assay Analysis of LCT Final Flotation Concentrate

Element	Pb 3rd Cleaner Conc.	Zn 3rd Cleaner Conc.
Au, g/mt	1.78	0.61
Ag, g/mt	416	32.0
SiO_2, %	3.3	3.5
Total S %	23	33
%		
Al	0.04	0.07
As	3.87	1.35
Ca	0.19	0.26
Fe	14.90	8.34
K	0.12	0.15
Mg	0.07	0.08
Na	0.22	0.23
P	0.07	0.11
Pb	46.25	1.15
Ti	<0.01	0.01
Zn	8.69	57.36
ppm		
Ba	4	1
Be	<2	<2
Bi	<2	<2
Cd	281	2133
Co	249	95
Cr	62	5
Cu	1835	1554
Hg	11.40	81.80
La	3	5
Li	<2	<2
Mn	133	139
Mo	1	<1
Ni	142	42
Sb	1884	433
Sc	11	<5
Se	<5	<5
Sn	594	658
Sr	11	15
Ta	<10	<10
Te	41	44
Tl	<10	<10
U	<10	<10
V	2	<1
W	395	3252

The locked-cycle flotation results indicate the following:

- Locked-cycle testing recovered 88.2% of the lead into the lead cleaner concentrate at a grade of 47.6% Pb, and 85.1% of the zinc into the zinc cleaner concentrate at a grade of 52.4% Zn. Final concentrate analysis shows a zinc concentrate grade of 57.36% Zn and lead concentrate grades of 46.25% Pb and 416 g/mt Ag. The product grades were similar to the open-cycle results, but the locked-cycle recoveries were higher due to the recycling of tails. The highest lead losses were in the final tails (8.3%), while the majority of zinc losses were from zinc left in the lead circuit (9.2%).
- The majority of precious metals were recovered in the lead cleaner concentrate with 47.8% of the gold and 84.2% of the silver reporting at grades of 2.16 g/mt Au and 410 g/mt Ag. The zinc cleaner concentrate contained 16.7% of the gold and 10.9% of the silver.
- Smelter penalty analysis of the sixth cycle cleaned concentrates indicated the arsenic was the highest contaminate at 3.87% As in the lead concentrate and 1.35% As in the zinc concentrate.

13.3.4.4 CONCENTRATE MINERALOGY

Select cleaner flotation concentrates were submitted for mineralogical analysis to determine the content and liberation size of the metals in the concentrates. Lead Cleaner 3 concentrates produced at various grinds were submitted (FT12-primary grind 200 mesh, regrind 325 mesh, FT13-primary 270 mesh/regrind 325 mesh, LCT primary 270 mesh/regrind 400 mesh) as well as the LCT Zinc Cleaner 3 concentrate. The mineralogy results were similar for the three lead concentrates that were analyzed. The main liberated contaminates in the lead concentrates were pyrite and sphalerite. These minerals were also the major contaminates attached to galena. Nearly all of the arsenopyrite was liberated from the galena at a content of approximately 6%. A small amount of quartz was found in the lead concentrate (<5%), while most of the concentrate was made up of sulfides. The contaminates generally decreased with finer grind.

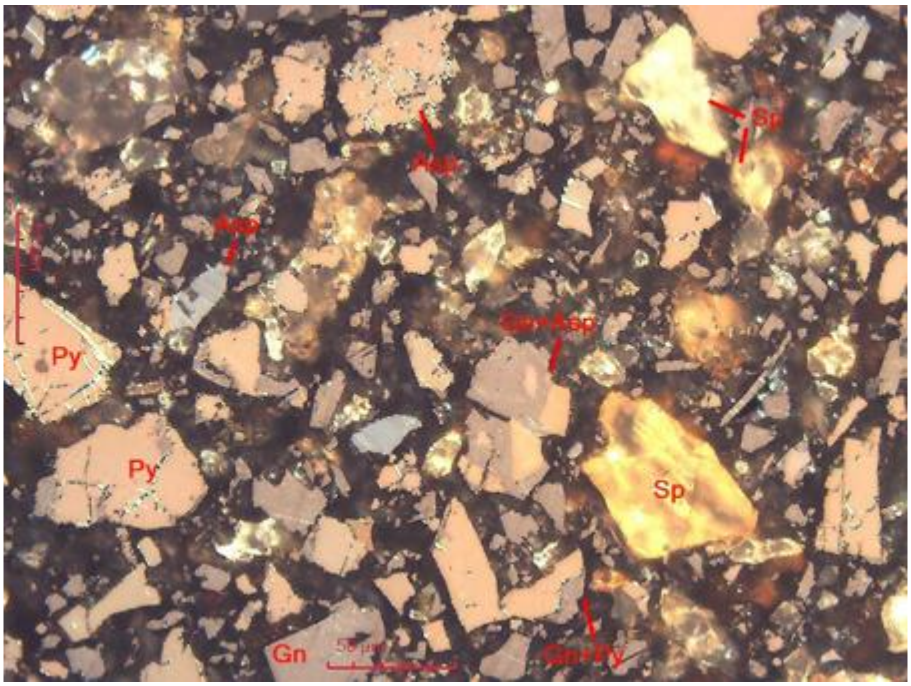


Figure 13-5 BHFT 12 Pb Cleaner 3 Concentrate Area Photo Showing Galena (Gn), Pyrite (Py), Sphalerite (Sp) and arsenopyrite (Asp) - 200X RL

The zinc concentrate contained mostly sphalerite, with small amounts of pyrite, galena, arsenopyrite, and quartz. Petrographic studies in conjunction with XRD indicate the sample contains 1% total galena, however, no liberated galena is identified. Galena occurs as minute inclusions or attachments in pyrite and sphalerite with a grain size that varies from 1µm to 10µm in size.

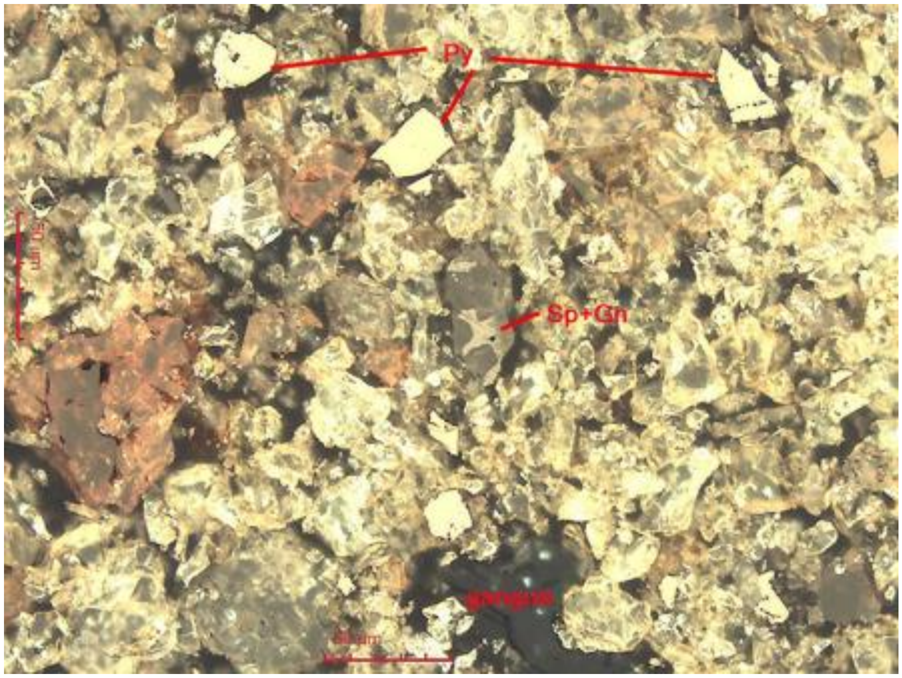


Figure 13-6 BH LCT Zn Cleaner Concentrate Cyc 6 Area Photo Showing Yellow Sphalerite, Galena (Gn), Pyrite (Py) and Quartz Gangue - 200X RL

13.4 METALLURGICAL TEST WORK – (SGS – 2022)

Bunker Hill Mining Corporation has contracted SGS Canada Inc (SGS) to conduct a metallurgical study to further evaluate and optimize metal recovery for the Bunker Hill Project. The primary objective of the test program is to complete metallurgical test work to improve met results over the Pre-feasibility Study (PFS) performed by Resource Development Inc. (RDi) for the Bunker Hill Project.

The main objectives of the test work included the following:

1. Establish a process flowsheet for lead and zinc recovery that maximizes recovery while maintaining high concentrate grades
2. Target significant operating improvements such as rougher flotation at a coarse grind size, minimize entrainment of sphalerite and arsenopyrite in the lead concentrate, and entrainment of galena in the zinc concentrate.

During this test program SGS reviewed the RDi and historical test work and investigated if the current flowsheet is suitable for this deposit outlined in the mine plan. A series of flotation tests was performed to reconfirm historic results and determine if alternative flowsheet conditions can be found resulting in improved metallurgical performance and operational efficiency. Various particle sizing, pH levels, reagent screening, and different flowsheet configurations were explored to evaluate metallurgical performance of the deposit. Mineralogy and grindability test work was also performed to complement flotation test work. Based on the study, the test conditions of the locked cycle test were confirmed, and 6 cycles (A-F) of the tests were performed.

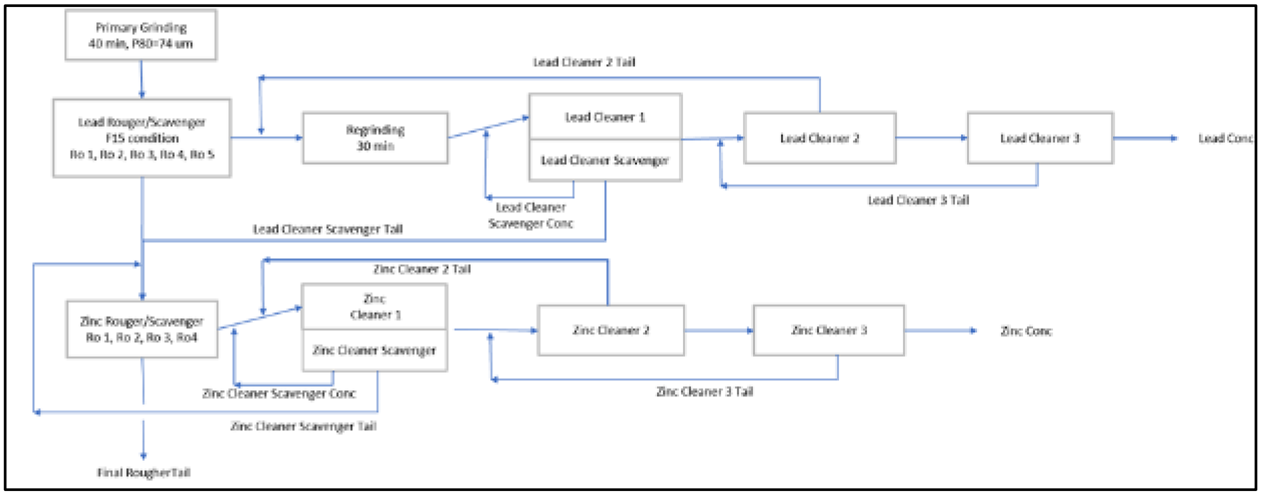


Figure 13-7 Locked-Cycle Test Process Flowsheet (SGS 2022)

The locked cycle testing performed well and produced the high-quality lead and zinc concentrates as shown in the Table 13-7. The grade of lead in the lead concentrate was 59.5% and the zinc in the zinc concentrate was 57.5%. The iron and arsenic in the lead concentrate were very low, they were 7.7% and 0.7%, respectively. The iron and arsenic in the zinc concentrate were also very low, they were 4.19% and 0.2%, respectively.

Table 13-7 Locked-Cycle Flotation Results (SGS 2022)

Metallurgical Projection (Cycles D-F)

Product	Weight		Assays, %, g/t						% Distribution					
	Dry	%	Pb	Zn	Fe	S	As	Ag	Pb	Zn	Fe	S	As	Ag
Pb 3rd Cleaner Concentrate	541.6	4.5	59.5	9.38	7.70	19.4	7173	972	81.7	6.7	6.3	11.2	16.3	77.1
Zn 3rd Cleaner Concentrate	1055.0	8.8	2.61	57.5	4.19	31.4	2118	77.6	7.0	80.5	6.6	35.3	9.4	12.0
Rougher Tail	10432.6	86.7	0.43	0.92	5.57	4.82	1697	7.2	11.3	12.8	87.1	53.6	74.3	10.9
Head (calc.)	12029.2	100.0	3.28	6.27	5.54	7.81	1981	56.8	100.0	100.0	100.0	100.0	100.0	100.0

However, the zinc recovery was lower than expected. One of the reasons was the mass pull. Cycles E and F had very high zinc grade in the final tails and the mass pull was lower (higher mass of the tailings). Therefore, it is suspected that the zinc rougher wasn't run properly during the cycles E and F. Since the locked-cycle test result was averaged from the cycle D, E and F, high zinc in the tails from the cycle E and F really impacted the zinc recovery significantly. It is advisable to conduct another locked cycle flotation test under the same conditions.

Table 13-8 Assay Analysis of LCT Final Flotation Concentrate (Cycle F)

Sample ID	BH-LCT Pb 3rd Cl Conc Cycle F	BH-LCT Zn 3rd Cl Conc Cycle F
Au, g/t	0.89	---
Ag, g/t	803	< 200
SiO2, %	1.81	2.03
Total S %	19.5	31.1
	%	
Al	0.115	0.067
As	0.75	0.18
Ca	0.124	0.2
Fe	7.38	4.09
K	0.132	0.22
Mg	0.012	0.023
Na	---	<0.01
P	---	<0.006
Pb	60.2	2.96
Ti	0.03	0.03
Zn	9.31	59.2
F	< 0.005	< 0.005
	ppm	
Ba	11	< 5
Be	< 3	< 3
Bi	< 400	< 400
Cd	380	2240
Co	< 200	< 200
Cu	3890	1540
Li	< 800	< 800
Mo	< 300	< 300
Ni	< 300	< 300
Sb	< 2000	< 2000
Se	< 2000	< 2000
Sn	< 800	< 800
Sr	< 10	< 10
Tl	< 2000	< 2000
U	< 400	< 400
Y	< 8	< 8
Cl (HNO3 soluble)	< 10	< 10
F, %	< 0.005	< 0.005
Hg		

Table 13-9 Tail Weights - Lead and Zinc Weights in the Locked Cycle Flotation Tails

Products	Weight		Assay	
	Dry, g	%	Pb, %	Zn, %
Py Rougher Tail A	1609	13.35	0.35	0.19
Py Rougher Tail B	1720	14.27	0.43	0.34
Py Rougher Tail C	1717	14.25	0.45	0.72
Py Rougher Tail D	1726	14.32	0.41	0.24
Py Rougher Tail E	1743	14.47	0.44	1.03
Py Rougher Tail F	1747	14.50	0.43	1.49

13.5 CONCLUSIONS

The following conclusions can be drawn based on the test work completed to date:

- The master composite sample contains 4.1% lead and 6.4% zinc. Precious metals are present with approximately 0.45 g/mt Au and 49.7 g/mt Ag. The sample is high in sulfur at 7.58%, with most of the sulfur present as sulfide sulfur. Arsenic content was significantly higher than previously tested samples at 0.86% As.

- Mineralogical analysis of the master composite sample indicated that nearly half of the sample is made up of sulphides. Sphalerite is the dominant sulfide and occurs in liberated grains at several millimeters in size and as inclusions in quartz, pyrite, and galena at 1 to 50 microns. Galena and pyrite are found in similar quantities. Large galena grains exhibit inclusions of pyrite, chalcopyrite, and tetrahedrite up to 50 microns in size. Galena is also found as inclusions in quartz, pyrite, and sphalerite of up to 75 microns. Arsenopyrite occurs in quartz, pyrite, sphalerite, and galena, with grain sizes ranging from 1 to 100 microns.
- In-place bulk density (SG) testing of coarse ore samples ranged from 2.61 to 3.08 with an average of 2.78.
- Bond Ball Mill Work Index and Bond Abrasion Index testing of the master composite indicate that the sample would be considered medium hardness and very abrasive. BWi was 13.47 kWh/st at a closed size of 100 mesh (150 microns), while the Ai was 0.6137.
- The differential rougher flotation approach was successful at producing separate rougher lead and zinc concentrates. Initial testing indicated a maximum of 92.8% of the lead with 24.8% of zinc reported to the lead rougher concentrate, while a maximum of 80.3% of the zinc reported to the zinc concentrate. Most precious metals reported to the lead rougher concentrate with approximately 87% of the silver and 75% of the gold.
    - Grind series rougher flotation testing indicated that finer grinding produced slight improvements in lead, silver, and gold recovery in the lead rougher concentrate, while reducing the amount of zinc reporting to the lead rougher concentrate.
    - Evaluation of various zinc depressants and dosages indicate slight differences in concentrate grade and metal recovery. Zinc cyanide was as effective at depressing zinc in the lead circuit as the combination of sodium cyanide and zinc sulfate utilized in initial tests. Increased addition of zinc depressants did not significantly affect the overall flotation results. Adding no cyanide for zinc depression resulted in approximately 7% additional zinc reporting to the lead concentrate. Addition of all depressant dosages to the primary grinding mill did not significantly affect the metal grades and recoveries.
    - Evaluation of various collectors in the lead rougher circuit indicate that the metal and mass recovery increases slightly when going from SIPX, to SIPX/Aero 3418A, and even more with SIPX/AP242. The combination SIPX/AP24 provided the highest lead recovery to the lead rougher concentrate, but also the highest zinc content.
    - Kinetic testing indicated that 3 minutes of laboratory flotation time for the lead rougher recovers approximately 90% of the lead. The zinc grade continues to increase as the lead flotation continues and the flotation time should be limited.
- Cleaner flotation testing indicated multiple cleaner stages and regrind are needed to produce marketable concentrates. Three stages of lead cleaners with regrind produced low grade (<50% Pb) lead concentrate with high zinc content (>5% Zn). Three stages of zinc cleaners without regrind produced reasonable grade (>50% Zn) zinc concentrate. Arsenic is the major contaminant in the cleaned concentrates, with the final SGS concentrate elemental analysis values being used in the economic analysis and deleterious element factors of this Technical Report.
    - Testing of the historic flowsheet (individual cleaner flotation circuits for lead rougher and zinc rougher with combined lead and zinc scavengers to single regrind) returned high levels of zinc back to the lead circuit since the activated zinc could not be depressed to the zinc concentrate with high dosages of reagents. Scavenger concentrates were combined with their respective rougher concentrates for the remainder of testing.
    - Cleaner flotation tests with combined rougher/scavenger concentrates indicated that lead rougher concentrate benefits from regrind to P_{80} 400 mesh, while the zinc rougher concentrate may not need to be reground if the primary grind is P_{80} 200 or finer.
    - Higher depressant additions in the lead cleaner circuit increased the lead grade of the final concentrate. Arsenic grade in the cleaned lead concentrates was not significantly changed with additional

depressants in the lead rougher or cleaner circuits, or with the use of soda ash for pH control. Slight improvements in lead and zinc recovery were observed with higher depressants.

- Locked-cycle testing recovered 88.2% of the lead (94.7% of rougher recovery) into the lead cleaner concentrate at a grade of 47.6% Pb, and 85.1% of the zinc (95.9% of zinc rougher recovery) into the zinc cleaner concentrate at a grade of 52.4% Zn. The highest lead losses were in the final tails (8.3%), while most zinc losses were from zinc left in the lead circuit (9.2%). Some improvements to these results can be obtained in the commercial operation with fresh feed as noted for several polymetallic operations between laboratory and plant results.
- Locked-cycle testing indicated that the open-cycle cleaner tests could reasonably predict metal grades but underestimate the metal recoveries due to recycling of streams during locked-cycle testing. Based on these results, one can predict the results of locked-cycle tests from open-circuit tests.

- Arsenic test work indicated that arsenic grade in the final lead concentrate is like the grade observed in the lead rougher concentrate for the current master composite as well as the Quill and Utz composites from the previous test program. Approximately 50%-60% of the arsenic is recovered into the lead rougher concentrate even with additional depressants.
- Mineralogical analysis of cleaned concentrates indicated that the lead concentrate contained liberated and non-liberated pyrite and sphalerite with small amounts of quartz. Nearly all arsenopyrite was liberated from the galena. The contaminants generally decreased with finer grind. The zinc concentrate contained mostly zinc, with small amounts of pyrite, galena, arsenopyrite, and quartz.

Table 13-10 Expected Net Recoveries and Final Grades in the Flotation Concentrates[1]

	Units	RDi Final Report LCT April 2022	YaKum Confirmed Model May 2022
Concentrate Mass Pull	%	15.8	15.8
Recovery to Zn Con (Zn)	%	85.1	85.1
Recovery to Pb Con (Pb)	%	88.2	88.2
Recovery to Pb Con (Ag)	%	84.2	84.2
Zn Concentrate (Zn)	%	57.36	58
Pb Concentrate (Pb)	%	46.25	67
Pb Concentrate (Ag)	g/mt	416	416

To the extent known, there are no processing factors or deleterious elements that will have a significant effect on the Project economics or salability of concentrate products. YaKum has confirmed that final concentrate grades realized through the RDi lock cycle testing were not representative of those historically seen at the Bunker Hill Mine and Concentrator plant. Through the initial test work at SGS, it is confirmed that the use of historical concentrate metal grades be used for mineral resource and economic analysis in this Report.

13.6 RECOMMENDATIONS

The following recommendations are made based on the previous study work:

- Complete additional rougher flotation tests to further investigate grind size and reagent suites to achieve coarse rougher flotation, improve separation of lead and zinc, as well as rejection of arsenic. Arsenic was not tracked during the initial rougher flotation testing during this program and zinc levels were higher than expected and not fully rejected in the lead cleaner stages.
- Subsequent cleaner flotation tests would need to be completed with new rougher flotation conditions to determine optimized concentrate grades and metal recoveries.

- Complete solids/liquid separation test work with material from finalized flowsheet to evaluate dry stacking of tailings.
- Process variability samples that cover an expanded range of lead, zinc, and arsenic head grades with the finalized flowsheet to determine the range of concentrate grade and recovery expected during first years of production and/or mine plan stages.

14 MINERAL RESOURCE ESTIMATES

14.1 SUMMARY

Mineral Resource Estimates ("MRE") in this report have been determined by using inverse distance weighting techniques for the Quill, Newgard and UTZ mineralization bodies. Mineral assays were derived from the 2020 drilling program, historic drilling, historic production car samples and channel samples gathered during the summer of 2020. Mineral Resource Estimates have been determined according to the CIM Estimation of Mineral Resources and Mineral Reserves Best Practice Guidelines. Mineral Resources have been reported in accordance with the disclosure obligations under NI 43-101.

Table 14-1 summarizes the Bunker Hill Mineral Resource Estimate, inclusive of Mineral Reserves, classified according to CIM definitions for the Project. Reasonable prospects of eventual economic extraction assume underground mining, mill processing and flotation of Pb and Zn concentrates. Mineral resource estimates are reported at an NSR cutoff of $70 per ton. Metallurgical recoveries are described in Section 13 of this report.

Net smelter return (NSR) is defined as the return from sales of concentrates, expressed in US$/t, i.e.: NSR = (Contained metal) * (Metallurgical recoveries) * (Metal Payability %) * (Metal prices) – (Treatment, refining, transport and other selling costs). NSR values are estimated using updated using metallurgical recoveries of 85.1%, 84.2% and 88.2% for Zn, Ag and Pb respectively, and concentrate grades of 58% Zn in zinc concentrate, and 67% Pb and 12.13 oz/ton Ag in lead concentrate.

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 to Mineral Reserves.

Table 14-1 Bunker Hill Mine Mineral Resource Estimate Inclusive of Mineral Reserves– NSR $70/ton cut off – Ag selling price of $20/oz (troy), Lead selling price of $1.00/lb, Zn selling price of $1.20/lb. Effective date of August 29, 2022)

Classification	Ton (x1,000)	NSR ($/Ton)	Ag Oz/Ton	Ag Oz (x1,000)	Pb %	Pb Lbs. (x1,000)	Zn %	Zn Lbs. (x1,000)
Measured (M)	2,374	$ 119.60	1.01	2,404	2.46	116,574	5.37	254,811
Indicated (I)	4,662	$ 119.81	1.00	4,657	2.37	221,295	5.48	510,964
Total M & I	**7,036**	**$ 119.74**	**1.00**	**7,061**	**2.40**	**337,869**	**5.44**	**765,774**
Inferred	6,943	$ 126.28	1.52	10,532	2.87	398,901	4.96	688,482

Mineral Resources are inclusive of Mineral Reserves. The reader is cautioned not to add Mineral Reserves discussed in the report to the Mineral Resources in Table 14-1.

The Qualified Person for the above estimate is Scott Wilson, C.P.G., SME. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. Columns may not add up due to rounding.

Project mineralization extends to great depths accessible by a complicated system of shafts to access levels and mine development headings. The mine is flooded up to the 11 Level of the mine. Other than pumping water according to EPA requirements, and limited care and maintenance, access to the depths of the mine has not been accessible since 1989. For these reasons, nearly half of the estimated mineral resources are considered to be inferred mineral resources.

Aside from criteria described in Section4 and in Section 20, the author knows of no environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that may materially affect the Mineral Resource estimate in this Technical Report.

The entire length of the MRE is assumed to be geologically continuous but differing in orientation due to underlying lithological constraints and faults. In order to constrain the MRE, three separate mineral domains were constructed to segregate the continuous mineralized zone comprising the UTZ, Quill and Newgard deposits. Figure 14-1 shows in plan-view the historic depletion and development solids associated with each section of the mine. Mapping shows that fault structures offset but do not truncate mineralization between the Quill, Newgard and UTZ. Historically, the

Quill-Newgard zone of mineralization was mined as a continuous mineralized body and has been constructed as a single domain solid ("QN").

UTZ was mined as multiple stope blocks separated by the Cate fault which runs roughly parallel to trend of mineralization in the UTZ. Both the hanging wall and foot wall of UTZ was mined, but stopes rarely crossed between the two zones. UTZ has been defined as two domains; the Cate hanging wall (CHW) and the Cate foot wall (CFW) domains.

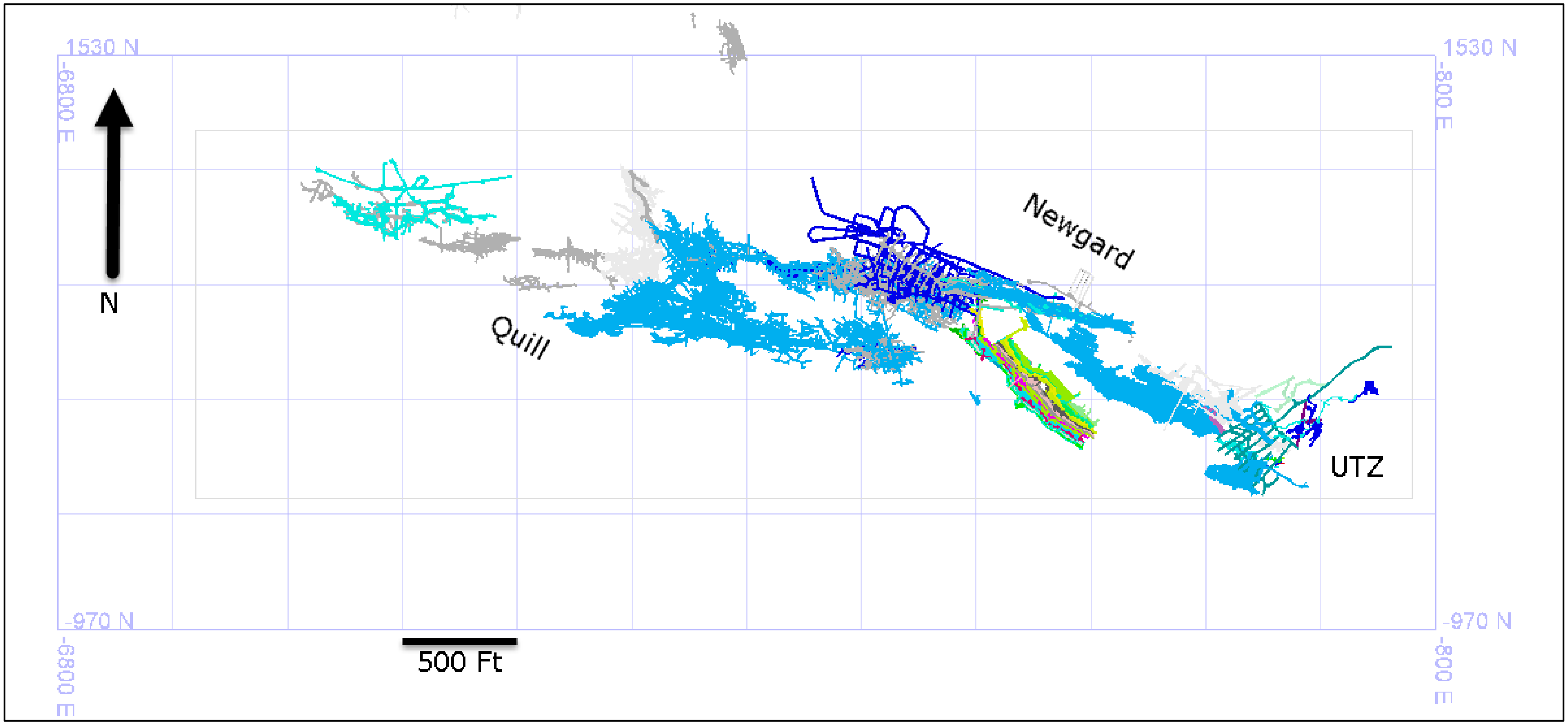


Figure 14-1 Quill, Newgard and UTZ deposits of the Bunker Hill Mine Plan View.

The stopes and workings displayed above have were surveyed during production and drafted on to mylar sheets. The Mylar sheets were recently digitized by Rangefront and converted to solid triangulations. In general mineralization strikes S070E with a nearly vertical dip.

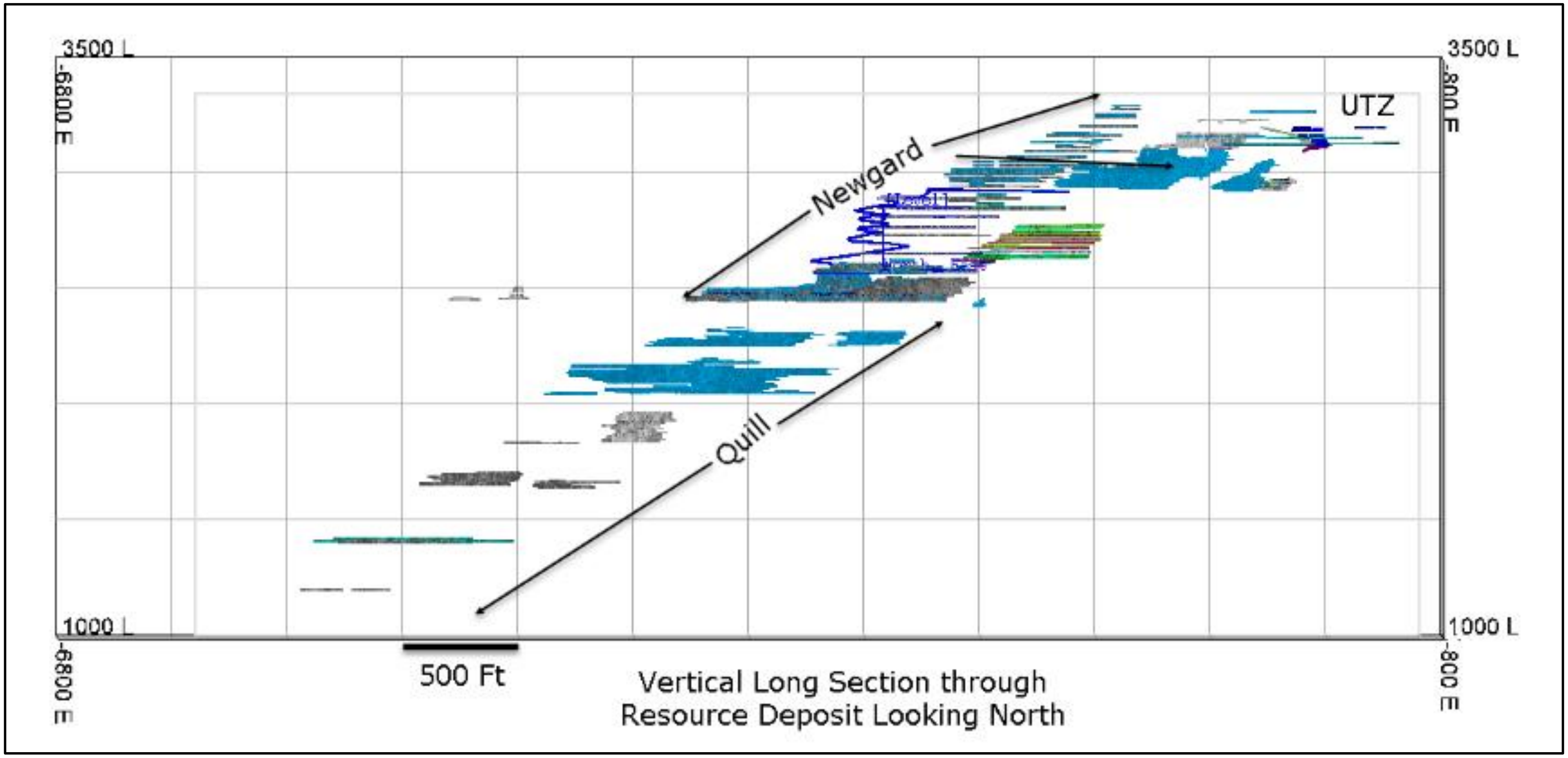


Figure 14-2. Vertical long section through the deposit showing depleted stopes down-dip and mineralized pillars between stopes

Nearly 2,500 vertical feet of continuous mineralization is present in UTZ, Newgard and Quill deposits. All areas between the existing stopes have been estimated using a block model and ID3 estimation techniques. A resource constraining shell (Figure 14-3) has been explicitly designed around known mineralization and used as a limit to resource estimates for the Project. Continued exploration drilling and geological modelling is required to expand mineralization.

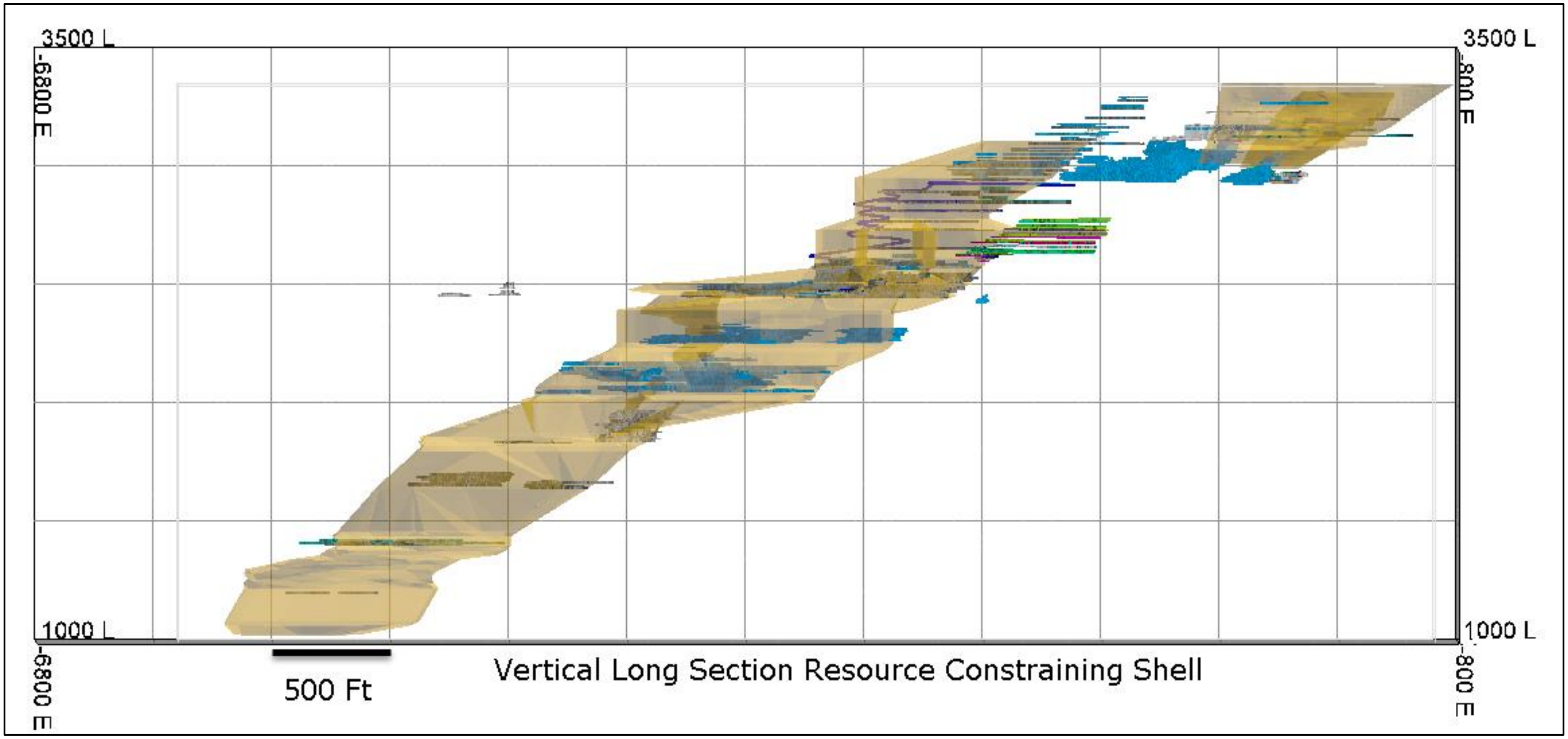


Figure 14-3 Interpretation of mineral envelope based on drilling, mining, and sampling of the deposit

14.2 DATABASE

A single database of composites was used for the Mineral Resource Estimation. Data for the composites was generated from production car samples, channel samples and core drilling data. Table 14-2 through Table 14-4 display database statistics for the three sources of information respectively. Production car samples are used alongside channel samples and drill data as they were found to closely represent mineralization in place as detailed in section 12 of this Technical Report.

