Bayan Khundii Gold Project
Bayankhongor Province, Mongolia

Feasibility Study Update, NI 43-101 Technical Report

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ERDENE RESOURCE DEVELOPMENT

O2MINING MINING & ENGINEERING SERVICES

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Acronyms and Abbreviations

Acronym / Abbreviation	Definition	Acronym / Abbreviation	Definition
µm	Micron; Micrometer	kV	Thousand Volt
%	Percent	kVA	Kilovolt-Amperes
°	Degree	kW	Kilowatt
°C	Degree Celsius	kWh	Kilowatt-Hour
3D	3 Dimension	L	Litre
A	Ampere	L/s	Litres Per Second
a	Annum	LAN	Local Area Network
AACE	Association for The Advancement of Cost Engineers	LBMA	London Bullion Market Association
AARL	Anglo American Research Laboratories	LG	Lerchs-Grossmann
AAS	Atomic Absorption Spectrophotometer	LG	Low Grade
ADT	Articulated Dump Truck	LOM	Life Of Mine
Ag	Silver	LV	Light Vehicle
AGP	AGP Consultants Ltd	m	Meter
AN	Altan Nar	M	Mega (Million)
Ar/Ar	Argon-Argon Dating	m^2	Square Meter
As	Arsenic	m^3	Cubic Meter
ASTM	ASTM International; American Society for Testing and Materials	m^3/h	Cubic Meters Per Hour
ATCW	Atc Williams Pty Ltd	Ma	Mega-Annum (A Million Years)
Au	Gold	MARV	Minimum Average Roll Value
AUD	Australian Dollar	MASL	Meters Above Sea Level
AuEq	Gold Equivalent	MASL	Meters Above Sea Level
Az	Azimuth	mbgl	Meters Below Ground Level
BCR	Blue Coast Research Ltd	MBR	Membrane Bioreactor
BFA	Batter Face Angle	MCAF	Mining Cost Adjustment Factors
BK	Bayan Khundii	MET	Page 35
BOM	Bill of Materials	MFSE	Midfield South East
BWI	Bond Ball Mill Work Indices	mi	Intact rock parameter
CAOB	Central Asian Orogenic Belt	ML	Million Litre
CAPEX	Capital Expenditure	mm	Millimeter
CBMG	Carbonate-Base Metal Gold	Mn	Manganese
CDT	Chinese Dump Truck	MNS	Mongolian National Standard

Acronym / Abbreviation	Definition	Acronym / Abbreviation	Definition
CH	Sandy Lean Clay	MNT	Mongolian Tugrik
CIM	Canadian Institute Of Mining, Metallurgy, And Petroleum	Mo	Molybdenum
CIP	Carbon In Pulp	MRE	Mineral Resrource Statement
cm	Centimeter	MRPAM	Mineral Resource and Petroleum Authority Of Mongolia
CMCP	Conceptual Mine Closure Plan	MSDS	Material Safety Data Sheets
CN	Cyanide	Mt	Million Tonne
CN_{WAD}	Weak Acid Dissociable Cyanide	Mtpa	Million Tonnes Per Annum
COG	Cut-off Grade	MW	Megawatt
COS	Coarse Ore Stockpile	myr	Million Year
CPT	Cone Penetration Tests	N	North
CRCP	Contaminant Runoff Collection Pond	NaCN	Sodium Cyanide
CRM	Certified Reference Material	NAF	Non-acid Forming
Cu	Copper	NE	North East
CV	Coeffiicient of variation	NI 43-101	National Instrument 43-101
CWDD	Clean Water Diversion Drains	NKMA	New Kazakh-Mongol Arc Terrane
CWi	Crusher Work Index	NO_2	Nitrogen Dioxide
d	Day	NPV	Net Present Value
D	Disturbance factor	NSR	Net Smelter Return
DCF	Discounted Cash Flow	NW	North West
DED	Detailed Engineering and Design	O2	O2 Mining Limited
DEIA	Detailed Environmental Impact Assessment	OMC	Orway Mineral Consultants-Perth, Au
DEM	Distal Elevation Mode	OMS	Operations, Maintenance And Surveillance
DH	Dark Horse	OPEX	Operating Expenditure
DTH	Down The Hole	oz	Troy Ounce (31.1035 g)
DZ	Discovery Zone	P.Eng	Professional Engineer
E	East	P.Geo	Professional Geoscientist
E&S	Environmental and Social	PAF	Potentially acid-forming
EBRD	European Bank for Reconstruction and Development	PCAF	Processing Cost Adjustment Factor
EMP	Environmental Management Plan	PEH	Productivity Per Engine Hour
ENE	East North-East	PL	Point Load
EPC	Engineering, Procurement & Construction	PLC	Process Logic Controller

Acronym / Abbreviation	Definition	Acronym / Abbreviation	Definition
EPCM	Engineering, Procurement, Construction Management	PPA	Power Purchase Agreement
ESIA	Environmental And Social Impact Assessment	ppb	Part Per Billion
EUR	European Euro	ppm	Part Per Million
FA	Fire Assay	QA/QC	Quality Assurance-Quality Control
Fe	Iron	QP	Qualified Person
FEED	Front End Engineering Design	RFP	Request For Proposal
FIFO	Fly In Fly Out	RFQ	Request For Quotation
FoS	Factor Of Safety	RL	Relative Level
FRP	Fibre Renforced Polymer	RMS	Responsible Mining Solutions Corp.
FS	Feasibility Study	RMSE	Root Mean Square Error
g	Gram	RO	Reverse Osmosis
G&A	General And Administrative	ROM	Run Of Mine
g/L	Gram Per Litre	ROMA	Roma Group Ltd
g/t	Gram Per Tonne	RPM	Rpm Global Asia Limited.
GA	General Arrangement	RQD	Rock Quality Designation
GC	Clayey Gravel with Sand	RWI	Bond Rod Mill Work Index
GEIA	General Environmental Impact Assessment	s	Second
GHB	Generalised Hoek-Brown	S	Sulphur
GPS	Global Positioning Satellite	S	South
GRG	Gravity Recoverable Gold	SAB	Semi-Autogenous Followed By Ball Grinding
GSI	Geological strength index	SAG	Semi Autogenous Grinding
ha	Hectare	SE	South East
HCl	Hydrochloric Acid	SGH	Security Guard House
$HClO_4$	Perchloric Acid	SGS	Ulaanbaatar Laboratory of SGS Mongolia LLC
HDPE	High Density Polyethylene	SM	Silty Sand
HEX	Hydraulic Excavator	SMBS	Sodium Metabisulphite
HF	Hydrofluoric Acid	SMC	SAG Mill Comminution
HG	High Grade	SMC Tests®	SAG Mill Comminution testing
HLSP	Herder Livelihood Support Program	SMDD	Standard Maximum Dry Density
HNO_3	Nitric Acid	SO_2	Sulphur Dioxide
hp	Horsepower	SPT	Standard Penetration Tests
hr	Hour	SW	South West

Acronym / Abbreviation	Definition	Acronym / Abbreviation	Definition
HV	Heavy Vehicle	SWIR	Short-Wave Infrared
HVAC	Heating, Ventilation, And Air Conditioning	SMU	Smallest Mining Unit
ICP	Inductively Coupled Plasma (Mass Spectrometry)	t	Metric Tonne
ICP OES	Inductively Coupled Plasma Optical Emission Spectrometry	TAT	Trans Altai Terrane
IP	Induced Polarization	tpa	Metric Tonne Per Year
IPD	Integrated Project Delivery	TSX	Toronto Stock Exchange
IPDC	Integrated Project Delivery Company	U/Pb	Uranium–Lead Dating
IPMT	Integrated Project Management Team	UCS	Unconfined/Uniaxial Compressive Strength
IRA	Inter Ramp Slope	UN	Union North
IRR	Internal Rate Of Return	US$	United States Dollar
IUCN	International Union For Conservation of Nature	UTM	Universal Transverse Mercator coordinate system
IWF	Integrated Waste Facility	V	Volt
K	Kilo (Thousand)	VAT	Value Added Tax
Kg	Kilogram	W	Watt
KGD	Khundii Gold District	W	West
kL	Thousand Litre	WAD	Weak Acid Dissociable
km	Kilometer	WBS	Work Breakdown Structure
km^2	Square Kilometer	WGS	World Geodetic System
KNA	Kriging Neighbourhood Analysis	WMP	Water Monitoring Plan
Koz	Thousand Troy Ounce	WRD	Waste Rock Dump
Kt	Thousand Tonne	WRMP	Water Resources Management Plan
KT-BS	Khuren Tsav – Bosgyn Sair	WSW	West South-West
Ktpa	Thousand Tonnes Per Annum	Yr	Year
Ktpm	Thousand Tonnes Per Month	Zn	Zinc

1. Summary

1.1. Introduction

Erdene Resource Development Corporation (“Erdene”, or the “Company”) commissioned O2 Mining Limited (“O2”) to support and manage the technical reporting of a Feasibility Study (“FS” or “FS Report”) in accordance with the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects (“NI 43-101”) for their 100% owned Bayan Khundii Gold Project (the “Project”), which includes the BK Gold Deposit and the Dark Horse Mane Gold Deposit, located in Bayankhongor province, southwestern Mongolia. Technical works for this FS update Report were provided by a group of independent engineering and consulting firms with experience in Mongolia and globally. The effective date of the FS update is August 15, 2023 and is based on a Mineral Resource for the BK gold deposit with an effective date of April 20, 2023, and a Mineral Resource for the Dark Horse Mane gold deposit with an effective date of November 1, 2022, and includes an updated Mineral Reserve with an effective date of August 1, 2023.

The FS update envisions a high-grade, open-pit mine, beginning at surface in the southern portion of the BK gold deposit (Striker and Gold Hill), and expanding northward into adjacent zones at Midfield and North Midfield to a maximum depth of 155 meters. The Dark Horse deposit will commence mining concurrently with BK, from the third year of operations, to a maximum depth of 55 meters. Total mineable mineralized plant feed is 4 million tonnes at an average diluted head grade of 4 g/t gold and average strip ratio of 10.9:1 (waste tonne: plant feed tonne).

The development incorporates conventional crushing and grinding, leach and a Carbon in Pulp (“CIP”) plant with processing capacity of 1,935 tonnes per day and a projected gold recovery of 93%. Total recovered gold over the life of the Project is 476,001 ounces and total recovered silver over the life of the Project is 121,278 ounces. Gold and silver will be produced as a doré and sold to the Bank of Mongolia at the daily spot price on the London Metals Exchange.

Based on current reserves, the development will operate for eight and a half years including a one-year pre-production period, six and a half year mining and processing period and one-year closure period. Prospective areas in the vicinity of the deposit and untested prospects on the Khundii mining license, and contiguous Ulaan exploration license, provide significant opportunities to expand resources and extend the mine life. These areas are currently the focus of the Company’s exploration work with drilling and technical studies underway to improve confidence for future development.

1.2. Key Study Outcomes

This section presents the outcomes of the mine plan and economic analysis completed for the Bayan Khundii FS update. The economic analysis represents forward-looking information that is subject to a number of known and unknown risks, uncertainties and other modifying factors that may cause actual results to differ materially from those presented. The material factors or assumptions used in the economic analysis and associated risks or uncertainties are fully described in Section 22 –Economic Analysis and Section 25 - Interpretations and Conclusions.

The results of the economic analysis, using base case parameters, are favorable for the Bayan Khundii Project. The Project’s pre-tax Net Present Value at 5 % discount (“$NPV^{5\%}$”) is US$245.0 million at the base gold price of US$1,800 per ounce. The Project’s post-tax $NPV^{5\%}$ at US$1,800 per ounce of gold is US$170.1 million. The Internal Rate of Return (“IRR”) is 44.3% pre-tax and 35.3% post-tax. The payback period is expected to be 2.0 years pre-tax and 2.4 years post-tax.

The key study outcomes for the projected mine plan and economic results are presented in Table 1-1.

Table 1-1 Financial Results from the Bayan Khundii Economic Model

Cash Flow Summary (Based on US$1,800/oz Gold; US$23.62/oz Silver)			
Financial Results	**Units**	**Amount**	**US$/ounce [1]**
Processing Target	M Tonne	4.0	N/A
Actual Feed / Au	g/tonne	4.0	N/A
Actual Feed / Ag	g/tonne	1.7	N/A
Doré Production			
Gold Ounces Produced	Ounces	476,001	N/A
Payable Gold (99.85%)	Ounces	475,287	N/A
Revenue	US$ M	855.5	1,797.3
Silver Ounces Produced	Ounces	121,278	N/A
Payable Silver (99.85%)	Ounces	121,097	N/A
Revenue	US$ M	2.9	23.6
Doré Selling Costs	US$ M	-1.6	-3.4
Net Project Revenue	**US$ M**	**856.8**	**1,800.0**
Operating Costs	US$ M	-351.6	-738.7
Royalties	US$ M	-51.5	-108.2
Real Estate Tax	US$ M	-2.9	-6.1
Operating Earnings	**US$ M**	**450.8**	**947.1**
Initial Capital Expenditure	US$ M	-100.4	-210.9
Sustaining Capital Expenditure	US$ M	-3.7	-7.8
Environmental & Closure Costs	US$ M	-6.8	-14.3
Salvage Value	US$ M	2.0	4.2
Pre-Tax Cash Flows	**US$ M**	**341.9**	**718.3**
Corporate Income Tax	US$ M	-97.7	-205.3
Post-Tax Cash Flows	**US$ M**	**244.2**	**513.0**
Result Summary			
Financial Results	**Units**	**Amount**	**US$/ounce [1]**
Pre-Tax			
$NPV^{5\%}$	US$ M	245.0	N/A
IRR	%	44.3	N/A
Payback Period	Year	2.0	N/A
Post-Tax			
$NPV^{5\%}$	US$ M	170.1	N/A
IRR	%	35.3	N/A
Payback Period	Year	2.40	N/A

Notes:

1. *Amount per ounce is calculated based on gold ounces produced totaling 476,001 ounces.*
2. *Initial capital expenditure consists of construction indirect costs, construction direct costs, owners project costs, mobile equipment, and contingencies.*
3. *Totals may not add up due to rounding.*

1.3. Property Description and Location

The Project is located in southwest Mongolia, approximately 980 km southwest of the Mongolian capital and 300 km south of the provincial capital, Bayankhongor City, as shown in Figure 1-1. The Project is situated within an emerging gold district that Erdene refers to as the Khundii Minerals District ("KMD"), which includes the BK and Dark Horse Mane gold deposits, as well as the Company's adjacent Ulaan exploration license, the Company's Altan Nar gold-polymetallic deposit and Zuun Mod copper-molybdenum deposit, and a collection of mineral occurrences at various stages of exploration.

The Project is 100% held by Erdene Mongol LLC, a wholly owned subsidiary of Erdene. The Project is located within the Khundii Mining License (MV-021444, 2,308.62 ha). Tenure of the Mining License has been confirmed as of the date of this FS Report. All permits have been obtained for ongoing exploration and technical field programs, along with all major permits for the Project construction works, including for the process plant. Permitting for the selected facilities and mine operations are planned in the course of the project development, consistent with legal requirements.

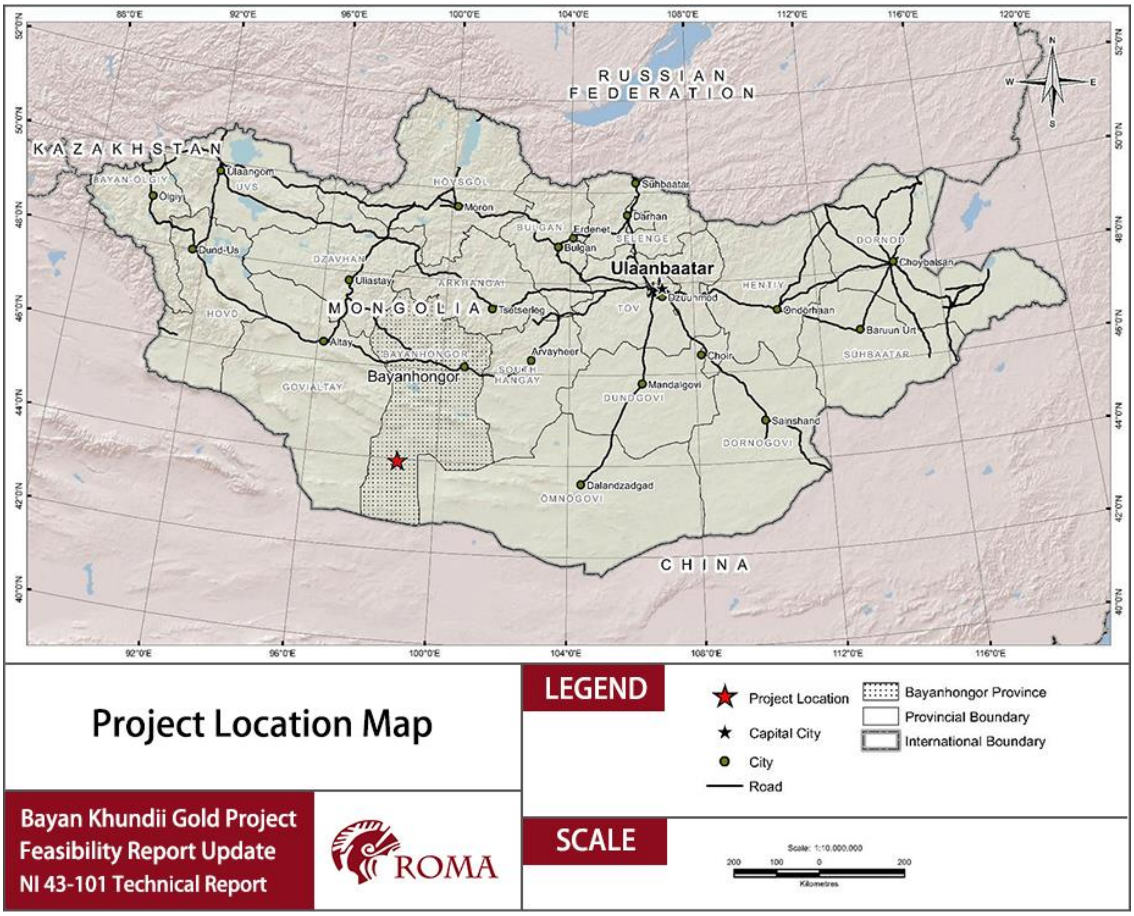


Figure 1-1 Location of the Project (Tetra Tech, 2019a)

1.4. Environmental Studies, Permitting and Social or Community Impact

Erdene has completed the following studies and executed the listed agreements for the Project in compliance with the applicable Mongolia regulations and Project standards:

- **Environmental and Social Impact Assessment ("ESIA")**: An independent ESIA for the Project has been prepared in accordance with the requirements of the European Bank of Reconstruction and Development and disclosed in June 2020.
- **Detailed Environmental Impact Assessment ("DEIA")**: An independent DEIA for the Project has been prepared and was approved by the Mongolian Ministry of Environment and Tourism in late 2021.
- **Local Cooperation Agreement**: The Company has executed a Local Cooperation Agreement with local governments pursuant to Article 42 of the Law on Minerals of Mongolia through the end of 2023.
- **Annual Environmental Management Plan and Report**: The Project remains in good standing with its annual environmental reporting requirements as of the date of this FS Report.
- **Hazardous Materials**: The Company has prepared its statutory risk assessment for hazardous materials as required in the Project DEIA. Formal application for hazardous materials permission, including for reagents and chemicals, such as cyanide, for the Project must be submitted subsequent to the construction and State commissioning of its facilities.

The Company has received all major permits for the Project development and commenced early site construction works in mid-2023. A water reserve for the purposes of mining and mineral processing at Bayan Khundii has been registered with the government. Application for water use permits must be submitted upon commissioning of the water supply system.

Baseline studies and impact assessments for the Project, which are documented in full in the ESIA and DEIA, have been completed for the potential impact domains of climate and air quality, noise and vibration, topography, landscape, geology, soil and seismicity, surface water quality, hydrology and hydrogeology, biodiversity conservation, waste, population and demography economy and employment, land use, cultural heritage, occupational and community health, safety and security, and transport. Management plans have been created for each of these areas of potential impact.

Erdene consults with stakeholders in the course of its business, including both statutory and voluntary. The statutory consultations required under Mongolian law during the DEIA process were completed in 2020 . The Local Cooperation Agreement also commits the Project to ongoing consultation with local stakeholders over the course of the Project life cycle.

Mine closure and reclamation will be performed in accordance with Mongolian regulations and guidelines. All buildings and facilities not identified for a post-mining use will be removed from the site during the salvage and site demolition phase. Mine closure costs have been estimated at US$6.8 million. The conceptual mine closure plan (CMCP) for the Project will be reviewed and continually improved during the development and operations phases of the project. A statutory mine closure plan must be filed with the government three years prior to the planned completion of mine operations.

1.5. Geology Setting and Mineralization

The Project is located within the southeast part of the Trans Altai Terrane ("TAT", previously referred to as the Edren Terrane; Badarch et al., 2002). The Trans Altai is an island arc terrane within the Central Asian Orogenic Belt ("CAOB"), which extends more than 3,000 km from the Urals to the Pacific. This orogenic belt formed by the accretion of island arcs, ophiolites, ocean islands, seamounts, accretionary wedges and microcontinents similar to the Mesozoic-Cenozoic accretionary orogens of the Circum Pacific. The CAOB (Figure 1-2) is host to numerous porphyry copper and epithermal Au deposits of largely Devonian to Permian age (intrusions and/or ore; Yakubchuk et al., 2012; Wang et al., 2021). The closest known deposits of this type in Mongolia are those of the Oyu Tolgoi cluster, located ~700 km ESE of Bayan Khundii.

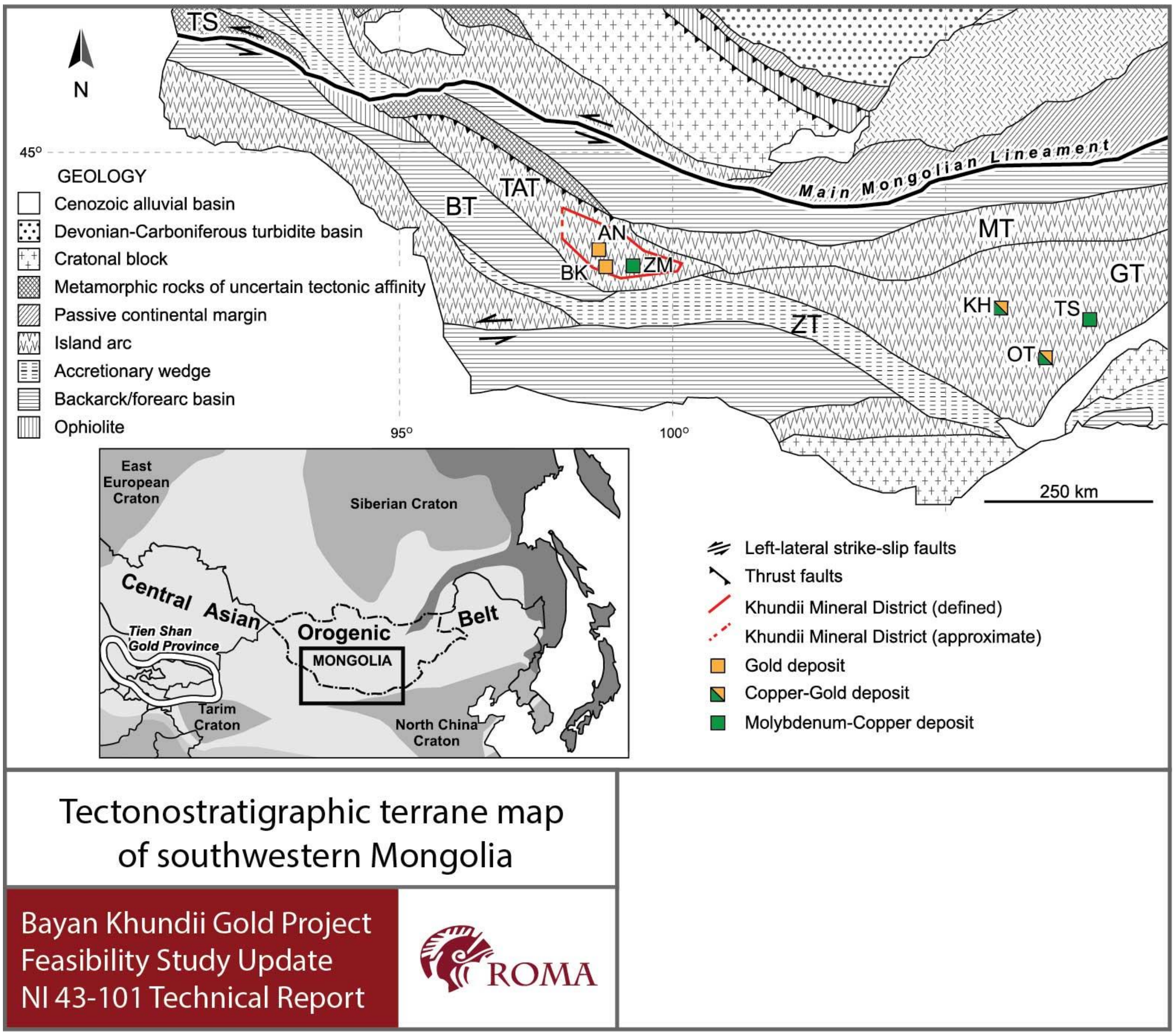


Figure 1-2 Tectonostratigraphic map of Mongolia with Location of Trans Altai Terrain (modified after Badarch et al., 2002)) (Source MacDonald 2023)

The southeast portion of the TAT is referred to by Erdene as the Khundii Minerals District ("KMD") (Figure 1-2) and host to a number of porphyry and epithermal deposits and occurrences, including the BK gold deposit, the Dark Horse gold deposit, the Altan Nar gold-polymetallic deposit, the Zuun Mod Mo-Cu deposit and the Ulaan SE gold mineralization.

The bedrock geology of the Khundii license area is dominated by a sequence of the Carboniferous Ulziithar Formation, comprised of tuffaceous units, volcanoclastic sedimentary sequences, basalt and andesite flows and volcanic breccia and is approximately 2,000 m thick. Rocks of the Ulziitkhar Formation were intruded by multiple plutons and stocks of the early Carboniferous Bayan Airag intrusive complex, and together these rocks were unconformably overlain by Permian and Jurassic volcanic and sedimentary units. All rocks in the region are overlain by unconsolidated sediments of Quaternary or Recent age.

Three sets of structures were distinguished in the KMD by their orientation and length, relationship to granitoid intrusions, and their cross-cutting relationships. The largest and oldest set comprises first-order ENE-trending lithospheric scale lineaments, interpreted as deep-seated, inherited basement structures. At least two such structures coincide with local gravity anomalies with the Altan Nar and Bayan Khundii deposits located along two separate ENE structures. A second set comprises structures that trend NE in en echelon fault segments that collectively define the ENE lithospheric trend. This set of NE-trending faults, including those at the Bayan Khundii deposit, are interpreted as a series of normal faults with dip-slip displacement. These extensional faults are interpreted to have formed the controlling structures at Bayan Khundii. Model integration of structural data from the BK gold deposit in three dimensions indicates a set of tilted extensional fault blocks in which gold was deposited in a fractured relay ramp structure between the fault tips of two soft-linked normal faults. A third set of smaller, N-S trending lineaments are noted. One of these N-S structures hosts the Dark Horse Mane gold deposit and can be traced for 3.5 km to the south where it connects to the extensional faults of the Bayan Khundii deposit.

Mineralization at the BK gold deposit consists of gold ±silver in massive-saccharoidal, laminar and comb-textured quartz ±hematite veins, multi-stage quartz-adularia-chalcedony ±hematite veins, quartz-hematite breccias, along late fractures (±hematite/specularite), and as disseminations within intensely illite-quartz altered pyroclastic rocks, where it is commonly associated with hematite that partially or completely replaced pyrite grains. Gold mineralization is mostly hosted in parallel NW-SE trending, moderately-dipping (approximately 45°) zones that range in width from 4 to 149 m.

Gold mineralization at the Dark Horse Mane deposit is hosted within strongly altered tuffaceous and volcanoclastic rocks, crosscut by quartz and quartz-hematite veins and stockwork zones. Several vein types are present, including comb-textured quartz-adularia veins, sugary crustiform-textured quartz veins, and multi-stage quartz-chalcedony veins. Mineralization is associated with a shallow (<60 m depth) oxide zone with high-grade Au mineralization at Dark Horse including well-developed structurally controlled supergene oxide zones which lies above a locally deeper sulphide-rich zone. .

1.6. Exploration

Erdene acquired the Khundii exploration license in 2010 and initial exploration included property-wide geological mapping, soil sampling and a magnetic survey (2012) while more detailed exploration, including detailed geological mapping, rock chip sampling and trenching was initially focused on the central part of the license on a project referred to as Altan Arrow, now part of the Greater Dark Horse prospect area.

In early 2015, Erdene geologists identified, through rock chip sampling, new high-grade, low-sulphidation epithermal gold mineralization, associated with a zone of intensely altered (quartz-illite) pyroclastic lithologies, about 5 km south of Altan Arrow. This area, referred to as the BK Gold Project was the focus of detailed exploration in 2015-2022 that culminated in the identification of the Bayan Khundii gold deposit as presented in the report.

Erdene discovered the Dark Horse Mane deposit, located 2.4 kilometres north of the Bayan Khundii deposit, when initial drilling, reported in early 2021, returned 5.97 g/t gold over 45 meters, beginning 10 meters downhole (AAD-58). The mineralization at Dark Horse Mane includes a shallow oxide zone, beginning at surface, hosting supergene enriched gold zones with values up to 195 g/t over 1 meter and ranging in thickness from 20 to 60 meters vertical depth with locally deeper oxidation along fractures. A detailed exploration program was carried out in the greater Dark Horse prospect area between 2020 – 2023. Work to date has identified the Dark Horse Mane Gold Deposit and the maiden mineral resource estimate for Dark Horse Mane is included in this report.

To date, exploration techniques employed across the Khundii license included the following:

- Detailed geological and structural mapping;
- Rock chip sampling;
- Progressively more detailed soil , with select areas now at 25m grid sampling;
- Geophysical surveys, including:
  - Ground magnetic surveys with line spacing at 100 m, 25 m and 10 m spacing;
  - IP dipole-dipole lines at 100 m to 200 m spacing;
  - Gradient IP surveys over 13 km^2 at BK and Dark Horse
  - Ground gravity survey at 200 m station spacing;
  - Compilation and 3D modelling of all geophysical data; and
- Scout drilling in a number of prospective areas, particularly in the greater Dark Horse area, including the Altan Arrow prospect.

Further exploration is required to determine the full extent of mineralization on the Khundii license. Erdene intends to continue exploration with the goal of expanding mineral resources within the Bayan Khundii Project area.

1.7. Mineral Resource Statement

The current Mineral Resource Estimate ("MRE") for the Bayan Khundii Gold Project includes MREs for two separate deposits, one for the BK Gold Deposit and one for the Dark Horse Mane Gold Deposit.

1.7.1. BK Gold Deposit MRE

The BK Gold Deposit MRE was prepared and disclosed in accordance with the CIM Standards and Definitions for Mineral Resources and Mineral Reserves (2014). The QP responsible for these resource estimates is Mr. Paul Daigle, P.Geo., Principal Resource Geologist for AGP Mining Consultants Inc. ("AGP"). The effective date of these Mineral Resources is April 20, 2023.

The Mineral Resource has been constrained to a conceptual pit shell and is reported at a cut-off grade of 0.40 g/t gold. The assumptions and parameters utilized to establish the cut-off grade and pit shell are reported below in notes to Table 1-2. AGP recommends reporting the Bayan Khundii Mineral Resource at a 0.40 g/t gold cut-off.

Table 1-2 Mineral Resource Estimate for the BK Gold Deposit, effective April 20, 2023

Resource Classification	Quantity (Mt)	Gold Grade (Au g/t)	Ounces Gold (Koz)	Silver Grade (Ag g/t)	Ounces Silver (Koz)
Measured	4.0	3.03	394	1.44	187
Indicated	3.3	2.04	219	1.22	131
M&I	**7.4**	**2.58**	**613**	**1.34**	**319**
Inferred	0.2	1.08	6	1.32	8

Notes:

- *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*
- *Summation errors may occur due to rounding.*
- *The effective date of the Mineral Resources is 20 April 2023.*
- *Open pit mineral resources are reported within an optimized constraining shell.*
- *Open* pit cut-off grade is 0.4 g/t Au based on the following parameters:
  - *Gold Price of $US 2,000/oz Au*

- *Gold recovery of 95%*
- *Mining Costs of $US 3.00/t*
- *Milling Costs and G&A of $22.00/t*

- *Capping of gold grades was 200 g/t Au and 50 g/t Ag on 1 m composite values.*
- *The* density varies between 2.58 g/cm^3 and 2.66 g/cm^3 depending on lithology.

1.7.2. Dark Horse Mane Gold Deposit MRE

RPM Global ("RPM") has independently estimated the Mineral Resources for the Dark Horse Mane gold deposit, based on the data collected by Erdene as at the 1st of October 2022. The Mineral Resource estimate and underlying data comply with the guidelines provided in the CIM Definition Standards under NI 43-101, therefore RPM considers it suitable for public reporting. The Mineral Resources were completed by Mr. Oyunbat Bat-Ochir (Qualified Person).

The Statement of Mineral Resources for the Dark Horse deposit is reported above a gold cut-off grade of 0.35 g/t Au for oxide and transition mineralization and 1.02 g/t Au for fresh mineralization The Mineral Resource has been constrained to a conceptual pit shell. The assumptions and parameters utilized to establish the cut-off grade and pit shell are reported below in notes to Table 1-3.