Table 14-2 Statistics for 2020-2021 Drill Program. 41 Core holes

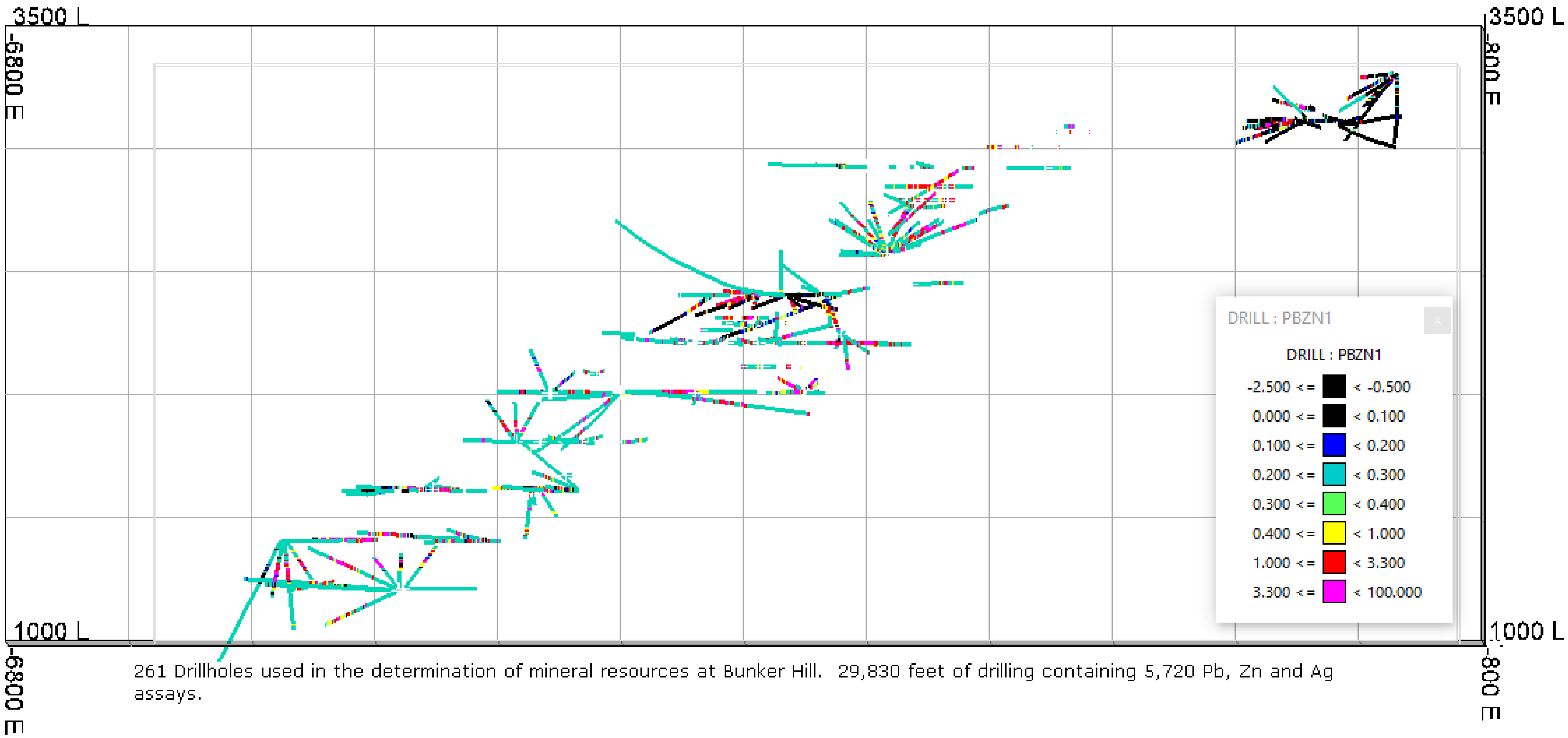
		2020-2021 Drilling Assays					
		ag_opt	ag_capped	pb%	pb_capped	zn%	zn_capped
CFW	Composites	862	862	862	862	862	862
	Min Value	0.0146	0.0146	0.0005	0.0005	0.0005	0.0005
	Max Value	20.738	15	39.81	30	14.35	13
	Mean Value	**0.666**	**0.659**	**1.641**	**1.607**	**0.585**	**0.583**
	Median Value	0.117	0.117	0.251	0.251	0.073	0.073
	Std. Deviation	1.676	1.606	4.260	3.990	1.461	1.447
CHW	count	423	423	423	423	423	423
	min	0.0146	0.0146	0.0005	0.0005	0.0005	0.0005
	max	34.854	10	22	20	26.7	25
	mean	**0.743**	**0.669**	**1.642**	**1.637**	**2.760**	**2.756**
	median	0.386	0.386	0.947	0.947	0.972	0.972
	std_dev	1.982	1.000	2.338	2.298	4.444	4.423
QN	count	363	363	363	363	363	363
	min	0.0146	0.0146	0.001	0.001	0.001	0.001
	max	8.254	8.254	13.15	13.15	23	23
	mean	**0.346**	**0.346**	**0.576**	**0.576**	**1.019**	**1.019**
	median	0.058	0.058	0.059	0.059	0.09	0.09
	std_dev	0.870	0.870	1.259	1.259	1.984	1.984

Table 14-3 Statistics for pre-2020 Drilling from 220 Core Holes

		Historic Drilling Assays					
		ag_opt	ag_capped	pb%	pb_capped	zn%	zn_capped
QN	count	2507	2507	2507	2507	2507	2507
	min	0.01	0.01	0.001	0.001	0.001	0.001
	max	131	25	43.4	25	44.8	32
	mean	**0.673**	**0.608**	**1.540**	**1.502**	**3.846**	**3.838**
	median	0.2	0.2	0.7	0.7	2.1	2.1
	std_dev	3.311	0.988	2.933	2.517	4.823	4.771

Table 14-4 Statistics for Production Car Samples (4,059 samples) and 2020 Channel Samples (394 Samples)

		Production Samples and 2020 Channel Samples					
		ag_opt	ag_capped	pb%	pb_capped	zn%	zn_capped
CFW	Composites	-	-	27	27	29	29
	Min Value	-	-	0.1	0.1	0.1	0.1
	Max Value	-	-	3.4	3.4	2.1	2.1
	Mean Value	**-**	**-**	**1.048**	**1.048**	**0.548**	**0.548**
	Median Value	-	-	0.8	0.8	0.3	0.3
	Std. Deviation	-	-	0.926	0.926	0.467	0.467
CHW	Composites	85	85	211	211	212	212
	min	0.05	0.05	0.05	0.05	0.01	0.01
	max	4.42	4.42	17.6	17.6	36.9	25
	mean	**0.908**	**0.908**	**2.579**	**2.579**	**4.276**	**4.183**
	median	0.7	0.7	1.9	1.9	2.85	2.85
	std_dev	0.725	0.725	2.340	2.340	4.710	4.168
QN	Composites	3000	3000	4059	4059	4059	4059
	min	0.01	0.01	0.05	0.05	0.01	0.01
	max	32.34	25	30.2	25	39	32
	mean	**1.063**	**1.060**	**1.773**	**1.771**	**4.427**	**4.390**
	median	0.68	0.68	1.21	1.21	3.325	3.3
	std_dev	1.390	1.341	1.846	1.828	3.751	3.734



261 Drillholes used in the determination of mineral resources at Bunker Hill. 29,830 feet of drilling containing 5,720 Pb, Zn and Ag assays.

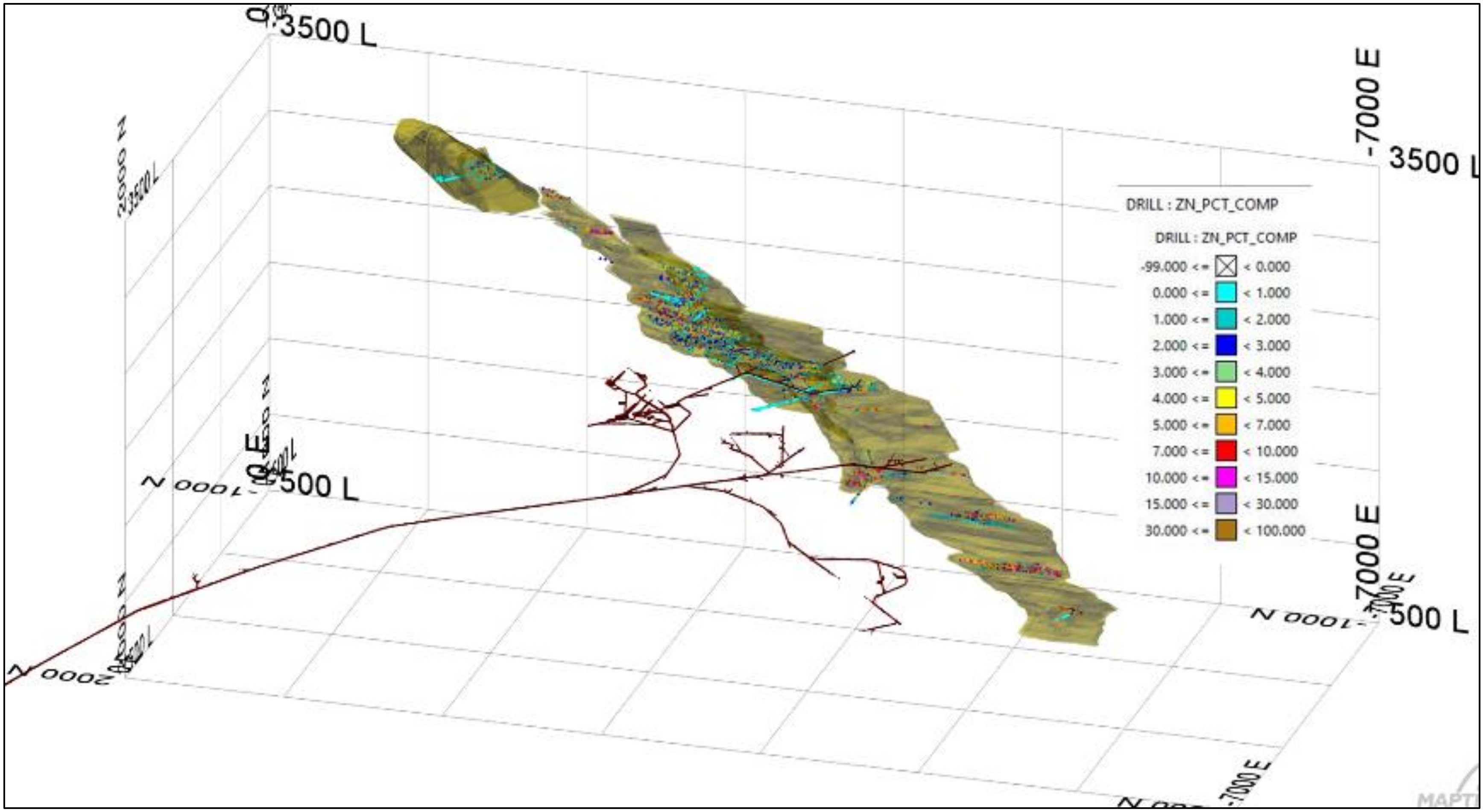


Figure 14-4 Oblique View MRE Domains with Production and Channel Samples Zn%

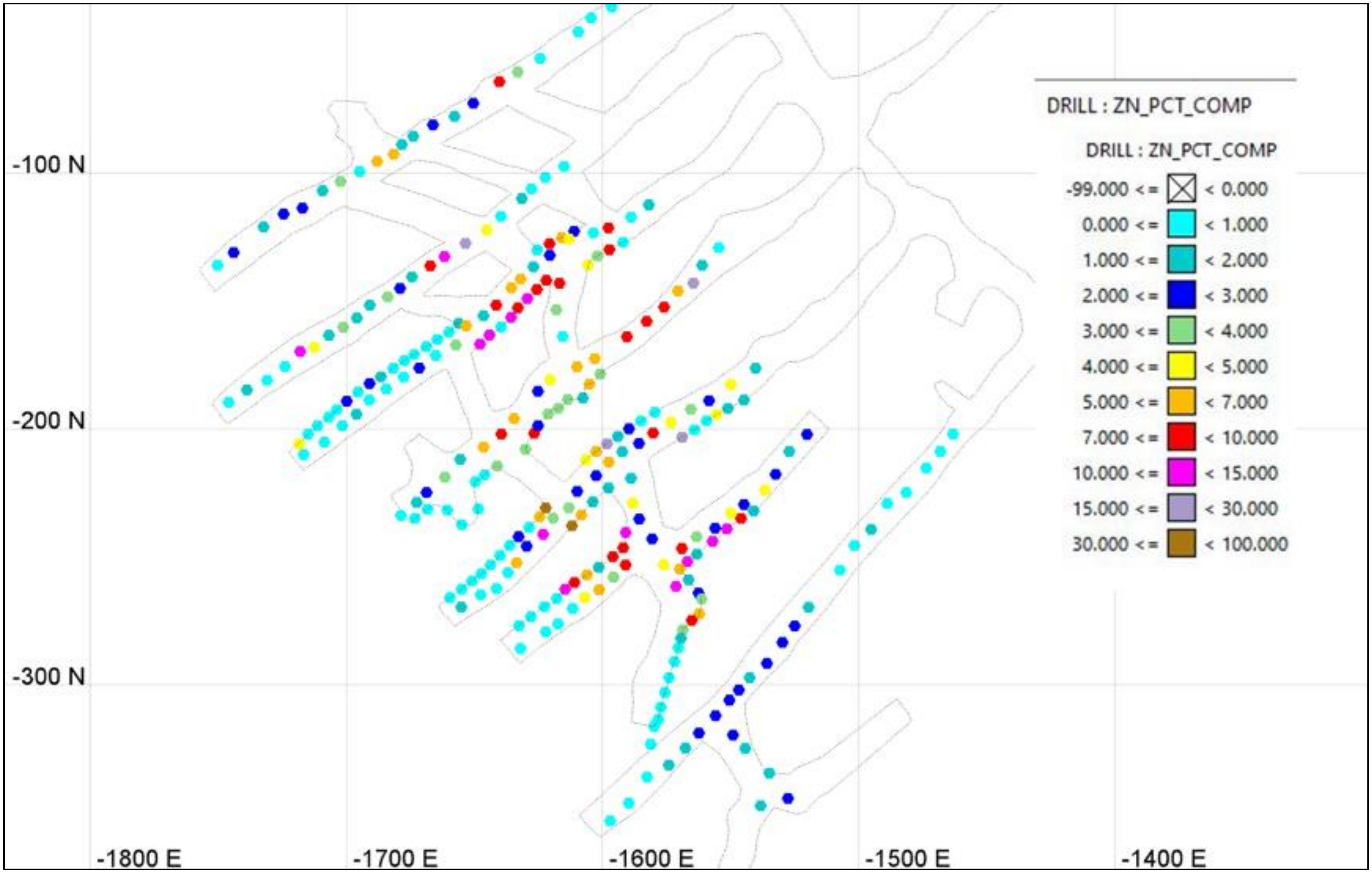


Figure 14-5 5-Level UTZ Channel Samples Zn%

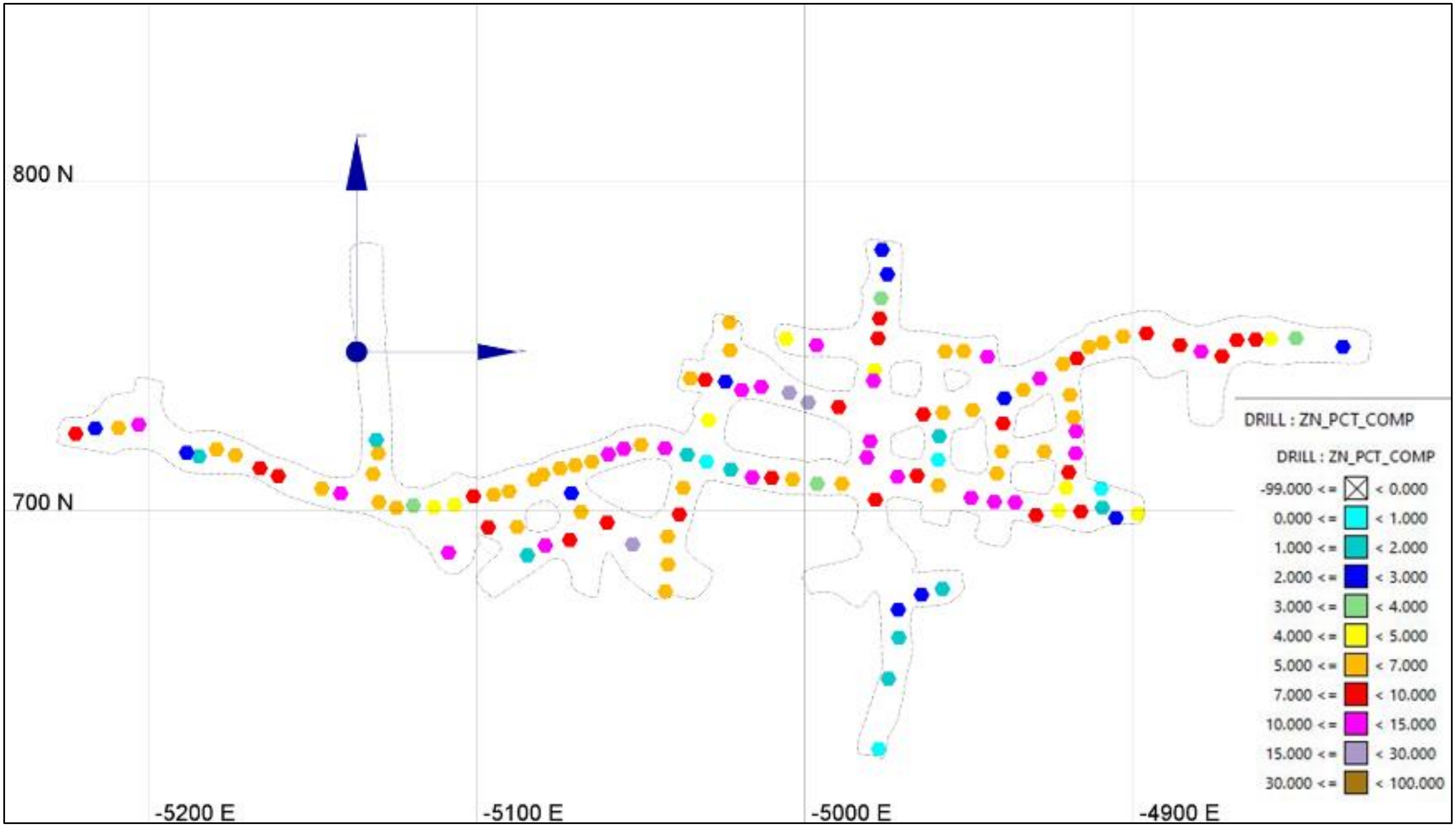


Figure 14-6 13-Level Quill Production Car Samples Zn%

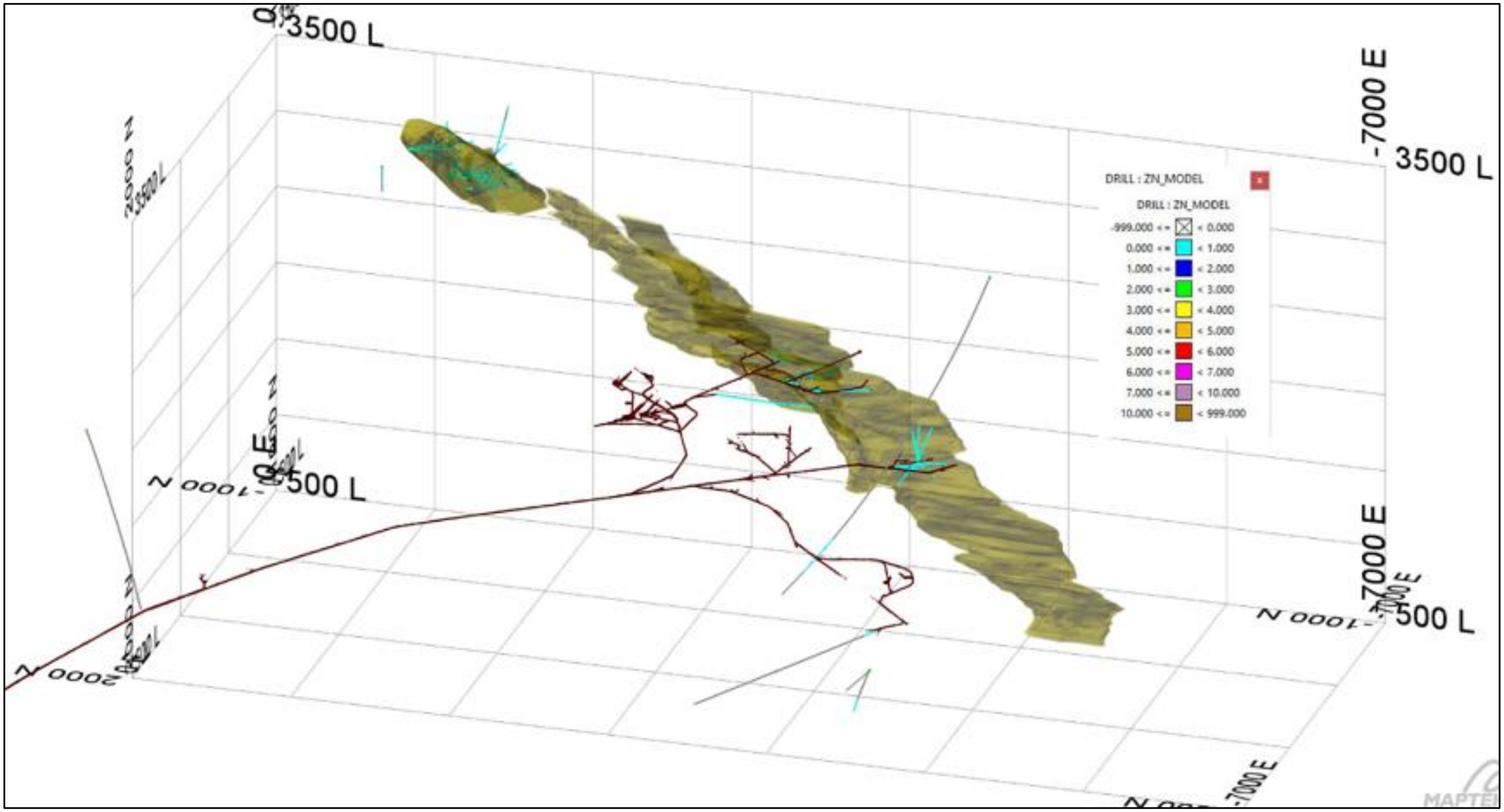


Figure 14-7 Oblique View MRE Domains with 2020-2021 Drilling Zn%

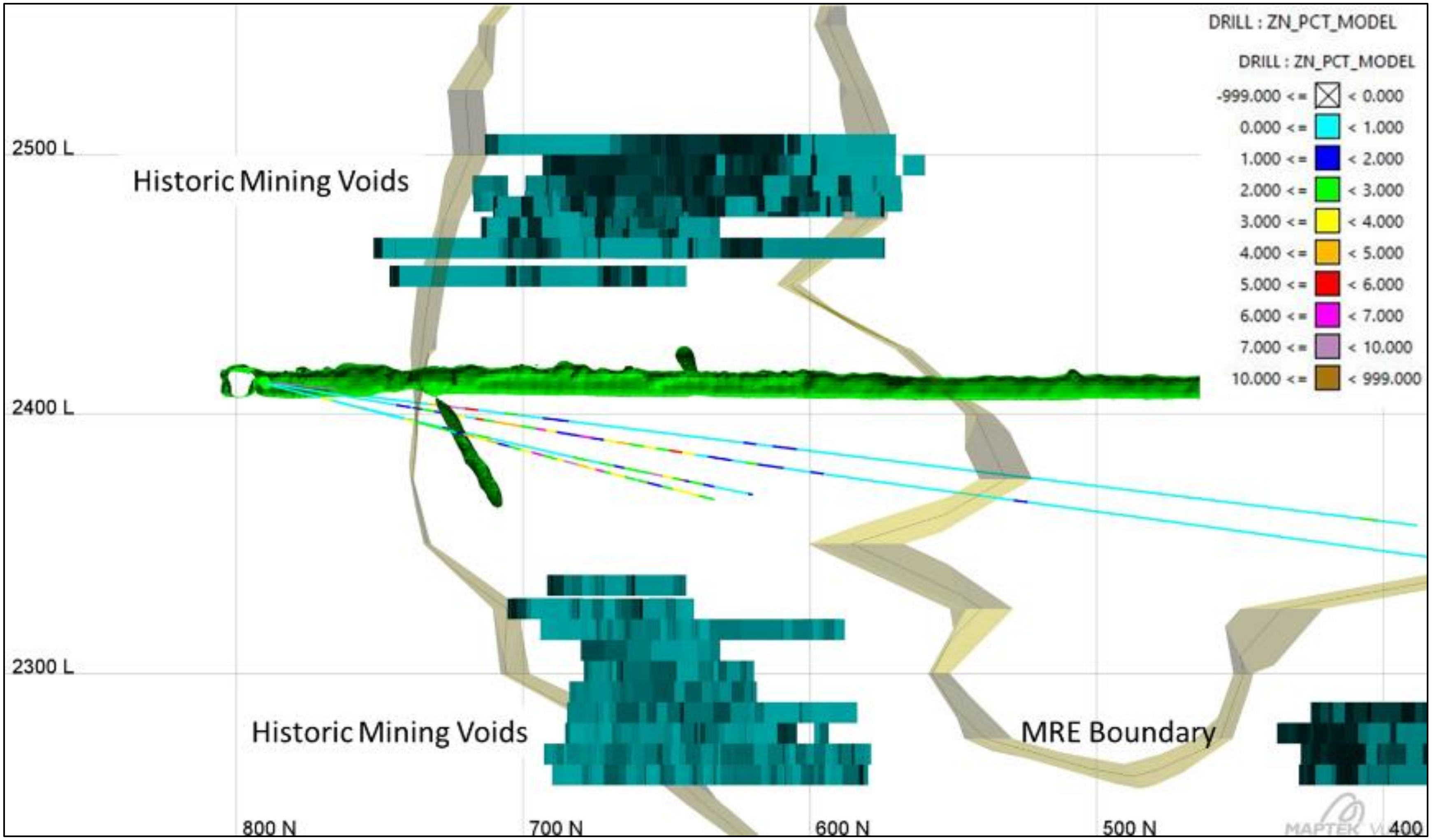


Figure 14-8 Section View DDH 7021A 9-Level Newgard Looking SE (115°). 2020-2021 Drill Holes Zn%

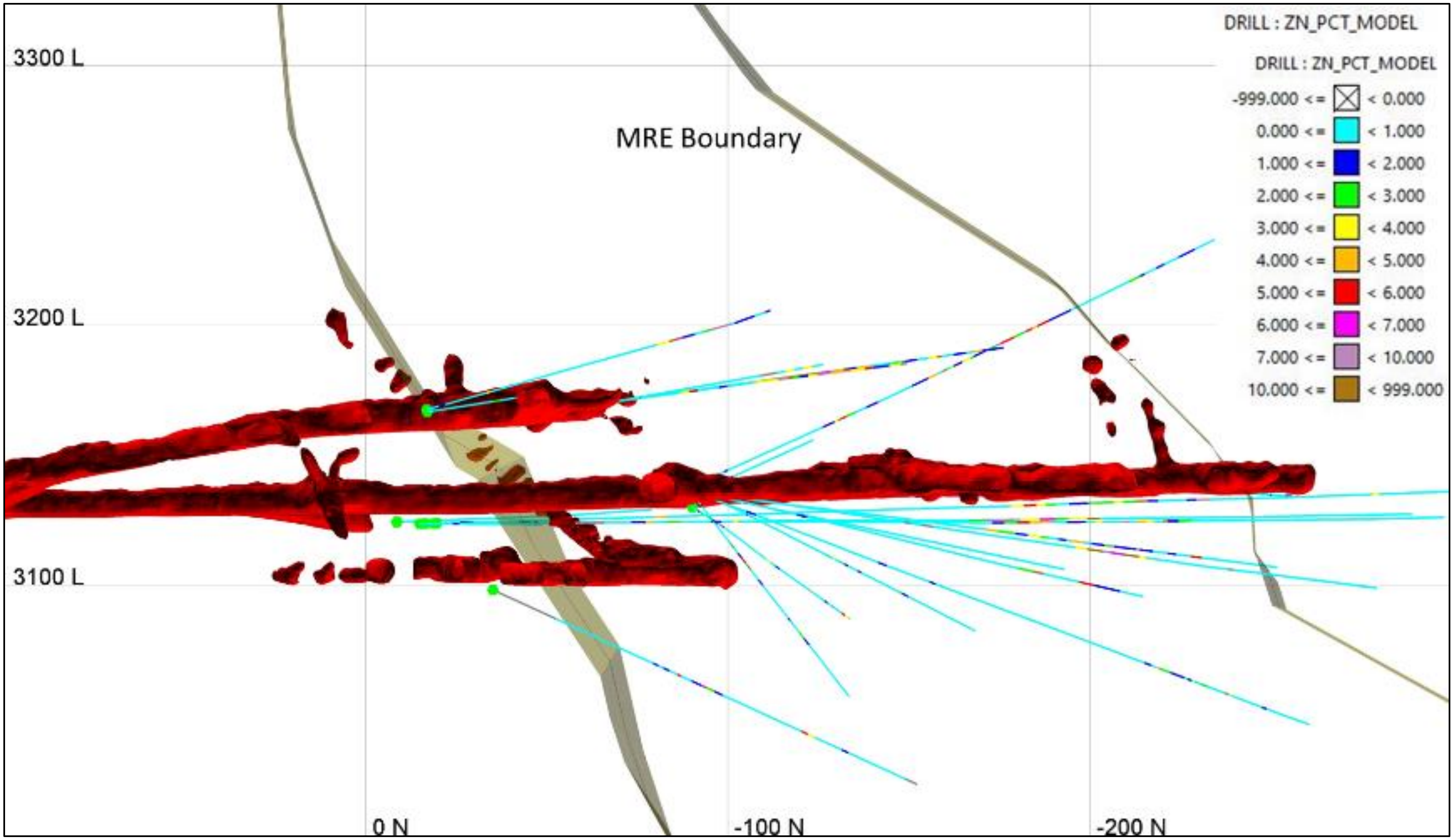


Figure 14-9 Section View DDH 7055 5-Level UTZ Looking SE (135°). 2020-2021 Drill Holes Zn%

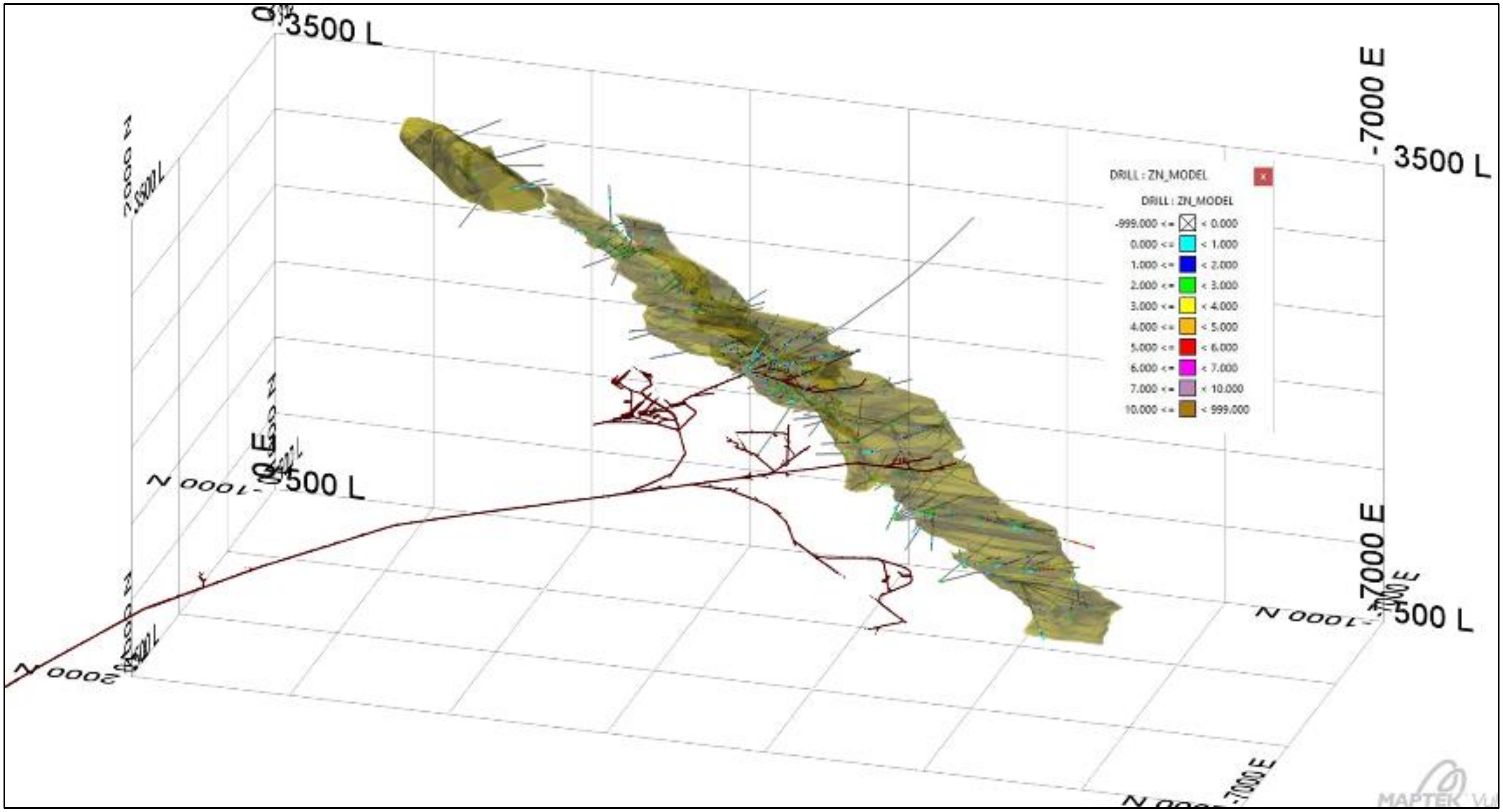


Figure 14-10 Oblique View MRE Domains with Pre-2020 Drilling Zn%

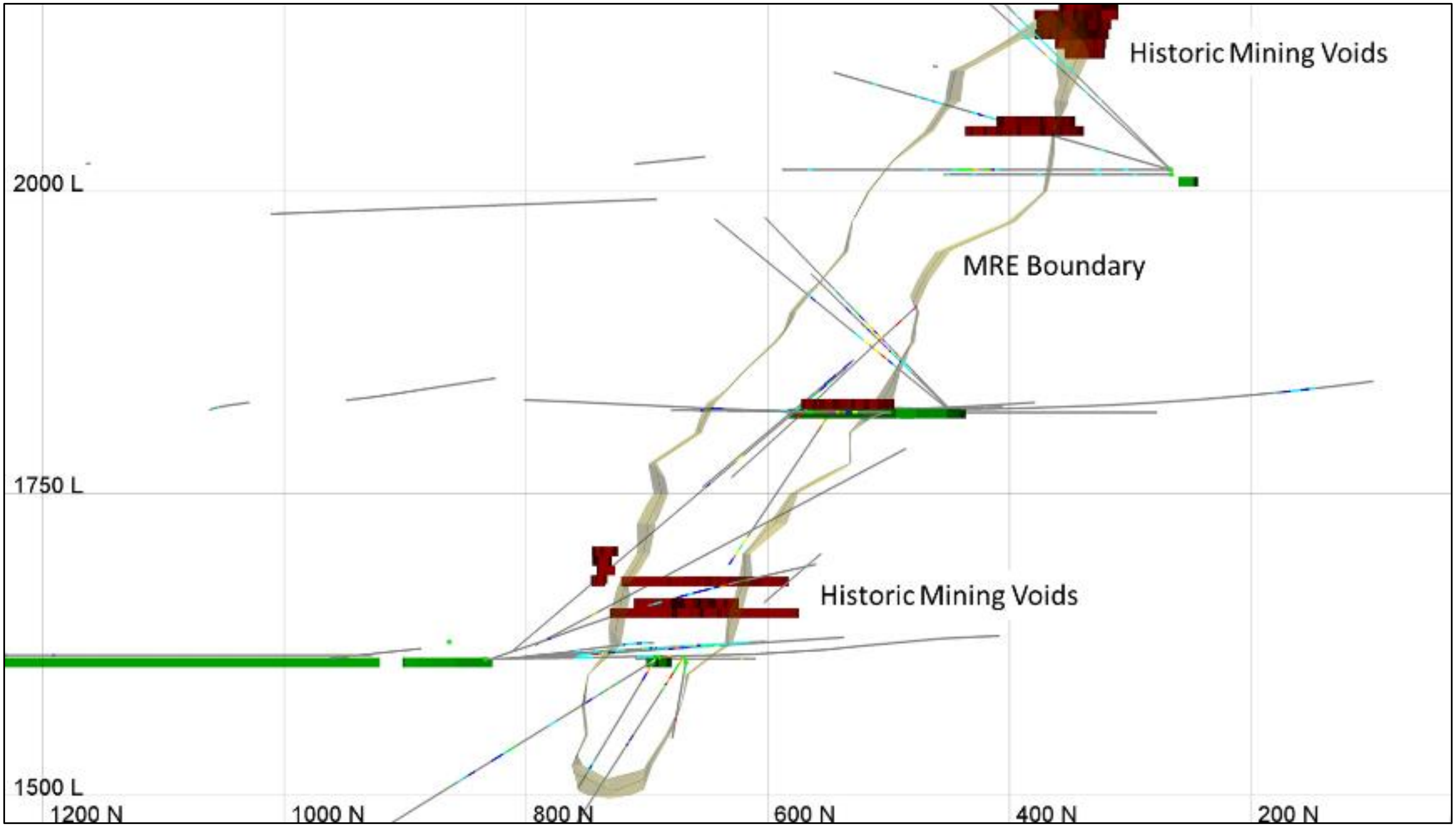


Figure 14-11 Section View DDH 6021 12-Level Quill Looking E (090°). Pre-2020 Drill Holes Zn%

14.3 CAPPING

Utilizing the flag identifier for assay intervals included in each of the domains, capping values were decided based on a per-metal, per-domain basis. Capping was assigned prior to compositing to better reflect actual assayed intervals. Intervals were extracted, and then used to construct CDF plots to look at the upper end assay values and correlation to the rest of the data set. Overall, all groups showed strong correlation throughout the assay value range indicating that capping values should lie close to the upper limit of received values. Table 14-5 shows the various capping values used in the Mineral Estimation parameters.

Table 14-5 Capped Values for Each Metal

	Capped Values		
Domain	**Ag_OPT**	**Pb%**	**Zn%**
CFW	15	30	13
CHW	10	20	25
QN	25	25	32

Capping values assigned to assays prior to compositing.

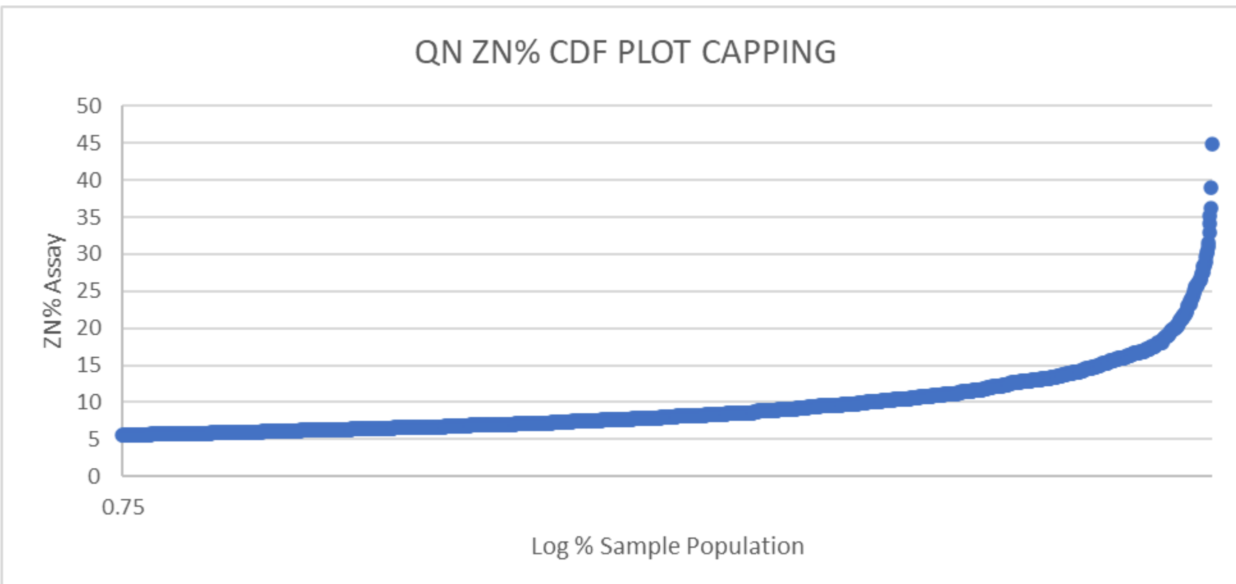


Figure 14-12 CDF Plot for Zn% Assays Within the QN Mineral Domain
Plot displays highest 25% of samples to better highlight capped segment.

After the capping values were determined, the capped field in the database was run through a script designed to adjust all negative and "0" value assays to ½ of the lower detection limit of the assay method for that element, or for historic data, the lowest value assigned in historic logs representing the lowest detection limit at that time for that element. Capping results by domain are included in Table 14-2 through Table 14-4 above.

14.4 COMPOSITING

Subsequent to capping, 5-foot composites were generated for each of the three metals Pb Ag and Zn. There are far fewer Ag values than there are Pb or Zn values in the database. Prior operators did not assay for Ag. Historically Ag was considered a by-product only.

Composites were broken on the domain and geologic boundaries. Production car samples are digitized as point data and were appended directly into the composited database without length adjustment.

14.4.1 DECLUSTERING

Assay data is rarely collected randomly. This is certainly true for assays related to underground mining operations where samples are collected every five feet in crisscross patterns such as Bunker. Large amounts of higher-grade areas contain the most assays. The data is important and should not be changed but there is a requirement to adjust the summary statistics to be representative of the entire volume being estimated. Cell declustering was applied to the capped composites values of the deposit. The parameters and results from the declustering can be seen in Table 14-6, along with the adjusted declustered weight statistics of the composite database. Parameters were set to determine the minimum mean weighted assay values of each of the metals over each of the three domains. This was done to help ensure that estimated grades are representative of the entire volume and especially between levels where the clustered data has been collected every 200 feet vertically. The declustered weights of the database assays were applied on a block-by-block basis in the block model.

A total of 8,598 declustered composite samples are contained in the database used to generate the Mineral Resource Estimation. Mineral Resource Estimates in this Technical Report were estimated using a Net Smelter Return (NSR) cutoff value of $70/ton, in addition to the criteria listed in Table 14-9, and thus excluded estimated regions of the Mineral Resource Domain not meeting those criteria. Assay intervals and composites were flagged for inclusion within the Mineral Resource Domain. Not all assay intervals or composite samples contained within the Mineral Resource Domain were used in the estimation of each block contained within the Mineral Resource Estimate as shown in Table 14-10. The Reader is cautioned not to use Table 14-6 as an analogue to the reported Mineral Resource Estimate grades and values.

Table 14-6 Composite Database Statistics and Declustering Parameters

	CFW			CHW			QN		
	Ag_OPT	Pb%	Zn%	Ag_OPT	Pb%	Zn%	Ag_OPT	Pb%	Zn%
N	750	750	750	603	603	603	7245	7245	7245
Min Grade	0.0146	0.0005	0.0005	0.0146	0.0005	0.0005	0.01	0.0005	0.0005
Max Grade	13.572	24.107	9.876	6.589	19.910	25	25	25	32
Mean Grade	**0.486**	**1.174**	**0.454**	**0.482**	**1.756**	**2.835**	**0.689**	**1.562**	**3.930**
Median Grade	0.142	0.293	0.123	0.288	1.2	1.466	0.36	1	2.78
Std. Deviation	1.050	2.441	0.973	0.687	2.074	3.678	1.241	1.923	3.853
Declustered Mean Grade	**0.407**	**1.026**	**0.409**	**0.378**	**1.325**	**2.149**	**0.640**	**1.509**	**3.652**
Min Declus Weight	0.203	0.215	0.234	0.185	0.186	0.186	0.224	0.224	0.207
Max Declus Weight	7.167	8.009	8.853	5.133	5.303	5.303	9.364	9.364	10.898
Mean Declus Weight	1.00000133	1.000004	1	1	1	1	1.00000028	1.00000028	1.00000262
Median Declus Weight	0.6635	0.68	0.6565	0.589	0.594	0.594	0.736	0.736	0.745
Std. Dev. Declus Weight	0.897	0.924	0.976	0.906	0.907	0.907	0.820	0.820	0.811
Declus Cell Size (Ft)	72.819	88.524	93.758	85.906	80.671	80.671	78.054	78.054	75.436

14.5 DENSITY

BHMC started a systematic determination of the specific gravity of the mineral types during the 2020 drilling campaign. There has not been enough data collected to determine a variance for the deposit at this time. A tonnage factor of 11.3 Ft^3/t was applied to mineralized material of the Bunker Hill mine throughout the decades. The same factor has been applied to the MRE.

14.6 BLOCK MODEL

Two separate block models were created. One for UTZ and one for Quill-Newgard. The models were constructed to best capture the geometries the domains. This helps recognize the shallower dip of UTZ. This is also important for subsequent mine planning exercises. Models were populated with physical and estimation variables. Block tonnages have been by flagging blocks within historic mined-out or development solids. Depletion represents percentages of the block mined, and these values were accounted for in all reporting stated for the MRE.

Table 14-7 Block Model Construction Details

Model	Bearing	Plunge	Dip	X-Length	Y-Length	Z-Length
UTZ	310°	0°	0°	5'	5'	2.5'
QN	285°	0°	0°	5'	5'	5'

UTZ Model zone contains both the Cfw and Chw domains

14.7 MINERAL RESOURCE ESTIMATION

Search parameters for the estimation ellipses were established using previous geological maps and production data from various levels of the mine associated with the MRE mineralization.

Table 14-8 Grade Estimation Search Parameters

Domain	Bearing	Plunge	Dip	Major Axis	Semi-Minor Axis	Minor axis	Min Sample	Max Sample	Sample Limits
cfw/chw	310°	-45°	-40°	150'	50'	100'	3	15	5/ddh
qn	285°	-35°	0°	350'	100'	250'	3	15	5/ddh

Cfw/Chw domains were estimated with the same parameters

14.8 GRADE ESTIMATION

Metal grades for the mineral resource are estimated using Inverse Distance Weighting. Inverse distance methods are a suite of weighted average estimation methods. These result in estimates that are smoothed versions of the original sample data. Inverse distance methods are based on calculating weights for the samples based on the distance from the samples to the centroid of a model block. This is essentially a linear estimate where sample weights are assigned to composite values for all composites used in the estimate. The calculation of the weights is based on the inverse of the distance between the composite and the center of the block being estimated. Sample weights are standardized to a sum of 1 to ensure there is not a globally biased estimate. In the mining industry there are two common exponents used, Inverse Distance squared (ID2) and Inverse Distance cubed (ID3). ID3 is used when large weights are desired for the closest composites. This is applicable when the variable being estimated is erratic and the current data spacing is weighted (declustered) relative to the data that would be available for mineral boundary decision making. Such as with metallic distributions of mineralization. ID3 methodologies are widely used in the mining industry and have proven through the decades to be an acceptable and reliable methodology for the estimation of metal distributions in both large-scale disseminated and tightly concentrated vein type mineral deposits.

Three-pass Inverse Distance Cubed (ID3) estimates were run for each of the composite metal values (Ag, Pb, Zn) with the same parameters for each metal. Capped database values were used for all estimates. Results from visual, nearest-neighbor and statistical analysis showed the ID3 model to well represent actual assay values versus estimated grade over both the QN and UTZ models.

Figure 14-13 shows the final mineral estimate distribution for Zinc for the three domains.

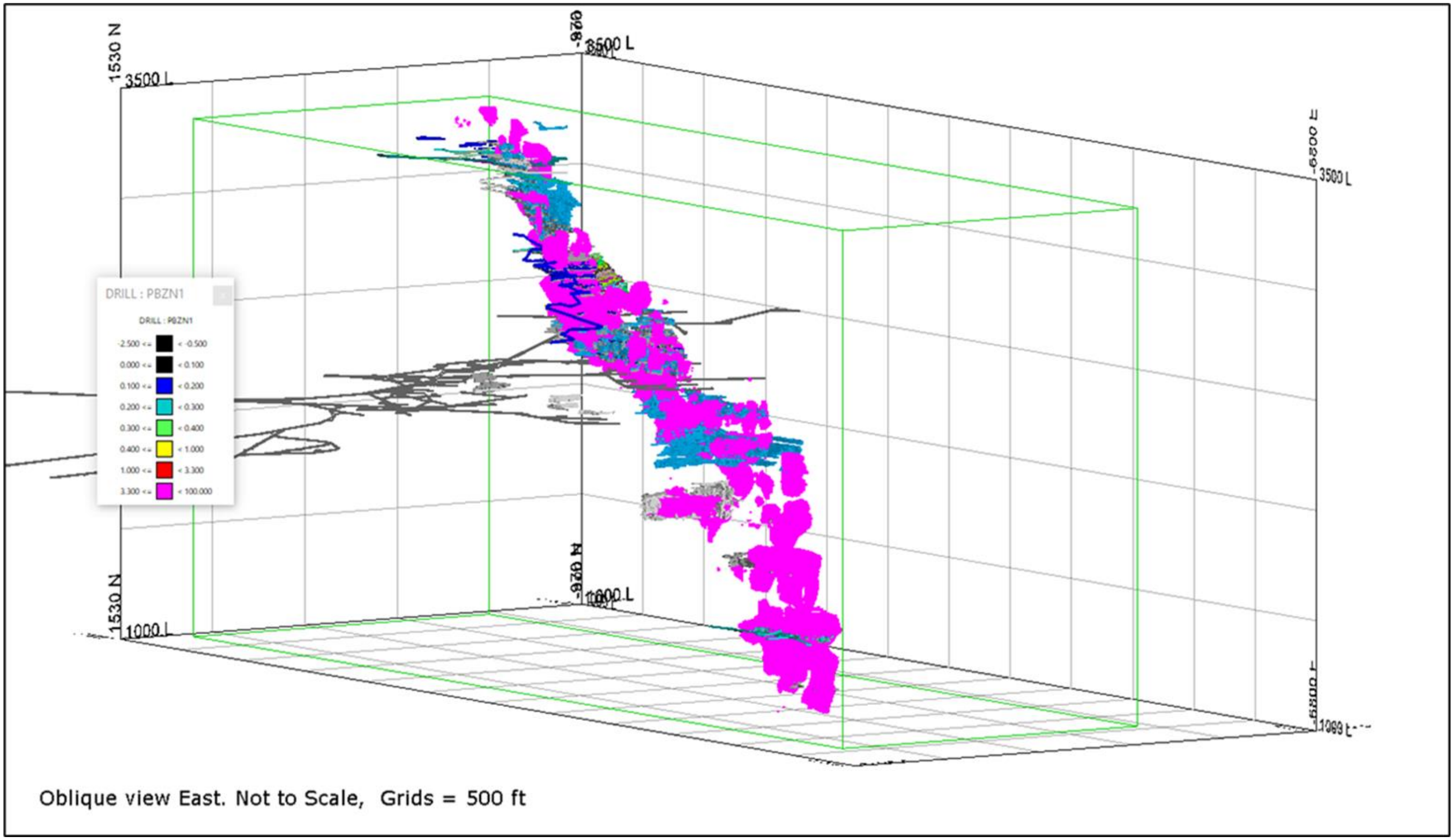


Figure 14-13 Estimated Zinc Mineralization

14.9 RESOURCE CLASSIFICATION

Mineral resources are classified according to CIM Definitions Standards, which are incorporated by reference in NI43-101. Mineralization at Bunker Hill has been categorized as Inferred Mineral Resources, Indicated Mineral Resources and Measured Mineral Resources, based upon increasing levels of confidence in various physical characteristics of the deposit. Drill hole spacing, search neighborhoods, metallurgical geological confidence and many other factors were used to give the author confidence in the MRE for the Project. The author is satisfied that the geological modeling for Bunker Hill honors the geological information and knowledge of the mineral deposit. The location of the samples and the assay data are sufficiently reliable to support resource evaluation.

Classification of mineral resources for Bunker Hill are based on the distance to the nearest samples used to derive the metal grades for each individual block in the deposit. A minimum of three samples is required for the estimate to be considered a resource of any confidence. Classification criteria are summarized in Table 14-9.

Table 14-9 Classification Parameters

Resource Class	Samples Used for Estimation	DDH Used for Estimation	Sample Nearest-Neighbor Distance
Measured	>= 8	>= 4	<= 30'
Indicated	>= 6	>= 3	<= 50'
Inferred	>= 3	>= 3	<= 85'

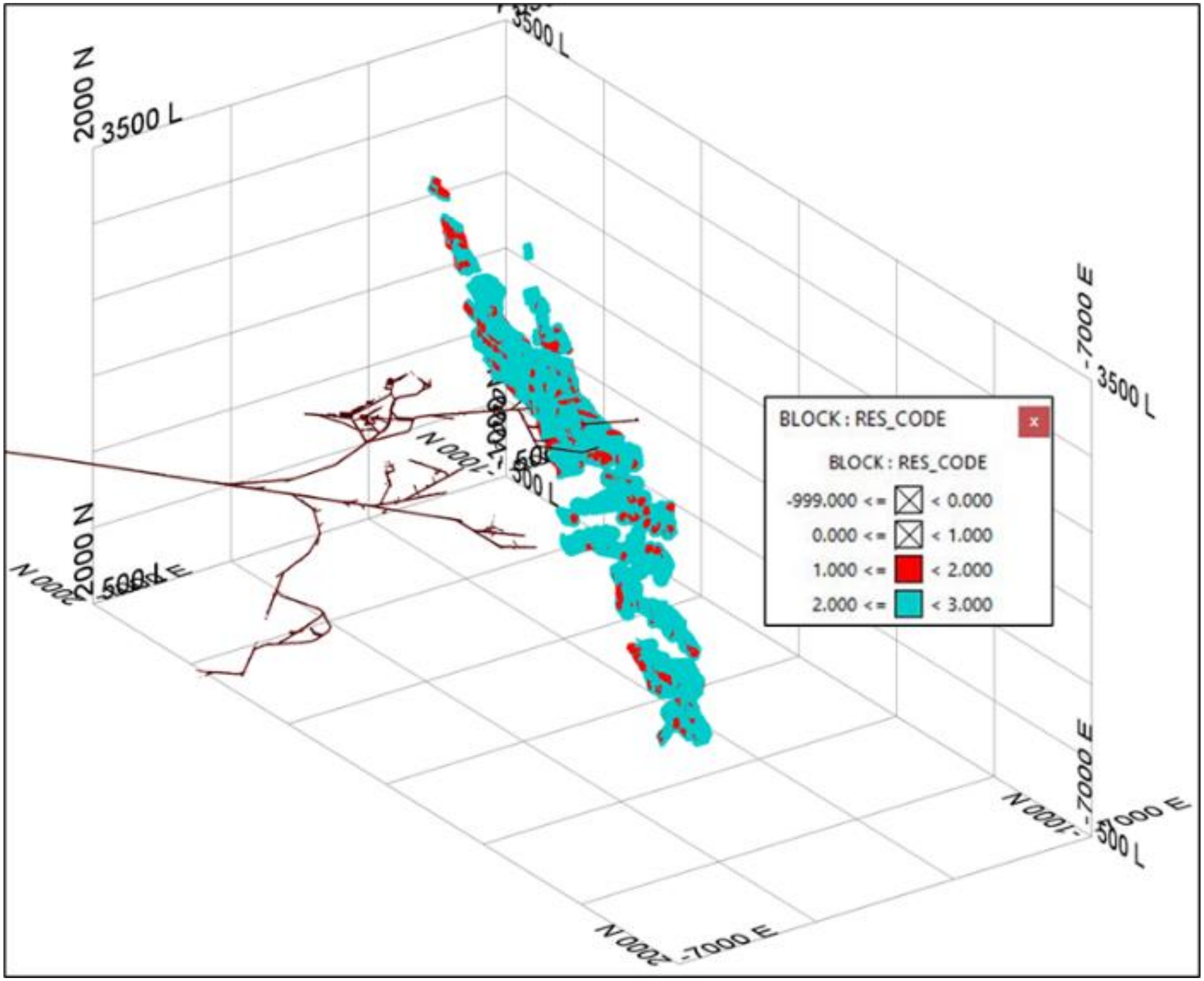


Figure 14-14 Resource Classification Distribution of Quill and Newgard

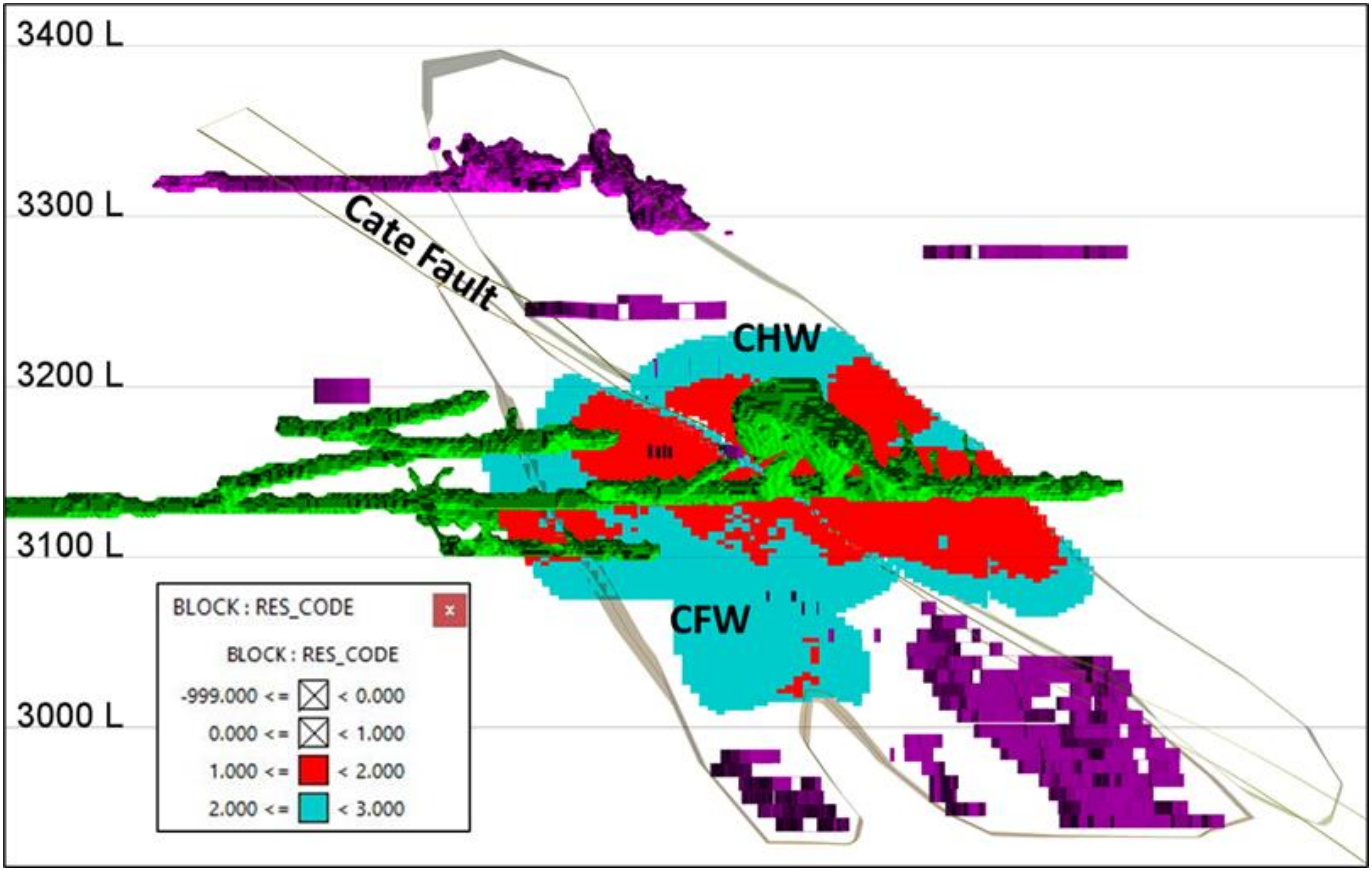


Figure 14-15 Resource Classification for UTZ Model Sections. Section view looking N45E. Measured blocks shown in Red, Indicated blocks shown as Teal.

14.10 MINERAL RESOURCE ESTIMATE DETAILS AND SENSITIVITIES

Tables below illustrate the Mineral Resource Estimate for the Bunker Hill Mine, as well as various sensitivity analyses applied to cutoff grades, NSR and metals prices.

Table 14-10 summarizes the Bunker Hill Mineral Resource estimate inclusive of Mineral Reserves, classified according to CIM definitions for the Project. Reasonable prospects of eventual economic extraction, defined in this section of the report, assume underground mining, mill processing and flotation. Mineralization at polymetallic mines typically require separate Pb flotation and Zn flotation circuits. Mineral resources are estimated at $70/ton NSR.

Net smelter return (NSR) is defined as the return from sales of concentrates, expressed in US$/t, i.e.: NSR = (Contained metal) * (Metallurgical recoveries) * (Metal Payability %) * (Metal prices) – (Treatment, refining, transport and other selling costs). NSR values are estimated using updated using metallurgical recoveries of 85.1%, 84.2% and 88.2% for Zn, Ag and Pb respectively, and concentrate grades of 58% Zn in zinc concentrate, and 67% Pb and 12.13 oz/ton Ag in lead concentrate.

Table 14-10 Bunker Hill Mine Mineral Resource Estimate Inclusive of Mineral Reserves – NSR $70/ton cut off – Ag selling price of $20/oz (troy), Lead selling price of $1.00/lb, Zn selling price of $1.20/lb. Effective date of August29, 2022)

Classification	Ton (x1,000)	NSR ($/Ton)	Ag Oz/Ton	Ag Oz (x1,000)	Pb %	Pb Lbs. (x1,000)	Zn %	Zn Lbs. (x1,000)
Measured (M)	2,374	$ 119.60	1.01	2,404	2.46	116,574	5.37	254,811
Indicated (I)	4,662	$ 119.81	1.00	4,657	2.37	221,295	5.48	510,964
Total M & I	**7,036**	**$ 119.74**	**1.00**	**7,061**	**2.40**	**337,869**	**5.44**	**765,774**
Inferred	6,943	$ 126.28	1.52	10,532	2.87	398,901	4.96	688,482

Mineral Resources are inclusive of Mineral Reserves. The reader is cautioned not to add Mineral Reserves discussed in the report to the Mineral Resources in Table 14-10.

The Qualified Person for the above estimate is Scott Wilson, C.P.G., SME. Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. Columns may not add up due to rounding.

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 to Mineral Reserves.

14.11 GRADE SENSITIVITY ANALYSIS

Mineral resources are sensitive to the selection of a cut-off NSR. To illustrate this sensitivity, the block quantities and grade estimates for the estimated mineralization are presented in Table 14-11 at linear increases in the cut-off grades for Measured, Indicated and Inferred mineral resources at Bunker. The same results are presented graphically in Figure 14-16. The reader is cautioned that Table 14-11 should not be misconstrued as a mineral resource. The reported quantities and grades are only presented as a sensitivity of the resource model to the selection of varying NSR values. Mineral resources are not mineral reserves and do not have demonstrated economic viability.

Table 14-11 NSR Cutoff Sensitivity Analysis

	Measured								Indicated							
Cutoff NSR ($/Ton)	**Ton (x1,000)**	**NSR ($/Ton)**	**Ag Oz/Ton**	**Ag Oz (x1,000)**	**Pb %**	**Pb Lbs. (x1,000)**	**Zn %**	**Zn Lbs. (x1,000)**	**Ton (x1,000)**	**NSR ($/Ton)**	**Ag Oz/Ton**	**Ag Oz (x1,000)**	**Pb %**	**Pb Lbs. (x1,000)**	**Zn %**	**Zn Lbs. (x1,000)**
60	2,854	$ 110.39	0.93	2,662	2.26	128,790	4.97	283,487	5,608	$ 110.54	0.92	5,133	2.18	244,349	5.07	569,121
62	2,750	$ 112.26	0.95	2,609	2.30	126,341	5.05	277,595	5,400	$ 112.45	0.93	5,041	2.22	239,662	5.16	556,901
64	2,652	$ 114.08	0.97	2,560	2.34	123,887	5.13	271,922	5,209	$ 114.26	0.95	4,948	2.26	235,195	5.23	545,337
66	2,559	$ 115.86	0.98	2,510	2.37	121,492	5.20	266,395	5,022	$ 116.09	0.97	4,852	2.30	230,623	5.32	533,903
68	2,466	$ 117.71	1.00	2,458	2.41	119,053	5.28	260,635	4,840	$ 117.94	0.98	4,754	2.33	225,960	5.40	522,429
70	2,374	$ 119.60	1.01	2,404	2.46	116,574	5.37	254,811	4,662	$ 119.81	1.00	4,657	2.37	221,295	5.48	510,964
72	2,280	$ 121.60	1.03	2,348	2.50	113,944	5.45	248,713	4,483	$ 121.75	1.02	4,557	2.41	216,312	5.57	499,162
74	2,192	$ 123.55	1.05	2,292	2.54	111,374	5.54	242,931	4,303	$ 123.80	1.03	4,452	2.45	211,203	5.66	486,817
76	2,107	$ 125.52	1.06	2,239	2.58	108,848	5.63	237,090	4,135	$ 125.78	1.05	4,354	2.49	206,323	5.75	475,164
78	2,027	$ 127.43	1.08	2,186	2.62	106,356	5.71	231,509	3,974	$ 127.76	1.07	4,257	2.53	201,399	5.83	463,623
80	1,949	$ 129.38	1.10	2,135	2.67	103,883	5.80	225,868	3,816	$ 129.78	1.09	4,158	2.57	196,505	5.92	452,083

	Measured & Indicated								Inferred							
Cutoff NSR ($/Ton)	**Ton (x1,000)**	**NSR ($/Ton)**	**Ag Oz/Ton**	**Ag Oz (x1,000)**	**Pb %**	**Pb Lbs. (x1,000)**	**Zn %**	**Zn Lbs. (x1,000)**	**Ton (x1,000)**	**NSR ($/Ton)**	**Ag Oz/Ton**	**Ag Oz (x1,000)**	**Pb %**	**Pb Lbs. (x1,000)**	**Zn %**	**Zn Lbs. (x1,000)**
60	8,462	$ 110.49	0.92	7,796	2.20	373,139	5.04	852,608	7,573	$ 121.18	1.44	10,874	2.74	414,425	4.80	726,406
62	8,150	$ 112.38	0.94	7,650	2.25	366,003	5.12	834,495	7,432	$ 122.32	1.45	10,801	2.77	411,204	4.83	718,355
64	7,861	$ 114.20	0.95	7,507	2.28	359,082	5.20	817,259	7,303	$ 123.36	1.47	10,734	2.79	408,204	4.87	710,722
66	7,582	$ 116.01	0.97	7,362	2.32	352,114	5.28	800,298	7,183	$ 124.33	1.49	10,670	2.82	405,233	4.90	703,443
68	7,306	$ 117.86	0.99	7,212	2.36	345,013	5.36	783,064	7,064	$ 125.30	1.50	10,602	2.85	402,125	4.93	696,096
70	7,036	$ 119.74	1.00	7,061	2.40	337,869	5.44	765,774	6,943	$ 126.28	1.52	10,532	2.87	398,901	4.96	688,482
72	6,764	$ 121.70	1.02	6,904	2.44	330,257	5.53	747,875	6,824	$ 127.25	1.53	10,461	2.90	395,596	4.99	680,718
74	6,496	$ 123.71	1.04	6,745	2.48	322,577	5.62	729,747	6,697	$ 128.28	1.55	10,383	2.93	391,953	5.02	672,157
76	6,242	$ 125.69	1.06	6,593	2.52	315,171	5.71	712,254	6,242	$ 125.69	1.06	6,593	2.52	315,171	5.71	712,254
78	6,001	$ 127.65	1.07	6,443	2.56	307,754	5.79	695,132	6,457	$ 130.22	1.58	10,228	2.98	384,696	5.08	655,546
80	5,765	$ 129.64	1.09	6,292	2.61	300,388	5.88	677,951	6,342	$ 131.15	1.60	10,147	3.00	380,983	5.10	647,471

Mineral resources are not mineral reserves and do not have demonstrate economic viability. There is no certainty that all or any part of the Mineral Resources will be converted to Mineral Reserves.

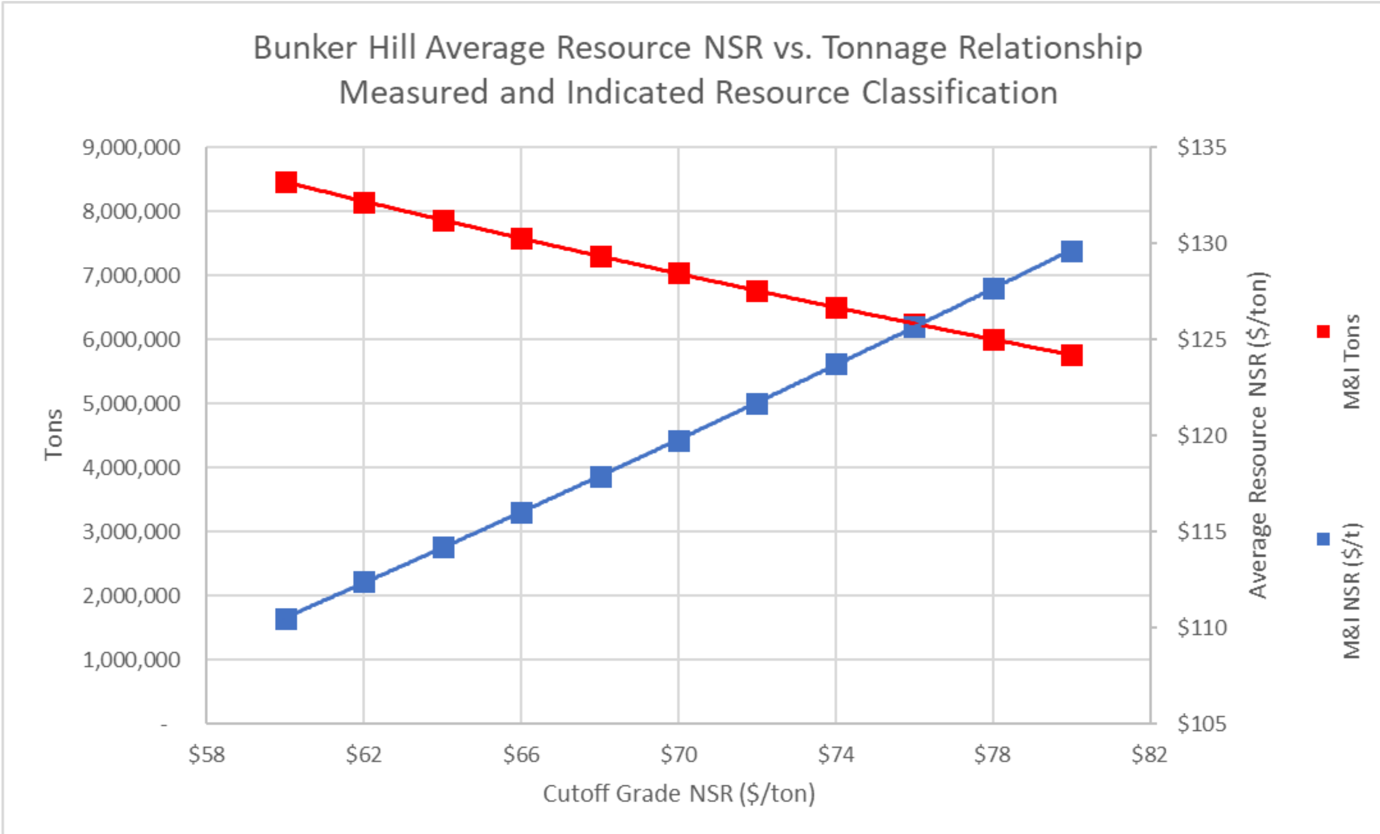


Figure 14-16 Grade vs Tonnage Chart for NSR Cutoff Sensitivity

14.12 SENSITIVITY OF MINERALIZATION TO METAL PRICES

The sensitivity of mineralization defined by the evaluation of the mineral inventory at different metal prices was performed by estimating metal prices at -20% and at metal prices +20%. Table 14-12 lists the amount of the mineralization that would support mineral resources at those metal prices. Table 14-12 should not be misconstrued as mineral resources for the Project. These quantities are only meant to describe mineralization volumes related to the described metal selling prices. Mineral Resources are inclusive of Mineral Reserves. The reader is cautioned to not add Mineral Reserves to Mineral Resources.

Table 14-12 Metals Price Sensitivity Analysis for Bunker Hill Mineral Resource Estimate Inclusive of Mineral Reserves

	Classification	Ton (x1,000)	NSR ($/Ton)	Ag Oz/Ton	Ag Oz (x1,000)	Pb %	Pb Lbs. (x1,000)	Zn %	Zn Lbs. (x1,000)
Ag: 16$/Oz Pb 0.80 $/lb Zn: 0.96 $/lb	Measured (M)	1,467	$ 107.32	1.22	1,789	2.96	86,761	6.42	188,368
	Indicated (I)	2,903	$ 107.29	1.22	3,553	2.85	165,706	6.51	378,051
	Total M & I	**4,370**	**$ 107.30**	**1.22**	**5,342**	**2.89**	**252,467**	**6.48**	**566,419**
	Inferred	5,650	$ 123.14	1.71	9,650	3.16	357,151	5.24	592,663
Ag: 20$/Oz Pb 1.00 $/lb Zn: 1.20 $/lb	**Classification**	**Ton (x1,000)**	**NSR ($/Ton)**	**Ag Oz/Ton**	**Ag Oz (x1,000)**	**Pb %**	**Pb Lbs. (x1,000)**	**Zn %**	**Zn Lbs. (x1,000)**
	Measured (M)	2,374	$ 119.60	1.01	2,404	2.46	116,574	5.37	254,811
	Indicated (I)	4,662	$ 119.81	1.00	4,657	2.37	221,295	5.48	510,964
	Total M & I	**7,036**	**$ 119.74**	**1.00**	**7,061**	**2.40**	**337,869**	**5.44**	**765,774**
	Inferred	6,943	$ 126.28	1.52	10,532	2.87	398,901	4.96	688,482
Ag: 24$/Oz Pb 1.20 $/lb Zn: 1.44 $/lb	**Classification**	**Ton (x1,000)**	**NSR ($/Ton)**	**Ag Oz/Ton**	**Ag Oz (x1,000)**	**Pb %**	**Pb Lbs. (x1,000)**	**Zn %**	**Zn Lbs. (x1,000)**
	Measured (M)	3,001	$ 133.28	0.91	2,717	2.18	130,562	4.85	291,361
	Indicated (I)	5,948	$ 133.83	0.88	5,248	2.10	249,411	4.95	588,637
	Total M & I	**8,949**	**$ 133.64**	**0.89**	**7,966**	**2.12**	**379,973**	**4.92**	**879,998**
	Inferred	7,798	$ 133.95	1.41	10,960	2.68	418,256	4.74	739,065

Mineral resources are not mineral reserves and do not have demonstrate economic viability. There is no certainty that all or any part of the Mineral Resources will be converted to Mineral Reserves.

15 MINERAL RESERVES

15.1 INTRODUCTION

Mineral Reserves have been estimated for the Quill, Newgard and UTZ sections of the Project. Measured and Indicated (M & I) Mineral Resources were converted to Probable Mineral Reserves for the mine. Measured Mineral Resources were converted to Probable Mineral Reserves because of uncertainties associated with modifying factors that were taken into account in the conversion from Mineral Resources to Mineral Reserves. Modifying factors considered were limited metallurgical work, minimal bulk mining / sampling of material in the Mineral Resource Estimate and current development advancement. All waste and tailings products are assumed to be placed underground in known open voids. There are surface storage contingency plans in the event additional capacity is required. Continued technical evaluations and advancement of mine development are required to estimate Proven Mineral Reserves.

The Property has been mined continuously since the late 1800's (strikes included) until the early 1980's, with additional limited development, exploration and production up until 1991. Figure 15-1 shows the general site layout and location of the Mineral Reserve for Quill, Newgard and UTZ.

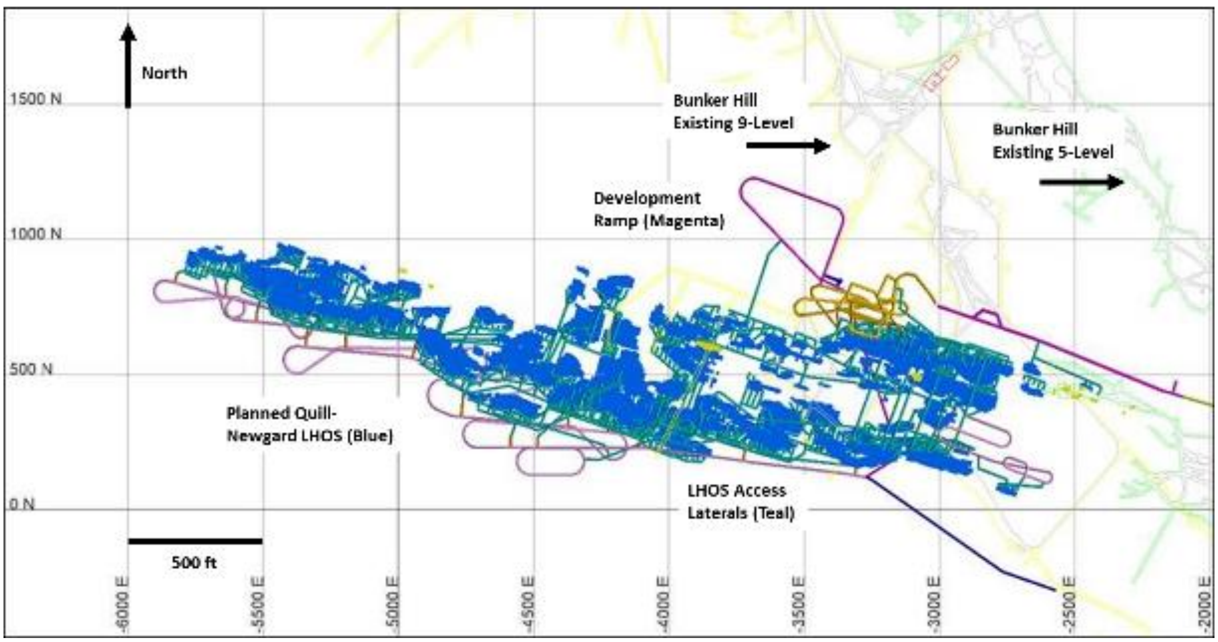


Figure 15-1 Mine Design of Mineral Reserves – Plan View

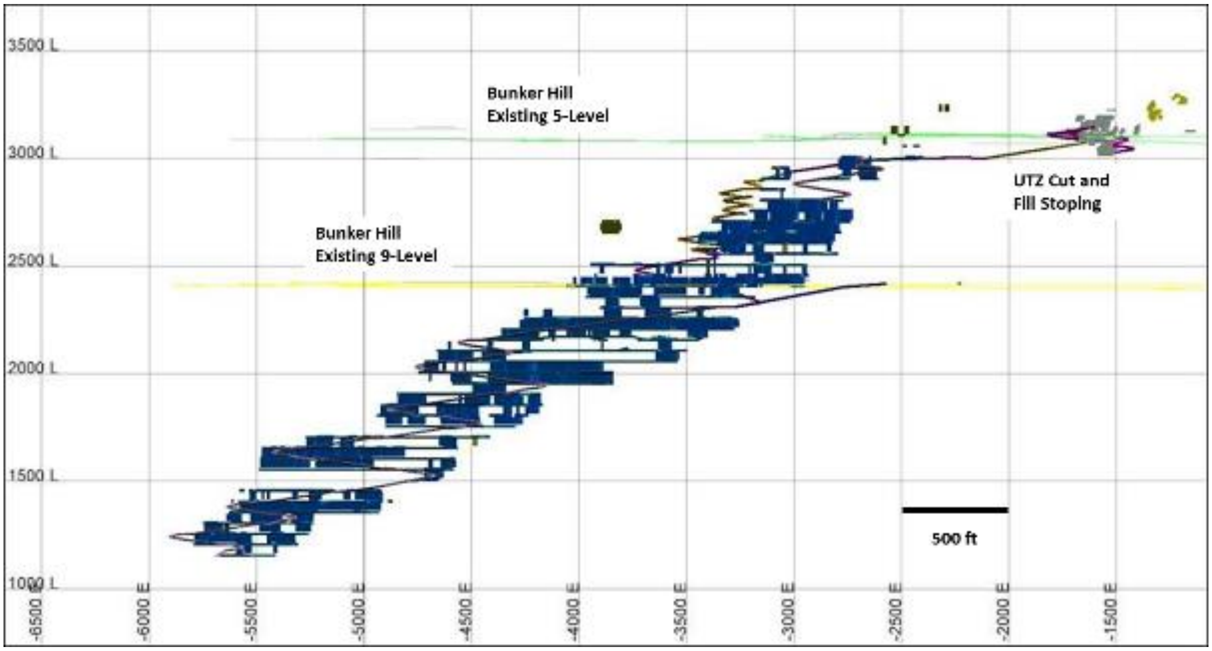


Figure 15-2 Mine Design of Mineral Reserves - Long Section Looking North

15.2 ASSUMPTIONS, METHODS AND PARAMETERS

Measured and Indicated Resources were converted to Probable Mineral Reserves by evaluating operating cost, projected metal revenues and estimated stope shapes and geometries. The general widths, plunge and shape of the Quill and Newgard mineralization lends itself well to transverse (perpendicular to strike) long hole open stoping (LHOS) with fill utilizing rubber tire equipment. The UTZ deposit is more amenable to cut-and-fill (CF) methods due to its shape and geometry.