Table 1-3 Dark Horse Mane Gold Deposit – Mineral Resource Estimate Summary, November 2022

Type	Indicated Mineral Resource			Inferred Mineral Resource		
	Tonnes	Gold Grade	Ounces Gold	Tonnes	Gold Grade	Ounces Gold
	(Kt)	g/t Au	(K oz)	(Kt)	g/t Au	(K oz)
Oxide	578	3.0	**56.2**	75	1.1	**2.7**
Transitional	99	1.5	**4.8**	109	1.2	**4.1**
Fresh	5	4.9	**0.7**	-	-	**-**
Total	**682**	**2.8**	**61.7**	**184**	**1.2**	**6.8**

Notes:

1. *The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Oyunbat Bat-Ochir who is a full-time employee of RPM and a Member of the Australian Institute of Geoscientists. Mr. Bat-Ochir has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity that he has undertaken to qualify as a Qualified Person as defined in the CIM Standards of Disclosure.*
2. *All Mineral Resources figures reported in the table above represent estimates at November 1, 2022. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.*
3. *Mineral Resources are reported on a dry in-situ basis.*
4. *The Mineral Resource is reported using a 0.35 g/t Au cut-off grade in oxide and transition mineralisation and 1.02 g/t Au cut-off in fresh mineralisation and is constrained above conceptual optimised pit shell. Cut-off parameters were selected based on an RPM internal cut-off calculator, assuming an open cut mining method with 5% ore loss and 10% dilution, a gold price of US$1,723 per ounce, a mining cost of US$3 per tonne and a processing cost of US$16 per tonne milled and processing recovery of 90% for oxide, 87% for transitional and 30% for fresh Au mineralisation. The conceptual optimised pit shell was constructed using a gold price of US$2,000 per ounce, which is 1.4 times the long-term consensus forecast price.*
5. *Mineral Resources referred to above, have not been subject to detailed economic analysis and therefore, have not been demonstrated to have actual economic viability.*

1.8. Mineral Reserve Statement

Mineral Reserves estimated for the Bayan Khundii and Dark Horse deposit are based on Measured and Indicated Resources, with an effective data of August 1, 2023, and calculated by O2 Mining, and use FS level engineering designs for the pit and associated process plant operating parameters.

The cut-off grade for mineral reserve calculations is 0.63 g/t Au for Bayan Khundii and 0.68 g/t Au for the Dark Horse deposit, and was based on a gold price of $1,816/oz. The Reserve as defined by the regularized block model contains modelled mineral losses of 2.5% and average internal dilution of 10% within the ultimate pit.

A summary of the Mineral Reserves estimated for the Bayan Khundii and Dark Horse deposit with an effective date of August 1, 2023 can be found in Table 1-4 and Table 1-5.

Table 1-4 Bayan Khundii Gold Deposit – Mineral Reserve Statement, August 1, 2023

Classification	Tonnage (Mt)	Grade (g/t Au)	Contained Au (Koz)	Grade (g/t Ag)	Contained Ag (Koz)
Proven	2.7	4.1	360.2	1.8	159.4
Probable	1.1	3.0	104.7	1.7	61.1
Total	3.8	3.8	464.9	1.8	220.5

Table 1-5 Darkhorse Gold Deposit – Mineral Reserve Statement, August 1, 2023

Classification	Tonnage (Mt)	Grade (g/t Au)	Contained Au (Koz)
Proven	0	0	0
Probable	0.2	7.0	48.8
Total	0.2	7.0	48.8

Notes:

1. *The effective date of the Mineral Reserve estimate is August 1, 2023. The QP for the estimate is Mr. Julien Lawrence of O2 Mining Limited;*
2. *The Mineral Reserve estimates were prepared with reference to the 2014 Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Definition Standards (2014 CIM Definition Standards) and the 2003 CIM Best Practice Guidelines;*
3. *Reserves estimated assuming open pit mining method;*
4. *Waste to ore cut-offs were determined using a NSR for each block in the model. NSR is calculated using prices and process recoveries for each metal accounting for all off-site losses, transportation, smelting and refining charges;*
5. *Reserves are based on a gold price of $1,816/oz; and*
6. *Mineral Reserves were calculated from a diluted "mining" block model which included average dilution of 10% and losses of 2.5%.*

1.9. Mining Method

Mining operations, designed as part of this FS, focus on the BK and Dark Horse open-pit and surrounding infrastructure. The Bayan Khundii Project site is comprised of the open-pit mine, processing plant and integrated waste rock and dry cake tailings storage facility. Additional infrastructure for maintenance facilities and an accommodation village are included. The proposed mine uses conventional open-pit truck and shovel methods for ore extraction.

Initial evaluation of Whittle™ pit shells was completed based on geotechnical and economic parameters to determine potentially economically minable material. The Whittle™ optimization process identified three main pit areas defined as Striker, Midfield and North Midfield. Subsequently, two stages of pit design and development were planned based on the Whittle™ optimization output. The BK Deposit pit exit level is approximately 1,235 meters above sea level ("mRL") and reaches a maximum depth of 1,080 mRL at the North Midfield Pit. For the Dark Horse pit exit level is approximately 1,273 meters above sea level ("mRL") and reaches a maximum depth of 1,220 mRL.

Overall mining inventory within the ultimate pit design is 47.9 million tons ("Mt") of which 43.9 Mt is classified as waste and 4.0 Mt is classified as ore. The average grade for process plant gold feed is 3.98 g/t gold containing approximately 513.7 thousand ounces ("Koz") of gold in total, silver feed is 1.71 g/t silver containing approximately 220.5 thousand ounces ("Koz") of silver in total.

The designed process plant throughput rate is 650 thousand tons per annum ("Ktpa") with 500 Ktpa for the first year of operations and 650 Ktpa from Year 2 onwards. The total productive mine life is 6 years, with an additional 3 months of pre-production to generate waste for construction of the run-of-mine stockpile ("ROM") and integrated waste facility ("IWF") in advance of process plant commissioning. An average of 12.6 Mtpa of total ex-pit production is required from Year 1 to 3 and this progressively reduces down to 1.3 Mtpa from Year 4 to Year 6, at which time ore from the North Midfield zone is sufficiently exposed to generate consistent process plant feed.

The stockpile and process plant feeding strategy optimizes project Net Present Value ("NPV"), balancing feed grade and stockpile re-handle quantities. A cap of 4.5 g/t Au for feed over a monthly period has been applied to reduce the risk of gold recovery loss in the processing plant. The maximum stockpile quantity is approximately 611 Kt, and total re-handle of stockpile material is approximately 896 Kt over the life of mine.

In total, 476 Koz of gold are expected to be recovered at an average gold recovery rate of 92.7%, and in total 121 Koz of silver are expected to be recovered at an average silver recovery rate of 55 %.

Table 1-6 LOM Schedule Summary in Year

Schedule Items	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Total
Total Mining Inventory										
Total Ex-pit	Kt	2,737	12,600	12,600	12,600	3,390	2,760	1,276	0	47,963
Waste	Kt	2,685	12,010	11,673	11,919	2,726	1,964	969	0	43,945
Ore	Kt	52	590	927	681	664	796	307	0	4,018
Au Grade	g/t	3.66	4.02	3.23	5.35	3.71	3.54	4.86	0.00	3.98
Mined Gold	oz	6,159	76,260	96,317	117,108	79,337	90,597	47,950	0	513,728
Ag Grade	g/t	1.16	1.62	1.47	1.98	1.98	1.49	2.06		1.71
Mined Silver	oz	1,951	30,670	43,881	43,444	42,223	38,022	20,316	0	220,506
Processing and Stockpile Balance										
Mill Feed	Kt	0	500	650	650	650	650	650	268	4,018
Feed Au Grade	g/t	0	4.50	4.50	4.50	4.50	4.50	2.77	0.86	3.98
Au Process Recovery	%	n/a	93.8	91.8	92.0	92.9	92.5	93.3	92.7	92.7
Gold Recovered	oz	0	67,836	86,362	86,476	87,336	86,976	54,159	6,856	476,001
Feed Ag Grade	g/t	0	1.72	1.91	1.30	2.61	1.94	1.27	0.51	1.71
Ag Process Recovery	%	n/a	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%
Silver Recovered	oz	0	15,215	21,902	14,896	29,988	22,285	14,588	2,405	121,278
Stockpile Balance										

Schedule Items	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Total
Balance ton	Kt	52	143	419	451	464	611	268	0	
Balance Au grade	g/t	3.66	2.19	0.92	2.44	1.26	0.88	0.86	0.00	
Balance Ag grade	g/t	1.16	1.08	0.67	1.75	0.87	0.54	0.51	0.00	
Rehandle Total	Kt	0	41.8	21.8	162.1	34.0	3.2	365.7	267.8	896.4

To satisfy the productivity and selectivity required over the life of mine, primary and bulk waste excavation will be undertaken with two Hyundai HX1250-9 backhoe configuration excavators and selective waste excavation and ore excavation will be undertaken with a single Hyundai HX520 backhoe configuration excavator. 60-tonne wide body dump trucks will be used to move ore and waste material, maximizing overall truck utilization, and unifying the truck spare parts stock. A single 60-tonne wide body dump truck was selected for tailings haulage from the process plant to the tailing cells located within the IWF.

Both production and control drilling are needed during mining operations. Production drilling is for bulk waste material, and control drilling is for wall blast, selective waste, and ore blast.

O2 has simulated ancillary fleet based on our prior operating experience and the application needed at Bayan Khundii. O2 has allowed for some extra dozer capacity for IWF wall and tailings flattening and progressive rehabilitation activities.

Table 1-7 Fleet Summary

Fleet Names	No. Required
Major Fleet	
Hyundai HX1250_9	2
Hyundai HX520	1
CDT60	19
Epiroc Smart ROC D65	3
Sandvik DP1500i	1
Ancillary Fleet	
Loader XCMG LW900KN	2
Dozer - XCMG SD9N	5
Hyundai HX520	1
Grader - XCMG GR3005Tpro	2
Water Carts – CDT60 with tank	1
Service Truck	1
Compactor - 10T	1
Support Fleet (various light vehicle units, lighting, pumps, emergency equipment, etc.)	

1.10. Project Infrastructure

Infrastructure for the Bayan Khundii Project is designed to support efficient day-to-day operations and includes:

- Main and internal access roads;

- Bulk earthworks, including clearing of all required areas, installations, including culverts, box cuts for landfill, backfill and compaction of construction locations, hard stands, dams, drains, catchments, services trenching and water storage ponds;
- Accommodation village installation, reticulated services, waste disposal, water treatment, medical facility, and associated infrastructure;
- Communications system;
- Buildings, including ablutions, laboratory, reagents storage and bus shelters;
- Steel-framed buildings, including an Office (inclusive of emergency medical facility), HV/LV workshops, Warehouse, Central Heating Plant and Security Guard House;
- Fuel Storage and distribution facility;
- Power related civils and genset/solar generation area;
- Power, water, heating, and wastewater reticulation across the project site;
- Site fencing and security;
- Process plant and gold room security; and
- Bore field water supply.

Infrastructure placement and design was sited with consideration of the prevailing winds on site to mitigate dust formation, areas of light and heavy vehicle interaction on haul roads, and drainage and catchment areas to mitigate potential flooding.

An on-site power plant is proposed to meet reliability and anticipated power requirements, with a combined solar/diesel generation method. The selected solar-diesel-battery power station has been designed with a 14.5MW diesel generator, 5 MW solar power plant, and 3 MWh battery energy storage.

The site requires an average of approximately 573 m3/day (or 6.6 L/s) of raw water to sustain mineral processing, mine dust suppression and camp domestic water requirements. Water is envisaged to be supplied from the nearby Khuren Tsav-Bosgyn Sair ("KT-BS") borefield, located approximately 1 to 4 km south-southwest of the Bayan Khundii processing plant. This nearby borefield has indicative capacity to meet the annualized demand rate. However, the assessed sustainable yield of the individual wells varies significantly, which in turn may limit the maximum sustainable yield of the aquifer. As groundwater is primarily hosted in localized fracture systems that are variable with limited connectivity, a below-ground pipeline is proposed to transport water from the borefield to a raw water tank within the processing plant for treatment. A separate, smaller water supply system in proximity to the camp is planned for the camp water requirements. Secondary water requirements at the accommodation camp and other buildings or site facilities will be treated further to allow a potable water source for drinking water and safety showers.

1.10.1. Construction Delivery Model

Erdene plans to engage an EPC contractor to deliver the bulk of the construction work.

Under an EPC model, the contractor assumes full responsibility for their elements of the Project's design, procurement, and construction. This minimizes coordination challenges and streamlines communication. Moreover, under this model the EPC contractor assumes a significant portion of the construction risks, including cost overruns and delays.

EPC Scope of Work

- Processing Plant
- Crushing Station
- Central Heating Plant
- Admin Building
- Chemical Storage

- Warehouse
- Heavy Vehicle Workshop
- Guard House
- Laboratory
- Water Supply System
- Wastewater Treatment Plant
- Switchrooms, Transformers, & MCC's
- Main Control Room
- Permanent Camp

In addition to construction and general procurement for the facilities listed above, the EPC contractor will undertake:

- Detailed Engineering
- Construction Permitting
- Construction readiness planning

In parallel to the work undertaken by the EPC contractor, Erdene will manage:

- Mechanical package procurement
- Fencing and site security
- IWF Establishment
- ROM Pad Establishment
- HV Haul Roads
- Explosives Magazine
- Permanent Fuel Depot
- Power Station

1.10.2. Infrastructure Design and Material Estimation

The design of project infrastructure followed a customized process that included Erdene input, general and architectural concepts, and a final conceptual approval by a qualified Architect and Erdene. As per the construction delivery model, costs for infrastructure covered under the EPC contract were quoted by the contractor and provided by Erdene.

For work managed by Erdene, design and engineering works were advanced to a level of detail sufficient for securing budget pricing and based on these specification vendor quotations have been received for the magazine, permanent fuel depot, and power station (via a power purchase agreement).

Development of ROM Pad Establishment, HV Haul Roads, and IWF establishment have been costed based on utilization of Erdene's mining fleet after mobilization, but prior to start of full mining activities.

1.10.3. Procurement Review Process

As part of the procurement process, Erdene undertook a process of pricing via sourcing of Request for Proposal ("RFP") or Quotation ("RFQ") and presented these proposals and quotations to O2 as the project pricing basis.

O2 undertook a process to ensure valid quotations had been received for all major work or equipment packages. This process involved ensuring pricing was available for all equipment packages, assessing how recent the pricing was, and ensuring the scope of work or equipment lists matched current specifications from the processing and mining engineering reports.

Mechanical equipment quotations were broken down into 15 packages for assessment:

- Crusher
- Feeders

- Conveyor belts
- Mills
- Cyclone cluster
- Vibrating screens
- Agitators
- Thickeners
- Interstage screens
- Slurry pumps
- Solution pumps
- Reagent pumps
- Cranes and hoists
- Water treatment plant
- Coal fired boiler

Separately to the mechanical packages, quotations or proposals were assessed for:

- Heavy equipment rental rates, including trucks, excavators, motor graders, bulldozers, wheel loaders
- Fuel supply including establishment of fuel depot operation and establishment
- Drill and blast service and materials, including establishment of explosives magazine
- Power supply via a power purchase agreement, including establishment and operation of a diesel solar hybrid power plant

Finally, the bulk of construction work and construction materials were assessed via review of the commercial proposal and full construction schedule set out by the preferred EPC contractor. Level 1 items included in this scope are:

- Temporary facilities
- Mobilization
- Design
- Early stage earthworks
- Early stage civils
- Processing plant construction
- Tank and plate works
- EICT
- Architectural Works
- Piping
- HVAC
- Non-process infrastructure (inclusive of permanent site camp design, supply, and install; heating plant excluding boiler equipment; HV/LV Workshop, Chemical warehouse, site office, warehouse, water reticulation system, water supply, onsite laboratory, waste water treatment plant, security guard house)
- Construction plant and equipment
- Indirect costs
- Demobilization
- Insurance

A list of project drawings, standards, and specifications for early works EPC were available as an annex to the EPC contract at time of report writing and these were consistent with the infrastructure described in the infrastructure section of this report.

1.11. Integrated Waste Facility

The Bayan Khundii Integrated Waste Facility (IWF) will comprise the co-disposal of waste rock and processed dry cake tailings generated during mining activities at the BK open pit. Both waste rock and dry cake tailings, with a final target moisture content of around 15%, will be transported to the IWF via haul trucks.

The IWF has been designed to store tailings within cells located in the core of the IWF structure and away from potential failure planes along the dump batter slopes identified from the stability analysis. Throughout the Life of Mine (LOM), the IWF will see the deposition of waste rock and tailings at an approximate volume ratio of 10:1, respectively, which will see the IWF grow vertically until it reaches its ultimate shell height of 73 m at RL 1,300m.

A feasibility-level water balance for the IWF system has been developed as a means to size other components of the system and to understand the likelihood of overtopping of the containment structures during a 1,000-year period of time. Auxiliary infrastructure and a seepage collection system will support the overall water management of the IWF and has been designed to minimise runoff migration into the IWF project areas, as well as minimising the amount of potential contaminant water that is to be collected and re-handled as a means to avoid cyanide leachate migration into the broader environment.

Auxiliary and seepage collection infrastructure for the IWF water management system entails:

- A diversion drain along the north-western flank of the IWF to divert clean water runoff away from the site,
- Combined underdrainage and seepage collection system sitting below the tailings storage area within the IWF,
- Containment Runoff Collection Pond (CRCP), located south of the IWF,
- Southern clean runoff collection drains, to divert runoff in contact with waste rock, away from the project's site.

The water collected at the CRCP is to be returned to the process plant for reuse, although this will not be a steady and reliable source of water for the materials processing based on the low rainfall averages expected at the site.

The seepage collection system will consist of a HDPE lining system and seepage collection pipes, that will collect seepage water that has come into contact with the tailings and convey the contaminated water to the CRCP for collection.

1.12. Dark Horse Waste Rock Dump

The Dark Horse Waste Rock Dump (WRD) will be located to the north of the BK site, to the west of the DH open pit and outside of the blast exclusion zone. The WRD is required to store 2.45 Mt of waste rock. Geochemical analysis reveals that the waste rock extracted from the DH pit will comprise both potentially acid-forming (PAF) and non-acid forming (NAF) waste rock. The design philosophy involves encapsulating the PAF waste rock within the NAF waste rock.

The WRD footprint design involves construction of a waste rock dump within a footprint of 7.9 ha with an ultimate shell height of 30 m at RL 1,302 m. The WRD has been located outside of any significant drainage routes to limit the requirements for any auxiliary infrastructure to just construction of toe drains along the southern and western toe of the WRD.

1.13. Mineral Processing and Metallurgical Testing

1.13.1. BK Metallurgical Test Work

A series of metallurgical test programs were conducted on material from the Bayan Khundii deposit between 2016 and 2020. Throughout this period, testwork included various comminution tests, gravity concentration testwork, a whole ore cyanidation optimization program, cyanide variability tests, carbon adsorption, cyanide destruction and dewatering testwork. Data from all tests programs is utilized in support of this study.

1.13.1.1. Comminution Tests

Comminution test results suggest that Bayan Khundii material is moderately hard to hard. Comminution testwork consisted of Bond Ball Mill Work Index tests ("BWI"), SAG Mill Comminution testing (SMC Tests®) and Abrasion Index tests. Additional JK Drop Weight Tests and Crusher Work Index tests were conducted as well.

The average Bond Work Index is 18.1 kWh/ton, however, there were some geographic trends noted in the hardness of the material. The average BWI from the Striker zone was 17.2 kWh/ton, while the average BWI from Midfield and North Midfield was 18.4 and 19.1 respectively. Since this generally aligns with the proposed mining sequence, then the implication is that feed to the mill will get progressively harder over the course of the mine life. The SMC Tests® also align with this observation. Abrasion Index results suggest the material is moderately abrasive to abrasive. The data from the comminution testwork was used to appropriately design and size the crushing and grinding circuit for a design basis of the primary grind size of 80% passing 60 µm.

1.13.1.2. Gravity Concentration

Gravity concentration studies conducted during the 2019 test program were completed in order to obtain a greater understanding of the gravity response from average grade material (BK-MET-COMP_18-01) and from high grade material which could make up a portion of the mill feed early in the mine life (BK-MET-COMP_18-02). The cumulative gravity recoverable gold ("GRG") ranged from 40.5% for BK-MET-COMP_18-01, to 57.7% for BK-MET-COMP_18-02. While there was a reasonable amount of gold present as GRG in each composite, that gold was quite fine and late liberating, thus making high recovery by gravity alone quite difficult. Gravity recovery is not included in the design of the Bayan Khundii plant.

1.13.1.3. Whole Ore Cyanidation Testwork

Numerous whole ore cyanidation test programs were conducted on Bayan Khundii material. During the various test programs the effects of primary grind size, cyanide concentration, lead nitrate addition, and oxygen addition were studied. Variability testwork allowed for a study of the impact of head grade and geography on gold recovery. On average, gold recovery ranged in the low to mid 90% range. A few lower grade samples yielded recovery less than this mark. The key findings from these programs were:

- Finer primary grind sizes provided higher overall gold extraction. A primary grind size of 80% passing 60 µm was selected as the design basis;
- Cyanide consumption was low and a sodium cyanide addition rate to the leach circuit of 0.5 g/L is sufficient to ensure acceptable gold extraction;
- The addition of lead nitrate or oxygen did not materially change the leach performance;
- Gold recovery was relatively insensitive to a solids content between 35% and 55% in the cyanidation circuit. A percent solids target of 42% was maintained as the design basis;
- Cyanidation residence time of 36 hours was appropriate.; and
- Gold recovery from the Striker Zone material is slightly higher than that from Midfield and North Midfield.

Carbon adsorption testwork on cyanide leach slurries indicated no issues with adsorption of gold and silver onto activated carbon.

1.13.1.4. Cyanide Destruction

A cyanide destruction program was conducted to evaluate conditions required to adequately detoxify process solutions and ensure that weak acid dissociable cyanide ("CN_{WAD}") present in tailings liquor complies with the project's stated target of less than 50ppm for impoundment in the Integrated Waste Facility. Testwork used the SO_2/Air process to oxidize CN_{WAD} to cyanate. Since Bayan Khundii is relatively clean material without many metal cyanide complexes formed in solution, most of the residual cyanide is present as free cyanide and copper sulphate had to be added to catalyze the reaction.

Optimized cyanide destruction parameters were 40 minutes retention time, copper concentration of 100 ppm and SO_2 addition rate of 5.5 g SO_2 / g CN_{WAD}. These parameters were sufficient to adequately oxidize CN_{WAD} content of the Bayan Khundii tails liquor from approximately 185 ppm to less than 10 ppm.

1.13.1.5. Dewatering Testwork

Thickening and filtration characteristics were evaluated on a sample of Bayan Khundii CIP tailings. Dynamic thickening testwork showed that Bayan Khundii CIP tailings could be thickened to underflow densities of 57% to 59%, while still maintaining reasonable overflow clarity. The sample was sensitive to flux rate, and tests conducted at a rate of 0.5 t/m^{2}hr had overflows with high total suspended solids (>30,000 ppm). Increasing the floc dosages to 80 g/t improves the overflow clarify. The best results were achieved with a feed solids dilution to 5%. Increasing the feed solids to 7.5% still produced good overflow clarity, however it reduced the underflow solids to 50%. This may be acceptable considering additional filtration stages are found downstream of the tails thickener.

Four different filtration systems were evaluated: cloth disc, ceramic disk, vacuum belt and pressure filtration. The lowest cake moisture was achieved with ceramic disc filters and pressure filters. Ceramic disc and pressure filtration were clearly superior to vacuum belt filtration or cloth disc filtration which only achieved cake moistures in the low to mid 20% range. The average moisture content from the ceramic filter test runs was 17%, however a few runs achieved a moisture content of less than 15%. Ceramic disc filtration provided clear filtrates than pressure filtration and was selected as the basis for the processing plant design.

1.13.1.6. Projected Gold and Silver Recovery

A relationship between head grade and gold recovery was developed during earlier phases of study and continuously updated as new test results became available. This relationship was a series of linear equations based on specific head grade bands. While the average gold recovery from Bayan Khundii material is in the low to mid 90% range, a few lower grade composites returned recovery less than this mark. Life-of-mine gold recovery is expected to be 93%. The gold recovery equations are highlighted in Table 1-8.

Table 1-8 Bayan Khundii Gold Head Grade Recovery Relationship

Grade Band (g/t)	2020 Recovery Equation
0 – 0.35	Au Rec (%) = 230.61*Au Grade (g/t)
0.35 – 1.18	Au Rec (%) = 13.32* Au Grade (g/t) + 76.052
1.18 – 22.0	Au Rec (%) = 0.314* Au Grade (g/t) + 92.045
>22.0	Au Rec (%) = 99.0

Silver recovery was tracked throughout the 2020 test program. At the target 60 µm grind size the silver recovery amongst the variability composites ranged from 43% to 67%. Average silver recovery from Bayan Khundii material is expected to be 55%.

1.13.2. Dark Horse Metallurgical Test Work

A series of metallurgical test programs were conducted on material from the Dark Horse Mane deposit in 2022 and 2023. Testwork included comminution tests, cyanide variability tests, cyanide destruction tests, carbon adsorption, and dewatering testwork. Cyanidation blending tests were also conducted using different ratios of Dark Horse and Bayan Khundii material to study co-processing of Bayan Khundii and Dark Horse material.

1.13.2.1. Comminution

The Bond Ball Mill Work Index results are classified as moderately hard (Average of 15.6 kWh/t), while the SMC parameters ranged from 58.7 to 68.8, which is moderately soft. Abrasion index results indicate that the sample is moderately abrasive. Overall Dark Horse material is slightly softer than that from Bayan Khundii, indicating that mill throughput should not be a limiting factor when processing Dark Horse ore.

1.13.2.2. Cyanidation Testwork

A number of cyanide optimization tests were conducted on Dark Horse material to investigate the impact of primary grind size, cyanide concentration, and lead nitrate addition. High recovery was observed across all optimization tests, ranging from 88.8-90.3% Au recovery (average: 89.9%). Due to the low variation in recovery between test conditions, it was determined that the Dark Horse master composite gold recovery is not sensitive to primary grind size or cyanide dosage across the ranges tested. Low sodium cyanide concentrations (0.35 g/L) are sufficient to achieve the stated gold recovery. No benefit to recovery was observed from the addition of lead nitrate and oxygen.

1.13.2.3. Co-Processing Testwork

The plan is for Dark Horse material to be processed through the Bayan Khundii plant, and that the Dark Horse and Bayan Khundii material may be co-processed. Three tests were conducted with blends of Bayan Khundii Master Composite and the Dark Horse master composite at varying blend ratios. A linear relationship was observed for both gold and silver recovery suggesting that there is no detrimental impact to co-processing Dark Horse material with Bayan Khundii feeds.

1.13.2.4. Cyanide Destruction

Cyanide destruction tests on Dark Horse material were performed to evaluate conditions necessary to adequately detoxify process solutions. A retention time of 40 minutes, 125 ppm Cu^{2+}, 6.5 g SO_2 / g CN_{WAD} resulted in CN_{WAD} concentrations at the discharge of the cyanide destruction reactor of 5 ppm.

1.13.2.5. Dewatering Testwork

Static settling tests were conducted on 12 Dark Horse composites and compared to the settling characteristics of the Bayan Khundii composite. The settling test conditions were based on conditions developed for Bayan Khundii; these conditions included, flocculant: SNF 910 VHM at 40g/t target dosage; pulp density: 5% solids target and lime at approximately 4.5g/t. Overall, the Dark Horse samples settled similarly to Bayan Khundii material.

1.13.2.6. Projected Gold and Silver Recovery

The Dark Horse variability data was analyzed to determine the best predictor of gold recovery. Upon reviewing all of the available data, no clear correlation was observed between gold recovery and any of the geochemical markers, including gold head grade. Therefore, an average gold recovery of 89% was considered the best option to describe the available dataset.

1.13.3. Mineral Processing and Recovery Methods

Mill feed from the BK and DH pits to the processing plant is expected to average 3.98 g/t gold and BK Pit ore feed is expected to average 1.71 g/t silver content, no silver content has been modelled for DH Pit ore feed. Test work conducted concludes that the ore is amenable to conventional cyanide leaching with life=of-mine gold recoveries averaging 92.7% using this method for a grinding product of nominal P80 of 60 µm.

The proposed conventional cyanide leaching process is designed to produce gold doré bars for transport off-site for further refining.

The simplified gold recovery process is as follows:

- Comminution;
- Cyanide Leaching;
- Carbon-in-Pulp Adsorption;
- Elution;
- Electrowinning;
- Carbon Regeneration; and
- Tailings Treatment.

The process plant will consist of single stage crushing, 2 stage grinding via a Semi-Autogenous followed by Ball Grinding ("SAB") circuit, cyanide leaching, adsorption via carbon-in-pulp methods, elution via the Pressure Zadra, electrowinning and furnace smelting to produce doré bars. Subsequent carbon regeneration will be conducted in a diesel-fired kiln before replacement in the CIP tanks. Tailings will be thickened to recover residual cyanide, following cyanide detoxification and vacuum filtered to a dry cake before disposal in constructed cells within the integrated waste facility. As stated in Section 1.13.3, a gravity circuit has not been included in the design.

1.14. Capital and Operating Cost Estimation

Capital costs for the Bayan Khundii operations were estimated according to the Association of Advancement of Cost Engineers ("AACE") Class 2 estimate. The accuracy of the estimate is ±10 – 15%. All currencies are in United States Dollars, unless otherwise specified. The estimated pre-production capital costs for an annual mine production of 650 Ktpa ore feed was estimated to be US$100.4 million, or US$90.0 million exclusive of contingency.

Table 1-9 Capital Cost Estimate

TOTAL CAPEX	000 US$	$ 100,427
Construction indirect Costs	**000 US$**	**$ 28,051**
Site Establishment & Early Works	000 US$	**$ 6,381**
Construction Temporary Facilities	000 US$	**$ 884**
Contractor Establishment Costs	000 US$	**$ 420**
Construction Indirects - General	000 US$	**$ 17,037**
Mobile Equipment	000 US$	**$ 3,329**
Construction Direct Costs	**000 US$**	**$ 60,589**
Project Site General Works	000 US$	**$ 12,163**
Process Plant	000 US$	**$ 46,251**
Electrical/Water/Heating Distribution	000 US$	**$ 2,175**
Owners Project Costs	**000 US$**	**$ 1,383**
Contingencies	**000 US$**	**$ 10,403**

The life of mine average operating cost for the Bayan Khundii operations is estimated at US$87.50/t milled. This operating cost excludes any initial or sustaining capital and excludes pre-production costs. Operating costs for mining, processing and general and administrative costs are summarized in Table 1-10 below.

Table 1-10 Operating Cost (US$ Million)

Operating Costs	Total Cost (LOM Millions)	Cost $/t Milled (LOM Average)
Mining Costs	165.0	41.1
Processing Costs	166.3	41.4
General and Administrative Costs	20.2	5.1
TOTAL OPERATING COST	**351.6**	87.5

**Operating costs are inclusive of 10% VAT where applicable*

1.15. Economic Analysis

An updated economic evaluation of the Bayan Khundii operation was undertaken as at August 15, 2023, using a US$1,800 per ounce gold price. The summarized results of the evaluation are as follows:

- Base Case Net Present Value at a 5.0% discount rate of US$245.0 million pre-tax and US$170.1 million post-tax;
- The estimated pre-tax Internal Rate of Return ("IRR") is 44.3% and the post-tax IRR is 35.3%; and
- Payback period of 2.0 years pre-tax and 2.4 years post-tax.

Sensitivity analysis were carried out on the post-tax financial model NPV and IRR results with respect to key project variables including gold price, capital expenditures and operating costs and the Mongolian to United States exchange rate. Both the project NPV and IRR are most sensitive to fluctuations in the gold price and operating costs and least sensitive to capital expenditures and the exchange rate. Details of the sensitivity analysis can be found in Section 22.11 – Sensitivity Analysis of Bayan Khundii Project.

The key study outcomes for the projected mine plan and economic results are presented in Table 1-1.

1.16. Interpretations and Conclusions

Based on the currently identified Mineral Resources and Mineral Reserves and the assumed prices and parameters, the authors of this FS Report have concluded that profitable operations can be sustained for six years on the Bayan Khundii site under the conditions and assumptions of this report.

1.16.1. Geology and Mineral Resource

1.16.1.1. BK Deposit

Mineralization at Bayan Khundii is exposed at surface in the southern portions of the deposit (Striker Zone) but constrained stratigraphically to the north (Midfield and North Midfield) by a package of Jurassic sediments (primarily conglomerates and sandstones) which unconformably overlay the mineralized tuff and contain localized intercalated basalt flows. At depth, mineralization is further constrained, locally, by a granitoid body. Mineralization consists of gold ± silver in massive-saccharoidal, laminar and comb-textured quartz± hematite veins within parallel northwest-southeast trending, moderately-dipping (~45°) zones that range in width from 5 to 150 m. These zones typically consist of narrower higher-grade mineralization surrounded by broader lower grade mineralization. Bayan Khundii is characterized as a low sulphidation epithermal gold deposit.

The resource was estimated using ordinary kriging. At a 0.4 g/t Au cut-off grade the updated Mineral Resources for the BK gold deposit are: Measured Resources of 4.0 Mt at 3.03 g/t Au and 1.44 g/t Ag; Indicated Resources of 3.3 Mt at 2.04 g/t Au and 1.22 g/t Ag; and Inferred Resources of 0.2 Mt at 1.08 g/t Au and 1.32 g/t Ag. The effective date of the BK Mineral Resources is April 20, 2023.

1.16.1.2. DH Deposit

Gold mineralization at the Dark Horse Mane deposit is hosted within strongly altered tuffaceous and volcanoclastic rocks, crosscut by quartz and quartz-hematite veins and stockwork zones within N-S trending structural corridor. Several vein types are present, including comb-textured quartz-adularia veins, sugary crustiform-textured quartz veins, and multi-stage quartz-chalcedony veins. Mineralization is associated with a shallow (<60 m depth) oxide zone with high-grade Au mineralization at Dark Horse including well-developed structurally controlled supergene oxide zones which lies above a deeper sulphide-rich zone).

For the Dark Horse Mane deposit ordinary kriging was chosen as the preferred methodology for interpolating/estimating grades into the block model. The Statement of Mineral Resources for the Dark Horse Mane deposit is reported above a gold cut-off grade of 0.35 g/t Au for oxide and transition mineralization and 1.02 g/t Au for fresh mineralization. Total Indicated Resources are 682Kt at 2.8 g/t Au and Inferred Resources are 184Kt at 1.2 g/t Au. The effective date of the Dark Horse Mane Mineral Resources is November 1, 2022.