Mineral reserve tonnages are expressed as dry short tons (i.e., no moisture) based on the density values included in the block model database. Maptek's Vulcan Stope Optimization (Optimizer) algorithm was used to developed stope envelopes based on the NSR values of M & I Resources only. A minimum 5-foot buffer was included around the worked-out stope areas. Delineation drilling is planned prior to mining in support the short-term production mine plan and to identify areas that will require back fill prior to mining adjacent areas.

15.2.1 MINING RECOVERY

Extraction of the planned mine shapes is assumed to be 100% of the NSR \$80/ton plan. Breakeven NSR is \$70/ton for LHOS and \$75/ton for cut-and-fill stopes.

15.2.2 DILUTION

Planned dilution is included in the stope shapes at a zero grade. External unplanned dilution has been set at 5% as an average for all primary, secondary and CF stopes with zero grade.

15.2.3 NET SMELTER RETURN (NSR)

Net Smelter Return (NSR) is defined as the proceeds from the sale of mineral products after deducting off-site processing, treatment, shipping and other payable and non-payable costs. This is a common method to evaluate the value of polymetallic deposits.

Two concentrate streams will be produced during the milling process: a zinc concentrate and a lead/silver concentrate. Silver follows lead though flotation and is payable under the lead smelting agreement. Silver reporting to the zinc concentrate is considered non-payable as is zinc reporting to the lead concentrate.

Table 15–1 represents the estimated the metal prices, mill attributes and smelter treatment and refining charges used for calculating NSR block model values.

Table 15-1 NSR Calculation Assumptions for Cut-Off Value

	Bunker Hill Mining Company	Zinc		Lead		Silver	
Process and Smelter Concentrate Assumptions	Metal Prices	$1.20	per pound	$1.00	per pound	$20.00	$US/t-oz
		$2,400	$US/short-ton	$2,000	$US/short-ton		
		$2,646	$US/tonne	$2,205	$US/tonne		
	Mill Net Recovery - Payable Metal	85.10%		88.20%		84.20%	
	Concentrate Grade	58.00%		67.00%		12.13	t-oz per short-ton
	Concentrate Moisture	8.00%		8.00%			
	Smelter Metal Charge	$245.97	$US/dry short-ton	$234.18	$US/short-ton	$1.25	$US/t-oz
	Concentrate Land Shipping	$24.38	$US/dry short-ton	$24.97	$US/dry short-ton		Incl. Pb Conc.
	Smelter Payable Metal Value	85.0%		95.0%		95.0%	95.0%

Gold is also present in the lead concentrate, but not payable at this time. The NSR calculation assumes that the zinc concentrate is 58.0% Zn, and the lead concentrate is 67.0% Pb.

15.2.4 STOPE DESIGN METHODOLOGY

The model block size for the Quill and Newgard is 5 ft by 5 ft by 5 ft. Block size for the UTZ is 5 ft by 5 ft by 2.5 ft on the Z-axis. The Selective Mining Unit (SMU) is 10 ft by 10 ft. The Optimizer provides the ability to analyze several cut-off NSR values over a range to projected stope geometry and input criteria. The Optimizer only returns stope shapes that fit the search and input operating criteria, it does not analyze capital development. It is up to designer to interpret the results and determine the optimum plan. It may return stope shapes that may not be contiguous to the main body. These areas must be further analyzed to determine if including these outliers returns the incremental capital investment. Areas that are too small or remote from the main access development to pay back the development costs have been manually removed from the reserve.

Several alternate stope runs were made at NSR values above and below the nominal $70/ton breakeven cut-off value and various input criteria. Cut & Fill runs at 10 ft by 10 ft heading dimensions yielded a reasonable maximum of greatest metal yield. These were compared to the more operationally economical, but less selective LHOS mining method. LHOS runs were made based on 20 ft wide by 50 ft high stopes. The majority of the optimization runs were oriented transverse to strike which is the preferred orientation. LHOS widths were held at 20 ft primary and secondary stope widths for cost and schedule estimation pending final hydraulic fill strength testing and geotechnical work. Expanding secondary stopes to a 30 ft or 35 ft width remains an up-side opportunity. Cut-and-fill stopes at 10 ft by 10 ft were performed for the UTZ area due to the geometry and nature of the deposit. Cut-and-fill methods represent less than 3% of the reserves. Bunker Hill's management team made the decision to base the mine plan on $80/ton NSR for all mining to maximize positive short term cash flow.

15.2.5 CUT-OFF VALUE

The estimated operating cost and thus the breakeven cut-off NSR value is shown in Table 15 – 2.

Table 15-2 NSR Break Even Cut-Off Value

Bunker Hill Mining Company	LHOS	Cut & Fill
	$/Ore Ton	$/Ore Ton
Processing		
Labor	$ 7.69	$ 7.69
Power	$ 2.38	$ 2.38
Reagents, Supplies & Assay	$11.06	$ 11.06
Total Process	**$ 21.12**	**$ 21.12**
Mining		
Definition Drilling	$ 0.50	$ 0.50
Direct Mining	$ 21.29	$ 36.42
Indirect Mining - Supv & Maintenance	$ 9.42	$ 10.46
Backfilling Cost ($/Ore Ton)	$ 5.33	$ 5.33
Power	*$ 1.50*	$ 0.04
Mine Site G/A	*$ 9.35*	$ 0.26
Total Mining and G/A	**$ 47.39**	**$ 53.01**
Total NSR BCOG - NSR	**$ 68.51**	**$ 74.13**

(1) Total cost/ton for power and mine site G/A were allocated based on percentage of LHOS and CF tons.
(2) The mine plan is based on an NSR $80 operating cut-off value to maximize short term positive cash flow.
(3) Mining costs escalate as mining advances below the 9-level due to longer haul distances. The above is the average over the life-of-mine.

15.3 MINERAL RESERVE ESTIMATE

Mineral Reserves were classified using the 2014 CIM Definition Standards. The mineral reserve statement is presented in Table 15-3. Mineral Reserves are estimated at an NSR value cutoff of $80/short ton at the reference point of saleable mill concentrates with an effective date of August 29, 2022. Aside from the previously stated modifying factors and to the extent known, the Author knows of no additional relevant factors that could materially affect the stated Mineral Reserve Estimate.

Table 15-3 Bunker Hill Mineral Reserve Estimate

Area	Description	Tons (x1,000)	Zn (%)	Pb (%)	Ag (opt)	Contained Ag (koz)	Contained Zn (klbs)	Contained Pb (klbs)	NSR (US$/st)
Newgard and Quill	Probable	3,111	5.87%	2.56%	1.12	3,492	365,118	159,326	133.53
	Plan Dilution	95	-	-	-	-	-	-	-
	Unplanned Dilution	156	-	-	-	-	-	-	-
UTZ	Probable	89	3.93%	3.74%	1.35	95	7,002	6,658	122.66
	Plan Dilution	1	-	-	-	-	-	-	-
	Unplanned Dilution	4			-	-	-	-	-
Total	Probable	3,200	5.81%	2.59%	1.12	3,587	372,120	165,984	133.23
	Plan Dilution	96	-	-	-	-	-	-	-
	Unplanned Dilution	160	-	-	-	-	-	-	-
	Total Plan	***3,360***	***5.30%***	***2.40%***	***1.02***	***3,587***	***186,060***	***82,992***	***126.88***

(1) Plan Dilution is zero grade waste included in the designed stope shapes and probable tonnages
(2) Unplanned dilution is 5% external dilution added at zero grade
(3) Mineral Reserves stated are inclusive of all above mentioned dilutions and are factored for ore loss due to mining activities
(4) Net smelter return (NSR) is defined as the return from sales of concentrates, expressed in US$/t, i.e.: NSR = (Contained metal) * (Metallurgical recoveries) * (Metal Payability %) * (Metal prices) – (Treatment, refining, transport and other selling costs). For the Mineral Reserve Estimate, NSR values were calculated using updated open-cycle metallurgical results including recoveries of 85.1%,

84.2% and 88.2% for Zn, Ag and Pb respectively, and concentrate grades of 58% Zn in zinc concentrate, and 67% Pb and 12.13 oz/ton Ag in lead concentrate.
(5) Mineral Reserves are estimated using a zinc price of $1.20 per pound, silver price of $20.00 per ounce, and lead price of $1.00 per pound.
(6) Historic mining voids, stopes and development drifting have been depleted from the Mineral Reserve Estimate
(7) Totals may not add up due to rounding

16 MINING METHODS

16.1 HISTORICAL MINING AT BUNKER HILL

The Bunker Hill mine was established in 1885. It was operated until 1981 when it was closed due to low metal prices, an extended labor strike, and capital short-falls required to meet new environmental standards. Although attempts were made to modernize and operate the mine until 1991, it was finally closed. By this time Bunker Hill had processed 35.78 million tons of mineralized material with head grades averaging grades of 4.52 opt Ag, 8.76% Pb and 3.67% Zn, containing 161.72 million ounces of Ag, 3.13 million tons of Pb and 1.31 million tons of Zn. Miners had a specific exemption from the draft during World War II due to the vital need for zinc and lead. Mining and development methods evolved over the years and included square-set timber stoping, open stoping via caving methods, overhand cut-and-fill mining with hydraulic fill and room-and-pillar mining with and without hydraulic fill. Long-hole stoping with fill, cut-and-fill and possibly room-and-pillar mining with fill are the only methods economically viable for sustained operations today. Room-and-pillar mining is not in the current plan.

16.2 MINE ACCESS

A new access ramp is being driven from the 5-level Russell portal (Wardner yard) down to the 6-level which should be completed in October 2022. The existing ramp from 6-level to 8-level will be upgraded for larger traffic and a new ramp from 8-level to 9-level will be driven. 9-level has been and will continue to be the main center of the underground infrastructure. It provides rail access out to the Kellogg portal and main mine yard. A new ramp will be driven from the 9-level down to the 15-level, which is the lowest level in the pre-feasibility plan. Levels below the 9-level are spaced at nominal 200 ft intervals. Sub-level access off the main ramps to the working stopes is provided at nominal 50 ft intervals. These levels will be interconnected with raises to provide ventilation and secondary escape routes.

16.3 PLANNED MINING METHODS

16.3.1 LONG-HOLE OPEN STOPING WITH HYDRAULIC FILL

Long-hole open stoping (LHOS) is employed with engineered hydraulic fill. This mining method is less selective than cut-and-fill (CF) mining however can be accomplished at a lower cost due to greater labor efficiencies and reduced primary ground support and hydraulic fill requirement. Long-hole panels are established by driving a top cut and bottom cut into the mineralized zone leaving a bench between the upper and lower cuts. This bench is then extracted utilizing the top cut as drilling and loading access and the lower cut for mucking access. LHOS are typically mucked with remote control equipment for safety. Stope centerlines are laid out and designated as alternating primary and secondary excavations. The primary stopes are taken first with native rock on all sides. As they are mined-out, they are filled with an engineered hydraulic backfill. The secondary stopes are then mined out adjacent to the primary backfill. The fill strength requirements for secondary stopes are typically much less as they are the last excavations taken in an area. Secondary stopes are typically filled with development material and low or zero cement content hydraulic fill. LHOS represents over 97% of the reserve tons. Planned dilution is included in the stope shapes and defined as M & I material below the cut-off value. External dilution is included at 5% for all planned tons and set to zero grade.

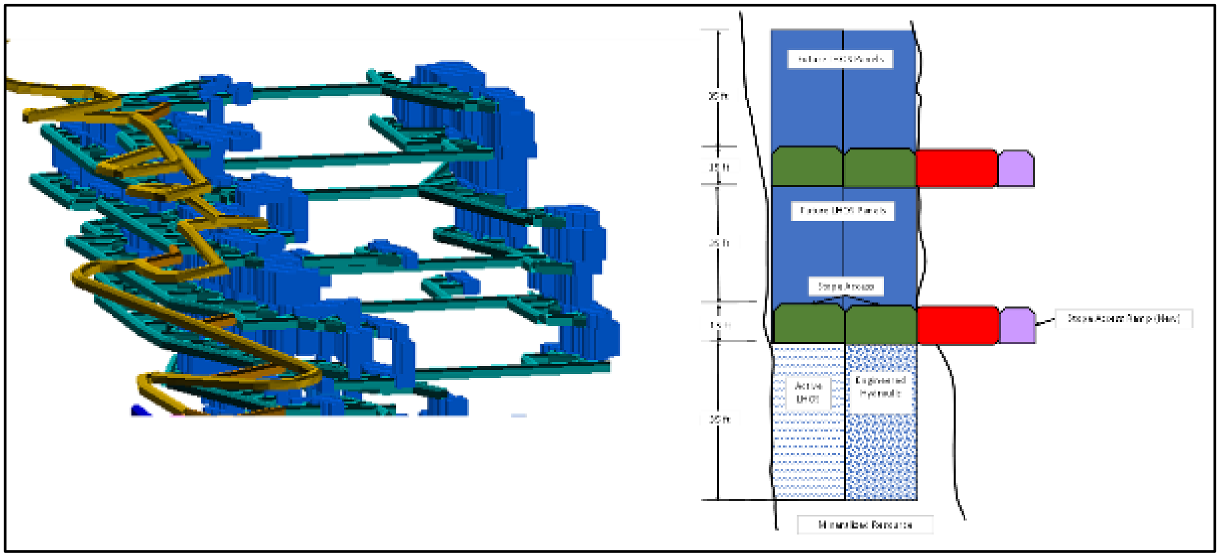


Figure 16-1 Long-hole open stoping

16.3.2 OVERHAND CUT AND FILL MINING

Overhand cut-and-fill mining is a selective method that can maintain grade and minimize dilution. It has been a staple of underground mining in the Coeur d 'Alene district for years. Rubber tire access ramps have replaced raises, slusher and rail car haulage systems and provide greater production efficiencies.

Overhand mining is a bottom-up method to mine successive stope cuts between main mining levels. Typical cut dimensions are estimated at 10 ft by 10 ft. Ground support is installed as required during each cut. As each cut is completed, it is filled with an engineered hydraulic fill. Then the next stope cut is taken on top of the placed fill and the process repeated until the mining panel between main mine levels is extracted.

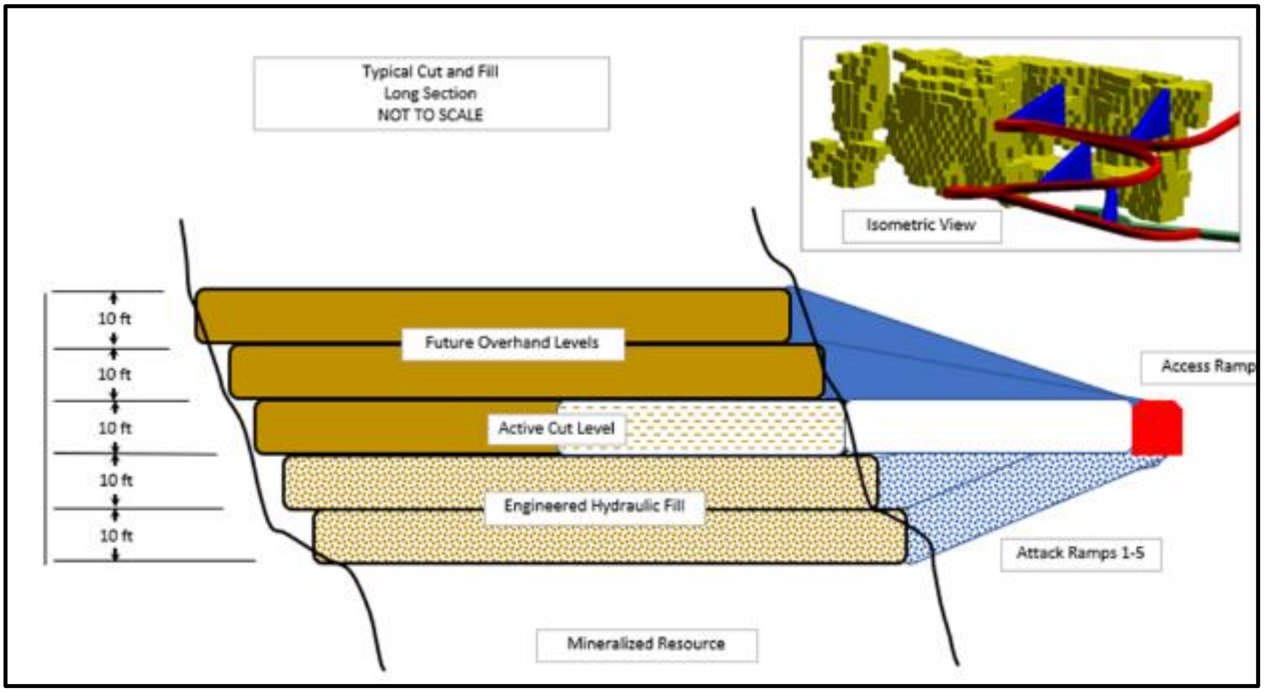


Figure 16-2 Cut and fill mining

The cut and fill stopes are accessed via an inclined ramp developed between levels. The ramp provides ventilation, utilities, and secondary escapeway as well as connecting the mine levels with rubber tire access.

16.4 GEOTECHNICAL PARAMETERS

Beginning in October of 2021 and completed in April of 2022, BHMC conducted a geotechnical investigation of the underground conditions at the Bunker Hill Mine. Data collection involved a data analysis of RQD values logged with previous exploration drilling, geotechnical logging of recently drilled rock cores and an extensive investigation of pre-existing underground excavations and development.

The Bunker Hill Mine is in the Northern Idaho Panhandle region underlain by the Belt-Purcell group of rocks. Mineralization at Bunker Hill is hosted almost exclusively in the upper Revett formation sequence of quartzite dominant rocks. Historically mining followed outcropping veins which did not require extensive geologic interpretation. In the 1970's, after extensive mapping and comparison with drill core, a stratigraphic model was developed, delineating the rocks of Bunker Hill into three major categories.

- Quartzite (Q): Fine grained, thick bedded to massive. Mineralization dominantly hosted in this unit.
- Sericitic Quartzite (SQ): Fine grained, thick to thinly bedded. Interstitial sericitization during metamorphism. Mineralization also hosted in this unit.
- Siltite-Argillite (SA): Dominantly mud, silt or clay protolith. Thinly bedded, planar. Mineralization is not dominantly hosted in this unit.

The ground conditions at Bunker Hill are reported to be good to excellent. Bunker Hill did not have a history of problematic rock burst events as the Silver Valley mines to the east. Bunker Hill is also much shallower than other Silver Valley mines.

16.4.1 UNDERGROUND INVESTIGATION

A site visit was performed by Golder Associates USA Inc. in November of 2021. An underground tour of the mine was conducted to observe the rock mass conditions in the area of previous excavations, future mining areas and develop an understanding of the low RQD values logged in the drill hole database. The tour involved entering through the 5-level Russell Tunnel at Wardner and exiting through the 9-level at the Kellogg Tunnel. Both the UTZ and Quill-Newgard portions at and above the 9-level of the mine were investigated. Some general observations were collected.

- In general, the excavations are stable and mostly unsupported. The quality of the rock mass as observed in the excavations is generally good and there is little variability throughout the mine.
- The RQD values collected during the 2020-2021 drill campaign are consistent with the highly-fractured nature of the core in the boxes, the values are not representative of the favorable stability of the excavations observed during the underground visit.
- The quartzite is a competent bedded rock mass with minor alteration observed as iron staining withing the discontinuities. The water present does not seem to impact the stability of the excavations.
- Rock mass performance seems to be independent of lithology and alteration. However, regional structures do impact the stability of excavations.

16.4.1.1 MCGATLIN CAVE AREA

Historical caving mining area resulted in large open excavations being created that have maintained a stable profile. The McGatlin cave area is approximately 500’ in height between 3 sub-levels (Bunker 4, 5 and 6). It is approximately 150’ wide across mineralization strike and varies in length along strike. It is unsupported and unfilled. The hanging wall of the openings was structurally controlled by quartzite beds dipping to the south-west that appeared to have an ISRM (International Society of Rock Mechanics) UCS strength estimate of R4, which is classified to be strong. Water was both dripping and flowing from the excavation. No falling or sloughing material was observed at the time. Development in the area was either unsupported or observed to have mechanical anchor bolts with straps in the back.

16.4.1.2 051-LEVEL UTZ FINGERS

The “fingers” on the 5-level of the mine are the upper-most proposed area of future mining in the UTZ portion of the MRE. The development ranges from 10’ to 12’ in height and is unsupported. The access ramp to the UTZ fingers was inspected where it crosses the Cate Fault. In this section of drift, the dimensions are 25’ high and 20’ wide with no ground support. The rock mass in the Cate Fault area is quartzite. Discontinuities were observed but no significant dilation or opening along structure greater than 1” were evident. The core holes drilled in this area remain open and in good condition.

Cell mapping was completed in this area to collect rock mass rating (RMR_{76}) data in the fingers where recent panel shots had been taken for metallurgical testing (Figure 16-3). The estimated RMR_{76} of the face mapped is 70%.

Figure 16-3 Cell Mapping Location 5-Level UTZ Fingers. Pen For Scale.

16.4.1.3 6-LEVEL TO 8-LEVEL RAMP

The area from the 5-level through the 8-level of the mine is accessible through the Cherry shaft and an internal ramp down from 6-level to the 8-level. The upper area of the Quill-Newgard planned stoping areas can be accessed through this internal ramp system. Level 8 of the mine has numerous openings from pervious mining ranging in dimension from 7' to 18' high and 6' to 15' wide. Most of the excavations are unsupported. Some of the larger intersections (approximately 25' spans) have metal straps installed with mechanical point anchored bolts. The rock is bedded quartzite with an iron oxide mineral coating and an ISRM strength estimate of R4 which is classified as being strong. Slight overbreak was observed preferentially along the strike of the bedding planes. A few of the pillars were inspected and indication of stress loading or loss of material from the pillars was observed.

Figure 16-4 Development Intersection on the 8-level of the Mine

16.4.1.4 SPAN ANALYSIS OF LARGE UNDERGROUND EXCAVATIONS

A review of the lithology and dimensions of existing large, stable open excavations at Bunker Hill was conducted. Analysis included review of large infrastructure excavations, sub-level cave openings and intersections of development drifting.

Table 16-1 Dimensions of Existing Underground Excavations Used for Span Analysis

Level	Excavation	Excavation ID	Height (ft)	Width (ft)	Length (ft)	Span (ft)
	Access Ramp Intersection	-	25	20	-	-
9 West	Caves (see Figure 18 for ID reference)	1	97	25 to 90	145	25 to 90
6		2	102	10 to 50	166	10 to 50
		3	49	20	80	20
5-6		4	72	40	83	40
		5	76	80	268	80
		6	102	130	321	130
		7	60	40	93	40
		8	362	140	471	140
		9	179	60	234	60
		10	89	25 to 77	138	25 to 77
		11	132	80	190	80
		12	128	120	130	120
		13	128	50 to 120	320	50 to 120

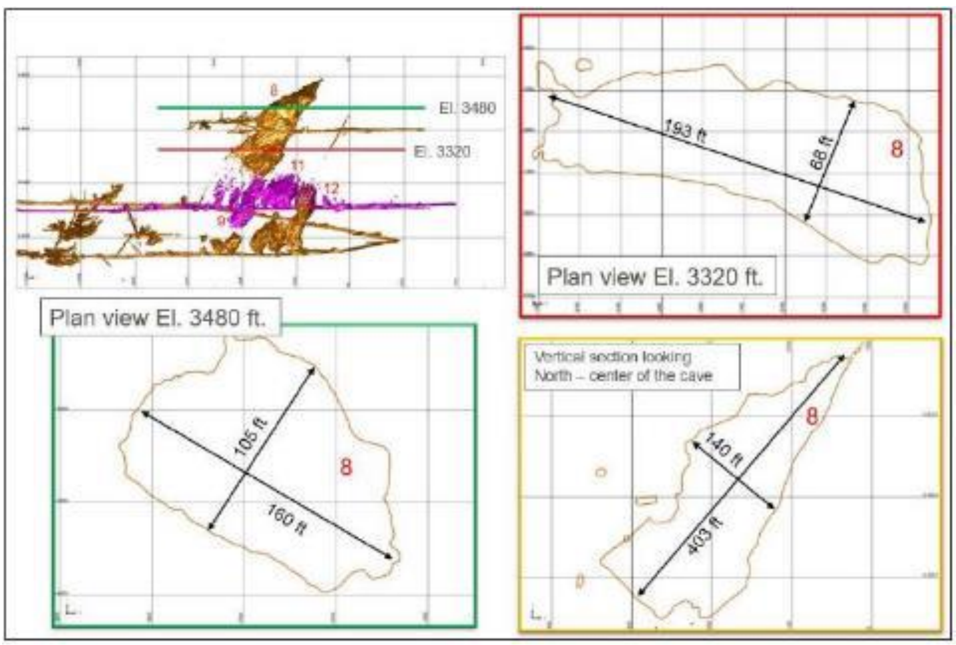


Figure 16-5 Detail on 5-level McGatlin Stope (With Sections) Used for Span Analysis

From this review, and the fact that the large excavations already exist unsupported and are in good condition in a similar geologic setting, it is concluded that the stability of the proposed open stopes of 20' wide, 15' to 85' long and 80' high is likely to be good.

16.4.2 INSPECTION OF DRILL CORE

The core from 17 drill holes was inspected at the core logging facility on site. Most of the core inspected had been split in half for assay. The following observations were made from the split core:

- The core was extremely fractured, much more than would be expected based on underground conditions at the mine.

- The condition of the core observed in the core logging facility and the logged RQD values are not considered representative of the generally favorable stability of the excavations observed underground. The rock mass contains micro-weaknesses that result in fracturing of the core when drilled, but these weaknesses do not adversely impact the stability of the excavations observed underground. Splitting of the core likely resulted in additional fracturing of the core.
- Rock mass characterization (NGI-Q or RMR_{76}) estimated from core logging grossly underestimates the quality of the rock mass. The rock mass does not appear to be well characterized by common rock mass characterization systems (RMR and Q).
- Very few sections of moderate to high alteration were identified in the core in the area of the proposed mining indicating that alteration would not have a significant impact in assessing the stability of excavations.

16.4.3 STRENGTH ESTIMATES

ISRM strength estimates were recorded for a total of 1779' of drill core. A total of 96% of the logged information indicated that the ISRM strength was R4 (50 to 100 Mpa, R4) which is classified as Strong rock.

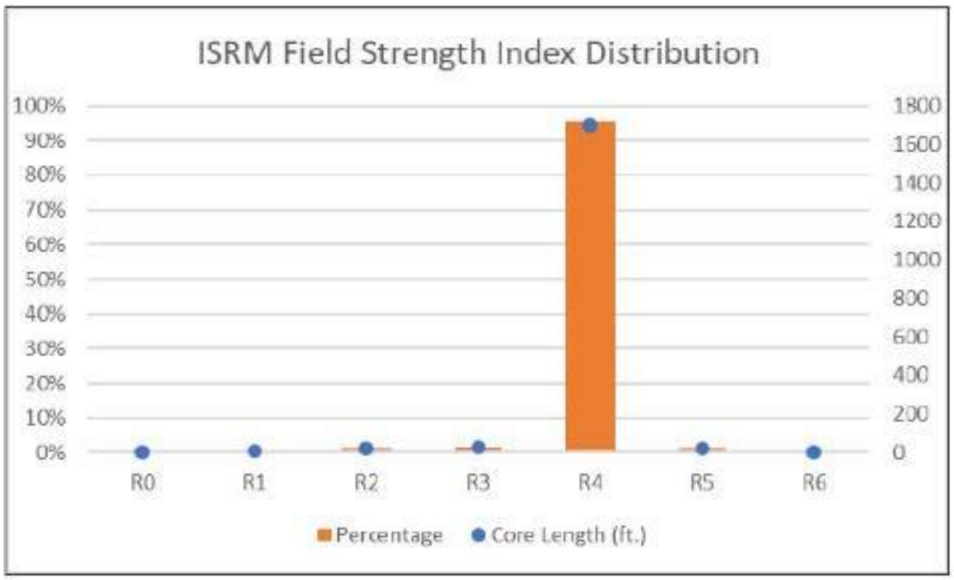


Figure 16-6 ISRM Field Strength Index Distribution (in % and Core Feet Logged)

Core samples were collected and sent to Golder's rock laboratory testing facility in Burnaby, BC Canada for UCS testing. The manner in which each sample failed was recorded as follows:

- Discrete: Shear failure along one discrete feature (weakness)
- Homogeneous: Failure through homogenous rock matrix by extension
- Failure Network: Failure completely along multiple veins, or around clasts, etc
- Combined: Failure by a combination of shear failure on discrete features and extension or shear failure through the homogenous rock matrix

The results correlate with the ISRM strength estimates collected during the site visit, both indicating generally Very Strong Rock (R5) for homogenous failures and Strong Rock (R4) for other failure types.

Table 16-2 Summary of UCS Laboratory Results

Sample Number	Rock Type	Failure Type	UCS (MPa)	ISRM Field Strength Index Class (ISRM, 1981)
7076	Sericitic Quartzite	Failure Network	88.5	Strong (R4)
7076-2	Sericitic Quartzite	Combined	118.3	Very Strong (R5)
7077-2	Sericitic Quartzite	Discrete	80.7	Strong (R4)
7076-3	Siltite Argilite	Homogeneous	132.0	Very Strong (R5)
7078-2	Siltite Argilite	Discrete	53.5	Strong (R4)

16.4.4 GEOTECHNICAL DESIGN

A review of the layout of the development drifts relative to the historical production mining in the UTZ Fingers areas from 8-level up to 5-level was carried out to assess stand-off distances at which there is a low probability of adverse interactions between development and stoping. The historical stand-off distance at the location checked on 8-level was as narrow as 10 ft at some locations but was between 18 ft to 20 ft at higher levels up to 5-level. Golder Associates recommend at least 25 ft of offset distance be maintained for stope access drifts.

16.4.4.1 GROUND SUPPORT RECOMMENDATIONS

Most of the existing excavations underground were unsupported and the stability generally appeared to be good. Mining personnel working in unsupported excavations is a safety concern and ground support is recommended for new excavations. Further rock mass characterization and testing is required to refine the recommendations on adequate ground support requirements for the various development dimensions of future mining activities underground. BHMC plans to use friction anchor rock bolts and a combination of steel mats and chain-link wire to support ground in development drifts with a dimension up to 15’ wide x 15’ high. This is in combination with the use of 8’-long #7 resin grouted rebar with plates and nuts in the back of the drifts. Additional resin grouted rebar ground support will be utilized in intersections where span distances exceed 15’.

Production development should take into consideration the potential impacts of the stress redistributions as mining progresses. BHMC will monitor ground support conditions as mining and development progress deeper in the mine and adjust ground support implementation as required. Development directly adjacent to or driven through structural zones of poor ground conditions will require additional ground support investigations and alterations to the ground support plan associated with development not located in structural zones.

16.4.4.2 HYDRAULIC (PASTE) BACKFILL STRENGTH REQUIREMENTS

LHOS and CF mining methods require backfill upon completion of the stope mining cycle. Planned dimensions of the LHOS are 20 ft wide, 50 ft high and range from 15 ft to over 85 ft long as a single panel. The strength requirement evaluation for paste backfill is based on the free-standing capacity of fill required when a secondary stope is mined and exposes a side wall of the fill mass. Based on the planned stope dimensions in the mine plan, the design UCS is 250 kPa (36.3 pounds per square inch [psi]) for an exposed height of 25m (80’), a length of 8m (25’), a density of 21 kilonewtons per cubic meter (kN/m^3) and a factor of safety (FOS) of 1.5.

16.4.5 RECOMMENDED ADDITIONAL WORK

The above geotechnical assessment by Golder Associates USA should be expanded once additional core drilling has begun. Conservative ground support installation patterns, pillar widths (ramp setbacks), and stope dimensions have been used in the mine plan and cost model based on the authors experience. There are definite cost advantages to increasing stope dimensions (e.g., 30 ft secondary stope widths).

Core should be logged at the drill by an experienced geotechnical geologist or engineer. Additional down hole televiewer surveys and logging are also recommended.

A conceptual model should be constructed and include domains delineated according to:

- Geomechanical characterization of domains (Q', RMR_{89}, RQD, rock strength, weathering, joint set orientations and joint character).
- Definition of engineering properties of the rock (intact and rock mass as well as joint characteristics and joint strengths).
- Spatial distribution of geomechanical design domains (i.e., domaining by rock type, structural zones or spatial volumes).

The mine should develop and maintain Mathews-Potvin Stability graphs based on this work and modify as required with operating experience.

16.4.6 HYDRAULIC (PASTE) BACKFILL

In Q4 of 2021 BHMC engaged Patterson & Cooke USA Ltd. (P&C) to conduct testing on both tails thickening and a hydraulic (paste) backfill system to meet the identified geotechnical strength requirements. For the testing, approximately 50 gallons of tailings material produced from the metallurgical test program identified in section 13 of this report was sent to a P&C testing facility, along with approximately 20 gallons of process water.

16.4.6.1 TAILINGS THICKENING

The first stage in the backfill process will involve the thickening of tailings produced from the mill/process facility located within the mill/process facility building. Initial testing found the tails product to consist of 58.8%m (by mass) solids (density of 2,699 +/-16 kg/m^3), the zero free-water testing showed 75%m solids. Both of these figures result from a 16%m pull concentrate load, the remaining being tails product. Tails product included material from both the Pb and Zn circuits of the processing plant. With continued optimization and variability testing of the process workflow this mass pull % will be adjusted accordingly in future plant engineering but is not projected to materially change.

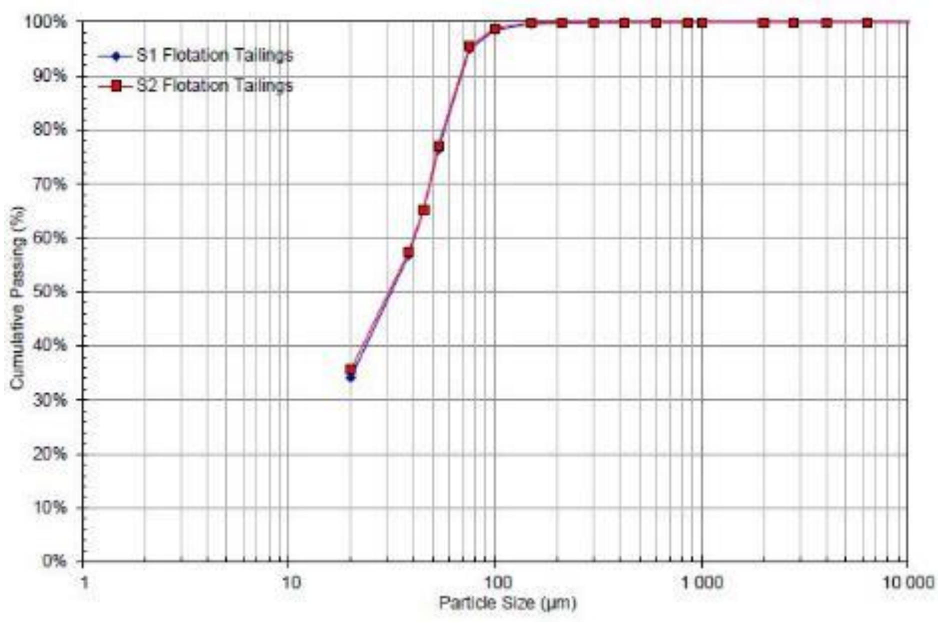


Figure 16-7 Flotation Tailings Wet Sieve Particle Size Distribution

Additional test work was completed on the tailings products including pH, mineralogy and conductivity. The process water was then characterized, and the zero free water material tested for cake resistance, zeta potential and particle settling behavior. Dynamic high-rate thickener tests and dynamic batch thickener bed consolidation tests were conducted for the tails thickening test work. Further rheological testing was conducted on the thickened tails products and carrier fluid to identify the transportable and flow moisture points.

Table 16-3 Thickener Underflow Bed Consolidation Summary

Test	High-Rate Thickener Underflow	Consolidated Underflow
Solids mass concentration	66.7%m	72.6%m
Un-sheared vane yield stress	29 Pa	142 Pa

Table 16-4 Transportable Moisture Limit

Parameter	Flotation Tailings
Flow moisture point	17.8%m
Transportable moisture limit	16.0%m

16.4.6.2 FILTER AND BINDER TESTING

In order to generate a bindable product, filtration tests were run on the thickened tailings material for both a vacuum and pressure filtration circuit. Summary of the results determined that optimum flow moisture point was achievable at all chamber widths tested in both scenarios. For operational implementation, BHMC will use vacuum filtration for the UG paste distribution plant. Further dewatering of thickened tails product, if needed to produce a typical dry stack product, could be achieved with the use of pressure filtration.

To investigate the binder requirements and properties of binder-added, filtered thickened tailings material, a 5% binder (cement) added product was created for testing with a viscometer and a slump cylinder to generate curves for Boger yield stress vs. cemented paste mass concentration.

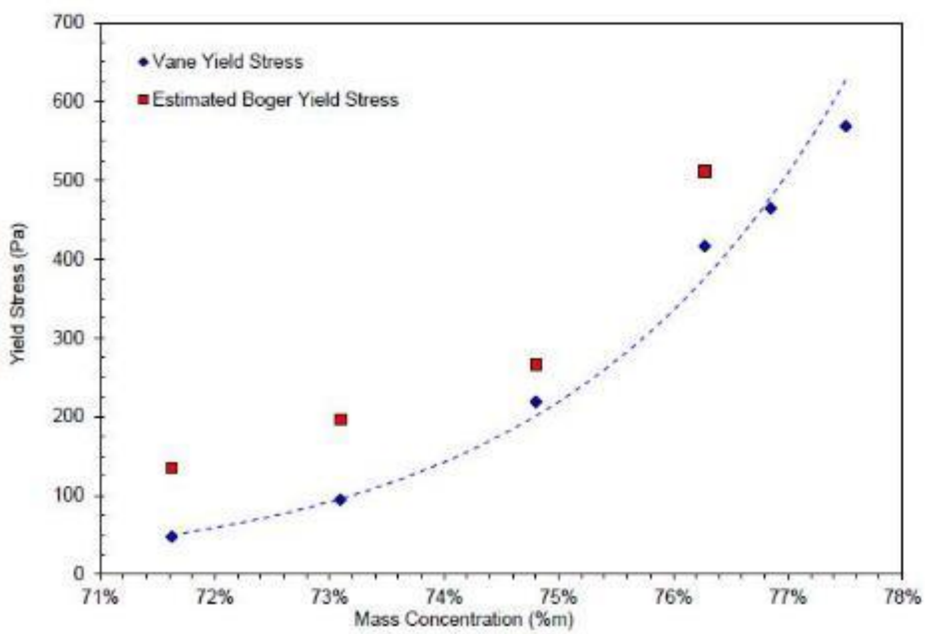


Figure 16-8 Static Vane Yield Stress vs. Solids Mass Concentration

Unconfined compression strength (UCS) testing was required to match against geotechnical recommendations and test the adequacy of the paste product. Binder was added using a ribbon mixer at various concentrations. Binder used was Ashgrove Portland Cement Type I/II. Additional tests were carried out using a 4.8% cement addition to a filtered, thickened tailings product pre-mixed with 0.9% mass component of a high-density sludge (HDS) product collected from the EPA's central water treatment plant (CTP) for future potential inclusion in the paste backfill as a sequestration method. Although current mine plans do not envision Bunker Hill operating its own water treatment plant for mine effluent, and therefore not producing a HDS material requiring sequestration, Bunker Hill has access to HDS material from the CTP if it is found to be beneficial as an additive to stope backfill.

Table 16-5 UCS Test Results (UCS in kPa)

Mix	Tailings Type	Binder (%m)	W:B Ratio	As- Cast Concentration (%m)	UCS			
					7 Day	14 Day	28 Day	90 Day
1 to 4	100% S2 Flotation Tailings	3.6%	9.5	74.5%	286	382	431	557
5 to 8	100% S2 Flotation Tailings	4.8%	7.1	74.5%	340	474	665	845
9 to 12	100% S2 Flotation Tailings	7.0%	4.9	74.5%	517	687	1,104	1,243
13 to 16	100% S2 Flotation Tailings	10.0%	3.1	76.2%	1,035	1,611	1,905	2,161
17 to 20	S2 Flotation Tailings / Sludge Blend	4.8%	7.1	74.5%	360	380	551	597

Geotechnical recommendations from Golder and Associates on UCS strength for the proposed stoping dimensions was 250 kPa. All binder concentrations tested met the recommended strength requirements by the 7-day cure timeline. This allows for future optimization and cost reduction with the use of lower binder concentrations and continued HDS addition. Stope sequencing will allow for cure times of greater than 28 days, further allowing for test work investigating reduction in binder addition concentrations. Results from this test work went into the development of GA and equipment specifications regarding the proposed underground backfill system at the Bunker Hill Mine.

16.4.6.3 BACKFILL PLANT OPERATIONS

At the completion of both long hole stoping and cut and fill stoping there will be a need for a backfill component to allow for the adjacent stopes to be mined. This will be accomplished using an engineered hydraulic (paste) backfill system to pump binder-added, thickened tailings back into the mined-out stope voids. The tailings from the process plant will be sent to a tailings thickener located in the mill/process building. Thickened tailings will be pumped to an adjacent building where a vacuum filter cake will be produced. This filter cake will the back hauled to the Wardner portal site via the same off-road haul trucks bring ore down to the mill. The filter cake will be mixed with the required binder components at Wardner and pumped underground. Surge piles of filter cake at the mill and Wardner site allow for operational flexibility for both the mine and mill.

16.4.6.4 BACKFILL PLANT OPEX

Paste plant operational costs have been estimated on an annual basis for a 1,500 tpd production rate. With the increase to 1,800 tpd production rate, additional OPEX detail is planned with continued detail plant engineering but is not projected to show material changes. Continued test work will focus on optimization of binder additions and flocculant requirements to reduce consumption rates to match geotechnical requirements.

Table 16-6 Paste Backfill Plant Annual OPEX

OPEX Component	Annualized Costs USD$ x (1,000)
Maintenance and Spares	$ 980
Electricity	$ 220
Flocculant	$ 30
Binder	$ 1,690
Total Annual OPEX	**$ 2,920**

16.5 MINE PLANNING AND SCHEDULING

The Wardner backfill plant will produce engineered geotechnical hydraulic fill for the mining operations and a pumpable tailing product to be placed in existing open stopes and select secondary stopes. Mix design and binder content vary depending on use requirements. Delineation drilling in advance of mining will be used to confirm final stope geometries and identify historically non-filled stopes which will be appropriately backfilled prior to new mining advancements.

Contract mining is envisioned with the current contractor, Coeur d 'Alene Mine Contracting (CMC) supplying mine supervision, labor and explosives. Bunker Hill will provide materials, supplies, engineering, geology and overall site management. Mining equipment has either been purchased or will be purchased by Bunker.

Table 16-7 Bunker Hill and Contractor Labor Requirements

Bunker Hill Mining Corporation Prefeasibility Study (PFS) **$USD**	**LOM - Total (Year 1- LOM)**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Contractor Supplied								
Shift Supervisors		2	4	4	4	4	4	4
Lead Miner		4	16	16	16	16	16	16
Miner		4	16	12	12	12	12	12
UG Labor		4	12	12	12	12	12	12
Backfill Plant Operators		-	8	8	8	8	8	8
Mechanics		3	16	20	20	20	20	20
Electricians		2	8	8	8	8	8	8
Surface Operators (Non CMC)			12	12	12	12	12	12
	Total	19	92	92	92	92	92	92

Table 16-8 Bunker Hill and Contractor Equipment Requirements

Bunker Hill Mining Corporation Prefeasibility Study (PFS) **$USD**	**LOM - Total (Year 1- LOM)**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Drill Jumbo		2	2	2	2	2	2	2
Bench Drill			1	2	2	2	2	2
Explosive Loaders		1	1	2	2	2	2	2
Loaders		2	3	3	3	3	3	3
Trucks		3	3	4	5	6	6	6
Bolters			1	1	1	1	1	1
Utility Equipment		2	4	5	5	6	6	6
	Total UG Units	10	15	19	20	22	22	22
Telehandler		1	1	1	1	1	1	1
Cat 988 Class - rental			1	1	1	1	1	1
Cat 745 Class - rental			2	2	2	2	2	2
	Total Surface Units	1	4	4	4	4	4	4

Production is scheduled to begin in the 4^{th} quarter of 2023 and ramp up to 1,800 tpd over the two quarters following commencement of production. Initial production will be target above the 9-level as the lower levels are developed. The mine plan is developed to allow sequential water draw-down as new production horizons are required. This sequencing is continued to the 15-level which is the lowest level in the pre-feasibility plan.

Table 16-9 Production Schedule

Year	September-22 December-23 *Initial Capex*	2024	2025	2026	2027	2028	TOTAL
Ore mined (kt)	77	652	655	655	655	665	**3,360**
Zinc grade (%)	5.90%	5.60%	4.70%	5.70%	5.70%	5.90%	**5.50%**
Lead grade (%)	2.10%	2.40%	2.70%	2.90%	2.40%	1.90%	**2.50%**
Silver grade (t-oz/t)	0.5	0.7	1.3	1.4	1.2	0.8	**1.1**
Zinc concentrate (t)	6,671	53,504	44,852	54,997	55,061	57,909	**272,995**
Lead concentrate (t)	2,091	20,945	23,577	25,078	20,955	16,605	**109,251**
Zn grade - Zn conc (%)	58.00%	58.00%	58.00%	58.00%	58.00%	58.00%	**58.00%**
Pb grade - Pb conc (%)	67.00%	67.00%	67.00%	67.00%	67.00%	67.00%	**67.00%**
Ag grade - Pb conc (t-oz/t)	14.4	18.6	31.5	30.1	31	27.4	**27.6**
Zn prod. - Zn conc (klbs)	7,738	62,065	52,029	63,796	63,871	67,174	**316,674**
Pb prod. - Pb conc (klbs)	2,802	28,067	31,593	33,605	28,080	22,251	**146,397**
Ag prod. - Pb conc (kt-oz)	30	390	742	754	649	455	**3,020**

(1) September 2022 – December 2023 includes initial Capex period

Table 16-10 Capital and Expensed Development Quantities Schedule

Bunker Hill Mining Corporation Prefeasibility Study (PFS) **$USD**	**LOM - Total (Year 1- LOM)**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Capital Development								
Total Capital Horizontal Advance, ft	84,692	647	2,708	12,622	16,779	14,516	32,054	5,366
Total Capital Horizontal Waste, tons	986,233	7,165	50,640	143,621	188,288	161,904	371,588	63,027
Total Capital Vertical Advance, ft	3,750				225	900	1,900	725
Total Capital Vertical Waste, tons	17,136				1,028	4,113	9,034	2,961

16.6 GROUND SUPPORT

Ground conditions are generally good to excellent at Bunker. Typical access ramp and development headings are designed at a nominal 12 ft H by 12 ft W cross section. This is a minimum so with overbreak slightly greater. CF headings are costed at 10 ft H by 10 ft W. LHOS sill dimensions are 15 ft H and 20 ft W with a bench depth of 35 ft for both primary and secondary stopes.

Table 16-11 Estimated Ground Support

Bunker Hill Mining Corporation Prefeasibility Study (PFS) - Bunker Hill Mine	Split Sets Length Feet	Square Ft per Bolt	Max Feet Above Sill	Resin Rebar Length	Square Ft per Bolt	Extra Bolt Factor % *All Bolts*
Development and Stope Access	6	16	5	8	64	10.0%
LHOS Sill Development	6	25	5	10	64	10.0%
Cut-and-Fill Stopes	6	16	8			10.0%

An average cost of $15.59 / ft was used for matts and wire in the development headings and LHOS sill cuts. Additional resin rebar bolting is expected in intersections.

16.7 GRADE CONTROL

Bunker Hill will maintain a mine geology program to collect and analyze data from both development and production headings to maintain and provide QA/QC data for mine to model and mine to mill reconciliations. Mine geologists will be responsible for the visitation of active mining areas to collect rock sample and mapping data. For long hole stope areas, the top and bottom cuts will provide direct access to the mineralized material for collection by channel sampling. Detailed drift mapping will add to the already extensive geologic digitization of historic geologic maps. With the current mine design, there is also the opportunity for the use of core drilling to assist in the delineation and sampling of portions of the mineralized body ahead of the driving of the top and bottom stope cuts. Allowance for grade control geologic activities is accounted for in the cost build-up for stoping activities. Due to the nature of the bluebird style mineralization to be encountered in the UTZ, Quill and Newgard sections of the MRE, strict geologic control will not be the main focus of underground geologic methods, but rather to allow for the continued refinement of grade control and resource models, in addition to providing top-line numbers to assist in full-ROM reconciliation programs.

16.8 MINE VENTILATION

The mine ventilation requirements were modeled using VNET (Mine Ventilation Services software now part of SRK Consulting). The extents of the underground workings are immense. Access is limited to several workings in the mine and air flows have been measured flowing into areas which are currently inaccessible. The mine has substantial natural ventilation flows most of the year. It has been naturally ventilated prior to the fan installations this year to support the drive from the 5 to 6-level. A combination of the 1981 ventilation paper maps, digitized level maps, lidar level and raise surveys, input from Bunker Hill safety and survey personnel, in addition to CMC personnel was used to construct the model. Air flow quantity measurements have been routinely recorded during the start-up; however, a differential pressure survey has not been performed. The airway resistance k-factors used are empirically derived from other similar airways aggregated from a number of mines and published by other sources. Once the 5 to 6-level ramp is completed, and the first main mine fan is installed, a field vent survey can be conducted and k-factors adjusted as required. Additional ventilation work is required and will be part of Bunker Hills ongoing engineering duties.

16.8.1 VENTILATION FROM THE 5-LEVEL TO THE 9-LEVEL

The main airways for the mine levels above the 9-level are the 5-level from the Russell portal and Hanna stope area to the top of the Newgard ramp, the Newgard ramp, the Cherry Raise which connects 9-level to the surface above and to the east of the Russell portal above Wardner, the S. Chance raise which connects the 7, 8 and 9-levels and the KT which daylights at the Kellogg portal. Temporary fans as of September 2022 are installed to draw air in from the Cherry raise and out the Russell Portal and Hanna stope area. Booster fans and fan lines support the Newgard ramp drive to the 6-level. The first main mine fan will be installed with an airlock in the Newgard ramp just above where it is planned to intersect the 6-level. This fan will be a Spendrup 84” 400 hp which is in the process of being purchased along with other fans and equipment from Teck’s Pend Oreille mine which is being closed. This fan will initially operate at about 180 kcfm and 5” water gage (w.g.) drawing air down from the 5-level Russell Portal/Hanna area ramp and forcing it out the Cherry raise and KT to the Kellogg portal. The fan location in the Newgard ramp just above the 6-level will minimize recirculation on the intake side. Bulkheads and other stopping will be installed as required on the levels to prevent short circuiting of air prematurely up the Cherry raise. Booster fans and vent lines will support the Newgard drive from the 8-level to the 9-level. Air will flow down the S. Chance raise and current manway to the 9-level providing a fresh air base at the top of the 8 to 9-level Newgard ramp as it is being driven. Figure 16-9 show the VNET isometric view of the upper levels vent plan looking to the northwest.

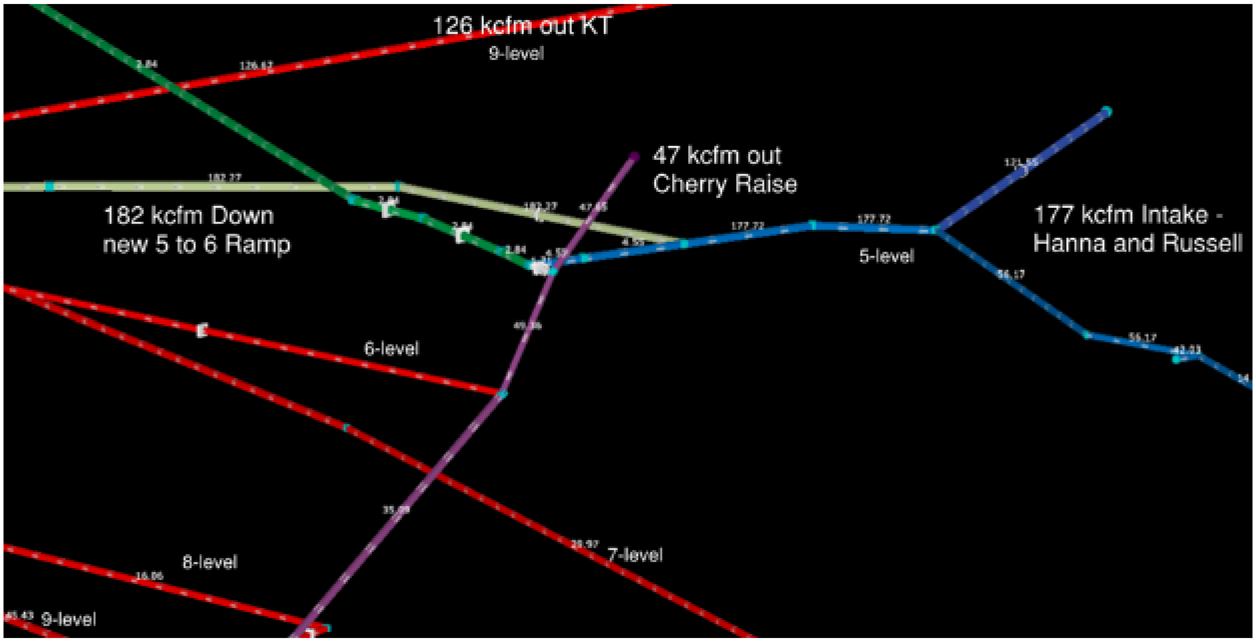


Figure 16-9 Isometric View of Upper-Level Vent Plan (Looking Northwest)

16.8.2 VENTILATION FROM THE 9-LEVEL TO THE 15-LEVEL

The Newgard ramp will continue to be driven from the 9-level down to the 15-level to serve as primary access to these levels. A new raise is required to move air from the 8-level to the top of this new ramp (8.5 to 9.5 Newgard raise). An airlock at the top of the 9 to 10-level ramp will allow the fan placed at the bottom of this new raise to force air down the ramp. A portion of the 9-level from the base of the Cherry raise will be upgraded and another new ramp and fan drift will be driven to intersect the 9 to 10-level Newgard ramp. These two fans will support mining at the lower levels with air down the Newgard and return air coming across the existing levels, up the existing #1, #2 and #3 shafts; and the new level raises and manways which will interconnect the 50 ft stope levels between the main mine levels (~200 ft). An additional exhaust airway will be established on the 8-level above the #1 and #2 shaft area to exhaust out through a combination of upgraded levels and new development raises and ramps to Wardner. Once the 9 to 10-level ramp is driven and flowthrough is obtained, the Cherry raise fan can be started which will now draw air down the Cherry raise. Intake airways will be the Cherry raise and the Newgard ramp via the new 8 to 10-level ramp raise. Exhaust will continue out the KT and out the new exhaust established from 8-level to Wardner. Two additional fans will be required at the bottom of the S. Chance raise and 9-level access to the #3 shaft. Both of these fans are small and considered fan splits in lieu of bulkheads to prevent dead air and possible recirculation.

Table 16-12 Estimated Mine Fan Requirements

Prefeasibilty Mine Fan List	Pressure " w.g.	Quantity kCFM	Air Hp (Calc)	Assumed Fan Efficiency	Mechanical Output Hp	Nominal Nameplate Hp
Main Fans						
5 to 6 level in Newgard	6	254	240	70.0%	343	**400**
Bottom of Cherry 9 Level	6	185	175	70.0%	250	**300**
#1 Shaft to Wardner Surface	6	318	300	70.0%	429	**500**
Raise 8.5 to 9.5 Newgard	5	166	130	70.0%	186	**250**
Fan Splits						
Bottom of S. Chance 9 level	6	62	60	70.0%	86	**100**
9 Level from #3 Shaft	6	56	60	70.0%	86	**100**
Total			**965**		**1379**	**1650**

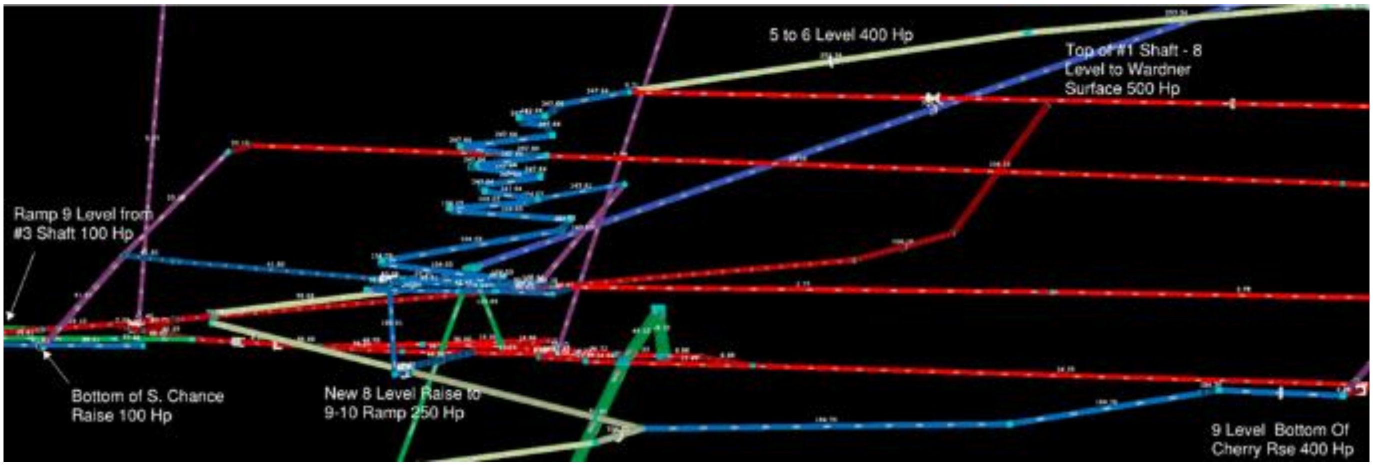


Table 16-13 Isometric View of VNET Ventilation Model 5-level to 10-level (Looking Northwest)

The ventilation plan assumes there will be communication with the old workings and the shafts once they are dewatered. This is likely, considering the condition of the rest of the mine.

16.9 OTHER MINE RELEVANT CONDITIONS

The mine is currently flooded to just above the 11-level. Pumps are located in the #2 shaft compartment to maintain this level. Level collection will be established, and pumping will continue and underground wells or upper-level clean water inflow sumps will be installed to provide a source of mine process and drill water. Mine and process water will also be available via multiple historic drill holes that have intercepted fresh water and have been grouted and headered into supply lines. The development cost estimate includes installation of mine water, discharge water, communications, electric and air lines to and from the working headings.

17 RECOVERY METHODS

The conceptual process flowsheet and the process design criteria were developed based on the completed locked-cycle test work done by Resource Development Inc. (RDi) and the historical plant description discussed in Section 13.

17.1 PROCESS PLANT AND DESIGN - INTRODUCTION

Bunker Hill plans to re-construct a crush-grind-flotation-concentration mill from the nearby Pend Oreille (PO) mine in northern Washington on the Bunker Hill Kellogg Mine Yard. There currently is a large building that housed the historic machine shop at the Bunker Hill mine that will first need to be dismantled and removed for access to the existing slab. The future structures to house the grind-flotation-concentration circuit, as well as the secondary crushing circuit and concentrate storage facilities will need to be constructed.

The process consists of a primary and secondary ore crushing circuit, then a primary grinding circuit followed by two separate flotation circuits to recover lead, zinc, silver and gold into two separate concentrate products; a lead, silver, gold concentrate and a zinc concentrate. Approximately 648,000, short tons of ore will be processed a year at a rate of 1,800 stpd, or 79 stph at 95% availability. From the metallurgical tests outline in section 13 of this report, a process flow diagram was constructed as shown in Figure 17-1.

The flotation tailings are thickened and backfilling underground under the current startup plan. Later, tailings will be sent to a paste backfill processing facility underground and the remaining thickened tailings to the dry-stack tailings facility for storage. Overflow streams from the tailings thickeners reports to the main process water collection tank, where it is treated and recycled for re-use in the plant according to process needs.

An operational and metallurgical review of process plant operations in recent months and metallurgical test programs have resulted in the identification of substantial improvements to the current process flowsheet and equipment to increase operating availability and product quality while maximizing production.

Process improvements currently planned for the Bunker Hill plant are based on operating experience by mill staff, technical reviews by consultants, and on metallurgical test results provided in and the interpretations derived from the recent test programs. The findings of these metallurgical test programs are summarized in previous sections of this report (Section 13).

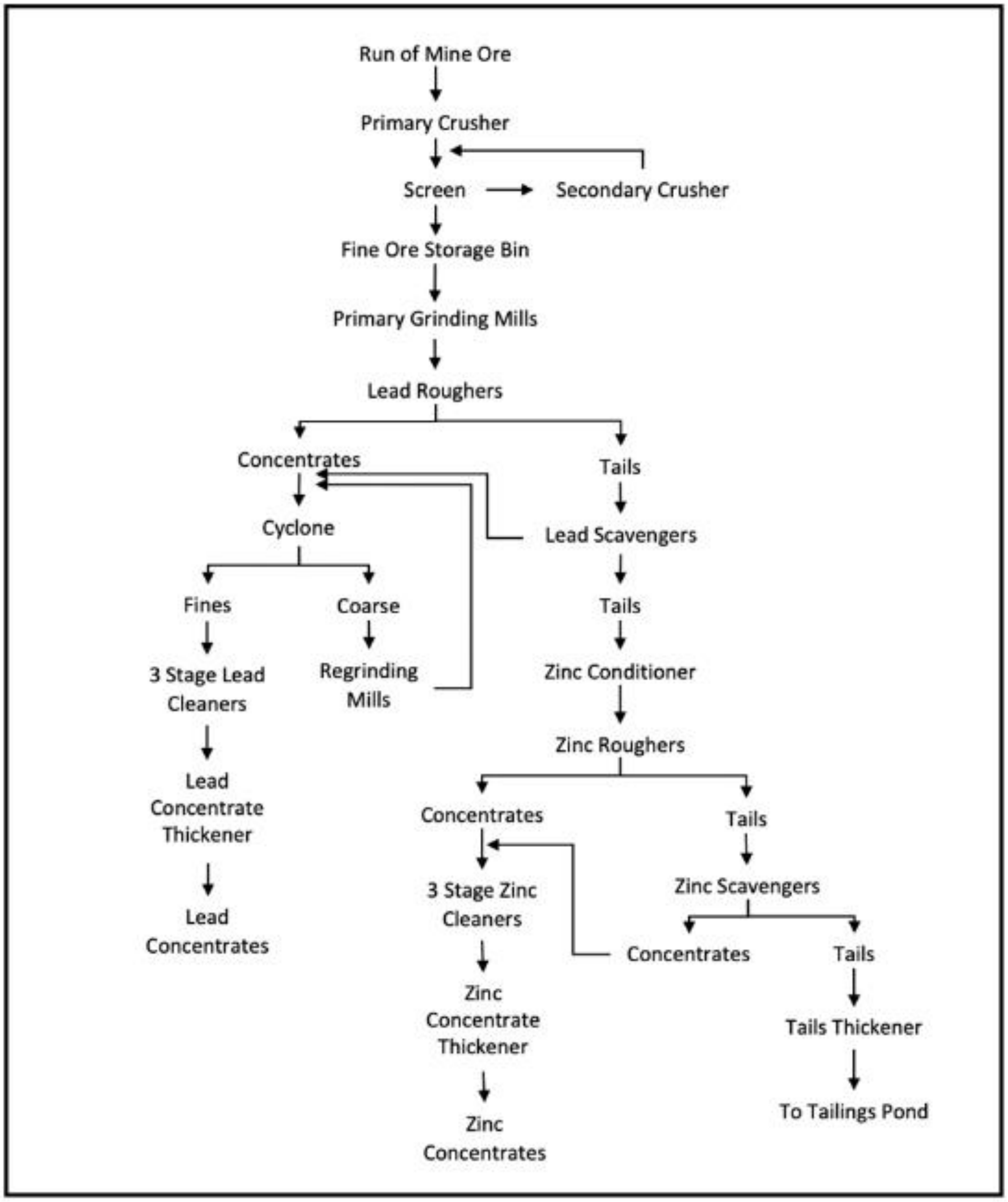


Figure 17-1 Bunker Hill Process Flowsheet

17.2 PROCESS PLANT DESIGN CRITERIA PROCESS PLANT DESIGN CRITERIA

The plant is designed to process 1,800 short tons per day (stpd) with an overall availability of 95%. The design criteria are given in Table 17-1.

Table 17-1 Design Criteria

No.	Parameter	Unit	Value	Source
GENERAL				
1.	Plant tonnage	stpd	1800	Client
2.	Plant availability	%	95	Pro Solv
3.	ROM moisture	%	3	Pro Solv
4.	Design plant throughput	Stpd/stph	1900/79	Calculated
5.	Specific gravity	g/cc	2.8	Calculated
6.	Bulk density	Lb/cu. Feet	125	Measured
CRUSHING				
7.	Operating hours	hr./day	16	Assumed
8.	Crusher availability	%	75	Assumed
9.	Crusher feed	stph	125	Calculated
10.	ROM feed, F_{80}	Ins	8	Assumed
11.	Primary crusher product, P_{80}	Ins	2.5	
12.	Secondary crusher, P_{80}	Ins	0.5	
13.	Screen opening	Ins	¾	Assumed
14.	Screen undersize, P_{80}	Ins	½	
15.	Fine storage bin capacity	hrs. tons	12 815	Assumed calculated
MILLING				
16.	Ball Mill Work Index		13.7-15.6	RDi/SGS
17.	Design BW_i		15.6	Pro Solv
18.	Mill Feed, F_{80}	Microns tph	12,500 68	Crusher product calculated
19.	Mill Product, P_{80} (cyclone overflow)	microns	75-104	RDi
FLOTATION				
20.	Lead Rougher Flotation	min	8	RDi
21.	Zn Rougher Flotation	min	20	Calculated
22.	Pb Cleaner 1 Flotation	min	12	Assumed
23.	Pb Cleaner 2 Flotation	min	8	Assumed
24.	Pb Cleaner 3 Flotation	min	5	Assumed
25.	Zn Cleaner Flotation	Same as lead cleaners		Assumed
26.	Pb Concentrate Thickener	Ft^2/t/day	1	Assumed
27.	Pb Concentrate Filter	lb./ft^2/hr.	300	Assumed
28.	Zn Concentrate Thickeners	Ft^2/t/day	1	Assumed
29.	Zn Concentrate Filter	lb./ft^2/hr.	300	Assumed
30.	Tail Thickeners	Diameter, ft	30	Assumed
31.	Regrinding mill	HP	500	Calculated

17.3 PLANT DESIGN

The simplified process flowsheet of the Bunker Hill plant presented in Figure 17-1 was the basis of the engineering study.

17.4 PROCESS PLANT DESCRIPTION

The process was modeled in METSIM, a specialized metallurgical process simulator to optimize feed sizes and consumptions to assemble a complete plant throughput model. ROM material to be processed will be delivered to the surface storage stockpile by overland haulage from the 5-level of the mine along a re-habilitated haulage route. Material will be brought out of the mine after passing through an initial grizzly screen to a minus 8” size. From the surface stockpile, material will be loaded into the hopper to be processed through the primary jaw crusher. Jaw crusher discharge is set to a top size of approximately 2”. From the jaw crusher discharge, material will travel by conveyor to the secondary crushing circuit.

A set of 2 Metso 7-60 Hydro-Cone cone crushers will be housed in the secondary crushing building. Both crushers will be utilized during the crushing campaigns so crushing activities can be limited to one shift per day. Should it be required, one crusher can remain in use for secondary crushing while the second maintenance is conducted on the other crusher. Screens for the oversize separation step are 4’x10’ and a return conveyor is planned for delivery back to the cone crusher for oversized material. From the secondary crushing circuit, material travels to the fine ore bin. Crushed material has a P_{80} between 0.265” and 0.375”. The fine ore bin is to be located on the north end of the future process facility structure.

Table 17-2 Crusher Configuration

Parameter	Units	Typical
No. of Units		2
Close Side Setting	in	0.3
Throw	in	0.52
Open Side Setting	in	0.82
Bond Work Index	kW h/short ton	13.47
Horse Power	Hp	100
Power Draw Electrical	kW	66.4
Powder Draw Mechanical	kW	57.6

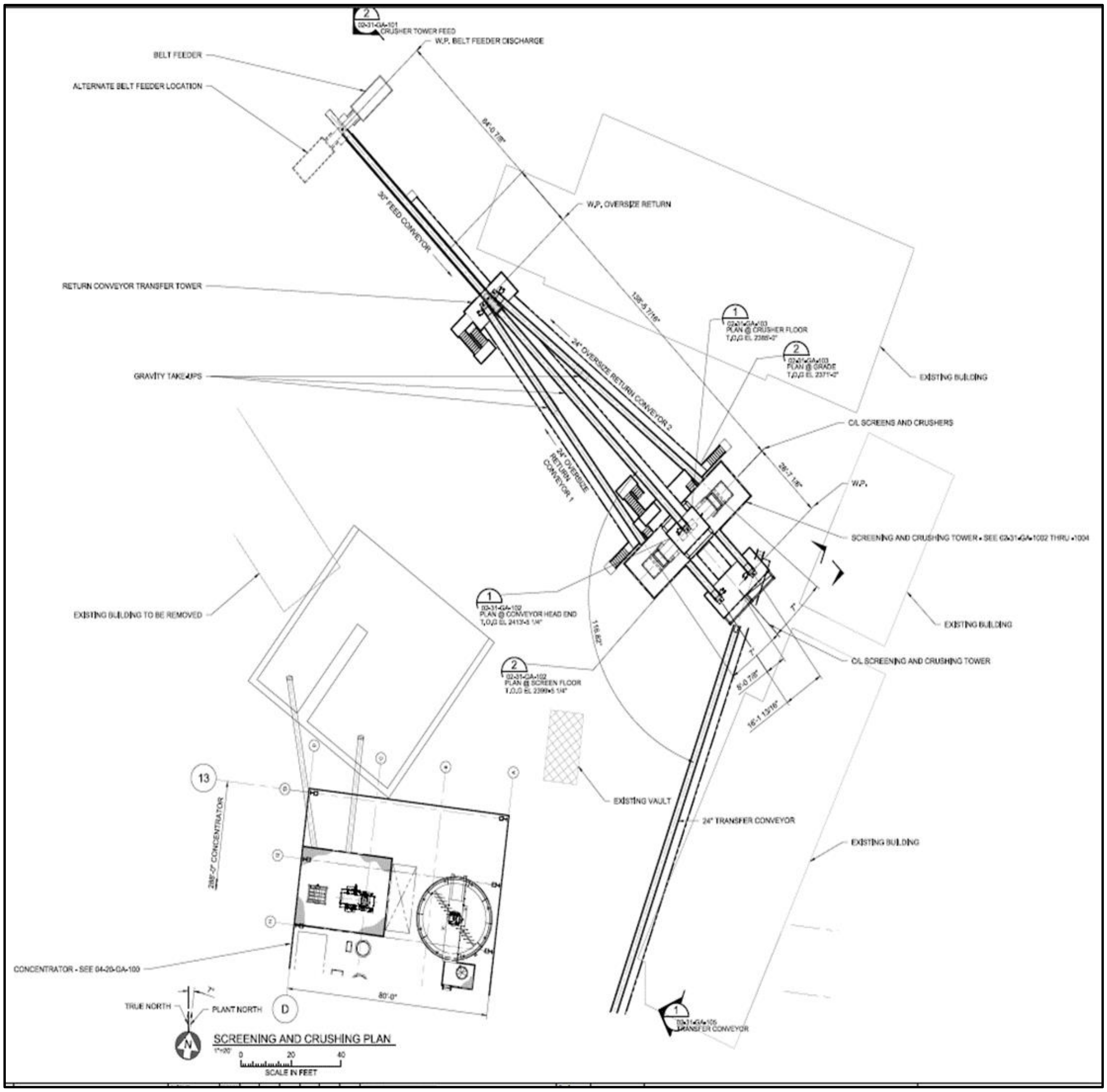


Figure 17-2 General View of Crusher Area

Material from the fine ore bin is conveyed to a closed loop ball mill circuit for primary grinding. Primary grinding will reduce the material to a P_{80} of 74 microns. Classification will take place via a multi hydrocyclone cluster that receives the ground material for classification with the oversize material in the cyclone underflow returning to the ball mill for further grinding. Classified material in the cyclone overflow will be sent to the lead rougher/scavenger stage of flotation.

The initial flotation stage consists of a bank of lead rougher/scavenger cells. From this stage the rougher concentrate overflow component will be sent to a re-grind milling circuit, while the rougher tailings will be sent to the zinc flotation circuit. Lead rougher concentrate is sent to a regrind ball mill with a discharge of P_{80} 325 mesh. An additional hydrocyclone cluster will classify the re-ground material with the oversize being sent back to the ball mill. Classified material is then transported to the first stage of lead cleaner flotation cells.

Underflow tailings from the first lead cleaner stage will report to the zinc flotation circuit, overflow concentrate will report to a second stage of cleaner cells. Second cleaner concentrate will be transported to a third stage of cleaner cells, of which the final lead concentrate product will be made from the concentrate overflow of the third cleaner step. The second lead cleaner tail will be sent back to the regrind circuit and back through the cleaner circuit. Tailings underflow from the third cleaner will be sent back through the feed of the second cleaner circuit, of which all eventual underflow material will be transported to the zinc circuit.

Table 17-3 Lead Flotation Circuit Configuration

Lead Flotation Circuit	Parameter	Units	Typical
Lead Rougher/Scavenger Cells	No. of Units		5
	Cell Size	cu. Feet	300
	Cell Fill Factor		85%
	Residence Time	min	7.85
	RDI Res. Time	min	6
Lead Cleaner Cells			
Cleaner 1	No. of Units		5
	Cell Size	cu. Feet	50
	Cell Fill Factor		85%
	Residence Time	min	5.10
	RDI Res. Time	min	4
Cleaner 2	No. of Units		2
	Cell Size	cu. Feet	50
	Cell Fill Factor		85%
	Residence Time	min	4.07
	RDI Res. Time	min	2.5
Cleaner 3	No. of Units		1
	Cell Size	cu. Feet	50
	Cell Fill Factor		85%
	Residence Time	min	2.27
	RDI Res. Time	min	1.5

The zinc circuit, receiving the tailings underflow from the initial lead rougher/scavenger and the first lead cleaner begins with a zinc rougher/scavenger cell bank. Tailings underflow is sent to final tailings discharge with concentrate overflow progressing through a 3-stage series of re-circulated cleaner cell banks. Sequential underflows are sent back to eventually generate a tails product from the first stage of cleaning. Final overflow material from the third cleaner stage will report to the final zinc concentrate product.

Table 17-4 Zinc Flotation Circuit Configuration

Zinc Flotation Circuit	Parameter	Units	Typical
Zinc Rougher/Scavenger Cells	No. of Units		8
	Cell Size	cu. Feet	300
	Cell Fill Factor		85%
	Residence Time	min	11.98
	RDI Res. Time	min	6
Zinc Cleaner Cells			
Cleaner 1	No. of Units		10
	Cell Size	cu. Feet	100
	Cell Fill Factor		85%
	Residence Time	min	34.98
	RDI Res. Time	min	6
Cleaner 2	No. of Units		4
	Cell Size	cu. Feet	100
	Cell Fill Factor		85%
	Residence Time	min	16.15
	RDI Res. Time	min	2.5
Cleaner 3	No. of Units		2
	Cell Size	cu. Feet	100
	Cell Fill Factor		85%
	Residence Time	min	8.36
	RDI Res. Time	min	1.5

Final tailings are sent to a tailings thickener. The tailings are thickened to a minimum 68% solids for transport to the backfill plant. The concentrates are sent to individual product thickeners. From the lead thickener, the lead concentrate is sent to a vacuum disc filtration unit, with the lead concentrate cake conveyed to the storage building for truck loadout and shipping. Meanwhile, the thickener underflow from the zinc circuit is sent to a vertical pressure filtration unit. The final zinc concentrate product is conveyed to the storage and shipping area. A filter cake material of 10-15% moisture will be generated for each product.

17.5 PROJECTED PLANT RECOVERIES AND GRADES

From the metallurgical work outlined in section 13 of this report, lead concentrates are assumed to assay at 67% lead, with net recoveries of 88.2% lead and 84.2% silver as the payable metals. The zinc concentrate assays 58% zinc, with a net recovery of 85.1% zinc.

17.6 CAPITAL COSTS FOR MILLING OPERATIONS

BARR Engineering compiled capital costs to complete design and installation of a functioning mill and concentrator facility at the Bunker Hill Site. The capital cost tables reflect install costs for the used Pend Oreille equipment and refurbishment as well as new equipment and installation to complete the facility. Summary of capital costs are shown below.

Table 17-5 Capital Cost Estimation

Capital Cost Summary			
NEW MECHANICAL EQUIPMENT TOTAL	**% MEC**		
	100.0%	$	5,324,000
Equipment Erection	60.0%	$	3,190,000
Piping, Platework, and Ductwork	20.0%	$	1,060,000
Electrical	15.0%	$	800,000
Instrumentation and Control	20.0%	$	1,060,000
Lagging and Paint	5.0%	$	270,000
PO MECHANICAL EQUIPMENT			
	100.0%	$	520,000
Equipment Erection	10.0%	$	3,120,000
Piping, Platework, and Ductwork	60.0%	$	1,040,000
Electrical	20.0%	$	1,560,000
Instrumentation and Control	30.0%	$	520,000
Lagging and Paint	10.0%	$	520,000
Civil and Structural Takeoff			
Mill building		$	4,050,000
Fine Ore Bin and Exterior Work		$	2,040,000
Secondary Crusher Structural		$	1,210,000
Concentrate Load Storage Building		$	695,833
Direct Costs		**$**	**26,460,000**
Sale of surplus mills and mill equipment		$	(250,000)
Construction phase services	Captured Elsewhere		
Contractor's Fee/Markup on mechanical	Captured Elsewhere		
Total Indirect Costs		*$*	*(250,000)*
Sub-Total Costs		**$**	**26,200,000**
Process Definition Contingency	15%	$	3,930,000
Total Costs		**$**	**30,100,000**

Installation of the used Pend Oreille (PO) equipment was estimated based on current construction and installation factors BARR had for recent projects from capital equipment costs of the PO equipment if purchased new. The table below represents an estimate of PO equipment if purchased new. Costs are not included in the final totals but are used for calculating factored quantities for the installation only.