1.16.2. Metallurgical Test Work

The following conclusions may be drawn based on the metallurgical testwork to date.

1.16.2.1. BK Gold Deposit

A relationship between grade and gold recovery has been developed for the Bayan Khundii material. Life-of-mine gold recovery is expected to be 93%. Silver recovery is expected to average 55%. Gold recovery is strongly correlated to primary grind size. Finer primary grind sizes produce higher overall gold recovery. A primary grind of 80% passing 60 µm was considered optimal and selected as the design basis of the plant.

Comminution testwork suggests that Bayan Khundii material is moderately hard to hard. Abrasion Index results suggest the material is moderately abrasive to abrasive. Comminution tests show that material gets moderately harder when transitioning from Striker through Midfield and North Midfield. The comminution circuit has been designed based on the testwork data.

Moderate cyanide addition rates are able to achieve high gold extraction. A sodium cyanide concentration of 0.5 g/L is appropriate in the leach circuit. Most composites achieved maximum gold extraction after 36 hours of leaching. A retention time of 36 hours was selected as the design basis for the plant. Gold recovery and leach kinetics were insensitive to the solids content during cyanidation. 42% solids was selected as the design basis for the leach plant.

Bayan Khundii ore is relatively clean material, without many metal cyanide complexes, and detoxification testwork showed that most of the residual cyanide in the CIP tailings is present as free cyanide and requires the addition of copper sulphate to catalyze the SO_2/Air cyanide detox reaction. A retention time of 40 minutes, 100 ppm Cu^{2+}, 5.7 g SO_2/g CN_{WAD} resulted in CN_{WAD} concentrations at the discharge of the cyanide destruction reactor of less than 10 ppm, well below the target of 50 ppm.

Dewatering tests highlight that CIP tails may be thickened to 50% solids with moderate floc dosage rates of 60-80 g/t. Feedwell dilution to 5% solids improved settling characteristics of the material. Filtration of CIP tailings using ceramic disc filters or pressure filters could achieve a final moisture content as low as 15%. Disc filtration was selected as the design basis for the FS.

1.16.2.2. DH Gold Deposit

For the Dark Horse Gold Deposit, life-of-mine gold recovery is expected to be 89%. The Dark Horse material was insensitive to primary grind sizes between 60µm and 150µm. Low sodium cyanide concentrations (0.35 g/L) are sufficient to achieve the stated gold recovery.

On average both the BWI and the SMC results suggest that Dark Horse material is somewhat softer than that from Bayan Khundii, indicating that mill throughput should not be a limiting factor when processing Dark Horse.

A retention time of 40 minutes, 125 ppm Cu2+, 6.5 g SO2 / g CN_{WAD} resulted in CN_{WAD} concentrations at the discharge of the cyanide destruction reactor of 5 ppm. Settling tests suggest that Dark Horse has similar settling characteristics to that of Bayan Khundii.

The plan is for Dark Horse material to be processed through the Bayan Khundii plant, and that the Dark Horse and Bayan Khundii material may be co-processed. Results of blending testwork show a linear relationship observed for both gold and silver recovery suggests that there is no detrimental impact to co-processing Dark Horse material with Bayan Khundii feeds.

1.16.3. Mineral Reserve Estimate

Estimations of Mineral Reserves for the BK deposit and DH deposit are based on Measured and Indicated Resources and meet the definitions of Proven and Probable Mineral Reserves as stated by NI 43-101 and defined by the CIM standards on Mineral Resources and Reserves Definitions and Guidelines (2014). The Mineral Reserve estimates are based on a mine plan and open pit design developed using modifying parameters including metal price, metal recovery based on performance of the processing plant, and operating cost estimates. The Proven and Probable Reserves are inclusive of the Mineral Resource and based on a three-year moving average gold price of $1,800/oz.

Geotechnical investigations were conducted to assess the expected rock quality at Bayan Khundii and Dark Horse. Characterization of structural domains was completed for slope stability and pit design considerations. Overall slope angles and bench parameters were provided from the geotechnical analysis as inputs to the pit optimization study.

Average mining costs of $41.40/t Milled, processing costs of $41.08/ton milled and $5.05/t Milled general and administrative costs have been used to estimate the reserves along with a gold price of US$1800/oz.

Proven and Probable Reserves total 4 Mt of ore, with estimated contained gold of 476 Koz.

1.16.4. Mining and Process Operations

Following completion of the open-pit optimization study and in order to maximize recovery of ore and minimize waste stripping and haulage costs, a pit has been designed to extract the reserves contained in the ultimate pit shell from the optimization that has dimensions of approximately 850m by 390m by 155m.

A detailed production schedule has been developed incorporating one pushback phased mining stages and the ultimate design pit. The production schedule will take place over seven years inclusive of a one-year commissioning ramp up for the processing plant until nameplate capacity is achieved. Over the LOM, the pit will produce 4.02 Mt of mineralized material and 43.9 Mt of waste rock. The LOM average gold grade is 3.98 g/t, silver grade is 1.71 g/t. The LOM stripping ratio is 10.9:1. The production schedule will provide process plant feed at a nominal rate of 650 Kt/year.

Mining will be undertaken using conventional open pit drill/blast and load/haul using trucks and excavators in backhoe configuration. Bench height for the ultimate pit has been set to a 15 m height based on 5 m benches stacked in a triple bench configuration. Dual-lane mine roads will be a minimum of 21 m and single roads at the bottom of the pit will be 13 m wide, and the switch back radius is 11m. All ore will be transported to a primary crusher in 60 t rear-dump haul trucks and waste will be transported using the same class haul trucks. Primary ore loading will be by 50 ton weight class diesel hydraulic excavators in backhoe configuration, primary waste loading by two 115 ton weight class diesel hydraulic excavators in backhoe configuration.

A total of 513.7 Koz gold, 220.5 Koz silver are expected to be mined over the life of mine.

The processing plant has been designed with a conventional cyanide leaching and CIP recovery circuit. The mine will provide ore to the process plant at a nominal rate of 650 Kt/year. The processing plant will use a crusher / SAG / Ball mill configuration. Two crushers in a duty/standby configuration were shown to result in a lower CAPEX than a single crusher plus stockpile and recovery system. The final circuit has an expected utilization of 92% and will provide a constant feed size to the leach circuit.

The leach circuit has been designed for a 36-hour residence time, with four tanks in series to optimize between enough tanks to minimize short circuiting and a manageable operational height for the building. A conventional six-tank CIP circuit was chosen and a conventional pressure Zadra circuit is designed in the gold room. The processing plant has been designed within buildings to provide year-round accessibility by maintenance and operational personnel.

The tailings requirement of co-disposal has been implemented using plate and frame pressure filters, which can produce as little as 12% moisture. This has the lowest risk of refluidization and transport of any residual cyanide from the tails storage. The filter cake discharges to a feeder which transports to hoppers, which can be discharged into mine trucks and taken directly to the IWF without rehandling.

Mining (waste rock) and processing waste (tailings) will be contained within an IWF as a single above ground structure. The IWF will consist of cells of dry cake tailings and waste rock encapsulated with an environmentally benign and durable erosion-resistant cover system.

1.16.5. Environmental, Social and Mine Closure

At the time of this FS Report update, the Project had in place all necessary environmental permits for its operations, including for the purposes of mine construction. Final commissioning and operating approvals remain to be secured upon completion of the construction phase.

The independent Environmental and Social Impact Assessment and statutory Detailed Environmental Impact Assessment of the Project provides detailed baseline information, impact assessment for key domains, and management plan commitments. Management plans in the ESIA and DEIA detail the Company’s commitment to build, operate, and close the Project in accordance with applicable regulations, laws, and Project standards. Considering the outcomes of the ESIA, the independent Mongolian statutory DEIA has been completed and approved by the relevant Mongolian government authority.

Based on the geochemical properties of BK and its surrounding environment as well as industry best practices, Erdene selected its preferred approach of integrated mineral waste management – whereby detoxified, filtered tailings are placed as a dry cake within layers of waste rock in a single landform (IWF).

The overall vision of closure for the BK site is to have all evidence of the operation removed, except for the final pit voids and the IWF landform. The remainder of the areas impacted by the operation will be returned to their pre-operation form and partially revegetated, where appropriate given the sparsely vegetated pre-operation landscape.

1.16.6. Capital and Operating Costs

The capital and operating cost estimates for the Bayan Khundii project are considered AACE Class 2 estimates. The base currency of the estimates is US dollars (US$).

The capital cost estimate for mining is based on usage of rented equipment, thus no capital cost was allocated for mining equipment and ancillary mining equipment. Capital costs have been included for support equipment. Power is proposed to be provided by an Independent Power Provider (IPP) and therefore no capital allowance has been included in the capital estimate. Likewise, explosives magazine and fuel depot are not included in the capital estimate as they will be provided through purchase and/or service agreements. The capital cost includes the cost for essential mining infrastructure, balance of utilities including, water and heating, and haul roads. The total estimated initial capital costs for BK are US$100.4M including contingency.

Sustaining capital is estimated at 1.5% of the initial capital costs for all process and non-process infrastructure per annum commencing from Year 2 and tapering off into year 6, with only mine closure costs accounted in Year 7. Sustaining capital includes provision for replacement or repair of major processing equipment components, site service and utility repair and replacement and process-related mobile equipment repair and replacement.

The LOM average operating cost for Bayan Khundii is estimated at US$ 82.5/t milled at the processing rate of 650 Kt/year.

1.16.7. Opportunities

1.16.7.1. Additional Resources at Bayan Khundii

A large portion of the Khundii mining license remains underexplored and work to date has identified multiple areas with significantly anomalous gold mineralization associated with structures and zones of alteration, similar to the BK and Dark Horse Mane deposit areas. The northern portion of the license area is referred to as the greater Dark Horse area and includes the Altan Arrow prospect. Erdene continues to carry out exploration activities on the Khundii license, including a recently completed IP Gradient Array survey at Dark Horse, covering 9km^2, that shows the major NE trending structures, as well as a strong north-south trends that host mineralization identified at Dark Horse Mane. A number of parallel zones with similar geophysical signatures to known mineralization at Dark Horse Mane have been identified. These areas are under tested or untested by drilling. These new geophysical anomalies represent strong new exploration targets. Together with other geological and geochemical data, all zones of gradient array IP anomalism will be assessed and prioritized for future drilling.

1.16.7.2. Exploration on the Ulaan License

In June 2021, the Company initiated a gold exploration program in the southern portion of the Ulaan exploration license, located just west of, and contiguous to, the Khundii mining license. A drilling program identified a significant new gold discovery just 300 meters west of the BK Gold Deposit. Results to date, including follow-up drilling in Q2 2022, have confirmed a significant gold discovery at Ulaan SE. Multiple drill holes have returned hundreds of meters (up to 354 meters) of gold mineralization, often ending in mineralization, over an area 200 meters by 250 meters. Gold mineralization begins approximately 80 meters from surface with anomalous gold intersected as shallow as 4 meters depth (UDH-18) and remains open along strike to the west/northwest and at depth. Gold grades up to 156 g/t are related to intense quartz ± hematite veins and stockwork zones enveloped by the same gold bearing silicified, white mica altered lapilli tuff sequence which hosts Erdene's Bayan Khundii epithermal gold deposit. Structural controls include northwest striking, southwest dipping veins hosting the gold and intensifying adjacent to bounding structures and/or feeder conduits typically oriented northeast or north.

Together with the BK deposit and Dark Horse deposit, results from drilling at Ulaan Southeast demonstrate the potential scale of mineralization within the nearly 4,000-hectare Khundii-Ulaan Hydrothermal system, which extends from Ulaan over 10 kilometres to the northeast onto the Khundii license.

1.16.7.3. Underground Mining Potential

Further underground mining potential has been identified in conceptual studies for North Midfield and Striker West which, if proven economical through further studies, could lead to a further increase in the economic reserve of the Bayan Khundii Project.

1.16.7.4. Processing Plant Expansion Potential

With the existing plant, there is a capacity to increase throughput by up to 20%, without compromising recovery, other than during maintenance periods on tanks, due to the reduced residence time in these circumstances. Constraints on capacity increase beyond this level are related to the grinding circuit, leach feed thickening, leach capacity, elution capacity, tail thickening and filtration capacity.

The plant could be modified to include an additional ball mill, addressing the grinding area, and an additional leach tank for the leach capacity. At a higher throughput the thickener density control would become critical to ensure sufficient residence time. Replacing the 20 m diameter leach feed thickener, with a 24 m diameter thickener would resolve this. The elution circuit could be upgraded by the replacement of the columns with larger units and increases to the electrowinning capacity. For the tails thickening and disposal, it would be difficult to include a larger tails thickener within the current layout, and the easier path to increasing the capacity would be to increase the detoxification circuit capacity to retain sufficient residence time at a lower percent solids. The filtration area would require one additional filtration unit, and structural modifications to incorporate this into the design.

In the scenario where additional mineral reserves are identified and proven, a modular gravity plant could be suitable as a processing solution, particularly for certain high grade resources. Under such conditions, a gravity plant could increase the project's economic value.

1.16.7.5. Additional Resources at Altan Nar

Erdene's Altan Nar deposit, located approximately 16 km north of Bayan Khundii, has an established Indicated Resource of 5.0 Mt grading 2.0 g/t gold (318,000 ounces of contained gold) and an Inferred Resource of 3.4 Mt grading 1.7 g/t gold (186,000 ounces of contained gold). Approximately 250,000 ounces of the current Altan Nar resource could potentially be processed by the Bayan Khundii Project processing facility, however, a number of development options for Altan Nar are under consideration.

1.16.8. Risks

General

The mining assets are subject to certain inherent risks, which applies to some degree to all participants of the international mining industry. These risks are summarized as follows:

- **Fluctuations in gold price** – Risk of pricing regression of gold and/or US$ will increase the potential impact on the project profitability. Sensitivity analysis conducted during the economic analysis of the project confirmed that the NPV and IRR of the project are both most sensitive to changes in the gold price.
- **Logistics** - The Project is remotely located, and the control of the logistics and their cost implications will be fundamental in maintaining reasonable operating costs. Especially the import of essential commodities such as project equipment, diesel fuel, explosives materials, plant reagents and consumables.
- **Capital Expenditure** - Capital expenditure predictions are based on substantially complete quotes and some contracted components, however further adjustments to project design and associated construction costs may occur during the construction phase resulting in variations in the capital expenditure. Direct equipment procurement costs are still subject to fluctuations in key commodity pricing such as labor, diesel, steel, logistics and related costs. The indirect costs of construction are still subject to fluctuations in key commodity pricing such as labor, diesel, logistics costs. In the financial modelling, capital costs has been shown to be less sensitive than other modifying factors with respect to project economics.
- **Operating Expenditure** - Operating expenditure predictions are based on budget quotations. Although thoroughly pre-determined using up-to-date assessment techniques, sensitivities on OPEX changes indicate that the project economics will remain robust under limited upward cost pressure.

1.16.8.1. Mining

Mineral Reserve figures are estimates, and there can be no assurance that they will be recovered or that they can be brought to profitable production. The volume and grade of Reserves mined and processed, and the recovery rates may not be the same as currently anticipated. A decline in the market price of gold may render Mineral Reserves containing relatively lower grades of mineralization uneconomic and may in certain circumstances ultimately lead to a restatement of reserves.

Definition of the final excavated slope angles has been assessed with consideration of in-situ groundwater conditions. This FS update has been developed under the design that all the working faces within the operating pit can be de-watered prior to mining, thus enabling the slope angles presented in this FS update. Greater moisture content or the inability to adequately de-water selected pit faces to the target level may result in an adverse change to the final excavated pit slope angles.

1.16.8.2. Infrastructure

Infrastructure design for this FS have been prepared in accordance with Mongolian requirements and applicable international standards and, in most cases, detailed designs have received Mongolian regulatory approval. Some of the infrastructure may be subject to client driven design changes which may lead to changes that could impact cost and/or schedule.

1.16.8.3. Processing

The process plant has been designed based on the results of the test work performed to date. Cyanide leach is the predominant method of gold recovery for non-refractive ores for ore bodies all over the world. The outstanding processing risks are therefore:

- Variability – If the final ore body varies significantly from the current test work, the plant's ability to process the ore and recover the gold is expected to change. Some variability testing has been performed. The ore is also expected to be blended on the ROM to minimize short term fluctuations.
- Grind size – The accuracy of the mill parameters will significantly affect the risk of the comminution circuits ability to deliver the required grind size. The spare capacity of the mills will reduce this risk significantly.

1.16.8.4. Environmental, Social and Mine Closure

Environmental and social studies have been carried out in accordance with Mongolian legislation as well as leading industry practices. However, the ability of the Project to secure the necessary ongoing environmental permits, including for its statutory hazardous material permit, and social license to operate remain a risk.

1.16.8.5. Project Delivery Schedule

The Project Delivery Schedule provided in Section 18 is based on all available information and reasonable estimates for completion of all financing, engineering, permitting, procurement, construction and commissioning activities foreseen and further detailed in this FS. Construction schedule elements were provided by the preferred EPC contractor and are in line with norms for Mongolia. However, like all mining projects of this nature, there are certain risks to construction schedule realization further summarized below:

- **Permitting** – the project still requires a number of permits to be issued by Mongolian regulatory bodies before the project can be commissioned for operations including the issuance of construction permits for the mine infrastructure, and state commissioning and permission to store and use cyanide. Delays in achieving these permits according to the schedule may result in further delays in the expected timeline for commissioning the project.

- **Delivery of equipment and materials required for construction and commissioning** – Given the remote location, potential impacts of regional geopolitics (border closures due to Russian sanctions, border closures due to pandemic, etc.), and weather patterns in Mongolia, there are timeframe risks around importation of key project items. Delays in the delivery of key items to the site will result in extensions of the time required to build and commission the project.
- **Availability of sufficient construction resources** – Mongolia is a relatively small country with limited resources dedicated to the construction and development sector, particularly with mining project experience. Whilst the outcomes of the study have identified suitable quantities of resources to deliver the project delivery schedule as presented, firm commitments of suitable quantities of these resources will only be realized once contracts are finalised with vendors and service providers.
- **EPC Contractor Management –** With the majority of construction work delivered under a single EPC contract, the schedule becomes highly dependent on the contractor's performance and capacity. Any delays or issues with the contractor may materially impact the project timeline. Likewise, EPC contractors often handle multiple projects concurrently which may introduce resource constraints on skilled labor or materials. A single EPC contractor may also not be able to handle changes in project scope, whether due to design modifications, client requests, or unforeseen site conditions, without impacting the schedule.
- **Project financing** – The proposed project delivery schedule is based on the owner's expected program and timeline to secure project financing. Any delays in the availability of project financing sufficient to meet required cash outflows may result in extensions in time to deliver certain elements of the project delivery schedule.

1.17. Recommendations

1.17.1. Geology and Mineral Resource

1.17.2. BK Deposit

To potentially expand the current resource base at Bayan Khundii, additional drilling can be undertaken with a specific focus on expanding and infilling the mineralization at Striker West in order to gain further confidence in the high-grade mineralization present. Further exploration style drilling could also be undertaken in the north-east and south-west of the currently modeled gold mineralization, along with step out style extensional drilling to the east of Bayan Khundii. As infill drilling is conducted, drill hole assay and lithology results should be compared against the geological and resource model in order to quantify any variation in expected and realized geology and gold grades which were intersected.

1.17.3. DH Deposit

Additional exploration in the greater Dark Horse area is currently underway with multiple exploration targets identified based on geochemical anomalism, geophysics, and structural interpretation. It is recommended that this work continue to fully evaluate the potential of identifying additional mineral resources within the Project area.

For the Dark Horse Deposit, RPM has recommended that an investigation be undertaken to define robust weathering definitions relevant to mining and metallurgical considerations, then update interpretations to reflect those definitions. RPM also noted that more density data needs to be collected as only 62 of the 167 density measurements taken to date were derived from the core within the resource wireframes. This number of mineralized density measurements is considered low to determine density variation within the deposit.

1.17.4. Geotechnical

1.17.4.1. Bayan Khundii

The assessments are generally considered to be robust for the purpose of kinematic stability evaluation of mine pit parameters, in pit areas where data is comparatively low, further information will better inform the representativeness of the current assessment. In particular, in the northern to eastern pit areas which have lower drill hole density.

Additional geotechnical drill holes should be conducted to reduce uncertainties due to bias in drill orientation particular where additional geotechnical testing is warranted and lesser data is available. The distribution of geo-mechanical data over the mine area is relatively limited, therefore, additional investigation is recommended to address some of the data gaps and variations in geotechnical parameters used in the bench and mine pit stability analyses, as well as for the assumed parameters adopted in the kinematic assessments. Further validation of the geotechnical parameters aims to reinforce the recommendations of this review and may enable some of the recommendations for reduced BFA to be further relaxed.

In proposing additional investigations, some vertical drill holes should also be considered to provide drill core samples for testing along the principal stress alignments, and also to vary the inclination of any potential anisotropic features with respect to the axis of test loading.

Given the degree of variance in the rock strength materials, additional strength testing of core samples is recommended to better determine characteristic rock strength parameters for each lithological domain over the geographic mine sectors. If during the course of excavation, point load (PL) tests are used for quick on-going assessments of rock strength and as part of the ongoing monitoring, then UCS and point load tests should be undertaken on adjacent parts of core samples for evaluation of the UCS-PL correlation.

Direct shear test results were not available and a typical friction angle of 30° was assumed for the kinematic assessment and a sensitivity analysis completed for a 40° friction angle. Carefully selected direct shear tests will provide more informed parameters for assessment and a more detailed review of the prevalence of any discontinuity coatings or infills. This process should be ongoing prior to and during excavation operations. However, following the use discontinuity shear tests for Dark Horse, the test method and sample set-up arrangements need to be addressed before any further testing. Alternatively, the conservative assumption for friction angle may be maintained.

1.17.4.2. Dark Horse

The 2023 geotechnical review is considered to be sufficient for the purposes of kinematic stability evaluation and determining the suitable parameters for mine pit design. However, similar to the Bayan Khundii area, data in some sectors is comparatively low due to the preferential directional drilling during the exploration campaigns. Specific geotechnical investigation was carried out in 2023 to obtain additional geotechnical data for the current assessment.

While the current available data is considered sufficient, and the geotechnical assessment considered robust, additional investigations and laboratory testing are recommended prior to and during mine construction and operation to fortify the design assumptions, mine pit parameters and provide necessary engineering designs to mitigate specific hazards.

Given the degree of variance in the engineering parameters of the rock materials, additional data acquisition would facilitate design review and improve the robustness of the design assumptions and associated pit parameter recommendations. In particular, if further investigation drilling is conducted, it is recommended that GSI logging by experienced geologists and UCS testing of cores be carried out.

1.17.5. Mining and Reserves

While sufficient definition is provided to define waste and ore quantities by type and volume in the mine plan included in the FS, a higher resolution of grade/sub-grade/waste boundaries is required before the commencement of waste stripping and ore production.

Preliminary grade control drilling is recommended in order to more confidently define the grade zones within the orebody and the ore/sub-grade/waste boundaries. Pre-stripping is planned in the pre-production schedule to generate sufficient waste material to build the ROM and the IWF initial structures. Appropriate grade control definition will be required in advance of the pre-stripping activities to ensure no ore loss occurs.

Grade control drilling is planned and costed in the mining operating cost throughout the mine life to ensure sufficient definition of ore and waste is available for mine planning to achieve consistent ore delivery to the process plant. By undertaking additional infill drilling and grade control during operations, inferred material, which for the purposes of this FS update is classified as waste, may be re-classified as ore, resulting in an increase in the reserve and an extension of the mine life.

Additional drilling outside the current pit limits may identify additional ore which could be included in the mineable reserves. If this additional ore with sufficient grade is defined within close proximity to the resource currently excluded from the mineable reserve, a further optimization study could be undertaken resulting in an increase in the mineable reserve resulting in an extension to the mine life.

The equipment selected for the mining operation is adequate to achieve the planned production as set out in this report and was selected based on reasonable commercial principles and processes. However, given the competitive market for mobile equipment suitable for mining operations, further investigation of excavator and truck configurations as well as ancillary and support equipment performance may result in further optimization of fleet performance and cost efficiency.

1.17.6. Mineral Processing and Metallurgical Testing

Based on the work conducted to date, additional testwork may be useful in fine tuning controls in the plant during operations, recommendations include:

- Evaluate additional variability samples throughout the deposit to gain additional understanding of potential variability in gold recoveries and reagent consumptions; and
- Conduct additional testwork to further optimize leach conditions including cyanide addition rates and primary grind size.

1.17.7. Plant and Facilities Design

Additional field investigations may enhance final plant foundation design. The existing process plant and facilities design is based on pedestal footings for the enclosed structure and standard foundations and ring beams for the equipment within the enclosure. Drilling complemented by Standard Penetration Tests (“SPT”) and cone penetration tests (“CPT”) is recommended to confirm foundation conditions for final design. The additional field work should consist of 20 to 30 holes with SPT logging and, where appropriate, CPT probes located within the foundation footprint. Each process plant enclosure footing should be assessed by a competent Geotechnical professional to verify the bearing capacity, and to determine the actions for identified soft spots within the foundation bearing zone.

1.17.8. Integrated Waste Facility

The current design is based on ATCW bankable feasibility study and will require the following:

- Additional field investigations should be performed in the IWF footprint areas at the detailed design level, including supplementary characterisation of foundation conditions, tailings material and potential borrow areas. This work could be carried out during the foundation preparation works of the IWF.

- Two trial pads for the following HDPE lining conditions:
  - Trial pad for waste rock placement on the protected HDPE lining system, and
  - Trial pad for tailings placement on the exposed HDPE liner.
- A monitoring program including piezometers, survey monuments and groundwater monitoring wells should be established as part of the detailed design. The program should also include annual reviews and independent audits as part of the final design.
- The closure design should be reviewed, and if necessary, updated during the detailed design, taking into consideration regulatory requirements.
- An Operations, Maintenance and Surveillance ('OMS') Manual, which guides the operation of the IWF, should be developed as part of detailed design, and include such items as:
  - A detailed project construction schedule that considers the contractor equipment, earthwork quantities and seasonality,
  - The use of an observational approach to provide an understanding of the actual performance of the facility. The periodic review of the performance of the facility should be conducted considering field observations to provide guidance for future operations. Operations personnel should closely monitor the observed seepage, pore pressures and phreatic surface, and
  - Refinements and modifications to the design and operational procedures should be made based on observed conditions and monitoring data, as appropriate.

1.17.9. Dark Horse Waste Dump

The current DH WRD design is based on ATCW bankable feasibility study and will require the following:

- Field investigations should be performed in the DH WRD footprint area at the detailed design level, including characterisation of foundation conditions since this has yet to be undertaken. The feasibility design assumes similar foundation conditions to that of the BK IWF.
- The closure design should be reviewed, and if necessary, updated during the detailed design, taking into consideration regulatory requirements.
- A monitoring program including groundwater monitoring wells should be established as part of the detailed design.

1.17.10. Environmental, Social and Mine Closure

Ongoing monitoring of key environmental parameters at the Project site, including but not limited to ambient dust levels, water quantity, and flora/fauna, are recommended in the course of the Project's development in order to enable robust comparison with baseline conditions and ensure that the Project's management plans and procedures are fit-for-purpose.

Modelling of the hydrological conditions of the final void post-mining based on monitoring data collected during operations are recommended to be undertaken to determine whether a pit lake may form, and if so, the likely water quality.

2. Introduction

Erdene Resource Development Corporation ("Erdene", or the "Company") commissioned O2 Mining ("O2") to oversee the preparation of a Feasibility Study ("FS") in accordance with the Canadian National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") for their 100% owned Bayan Khundii Gold Project (the "Project") located in the Bayankhongor province in south-western Mongolia. The effective date of this FS Report is August 15, 2023; and is based on Mineral Resources for the BK Gold Deposit with an effective date of April 20, 2023 and Dark Horse Mane Gold Deposit with an effective date of November 1, 2022 and includes an updated Mineral Reserve with an effective date of August 1, 2023.

Erdene is a Canada-based resource company that has operated for 22 years in Mongolia, focused on precious and base metal exploration, and development.

2.1. Scope of Work

This FS Report was prepared for Erdene by O2 and ROMA, with reliance on other qualified consultants (the "Authors") with Mongolian experience for the Feasibility Study (the "FS") of the Bayan Khundii Gold Project:

- O2 Mining ("O2") led the overall delivery of the FS update, completing the key works of mine design and planning (including closure), process design, cost estimation, and financial evaluation. O2 is a Hong Kong-based engineering firm with principals who have over 15 years of Mongolian mining experience and a team with significant experience in mine development in Australasia, including the design, construction, commissioning and operation of gold, coal, base metals and industrial mineral mines and processing facilities.
- Roma Group Ltd. ("Roma"), a leading company in the region in engineering, business and asset valuations, corporate and M&A advisory services, assisted in the development of the final NI 43-101 FS update Technical Report. Roma is listed on the Hong Kong Stock Exchange and has extensive experience working with major regional mining and financial firms leading technical studies and valuations for mining projects in Asia, including Mongolia.
- Multiple Mongolian companies provided in-country services and support for the FS update. Erdene works closely with local specialists to apply international standards and ensure compliance with Mongolian regulations.
- 360-Global Inc. ("360-Global") carried out process plant design and engineering for the FS and DED work. 360-Global is a consulting firm based in the Philippines, specialized in full cycle design services and experienced with gold processing infrastructure globally, including in Mongolia, China, Canada, Australia and Africa.
- ATC Williams Pty Ltd, ("ATCW") undertook mineral waste and tailings facility design and management planning, including for closure. ATCW is Australia-based and has extensive experience in mineral waste and tailings transport, storage, closure and water management, including at the Oyu Tolgoi project in Mongolia.
- Blue Coast Research Ltd ("BCR") provided metallurgical testing and interpretation for the Bayan Khundii Gold Project. BCR have extensive experience with gold deposits and have carried out all of the Bayan Khundii, Dark Horse, and Altan Nar metallurgical test work to date.
- Ramboll Australia Pty performed technical review and assessment of the mine water supply and pit hydrology. Ramboll is a global architecture, engineering, and consultancy company involved in buildings, transport, energy, environment & health, water, management consulting, architecture and landscape.

- Fugro Ltd. provided the geotechnical assessment of the Bayan Khundii and Dark Horse open pits. Fugro is a leading geo-data specialist.
- AGP Mining Consultants Inc. completed the mineral resource estimate for the Bayan Khundii Gold deposit. AGP is a full service, independent mine engineering company.
- RPM Global Inc. completed the mineral resource estimate for the Dark Horse Gold Deposit. RPM Global is an international provider of advisory and consulting, software, and training services focused on the mining industry.
- Sustainability East Asia LLC, Ramboll, and Eco Trade LLC delivered the Environmental and Social Impact Assessment for the Project, announced on June 4, 2020.

2.2. The Study Team

O2 and ROMA managed the full integration of reporting of all project disciplines and coordinated the efforts of Erdene's other study partners. The major components of this FS comprise: mineral resource estimates, mineral reserve estimates, mine design and method, metallurgical testwork, process design and process plant cost estimation, environmental assessment, financial analysis and other supporting studies on geology, hydrogeology, hydrology, rock mechanics for pit slope design and geotechnical engineering.

Table 2-1 Qualified Person Responsibilities

Name of Qualified Person ("QP")	QP Organization	Sections
Julien Lawrence	O2 Mining	1.1, 1.2, 1.8, 1.9, 1.10, 1.14, 1.16.3, mining portions of 1.16.4, 1.16.6, 1.17.3, 2.1, 2.2, 5, 15, 16, 18 (excl IWF), 21, 25.3, 25.4, 25.7, 25.8.3, 25.9.1, 25.9.2, 25.9.3, 25.9.4, 25.9.5, 26.3, 26.7
Benny Cha	ROMA	1.3, 1.4, 1.5, 1.6, 1.16.5, 1.17.8, 2.3, 3, 4, 6, 7, 8, 9, 10, 11, 12, 20, 23, 24, 26.10
Jesse Tam	Fugro	1.17.2, 16.9, 26.2
Andrew Kelly	Blue Coast Research	1.13, 1.16.2, 1.17.4, 13, 25.2, 26.4
Mark Dillon	ATC Williams	1.11, 1.12, 1.17.6, 1.17.7, 16.7, 16.8, 18.18, 18.19, 18.20, 18.21, 20.5, 20.6, 26.8, 26.9
Jeff Jardine	O2 Mining	1.13.3, 1.16.4, 1.16.7.4, 1.17.4, 1.17.5, 17, 25.5, 25.8.4, 26.5, 26.6
Mark Reynolds	O2 Mining	1.15, 19, 22, 26.11
Anthony Gibson	Ramboll	15.4, 18.24.1, 18.24.2, 18.24.3, 18.24.4
Oyunbat Bat-Ochir	RPM Global	1.7.2, 11.5.2, 11.5.3, 11.6.2, 12.2, 14.2
Paul Daigle	AGP	1.7.1, 11.5.1, 11.6.1, 12.1, 14.1, 15.1

2.3. Sources of Information

The QPs of this NI 43-101 Technical Report have relied upon information provided by Erdene including drill hole data, maps, laboratory analytical certificates, costs for contractors and fuel, and from other sources such as publicly available databases, research and academic literature, and observations made during site visits.

A list of referenced documents is provided in Section 27.

3. Reliance on Other Experts

This report was prepared by O2 and ROMA for Erdene as a FS for Public Reporting. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to ROMA and O2 at the time of preparation of this report;
- Assumptions, conditions, and qualifications discussed in this report; and
- Data, reports, and other information supplied by Erdene and other third parties, as documented and referenced in this FS Report.

For the purpose of this report O2 and ROMA have relied on ownership information and other local knowledge provided by Erdene. The mineral tenure information had been verified by ROMA from the Mongolian government land title registry, through the website cmcs.mrpam.gov.mn (search completed on September 20, 2023).

Non-technical information in Section 20 has been prepared based on the independent Environmental and Social Impact Assessment of the Project published in June 2020 by Sustainability East Asia LLC, in consortium with Eco Trade LLC and Ramboll Australia Pty Ltd.