Table 17-6 Pend Oreille (PO) Equipment List

DESCRIPTION	COST USD	QTY	EXT
Ball Mill		0	Not Used
Regrind Cyclopac	$ 33,300	1	$ 33,300
Regrind Mill	$ 444,000	1	$ 444,000
Flotation plant	$ 2,220,000	1	$ 2,220,000
Lead Disc Filter	$ 170,940	1	$ 170,940
#1 Vacuum Pump	$ 111,000	1	$ 111,000
#2 Vacuum Pump	$ 111,000	1	$ 111,000
Concentrate Truck Scale	$ 44,400	1	$ 44,400
Load-Out Area Baghouse	$ 149,850	1	$ 149,850
Lime Silo	$ 188,700	1	$ 188,700
Reagent Area Scrubber	$ 15,540	1	$ 15,540
Secondary Crusher - Hydrocone	$ 368,520	2	$ 737,040
Secondary Screen	$ 55,000	2	$ 110,000
Tertiary Crushing O/H Crane	$ 71,040	1	$ 71,040
Vibrating Grizzly Feeder	$ 93,240	1	$ 93,240
Primary Jaw Crusher	$ 346,320	1	$ 346,320
Zinc Horizontal Plate Press Filter	$ 222,000	1	$ 222,000
Fine Ore Discharge Feeder	$ 22,000	6	$ 132,000
Ball Mill Feed Conveyor	$ 115,000	0	$ -
TOTAL MAJOR EQUIPMENT			**$ 5,200,370**

New equipment summary required to complete the plant was completed by BARR and is illustrated in the table below. This equipment represents items that were either nonexistent at PO or were not recoverable/convertible to the needs at the Bunker Hill site. Bunker Hill does not intend to utilize the 3, 8' x 10' mill from PO due to capacity constraints with these mills. Instead, this project considers 2 larger approximately 10' x 14' mills at 1000 HP each. Alternatively, a single 2000 HP mill 13'D x 20'L will work as well in this application. The procurement and installation of the used mill is captured in the new equipment cost table below.

Table 17-7 New Equipment List

DESCRIPTION	COST USD	PROCESS SIZE/CAP.	UNITS	QTY	EXT
Reclaim hopper	$ 67,000	25.0	TON	1	$ 67,000
Crusher Screen Feed Conveyor	$ 286,000	137.0	TPH	1	$ 286,000
Oversize Return Conveyor #1 & #2	$ 209,000	0.0	TPH	2	$ 418,000
Screen Undersize Conveyor #1 & #2	$ 115,000	137.0	TPH	2	$ 230,000
Fine Ore Conveyor	$ 819,000	137.0	TPH	1	$ 819,000
Fine Ore Storage Shuttle Conveyor	$ 50,000	137.0	TPH	1	$ 50,000
Fine Ore Discharge Feeder	$ 22,000	15.0	TPH	6	$ 132,000
Concentrate Transfer Conveyor	$ 115,000	7.4	TPH	2	$ 230,000
Lead Concentrate Conveyor	$ 286,000	6.0	TPH	1	$ 286,000
Zinc Concentrate Conveyor	$ 286,000	7.4	TPH	1	$ 286,000
Fresh/Fire Water Storage Tank	$ 167,000	30' D x 30' H	FT	0	$ -
Lead Thickener	$ 167,000	30' D	FT	1	$ 167,000
Zinc Thickener	$ 211,000	20' D	FT	1	$ 211,000
Process Water Tank	$ 89,000	20' D x 20' H	FT	3	$ 267,000
Pump Allowance	$ 200,000			1	$ 200,000
Bridge Crane	$ 280,000	20.0	TON	1	$ 280,000
Mill Feed Conveyors	$ 130,000	34.5	TPH	2	$ 260,000
New Used Mill/s	$ 337,500	12'Dx14'L	FT	2	$ 675,000
Used mill ship & prep	$ 185,000			1	$ 185,000
2-4 Zinc cleaner cell bank	$ 75,000	8x100cuft		1	$ 75,000
Cyclone Allowance	$ 200,000			1	$ 200,000
TOTAL MAJOR EQUIPMENT					**$ 5,324,000**

This project will require construction of a new process mill building to accommodate this equipment. The existing structure is not code compliant, lacks adequate support structure, is insufficient height, and requires some foundational upgrades with the existing footprint. The existing structure will be removed and replaced with a new pre-engineered building with a common use bridge crane that will span the entire structure north-south. The building cost outline is detailed in the table below.

Table 17-8 Cost Estimation of Buildings

DESCRIPTION	UNIT COST	UNITS	QTY	EXT
Demo entire superstructure	$ 275,000	LS	1	$ 275,000
Foundation remediation	$ 750,000	LS	1	$ 750,000
Ball mill foundations (at 4' thick, 422 sqft plan view area), 2 thus	$ 400	CYD	188	$ 75,200
Regrind mill foundation (at 4' thick, 564 sqft plan area)	$ 600	CYD	84	$ 50,100
Concrete containment curbs, 8"x8", drill dowels into existing slab	$ 30	LF	600	$ 18,000
Pump pads - average size 2'x4'x2' tall	$ 1,500	CYD	7	$ 10,500
Tank Pads - poured on existing slab, assume 7' octagon x 12" high, 7 thus	$ 1,200	CYD	10	$ 12,000
Thickener leg footings - assume 6'x6'x2', 20 thus	$ 750	CYD	53	$ 40,000
Floor sumps - 3 required, assumed cost, construction not determined	$ 8,000	EA	3	$ 24,000
Personnel space (meeting, control, lab, etc) including floor finish	$ 70	SQFT	1620	$ 113,400
CMU room for cyanide tanks and pumps - 10x12 with timber roof	$ 50	SQFT	120	$ 6,000
CMU room for MCC - 10x12 with timber roof	$ 50	SQFT	900	$ 45,000
New overhead doors - assum 12x12 panel doors, electric openers	$ 12,000	EA	3	$ 36,000
New man doors - assume 3x7 with nromal hardware	$ 3,000	EA	5	$ 15,000
Alternate Pre-engineered superstructure for entire footprint	$ 32	SQFT	23040	$ 728,580
PEMB Erection cost	$ 20	SQFT	23040	$ 460,800
Alternate - footing 6' wide x 3' deep 288' long	$ 600	CYD	192	$ 115,200
Alternate - footing 4' wide x 1.5' deep 288' long	$ 600	CYD	64	$ 38,400
Alternate - 8"x24" knee wall, 288' + 2* 80' long	$ 1,500	CYD	22	$ 33,000
Alternate - Floor slab in buiding footprint	$ 600	CYD	467	$ 280,089
Mezzanine at mill feed - post foundations assume 6x6x1.5'	$ 750	CYD	4	$ 3,000
Mezzanine at mill feed - primary structural steel	$ 9,000	TON	14	$ 126,000
Mezzanine at mill feed - grated platform including minor members	$ 35	SQFT	1920	$ 67,200
Mezzanine at mill feed - railings	$ 30	LF	128	$ 3,840
Mezzanine at mill feed - stairs	$ 200	TREAD	50	$ 10,000
Mezzanine at filters - post foundations assume 6x6x1.5'	$ 750	CYD	4	$ 3,000
Mezzanine at filters - primary structural steel	$ 9,000	TON	8	$ 68,040
Mezzanine at filters - grated platform including minor members	$ 35	SQFT	1008	$ 35,280
Mezzanine at filters - railings	$ 30	LF	132	$ 3,960
Mezzanine at filters - stairs	$ 200	TREAD	46	$ 9,200
Mezzanine at flotation (lower level) - primary structural steel	$ 9,000	TON	33	$ 297,000
Mezzanine at flotation (upper level) - post foundations assume 6x6x1.5'	$ 750	CYD	4	$ 3,000
Mezzanine at flotation (upper level at tanks) - primary structural steel	$ 9,000	TON	7	$ 66,960
Mezzanine at flotation (upper level at tanks) - grated platform	$ 35	SQFT	4952	$ 173,320
Mezzanine at flotation (upper level) - railings	$ 30	LF	416	$ 12,480
Mezzanine at flotation (upper level) - stairs	$ 200	TREAD	50	$ 10,000
Mezzanine at regrind and thickeners - post foundations assume 6x6x1.5'	$ 750	CYD	7	$ 5,333
Mezzanine at regrind and thickeners - grated platform including minor members	$ 35	SQFT	422	$ 14,770
Mezzanine at regrind and thickeners - railings	$ 30	LF	106	$ 3,180
Mezzanine at regrind and thickeners - stairs	$ 200	TREAD	50	$ 10,000
Grand Total				**$ 4,051,832**

Not included in the mill building estimate is the cost for a fine ore bin storage facility to feed the mill. The intent is to have approximately 24 hours surge capacity ahead of the mill to help accommodate crusher maintenance and offset ore feed interruptions from the mine. A summary of associated costs to construct are in the table below.

Table 17-9 Cost Estimation of Ore Bin and Exterior Works

DESCRIPTION	UNIT COST	UNITS	QTY	EXT
Site prep exterior work limits-area based on approx sketch	$ 5	SQFT	15000	$ 75,000
Foundation for transfer tower at portal	$ 750	CYD	4	$ 2,667
Foundation for transfer tower for cross-conveyor at fine ore bin	$ 750	CYD	22	$ 16,667
Transfer tower for cross-conveyor at fine ore bin	$ 9,000	TON	9	$ 78,300
Stair at tower	$ 200	TREAD	88	$ 17,600
limestone silo foundation	$ 750	CYD	17	$ 12,500
Fine Ore Bin - foundation	$ 750	CYD	311	$ 233,333
Fine Ore Bin - elevated floor	$ 1,500	CYD	256	$ 384,000
Fine Ore Bin - long sidewalls	$ 1,200	CYD	284	$ 341,333
Fine Ore Bin - short sidewalls	$ 1,200	CYD	256	$ 307,200
Fine Ore Bin - sidewalls below elevated floor	$ 1,200	TON	75	$ 89,600
Fine Ore Bin - conveyor support steel and walkway	$ 35	SF	2304	$ 80,640
Fine Ore Bin - PEMB superstructure	$ 44	SF	2304	$ 101,376
Geotech remediation	$300,000	LT	1	$ 300,000
Grand Total				**$ 2,040,216**

For the first few years of operation, the ROM ore will be transported to a portable surface jaw crusher at the portal in Wardner. Dedicated haul trucks will transport the crushed ROM ore via haul road to the Bunker Hill site. A loader will blend the stockpiled material to a reclaim feeder that feeds the secondary crushing and screening tower. Fine ore product from this system will be fed to the fine ore storage bin as outlined previously. The capital cost for the associated reclaim feeder and crushing/screening tower are in the table below. Please note the portable primary crusher will be a leased unit.

Table 17-10 Cost Estimation of Crusher Area

DESCRIPTION	UNIT COST	UNITS	QTY	EXT
Secondary crusher tower - steel framing	$ 9,000	TON	36	$ 321,369
Secondary crusher tower - grating area	$ 20	SQFT	2250	$ 45,000
Secondary crusher tower - railing	$ 30	LF	396	$ 11,880
Secondary crusher tower - stair treads	$ 200	TREAD	202	$ 40,400
Secondary crusher tower - rock anchors	$ 2,500	EA	18	$ 45,000
Secondary crusher tower - base slab	$ 2,000	CYD	89	$ 177,778
Conveyor transfer tower - steel framing	$ 9,000	TON	10	$ 92,887
Conveyor transfer tower - grating area	$ 20	SQFT	288	$ 5,760
Conveyor transfer tower - railing	$ 30	LF	96	$ 2,880
Conveyor transfer tower - stair treads	$ 200	TREAD	128	$ 25,600
Conveyor transfer tower - rock anchors	$ 2,500	EA	16	$ 40,000
Conveyor transfer tower - base slab	$ 2,000	CYD	33	$ 66,667
Hopper/Feeder slab	$ 600	CYD	21	$ 12,444
Allowance for roofing	$ 40	SQFT	1125	$ 45,000
Allowance for siding	$ 40	SQFT	7000	$ 280,000
Grand Total				**$ 1,212,665**

The concentrate storage and loadout area will initially be located near the mill building and adjacent to the dewatering unit processes. Future plans are to relocate concentrate storage and loadout to an area below the Bunker Hill site and adjacent to McKinley Avenue to simplify concentrate truck loadout and improve safety. Consequently, the initial concentrate storage area will consist of a minimalist approach with a simple slab with collection sump, ecology block stem walls all covered by a steal framework fabric cover structure. The truck scales from PO will be incorporated into the load out in a location that doesn't inhibit loader movement to the reclaim feeder. Associated capital costs are shown in the table below.

Table 17-11 Cost Estimation of Concentrates Storage Area

DESCRIPTION	UNIT COST	UNITS	QTY	EXT
FOUNDATIONS / CONCRETE WORK				
Column / Strip footings	$ 850	LFT		$ -
12" Thick floor slab	$ 900	YARDS	181.48	$ 163,333
Truck scale footings/piers/walls	$ 1,000	YARDS	35.00	$ 35,000
8" Slab u8nder truck scale	$ 900	YARDS	45.00	$ 40,500
8' High precase bunker walls	$ 700	LFT	210.00	$ 147,000
P.E.BUILDING				
Pre-Engineered building 104' X 96' X 28'	$ 20.00	SQ.FT.	10000.00	$ 200,000
P.E. BUILDING ACCESSORIES				
Loader wheel washer with piping	$ 10,000	EACH	1	$ 10,000
Rehab Truck Wash	$ 100,000	EACH	1	$ 100,000
Grand Total				**$ 695,833**

17.7 OPERATING COSTS FOR MILLING OPERATIONS

Summary of process operating costs are shown in Table 17-12 below. The costs are broken down by major cost center and are based on annual concentrator nominal throughput rate of 1,800 stpd. Annual operating costs by major cost center are further broken down by ton of ROM processed. Labor and Reagents are the highest cost drivers for Process area.

Table 17-12 Cost of Processing Plant Equipment (1,800 stpd Capacity)

Operating Cost Summary ($/ ton ore)	TOTAL	Crushing	Grinding	Flotation	Dewatering	Tailings	Maintenance	Reag/Utils	Paste	G&A
Labor	7.69	1.59	1.17	1.32	0.58	0.32	0.86	0.56	-	1.28
Power	2.38	0.66	0.90	0.36	0.21	0.15	-	0.10	-	-
Diesel Fuel & Equipment Rental	0.70	-	-	-	-	-	-	-	-	0.70
Reagents	7.53	-	-	7.04	0.48	-	-	-	-	-
Operating Supplies	0.95	0.31	0.30		0.08		-	0.23	-	0.03
Maintenance Supplies	1.76	0.49	0.52	0.34	0.14	0.14	-	0.14		-
Assay Lab Services	0.09	-	-	-	-	-	-	-	-	0.09
Process G&A	0.03	-	-	-	-	-	-	-	-	0.03
TOTAL	21.12	3.05	2.89	9.07	1.49	0.60	0.86	1.03	-	2.13

General assumptions used for the OPEX model are shown in Table 17-13 below.

Table 17-13 Major Assumptions for Operating Cost Estimation

MAJOR ASSUMPTIONS	
Mill Throughput Rate (Mstpy)	0.66
Mill Throughput Rate (st/d)	1800
Mill Plant Availability (%)	95
Mill Throughput Rate (st/h)	79
Assumed Overtime (%)	5

The labor component for mill operations and maintenance includes critical operational, technical, and maintenance support for a 24/7/365 operating schedule. The exception being that primary crushing is staffed to occur on a single shift only. Secondary crusher operation will occur as needed. The staffing table and associated cost assumptions in below.

Table 17-14 Labor Cost Estimation

Position	Number	Base Rate	Base Salary	Burden	Overtime	Annual Cost	Annual
		$/hr/person	$/yr/person	Overhead	Allowance	per Person	Cost
Process Manager	1		$ 190,000	$ 66,500		$ 256,500	$ 256,500
Operations Shift Supervisor	4		$ 105,000	$ 36,750		$ 141,750	$ 567,000
Operator - Control Room	4	$ 35	$ 72,800	$ 25,480	$ 3,640	$ 101,920	$ 407,680
Operator - Primary Crushing	2	$ 30	$ 62,400	$ 21,840	$ 3,120	$ 87,360	$ 174,720
Operator - Secondary Crushing	4	$ 30	$ 62,400	$ 21,840	$ 3,120	$ 87,360	$ 349,440
Operator - Grinding / Regrinding	4	$ 30	$ 62,400	$ 21,840	$ 3,120	$ 87,360	$ 349,440
Operator - Flotation	4	$ 30	$ 62,400	$ 21,840	$ 3,120	$ 87,360	$ 349,440
Operator - Concentrate Thickening / Filtration	2	$ 30	$ 62,400	$ 21,840	$ 3,120	$ 87,360	$ 174,720
Operator - Reagents & Utilities	2	$ 28	$ 58,240	$ 20,384	$ 2,912	$ 81,536	$ 163,072
Clerk	1	$ 20	$ 41,600	$ 14,560		$ 56,160	$ 56,160
Maintenance General Foreman/Superintendent	1		$ 125,000	$ 43,750		$ 168,750	$ 168,750
Maintenance Planner	1		$ 95,000	$ 33,250		$ 128,250	$ 128,250
Mechanical Supervisor	1		$ 100,000	$ 35,000		$ 135,000	$ 135,000
Electrical Supervisor	1		$ 100,000	$ 35,000		$ 135,000	$ 135,000
Mechanics	6	$ 38	$ 79,040	$ 27,664	$ 3,952	$ 110,656	$ 663,936
Electricians	4	$ 38	$ 79,040	$ 27,664	$ 3,952	$ 110,656	$ 442,624
Chief Metallurgist	1		$ 130,000	$ 45,500		$ 175,500	$ 175,500
Entry level metallurgist	1		$ 90,000	$ 31,500		$ 121,500	$ 121,500
Metallurgical Technician	4	$ 20	$ 41,600	$ 14,560	$ 2,080	$ 58,240	$ 232,960
TOTAL	**48**						**$ 5,051,692**

Power consumption is listed in the table below and reflect the current run time projections, ore hardness, and installed horsepower of the current process configuration.

Table 17-15 Power Cost Estimation

Area	Consumption	Unit Price	Cost
	kWh/st	$/kWh	$/st
Primary Crushing-Conveying	7.0	$ 0.06	$ 0.42
Secondary Crushing-Screening	4.0	$ 0.06	$ 0.24
Grinding (74 µm primary grind)	13.0	$ 0.06	$ 0.78
Flotation	6.0	$ 0.06	$ 0.36
Concentrate Regrinding (45-52 µm)	2.0	$ 0.06	$ 0.12
Dewatering	3.5	$ 0.06	$ 0.21
Tailings Pumping & Disposal	2.5	$ 0.06	$ 0.15
Reagents	0.6	$ 0.06	$ 0.04
Utilities & Water	1.0	$ 0.06	$ 0.06
TOTAL	**39.6**	**$ 0.06**	**$ 2.38**

The reagent suite and consumptions are based on bench top testing and reflect the best-known conditions we have to date. Reagent pricing was an average budgetary estimate from current regional suppliers FOB the Bunker Hill site. Where freight wasn't provided, trucking estimates were obtained by a regional carrier.

Table 17-16 Reagent Cost Estimation

REAGENTS	Consumption		Unit Price	Cost
	lb/st	lb/yr	$/lb	$/st
Zinc Sulfate	1.40	921,736	$ 0.909	$ 1.28
Copper Sulfate	1.40	921,736	$ 1.602	$ 2.25
Zn(CN)2	0.30	197,515	$ 6.660	$ 2.00
Lime - Flotation	2.00	1,316,765	$ 0.116	$ 0.23
Flocculant	0.10	65,838	$ 4.824	$ 0.48
AP242	0.12	79,006	$ 5.463	$ 0.66
SIPX	0.30	197,515	$ 1.503	$ 0.45
MIBC	0.08	52,671	$ 2.196	$ 0.18
Other	-	-	-	
TOTAL				**$ 7.53**

Table 17-17 Cost Estimation of Operating Supplies

Area	Consumption lb/st	Cost $/lb	Cost $/yr	Cost $/st
Balls - Ball Mill (150 microns)	0.100	2.270	149,139	0.23
Balls - Regrind Mill (25 microns)	0.034	2.270	50,707	0.08
Conveyor Belting/Splicing Supplies			85,000	0.13
Screen Panels Secondary	5,000	24	120,000	0.18
Screen Panels Tertiary	-	24	-	-
Filter Cloths	500	100	50,000	0.08
Filter Aid			-	-
Safety Supplies & Equipment			10,000	0.02
Laboratory Supplies & Equipment			10,000	0.02
Misc. Operating Supplies			150,000	0.23
TOTAL			**425,000**	**0.95**

Maintenance consumables and associated costs are listed in the table below. Liner consumption estimates were based on industry comparable rates and assessed against the Bunker Hill hardness data. Without accurate work histories, a general allowance for additional maintenance parts was assessed at 2% of the installed equipment cost. Contract maintenance support was added for shutdown support and supplement site maintenance as needed.

Table 17-18 Cost Estimation of Maintenance Supplies

Area	Consumption	Unit Price	Cost	
	lb/st	$/lb	$/yr	$/st
Liners - Primary Crushing	0.012	$ 5.00	$ 39,420	$ 0.06
Liners - Secondary Crushing	0.020	$ 4.20	$ 55,188	$ 0.08
Liners - Ball Mill	0.193	$ 1.20	$ 152,161	$ 0.23
Liners - Regrind	0.016	$ 1.20	$ 12,614	$ 0.02
Maintenance Parts (2.0% of installed cost)			$ 600,000	$ 0.91
Oil and Grease			$ 75,000	$ 0.11
Contractor Services - Maintenance			$ 150,000	$ 0.23
Tools and Equipment			$ 75,000	$ 0.11
TOTAL				**$ 1.76**

18 PROJECT INFRASTRUCTURE

The Bunker Hill complex is a mature mine with much of the underground infrastructure and development still in place. The mill, smelter and tailing impoundment have been removed and these sites have been reclaimed. Part of the reclamation included surface water diversion structures which are still in use and are maintained in good condition. The original Bunker Hill mine offices, car and maintenance shops, and change house are located near the Kellogg Tunnel (KT) portal and are in serviceable condition, (Figure 18-1).

Figure 18-1 Kellogg Office Complex and Kellogg Tunnel Portal

Road access to the property and the various mine access portal locations are good to excellent. The Kellogg Tunnel (KT) portal is located immediately adjacent to the mine offices at the 2,380 ft elevation. The KT is currently rail haulage and connects to the main hoist rooms and inclined shafts approximately 9,500 ft laterally to the south-southwest on the 9-level at the 2,415 ft elevation. Levels 8 through 4 are above the 9-Level on approximately 175 ft intervals. Levels 10 to 28 are below the 9-Level at approximately 200 ft intervals. Additional mine portals provide access to the 5-level on the Wardner side of the mine. There is a tremendous complex of underground shafts, raises and other infrastructure at Bunker Hill, only infrastructure germane to restarting mining operations are addressed in this report. Bunker Hill site layout is shown in Figure 18 – 2. Avista Utilities (Avista) supplies electrical power to the mine from a sub-station located near the Kellogg side office complex. The Kellogg offices have a high-speed internet connection.

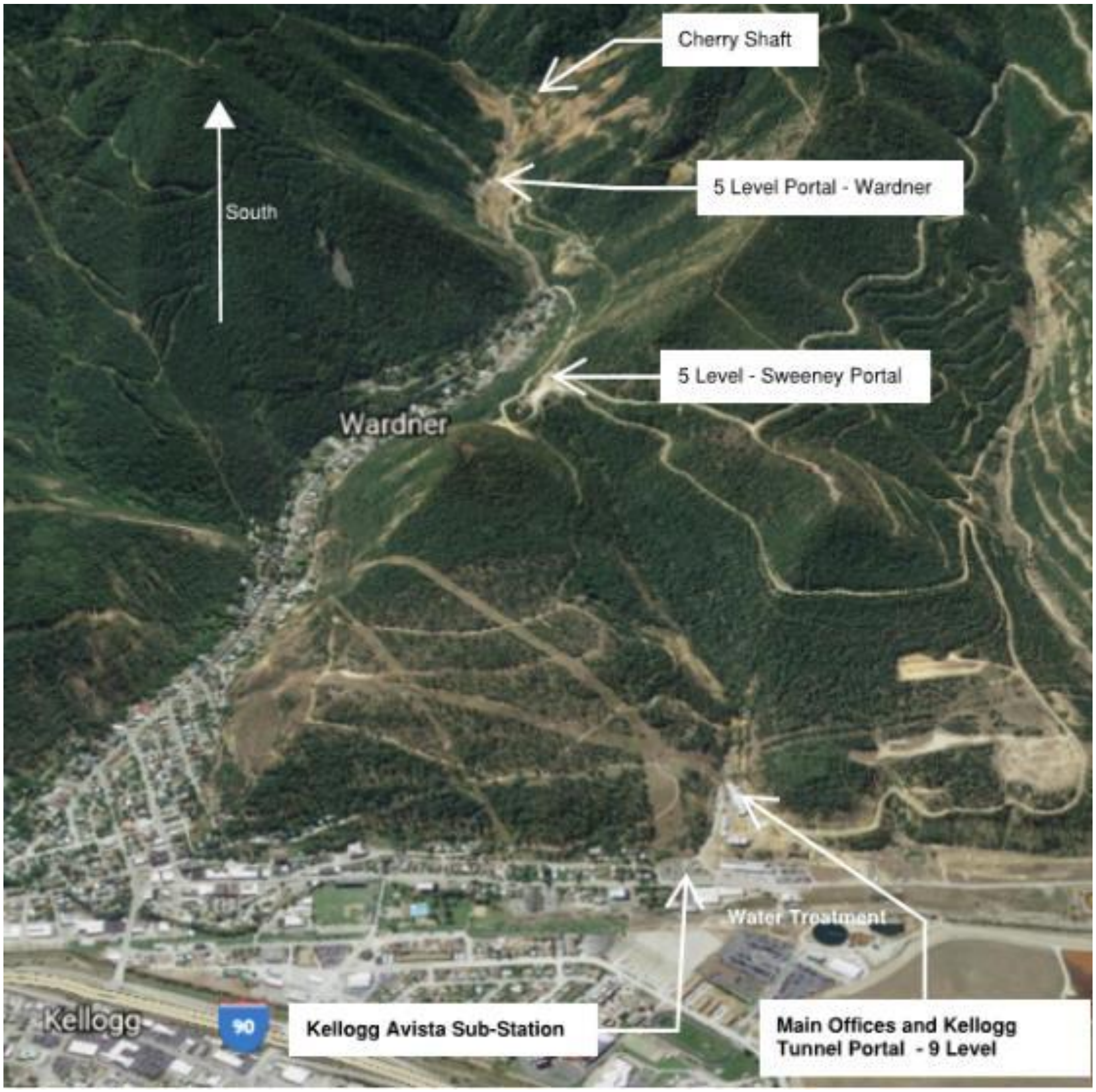


Figure 18-2 Bunker Hill Site Layout

18.1 SITE ACCESS AND COMMUNITY

Bunker Hill is located in Kellogg Idaho along the Interstate 90 corridor on the west side of what is traditionally known as the Silver Valley. It is 60 miles from the Spokane, WA airport to the west and 125 miles to the Missoula, MT airport to the east. The Silver Valley of north Idaho is a desirable place to live and is home to an enthusiastic and talented underground mining work force.

18.2 ELECTRICAL POWER AND DISTRIBUTION

The Avista Kellogg substation is located next to the Bunker Hill main offices and supplies power to the mine and other local consumers.

There are two existing distribution lines now supplying the mine from the Kellogg Avista substation. One feeds the surface mine facilities and the underground loads from the Kellogg side, the other feeds the Wardner mine yard and facilities. The current 3-phase 2.5kV mine distribution system on the Kellogg side is in the process of being upgraded to 3-phase 13.2kV. The overhead powerlines leading to the Wardner side of the mine will be completely upgraded with 3-phase 13.2kV by October 2022. New underground power feeds will be brought in on the Wardner side on 5-level and dropped down to the 9-level for distribution to the mine. A new power feed was installed in the KT to the

9-level underground distribution and currently feeds the underground at 2.5kV. This is a 25kV rated cable and will be upgraded to 13.2kV to minimize line voltage loss. The 9-level around the #1 and #2 hoist rooms will remain the hub of underground infrastructure. The existing u/g substations and switchgear will be replaced with modern equipment. Bunker Hill has been working closely with Avista to upgrade the electrical supply infrastructure to both the main Bunker Hill yard (9-level) and Wardner (5-level) sites. Additional capacity will be freed up at the main Kellogg/Bunker Hill substation by redirecting other non-mine loads to adjacent Avista substations where feasible (either immediately or with minimal additional infrastructure). Capital costs for these activities are funded by the project up front and then credited back to the operational power bill over the life of the project.

18.3 MINE WATER

Mine discharge water now gravity drains out the 9-level through the KT via a ditch adjacent to the rail line to the portal. It is then routed to a water treatment plant constructed by the EPA and currently operated by the Idaho Department of Environmental Quality (IDEQ), see Section 4.2. Water above the 9-level naturally drains out of the KT and averages 500 gpm. Below the 9-level water must be pumped to dewater the workings. Maintaining a water level below the 9-level requires about 700 gpm (1,200 gpm total) to be pumped out of the mine. An additional pumping capacity of 600 gpm was assumed to draw the water table down to successive levels in the mine based on operational experience. It is envisioned to handle the water above and below the 9-level in separate pipeline systems out the KT. Water below the 9-level will be staged up through a series of pump stations located on each level. Mine discharge will continue to be treated at the IDEQ facility under a continued use agreement, all costs of which are included in reported operating costs.

Mine and process water distribution will be developed from underground water sources with either clean water collection sumps or underground interception wells. There is currently not a mine wide water distribution system, but systems for process and dewatering are included in the capital estimates. CAPEX has been budgeted for utilization of underground water sources to be used for mining activities and the mill/process facility will have its own process and make-up water system budgeted for.

18.4 ENGINEERED HYDRAULIC (PASTE) BACKFILL PLANT

BHMC commissioned Patterson & Cooke North America to perform tradeoff studies for costing and operating the mine backfill and tailing placement facilities. The main factors investigated for capital expenditures were pumping requirements based on the material being transported vs friction loss on the pipe run-lengths, ease of binder transport to location, cost to construct (excavate) and future efficiency to distribute to mining areas.

The logistics of operating the milling and processing operations with the hydraulic backfill plant were also considered. The backfill plant will produce two basic products; high strength modulus product for engineered fill back into stope voids and, a low strength modulus product to dispose of excess tailing materials into historic mine openings or when possible secondary stope voids. Pumping the thickened tails underground directly from the mill thickener to vacuum filtering, binder addition and fill placement is viewed to have logistical issues. Filter cake storage is limited underground which requires the mine to placing fill constantly while the mill is running. Conversely, when the mill is not running the mine will not have a fill product.

Capital estimates were developed for the four basic components of the system:

1. Tailing thickening
2. Thicken tailing pumping
3. Thicken tailing vacuum filtering (filter cake)
4. Binder addition and pumping fill into the mine

The tradeoff studies investigated options for locating the four components of the plant:

- All components on surface directly adjacent to the mill tailing thickener,
- Tailings thickening at the mill with thickened tails being pumped underground to the 5-level of the mine where vacuum filtering, binder addition and pump distribution down into the mine voids,

- Tailings thickening at the mill with thickened tails being pumped underground to the 9-level existing excavation known as the Scotty Shop, where vacuum filtering, binder addition and pump distribution up and down into the mine voids,
- Tailings thickening and vacuum filtering at the mill with filter cake being backhauled in the offroad ore haul trucks to the 5-level Wardner (Russell) mine yard where binder addition and pump distribution down into the mine voids will take place.

Results from the tradeoff studies led to the location of the plant on surface, both adjacent to the mill and at Wardner. Tailings thickening will take place inside the mill/process facility building, with the underflow being pumped to the tailings filtration plant located adjacent to the mill/process building. Vacuum filtration will take the thickened tailings and produce a filter cake material which will be deposited and stored in a load-out facility at the plant. A surface loader will transfer the filter cake tailings into overland haul trucks to deliver the material up to the Wardner side of operations along the return route from ROM ore haulage. This saves the requirement to construct a thickened tailings pumping system to deliver feed to the paste plant from the tailings thickener and incurs a lower operational cost to utilize the return trip of the haul trucks to Wardner.

Once delivered to the storage facility at Wardner, material will be loaded into the paste plant, combined with an ordinary cement binder, and subsequently pumped underground via a reticulated piping system. Location at Wardner on the 5-level of the mine will work to greatly reduce the pump horsepower requirements as a majority of the stoping will occur below this elevation. Reticulation piping will work to both deliver backfill material to stoping areas as sequence backfill and to historically mined out void space for storage of additional tailings material. A detailed equipment capital list has been compiled for the 3 components of the plant (tailings thickening, paste plant and reticulation system). Continued detailed engineering is underway for the arrangements and construction of both the Kellogg and Wardner facilities. An operational cost associated with the paste backfill has been assigned to the overall mining cost buildup.

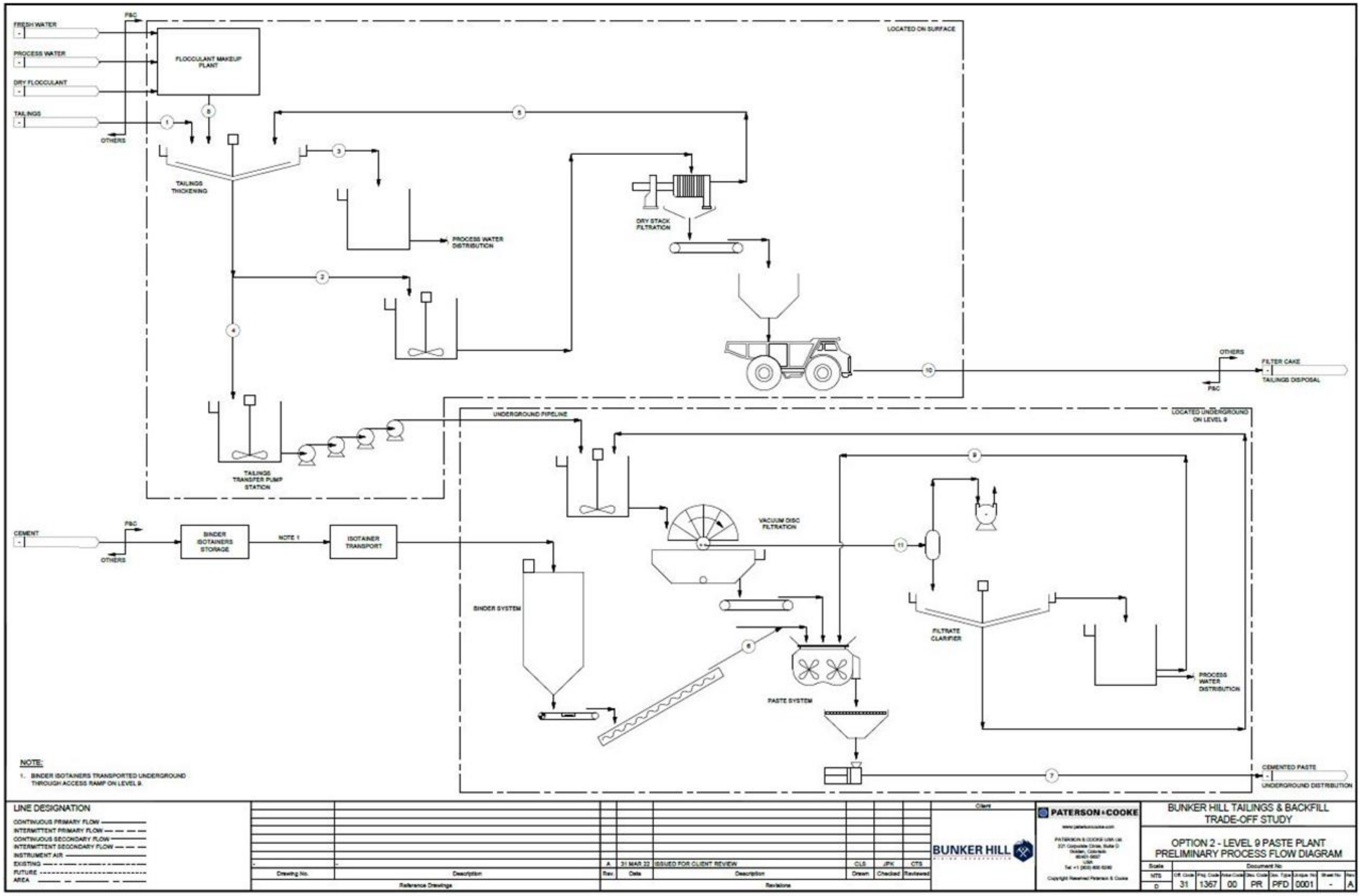


Figure 18-3 Paste Plant PFD

STREAM NUMBER		1	2	3	4	5	6	7	8	9	10	11
DESCRIPTION	-	FLOTATION TAILINGS	THICKENER UNDERFLOW TO PRESSURE FILTER	THICKENER OVERFLOW	THICKENER UNDERFLOW TO PASTE PLANT	PRESSURE FILTER FILTRATE	BINDER	PASTE	FLOCCULANT	TRIM WATER	FILTER CAKE TO DRY STACK	VACUUM DISC FILTER FILTRATE
SOLIDS DENSITY	lb/ft3	174	-	174	174	-	197	175	-	174	-	174
LIQUID DENSITY	lb/ft3	62.4	-	62.4	62.4	-	-	62.4	62.4	62.4	-	62.4
SOLIDS MASS FLOW RATE - NOMINAL	stph	52.5	-	0.152	52.4	-	2.18	54.5	0	0.00	-	0.017
SOLIDS MASS FLOW RATE - DESIGN	stph	57.8	-	0.167	57.6	-	2.40	60.0	0	0.00	-	0.019
LIQUID MASS FLOW RATE - NOMINAL	stph	158	-	152	28.2	-	0	18.2	5.25	7.07	-	17.1
LIQUID MASS FLOW RATE - DESIGN	stph	173	-	167	31.0	-	0	20.0	5.78	7.78	-	18.8
MIXTURE VOLUMETRIC FLOW RATE - NOMINAL	gpm	704	-	606	188	-	2.77	150	21.0	28.2	-	68.3
MIXTURE VOLUMETRIC FLOW RATE - DESIGN	gpm	774	-	666	206	-	3.04	165	23.1	31.1	-	75.1
MIXTURE DENSITY	lb/ft3	74.3	-	62.5	107	-	197	121	62.4	62.4	-	62.5
MIXTURE SOLIDS MASS CONCENTRATION	%m	25.0	-	0.100	65.0	-	100	75.0	0	0.00	-	0.100

Figure 18-4 Paste Plant Tailings to Paste Fill Mass Balance Tables

Table 18-1 Paste Plant Estimated Equipment CAPEX

Costs in USD$ x (1,000)	Direct Costs	Indirect Costs	Total Cost
Tailings Thickening	$ 504	$ 17	$ 521
Paste Plant	$ 3,348	$ 134	$ 3,482
Reticulation system	$ 985	$ 30	$ 1,015
Total Paste Backfill CAPEX	**$ 4,837**	**$ 181**	**$ 5,018**

Table 18-2 Tailings Thickening Component Direct Cost Detail

Equipment	No of Units	UOM	$/Unit	Total Material Cost
Thickener break tank	1	ea	$ 14,950	$ 14,950
Tailings thickener	1	ea	$ 211,000	$ 211,000
Thickener underflow pump	2	ea	$ 17,554	$ 35,108
Thickener overflow tank	1	ea	$ 8,785	$ 8,785
Thickener overflow pump	2	ea	$ 28,525	$ 57,050
Thickener area sump pump	1	ea	$ 11,000	$ 11,000
Flocculant makeup plant	1	ea	$ 49,615	$ 49,615
Thickener feed pump	2	ea	$ 33,936	$ 67,872
Adjustments				$ 870
Process Equipment Sub-Total				**$ 456,250**
6" Carbon steel CL 150	300	ft	$ 30	$ 9,000
<4" dia. All other pipe	480	ft	$ 29	$ 13,920
Piping escalation allowance (20%)	1	lot	$ 11,154	$ 11,154
Allowance for piping supports and hardware	1	lot	$ 2,243	$ 2,243
Adjustments				$ 833
Piping and Valves Sub-Total				**$ 37,150**
Electrical Components				$ 5,100
Control and Instrumentation				$ 5,100
Tailings Thickening Combined Sub-Total				**$ 503,600**

Table 18-3 Paste Plant Direct Cost Detail

Equipment	No of Units	UOM	$/Unit	Total Material Cost
Vacuum disc filter feed tank	1	ea	$ 167,000	$ 167,000
Vacuum disc filter feed tank agitator	1	ea	$ 75,000	$ 75,000
Vacuum disc filter feed pump	1	ea	$ 11,581	$ 11,581
Vacuum disc filter and ancillaries (vacuum pump, snap air receiver, filtrate receiver)	1	ea	$ 495,000	$ 495,000
Filtrate pump	1	ea	$ 9,615	$ 9,615
Filter cake conveyor	1	ea	$ 175,000	$ 175,000
Continuous mixer	1	ea	$ 149,338	$ 149,338
Continuous mixer pressure washer	1	ea	$ 41,926	$ 41,926
Paste surge hopper	1	ea	$ 38,000	$ 38,000
Paste pump	1	ea	$ 450,000	$ 450,000
Plant dust collector	1	ea	$ 25,212	$ 25,212
Binder silo	1	ea	$ 50,000	$ 50,000
Rotary valve	1	ea	$ 9,615	$ 9,615
Weigh feeder	1	ea	$ 80,000	$ 80,000
Transfer conveyor	1	ea	$ 14,420	$ 14,420
Paste diverter valve	1	ea	$ 50,000	$ 50,000
Clean water tank	1	ea	$ 64,084	$ 64,084
Clean water pump	1	ea	$ 15,000	$ 15,000
Flocculant makeup plant	1	ea	$ 49,615	$ 49,615
Flush pump	1	ea	$ 60,000	$ 60,000
Process water tank	1	ea	$ 30,000	$ 30,000
Trim water pump	1	ea	$ 9,615	$ 9,615
Return water pump	1	ea	$ 15,000	$ 15,000
Drive-in sump pump	1	ea	$ 11,000	$ 11,000
Overhead crane	1	ea	$ 120,000	$ 120,000
Air compressor	1	ea	$ 100,000	$ 100,000
Plant air receiver	1	ea	$ 38,000	$ 38,000
Instrument air dryer	1	ea	$ 6,919	$ 6,919
Instrument air receiver	1	ea	$ 11,000	$ 11,000
Adjustments				$ 435
Process Equipment Sub-Total				**$ 2,372,375**
12" Carbon steel, CL 150	50	ft	$ 67	$ 3,330
<4" dia. All other pipe	900	ft	$ 29	$ 25,902
Piping escalation allowance (20%)	1	lot	$ 9,821	$ 9,821
Allowance for valves	1	lot	$ 5,893	$ 5,893
Allowance for hardware	1	lot	$ 4,495	$ 4,495
Adjustments				$ 684
Piping and Valves Sub-Total				**$ 50,125**
Provisional sum				$ 47,439
MCC (Motor Control Center)				$ 500,000
Adjustments				$ 461
Electrical Sub-Total				**$ 547,900**
Control and Instrumentation				$ 118,600
Concrete	200	yd3	$ 485	$ 97,000
Structural and Building				$ 161,750
Paste Plant Combined Sub-Total				**$ 3,347,750**

Table 18-4 Reticulation System Direct Cost Detail

Equipment	No of Units	UOM	$/Unit	Total Material Cost
4" Sch 40, Style 77 Vic	1000	ea	$ 46	$ 46,493
5" HDPE SDR 7	10533	ea	$ 10	$ 105,330
HP-70ES Vic Couplings	50	ea	$ 114	$ 5,700
Style 77 Vic Couplings	480	ea	$ 52	$ 24,960
U-bolt Hangers	664	ea	$ 107	$ 71,015
Chain Hangers	664	ft	$ 68	$ 44,847
Axial Anchor	66	ea	$ 1,699	$ 112,115
Guide Bracket	66	ea	$ 1,285	$ 84,805
PIPE COMPONENTS	1	lot	$ 300,000	$ 300,000
4" Centerlugged Sch 120 Borehole Piping	551	ea	$ 344	$ 189,544
Adjustments				$ 491
Reticulation System Sub-Total				**$ 985,299**

19 MARKET STUDIES AND CONTRACTS

Concurrent with the agreement to satisfy the remaining purchase price of the Pend Oreille mill from a subsidiary of Teck Resources Limited (“Teck”) in an equity issuance, Bunker granted Teck an option to acquire 100% of both zinc and lead concentrate production for an initial term of 5 years after the mine has commenced production of concentrates, with such option to be exercised by March 31, 2023. In the event that the option is exercised, detailed agreements are to be negotiated with treatment and refining charges to be based on benchmark terms, and other terms to be mutually agreed. The Prefeasibility Study assumes that the option is exercised, with all concentrates delivered to Trail, British Columbia. Accordingly, a third-party consultant was engaged for an analysis of future benchmark treatment and refining charges. Long-term zinc and lead treatment charge assumptions of $215 and $150 per dry metric tonne, respectively, were assumed for the economic analysis in the Prefeasibility Study, in addition to a refining charge of $1.25 per payable ounce of silver in the lead concentrate. An arsenic penalty of $4.08 per dry short ton was assumed for the lead concentrate, with no penalties assumed for the zinc concentrate, based on analysis of metallurgical assays.

Freight charges were estimated based on discussions with local operators and under fuel prices assumed in the Pre-feasibility Study, under the assumption of overland haulage to Trail, BC.

The qualified person has reviewed these studies and confirms the results support the assumptions in this Technical Report.

20 ENVIRONMENTAL STUDIES, PERMITTING AND SOCIAL OR COMMUNITY IMPACT

20.1 BACKGROUND

Environmental contamination of surface water, groundwater, soil, and sediment occurred at the Site as a result of mining, milling and smelting operations in the Silver Valley, including but not limited to, at the Bunker Hill Mining and Metallurgical Complex ("Complex"), of which the Mine was a part. Operations at the Complex started in 1885 and continued through the 1980s, and included an integrated system of mining, milling and smelting. Prior to 1928, liquid and solid waste from the Complex was discharged directly into the South Fork of the Coeur d'Alene River and its tributaries. Following 1928, waste from the Complex was directed to a nearby floodplain where a Central Impoundment Area ("CIA") was developed. Acid mine drainage ("AMD") and wastewater from the Complex were discharged to a settling pond in the CIA. In 1974, a Central Treatment Plant ("CTP") was built by the Bunker Hill Mining Company, the owner and operator of the Complex at the time. AMD and wastewater from the Complex were stored in an unlined pond in the CIA before being decanted to the CTP. In 1981, following the closure of the smelter, the CIA was no longer required to impound wastewater from the Complex, although surface run off from the Complex and AMD from the Mine were still routed to the CIA prior to treatment at the CTP. Sludge which formed during the treatment process was also disposed in unlined ponds at the CIA.

Ownership of the Complex passed through a number of companies throughout the 100-year operation of the Complex. In early 1991, the Bunker Limited Partnership, then owner of the Complex and operator of the CTP, closed the Mine and filed for bankruptcy. In late 1991 and 1992, PMC purchased a portion of the Site, which includes underground workings, mineral rights, and much of the land surface above the Mine, from Bunker Limited Partnership. PMC did not purchase the entire Complex nor the CTP. In November 1994; federal and State governments assumed operation of the CTP for ongoing treatment of AMD.

AMD is a result of acid-forming reactions occurring within the Mine among water, oxygen, sulfide minerals (especially pyrite) and bacteria. AMD is acidic with typical pH levels between 2.5 and 3.5, and it contains high levels of dissolved and suspended heavy metals. For human receptors, the constituents of primary concern at the Site found in the AMD are arsenic, cadmium, lead, mercury, and thallium, and for aquatic and terrestrial receptors they are aluminum, arsenic, cadmium, copper, iron, lead, manganese, mercury, selenium, silver, and zinc. Impacts on human health from exposure to these constituents include carcinogenic effects, skin lesions, neuropathy, gastrointestinal irritation, kidney damage, interference with metabolism, and interference with the normal functioning of the central nervous system. Impacts on the environment from exposure to these constituents include significant mortality offish and invertebrate species, elevated concentrations of metals in the tissues of fish, invertebrates, and plants, and reduced growth and reproduction of aquatic life.

AMD is generated and discharged from the Mine continuously. AMD from the Mine is drained through the Kellogg Tunnel portal and then passes through a conveyance system to the CTP for treatment. Average AMD discharge from the Mine during typical flow periods is approximately 1300 gallons per minute. During high flow periods AMD may be diverted to a lined surface impoundment on the Site, where it mixes with other minimal wastewater streams from the Mine. From the impoundment, it is pumped to the CTP for treatment. If not collected and treated at the CTP, AMD from the Mine would flow downhill through the mine yard, across properties where public and environmental exposures would occur, and into Bunker Creek and the South Fork Coeur d'Alene River where it would have significant detrimental effects on water quality and the ecosystem.

Initially, the Bunker Hill Superfund Site was divided into two operable units, the Populated Areas and the Non-Populated Areas, in order to focus investigation and cleanup efforts. A Record of Decision ("ROD") for the Non-Populated Areas Operable Unit was signed on September 22,1992. A ROD Amendment for the Non-Populated Areas Operable Unit, addressing the management of AMD was issued in December 2001. A third operable unit was created to address contamination in the Coeur d'Alene Basin, and a ROD for Operable Unit 3, the Coeur d'Alene Basin, was issued in 2002.

In 1994, EPA issued a unilateral administrative order("UAO") to PMC directing PMC to keep the mine pool pumped to an elevation below the level of the South Fork Coeur d'Alene River (at or below Level 11 of the Mine) to prevent discharges to the river, to convey mine water to the CTP for treatment unless an alternative form of treatment was approved, and to provide for emergency mine water storage within the mine. In 2017, EPA issued a UAO to PMC directing PMC to control mine water flows to the CTP during needed upgrades at the CTP and in high flow periods, to conduct operation and maintenance of the Reed Landing Flood Control Project, to file an environmental covenant on a portion of the Mine property regarding access and operation and maintenance and allowing PMC to fill the mine pool to Level 10 during diversion events.

Response actions required by the 1994 and 2017 UAOs are currently being performed by Bunker Hill Mining Corp. Upon the later of the Effective Date of the Settlement Agreement, US EPA withdrew the 1994 and 2017 UAOs. To the extent that aspects of those UAOs required ongoing work, Bunker Hill Mining Corp agreed to perform such work when it became the operator of the Mine and is now continuing to perform that work now that Bunker Hill Mining Corp is the owner of the Mine.

20.2 ONGOING ENVIRONMENTAL ACTIVITIES

BHMC began a study of the Bunker Hill Mine water system in March of 2020. The review included studies conducted by the US EPA and research conducted by the Bunker Hill Water Management team. This led to a formulation of the following near-term water management activities:

- Acid Mine Drainage ("AMD") Collection System – this captures and controls flows of Acid Mine Drainage to keep them separate from cleaner water in the mine. Total collected AMD flows from levels 5 through 9 fluctuate between 6 gallons per minute and 30 gallons per minute depending on the season that contains approximately 70% of the metal load in the effluent of the Mine. This system was designed and implemented in 2020 and is still in use as of the effective date of this report.
- Surface Water Infiltration Study – BHMC has entered into a Sponsored Research Agreement with University of Idaho to conduct a study of infiltration of surface waters into Bunker Hill Mine. The study will be conducted by a Water Resources graduate student with support from the Hydrology and Hydrogeology faculties. This will inform future source control projects that will seek to limit water infiltration.
- Source Control Program –This will reduce the amount of surface waters entering the mine, which is ultimately expected to reduce water treatment costs by reducing the amount of water requiring treatment. The initial project is a series of test plots of trees, shrubs and grasses to determine which mix of plants will most effectively revegetate the surface expression of the Guy Cave with a dense and broad root network. This project is being carried out in collaboration with the University of Idaho. This area is a barren hillside that is a major point of water infiltration. Within the mine, the Guy Cave is rich in pyrite, which produces Acid Mine Drainage when mixed with air and water. Reducing the amount of water infiltration into this area will significantly reduce the amount of Acid Mine Drainage produced within the mine. The second area of collaboration with the University of Idaho that aims to reduce water in-flow through the surface expression of the Guy Cave is an engineering project that will evaluate the effectiveness and cost of different approaches to establishing a cap or a barrier to flow. This has been designed as a 3-year initiative.
- Water Sampling and Testing – Water samples are collected on monthly basis for wide spectrum testing that includes 45 different analytes at 30 different locations in and around the Bunker Hill Mine. Once a sufficient amount data has been collected, these results will allow BHMC to apply for an IPDES water discharge permit in the future. Field parameters are measured on a biweekly basis by the BHMC Water Management team using a collection of instruments. The parameters include conductivity, pH, dissolved oxygen, total dissolved solids, water temperature, ambient temperature, ambient humidity and flow rate. The sum total of this information provides insights into the efficacy and impacts of water management program activities and deepen understanding of the Bunker Hill Mine water system. Much of this information is available to the public in the "Interactive Database" section of the BHMC website. BHMC is collaborating with the University of Idaho in a multi-year study of the water system as well. This study focuses on the presence of specific isotopes within water molecules that create a unique signature that all the research team to determine the pathways and rate of flow of water from snowpack on the mountains above the mine on their journey into and out of the mine. This will ultimately inform water modeling and lead to more efficient water management practices.

Many of these activities will continue and extend far into the future. The duration and intensity of these activities will depend primarily on two factors: (1) development of understanding through continuous improvement of a

Conceptual Site Model and (2) the magnitude of impacts generated by the activities as measured and recorded by BHMC performance monitoring.

20.2.1 PILOT WATER TREATMENT PLANT

Over the summer of 2022, Bunker Hill conducted a pilot scale water treatment study (WTP), under the direction and design completed by Mine Water LLC. The plant was housed in the existing surface infrastructure outside the Kellogg Tunnel portal. The goal of the plant was to understand the mine site's water treatment requirements. The pilot system was capable to treating 50 – 120 gpm of mine effluent water. It made use of a Lamella clarifier in conjunction with lime slurry addition and multiple stages of flocculation and agitation to treat the water currently discharging from the Kellogg Tunnel. That effluent is currently piped to the IDEQ-operated and US EPA-owned Central Treatment Plant (CTP). Products from the plant are a stream of cleaned water meeting all requisite discharge standards and a high-density sludge (HDS) material that was scheduled to be included into the paste-backfill tailings stream to be included in stope backfill.

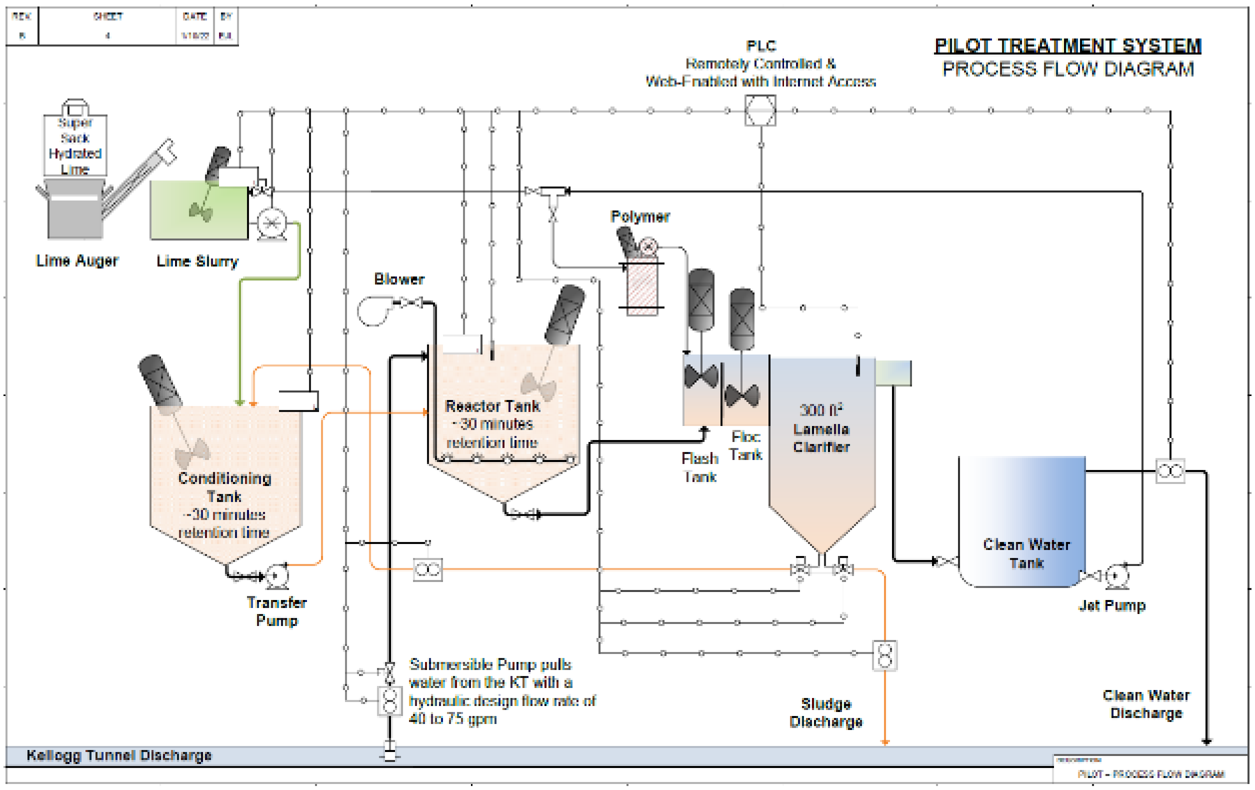


Figure 20-1 Pilot Water Treatment Plant Process Flow Diagram

Testing commenced in May 2022 and finished in July 2022. A total of 16 tests were scheduled, of which 10 were completed covering various parameters of pH, flow and flocculant dosages. The pilot WTP program and design proves that Bunker Hill could construct a WTP capable of meeting its discharge standards for full mine effluent. As of the effective date of this report, all testing using the pilot WTP has concluded, and results verified by Mine Water LLC. The plant itself is currently being disassembled at the Bunker Hill mine site.

Table 20-1 Bunker Hill Pilot Water Treatment Program Test Scenarios

Treatability Study Scenarios - IWTP Variables											
	IWTP Parameters				Field Testing		Lab Analysis				
Scenario #	Flow Rate (gpm)	pH Reactor Tank (SU)	Polymer Dosage (ppm)	MHDS (gpm)	Field Sample Freq	pH, ORP, Cond, & Temp	Total Recoverable Metals (200.7 and 200.8)	Dissolved Metals[1] (200.7 and 200.8)	Alkalinity (2320B) & Anions (300.0)	Hardness (2340B)	TSS
#2	40-60	8	1.5 (0.25% - 4/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#3	40-60	9	1.5 (0.25% - 4/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#3A	40-60	10	1.5 (0.25% - 4/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#4	61-80	7	1.5 (0.25% - 7/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#5	61-80	8	1.5 (0.25% - 7/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#6	61-80	9	1.5 (0.25% - 7/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#6A	61-80	10	1.5 (0.25% - 7/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#8	81-100	8	1.5 (0.50% - 4/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#9	81-100	9	1.5 (0.50% - 4/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge
#9A	81-100	10	1.5 (0.50% - 4/10)	5	Steady State	✓	✓	✓ Not Sludge	✓	✓ Not Sludge	✓ Not Sludge

Discussions are ongoing with IDEQ and US EPA about the proposed use of the CTP adjacent to the mine. These discussions have allowed Bunker Hill to project the continued use of the CTP through the remainder of mine life outlined in this Technical Report and subsequently not requiring the need to construct an internally operated water treatment plant. This allows for the capital expenditure savings of not having to construct an internal WTP, and the operational expense of additional staffing and reagent consumption. All costs associated with continued use of the CTP are scheduled into mine operational expenditures.

20.3 ONGOING WORK REQUIRED BY US EPA

BHMC is required by US EPA to perform all work required to manage AMD at Bunker Hill Mine. Several activities are described in the Settlement Agreement that related to this responsibility.

In-Mine Diversion System and Mine Pool:

BHMC has constructed an In-Mine Diversion System and manages the mine pool such that, when so directed by US EPA, diverted flows of Mine Waters will be stored within the mine or discharged at a controlled rate, and not result in uncontrolled discharge to the environment. The following criteria describe the performance criteria to be met:

1 Mine Waters to be Stored: Waters to be stored by Purchaser include all mine water which originate upstream of the Barney Switch within the mine, including the east side (Milo)gravity flows, the west side (Deadwood) gravity flows, and the lower country (Mine Pool) pumped flows.

2. Mine Pool Storage Volume: BHMC has provided storage volume using all void space (the mine workings) from a minimum of 30 feet below the sill of 11 Level at the No.2 Raise to the sill of 10 Level at the No.2 Raise.

3. In-Mine Diversion System Construction: BHMC and PMC constructed a diversion dam system in the Kellogg Tunnel downstream from the Barney Switch which backs up all Mine Waters into the Barney Vent Raise or other appropriate and approved location. The system has the capability to divert a minimum of 7,000 gallons per minute.

4. In-Mine Diversion System Activation: BHMC is required to activate the In- Mine Diversion System under the following circumstances:

   a. For emergencies: Within 4 hours of notification from US EPA, for a duration to be determined and requested by EPA based on the emergency situation, which may occur at any time; and

   b. For CTP or Conveyance Line Maintenance: Within 14 days of notification from EPA, for a duration to be determined and requested by US EPA based on the maintenance required.

5. In-Mine Diversion System Operation and Maintenance: BHMC will maintain and operate the In-Mine Diversion System until notification from US EPA that the system may be decommissioned and removed, in accordance with the following:

   a. The amount of In-Mine Diversion System building materials continuously kept at the diversion structure location shall be sufficient to divert all flows as required above, and to construct the diversion dam to provide the storage capacity required above;

   b. The diversion dam structure, location as described above, and adjoining ditches, are to be kept serviceable and in operable condition at all times for diversion dam construction, operation, and maintenance.

   c. The entire In-Mine Diversion conveyance system (e.g., Barney Vent Raise or other appropriate and US EPA-approved location) shall be inspected a minimum of twice per year, and more frequently if there are concerns regarding its ability to convey the capacity required above. BHMC maintains a written report of each inspection.

   d. The In-Mine Diversion conveyance system is cleaned, by hydraulic flushing or other means as necessary, at least once per year, and more frequently if needed to provide the capacity required in above. BHMC is required to inform US EPA within 7 days of completing each cleaning.

   e. Written diversion dam construction procedures and In-Mine. Diversion System operation and maintenance procedures are posted near the diversion dam structure location. This provides sufficient detail for diversion dam construction, and system operation and maintenance by all crew members. The written diversion dam construction procedures and system operation and maintenance procedures are periodically updated as needed. BHMC is required to provide the written procedures to US EPA upon request.

   f. Diversion dam construction procedures and system operation and maintenance procedures required above are periodically practiced, at least once per year, or more frequently as needed to ensure the required diversion response time can be met. BHMC is required to inform US EPA a minimum of 7 days prior to each diversion dam construction practice.

Kellogg Portal Contingency Diversion System:

Purchaser shall obtain and store a sufficient quantity of sandbags or other appropriate materials near the entrance to the Kellogg Tunnel with the designated purpose of containing, damming, and/or rerouting any flows into the Kellogg Tunnel ditch, in order to prevent any overland flow outside the ditch.

6. Waters to be diverted: All mine waters that are not contained within the Kellogg Tunnel ditch that are either within the Kellogg Tunnel or outside of the Kellogg Tunnel in the mine yard.

7. Continency Diversion System Materials: Sandbags or other materials that could be easily transported and assembled to route mine water back to the ditch in an emergency situation.

8. Contingency Diversion System Activation:

   a. Deployment of Contingency Diversion System: Within 1 hour of the first indication, or when BHMC knowns or should know, of mine water flowing outside of the Kellogg Tunnel ditch, regardless of cause.

9. Continency Diversion System Operation and Maintenance: BHMC is required to maintain and operate the Contingency Diversion System until notification from US EPA that the system may be decommissioned and removed, in accordance with the following:

   a. The amount of Contingency Diversion System building materials kept on-hand at all times must be sufficient to divert all flows as required above and shall be deployed in accordance with procedures described above in order to control flows during high flow events or to respond to emergencies.

   b. The Contingency Diversion System storage location and materials are kept serviceable and in operable condition at all times for Contingency Diversion System construction and operation.

   c. Written Contingency Diversion System construction procedures are posted near the diversion system materials storage location. Construction procedures provide sufficient detail for diversion system construction by all crew members. The construction procedures are periodically updated as needed. BHMC is required to provide the construction procedures to US EPA upon request.

   d. Contingency Diversion system procedures are periodically practiced, at least once per year, or more frequently as needed, to ensure that the required diversion response times as described above can be met. BHMC is required to inform US EPA a minimum of7 days prior to each Contingency Diversion System construction practice.

Reed Landing Flood Control Project Operations and Maintenance:

10. BHMC conducts operations and maintenance in accordance with the Reed Landing Flood Control Project Operations and Maintenance Manual ("O&M Manual"), which is appended to BHMC's Settlement Agreement with US EPA.

11. BHMC conducts inspections of the Reed Landing Flood Control Project in accordance with the frequency described in the O&M Manual and fills out the Inspection Checklist for each inspection. This is provided to US EPA and the State of Idaho upon request.

12. BHMC removes snow and takes any other necessary steps to maintain access roads to provide for safe access to the Reed Landing Project area year-round.

Manage mine wastes to prevent a release of such waste into the environment.

Water discharge permit:

BHMC is required to obtain an IPDES/NPDES permit for its discharge of AMD and any other Mine-related discharges by May 15, 2023. Until that time, BHMC is required to continue to convey AMD to the CTP for treatment. US EPA may approve the conveyance of other Mine-related discharges to the CTP for treatment during this interim period. After May 15, 2023, BHMC is required to treat all AMD and Mine-related discharges pursuant to an EPA-approved treatment option and in compliance with Section 402 of the Clean Water Act,33 U.S.C.§1342. Treatment options may include:

a. Entering into a lease agreement with EPA providing for Purchaser to lease and operate the CTP;
b. Purchasing and operating the CTP; or
c. Constructing and operating a treatment plant.

Treat any flows from the Reed and Russell portals prior to discharge into surface waters or route back into the Mine to prevent discharge, without treatment, off-site. Currently all waters are being directed back into the mine.

Inspections:

13. US EPA may require an inspection of the In-Mine Diversion System to determine compliance with the requirements described above.

14. US EPA may have an on-site presence during these activities. At US EPA's request, BHMC or BHMC's designee will accompany US EPA for inspections during the activities to be Performed.

15. BHMC is required to provide any specialty personal protective equipment needed for US EPA personnel, transportation, and an escort for any oversight officials to perform their oversight and/or inspection duties within the mine.

16. Upon notification by US EPA of any deficiencies during these activities on any component, BHMC is required to take all necessary steps to correct the deficiencies and/or bring the activities into compliance. If applicable, BHMC is required to comply with any schedule provided by US EPA in its notice of deficiency.

Emergency Response and Reporting:

The reporting requirements below are in addition to the reporting required by CERCLA § 103 and/or the Emergency Planning and Community Right-to-Know Act("EPCRA") § 304.

17. If any incident occurs during performance of the activities described above that causes or threatens to cause a release of Waste Material on, at, or from the Mine and that either constitutes an emergency situation or that may present an immediate threat to public health or welfare or the environment, BHMC is required to:(1)immediately take all appropriate action to prevent, abate, or minimize such release or threat of release;(2)immediately notify the authorized US EPA officer; and (3) take such actions in consultation with the authorized US EPA officer.

18. Upon the occurrence of any incident during performance of the activities described above that BHMC is required to report pursuant to Section 103 of CERCLA, 42U.S.C.§9603, or Section 304 of EPCRA, 42U.S.C.§ 11004, BHMC is required to also immediately notify the authorized US EPA officer orally.

19. The "authorized US EPA officer" for the purposes of immediate oral notifications and consultations is the US EPA RPM, or the US EPA Emergency Response Unit, Region 10 at 206-553-1263(if the RPM is not available).

20. For any incident covered above, BHMC is required to: (1) within 14 days after the onset of such incident, submit a report to US EPA describing the actions or incidents that occurred and the measures taken, and to be taken, in response there to; and (2) within 30 days after the conclusion of such incident, submit a written report to US EPA describing all actions taken in response to such incident.

BHMC is required to perform all actions required by its Settlement Agreement with US EPA in accordance with all applicable local, state, and federal laws and regulations, except as provided in Section 121(e)of CERCLA, 42U.S.C.§9621(e), and 40C.F.R.§§300.400(e). All on-Site actions required pursuant to BHMC's Settlement Agreement with US EPA shall attain applicable or relevant and appropriate requirements ("ARARs") under federal environmental or state environmental or facility siting laws as set forth in the 1992 Record of Decision and the 2001 Record of Decision Amendment.

20.4 FUTURE ENVIRONMENTAL AND SOCIAL ACTIVITIES

Environmental, Social and Health Impact Assessment (ESHIA) – BHMC will conduct a full voluntary ESHIA based on its mine plan and business model that includes deliberate focus on high levels of sustainability. This focus includes:

- Environmental Impact – Reduction of long-term water treatment costs by greater than 75% versus the status quo. This includes a range of initiatives including sealing AMD producing stopes with low porosity paste and source control projects.
- Environmental Impact – Net Positive Impact on biodiversity
- Emissions – Scope 1 and Scope 2 carbon neutrality
- Social Impact – Workforce training for residents of Shoshone, Kootenai and Benewah Counties
- Social Impact – Greater than 80 percent of new job to local residents
- Social Impact – Compensation for full-time employees that is significantly higher than the median household income for Shoshone County
- Social impact – local economic diversification investment
- Social impact – Employee equity award plan in place by 2023
- Governance – Labor representation on the Board of Director of the Mining Company
- Governance – Global Reporting Initiative (GRI) compliance by 2023

- Governance – Sustainability Accounting Standards Board and ISO 14001, 14004, 14005 compliant by 2023

The ESHIA study is anticipated to be completed in Q1 of 2024. The intent of conducting a voluntary ESHIA is to establish a broad spectrum of detailed baseline conditions against which stakeholders and the Company can measure impacts and can generate better informed programming in the future to maximize the positive impacts of the Mine's activities and mitigate any negative impacts.

Many of the ongoing environmental and sustainability activities are intended to continue far into the future. Efforts such as source control aiming at reducing the infiltration of water into the mine will likely take many forms over time but will continue to some degree for many years. Similarly, water sampling and testing is likely to be only one form of environmental testing that will be a regular recurring activity. These data will provide both insights into new activities that should and will be undertaken in the future and will allow BHMC and all of our stakeholders to measure the impacts of BHMC's environmental management activities. Provision of this data to our stakeholder community will be a core component of communication, development of trust and broad participation in inclusive decision-making.

A paste backfill plant is included in the mine restart plan. This will be a core component of water treatment cost reduction and general mitigation of environmental impacts of past mining activities. The location and size of the stopes in the upper east side of Bunker Hill Mine are well understood by the BHMC Water Management Team. These are the stopes where most of the AMD in the mine is produced. BHMC anticipates that AMD reduction from paste production and stope sealing will begin to register in a meaningful way as early as 2025.

20.5 TAILINGS DEPOSITION

As part of the historic data digitization program, as well as through current surveying for mine-design, there have been numerous voids identified underground at Bunker Hill. A large portion of these open excavations, mainly located on the east side of the mine between the 4-level and 6-level have been LiDAR surveyed. Historically, mining operations at Bunker were a mix of methods, but a large portion of early mining activity on the lower-angle structures accessible between the 9-level and surface were open-stoped without the use of backfill. Continued mine development with the current plan will work to explore and develop access to the existing void spaces adjacent to future mining activity. Under the current plan and specifications of both thickened tailings and binder-added (paste) fill, there is enough identified void space underground to support the deposition of all planned mine processing wastes.

20.6 PERMITS REQUIRED FOR FUTURE MINING ACTIVITIES

The land package associated with Bunker Hill Mine consists of approximately 400 patented claims, of which approximately 35 include associated surface rights. The Mine also owns surface parcels unrelated to the federal land-patent process. All of the Mine property is located in Shoshone County, Idaho.

Some of the parcels have existing buildings on them that will not be used in mining operations. There was a milling parcel previously associated with the Mine; however, though BHMC has purchased that parcel from Placer Mining Corp, it will not be used in the future for milling. The current mine plan envisions surface operations for crushing, grinding and processing. Furthermore, the mine plan also deposits all tailings underground, which will remove the need for permitting of a tailing storage facility. Development waste rock will be stored on existing mine disturbance areas.

The State of Idaho has several statutory permitting requirements for surface mining and dredge, placer mining. Unlike surface or placer mining, BHMC intends to perform underground hard rock mining activities. Idaho statues do not independently regulate this type of activity on private lands for historical mine site where less than 50% of the ground will be disturbed.

At a local level, the Mine will be regulated by planning, zoning and building ordinances established by Shoshone County. These ordinances will impose use restrictions for the property, as well as building code requirements for future construction and/or renovations of existing structures. These codes will be reviewed prior to any construction activities or surface activities.

In addition to other requirements, Shoshone County Zoning ordinances create the Bunker Hill Superfund Site Overlay District ("BD"), which guides and controls "development in the area known as the federally created Bunker Hill Superfund Site by ensuring compliance with the environmental health code ("EHC") and institutional control program ("ICP") developed by the BD district. Monitoring compliance with and enforcement of EHC and ICP shall be the responsibility of the Panhandle Health District 1." Shoshone County Ordinance 9-4-17. ICP oversight generally consists of ensuring that the protective barriers put in place to hold the old mining contaminants are not disturbed and ensuring that construction activities would not expose these contaminants (or others) to the environment. Thus, certain permits may be required by the Panhandle Health District prior to any site disturbance activities at the surface of the Mine.

In terms of federal permitting requirements, the Mine activities will wastewater and other mine drainage. The Clean Water Act ("CWA") requires all point source discharges from mining operations, including discharges from associated impoundments, be authorized under a National Pollutant Discharge Elimination Systems (NPDES) permit from the US EPA or, in the case of Idaho now, an Idaho Pollutant Discharge Elimination Systems (IPDES) permit from the Idaho Department of Environmental Quality. BHMC is required to obtain an NPDES/IPDES permit by May 15, 2023 in accordance with its Settlement Agreement with US EPA. Until May 15, 2023, BHMC will be allowed to continue to discharge water to the Central Treatment Plant where it will be charged by US EPA for water treatment services that meet existing discharge standards.

This permitting analysis relies on the following assumptions:

- Milling uses conventional froth flotation technology.
- Concentrates produced will be shipped off site and sold to an appropriate smelter facility.
- No public lands are involved in any element of the restart of the project.
- No jurisdictional Waters of the U.S. will be impacted.
- No instream work is required nor any impacts to non-jurisdictional wetlands.

20.6.1 ENVIRONMENTAL PERMITS

The project has a long history of operations and commenced prior to any formal regulatory framework being in place for federal, state, and local agencies. Since all lands are patented mining claims, it eliminates federal land manager permitting and/or National Environmental Policy Act (NEPA). The project will only be subject to the State of Idaho mining regulations.

20.6.1.1 IDAHO DEPARTMENT OF LANDS

20.6.1.2 MINE LAND RECLAMATION PERMITS

Idaho Department of Lands (IDL) regulates surface mining and surface effects of underground mining. The authority to regulate surface effects of underground mining is a more recent change in the regulations. As such, the project is grandfathered and is not subject to the reclamation and bonding of surface disturbance associated with underground mining. It should be noted, however, that the rule will apply when the project expands disturbance. More specifically, IDAPA 20.03.02(b)(iv) states "Underground mines that existed prior to July 1, 2019 and have not expanded their surface disturbance by 50 percent more after that date." Bunker Hill Mine will not expand surface disturbance by more than 50 percent. Under the current Future Operating Plan and to the extent known, there are no mine closure or reclamation bond requirements that will materially affect operations at the Bunker Hill Mine.

20.6.2 IDAHO DEPARTMENT OF WATER RESOURCES

20.6.2.1 TAILINGS IMPOUNDMENTS/DAMS

Mine tailings impoundment structure, which is or will be more than 30 feet in height for purposes of storing mine tailings slurry, are subject to the Mine Tailings Impoundment Structure rules (IDAPA 37.03.05). Minimum standards are dictated in the rules. Dry stack tailings are not subject to this rule. Since Bunker Hill Mine will deposit tailings underground this permit will not be required.

20.6.2.2 WATER RIGHTS

Any use of surface or groundwater for "beneficial use" is subject to obtaining a water rights that must be obtained from IDWR. Existing water rights have been reviewed for beneficial use and place of use and this analysis confirms that they are properly allocated.

20.6.3 IDAHO DEPARTMENT OF ENVIRONMENTAL QUALITY

20.6.3.1 AIR QUALITY PERMIT

An air quality permit (Permit to Construct) will be required for any crushing equipment, silos (lime silos, etc.), generators, petroleum fired equipment (lab furnaces, etc.) and other equipment/facilities that have the potential to emit any regulated pollutant or designated hazardous air pollutant

20.6.3.2 UNDERGROUND INJECTION CONTROLS

Placement of tailings back underground are authorized by rule as part of mining operations. They are therefore exempt from the groundwater quality standards and permitting requirements but are limited to injection of mine tailings only. The implementation of backfilling cannot affect beneficial use or exceed groundwater standards. If this may occur, the Director has the regulatory flexibility to require a project to obtain a UIC permit. There are no plans for this to occur at the bunker Hill mine.

20.6.3.3 STORMWATER PERMIT

The project will be subject to stormwater permitting if it were to increase its current disturbance footprint by over 50%. There are no plans under planned mine operations that will exceed this limit in this Technical Report. At the time of this analysis, US EPA still maintains authority of the Multi-sector Industrial Stormwater Project; however, IDEQ has taken over the program on July 1, 2021.

20.6.4 IDAHO HEALTH DEPARTMENT

20.6.4.1 POTABLE WATER SUPPLY

If the project were to provide potable water to the project from water well or surface water, BHMC would be subject to obtaining approval for the public drinking water system. The provision is subject to providing water to more than 25 people. If water is supplied from a municipality, there is no requirement to apply for this permit. Municipally supplied water connections are planned for surface building modifications in the Kellogg yard.

21 CAPITAL AND OPERATING COSTS

Much of the vast underground workings, surface portals, mine office, maintenance complex, and 9-level shaft access points for the Bunker Hill Mine remain intact. The Kellogg Tunnel (KT) portal adjacent to the surface infrastructure at the Kellogg mine yard connects horizontally by rail to the underground hoisting facilities on 9-level, approximately 9,500 feet to the south. Water seepage above the 9-level drains naturally out of the KT, laterals below the 9-level must be dewatered prior to development and production. All water is collected at the portal and sent to the CTP for treatment. The underground workings are extensive, and only the infrastructure germane to the reopening of the mine is being described in the PFS. Several shafts and raises connect to the 9-level and its underground infrastructure is central to the mine and home to the #1 and #2 hoistrooms, material bins, substations and shops. Shafts at the mine are inclined rail; the #1 being the production shaft and #2 materials and personnel. The mine is currently accessed by the KT from the Kellogg mine yard and the 5-level Russell portal at the Wardner mine yard located just above the town of Wardner to the south. The Newgard Ramp will be extended from the 5-level portal down to the 15-level and serve as personnel, materials and supplies access as well as the main haulage out of the mine. Mine capital and operating costs were developed by Minetech and are based on the current contractors, Coeur d 'Alene Mine Contracting, LLC (CMC), rates. Efficiency factors are based on Idaho and other similar operating mines as well as the work CMC is currently performing driving the Newgard ramp. Milling and process capital and operating costs were developed by Barr Engineering and Bunker Hill with YaKum Consulting providing the process and metallurgical test work. Patterson & Cooke provided design and capital cost estimates for the hydraulic backfill facilities with Bunker Hill.