The tax model in Section 22.8 was based on the "Mongolia Reforms its Key Tax Legislation" White paper by Ernst and Young (2019) and reviewed by Sevillia Audit LLC, a Mongolian professional services consultancy.

Except for the purposes legislated under Canadian or other securities laws, any use of this report by any third party is at that party's sole risk.

4. Property Description and Location

4.1. Location of Property

The Project is located in the southwest region of Mongolia and is 100% held by Erdene Mongol LLC, a wholly owned subsidiary of Erdene. The Project is located within an emerging gold district Erdene refers to as the Khundii Minerals District which includes the BK gold deposit, the Dark Horse Mane gold deposit (collectively the Bayan Khundii Gold Project), the Altan Nar gold-polymetallic deposit, the Zuun Mod molybdenum-copper deposit and a collection of mineral occurrences. The Bayan Khundii Gold Project is the focus of this report as it has been progressed to technical level commensurate to a feasibility study.

The Bayan Khundii Project falls within the 115,977.80 km^2 Bayankhongor province, which contains a population of approximately 89,000 people, and an overall population density of 0.77 people per km^2. The Project is located approximately 980 km southwest of the Mongolian capital Ulaanbaatar (population 1,640,000) and 300 km south of the provincial capital, Bayankhongor City (population 31,000), Figure 4-1. The nearest towns (soum centers) are Shinejinst and Bayan Undur, located 70 km northeast and 80 km to the north, respectively. The Project area is sparsely populated, with nomadic pastoral activities being the main industry.

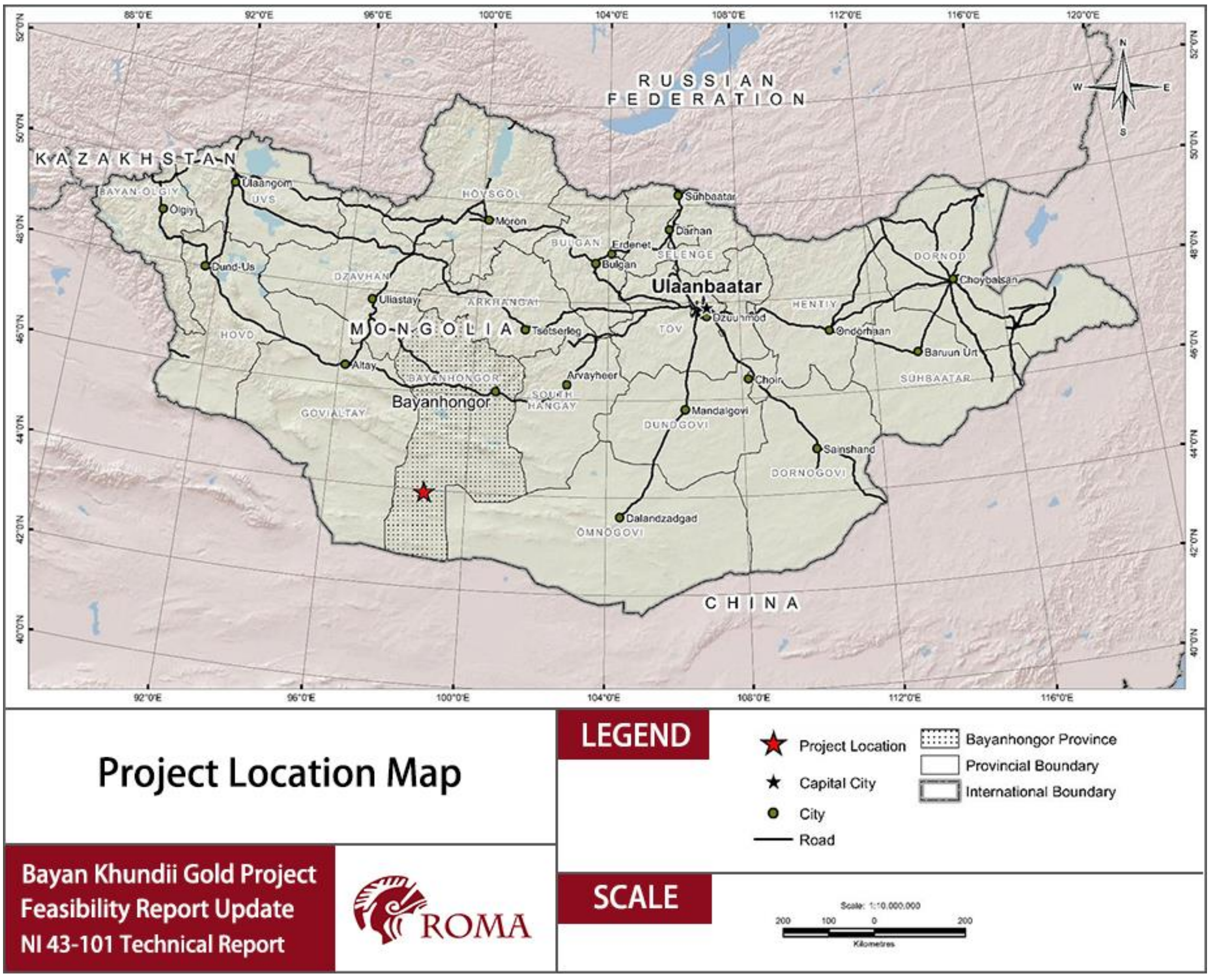


Figure 4-1 Project Location Map (Source Tetra Tech, 2019a)

Field work is currently carried out from an exploration camp located at the Bayan Khundii site. The UTM license center coordinates are listed in Table 4-1.

4.2. Mineral Tenure

The Bayan Khundii Gold Project (the “Project”) is a part of the Khundii Minerals District which includes the BK Gold Deposit, the Dark Horse Mane Gold Deposit, the Altan Nar Gold-polymetallic Deposit, the Zuun Mod Molybdenum-copper Deposit and the Ulaan Gold Prospect. The Altan Nar deposit, the Zuun Mod Deposit and Ulaan Gold Prospect are not included in the Project therefore it will not be discussed in detail in this Report, though some additional information is provided in Section 23 - Adjacent Properties. This Project is located on the Khundii Mining License (MV-021444, 2,308.62 ha) as shown in Figure 4-2. Table 4-1 outlines the approximate center co-ordinates of the license along with the license particulars.

The BK Gold Deposit and the Dark Horse Mane Gold Deposit are both located on the Khundii mining license, which was converted from an exploration license and granted in August 2019, and is comprised of 2,309 hectares. The mining license covers the BK Gold Deposit and the Dark Horse Mane Gold Deposit, as well as a number of high priority prospects, particularly in the Greater Dark Horse area. The license is valid for an initial term of 30 years, with the ability to extend to 70 years.

Erdene holds two additional licenses in the vicinity of the Khundii Mining License. These licenses include the contiguous Ulaan exploration license and the Altan Nar Mining License, located approximately 20 km to the northwest. These licenses are shown on Figure 4-2 for reference.

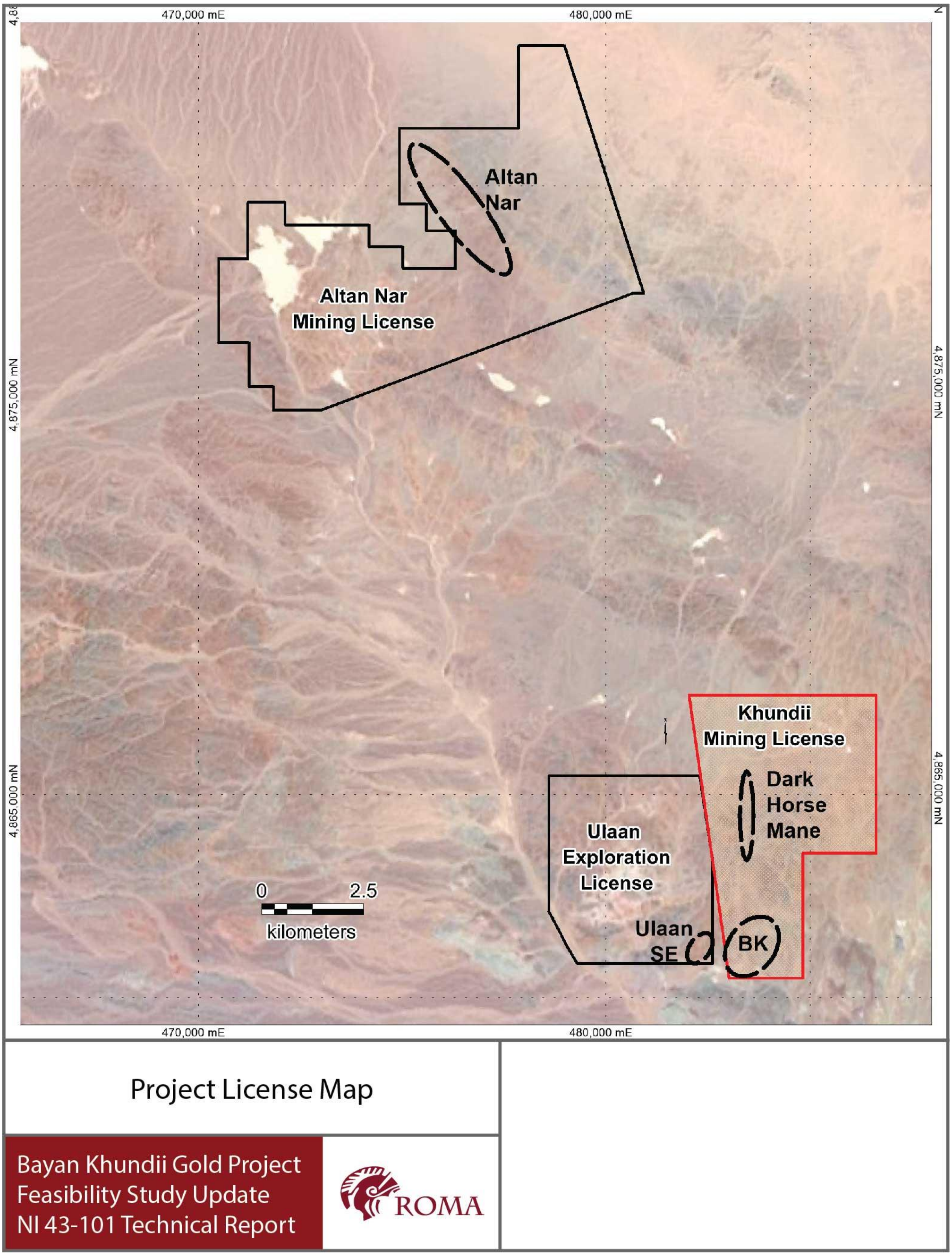


Figure 4-2 Khundii Gold Project License Map (Source - ROMA 2023)

Table 4-1 Summary of project license details (MRPAM, Mongolia)

Property Name	*Khundii*
License Number	*MV-021444*
Description	Mining License
Province	*Bayankhongor*
Date of Issue	*05/Aug/2019*
Renewal date	*05/Aug/2049*
Easting (WGS84 Zone 47N)	*484,290.6*
Northing (WGS84 Zone 47N)	*4,864,605.4*
Elevation (m)	*1,266*
Hectares	*2,308.62*
Renewal Fees	*US $14,470*

** Renewal fees for Mining License are in Mongolian Tugrik ("MNT") at a rate of 21,750 MNT/ hectare; F/X rate of 3470 MNT/US$ was used.*

4.2.1. Permits Required for Mineral Tenure

As part of the Minerals Law, license holders have the right to surface access to carry out exploration and/or mining works. Erdene has, and continues to meet, the surface rights access requirements as set out under Mongolian Law for carrying out its exploration programs. Additional permits are required for the construction and operation of mining activities. Key permits required to carry out planned exploration work and mining of the Bayan Khundii deposits within the Khundii mining license include annual work plans, annual environmental bonds, water use permits, and land use permits for the mine facilities.

Environmental Bonds

The annual environmental bonds for the Khundii mining license for the Year 2023 was paid and the environmental management plan for 2023 was approved on April 15, 2023.

Water Permits

Water use permitting consists of two primary documents: the approval of water resource and the water use agreement. These permissions are required for exploration and field programs and later for the proposed mine pre-commissioning and water supply.

Erdene is permitted to extract and use a total of 1,540 m^3 water from two groundwater sources at Bayan Khundii for exploration use which has a duration of one year, renewable annually. The Water Use Permit was granted upon the Water Use Agreement by the Governor of Shinejinst Soum on March 30, 2023 with permit number A/15.

For the Bayan Khundii mine water supply, the Approval of Water Resource issued by the Ministry of Environmental and Tourism on December 30, 2019, number A/640 permits Erdene to obtain groundwater from Shinejinst soum, Bayankhongor province of up to 10 L/s. This Approval provides the basis for access for the Company to sufficient water supply for mining operations, as demonstrated with investment from the Company and input from duly certified and qualified Mongolian experts. The Company must enter into a Water Use Agreement for the mine subsequent to the associated water supply system being constructed and commissioned.

Land Use Permits

Land Use Permit is granted by Shinejinst Soum Governor. Prior to 2023 land use permits were required for individual use areas, such as the mining production facilities, explosives storage and waste facility. From January 24, 2023, a land use permit was granted to the Company over the entire mining license area, greatly simplifying the land use permitting process and providing the Company with greater flexibility in designing the layout of the process and non-process infrastructure for the Project. The permit is valid for a period of five years.

Permits associated with the environmental and social or community elements of the Project are discussed in Section 20 – Environmental Studies, Permitting and Social Impact.

4.3. Tenure Agreements and Encumbrances

On April 21, 2016 Erdene entered into a royalty agreement with Sandstorm Gold Limited ("Sandstorm") which granted Sandstorm a 2% Net Smelter Return ("NSR") in exchange for $2.5 million (Canadian). This transaction provided Erdene with a three-year option to buy back 50% of the 2% NSR royalty for $1.2 million (Canadian). On April 12, 2019 Erdene executed the repurchase agreement, buying back 1% of the NSR from Sandstorm.

Following the buyback, the Bayan Khundii gold project is now subject to a 1% NSR royalty agreement with Sandstorm Gold Ltd.

4.4. Environmental Liabilities

Through its Mongolian-certified contractor, Erdene has completed comprehensive environmental studies and impact assessment for the Project in accordance with applicable Mongolian and international standards. A discussion of environmental considerations or liabilities are presented in Section 20 – Environmental Studies, Permitting and Social Impact of this report.

5. Accessibility, Climate, Local Resources, Infrastructure and Physiography

5.1. Accessibility

The Project is accessible on sealed roads from the state capital Ulaanbaatar to the provincial center, Bayankhongor (8 hours), followed by 300 km of unsealed regional gravel roads from Bayankhongor to the sub-province center, Shinejinst (5 hours), then another 2 hours on to site. The Project is located approximately 160 km from the Chinese-Mongolian border.

In 2012-23, a temporary landing strip located 20 km to the northwest (on the Company's Altan Nar mining license) was approved by the Mongolian Aviation Authority for light aircraft. Annual approval is required to use the temporary landing strip. The landing strip is located in the north part of the western boundary of the Altan Nar license on a dry lakebed. A private flying service is available from Ulaanbaatar and a one-way trip to Altan Nar takes approximately 3 hours.

The region hosting the Bayan Khundii Gold Project is one of the least densely populated areas in Mongolia, however, infrastructure to access south-western Mongolia's natural resources from China is developing rapidly. The Project is located approximately 200 km northwest of the Nariin Sukhait mining complex (Ovoot Tolgoi) from which South Gobi Resources (TSX:SGS), TerraCom Limited (ASX:TER) and MAK have produced coal and transported product through the Ceke (PRC)/Shivee Khuren (Mongolia) border point. This border crossing includes a paved eight-lane highway and a major automated railcar coal loading facility with three railway terminals where truck transported coal can be loaded on train and shipped out over the Jiayuguan-Ceke Railway, Ejin-Hami Railway or Linhe-Ceke Railway. Planning is underway to extend the standard gauge rail into Mongolia's coal mining districts refer to Figure 5-1.

It is planned that the Bayan Khundii mining operation would initially produce only high valued doré, which would be of small volume and could be transported by land or by air to points of sale in Ulaanbaatar or Bayankhongor City.

Figure 5-1 Transportation Network of the Project and Nearby Properties. (Source RPM, 2018)

5.2. Topography, Elevation and Vegetation

The topography of the Project area is characterized by low hills of exposed rock and lower plains of unconsolidated and alluvial sediments. There is very little to no soil profile developed, with fresh rock generally occurring from or very near to surface, except in areas covered by Quaternary sediments where depth to bedrock is uncertain. The elevation of the landscape ranges from 1,200 to 1,250 mRL. Vegetation is sparse and restricted to grasses, saxaul bushes and shrubs.

5.3. Climate

The Project area is subject to the extreme climate of the continental Gobi Desert region, with four seasons much like the other territories of Mongolia. Orographic conditions and local micro wind affect the air current formation in combination with the high altitude (~1220 mRL) creates a dry micro region where precipitation, humidity, cloudiness and snow cover are relatively low and the area averages 250 sunny days a year. Summer temperatures average between 24.3°C to 27.5° although individual temperatures can be much higher (exceeding 40°C). The winter season is on average between -6.6°C and -13.1°C and can be much colder (less than -30°C). Annual mean temperature is around 0.7°C.

The Project area, much like all of Mongolia, is subject to high wind conditions and can result in extreme wind chill during the winter. The region has a mean annual precipitation of 105 mm. Although relatively little precipitation falls in this region, there is a one in 50-year chance that the maximum amount of up to 60 mm precipitation may fall within a single day creating localized flash flooding, with cloudburst and lightning likely to occur. Approximately 70% to 80% of surface water flow events occur during the months of July and August (Tetra Tech, 2019a). In summer, rain falls an average of 15 to 20 days.

Frequency of the dominating wind direction is 28.7% from northeast, 25.1% from west and 16.9% from northwest. The prevailing wind direction varies seasonally. Depending on the wind force, 10 to 15 days of blizzards occur and 28 to 30 days of dust storms per year with most of them occurring in the windy spring months of March to May. When wind speed reaches 6 m/s, dust and soil become mobile, and when it reaches 10 m/s, dust storms intensify. In this region, wind with a speed of more than 10 m/s blows for 35-40 days per annum.

Exploration and mining activities can be conducted all year round with short curtailments occurring during storms or strong wind activity which can result in sandstorms. Such work only requires proper preparation with respect to working in a remote location during extreme cold and hot weather.

5.4. Sources of Power

To date, power has been generated locally using diesel generators which is sufficient to carry out planned exploration and early construction works in the near term. Potential future electrical power sources for the site include a potential connection to the national grid and off-grid generation. Connecting to the Mongolian Central Energy Supply Grid at the local sub-province center (Shinejinst) via a 35 kV line to the Project site may be an option. However, the reliability and availability of power from the grid appear potentially limited. Off-grid, the Gobi region has conditions supportive of renewable solar and wind generated power.

For the planned Bayan Khundii Gold Project development, new sources of power have been considered including a micro-grid using a combination of Solar, Diesel generation, and a Battery Energy Storage System. Electricity to the project is proposed to be delivered under a Power Purchase Agreement (“PPA”). Further details are provided in Section 18.6 – Site Services.

5.5. Water

Relatively little precipitation falls in this region with a mean annual precipitation of 105 mm with a one in 50-year chance that the maximum amount of up to 60 mm precipitation may fall within a single day. Snow cover, on average, is about 50 days per year, however, on occasions there can be no snow during a year. Annual evaporation for the region is estimated at 2,900 mm/year (Tetra Tech 2019c) with average relative humidity of approximately 56%.

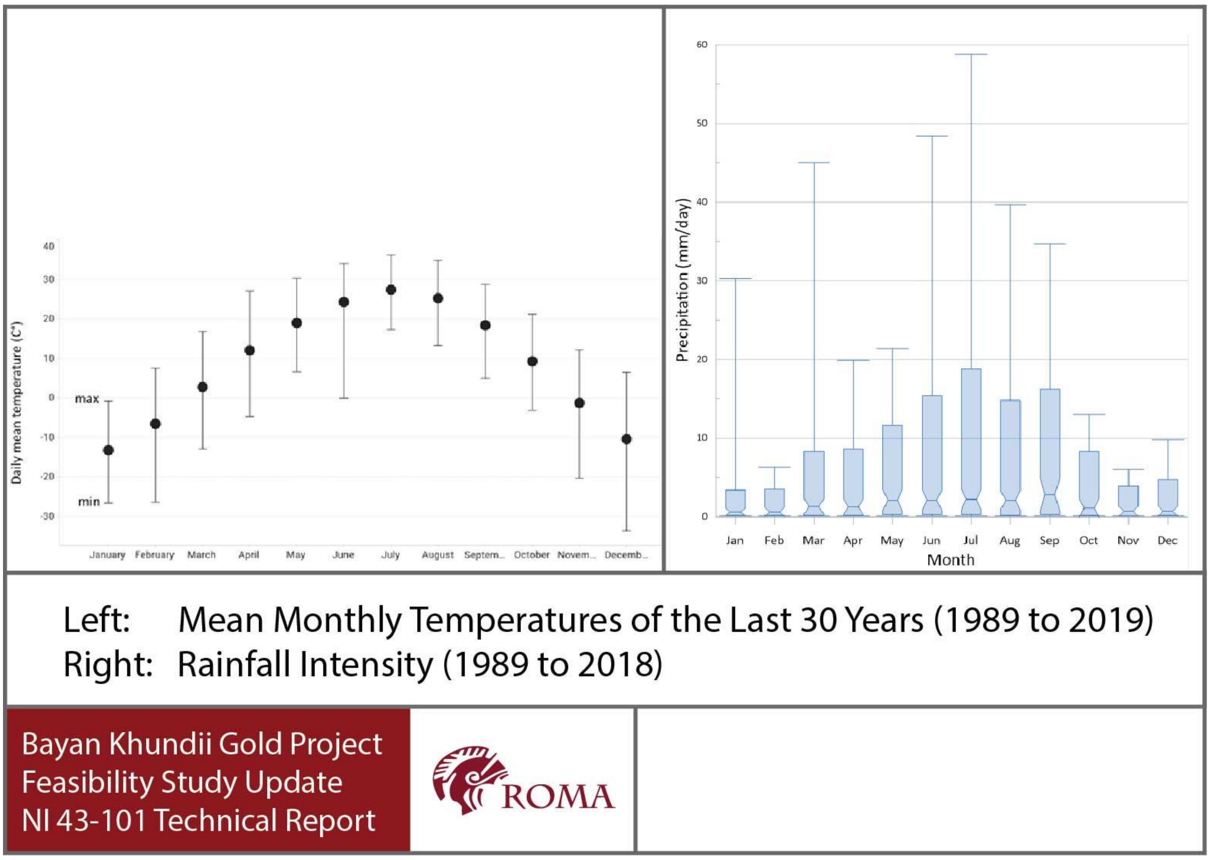


Figure 5-2 Left: Mean Monthly Temperatures of the 30 Year Period from 1989 to 2019; Right: Rainfall Intensity (1989 to 2018) (Pando, 2020)

The elevation of the proposed BK mine area is between 1220 to 1250 mRL. The Khuren Tsav and Bosgyn Sair ("KT-BS") wellfield, which will provide the necessary raw water to support the mine and processing, is located between 1 to 4 km to the south-southwest outside the proposed mine boundary. It is within the lowest point of the Bosgot Gashuun floodplain, between 1190 to 1235 mRL. The north-eastern area of the well field comprises surface drainages originating from the south of Bor Khairkhan (1729 mRL) which slopes from the north-east and drains in a south-westerly direction (Okhi-Us, 2019).

The area surrounding the Project is characterized by low hills of exposed rock and lower plains of unconsolidated sediments. There is very little to no soil profile developed, with fresh rock generally occurring from or very near to surface. The elevation of the undulating low hills ranges from 1,300 m to 1,350 m above sea level. Vegetation is very sparse and restricted to grasses, small bushes and shrubs.

Surface runoff is ephemeral and dependent on irregular rainfall. Surface runoff within the proposed pit areas drain to the south-southwest. 70% to 80% of the surface water flow events usually occur during the months of July and August (Tetra Tech, 2019a).

Groundwater within the regional Zahui-Zarman and Doloony Tsenkher water basins (Okhi-Us, 2019) formed during the late Pleistocene and Holocene periods (Tetra Tech 2019b). Recharge to these basin aquifers via rainfall and/or overland run-off is considered very limited, if any. Groundwater is primarily hosted in localized fracture systems which are likely highly variable with limited connectivity, and as such difficult to quantify. Hydraulic gradients are considered '*subdued*' due to relatively flat topography (Tetra Tech 2019c).

5.6. Mining Personnel

The Bayan Khundii gold project is located in a sparsely populated greenfields site. The closest sub-provincial settlements of Shinejinst and Bayan-Undur, located approximately 75 km and 85 km from the Project site respectively, host a combined total population of approximately 5,500 people. Bayankhongor is the capital of Bayankhongor province, within which Shinejinst and Bayan-Undur are located. Bayankhongor city has a population of approximately 30,000, while the province has a population of approximately 90,000 over an area of 116,000 km^2. The neighboring Umnugovi Province hosts Mongolia's major mining projects, including the Oyu Tolgoi copper-gold mine and Ukhaa Khudag coal mine, at which some portion of Bayankhongor residents have gained experience in modern, commercial open pit mining. The mining personnel for Bayan Khundii are expected to come primarily from Bayankhongor, including the sub-provinces of Shinejinst and Bayan-Undur, and Ulaanbaatar. Personnel will travel by bus in and out the workforce from Bayankhongor and Shinejinst to the project site. Personnel from Ulaanbaatar (or other locations outside Bayankhongor province) will travel primarily by land to the project site, with some highly skilled and senior personnel flying to and from site on a limited basis. A modern on-site accommodation village is planned at Bayan Khundii to support the workforce, as described in Section 18.5 - Accommodation Camp.

6. History

6.1. Property Ownership

Apart from regional geological mapping and prospecting carried out at a scale of 1:200,000 under the direction of the Mongolian government, no recorded exploration, development or mineral resource work is known to have taken place on the property prior to Erdene's initial exploration in 2009 – 2010.

The Project was covered by Erdene's 2009 SW Porphyry evaluation program which included a regional stream sediment survey and limited prospecting over the license areas. The regional stream sediment results identified an area of highly anomalous base metal and gold in the area of the Project.

Between 2010 and 2014, exploration on the Khundii license included property-wide geological mapping, soil sampling and a magnetic survey while more detailed exploration, including detailed geological mapping, rock chip sampling and trenching was focused on the north-central part of the license on a project referred to as Altan Arrow (refer to Figure 6-1).

The rock chip sampling program for the Khundii license identified a number of significant anomalies for Au and Ag, with lesser base metal anomalism. Generally, the anomalous rock chip samples were from two distinct and adjacent quartz vein systems located at Altan Arrow in the north-central part of the Khundii license.

The mineralized quartz vein systems were trenched in late 2013. Four trenches were excavated across the mineralized Main Zone and one trench was excavated across an area hosting high-grade Au mineralization within epithermal quartz veins.

The identification of high-grade Au mineralization associated with epithermal style quartz veins prompted additional prospecting and mapping in the southern portion on the Khundii exploration license. In early 2015, Erdene geologists identified, through rock chip sampling, new high-grade Au mineralization associated with a zone of intensely altered (quartz-illite) pyroclastic lithologies located ~5 km south of Altan Arrow. This area, referred to as the Bayan Khundii (Rich Valley) Project (refer to Figure 6-1), was the focus of a detailed exploration program carried out in 2015 – 2022.

Erdene discovered the Dark Horse Mane deposit, located 2.4 kilometres north of the Bayan Khundii deposit (refer to Figure 6-1), when initial drilling, reported in early 2021, returned 5.97 g/t gold over 45 meters, beginning 10 meters downhole (AAD-58). The Dark Horse Mane epithermal mineralization is related to a north-south trending, linear structural corridor which intersects deep seated northeast trending transform faults, believed to be a conduit for primary mineralizing fluids. The N-S structure has been traced over 5 kilometres from the southern portion of the Bayan Khundii deposit to the northern extension of Dark Horse. The mineralization at Dark Horse Mane includes a shallow oxide zone, begins at surface, hosting supergene enriched gold zones with values up to 195 g/t over 1 metre and ranging in thickness from 20 to 60 meters vertical depth with locally deeper oxidation along fractures. A detailed exploration program was carried out in the greater Dark Horse prospect area between 2020 – 2022.

Details of the exploration programs at Bayan Khundii and Dark Horse are provided in subsequent sections of this Report.

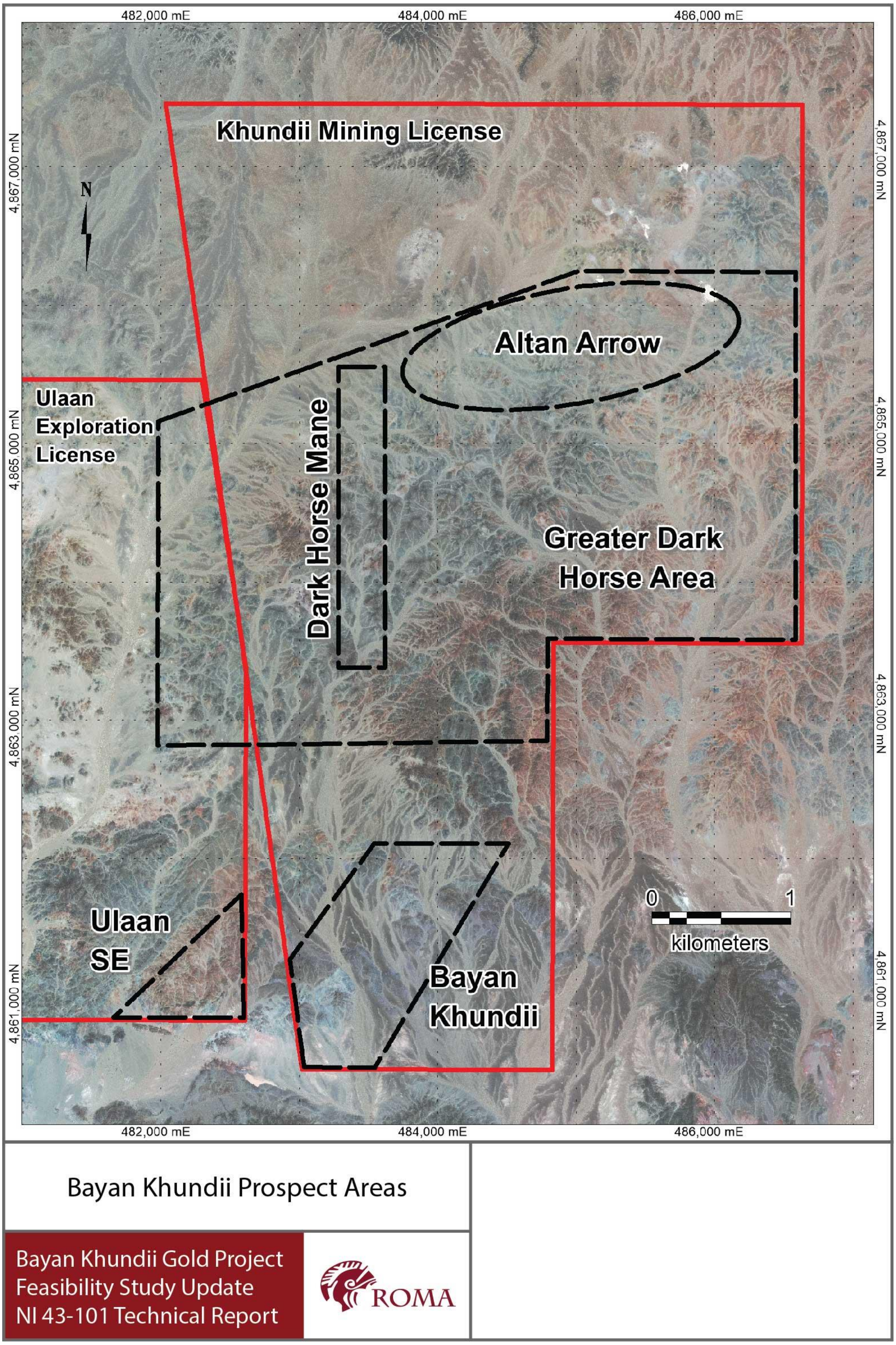


Figure 6-1 Bayan Khundii Prospect Areas (Source - ROMA 2023)

6.2. Previous Mineral Resources

No historical Mineral Resource or Mineral Reserve estimates have been published for the Project. All mineral resources were discovered by Erdene. An initial Mineral Resource Estimate was reported by RPM Global for the Company dated September 2018, and updated by Tetra Tech in 2019 and 2021.

6.3. Historical Production

No historic mining has been completed on the Project area.

7. Geology Setting and Mineralization

The majority of the regional geology information presented below has been summarized from the paper “Epithermal Gold Discoveries in the Emerging Khundii Metallogenic Province, southwest Mongolia”.

7.1. Regional Geology

The Project is located within the southeast part of the Trans Altai Terrane (“TAT”, previously referred to as the Edren Terrane; Badarch et al., 2002), as defined by a 1:50,000-scale geological mapping and associated reports sponsored by the Mongolian government (Lhundev et al., 2019). The Trans Altai is an island arc terrane within the Central Asian Orogenic Belt (“CAOB”), which extends more than 3,000 km from the Urals to the Pacific, and from the northern Siberian and East European cratons to the southern North China and Tarim cratons (Windley et al., 2007; Figure 7-1). This orogenic belt formed by the accretion of island arcs, ophiolites, ocean islands, seamounts, accretionary wedges and microcontinents similar to the Mesozoic-Cenozoic accretionary orogens of the Circum Pacific. The belt began its growth in the Proterozoic at ~1.0 Ga (Khain et al., 2002) and continued until the late Permian at ~250 Ma (Xiao et al., 2003), when the Paleo-Asian ocean closed.