Bunker Hill has as of August 31, 2022 purchased the Teck Pend Oreille process plant, much of their electrical gear, and other miscellaneous equipment including fans, spare parts inventories, power cable, etc. Most of the Pend Oreille equipment has been relocated to the Kellogg yard. The Pend Oreille mine is going through closure and Bunker will purchase more equipment as it becomes available. Bunker has also purchased or is leasing to purchase several pieces of underground equipment. Owned equipment is not included in the capital equipment estimate.

Capex and Opex costs and assumptions are detailed in Sections 16 – Mining Methods; 17 – Recovery Methods and; 18 – Project Infrastructure. Contingency was applied to task groups based on the estimate quality. The Company has already either purchased or received pricing quotations and contracts in place for a majority of the Capital Development and Capital Mobile Equipment items allowing for a 5% contingency to be assigned. To reflect the current state of engineering on the process plant and paste backfill plant, as well as discussions with engineering, procurement and construction management (EPCM) groups, 15% and 10% contingencies were applied to Capital Infrastructure and EPCM and Other Construction Allowances respectively. Note that the Avista $1M payment for substation and line power improvement includes contingency on the up-front capital cost with capital credits against operating cost in later years or effectively a zero % contingency.

21.1 CAPITAL COSTS

The utilization of the existing underground infrastructure allows for a restart of the mine with a relatively low initial capital investment. Annual and Life-of-Mine (LOM) capital is summarized in Table 21-1 Bunker Hill Capital Expenditure Schedule. A variable contingency was applied to all capital costs averaging 8% over LOM. With the acquisition of the Pend Oreille process plant equipment, current level of mill and process plant engineering and known contractor mining unit costs, the Author for this section of this Technical Report believes the above stated contingency value to represent the current state of the Project. The overall expected accuracy of the estimate is +/-20%.

Table 21-1 Bunker Hill Capital Expenditure Schedule

Bunker Hill Mining Corporation Prefeasibility Study (PFS) **$USD**	**LOM - Total (Year 1- LOM)**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**
Ramp & Lateral Development/Rehab		2,972,970	3,396,797	9,550,141	11,436,323	10,383,194	22,710,890	4,035,145
Ventilation Development and Pumps				50,000	1,040,208	436,046	1,079,456	121,512
Vertical Development					180,000	720,000	1,320,000	780,000
Capital Development	**70,212,683**	**2,972,970**	**3,396,797**	**9,600,141**	**12,656,531**	**11,539,240**	**25,110,346**	**4,936,657**
Contingency	3,510,634	148,649	169,840	480,007	632,827	576,962	1,255,517	246,833
One Additional Drill Jumbo	250,000			250,000				
Two Bench Drills	500,000		250,000	250,000				
Loader (in transit lease to buy)	300,000	20,000	240,000	40,000				
Loader (Teck)	150,000		150,000					
Three Additional UG Trucks	540,000			180,000	180,000	180,000		
Ancillary UG Support Equipment	326,700	9,900	49,500	59,400	59,400	59,400	59,400	29,700
Telehandler - Surface	175,000	175,000						
UG Transport	120,000	60,000		60,000				
Light Vehicals	130,000			130,000				
Capital Mobile Equipment	**2,491,700**	**264,900**	**689,500**	**969,400**	**239,400**	**239,400**	**59,400**	**29,700**
Contingency	124,585	13,245	34,475	48,470	11,970	11,970	2,970	1,485
Primary Power Feed - Avista	330,000	410,000	1,013,000	(297,000)	(297,000)	(297,000)	(202,000)	
UG Power Distribution - Main	270,000	30,000	240,000					
Backfill Plant	5,190,700		5,190,700					
Backfill Distribution	1,415,200		1,015,200		100,000	100,000	200,000	
Mill and Process	26,764,000	4,300,000	22,464,000					
Utilities, Comms, Fans, Compressors	880,000	340,000	50,000	265,000	225,000			
Building Upgrades	325,000	75,000	250,000					
Capital Infrastructure	**35,174,900**	**5,155,000**	**30,222,900**	**(32,000)**	**28,000**	**(197,000)**	**(2,000)**	**0**
Contingency	4,855,690	730,500	4,145,490	(3,200)	2,800	(19,700)	(200)	0
Other Engineering Allowance	100,000			100,000				
Permitting	25,000	25,000						
Technical Services Equipment	150,000	50,000	100,000					
Mine Safety	160,000	40,000	120,000					
Geotechnical Engineering	150,000		150,000					
Rentals, Offices,	196,389	62,677	133,712					
EPCM Process	3,582,044	1,155,282	2,426,762					
EPCM Backfill	1,039,313	302,450	736,863					
Bunker Hill Staff Allocated	1,529,412	470,588	1,058,824					
EPCM Other Construction Allowances	**6,932,158**	**2,105,998**	**4,726,160**	**100,000**	**0**	**0**	**0**	**0**
Contingency	**693,216**	**210,600**	**472,616**	**10,000**	**0**	**0**	**0**	**0**
Mine Development	200,000				100,000	50,000	50,000	
Mobile Equipment	600,000			125,000	125,000	125,000	225,000	
Mine Infrastructure	200,000				100,000	50,000	50,000	
Process Engineering	600,000			150,000	150,000	150,000	150,000	
Surface Facilities	100,000		50,000			50,000		
Dewatering	120,000		30,000		30,000	30,000	30,000	
Capital Sustaining	**1,820,000**	**0**	**80,000**	**275,000**	**505,000**	**455,000**	**505,000**	0
Contingency	182,000	0	8,000	27,500	50,500	45,500	50,500	0
Total Capital	**116,631,441**	**10,498,868**	**39,115,358**	**10,912,541**	**13,428,931**	**12,036,640**	**25,672,746**	**4,966,357**
Capital Contingency	**9,366,125**	**1,102,993**	**4,830,421**	**562,777**	**698,097**	**614,732**	**1,308,787**	**248,318**
Total Capital W/Cont, $USD	**125,997,566**	**11,601,861**	**43,945,778**	**11,475,318**	**14,127,028**	**12,651,372**	**26,981,533**	**5,214,675**

Credits are shown for Bunker funded Avista power upgrades which are credited back

LOM mine capital improvements include the following:

- Connect the 5-level Warder portal Newgard ramp to the 9-level then down to 15-level
- New ramp and raise level access
- All rubber tire access
- Ventilation system including fans, controls, raise manways

- Upgrade site wide main power distribution (Avista Utilities)
- Install new mine wide power distribution down from Wardner – new high voltage cable is already installed in the KT
- Install Sentinel communications from the surface to the main underground facilities
- Install a hydraulic backfill plant at the Wardner 5-level yard; allows efficient access to cement and reagents
- Install a primarily pumped and gravity backfill distribution system to active and historical mining areas
- Construct new mill building and processing facility at the Kellogg mine yard

21.2 OPERATING COSTS

Mine operating costs are based on experienced local contract labor and Bunker Hill owed equipment for mining operations. A zero-based efficiency and cost estimate was completed based on the current underground contractors' rates and current material costs. Electrical power costs are scheduled based on projected motor loads applying power factor correction, and applicable Avista Utilities rates for all projected mine, milling and site operations. Mining costs are based on CF (3% of tonnage) techniques and LHOS (87% of tonnage). Power usage and consumption has been divided between the mine, mill and surface yards. The mine carries the power cost for the hydraulic backfill plant. Site G&A includes power costs for site mine offices, area lighting and changeroom facilities.

Mill operating costs are scheduled. Mine site general and administrative (G&A) costs are determined based on anticipated staffing levels and compensation compatible with area salaries. Mill power consumption is based on 1,800 tons per day.

Table 21-2 LOM and Annual Mine Operating Costs

Bunker Hill Mining Corporation Prefeasibility Study (PFS) $USD	LOM - Total (Year 1- LOM)	2022	2023	2024	2025	2026	2027	2028
Definition Drilling	1,744,484	-	37,358	319,681	326,157	337,853	349,575	373,859
LHOS Stope Development	39,947,480	-	2,286,898	6,969,536	12,652,419	7,631,406	5,458,492	4,948,728
LHOS Stope Production	73,990,906	-	1,165,584	14,868,167	10,660,459	15,018,032	16,134,870	16,143,793
Cut and Fill Production	4,974,182	-	-	-	-	-	-	4,974,182
Processing Cost	70,978,124	-	1,632,267	13,766,489	13,842,115	13,842,115	13,842,115	14,053,023
Mine G&A incl. Power	32,380,103	798,412	3,611,335	6,720,190	7,016,217	7,046,596	7,046,596	5,270,914
Total Operating Cost, $USD	229,145,435	**798,412**	**8,733,442**	**42,644,063**	**44,497,367**	**43,876,002**	**42,831,649**	**45,764,500**

Table 21-3 General Administrative and Site Indirect Costs

Bunker Hill Mining Corporation Prefeasibility Study (PFS) $USD	LOM - Total (Year 1- LOM)	2022	2023	2024	2025	2026	2027	2028
$USD								
Bunker Hill Staff G&A	15,525,588	414,412	1,881,176	2,940,000	2,940,000	2,940,000	2,940,000	1,470,000
Mining Indirects	268,838		6,182	52,142	52,429	52,429	52,429	53,227
Overland Ore Haul (off road)	11,593,629		266,616	2,248,631	2,260,983	2,260,983	2,260,983	2,295,433
Site Facilities Power (Excl. Mine/Mill)	140,000	8,000	24,000	24,000	24,000	24,000	24,000	12,000
Water Treatment (CTP)	4,460,000	320,000	900,000	720,000	720,000	720,000	720,000	360,000
Dewatering Operation and Maintenance	336,048		7,728	65,178	65,536	65,536	65,536	66,534
Total Site G&A, $USD	**32,324,103**	**742,412**	**3,085,702**	**6,049,951**	**6,062,948**	**6,062,948**	**6,062,948**	**4,257,194**

Bunker Hill direct hire staffing for the overall mine and process operations, and the indirect contractor overhead and maintenance for the mine were scheduled based on estimated staffing levels. Only mining will be performed with contract labor. Contingency was not added to estimated operating costs and the level of accuracy is estimated at a +/- 15%.

Table 21-4 Mine Operations, Engineering, Geology and Overhead Staffing

Position	Number	Base Rate $/hr/person	Base Salary $/yr/person	Burden Overhead	Overtime Allowance	Annual Cost per Person	Annual Cost
Mine Manager	1		175,000	61,250	-	236,250	236,250
Safety Trainer	1		65,000	22,750	-	87,750	87,750
Health/Safety Supervisor	1		90,000	31,500	-	121,500	121,500
Sr Engineer	1		120,000	42,000	-	162,000	162,000
Mine Engineer	2		90,000	31,500	-	121,500	243,000
Sr Geologist	1		110,000	38,500	-	148,500	148,500
Mine Geologist	4		80,000	28,000	-	108,000	432,000
HR Manager	1		135,000	47,250	-	182,250	182,250
Purchaser	1		60,000	21,000	-	81,000	81,000
Controller	1		70,000	24,500	-	94,500	94,500
Geology Techs	2		65,000	22,750	-	87,750	175,500
Enviro Supervisor	1		84,000	29,400	-	113,400	113,400
Water specialist	1	30	62,400	21,840	3,120	87,360	87,360
Enviro Tech	1	25	52,000	18,200	2,600	72,800	72,800
Payroll	1	21	43,680	15,288	2,184	61,152	61,152
Surveyor	2	30	62,400	21,840	3,120	87,360	174,720
Survey Assistant	2	25	52,000	18,200	2,600	72,800	145,600
Warehouse	2	30	62,400	21,840	3,120	87,360	174,720
Security Night Watch	2	25	52,000	18,200	2,600	72,800	145,600
Total	28						2,939,602

Table 21-5 Mill Operations and Overhead Staffing

Position	Number	Base Rate $/hr/person	Base Salary $/yr/person	Burden Overhead	Overtime Allowance	Annual Cost per Person	Annual Cost
Process Manager	1		190,000	66,500	-	256,500	256,500
Process Managers Clerk	-	21	58,000	20,300	-	78,300	-
Operations General Foreman/Superintende	-		125,000	43,750	-	168,750	-
Operations Shift Supervisor	4		105,000	36,750	-	141,750	567,000
Operator - Control Room	4	35	72,800	25,480	3,640	101,920	407,680
Operator - Primary Crushing	2	30	62,400	21,840	3,120	87,360	174,720
Operator - Secondary Crushing	4	30	62,400	21,840	3,120	87,360	349,440
Operator - Tertiary Crushing	-	30	62,400	21,840	3,120	87,360	-
Operator - Grinding / Regrinding	4	30	62,400	21,840	3,120	87,360	349,440
Operator - Flotation	4	30	62,400	21,840	3,120	87,360	349,440
Operator - Concentrate Thickening	2	30	62,400	21,840	3,120	87,360	174,720
Operator - Reagents & Utilities	2	28	58,240	20,384	2,912	81,536	163,072
Maintenance Gen Foreman/Supt	1		125,000	43,750	-	168,750	168,750
Maintenance Planner	1		95,000	33,250	-	128,250	128,250
Mechanics	6	38	79,040	27,664	3,952	110,656	663,936
Electricians	4	38	79,040	27,664	3,952	110,656	442,624
Clerk	-	21	43,680	15,288	-	58,968	-
Chief Geotechnical Engineer	-		140,000	49,000		189,000	-
Chief Metallurgist	1		130,000	45,500	-	175,500	175,500
Entry level metallurgist	1		90,000	31,500	-	121,500	121,500
Metallurgist	-		105,000	36,750	-	141,750	-
Metallurgical Technician	4	20	41,600	14,560	2,080	58,240	232,960
Chief Chemist	-		125,000	43,750		168,750	-
Mineralogist	-		120,000	42,000		162,000	-
Laboratory Supervisor	-		80,000	28,000		108,000	-
Chemist	-		94,000	32,900		126,900	-
TOTAL	**48**						**5,051,692**

Table 21-6 Indirect Contract Supervision, Maintenance and Support Staffing

Bunker Hill Mining Corporation Prefeasibility Study (PFS) - Bunker Hill Mine		**Annual**		**Labor Cost**	**Total**
Contract Supervision, Maint. and Support Labor		Hours		$/Hour	$/Year
Shift Supervisor	4	1898	Reg	$100.00	$759,200
1/shift; rotating crews	4	104	OT	$150.00	$62,400
Electricians	8	1898	Reg	$98.00	$1,488,032
2/shift; rotating crews	8	104	OT	$147.00	$122,304
Maintenance Personnel	20	1898	Reg	$85.00	$3,226,600
5/shift; rotating crews	20	104	OT	$127.50	$265,200
Nipper	12	1898	Reg	$70.00	$1,594,320
3/shift; rotating crews	12	104	OT	$105.00	$131,040
Total Annual Cost					**$7,649,096**
Average Daily Cost					**$20,956**
Note: At full Production after ramp-up					

22 ECONOMIC ANALYSIS

The economic analysis is based on an 1,800 stpd mine plan utilizing cut-and-fill and long hole open stoping with backfill. Metal recoveries are based on current metallurgical test work and historical mill operational data. Silver will be recovered in the lead concentrate and any silver reporting to the zinc concentrate is considered non-payable. This is consistent with typical smelter treatment charges and agreements. Projected long term metal prices of \$1.25/lb zinc, \$0.95/lb lead and \$21.50/oz silver were used to calculate revenues for the full life of mine. Escalation was not applied to operating or capital costs other than a slight operating cost increase later in the mine life to reflect operating from the deeper-mine levels.

An initial capital investment of \$55 million (including contingency) is required to restart the mine. Bunker Hill is projected to generate approximately \$25 million of annual average free cash flow over an initial 5-year mine life based on the current Probable reserves. It will produce over 316 million pounds of zinc, 146 million pounds of lead, and 3 million ounces of silver at an all-in sustaining cost ("AISC") of \$0.77 per payable pound of zinc (net of by-products).

The project is expected to generate pre-tax free cash flow of \$137 million over its 5-year mine life and \$129 million on an after-tax basis, excluding the Initial Capex period and before consideration of projected land and salvage sale proceeds of \$12 million at the end of the mine life. The Company's goal is to significantly increase the free cash flow by multiple optimization work streams including mill and process throughput and recovery, resource expansion and exploration.

22.1 TAXES

A US mining-focused tax consulting firm prepared the U.S. federal and Idaho state tax computations based on the Internal Revenue Code of 1986, as amended and the regulations thereunder and the Idaho Revenue and Taxation Statute – Title 63 as in effect as of April 10, 2021. The tax elections assumed and incorporated in the tax computation are the Bunker Hill:

1. is a single mine and property under Section 614.
2. will expense exploration expenditures as incurred
3. will elect to treat mine development costs as incurred as deferred expenses under Section 606(b).
4. will elect out of Section 168(K) bonus depreciation
5. will depreciate long-lived assets under the unit of production basis under Section 168(f)(1) and other assets will be depreciated under MACRS in accordance with Rev. Proc. 87-56.

   (1) And all metal sales will be delivered outside of the United States and are therefore eligible for the FDII deduction under Section 250.

Property taxes and the Idaho Mine License tax are included as operating costs. Idaho Mine License tax is 1% of taxable mine income less depletion expense.

22.2 ROYALTIES

To date, Bunker Hill has been advancing development of the mine through funding obtained from a number of sources, including through its \$66 million project financing package with Sprott Private Resources Streaming and Royalty Corp. ("Sprott" or "SRSR"). This package consists of four instruments:

- An \$8 million Royalty Convertible Debenture, which is convertible into a 1.85% royalty on gross revenue from the Bunker Hill Mine at the option of the holder until the earlier of the maturity date of July 7, 2023 or such time that the multi-metals Stream is advanced (see below). A lower 1.35% rate applies to production from certain areas outside the current resource)
- A \$6 million Series 1 Convertible Debenture, which is convertible into common shares of Bunker Hill until the maturity date of March 31, 2025
- A \$15 million Series 1 Convertible Debenture, which is convertible into common shares of Bunker Hill until the maturity date of March 31, 2025

- A $37 million multi-metals Stream, which is envisaged to include a sale of 10% all payable metals from the Bunker Hill Mine at 20% of applicable market prices until a certain minimum quantity of metal sales is met, at which point it will reduce to a 2% rate thereafter

As of September 2022, the Royalty Convertible Debenture, Series 1 Convertible Debenture, and Series 2 Convertible Debenture had closed, with $29 million advanced from SRSR; the $37 million multi-metals Stream had not been advanced.

The Prefeasibility Study economic analysis does not include the impact of the gross revenue royalty that would result from conversion of the Royalty Convertible Debenture, as such a royalty on the Bunker Hill Mine does not exist as of the date of this report nor can there be any assurance that a conversion of the Royalty Convertible Debenture will take place. Similarly, there can be no assurance of closing of the multi-metals Stream and as such, no impact from the Stream have been factored into the economic analysis.

As such, in summary all outstanding obligations from the Royalty Convertible Debenture, Series 1 Convertible Debenture, and the Series 2 Convertible Debenture are treated as corporate debt and not included in the economic analysis of the Prefeasibility Study.

Table 22-1 Bunker Hill Project Economic Summary

Year	Initial Capex	1	2	3	4	5	TOTAL	ANNUAL AVERAGE
Metal Prices								
Zinc ($/lb)	1.5	1.4	1.3	1.25	1.25	1.25	**1.29**	**1.29**
Lead ($/lb)	0.95	0.95	0.95	0.95	0.95	0.95	**0.95**	**0.95**
Silver ($/oz)	22	22	22	21.5	21.5	21.5	**21.7**	**21.7**
Mine plan								
Ore mined (kt)	77	652	655	655	655	665	**3,360**	**657**
Zinc grade (%)	5.90%	5.60%	4.70%	5.70%	5.70%	5.90%	**5.50%**	**5.50%**
Lead grade (%)	2.10%	2.40%	2.70%	2.90%	2.40%	1.90%	**2.50%**	**2.50%**
Silver grade (oz/t)	0.5	0.7	1.3	1.4	1.2	0.8	**1.1**	**1.1**
Zinc eq grade (%)	7.70%	8.00%	8.10%	9.40%	8.80%	8.20%	**8.50%**	**8.50%**
Production								
Zinc concentrate (t)	6,671	53,504	44,852	54,997	55,061	57,909	**272,995**	**53,265**
Lead concentrate (t)	2,091	20,945	23,577	25,078	20,955	16,605	**109,251**	**21,432**
Zn grade - Zn conc (%)	58.00%	58.00%	58.00%	58.00%	58.00%	58.00%	**58.00%**	**58.00%**
Pb grade - Pb conc (%)	67.00%	67.00%	67.00%	67.00%	67.00%	67.00%	**67.00%**	**67.00%**
Ag grade - Pb conc (oz/t)	14.4	18.6	31.5	30.1	31	27.4	**27.6**	**27.7**
Zn prod. - Zn conc (klbs)	7,738	62,065	52,029	63,796	63,871	67,174	**316,674**	**61,787**
Pb prod. - Pb conc (klbs)	2,802	28,067	31,593	33,605	28,080	22,251	**146,397**	**28,719**
Ag prod. - Pb conc (koz)	30	390	742	754	649	455	**3,020**	**598**
Zinc eq produced (klbs)	9,954	87,233	87,679	102,310	96,375	91,909	**475,460**	**93,101**
Cost metrics								
Mining ($/t)		35	38	37	35	41	**37**	**37**
Processing ($/t)		21	21	21	21	21	**21**	**21**
G&A ($/t)		9	9	9	9	6	**9**	**9**
Opex - total ($/t)		65	68	67	65	69	**67**	**67**
Sustaining capex ($/t)		18	22	19	41	8	**21**	**21**
Cash costs: by-prod. ($/lb Zn payable)		0.61	0.42	0.36	0.45	0.64	**0.5**	**0.5**
AISC: by-prod. ($/lb Zn payable		0.82	0.74	0.59	0.95	0.73	**0.77**	**0.77**
FCF & Valuation ($000's)								
Zinc revenue		73,857	57,492	67,784	67,863	71,373	**338,368**	**67,674**
Lead revenue		25,330	28,513	30,328	25,342	20,081	**129,595**	**25,919**
Silver revenue		7,900	15,515	15,406	13,256	9,260	**61,337**	**12,267**
Gross revenue		107,087	101,520	113,518	106,461	100,714	**529,300**	**105,860**
TC - Zinc conc		-16,257	-11,138	-13,657	-13,673	-14,380	**-69,105**	**-13,821**
TC - Lead conc		-3,698	-4,162	-4,428	-3,700	-2,932	**-18,919**	**-3,784**
RC - Lead conc		-449	-882	-896	-771	-538	**-3,535**	**-707**
Land freight		-2,193	-2,019	-2,360	-2,239	-2,192	**-11,002**	**-2,200**
Net smelter return		84,491	83,319	92,178	86,079	80,672	**426,739**	**85,348**
Mining costs		-22,828	-24,592	-23,971	-22,927	-27,454	**-121,772**	**-24,354**
Processing costs		-13,766	-13,842	-13,842	-13,842	-14,053	**-69,346**	**-13,869**
G&A costs		-6,050	-6,063	-6,063	-6,063	-4,257	**-28,496**	**-5,699**
EBITDA		**41,847**	**38,822**	**48,302**	**43,247**	**34,908**	**207,126**	**41,425**
Sustaining capex		-11,475	-14,127	-12,651	-26,982	-5,215	**-70,450**	**-14,090**
Initial capex	-54,853						**-54,853**	**-**
Land & salvage value						12,281	**12,281**	**12,281**
Pre-tax free cash flow	**-54,853**	**30,372**	**24,695**	**35,650**	**16,266**	**41,974**	**94,103**	**29,791**
Taxes	-511	-1,394	-1,382	-2,218	-1,155	-1,224	-7,884	**-1,475**
Free cash flow	**-55,364**	**28,978**	**23,313**	**33,432**	**15,111**	**40,750**	**86,219**	**28,317**
NPV (5%)	**62,826**							
NPV (8%)	**51,813**							
IRR (%)	**36.00%**							
Payback (years)	**2.1**							

(1) Includes zinc produced in zinc concentrate, lead and silver produced in lead concentrate.
(2) Life of mine ("LOM") includes initial capital expenditure.
(3) Annual Average is the average of years 1-5 and does not include initial CAPEX
(4) Cost Metrics and FCF & Valuations associated with production under the Initial Capex period are reflected in the Initial Capex and Free Cash Flow values at the bottom of the Initial Capex column.

(A) Initial capex period is expressed on a 16-month basis; Years 1-5 are expressed on a 12-month basis.
(B) All metrics expressed on a 12-month basis, beginning after the 16-month initial capex period.

Note: all figures expressed in USD 000's unless otherwise stated. Historic water treatment cost recovery liabilities of $17,000,000, and accounts payable for historic water treatment by the EPA, are considered corporate costs and not included in this economic analysis.

As shown in Table 22-1, based on these free cash flow estimates, the financial model indicates an IRR of 36% with a 2.1-year payback and a net present value (NPV) of approximately $63 million at a 5% discount rate, or $52 million at an 8% discount rate. A 5% discount rate is often utilized with precious metals projects, while an 8% discount rate is often used with base metals projects. Lower discount rates are also typically associated with lower risk jurisdictions. Given the polymetallic nature of the Bunker Hill Mine, the historic and future importance of silver to the project's economic value, the low-risk jurisdiction of Idaho, USA, and the low interest rate environment as of the date of this report, it is helpful to understand the project valuation for both a 5% and 8% discount rate.

22.3 SENSITIVITIES

Table 22-2 below summarizes the after-tax sensitivities of NPV (8% discount rate) and IRR, with respect to metal prices and costs.

Table 22-2 Sensitivity Analysis

	Metal Prices							Operating & Capital Costs						
			Zinc Price ($/lb)							Operating Costs (+/- %)				
			-20%	-10%	-	10%	20%			-20%	-10%	-	10%	20%
NPV (8%) ($M)	Lead Price ($/lb)	-20%	-7	13	32	51	68	Total Capital Costs (+/- %)	-20%	102	87	72	56	40
		-10%	4	23	42	60	78		-10%	92	77	62	46	30
		-	14	33	**52**	69	87		-	82	67	**52**	36	19
		10%	24	43	61	78	96		10%	72	57	42	25	9
		20%	34	53	70	87	105		20%	62	47	31	15	-1
			Zinc Price ($/lb)							Operating Costs (+/- %)				
			-20%	-10%	-	10%	20%			-20%	-10%	-	10%	20%
IRR (%)	Lead Price ($/lb)	-20%	4%	16%	26%	35%	44%	Total Capital Costs (+/- %)	-20%	71%	62%	53%	44%	34%
		-10%	10%	21%	31%	40%	49%		-10%	60%	52%	44%	35%	26%
		-	16%	26%	**36%**	45%	53%		-	51%	44%	**36%**	28%	19%
		10%	22%	32%	41%	49%	57%		10%	44%	37%	29%	21%	13%
		20%	27%	37%	45%	54%	62%		20%	37%	30%	23%	15%	7%

23 ADJACENT PROPERTIES

Adjacent properties are properties in which the issuer does not have an interest, has a boundary that is proximate to the Property being reported upon and has similar geological characteristics to the Property being reported on. Figure 23-1 shows the adjacent properties contiguous to the Bunker Hill Property.

Figure 23-1 Properties adjacent to Bunker Hill

The mineralized veins of the Crescent Silver Project are located approximately 1.25 miles (2 km) east-southeast of the past-producing Bunker Hill Mine (Figure 23.2). Crescent Silver Project mineral tenure consists of 1,280 acres (518 ha) of patented mining claims and is contiguous with the Bunker Hill Property.

The following information on the Crescent Silver Project has been taken from the Crescent Silver LLC. website. The Resource Estimate shown in Table 23-1 was summarized from the 2013 NI 43-101 Technical Report and Preliminary Economic Assessment by Pennington and Hartley.

The qualified person has been unable to verify the information within the Crescent Silver technical report. The information is not necessarily indicative of the mineralization at Bunker which is the subject of this technical report.

The Crescent Silver Project (Pennington and Hartley 2013) currently contains four known major mineralized zones. The mineralized veins of the Crescent Silver Project are typical "Silver Belt" veins, and are composed of siderite, quartz, and various sulfides including pyrite, tetrahedrite, chalcopyrite, arsenopyrite and galena.

Table 23-1 Crescent Silver Project Mineral Resource

Vein	Resource Class	Tons (x 1,000)	Silver		Copper	
			oz/ton	oz (x 1,000)	%	lb (x1,000)
Alhambra	Measured	8.2	18.4	150	0.32	52
	Indicated	101.4	15.5	1,568	0.24	485
	Measured + Indicated	109.6	15.7	1,718	0.25	538
	Inferred	442.4	14.0	6,189	0.19	1,709
Jackson	Measured	2.8	19.6	54	0.87	48
	Indicated	1.4	18.8	26	0.80	22
	Measured + Indicated	4.1	19.3	80	0.85	70
	Inferred	15.3	16.3	248	0.82	250
South	Measured	27.8	23.3	647	0.61	342
	Indicated	59.3	23.4	1,387	0.57	681
	Measured +	87.1	23.4	2,035	0.59	1,023
	Inferred	526.8	24.1	12,670	0.63	6,602
Total	Measured	38.7	22.0	851	0.57	443
	Indicated	162.1	18.4	2,981	0.37	1,189
	Measured + Indicated	**200.8**	**19.1**	**3,833**	**0.41**	**1,631**
	Inferred	948.5	19.4	19,107	0.43	8,561

The reader is cautioned that the above information is not necessarily indicative of the mineralization on the Bunker Hill Property.

The past-producing Sunshine Mine is located approximately 4 km east-southeast of the Bunker Hill Property. The Sunshine Mine Project mineral tenure consists of 10,377 acres (4,200 ha) of patented and unpatented mining claims and is contiguous with the Bunker Hill Property.

The information presented in Table 23-2 has been summarized from the NI 43-101 Technical Report, Resource Estimate and Preliminary Economic Assessment prepared for Sunshine Silver Mines Corporation by TetraTech and MTB (Bryan et al. 2014). The data contained in the technical report and website has not been originally sourced or verified by RDA.

Table 23-2 Sunshine Mine Mineral Resource Estimate

Resource Class	Tons Diluted	Ag Grade Diluted (g/t)	Ag Contained Ounces	Cu %	Pb %	Zn %
Measured	1,120,000	843	30,300,000	-	-	-
Indicated	1,870,000	752	45,200,000	-	-	-
Measured + Indicated	2,980,000	786	75,500,000	-	-	-
Inferred	8,170,000	842	221,300,000	0.22	0.35	0.02

24 OTHER RELEVANT DATA AND INFORMATION

The Authors know of no additional relevant data and information that would make the report understandable and not misleading.

25 INTERPRETATIONS AND CONCLUSIONS

The Bunker Hill Mine is one of the most storied base metal and silver mines in American history. Initial discovery and development of the property began in 1885, and from that time until the mine closed in 1981 it produced over 35.8 M tons (32.5 M tonnes) of mineralization at an average mined grade of 8.76% lead, 4.52 ounces per ton (155 g/t) silver, and 3.67% zinc. The acquisition of the Bunker Hill Mine Project includes existing infrastructure at Milo Gulch, and the majority of machinery and buildings at the Kellogg Tunnel portal level as well as all equipment and infrastructure anywhere underground at the Bunker Hill Mine Complex.

The PFS demonstrates that the restart of the Bunker Hill mine can reasonably be expected to generate a positive return on investment with an after-tax IRR of 36% based on the reserves presented. It is reasonable to expect the conversion of Inferred resources to Indicated resources and indicated resources to measured resources to continue. Inferred Mineral Resources are considered too geologically speculative to have economic considerations applied to them to be classified as a Mineral Reserve.

The mineralization of the Coeur d'Alene district consists of veins with variable proportions of sphalerite, galena, argentiferous tetrahedrite in either a quartz or siderite gangue. Most silver production has come from the mineral belt south of the Osburn Fault, the western part of which includes the Bunker Hill Mine and is known as the Silver Belt. The deposits are numerous and relatively large with strike lengths up to 984 ft (300 m) with dip lengths of over 3,280 ft (1,000 m). Wall rock alteration associated with veining consists of changes in carbonate mineralogy plus sulfidation and silicification. Pyritization of wall rocks is locally strong. Bleached halos resulting from destruction of hematite by hydrothermal fluids are also characteristic. The mineralization is partly oxidized to a depth of approximately 1,968 ft (600 m).

The Bunker Hill Mine comprises multiple zones of mineralization. Most production has come from structurally controlled zones along the northwest striking and southwest dipping Cate Fault, a splay structure of the Osburn Fault. Mineralization is primarily hosted by quartzites and siltites of the Revett and St. Regis Formations of the Ravalli Group. Mineralization occurs in veins in the footwall rocks of the Cate Fault, and from veins and strata bound mineralization in the hanging wall of the Cate Fault.

RDA is of the opinion that the past production of over 160 million ounces of silver should be investigated with vigorous exploration programs. While base metals are a very important component of the Project, the recent selling prices of silver demand attention. The confirmation drilling program identified intercepts of 10 to 20 ounces per ton of sliver. The J vein and Francis stopes hosted high grade silver mineralization. The near surface historic Caledonia and Sierra Nevada Mines were bonanza grade silver producers in the past. These and other known occurrences of silver must be followed up upon to determine if economic silver occurrences exist on the Bunker Hill Property land package.

This Technical Report is based on all available technical and scientific data available as of August 29, 2022. Mineral Resources are considered by the QP to meet the reasonable prospects of eventual economic extraction due two main factors; 1) cut-off grades are based on scientific data and assumptions related to the project and 2) Mineral Resources are estimated only within blocks of mineralization that have been accessible in the past by mining operations as well as by using generally accepted mining and processing costs that are similar to many projects in Idaho.

The exploration and development of mineral properties involves risk. There can be no assurance that the exploration program discussed in this Technical Report will result in additional Mineral Resource Estimates. Numerous factors such as commodity price fluctuations, property tenure, environmental and permitting issues, metallurgical and geotechnical considerations may have a material impact on the Bunker Hill Project.

26 RECOMMENDATIONS

Exploration programs should focus on the definition of additional silver and other base metal resources. Resources that demonstrate the reasonable prospects of eventual economic extraction have been identified within the current mineral resource estimate. Specifically. significant silver mineralization encountered through exploration and past production suggests that these zones should be given as much weight as past Pb and Zn exploration and resource definition programs.

Metallurgical test work should be continued to include full variability testing through various sections of mineralization as development progresses.

Digitization of nearly 100 years of paper maps is constantly being updated. In addition to unlocking the understanding of the geometry of the mineral deposit much of the information describes the mined-out portion of the Project. This will be critical for future mineral resource estimates as mined out voids need to be accounted for.

Continued engineering and design work on the milling, process and backfill plants and systems are recommended. Backfill mix designs should be optimized. Construction level design and equipment bid packages are required to initiate construction and further define project economics and timelines.

Additional geotechnical work is recommended to optimize stope and pillar dimensions, as well as ground support standards. A mine ventilation survey should be completed once the 5 to 6-level breakthrough is completed and main fan installed. Regular ventilation surveys are recommended throughout development and operations.

Successive phases of work are not recommended for the advancement of the project.

Table 26-1 Proposed Phase 1 Work Program to Advance Bunker Hill

Activity	Amount
Geophysical Interpretation and Additional Geophysics	\$0.05M
Environmental Studies	\$0.03M
Geotechnical Studies	\$0.15M
Mill and Process Plant Engineering	\$1.70M
Hydraulic Backfill and Tailing Placement Engineering	\$0.50M
Total Recommended Budget	**\$2.43M**

27 REFERENCES

Farmin, J., 1977. Geologic Research Progress Summary and 1977 Exploration Plans, Bunker Hill Mining internal memo.

Herndon, Stephen D., "Diagenesis and metamorphism in the Revett quartzite (Middle Proterozoic Belt) Idaho and Montana" (1983). Graduate Student Theses, Dissertations, & Professional Papers. 7510.

Hobbs, S. W., A. B. Griggs, R. E. Wallace, and A. B. Campbell, 1965, Geology of the Coeur d'Alene district, Shoshone Co., Idaho: U.S. Geological Survey Professional Paper 478, 139 p.

Idaho Geologic Survey, 2002. Geologic Map of Shoshone County, Open-File Publication. https://www.idahogeology.org/webmap.

Juras, D. S., 1977, Structural Geology of Bunker Hill Mine: Private report for the Bunker Hill Company, 111 p.

Juras, D. and Duff, J., 2020. Geology and Ore Controls at the Bunker Hill Mine, Coeur d'Alene District, Idaho: Private report for the Bunker Hill Company.

Leach, D.L., Hofstra, A.H., Church, S.E., Snee, L.W., Vaughn, R.B., and Zartman, R.E., 1998, Evidence for Proterozoic and Late Cretaceous-Early Tertiary ore-forming events in the Coeur d'Alene district, Idaho and Montana: Economic Geology, v. 93, p. 347-359.

Lydon, J.W., 2007, Geology and metallogeny of the Belt-Purcell Basin, in Goodfellow, W.D., ed., Mineral Deposits of Canada: A Synthesis of Major Deposit Types, District Metallogeny, the Evolution of Geological Provinces, and Exploration Methods: Geological Association of Canada, Mineral Deposits Division, Special Publication No. 5, p. 581-607.

Mathews, K.E., Hoek, E., Wyllie, D.C., et al. 1981. Prediction of Stable Excavations Spans for Mining at Depths Below 1,000 Metres in Hard Rock.

Meyer, R. L. and Springer, D., 1985, Proposal to Explore and Mine the Bunker Hill Property, Shoshone County, Idaho, Private report for Bunker Limited Partnership.

Potvin, Y. 1988. Empirical open stope design in Canada. Ph.D. thesis, University of British Columbia, Vancouver, Canada

U.S. EPA Region 10 CERCLA Docket No. 10-2017-0123. "SETTLEMENT AGREEMENT AND ORDER ON CONSENT FOR RESPONSE ACTION BY BUNKER HILL MINING CORP., PURCHASER, UNDER THE COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION AND LIABILITY ACT, 42 U.S.C. 9601-9675"

White, B. G., 1976, Revett stratigraphy of the Bunker Hill mine and vicinity: Private report prepared for The Bunker Hill Co., Dec. 31, 1976, 46 p., 4 plates.

White, B.G., 1994, Shear zone hosted ore deposits of the Coeur d'Alene mining district, Idaho, USA: Geological Society of America Abstracts with Program, v. 26, no.7, p.21.

White, B. G., and D. S. Juras, 1976, Surface geological map, and cross Sections of the Bunker Hill property: Private report for The Bunker Hill Co., December. 1976.

White, B., 2015. "New Concepts for the Exploration of the Bunker Hill Mine: 2015": Private Report for New Bunker Hill Mining Company.

Wilson, S.E., 2020, "Technical Report for the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA."

Wilson, S.E., 2021, "Technical Report for the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA."

Wilson, S.E. et al., 2021, "Technical Report and Preliminary Economic Assessment for Underground Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA."

Wilson, S.E. et al., 2021, "Technical Report and Preliminary Economic Assessment for Underground Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA. November 03, 2021. Effective Date September 20, 2021"

Wilson, S.E. et al., 2021, "Technical Report and Preliminary Economic Assessment for Underground Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA. December 29, 2021. Effective Date November 29, 2021"

Wilson, S.E. et al., 2022, "Technical Report and Preliminary Economic Assessment for Underground Milling and Concentration of Lead, Silver and Zinc at the Bunker Hill Mine, Coeur d'Alene Mining District, Shoshone County, Idaho, USA. February 22, 2022. Effective Date January 7, 2022"