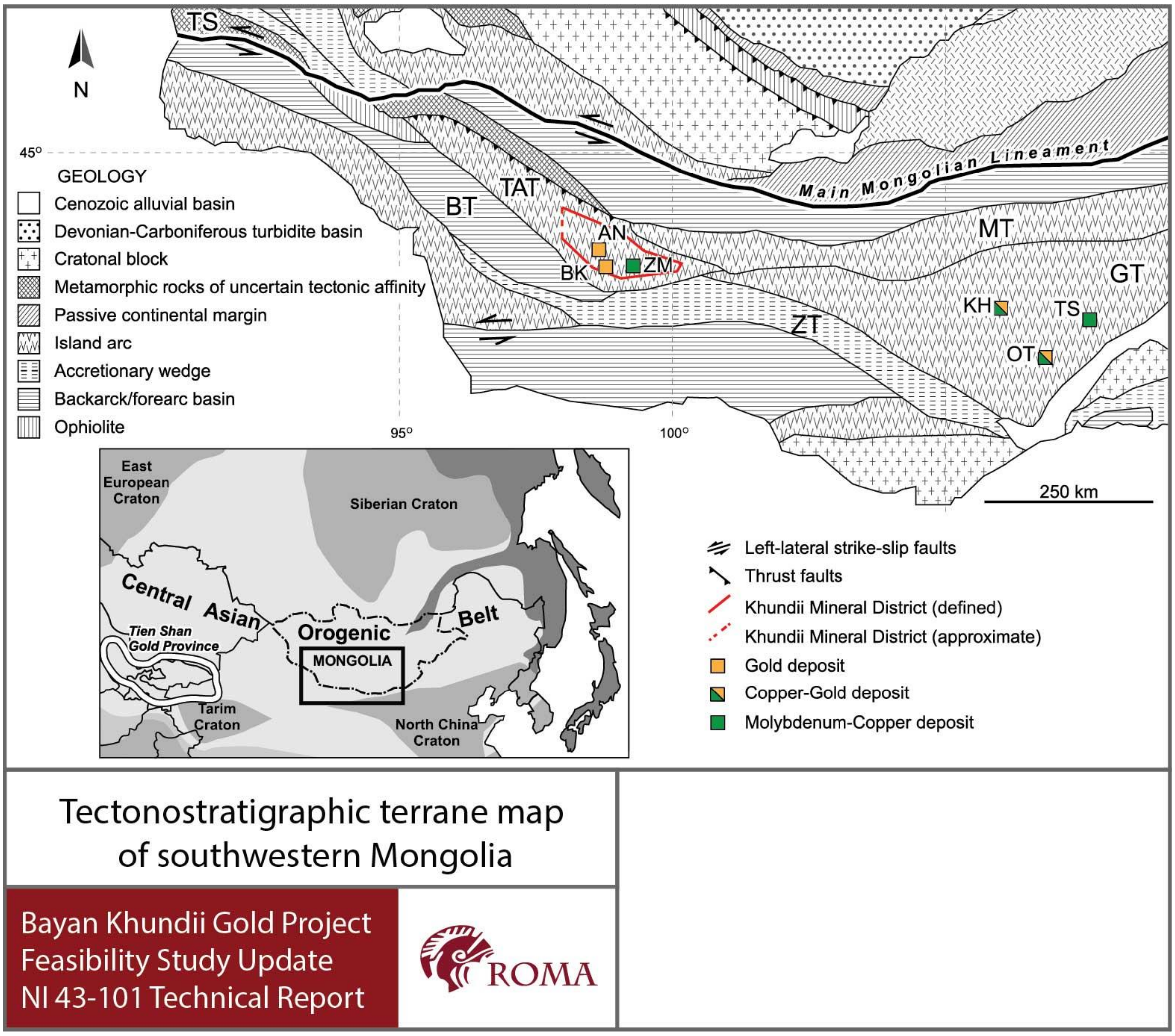


Figure 7-1 Tectonostratigraphic terrane map of southwestern Mongolia (modified after Badarch et al., 2002) (Source MacDonald 2023)

Notes:
Main map:
Tectonostratigraphic terranes: TAT: Trans Altai terrane; MT: Mandalovoo island arc; BT: Baraan backarc/forearc; TS: Tseel metamorphic; GT: Gurvansaikhan island arc/terrane; ZT: Zoolen accretionary wedge.
Khundii metallogenic province polymetallic deposits: ZM: Zuun Mod porphyry Mo-Cu deposit; BK: Bayan Khundii-Ulaan-Dark Horse Au-Ag deposit; AN: Altan Nar polymetallic deposit.
Oyu Tolgoi cluster porphyry deposits: OT: Oyu Tolgoi; KH: Kharmagtai; and TS: Tsagaan Suvarga.
Inset:
Black box: Central Asian Orogenic Belt; Solid white line: Tien Shan gold province.

The CAOB (Figure 7-1) is host to numerous porphyry copper and epithermal Au deposits of largely Devonian to Permian age (intrusions and/or ore; Yakubchuk et al., 2012; Wang et al., 2021). The closest known deposits in Mongolia are those of the Oyu Tolgoi cluster (370 Ma), located ~700 km ESE of Khundii (Figure 7-1). They contain >36 Mt Cu and >1400 t Au; smaller nearby deposits contain ~1 Mt Cu (Tsagaan Suvraga and Kharmagtai; Figure 7-1). Yakubchuk et al. (2012) concluded that the greatest metal endowment and largest number of individual deposits in the CAOB were formed during the period 340 to 320 Ma (e.g., Kalmakyr and Almalyk), with the second most important period at 385 to 370 Ma (e.g., Oyu Tolgoi).

7.1.1. Regional Tectonics and Structure

A tectonostratigraphic terrane map of Mongolia, modified after Badarch et al. (2002; Figure 7-1), shows that the region south of the Main Mongolian Lineament is dominantly Precambrian and Lower Paleozoic rocks to the north and dominantly Upper Paleozoic rocks to the south. This region is composed of a collage of island arc terranes, including the Gurvansaikhan Terrane which hosts the Oyu Tolgoi Au-Cu deposit and the TAT which hosts the Khundii metallogenic province. Other terranes in the collage include ophiolites, accretionary wedges, backarc/forearc basins, and metamorphic complexes typical of global accretionary orogenic belts (Windley et al., 2007).

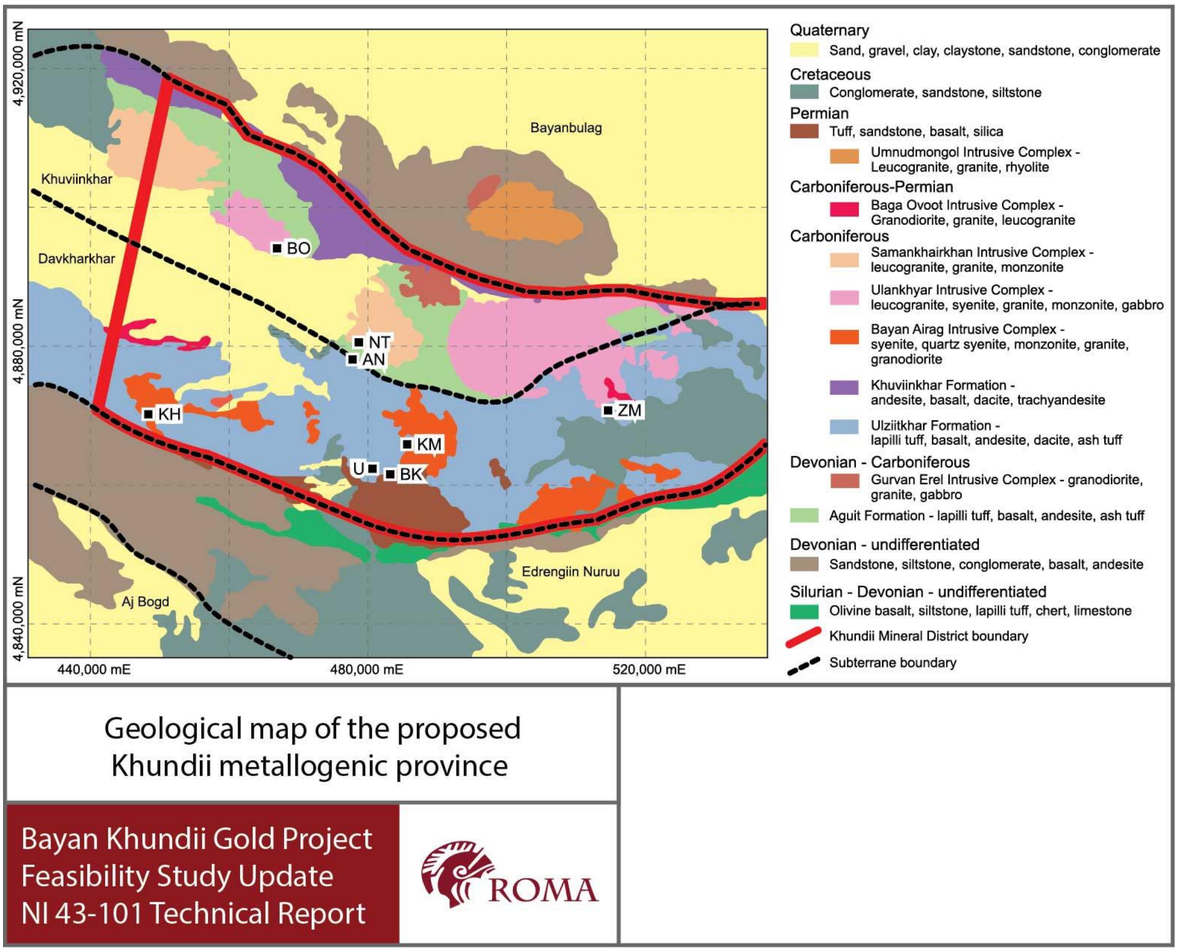


Figure 7-2 Geological map of the proposed Khundii metallogenic province showing the results of recent 1:50,000 scale geological mapping (Lhundev et al., 2019; Togotkh et al., 2019; Tumurchudur et al., 2020) (Source MacDonald 2023)

Note:

BK: Bayan Khundii deposit; U: Ulaan Southeast prospect; KM: Dark Horse deposit; AN: Altan Nar deposit; ZM: Zuun Mod deposit; NT: Nomin Tal prospect; KH: Khul Morit prospect; BO: Bor Khairkhan prospect. Solid red lines indicate the limits of the Khundii metallogenic province

The TAT is elongate (~100 x ~450 km) and trends NW (Figure 7-1). It was subdivided into five subterranes (Figure 7-2) by Lhundev et al. (2019), Togtokh et al. (2019) and Tumurchudur et al. (2020), including, from north to south:

1. *Bayanbulag accretionary wedge;*
2. *Khuviinkhar island arc;*
3. *Davkharkhar island arc;*
4. *Edrengiin Nuruu island arc; and*
5. *Aj-Bogd accretionary wedge.*

The Khundii metallogenic province is entirely underlain by rocks of the Khuviinkhar and Davkharkhar island-arc subterranes, with recent discoveries hosted by the Davkharkhar subterrane (Figure 7-2). The E-W trending southern margin of the TAT is parallel to an adjacent crustal-scale sinistral fault (Badarch et al., 2002; Figure 7-1) and is the dominant structural orientation of the CAOB.

Davkharkhar Subterrane

The southern portion of the province is underlain by the Davkharkhar subterrane of the TAT (Figure 7-2), which comprises volcanogenic units of the Carboniferous Ulziitkhar Formation. Figure 7-3 is a stratigraphic column showing the main volcanic, sedimentary and intrusive units in the Davkharkhar and Khuviinkhar subterranes and the host units for the main mineral deposits, including geochronological data. The Ulziitkhar Formation was intruded by early Carboniferous granitoids of the Bayan Airag intrusive complex. Most of the deposits and advanced projects discovered to date in the province are located in this subterrane, including Altan Nar, Bayan Khundii and Zuun Mod.

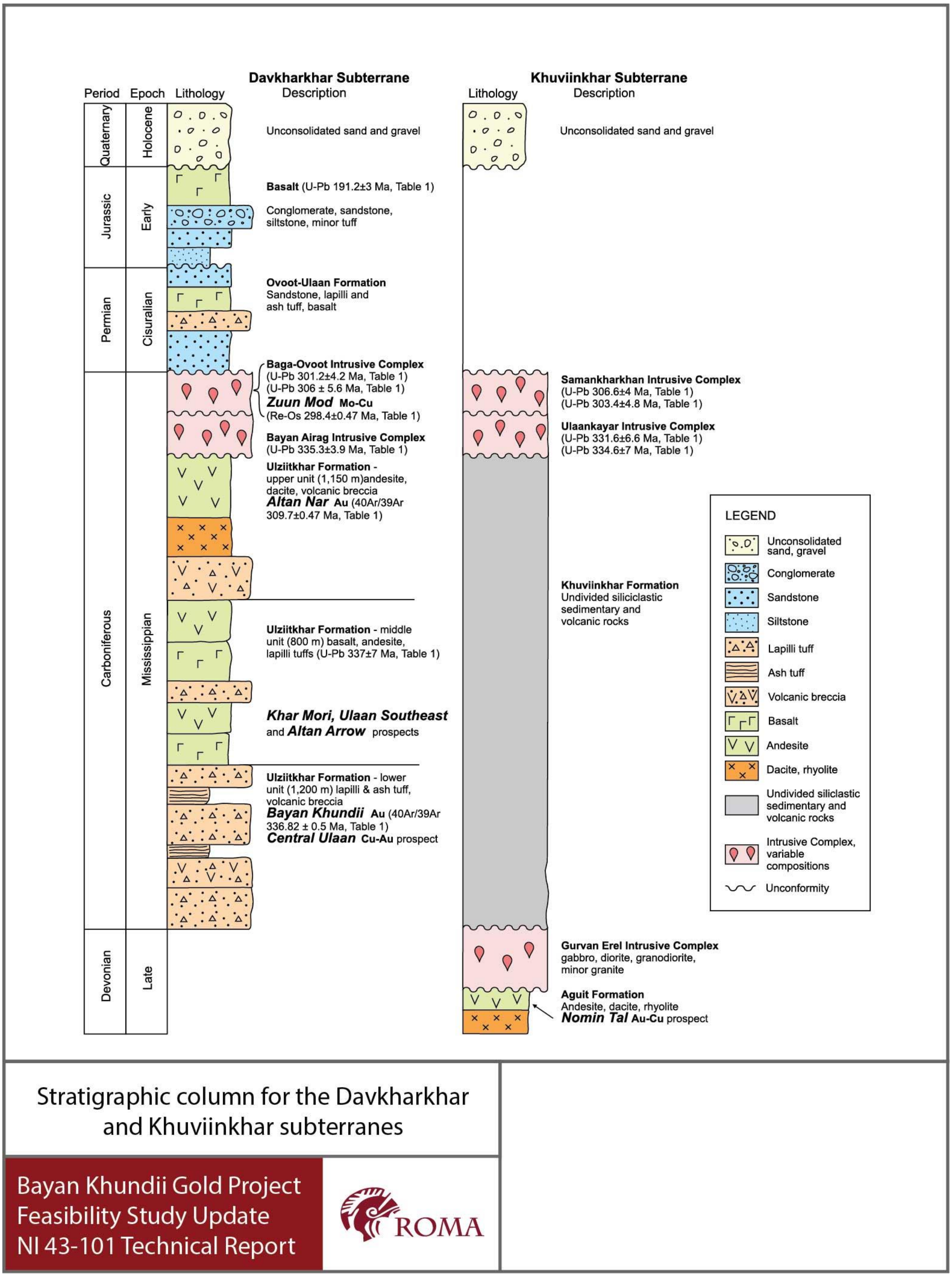


Figure 7-3 Stratigraphic Column for the Davkharkhar and Khuviinkhar Subterranes of the TAT (Source MacDonald 2023)

7.2. Khundii Metallogenic Province Geology

All mineralization within the Khundii metallogenic province, including both porphyry Mo-Cu and epithermal Au ± base metal deposits, is located within a belt of mid-Paleozoic island arcs that are part of the CAOB. Preliminary geochronological data for deposits from the Khundii metallogenic province, are coeval with metallogenic ages from the Tien Shan Belt, over 1000 km to the west (Figure 7-1), but somewhat younger than the Late Devonian activity that formed Oyu Tolgoi. The southern portion of the Khundii metallogenic province that underlain by the Davkharkhar and the geology of Davkharkhar subterrane is discussed as follows.

7.2.1. Geological Units

Carboniferous Ulziitkhar Formation

The Ulziitkhar Formation (Lhundrev et al., 2019) has been subdivided into three conformable members, including:

1) A 1,200 m-thick lower member comprised of tuffaceous rocks (ash, lapilli, block and ash tuffs) and volcanoclastic sedimentary rocks. This member is host to the Bayan Khundii Au deposit and a large area of quartz-white mica-pyrite alteration (~2 x 3 km) at the central Ulaan project;
2) An 800 m-thick middle member, comprised mostly of basalt and andesite flows and tuffaceous rocks, host the Dark Horse Au and Altan Arrow Au-Ag prospects (Figure 7-2, Figure 7-3). Geochronological analysis of zircon from an andesite unit returned an early Carboniferous (Visean) age of 337 ± 7 Ma (Lhundev et al., 2019; Table 7-1);
3) A 1,150 m-thick upper member of mostly andesite and dacite flows and volcanic breccia hosts the Altan Nar Au-polymetallic deposit.

Outcrop patterns for the three members of the Ulziitkhar Formation (Lhundev et al., 2019; Togtokh et al., 2019; Tumurchudur et al., 2020) show a complex pattern of local folding and widespread block faulting, which has juxtaposed rocks from each of the three members. Despite the local folding of the Ulziitkhar Formation, the strike of the units in all three members is mostly NW-trending in the west, E-W trending in the south-central part of the district, and ENE-WSW to the east.

Early Carboniferous Bayan Airag Intrusive Complex

Rocks of the Ulziitkhar Formation were intruded by multiple plutons and stocks of the early Carboniferous Bayan Airag intrusive complex (Figure 7-2, Figure 7-3). The Early Carboniferous Bayan Airag Intrusive complex is composed of five different phases within the province:

- Phase I: medium grained biotite-hornblende monzonite, quartz monzonite, quartz monzodiorite (Jurassic sedimentary massif U-Pb 335.3±3.9 Ma (Lhundev et al., 2019), located 6.2 km to the NE from BK).

- Phase II: mottled, light yellowish, coarse grained biotite-amphibole granodiorite, biotite granite (east body of Khul morit massif U-Pb 344.0±1.2 Ma (Tumurkhuu et al, 2013), located approximately 27 km to NW from BK).

- Phase III: equigranular, medium grained, alkali granite (locally, within the margin of the intrusive unit, it changes to quartz syenite). (Khul morit, Aryn usny khar massif U-Pb 330±12 Ma (Hanzl et al, 2008), located ~35 km to NW from BK).

- Phase IV: medium grained, quartz syenite, quartz syenite porphyry. (BK quartz syenite porphyry U-Pb 310±27 Ma (Erdene, 2018)).

- Phase V: brown fine grained, alkali leucogranite. (this alkali granite is similar with 303.4±4.8 Ma age dated Bayanzurkh massif, which is located in the NE part of Altan Nar license area).

In addition there are numerous dykes (diorite porphyry, basalt, syenite porphyry, leucogranite) and veins (quartz, quartz-tourmaline veins) and quartz-tourmaline breccia pipes.

Late Carboniferous to Early Permian Baga Ovoot Intrusive Complex

The Ulziitkhar Formation was also intruded by the late Carboniferous to early Permian Baga Ovoot intrusive complex (Lhundev et al., 2019), ranging from an early phase of quartz monzonite (U-Pb zircon age of 306 ± 5.6 Ma; Altankhuyag et al., 2012; Table 7-1), a main phase of leucogranite, granite, and minor quartz syenite, and a late phase of leucogranite porphyry. A granodiorite phase of the Baga Ovoot complex that hosts the Zuun Mod Mo-Cu deposit returned a zircon U-Pb age of 301.2 ± 4.2 Ma (Altankhuyag et al., 2012; Table 7-1).

The area south of the Bayan Khundii Au deposit is mostly underlain by Permian to Jurassic siliciclastic sedimentary rocks, flood basalt units and minor tuffaceous rocks, which unconformably overlie the Carboniferous volcanogenic and intrusive rocks (Figure 7-2, Figure 7-3). A zircon U-Pb date of a flood basalt in the upper member returned an Early Jurassic age (191.2 ± 3 Ma; Lhundev et al, 2019; Table 7-1).

7.2.2. Structural Kinematic Framework

The TAT has a dominant regional WNW-trending accretionary tectonic trend of compressional foliations, folds, and thrusts, which reflects a prolonged history of Devonian-Carboniferous and Permian-Jurassic plate convergence, crustal shortening, and development of the broader CAOB (e.g., Kroner et al., 2010). The degree of deformation, however, was reported to be heterogeneous, with structural disruption being most intense and continuous along terrane and subterrane boundaries, and with less deformed areas, such as within the Khundii metallogenic province, preserved in between (Lehmann et al., 2010).

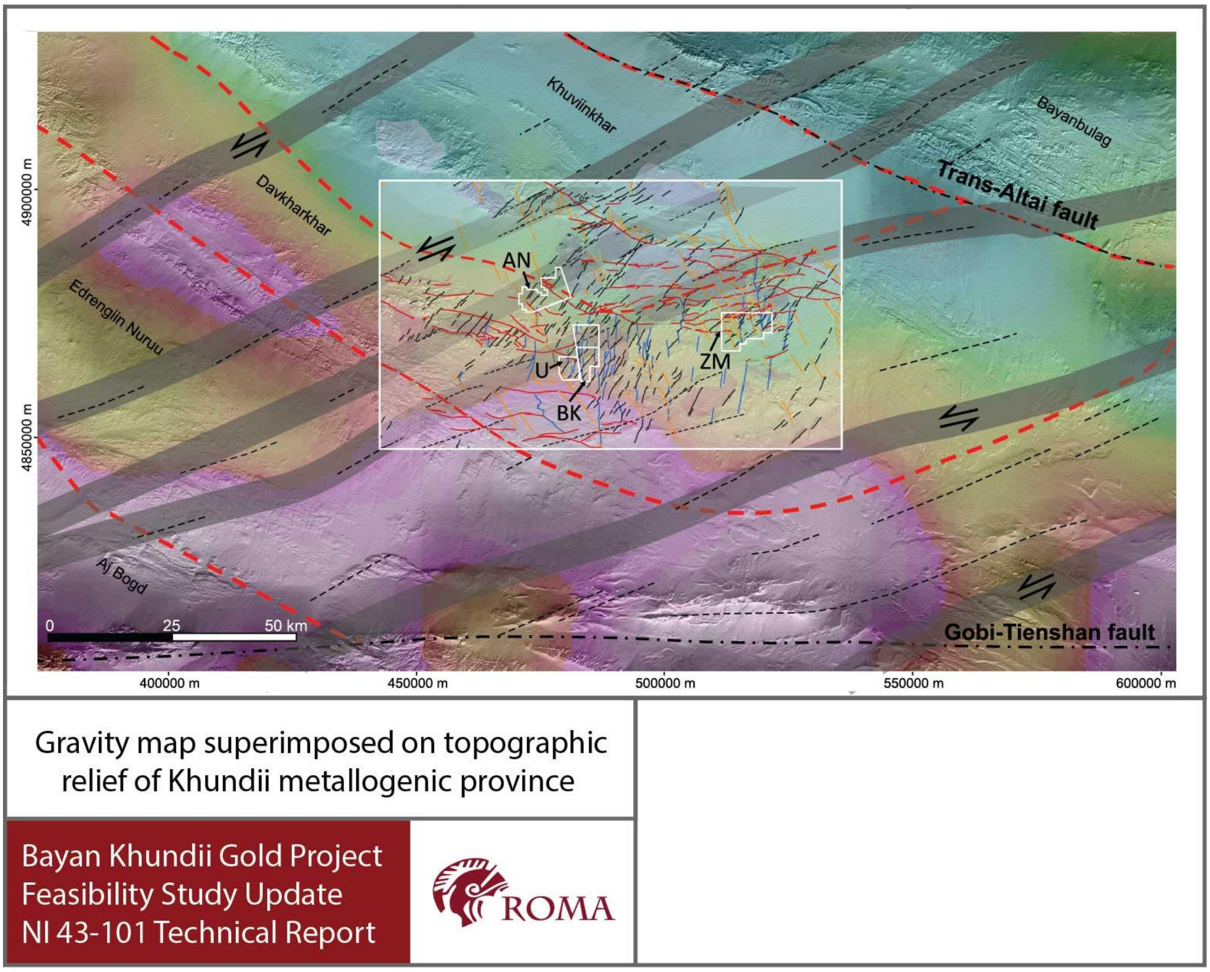


Figure 7-4 Gravity map superimposed on topographic relief of the area hosting the Khundii metallogenic province (Getech) (Source MacDonald 2023)

Note:
Main map:
Warm colors: gravity high; cold colors: gravity low.
Red dashed lines: boundaries of the four subterranes; grey shaded bands: general location and trend of six first-order, ENE-trending, inherited basement lineaments;
Detailed structural map (white box):
Structures:
Grey shading: ENE cryptic trend (set 1); black: NE extensional faults (set 2); blue: N-S trending dextral steep set (set 3); solid red lines: contractional fabrics, foliations, folds and thrusts;
Tenements:
Thin white lines: tenement boundaries; AN: Altan Nar; BK: Bayan Khundii; ZM: Zuun Mod; U: Ulaan.

Three sets of structures were distinguished in the Khundii metallogenic province by their orientation and length, relationship to granitoid intrusions, and their cross-cutting relationships. The largest and oldest set comprises first-order ENE-trending lithospheric scale lineaments that can be traced across Mongolia for over 2,000 km (Dolgopolova et al., 2013). Despite the great length of these lineaments, most have limited offsets, suggesting that they are deep-seated, inherited basement structures. In the Khundii province their surface expression is somewhat cryptic; however, at least two such structures coincide with local gravity anomalies (Figure 7-4), with the Altan Nar and Bayan Khundii deposits located along two separate ENE structures. The general geological map pattern as well as the gravity breaks indicate a sinistral horizontal component of offset.

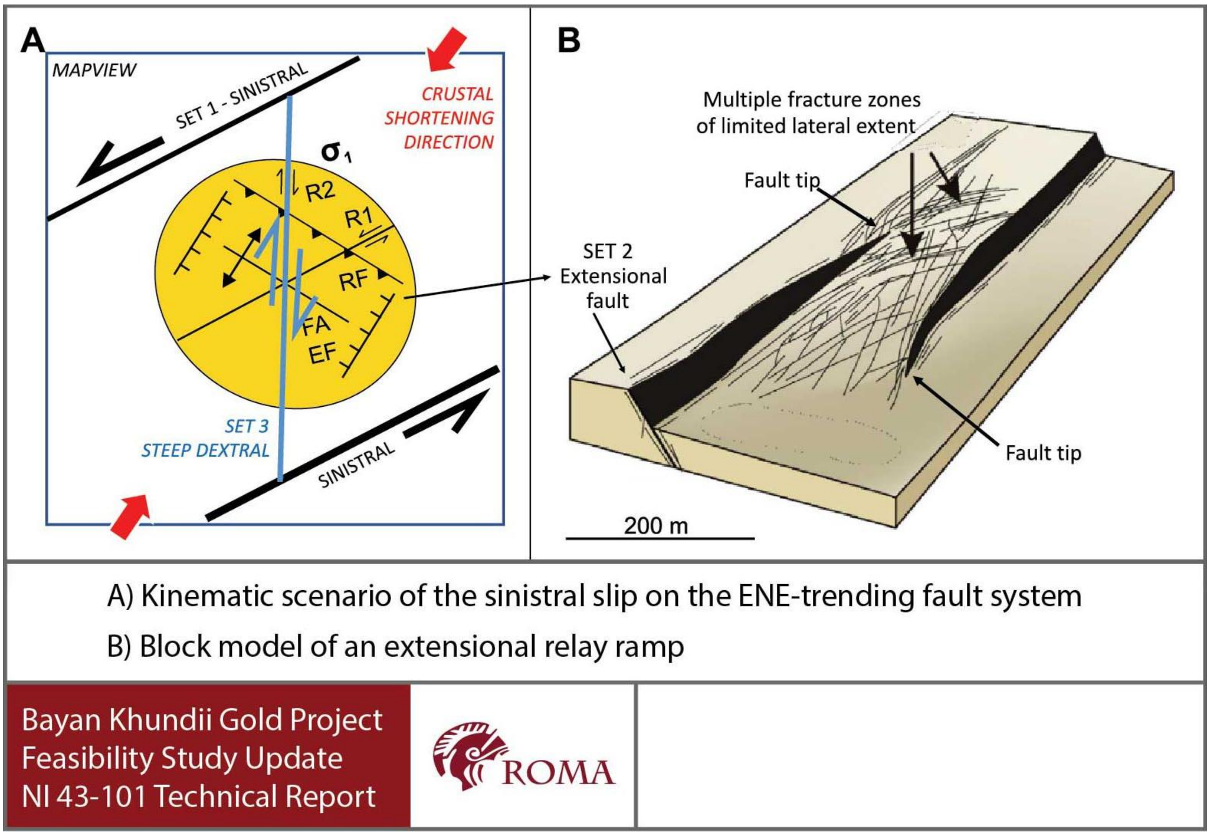


Figure 7-5 A) Kinematic scenario that emphasizes the sinistral slip on the ENE-trending fault system (SET 1) that developed second-order extensional faults (SET 2) and N-trending shears (SET 3) (Figure 7-4); B) Block model of an extensional relay ramp (Source MacDonald 2023)

A second set comprises structures that trend NE and individually are 10-20 km-long, en echelon fault segments (Figure 7-4) that collectively define the ENE lithospheric trend. These structures follow lithological contacts, contacts with intrusions, and topographic lows, without an obvious horizontal component of offset. This set of NE-trending faults, including those at the Bayan Khundii deposit, are interpreted as a series of normal faults with dip-slip displacement. These extensional faults are interpreted to have formed the controlling structures at Bayan Khundii, based on surface maps and drilling data, including the orientation of volcanic layering, faults, veins and granitoid dikes. Model integration of structural data in three dimensions indicates a set of tilted extensional fault blocks in which Au was deposited in a fractured relay ramp structure between the fault tips of two soft-linked normal faults (Figure 7-5). The overall en echelon asymmetry and distribution of the faults is consistent with a sinistral horizontal component of movement along the first-order ENE trend and is consistent with NNE-SSW directed crustal shortening. En echelon normal-fault arrays are expected as second-order structures in zones with a horizontal component, as demonstrated by the sand-box models of Dooley and Schreurs (2012).

A third set of smaller, N-S trending, 10-15 km-long lineaments are present throughout the area of detailed structural analysis (blue lines in Figure 7-4). These lineaments are commonly bounded by the NE-trending extensional faults, and have an orientation of dextral, conjugate Riedel shears within the sinistral ENE-trending slip system (see Dooley and Schreurs, 2012, for examples). One of these N-S structures hosts the Dark Horse Au deposit (see below) and can be traced for 3.5 km to the south where it connects to the extensional faults of the Bayan Khundii deposit.

All three sets are interpreted to have been active coevally and formed a complex connected network at the time of mineralization, each contributing to the focusing of Au-bearing fluids.

7.2.3. Known Mineralization Styles in the Province

Three main styles of hydrothermal mineralization have been identified to date within the Khundii metallogenic province. These include:

1. Epithermal vein and disseminated Au mineralization at Bayan Khundii, Ulaan Southeast, Dark Horse, and Altan Arrow occurs in a ~2 x 7 km belt. Gold mineralization is present in adularia-bearing comb-textured and multi-stage quartz veins and disseminations, poor in sulphides, and hosted by lapilli and ash andesite tuffs; these deposits are interpreted as low-sulphidation in style. A detailed description of individual deposits, including details of the overprinting of epithermal illite-adularia alteration over earlier lithocap alteration, typical of the tops of porphyry deposits, is given below.
2. Epithermal polymetallic (Au-Ag-Pb-Zn±Cu) vein mineralization at, and surrounding, the Altan Nar deposit has multiple occurrences within a 1.5 x 5.5 km Pb-Zn-Au soil anomaly. Mineralization is associated with NE-SW and lesser N-S faults and shears, especially within dilational jogs in these structures, with coarsely crystalline galena and sphalerite (±chalcopyrite) and associated Fe-, Mn- and Mg-carbonate gangue minerals. Associated alteration includes Fe- and Mg-chlorite, tremolite, actinolite and epidote, with zones of intense white mica alteration. As discussed below, the Altan Nar deposit is interpreted to be typical of intermediate sulphidation epithermal deposits.
3. Porphyry Mo-Cu mineralization is present at the Zuun Mod deposit, plus several Cu-Ag ± Mo porphyry-style occurrences within the ~4 km-diameter Zuun Mod-Khuvyn Khar porphyry complex. Mineralization at Zuun Mod consists mostly of molybdenite and chalcopyrite along margins, and within, B-type quartz veins in a granodiorite intrusion. Other vein types, which are mostly unmineralized or weakly mineralized, include early-stage biotite veins, A-veins with little or no associated alteration selvages, and D-veins with variably developed quartz-white mica alteration selvages. The dominant alteration within the deposit is potassic with variably developed K-feldspar alteration selvages on B-type quartz veins, and more pervasively, as disseminated biotite and magnetite clusters. The alteration style outside the main deposit is dominated by pervasive quartz - white mica ± pyrite replacement of feldspars.

A few km NW of Bayan Khundii, in the central Ulaan project (35 km from Zuun Mod), Cu anomalies are associated with widespread quartz-white mica-pyrite alteration, which is interpreted as representing the upper level of a porphyry system, as described by Sillitoe (2010).

7.2.4. Age of Mineralization in the Khundii Metallogenic Province

Erdene undertook a geochronological study of lithologies and mineralization for the Metallogenic Province including samples from Bayan Khundii (zircon, adularia), Altan Nar (adularia), and Zuun Mod (Molybdenite). The Ar/Ar dating was carried out at Western Australian Argon Isotope Facility (WAAIF) at Curtin University in Australia. The flowing table summarizes the results of the study.

Table 7-1 Khundii Metallogenic Province Geochronology

Unit / Deposit	Method	Age	Period	Reference / Source	Sample Description
Cover rocks	U/Pb	191.2±3 Ma	Early Jurassic	Lhundev et al., 2018	Zircon from basalt
Zuun Mod Mo-Cu deposit	Re-Os	298.4±0.47 Ma	Permian (Cisuralian)	Altankhuyag et al., 2012	Molybdenite from mineralized quartz veins
Zuun Mod Mo-Cu deposit	Re-Os	295 Ma	Permian (Cisuralian)	Bat-Erdene et al., 2011	Molybdenite from mineralized quartz veins
Baga Ovoot Int. Comp.	U/Pb	301.2±4.2 Ma	Carboniferous (Late Pennsylvanian)	Altankhuyag et al., 2012	Zircon from granodiorite which hosts the Zuun Mod Mo-Cu deposit
Baga Ovoot Int. Complex	U/Pb	306±5.6 Ma	Carboniferous (Late Pennsylvanian)	Altankhuyag et al., 2012	Zircon from quartz monzonite near the Zuun Mod deposit
Samankharkhan Int. Complex	U/Pb	306.6±4 Ma	Carboniferous (Late Pennsylvanian)	Togtokh et al., 2019	Zircon from gabbro
Samankharkhan Int. Complex	U/Pb	303.4±4.8	Carboniferous (Late Pennsylvanian)	Tumurkhuu et al., 2013	Zircon from alkali leucogranite
Altan Nar Deposit	40Ar/39Ar	309.7±0.47 Ma	Carboniferous (Middle Pennsylvanian)	This report	Adularia from mineralized quartz vein - Discovery Zone, Altan Nar gold-polymetallic deposit
Ulaankayar Int. Complex	U/Pb	331.6±6.6 Ma	Carboniferous (Middle Missisipian)	Lhundev et al., 2019	Zircon from syenite
Ulaankayar Int. Complex	U/Pb	334.6±7 Ma	Carboniferous (Middle Missisipian)	Lhundev et al., 2019	Zircon from quartz syenite
Bayan Airag Int. Complex	U/Pb	335.3±3.9 Ma	Carboniferous (Middle Missisipian)	Lhundev et al., 2019	Zircon from monzonite
Bayan Khundii Deposit	40Ar/39Ar	336±0.5 Ma	Carboniferous (Middle Missisipian)	This report	Adularia from mineralized quartz vein - Bayan Khundii gold deposit
Ulziithar Formation	U/Pb	337±7 Ma	Carboniferous (Middle Missisipian)	Lhundev et al., 2019	Zircon from andesite - Middle Member of the Ulziithar Formation

The $^{40}Ar/^{39}Ar$ ages of adularia from the Bayan Khundii and Altan Nar deposits (336 ± 0.5 Ma and 309.7±0.7 Ma, respectively; Table 7-1) indicates epithermal activity was intermittently active for at least 25 myr, with Bayan Khundii possibly related to a period of extension early in the history of the island arc. Altan Nar was likely related to a putative ~310 Ma intrusion, possibly part of the late Carboniferous-early Permian Baga Ovoot intrusive complex (306±5.6 Ma; Altankhuyag et al., 2012; Table 7-1). The as yet undated porphyry-style alteration at Bayan Khundii which was overprinted by later illite alteration, indicates magmatic-hydrothermal activity prior to the formation of the epithermal deposits. The youngest hydrothermal age in the district, for the Zuun Mod porphyry deposit (298±0.47 and 295 Ma Re-Os dates on molybdenite; Table 7-1) indicates a minimum ~40 myr range of episodic magmatic-hydrothermal activity in the Khundii metallogenic province.

7.3. Geology of the Khundii License District

The Khundii mining license covers four mineralization areas including: Bayan Khundii, Ulaan Southeast, Dark Horse, and Altan Arrow as presented in Figure 7-6, with geochronological data for both mineralization and main lithologies (Table 7-1) noted in the stratigraphic column (Figure 7-3). The Bayan Khundii and Dark Horse deposits and the Ulaan Southeast mineralization, although identified as separate deposits for their discovery at different times, all three of them may be part of a single epithermal system based on their proximity, inclusion within a contiguous white mica alteration zone, and generally similar mineralization features; they also are related to the same structural trends. The ~2 x 7 km size of the Bayan Khundii-Ulaan Southeast-Dark Horse epithermal system (Figure 7-6) is typical of the area encompassed by many other epithermal deposits worldwide (Simmons et al., 2005; Simmons, 2017).

It is suggested that the sulphide-poor but Au-rich epithermal quartz veins at Bayan Khundii and satellite deposits, with quartz-illite-adularia alteration halos, overprinted the upper portion of an older, partly eroded porphyry system that likely formed in a distinctly different tectonic setting. The extensive quartz-white mica-pyrite alteration further west at central Ulaan, which extends to the NE to the area of the Dark Horse epithermal project (Figure 7-7), is typical of alteration in the transition to the deeper porphyry environment (Sillitoe, 2010). Epithermal alteration and veining at Bayan Khundii overprint an early alteration assemblage that includes K-feldspar, actinolite/tremolite and polygonal-textured quartz, including hypersaline fluid inclusions, characteristic of deeper formed porphyry deposits. The areas of strong silicification, with local development of residual quartz and advanced argillic alteration (Figure 7-6, Figure 7-7) at Bayan Khundii are characteristic of the base of lithocap alteration that occurs over porphyry deposits (Hedenquist and Arribas, 2022).

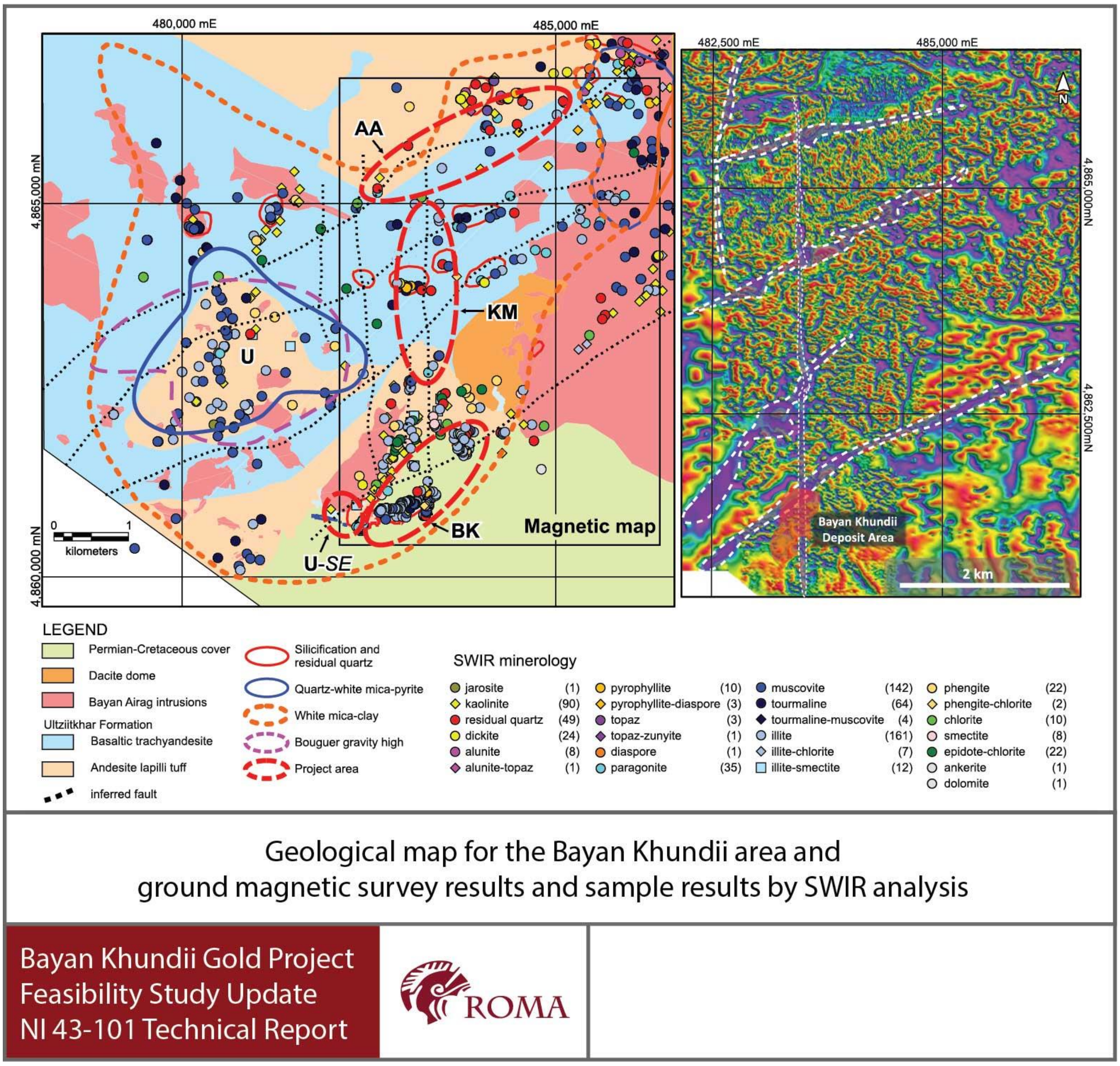


Figure 7-6 Geological map for the Bayan Khundii area showing alteration zones determined from reprocessed ASTER satellite data and detailed ground magnetic survey results and sample results from short-wave infrared ("SWIR") analysis (Source MacDonald 2023)

Note:

Main map:

BK: Bayan Khundii; U: Ulaan; U-SE: Ulaan Southeast; KM: Dark Horse; AA: Altan Arrow.

Inset: purple-blue linear areas with white dashed outlines: low magnetic response interpreted as zones of magnetite destruction in the host felsic tuffs and intermediate volcanic host rocks, correlating with intense white mica alteration.

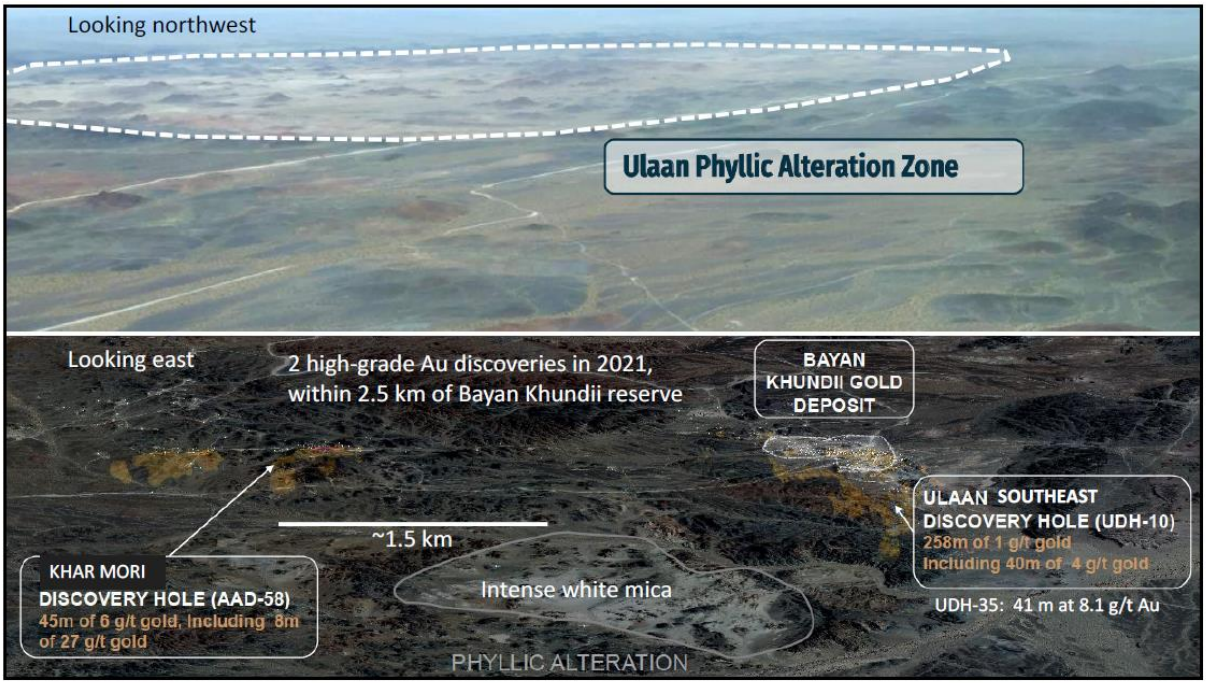


Figure 7-7 Phyllic alteration over Bayan Khundii, Dark Horse and Ulaan Southeast (Source Erdene, 2022)

Source: https://erdene.com/site/assets/files/4344/khundii.pdf

7.3.1. Bayan Khundii epithermal Au-Ag deposit

7.3.1.1. Geological Units

The Bayan Khundii project and surrounding areas were mapped in detail during the 2015, 2016 and 2017 field seasons, with field data collected along foot-traverse lines. Generally, the bedrock geology of the Bayan Khundii area (Figure 7-8) is dominated by a sequence of the Late Carboniferous Ulziithar Formation consisting of volcanic (andesite, andesite porphyry) and pyroclastic rocks (ash, lapilli, and block and ash tuffs). These were intruded by units of the Early Carboniferous Bayan Airag Intrusive Complex, and together these rocks were unconformably overlain by Jurassic siliciclastic sedimentary units. All rocks in the region are overlain by unconsolidated sediments of Quaternary or Recent age. The following descriptions of the main geological units at Bayan Khundii are described in an interpreted sequence from oldest to youngest.

Late Carboniferous Ulziithar Formation Altered Pyroclastic Rocks

The Ulziithar Formation is the oldest rocks at Bayan Khundii, and the host rocks for gold mineralization, include a sequence of intensely silicified and illite-altered pyroclastic rocks. Lower Carboniferous volcanic rocks of the Ulziithar Formation are present throughout the license area and include several texturally-distinct units of intermediate composition including andesite, porphyritic andesite and basalt. Pyroclastic lithologies include fine- and coarse-grained lapilli tuffs (i.e. containing lithic fragments <2 cm and >2-6 cm respectively), ash tuffs (fragments <2 mm; some finely laminated), welded tuffs (with fiamme) and rare block and ash tuffs (with blocks >6 cm). These Carboniferous tuffs represent an erosional window, surrounded and unconformably overlain by Permian to Jurassic red bed sedimentary strata and flood basalts. Assays of surface rock chips with comb-textured quartz veins from initial prospecting returned up to 4,380 g/t Au.

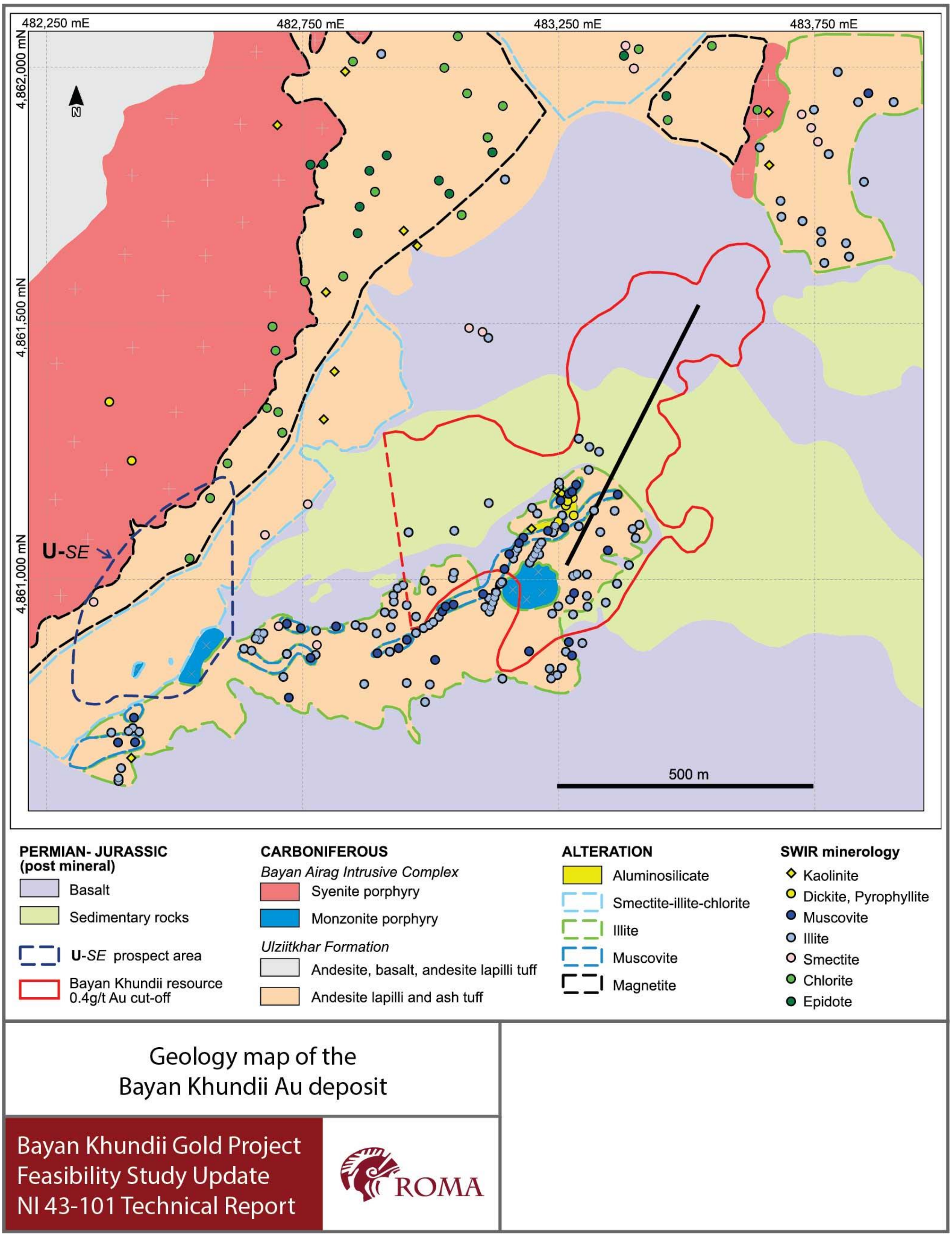


Figure 7-8 Detailed geology map of the Bayan Khundii Au deposit, showing the distribution of the Lower Ulziitkhar Formation (Source MacDonald 2023)

The geological map of the Khundii deposit and surrounding area (Figure 7-8) shows that Au mineralization is hosted by andesite lapilli tuffs, with minor ash tuffs and block and ash tuffs of the lower member of the Ulziitkhar Formation (Figure 7-3), all intensely altered. The presence of erosional features on the upper contact of the ore zone and the nature of alteration zones, coupled with the occurrence of unconformably overlying Permian red-bed strata and Jurassic flood basalts (Figure 7-9), indicates that the mineralized tuffs were variably eroded prior to the deposition of the post-mineral cover rocks. The lower portion of some of the deposit was intruded by post-mineral alkaline granitoids (syenite, quartz syenite) of the early Carboniferous Bayan Airag intrusive complex (Figure 7-9). Thus, the original Bayan Khundii Au deposit was partially eroded, and part may also have been removed by intrusion.

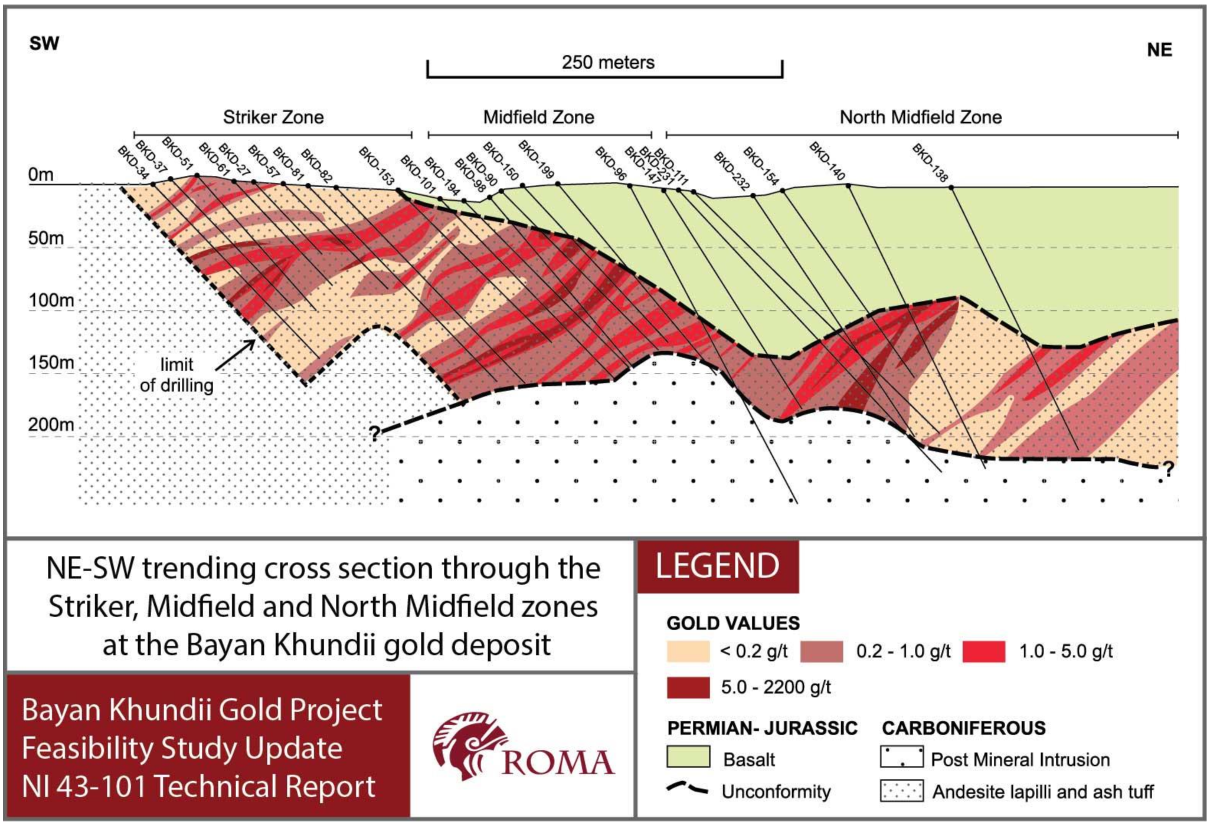


Figure 7-9 NE-SW trending cross section through the Striker, Midfield and North Midfield zones at the Bayan Khundii gold deposit (Source MacDonald 2023)

Intense quartz-illite hydrothermal alteration has replaced most primary minerals in these tuffaceous rocks, giving the lithologies a pervasive medium grey color in outcrop, and making identification of the protoliths difficult, even in fresh drill core. Observations from outcrop and surface trenches in the Bayan Khundii area, coupled with mapping of weakly altered tuffaceous units to the north and west of the Northeast Prospect area, indicate these rocks have a dominant northeast-southwest strike trend and dip at approximately 40° to 45° to the northwest. Recent structural analysis of oriented drill core from parts of the Midfield Zone, coupled with field observation in the Northeast Prospect area, indicate that lithologies may also have northwest and east-west strikes with variable dips.

Figure 7-10 Panorama of Bayan Khundii Area, Looking NE from West ridge. (Source - Erdene, 2018)

The rocks underlying the Striker and Gold Hill Zones (Figure 7-10) are mostly fine and coarse-grained lapilli tuffs with fine grained matrix comprised of lithic and crystal fragments. Coarse grained lapilli tuffs have common coarse, round to sub-angular lithic fragments of pyroclastic rock with variable composition, and may have angular to sub-rounded quartz fragments to 1 cm (Figure 7-11). Lapilli tuffs have minor interbedded massive to finely-laminated ash tuff layers (Figure 7-8). Lapilli tuffs are very poorly sorted whereas some laminated ash tuffs are well-sorted with fine laminae (1-2 mm wide). The lapilli and ash tuff units are overlain by a fine to coarse grained welded tuff unit that contains abundant angular quartz fragments, thin fiamme with >10:1 aspect ratio, medium to coarse lithic fragments, and ovoid to irregular-shaped lithophysae (i.e. in-filled gas bubbles).

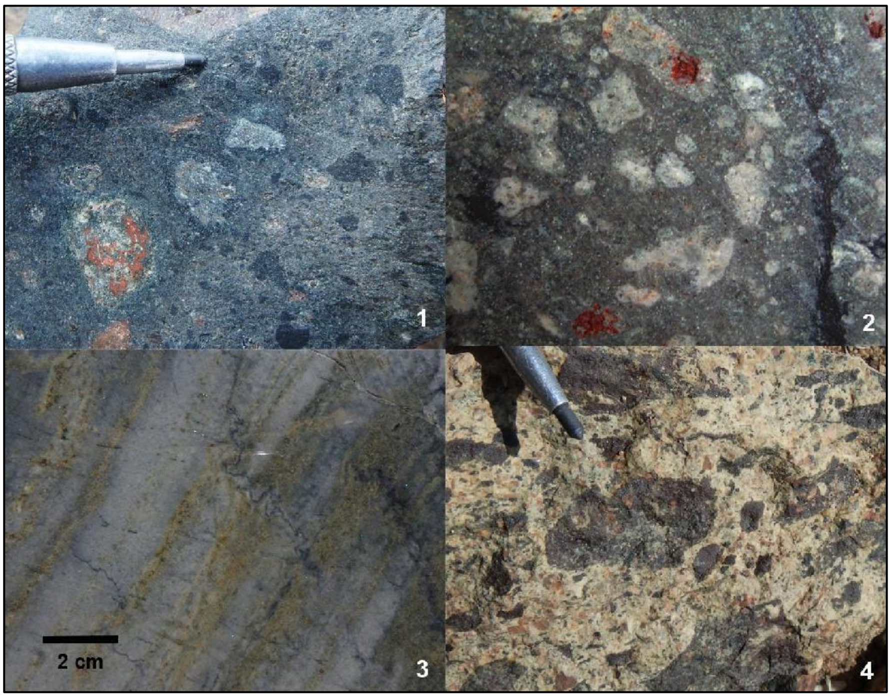


Figure 7-11 Photographs of pyroclastic rocks. (Source - Erdene, 2018)

Notes:

1. *Weakly altered (chloritized) coarse-grained lapilli tuff from an outcrop 500 m north of the Northeast Zone;*
2. *Strongly altered (illite-quartz) coarse-grained lapilli tuff from the Striker Zone;*
3. *Finely laminated and variably altered ash tuff interbedded with welded tuff to the northwest of Striker Zone in drill hole BKD-40;*
4. *Welded tuff with angular quartz fragments and coarse lithic and chalcedony fragments from an outcrop approximately 400 m north of the Northeast Zone.*

Several siliceous zones were observed in Figure 7-8, including a zone at Gold Hill (approximately 75 m x 125 m), where they form prominent topographic high features (Figure 7-10). Smaller and less intense silicified zones (approximately 10 m x 50 m) were also observed in Striker Zone. Despite a general lack of 'vuggy' texture, these siliceous zones are interpreted as representing residual quartz alteration zones. The area to the southwest of Gold Hill is dominated by medium grey massive lapilli tuff with minor interlayered ash tuff beds. There are several intensely silicified zones between Gold Hill and Striker zones that form prominent topographic highs similar to Gold Hill.

There is a northeast-trending unit of welded tuff along the northwest margin of the Southwest Prospect area that varies from approximately 20 to 75 m in width. Rocks are light buff to grey in color and commonly have a pervasive fabric, as defined by parallel aligned and stretched fiamme, consisting mostly of medium to dark grey quartz-rich fragments, in a light grey tuffaceous matrix. A northeast-trending intensely silicified zone (approximately 150 m x 30 m) that forms a prominent topographic high, is present along the southern margin of the welded tuff, Figure 7-10. A zone of tourmaline alteration was noted adjacent to the silicified zone, extending over much of the welded tuff unit. Tourmaline is present both as narrow veins (<0.5 cm wide) and as widespread alteration 'spots' (<1 cm). One wide tourmaline vein was noted to contain angular fragments of quartz vein material and displayed comb-textured overgrowths on tourmalinized wall-rock fragments indicating a complex relationship between tourmaline alteration and veins, and quartz vein formation.

The zones of intense silicification at Bayan Khundii have replaced most of the pre-existing rock (e.g. fine- and coarse-grained lapilli tuff, ash tuff, welded tuff) resulting in massive, light grey colored, very fine grained to slightly saccharoidal textured quartz rich zones that are provisionally interpreted as 'lithocap zones'.

The coarse size of lithic rock fragments (up to >6 cm) in some Early Carboniferous tuffs suggests possible proximity to a volcanic vent; however, there are no obvious vectors based on observations to date. Additional work is required to test this hypothesis.

Early Carboniferous Bayan Airag Intrusive Complex

It is assumed that all intrusive units form part of the Early Carboniferous Bayan Airag Intrusive complex. A small intrusion of medium grained equigranular hornblende monzonite (<100 m diameter) outcrops in the center of the Southwest Prospect area, to the west of Gold Hill (Figure 7-10). This monzonite was intersected in the top of several drill holes including BKD-12, BKD -34, BKD -46 and BKD -55 where sharp intrusive contacts were observed with lapilli tuff. There were three monzonite porphyry dikes, ranging in thickness from 2 to 27 m, in drill hole BKD-67 located near the southern contact of, and presumably originating from, the monzonite intrusion. The monzonite is fine to medium grained and has hornblende and two feldspars in a very fine grained matrix, with minor euhedral feldspar phenocrysts. A fine grained chilled margin was noted adjacent to the host pyroclastic rocks indicating the monzonite is younger than the pyroclastic rocks. The monzonite has several brick-red colored zones of hematization, including a 2 m wide contact zone. Tourmaline alteration of monzonite was observed in a 3 m wide zone at the contact zone, with tourmaline present both as narrow veins (<0.5 cm wide) and as alteration 'spots' (<1 cm). Similar monzonite was encountered in the bottom 15 m of drill hole BKD-38, which located approximately 250 m east of the Striker Zone. Based on drilling results to date, these monzonite intrusions are interpreted to be narrow separate plugs with steep contacts and limited lateral extent. Both monzonite intrusions have positive magnetic signatures as determined by a previous ground magnetic survey. Monzonite is interpreted to be part of the Upper Carboniferous Bayan-Airag Intrusive complex and post-dated the gold mineralization event.

Most drill holes in 2016 and 2017 intersected fine and medium grained syenite beneath the Bayan Khundii mineralized zones, Figure 7-9, which is interpreted as a widespread post-mineralization intrusion. The NE-trending syenite intrusion that cross-cuts the Northeast Zone (Figure 7-8) is interpreted as a surface exposure of this underlying intrusion. Drill hole BKD-96 which was drilled in 2016 intersected several meters of syenite at the bottom, was extended for approximately 100 m in 2017 with the extension intersecting syenite to the bottom of the hole. Accordingly, the syenite intersected in drilling to date is interpreted as the top of a large intrusion, although the possibility of it being a thick sill cannot be ruled out. Syenite rocks generally have a low magnetic susceptibility response (e.g. < 0.2); although some syenite may have high readings (up to 23.0), and generally do not have a positive response in the ground magnetic survey. Zones of magnetite alteration were observed to straddle the syenite-tuff contact in several holes, with alteration extending for several meters either within the syenite or host tuffs. This alteration is not associated with an increase in gold grades and is interpreted as a post-mineral contact metamorphic effect (i.e. skarn).

Several fine grained aplite and porphyritic granite dykes were intersected throughout the Bayan Khundii area including two granite porphyry dykes (0.8 and 17 m wide) and an 8 m interval at the bottom of drill hole BKD-41 in the Northeast Zone and several dykes in the Midfield Zone, ranging in thickness from 1 to 12 m wide, (drill holes BKD-60, BKD-95, BKD-98, BKD-99) and two separate narrow aplite dykes in holes located several hundred m east and west of the Striker Zone (BKD-38 and BKD-39 respectively). The granitic dykes in BKD-98 and BKD-99 are proximal to large quartz-adularia veins with abundant visible gold and were observed to be moderately altered. Similarly, the large dyke in BKD-60 was noted to be altered and had gold mineralization, suggesting that these dykes may have been either pre-mineral or syn-mineral in origin. Some of the aplite, quartz syenite and granite porphyries may be late differentiates from the underlying syenite intrusion at depth. The syenite intrusion that underlies the mineralized tuffs is interpreted as post-mineral and part of the Early

Carboniferous Bayan-Airag Intrusive Complex, whereas the age of the altered dykes is unclear although the presence of gold mineralization the dyke in in BKD-60 suggests it is older.

Numerous andesite porphyry dikes have been logged throughout the Bayan Khundii prospect. These are thought to be Early Carboniferous in age and have formed along with the deposition of the tuffaceous units.

Jurassic Rocks

Sediments of the Jurassic age unconformably covered Lower Carboniferous Ulziithar Formation and granitoids of Lower Carboniferous Bayan-Airag intrusive complex. The Jurassic rocks are composed of conglomerate, conglobreccia, sandstone, siltstone, sooty coal bearing siltstone, tuff gravelite, trachy-basalt, andesite, rhyolite, acidic tuff and tuffite. This formation has been subdivided into two members. Lower member (306 m thick) is composed by volcanogenic-tuffogenic sediments. Individual strata are very well indurated and have well-developed primary bedding that has an average 108° strike and shallow dips to the south (from 10-25°), avg. approximately 18° The upper member (259 m thick) is composed by terrigenic-tuffogenic sediments and flow basalts, including unaltered massive and amygdaloidal basalt. The primary bedding orientation in the basalt flows differs from the underlying red-beds, having an average NE-SW strike (051° and an average dip of 14° to the SE. Accordingly, the contact between the upper and lower members is interpreted as an angular unconformity. Most sedimentary rocks are red colored, presumably reflecting the presence of hematite in the matrix, however, in more widespread areas, such as along the south side of the Southwest Prospect, the rocks vary from red to whitish or light grey and have a mottled appearance. Several drill holes intersected very coarse grained basal conglomerate commonly developed at the unconformity with the Carboniferous Ulziithar Formations with angular clasts of altered Carboniferous tuff (to 2-5 cm), with several intervals containing anomalous gold values (>1 g/t Au).

The Jurassic sedimentary sequence is unconformably overlain by unaltered massive and amygdaloidal basalt. The primary bedding orientation in the basalt flows differs from the underlying red-beds, having an average NE-SW strike (051° and an average dip of 14° to the SE. Accordingly, the contact between this basalt and the underlying red-beds is interpreted as an angular unconformity.

Quaternary to Recent Sediment Deposits

Topographic low areas at Bayan Khundii are underlain by unconsolidated Quaternary and Recent sediments. The pattern and distribution of various facies of Quaternary deposits reflects modern and paleo-drainage systems. There is a prominent southeast orientation to many of the small Quaternary sediment-filled valleys at Bayan Khundii that are sub-parallel to the main auriferous quartz vein orientation. Larger NW-SE, N-S and E-W trending linear valleys may reflect contact zones or structures, possibly faults.

7.3.1.2. Mineralization

Visible Gold

Gold mineralization is mostly hosted in parallel NW-SE, moderately-dipping (~45° SW) zones that range in width from ~5 to ~150 m (Figure 7-9). Within these zones Au mineralization consists of a series of high-grade zones with good continuity, within broad low-grade halos (mostly <0.1 g/t Au). Quartz veins within these zones have three main orientations, including the dominant NW-SE vein set with a moderate SW dip, a conjugate and subordinate NE-SW set with a moderate SE dip, and a minor N-S trending vein set, steeply dipping to vertical. The presence of Au mineralization in sheeted SW-dipping zones (Figure 7-9) indicates that structures were critical in formation of the deposit. The NW-SE-trending, SW-dipping ore zones contain numerous small individual veins and have a limited strike length (generally 100-200 m); however, the strike width is several hundred meters. Collectively, the mineralized zones define a volume with a NE-trending envelope interpreted as a relay ramp structure

(Figure 7-5) between the fault tips of two parallel but stepping NE-trending normal faults, within an extensional structural domain. Several NE-trending fault sets and a N-S structure have a corresponding low magnetic response (Figure 7-6), and are adjacent to and intersect the relay ramp, which may have provided permeability for mineralizing fluids.

Visible Au was noted in approximately 30% of the drillholes at Bayan Khundii; however, visible Au is not always a good indicator of Au grade, as numerous samples have returned moderate to high Au values where no visible Au was noted during logging. Visible Au was observed in several modes of occurrence, including:

1. In quartz veins with a range of textures including:
    a. Massive-saccharoidal, laminar and comb-textured quartz± hematite veins (Figure 7-12A) which are mostly <1 – 2 cm wide and commonly have hematite ± specularite and/or open space in vein centers and may have narrow colloform bands along vein margins. Within these veins Au is present: 1) along prismatic quartz grain boundaries; 2) within the vein centers ± hematite or specularite; and 3) along vein margins at contact with host tuffs.
    b. Multi-stage composite quartz-chalcedony-adularia ± hematite veins, commonly with a mottled texture (mostly <1 -10 cm wide; Figure 7-12B) with sub-rounded fragments of milky light grey-buff quartz-adularia or dark-colored chalcedony, some having abundant disseminated Au, commonly rimmed by euhedral adularia crystals. These veins may have colloform or chalcedony bands along vein margins.
    c. Multi-stage quartz-adularia-chalcedony veins with bladed calcite, now pseudomorphed by quartz, and dark grey Au-rich chalcedony along vein margins. The presence of bladed, or lattice, quartz (pseudomorphed calcite) is common in epithermal deposits (Simmons, 2017).
    d. Large composite veins (up to ≥1 m wide) composed of a, b and c-type veins described above commonly are brecciated with a hematite matrix.
2. In quartz-hematite breccias (from ~5 to 40 cm wide; Figure 7-12C) that contain sub-angular to sub-rounded fragments of quartz or tuffaceous rocks in a hematite ±specularite matrix.
3. Along late angular fractures, micro-fractures and joints, commonly associated with supergene hematite and/or specularite; and
4. As fine-grained disseminations in intensely illite-quartz altered lapilli tuffs (Figure 7-12D), where it is commonly associated with hematite that partially or completely replaced early-stage pyrite grains.

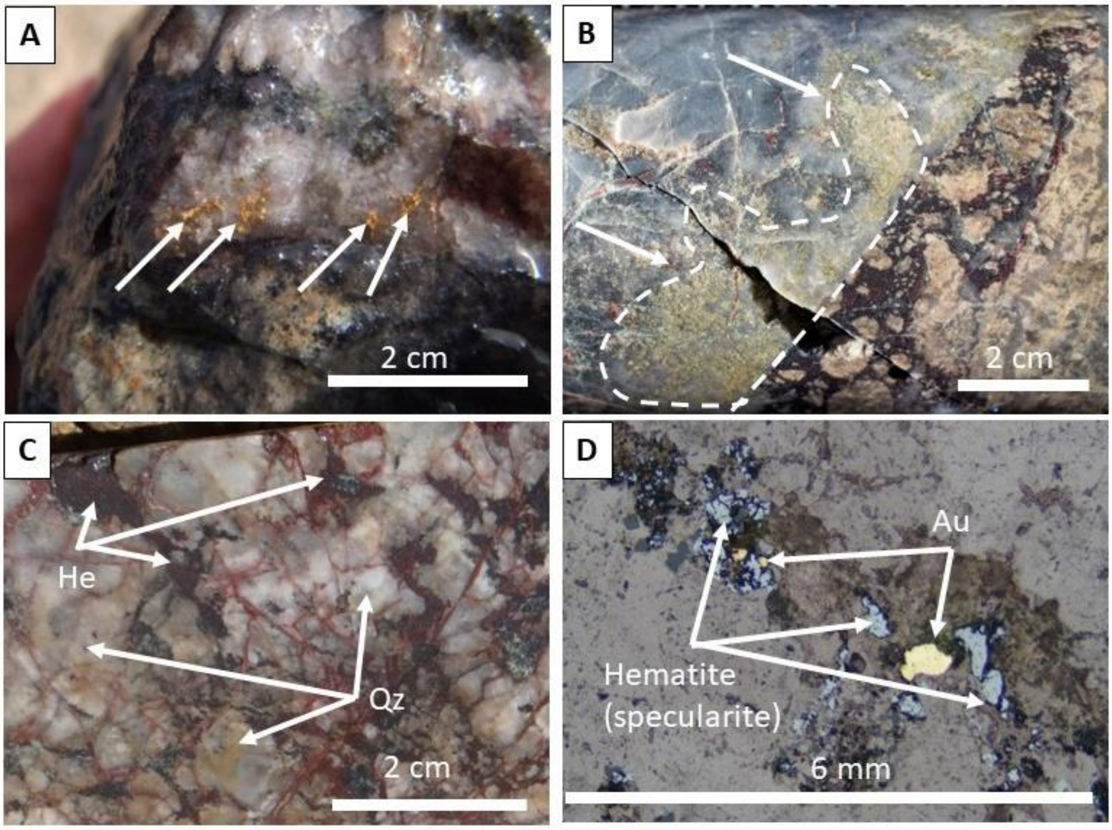


Figure 7-12 Gold-bearing quartz veins from the Bayan Khundii Gold Deposit (Source MacDonald 2023)

Note:

A) Recrystallized quartz-specularite (hematite) vein with remnant (recrystallized) comb textures and specularite along vein margins and in vein core. Visible gold indicated by white arrows.

B) Composite multi-stage quartz-chalcedony-adularia vein (abundant finely disseminated visible Au within white dashed line). Multi-stage hydrothermal brecciation and quartz veining is evident, including the dark reddish-brown hematite breccia with sub-angular fragments and quartz veining cutting altered tuff along the right side of the sample.

C) Hydrothermal quartz (Qz) – hematite (He) breccia with mottled quartz (variably recrystallized) and hematite patches and veinlets.

D) Photomicrograph of electrum (Au) intergrown with hematite (specularite) which has replaced early-stage pyrite.

Sulphide Minerals

Most of the Bayan Khundii deposit is either devoid of sulphide minerals or contains only trace amounts, including pyrite and minor sphalerite, galena and chalcopyrite. However, locally elevated levels of Mo, S and As were noted in the drillcore dataset. Clearly, based on geochemistry, there are sulphide-rich zones at Bayan Khundii that presumably contain As-, Mo-, Cu-, Zn- and to a lesser extent P-bearing mineral species.

Some zones in the NW part of the Bayan Khundii deposit contain 1-2% pyrite, which is present both as disseminated grains and as sulphide veins. Most pyrite-bearing zones have low Au concentrations, and a general antithetical relationship between pyrite and Au concentration was noted in drillcore. This relationship is interpreted as reflecting the replacement of pyrite by hematite (Figure 7-12D) as part of the low-sulphidation Au mineralizing event. The relict pyrite is thought to have formed during the early porphyry-related alteration, prior to epithermal Au deposition.

Hematite

Hematite, commonly with associated specularite, is a ubiquitous feature at Bayan Khundii, and was observed in surface outcrop, trenches and in drill core, where it is present as:

1. Fracture/vein infilling, commonly within very sharp-sided angular fractures or veins that may contain wallrock fragments.
2. As central vein infilling and vein margins in comb-textured quartz veins.
3. As matrix in quartz-hematite breccias, commonly with angular fragments of illite-quartz altered wall-rock.
4. As rare round disseminations that are interpreted as pseudomorphic replacement of early pyrite.
5. As alteration selvages along the margins of fine-grained dark grey quartz or chalcedony veins.

Several narrow specularite veinlets (<1-2 mm wide) in drillcore with medium grey alteration selvages (≤2 cm) consist of intense silicification with illite alteration. The lack of hematite alteration selvages surrounding quartz-hematite veins at Bayan Khundii, where hematite may reside in the central parts of comb-textured veins, or as vein-parallel bands near vein margins, supports a hypogene versus supergene origin for the iron-oxide minerals at Bayan Khundii. The presence of visible Au in some hematite veinlets establishes a genetic relationship between the Au and hematite-forming fluids. Accordingly, hematite is considered to be associated with the intense quartz-illite alteration and deposition of Au.

Au and Ag Enrichment in Basal Conglomerate

There are no veins or breccias, mineralized or otherwise, in the unconformably overlying Permian-Jurassic aged sedimentary or basaltic rocks, indicating these units represent a post-mineral cover sequence. Some Au ± Ag enrichment has been noted in the basal conglomerate containing angular, altered, and possibly mineralized Carboniferous tuff clasts, near the unconformity. This mineralization may represent the incorporation of mineralized material from nearby tuffs, or it may represent paleo-placer Au in the conglomerate matrix. A strongly mineralized 1-m interval (51.2 g/t Au) of basal conglomerate was intersected directly above altered and mineralized tuff in the Midfield Zone (Figure 7-10). Petrographic analysis identified several Au grains associated with acicular tourmaline within Fe-Mg-Ca carbonate facies that replaced the matrix of the basal conglomerate. The origin of this Au mineralization is unclear; however, the petrographic evidence suggests the Au is associated with hydrothermally altered conglomerate restricted to the Carboniferous/Permian-Jurassic contact zone, and may reflect post-Permian hydrothermal activity along the contact.

Most Au is present as electrum, with 22-30 wt% Ag; however, the results of a scanning electron microscope (SEM) study of Au grains indicate high fineness Au (up to 100 wt.% Au), is present as fracture infillings, as individual grains, and rarely as rims on individual electrum grains. Electrum is interpreted as hypogene in origin whereas the high fineness Au is supergene in origin, consistent with its association with goethite.

7.3.1.3. Alteration

Interpretation of ASTER satellite imagery outlined a broad elliptical-shaped zone of white mica alteration over the central part of the map area (~6 x ~7 km). A program of detailed geological mapping coupled with SWIR analyses of surface rock chip samples from this zone indicates a complex alteration history. Several alteration types include:

1. a widespread zone of weak to moderate white mica and clay alteration;

2. zones of more intense alteration, including quartz-white mica-pyrite alteration over the central part of the Ulaan prospect that corresponds with a positive gravity anomaly (Figure 7-6);
3. several patches (mostly 1-2 km diameter) of strong silicification, locally of residual quartz origin (Hedenquist and Arribas, 2022), with spatially associated aluminosilicate and/or alunite alteration interpreted as part of a larger, now largely eroded lithocap of advanced argillic (kaolinite-dickite-pyrophyllite) alteration; and
4. illite-adularia alteration related to Bayan Khundii vein structures, which overprints these earlier alteration styles.

Some quartz veins have narrow (<1-2 mm wide) illite-quartz alteration selvages; however, most quartz veins at Bayan Khundii do not have alteration selvages. The tuffaceous host rocks are altered to an assemblage of illite (Al-OH SWIR values ranging from 2206 to 2208 nm), or illite-smectite, plus adularia with pervasive silicification. This style overprints patchy occurrences of earlier-formed lithocap-style alteration, with residual quartz plus pyrophyllite, dickite and kaolinite, and which is best developed in finely laminated tuffs (Figure 7-6, Figure 7-8).

Adularia from a mineralized quartz vein from the Bayan Khundii deposit was analyzed at the Western Australian Argon Isotope Facility (WAAIF) at Curtin University in Australia and returned a $^{40}Ar/^{39}Ar$ age of 336 ± 0.5 Ma (Table 7-1, Figure 7-3). The 337 ± 7 Ma U-Pb zircon age for the middle unit of Ulziitkhar Formation (Table 7-1; Figure 7-3; Lhundev et al., 2019), which overlies the lower member that hosts the Bayan Khundii deposit, indicates Au mineralization formed soon after tuff deposition.

7.3.1.4. Paragenesis

The results of petrographic and mineralogic studies of the Bayan Khundii deposit indicate a complex alteration and mineralization paragenesis with subsequent supergene weathering (Figure 7-13 and Figure 7-14):

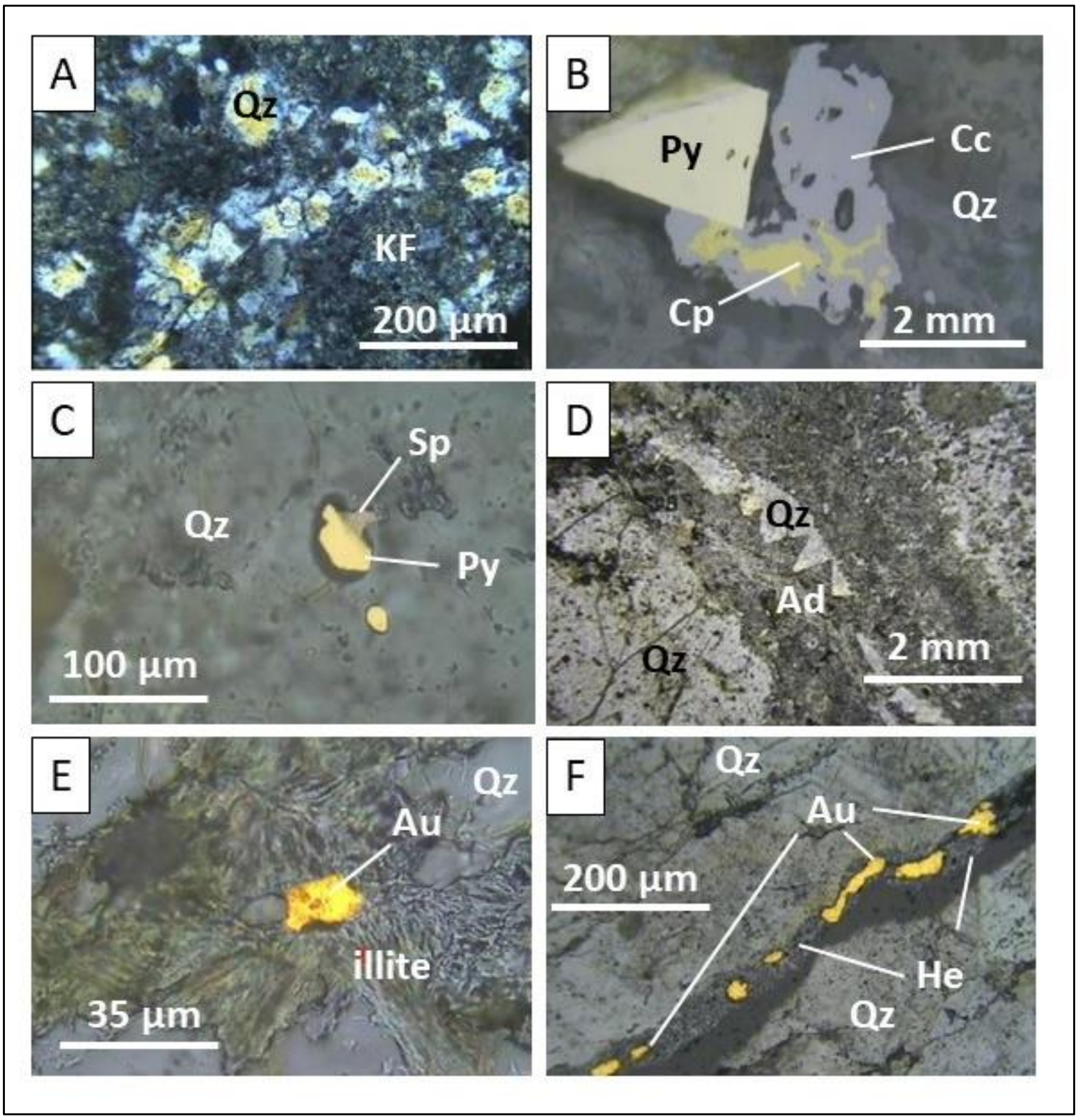


Figure 7-13 Photomicrographs of samples from the Bayan Khundii Au Deposit (Source MacDonald 2023)

Notes:
Cpl: crossed polars; ppl: plane polarized light; rl: reflected light.
Porphyry event A-C:

A) Alteration of host lapilli tuff to a mineral assemblage of polygonal textured (i.e., recrystallized) quartz (Qz), alkali feldspar (KF), and actinolite/tremolite (cpl);

B) Chalcopyrite (Cp) altered to supergene chalcocite (Cc) with euhedral pyrite (Py) in a quartz host (cpl).

C) Disseminated pyrite and minor sphalerite (Sp), locally intergrown with the early alteration assemblage of quartz (ppl/rl).

Epithermal event D-E:

D) Mosaic quartz central to rhombic adularia (Ad) (ppl/rl).

E) Gold/electrum (Au) intergrown with mosaic quartz and illite of epithermal replacement assemblage (ppl/rl).

Supergene Event:

F) Gold (Au)-hematite (He) veining in mosaic quartz (ppl/rl).

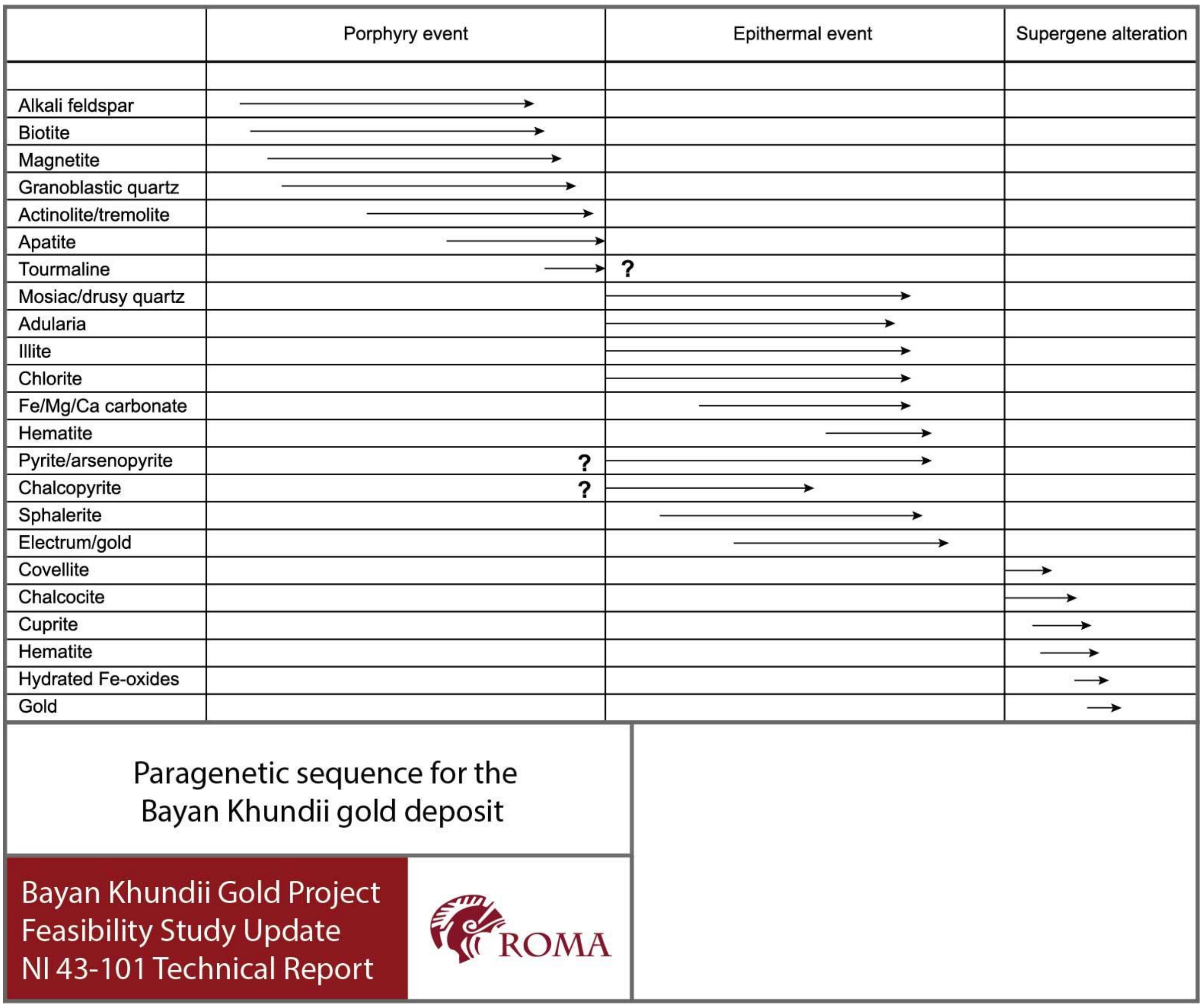


Figure 7-14 Paragenetic sequence for the Bayan Khundii Gold Deposit (Source MacDonald 2023)

1. **Porphyry event:** Lapilli and minor ash tuffs which host the Bayan Khundii deposit were initially altered to K-feldspar, actinolite/tremolite, recrystallized equigranular quartz, and possibly biotite, magnetite, and apatite (Figure 7-13A); trace amounts of chalcopyrite, altered to supergene Cu oxides (Figure 7-13B), and disseminated pyrite and minor sphalerite are locally intergrown with the early alteration assemblage (Figure 7-13C). There are also patches of residual quartz plus pyrophyllite, dickite and kaolinite, typical of the margins and roots of lithocaps (Hedenquist and Arribas, 2022).

2. **Epithermal event:** Distinctly different alteration and mineralization was superimposed on the early assemblage, consisting of mosaic-drusy quartz veins, adularia, illite (Figure 7-13D), chlorite, rutile, hematite and Fe/Mg/Ca-carbonate minerals. Where not oxidized, sulphide minerals include pyrite and arsenopyrite plus an As-rich sulphide (likely arsenian pyrite), locally encapsulated in mosaic-drusy quartz; most Fe-sulphides were altered to supergene goethite and jarosite. Crystalline hematite (specularite) of likely hypogene origin is intergrown with mosaic quartz in veins. Electrum is mostly associated with quartz veins, although disseminated electrum (Figure 7-13E) is associated with some low-grade ore zones. Trace amounts of chalcopyrite, sphalerite, and tennantite-tetrahedrite are also present.

3. **Supergene event:** Weathering subsequent to the porphyry and epithermal events caused the formation of supergene alteration minerals; Fe-sulphide minerals (pyrite, arsenopyrite, possible arsenian pyrite), initially of low concentration, were largely altered to supergene goethite and jarosite, and chalcopyrite was altered to covellite,

cuprite and chalcocite. High fineness Au (up to 100% Au) of supergene origin occurs intergrown with goethite and along late-stage micro-fractures (Figure 7-13F). Weathering-related kaolinite and smectite are present.

Petrographic examination indicates that early quartz in the matrix of the host lapilli tuffs has polygonal textures, commonly with 120° triple points (Figure 7-15A), indicating pervasive recrystallization. A qualitative examination of fluid inclusions in the polygonal quartz identified translucent daughter minerals (Figure 7-15B), locally appearing cubic (halite), accompanied by opaque daughter minerals in some samples. This observation indicates a high salinity liquid (>23 wt% NaCl equivalent) during formation of the polygonal quartz, typical of hypersaline liquids associated with porphyry-related intrusions (Roedder, 1984). This observation supports the high-temperature nature of early alteration, locally accompanied by residual quartz and advanced argillic alteration. This was subsequently overprinted by epithermal veins with mosaic quartz veins, with fluid inclusions that lack daughter minerals, indicating lower salinity liquids.

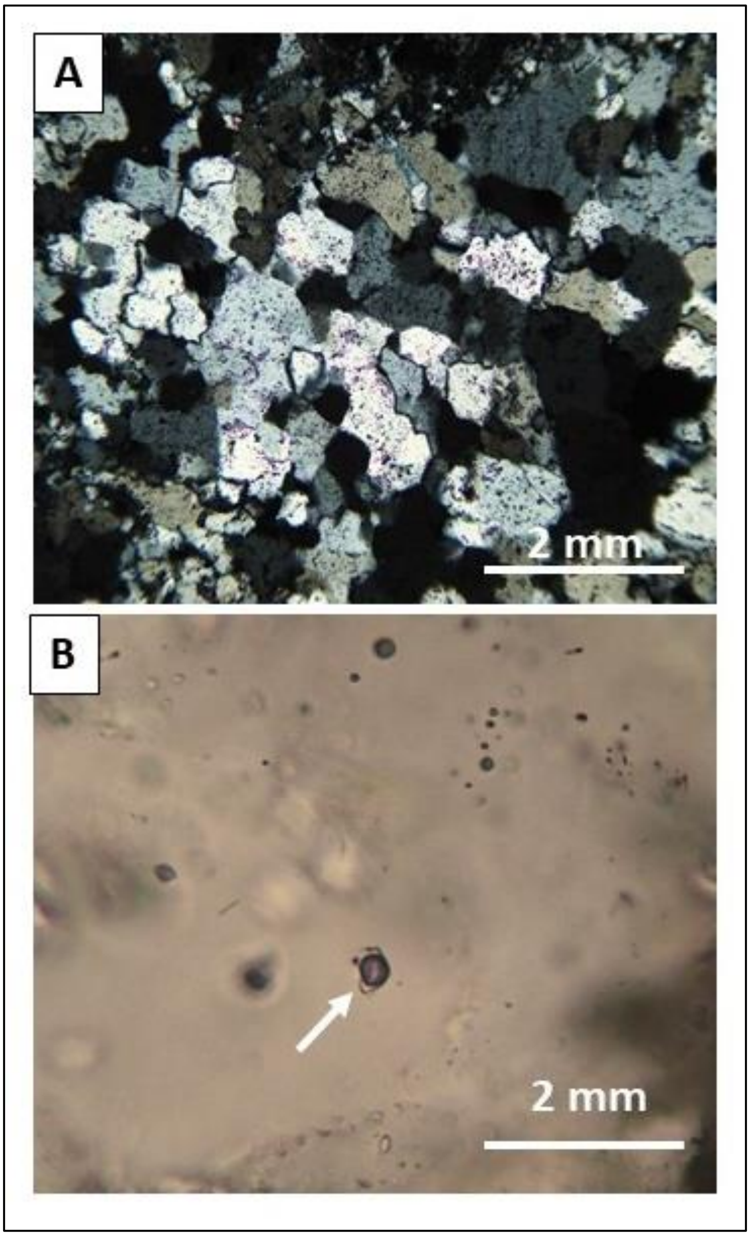


Figure 7-15 Petrographic examination quartz minerals in altered lapilli tuff from the Bayan Khundii Au Deposit (Source MacDonald 2023)

Note:

A) Polygonal quartz texture in an altered (quartz, K-feldspar, actinolite/tremolite) lapilli tuff from the Bayan Khundii Au deposit;

B) Fluid inclusion with translucent daughter mineral (halite?) plus small opaque (reddish at high magnification, hematite?) in quartz from a sample of an early-stage quartz vein from the Bayan Khundii Au deposit.

Some tourmaline breccias and tourmaline alteration zones to the west of the Striker Zone (Figure 7-6) contain brecciated fragments of quartz veins and also comb-textured quartz overgrowths on tourmaline-altered fragments, suggesting a complex relationship between quartz veining and tourmaline alteration events. The relationship between Au mineralization and tourmaline is unclear; however, most tourmaline is present west of the Striker Zone, where limited Au mineralization has been encountered to date; there is only rare to trace tourmaline in the Striker and Midfield zones, suggesting the tourmaline and comb quartz overgrowths were separate events.

7.3.2. Dark Horse Au-Ag Epithermal Satellite Prospect

The Dark Horse project is located ~ 3.5 km north of the Bayan Khundii Au deposit along a N-S structure that connects the two areas, as indicated by linear trends in magnetic data (Figure 7-5, inset). A geological map of the Dark Horse prospect area (Figure 7-16) shows mineralization focused along a N-S structure, which extends southward to the Bayan Khundii Au deposit. Gold-in-soil anomalies and local exposures of epithermal breccia and quartz stockwork veins have been traced from Bayan Khundii along the N-S structure which are interpreted to represent conduits for mineralizing fluids, and alteration signatures supporting an epithermal mineralization model characterize the greater Dark Horse prospect area.

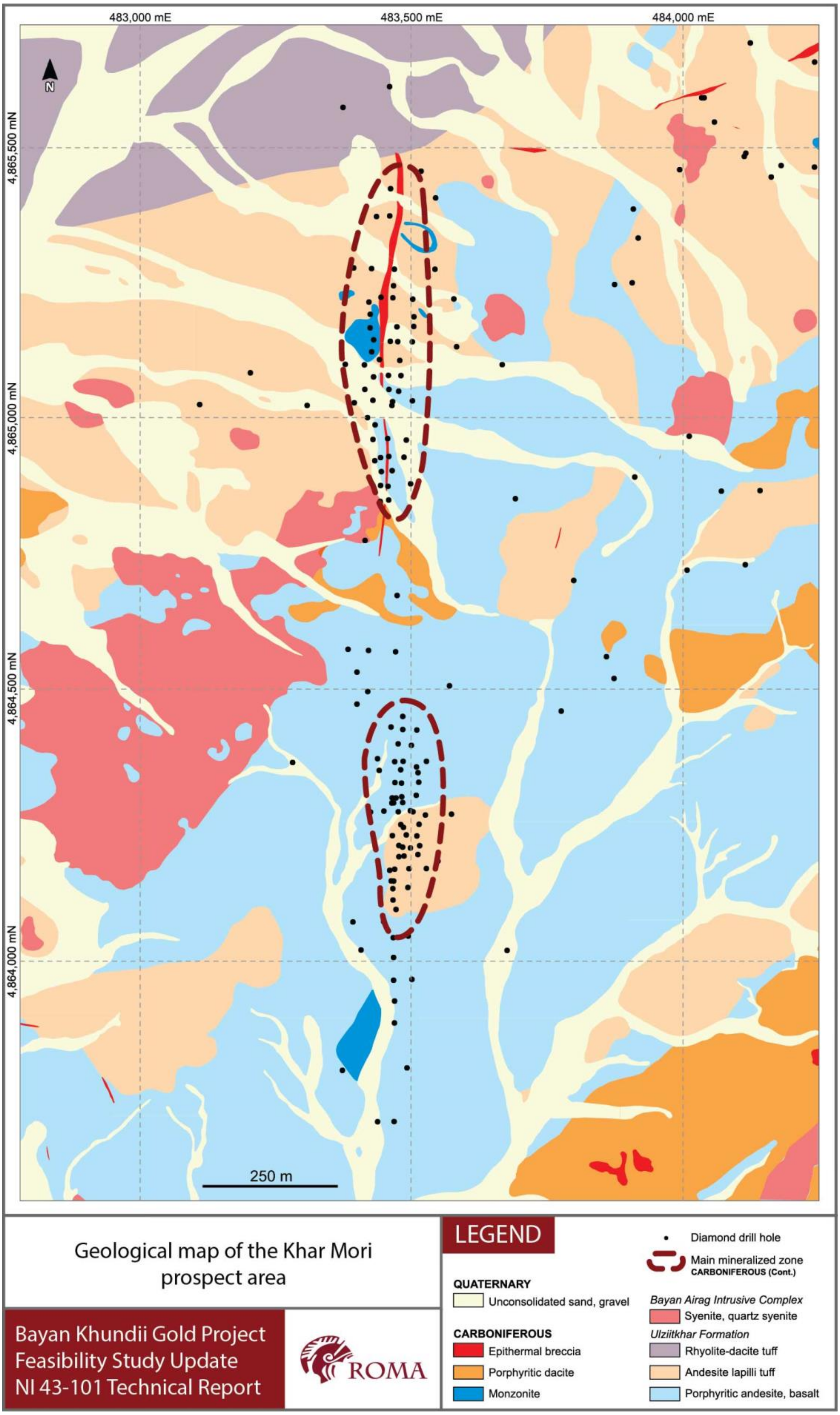


Figure 7-16 Geological Map of the Dark Horse (Khar Mori) Prospect Area (Source MacDonald 2023)

The Dark Horse Mane prospect is associated with a north-south trending, linear structural corridor which intersects deep seated northeast trending transform faults, believed to be a conduit for primary mineralizing fluids. The N-S structure has been traced over five kilometres, from the southern portion of the Bayan Khundii deposit to the northern extension of Dark Horse Mane. Gold mineralization is hosted within strongly altered tuffaceous and volcanoclastic rocks, crosscut by quartz and quartz-hematite veins and stockwork zones. Multiple rock chip samples returned >5 g/t Au values, including a 32.9 g/t Au sample of comb quartz-adularia veins. Stockwork veins crosscut an epithermal breccia zone developed in a silicified and illite-adularia altered quartz syenite intrusion of the Bayan Airag intrusive complex, with magnetite destruction (Figure 7-2). Several vein types are present, including comb-textured quartz-adularia veins, sugary crustiform-textured quartz veins, and multi-stage quartz-chalcedony veins. Recent drilling (Erdene, 2022 [1]) intersected a shallow (<60 m depth) oxide zone with high-grade Au mineralization at Dark Horse (including a 5 m interval averaging 123.5 g/t Au), which lies above a deeper sulphide-rich zone (of pyrite, arsenopyrite and arsenian pyrite), hosted by silicified and illite-altered lapilli andesite tuffs and volcanoclastic units.

The near surface oxide gold zones discovered at Dark Horse Mane are the result of oxidation of sulphide bearing epithermal veins and hydrothermal breccias within white mica altered host lithologies. Limited deeper drilling has intersected gold bearing epithermal veins and associated white mica and sulphide alteration zones to a depth of up to 230 meters vertically, that remains open at depth. The gold mineralization near surface at Dark Horse Mane is related to broader areas of structurally controlled alteration and mineralization believed to be connected to feeder structures, distributing gold bearing fluids over a wide area as these fluids approached the paleo surface. Evidence for these feeder structures includes a series of exposed residual quartz lithocaps (Figure 7-17). Lithocaps are subsurface, broadly stratabound alteration domains that are laterally and vertically extensive. They form when acidic magmatic-hydrothermal fluids react with wallrocks during ascent towards the paleosurface (Figure 7-18). High sulphidation state mineralization typically occurs in silicicaltered rocks within lithocaps. This is interpreted to associate locally with increasing copper anomalism at depth, interpreted to predate the gold mineralization. These lithocaps are distributed along dominant NE trending structures believed to represent transform faults and potentially feeder conduits from a magmatic porphyry source at depth. The highest-grade gold bearing oxide zones at the southern end of the Dark Horse Mane are located proximal to the residual quartz lithocaps and hosted within tuffaceous to porphyritic volcanoclastic units.

[1] *Erdene Resource Development Corp., 2022,* https://erdene.com/site/assets/files/4328/epr_en.pdf

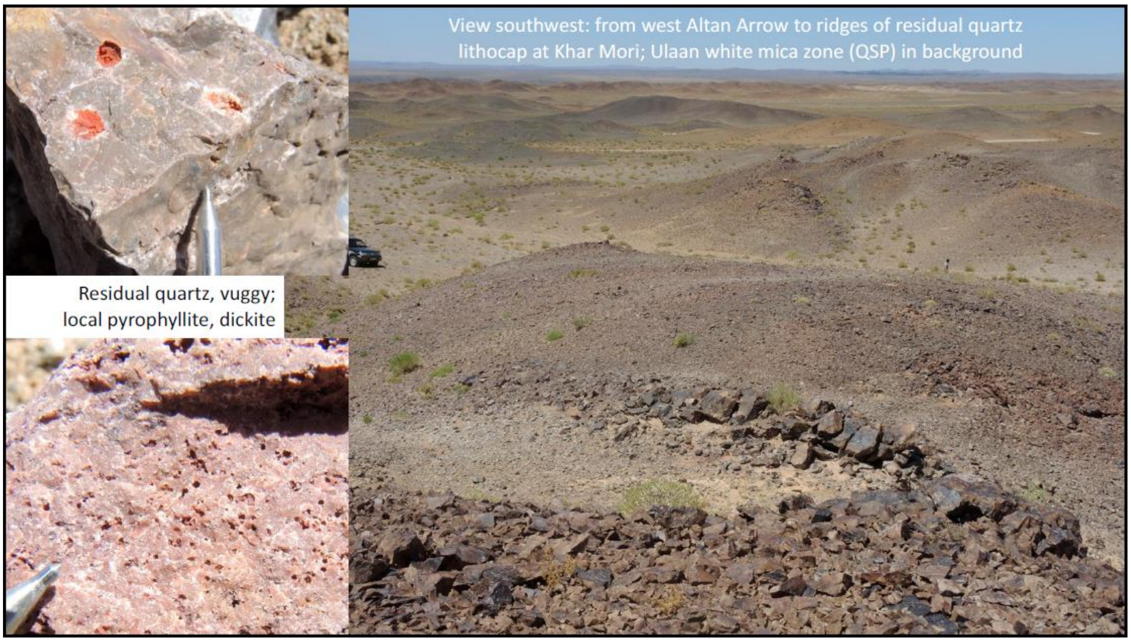


Figure 7-17 Lithocap at Dark Horse; Ulaan white mica zone (QSP) in background (Erdene, 2022) (Source MacDonald 2023)

Source: https://erdene.com/site/assets/files/4344/khundii.pdf

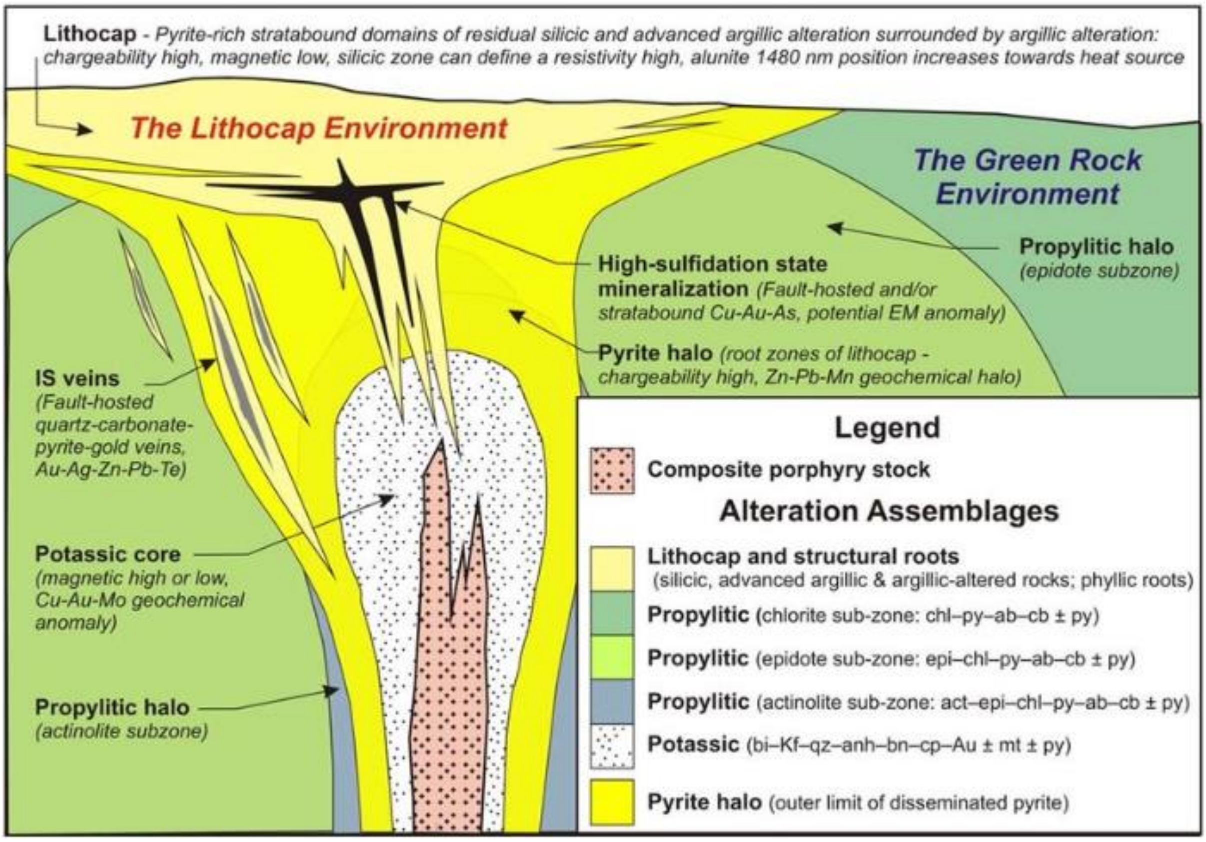


Figure 7-18 Schematic Illustration of Alteration Zoning and Overprinting Relationships in a Porphyry System (Cooke et al. 2017) (Source MacDonald 2023)

Reference: Cooke, David & White, Noel & Zhang, Le-Jun & Chang, Zhaoshan & Chen, Huayong. (2017). Lithocaps – characteristics, origins and significance for porphyry and epithermal exploration.

The field and petrographic evidence for an early high-temperature event of K-feldspar-biotite-quartz alteration, and chalcopyrite encapsulated in quartz, as well as patches of lithocap-style alteration was overprinted by quartz-illite alteration associated with epithermal Au mineralization. Regardless the similarities in mineralization and alteration styles, significant differences were identified which represent the different mineralization environment in Dark Horse:

1. Sulphide minerals are present in low concentrations (mostly trace, <1 vol%) in most of the Bayan Khundii deposit; hypogene Fe-sulphide minerals (pyrite and arsenopyrite) have been replaced by goethite and jarosite. By contrast, there are 1-2 vol% Fe-sulphide minerals (pyrite and arsenopyrite), locally up to 20% combined sulphide minerals at Dark Horse.
2. At Bayan Khundii, Au occurs as electrum, with minor high fineness supergene Au, whereas Au is associated with, and presumably within the mineral structure of arsenopyrite at Dark Horse.
3. Average concentrations of As, Cu, Sb and Mo from drill core samples (with >0.3 g/t Au) are higher at Dark Horse; average As concentration is 30x higher (i.e., 1,700 for Dark Horse vs. 65 ppm for Bayan Khundii), and Cu is 5x higher (89 vs. 16 ppm); Sb (38 vs. 16 ppm) and Mo (12 vs. 5 ppm) are both twice as high at Dark Horse.
4. Dark Horse has well-developed structurally controlled supergene oxide zones, as defined by the presence of abundant Fe-oxyhydroxide minerals (up to 15 wt% Fe_2O_3), which exceeds the Fe content of tuffs and andesite from the Ulziitkhar Formation (generally 5.5 to 7.5 wt% Fe_2O_3); Au of high fineness is encased by supergene oxidation products of arsenopyrite within the supergene zone. By contrast, Bayan Khundii lacks a well-developed supergene oxide zone.

The presence of sulphide minerals is related to the lithocap and the presence of supergene oxide zone is the result of leaching of sulphide minerals from surface by meteoric water circulation along the mineral vein. Both of them are evidence to subsurface mineralization at the hydrothermal conduit at Dark Horse which is related to porphyry mineralization at depth.

8. Deposit Type

The BK and DH Mane gold deposits and the Ulaan Southeast gold occurrence, although identified as separate mineralization, as they were discovered at different times, all three may be part of a single epithermal system based on their proximity, inclusion within a contiguous white mica alteration zone, and generally similar mineralization features; they are also related to the same structural trends.

The BK gold deposit is interpreted as a low-sulphidation epithermal deposit hosted within a corridor of en-echelon extensional faults. Dark Horse Mane shares many features with the BK gold deposit, including field and petrographic evidence for an early high-temperature event of K-feldspar-biotite-quartz alteration, and chalcopyrite encapsulated in quartz, as well as patches of lithocap-style alteration. This early porphyry-like assemblage was overprinted by quartz-illite alteration associated with epithermal Au mineralization.

The higher As and Sb contents in the Dark Horse project area suggest that it may represent a shallower erosion level than at Bayan Khundii. Recent drilling intersected a shallow (<60 m depth) oxide zone with high-grade Au mineralization at Dark Horse (including a 5 m interval averaging 123.5 g/t Au), which lies above a deeper sulfide-rich zone (of pyrite, arsenopyrite and arsenian pyrite), hosted by silicified and illite-altered lapilli andesite tuffs and volcanoclastic units. The presence of oxidation zone in Dark Horse is evidence to the near surface mineralization environment where leached sulphide minerals from surface were oxidized in the supergene process.

The differences of mineralization styles of Bayan Khundii and Dark Horse deposits are described as follows.

8.1. Epithermal Au-Ag Deposits

8.1.1. Low Sulphidation Deposit Formation

Epithermal deposits are characterized as forming within subduction-related arc settings, post-collisional orogenic belts, or back-arc settings (Wang et al, 2019), and at depths of less than 1.5 km. Epithermal deposits can typically be classified as either high or low sulphidation style based upon their proximity to an intrusive heat source, and the interaction from meteoric vs. magmatic fluids (Figure 8-1). High sulphidation deposits form within closer proximity to an intrusive body where they are subjected to increased magmatic fluid interaction; low sulphidation deposits occur more distal to the intrusive body and contain increased influence from meteoric fluids. Regardless of their classification, both deposit types require a sufficient heat source such as a magma chamber to promote the generation and circulation of mineralized magmatic or meteoric fluids.

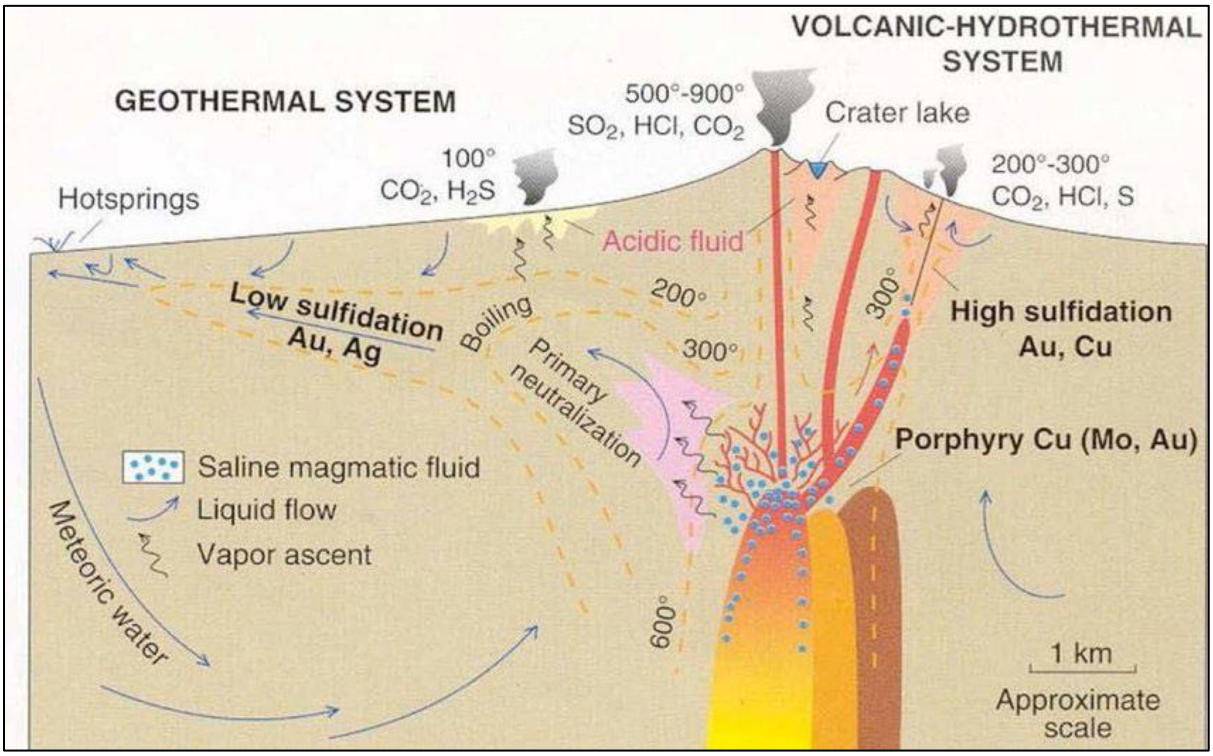


Figure 8-1 Low and High Sulphidation Epithermal Model (Source MacDonald 2023)

In the case of a low sulphidation deposit, reduced, near neutral pH fluids are formed from the interaction of magmatic fluids along with deeply circulating meteoric groundwater. As these fluids rise, boiling occurs at approximately 300 m below the topographic surface which stimulates the precipitation of the gold from the fluids. This boiling and rapid cooling of the fluids results in the deposition of fine-grained gold along with the formation of unique mineralogical textures.

Several features support a low sulphidation model for the Bayan Khundii mineralization, including: the presence of quartz-adularia-sericite (illite) veins and adularia alteration zones in gold mineralized zones; the low Ag:Au values (0.1 to 5, avg. ~1) local colloform bands of chalcedony (often with finely disseminated gold), bladed calcite (now pseudomorphed by quartz) textures that indicate boiling; the generally low concentrations of base metals, widespread intense illite-quartz alteration zones; the ubiquitous presence of hypogene hematite as fractures, veins and breccias; and the presence of comb-textured quartz veins and chalcedony, albeit minor in abundance.

8.2. Supergene Enrichment

The comparatively high concentrations of sulphide minerals (1-2 vol% Fe-sulphide minerals, pyrite and arsenopyrite), locally up to 20% combined sulphide minerals as well as the presence of vuggy quartz lithocaps suggest a near surface mineralization environment in Dark Horse. High sulphidation state is of typical in lithocap environment (Figure 8-2) and the presence of well-developed structurally controlled supergene oxide zones in Dark Horse is evidence to a subsurface environment where supergene process took place (Figure 8-3).

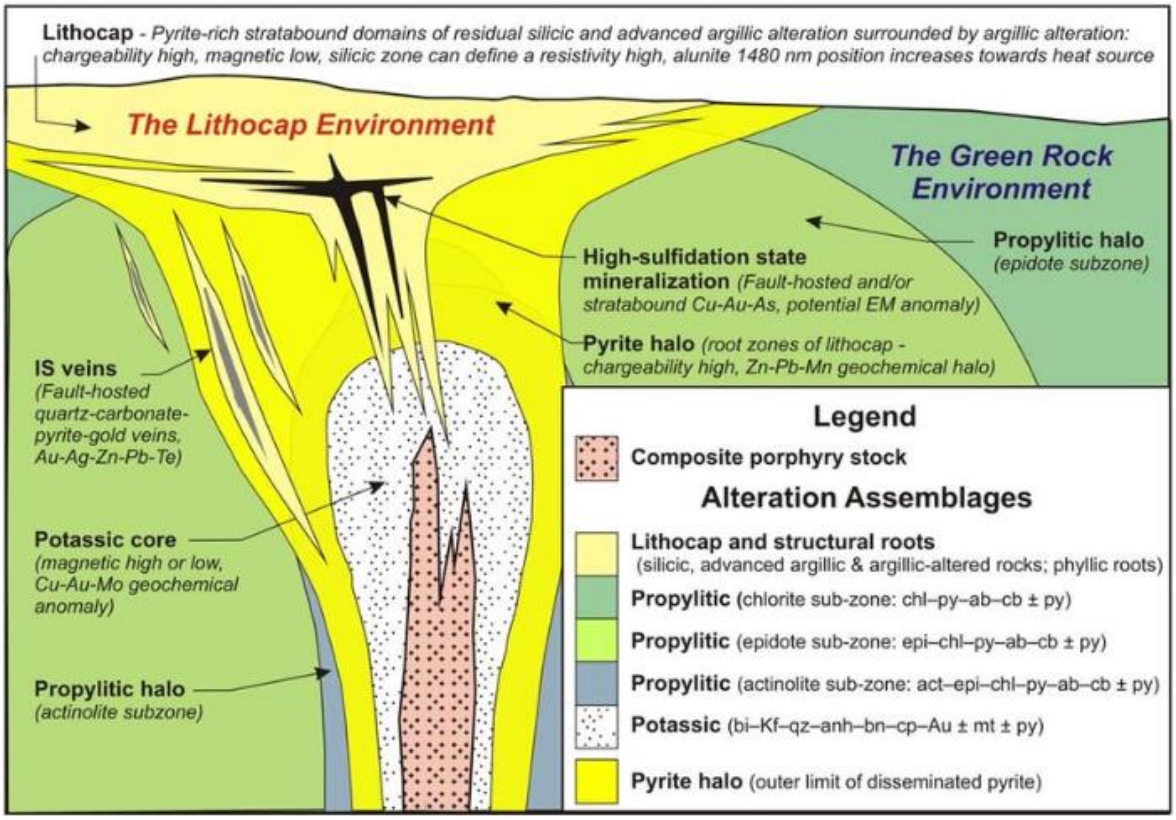


Figure 8-2 Schematic illustration of alteration zoning and overprinting relationships in a porphyry system (Cooke et al. 2017) (Source MacDonald 2023)

The supergene process occurs relatively near the surface where meteoric water circulation react with near surface sulphide minerals involving oxidation and chemical weathering. The presence of abundant Fe-oxyhydroxide minerals (up to 15 wt% Fe_2O_3) in the well-developed structurally controlled supergene oxide zones in Dark Horse is the result of supergene enrichment; Au of high fineness is also observed encased by supergene oxidation products of arsenopyrite within the supergene zone.

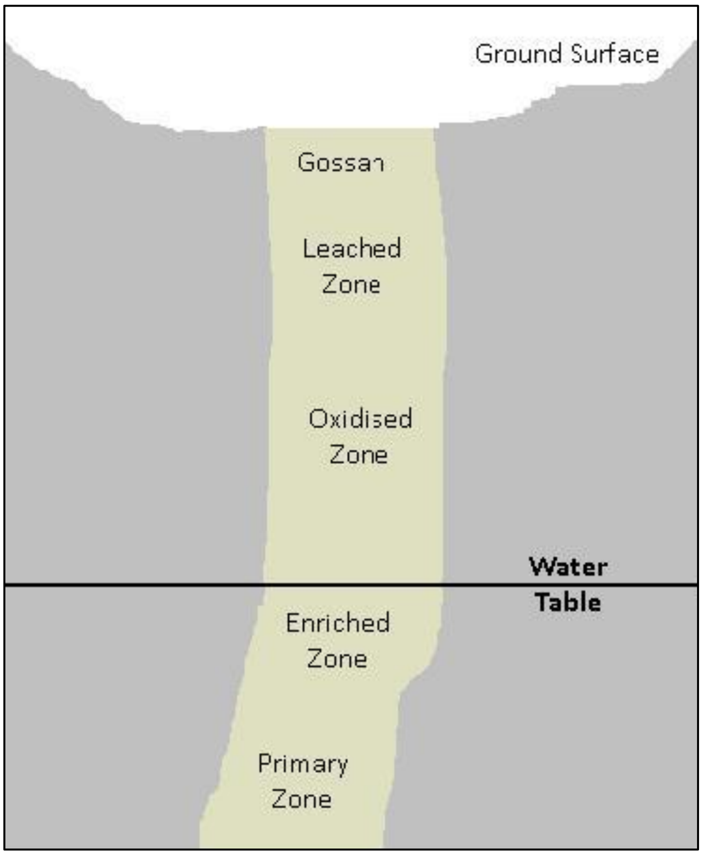


Figure 8-3 Schematic diagram of supergene process in idealized mineral vein (Wikipedia[2]) (Source MacDonald 2023)

[2] *Wikipedia, https://en.wikipedia.org/wiki/Supergene_%28geology%29*

9. Exploration

Erdene acquired the Khundii exploration license in 2010 and initial exploration included property-wide geological mapping, soil sampling and a magnetic survey (2012) while more detailed exploration, including detailed geological mapping, rock chip sampling and trenching was initially focused on the central part of the license on a project referred to as Altan Arrow (Figure 6-1), now part of the Greater Dark Horse prospect area.

In early 2015, Erdene geologists identified, through rock chip sampling, new high-grade low sulphidation epithermal gold mineralization, associated with a zone of intensely altered (quartz-illite) pyroclastic lithologies, about 5 km south of Altan Arrow. This area, referred to as the BK Gold Project, Figure 6-1, was the focus of a detailed exploration program carried out in 2015-2022 that culminated in the identification of the BK gold deposit as presented in the report.

Erdene discovered the Dark Horse Mane deposit, located 2.4 kilometres north of the BK gold deposit, when initial drilling, reported in early 2021, returned 5.97 g/t gold over 45 metres, beginning 10 metres downhole (AAD-58). The Dark Horse Mane epithermal mineralization is related to a north-south trending, linear structural corridor which intersects deep seated northeast trending transform faults, believed to be a conduit for primary mineralizing fluids. The mineralization at Dark Horse Mane includes a shallow oxide zone, begins at surface, hosting supergene enriched gold zones with values up to 195 g/t over 1 metre and ranging in thickness from 20 to 60 metres vertical depth with locally deeper oxidation along fractures. A detailed exploration program was carried out in the greater Dark Horse prospect area between 2020 – 2023.

The following sections detail the exploration work completed to date on the Khundii mining license.

9.1. Exploration Approach

The area of the Khundii license, together with the Altan Nar license area, was first identified as an area of interest following a regional scale desk-top and field-based stream sediment and prospecting program carried out by Erdene in 2009 and 2010.

Following acquisition of the license in 2010, exploration work was focused on the Altan Arrow area in the north central part of the current license area that identified strongly anomalous base and precious metal mineralization associated with a NE trending structure (Altan Arrow fault).

In 2015, through a program of geological mapping and rock chip sampling, Erdene discovered the high-grade gold mineralization associated with the BK gold deposit, in the Striker and Gold Hill area, where the deposit outcrops on surface. This resulted in a significant follow-up exploration drilling program in 2016-2017 (>37,000 m of drilling), culminating in the discovery of the BK Gold Deposit.

In 2020, follow-up exploration on geochemical anomalies south of Altan Arrow, resulting in the discovery of the Dark Horse Mane deposit, with high-grade gold results from AAD-58 first reported in early 2021. Following drilling in 2021-22 (~ 13,500 m) resulted in the delineation of the Dark Horse Mane Gold Deposit. The maiden mineral resource estimate is provided in Section 14.2 – Mineral Resource Estimate – Dark Horse Mane.

Erdene's approach to exploration typically consists of a staged, measured approach, that emphasizes a field-based style where ongoing exploration is driven by results. Geological mapping, geochemical sampling, and geophysical surveys (magnetic, induced polarization (IP), gravity, etc.) have been carried out with increasing refinement (closer spacing, generally) over areas of interest, such as the area of the BK Gold Deposit and the greater Dark Horse prospect/ Dark Horse Mane deposit area.

There remains significant upside potential for the discovery of additional gold deposit on the Khundii mining license and the adjacent Ulaan exploration license. Erdene is continuing to carry out exploration at Bayan Khundii to expand the mineral resources for the Project.

At appropriate stages of exploration, Erdene has also engaged with experts in the fields of structural geology, geophysical modelling, alteration mapping, mineralogy, age dating, deposit models, metallurgy, etc. These experts have all contributed to the refinement of a geological model for the Bayan Khundii Project. For additional details, please refer to Section 7 - Geology Setting and Mineralization and Section 8 – Deposit Type.

The following sections provide an overview of the various aspects of the exploration programs that have been completed on the Khundii mining license.

9.2. Geological Mapping

A detailed geological mapping program has been completed over much of the Khundii Mining License by Erdene resulting in the greater understanding of the distribution of lithological units and zone of alteration across the area of the Khundii license and how these related to the gold mineralization at Bayan Khundii. Refer also to Section 7.3 - Geology of the Khundii License District.

9.3. Rock Geochemical Surveys

In conjunction with geological mapping a program of rock chip (from outcrop) and rock grab (from sub-crop) sampling is carried out in prospective area, typically from quartz veins and altered host rock. No grid-based rock geochemical surveys were completed. All samples were analyzed for gold (fire assay) along with a 32-element suite (ICP). Results ranged from below detection limit to 4,380 g/t Au. The highest-grade gold mineralization identified to date is located at Gold Hill within the BK Gold Deposit. Figure 9-1 shows the distribution of gold grades from rock sample collected on the Khundii mining license.

9.4. Soil Geochemical Sampling

A series of progressively more detailed and target specific grid-based soil sampling program have been carried out across the entire area on the Khundii license. Most areas of interest have been sampled on a 50 m grid with select areas samples on a 25 m grid. Approximately 7,600 samples have been taken across the Khundii license. Soil samples are assayed for gold (fire assay) and a 32-element suite (ICP). Soil geochemistry is used in conjunction with rock chip geochemistry, geological mapping, and geophysical data sets, to identify and prioritize exploration targets and drilling programs.

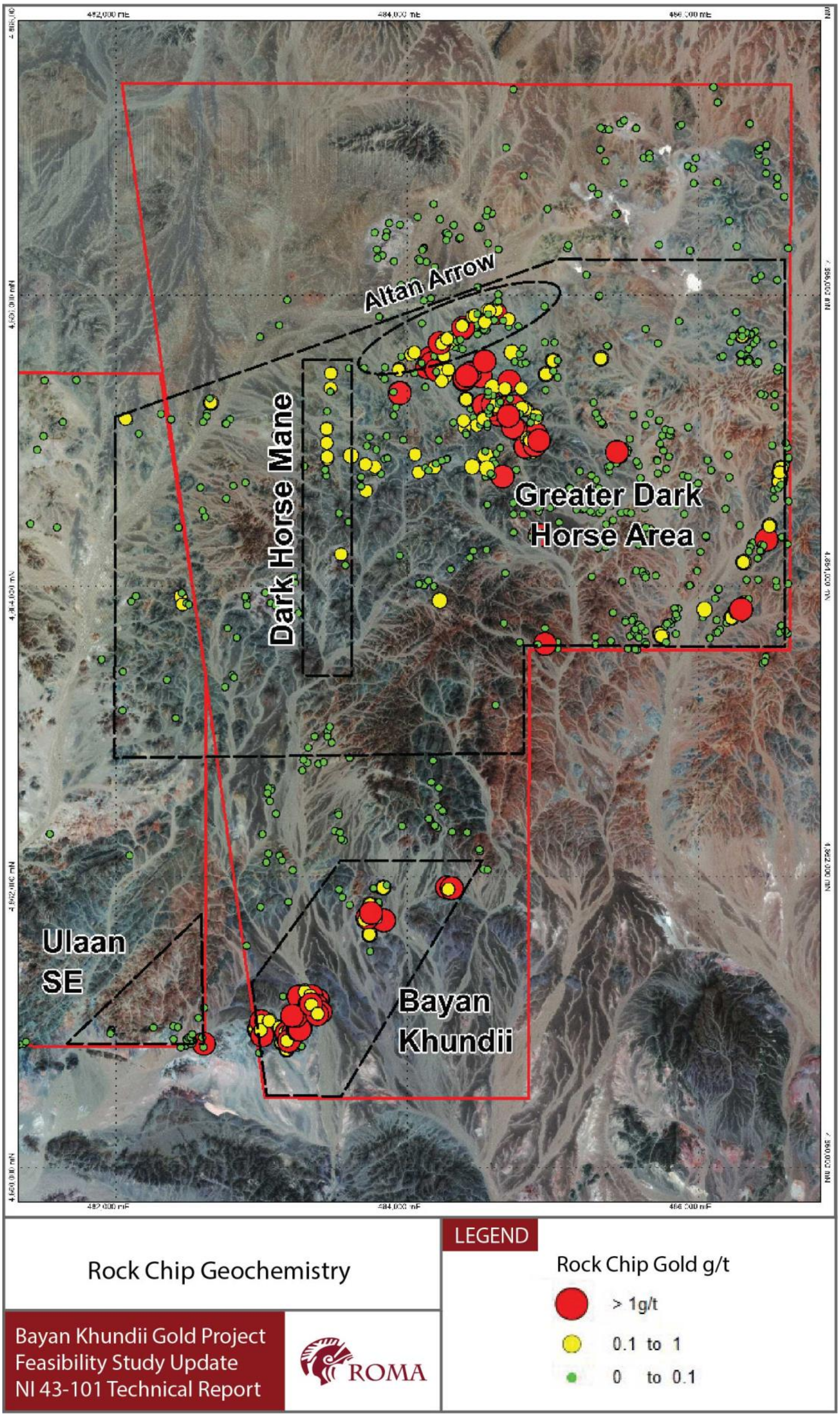


Figure 9-1 Rock Chip Geochemistry (Source – ROMA 2023)

Figure 9-2 shows the distribution of gold in soil across the Khundii license area (>4 ppb Au). Gold assay results ranged from below detection limit (1 ppb Au) to a high of 1,570 ppb Au (1.6 g/t). The anomalous gold mainly focused in and around the two areas of exposed, altered, Lower Carboniferous pyroclastic rocks at the BK (southwest) and Greater Dark Horse (northern) prospect areas.

9.5. RC Drilling Program

In 2022, Erdene completed a systematic reverse circulation (RC) drill program consisting of 278 holes, averaging eight meters depth in the Greater Dark Horse area. The RC drilling program was designed to test areas where recent sediments and regolith material covers bedrock, potentially masking oxide gold mineralization, similar to the high-grade gold mineralization present at the Dark Horse Mane. The RC program identified four new zones of strongly anomalous gold mineralization (up to 0.6 g/t gold) hosted within altered and tuffaceous material similar to the geology of the Dark Horse Mane discovery. The RC results were incorporated into targeting for followed up diamond drilling designed to investigate near surface oxide gold potential in the Greater Dark Horse area.

9.6. Geophysical Surveys

Since the acquisition of the Khundii license, Erdene has undertaken a series of phased geophysical surveys between 2012 and 2023, including:

- Ground Magnetic survey
  - 2012 – 100 m line spacing over the entire Khundii license area
  - 2016 - 20 m spaced lines over an area of 2.05 km by 1.8 km at BK
  - 2017 – 25 m spaced lines over the northern portion of the Khundii license
  - 2018 – detailed 10 m line spacing over the core of the Dark Horse prospect
  - 2018 – 100 m line spacing over the adjoining Ulaan license area
- IP dipole-dipole survey
  - 2015-2016 - 100 m spaced lines along 17 N-S oriented survey lines at BK
  - 2016 - 200-400 m spaced N-S oriented lines over the north part of the Khundii license
  - 2017 - 200 m spaced N-S oriented lines over the greater Dark Horse area
  - 2021 - 200 m spaced E-W oriented lines in the vicinity of the Dark Horse Mane deposit
- IP gradient array survey
  - 2015-2016 - 100 m spaced lines covering a 2 km by 2 km area of the BK prospect
  - 2023 – 100 m spaced lines covering a 9 km^2 area of the Dark Horse prospect area
- Ground Gravity survey
  - 2016, 2018 - 200 m spaced stations covering the entire Khundii and Ulaan license areas

In 2019, and updated in 2021, a compilation of all geophysical data was carried out by Craig Beasley, Wave Geophysics LLC. Beasley reprocessed data from various Mongolian based contractors into a consistent suite of data and map products. Beasley also processed available data to produce 3D products for the magnetic, IP DpDp and gravity data sets. Beasley has also acted as Erdene's quality control reviewing for geophysical program since 2019.

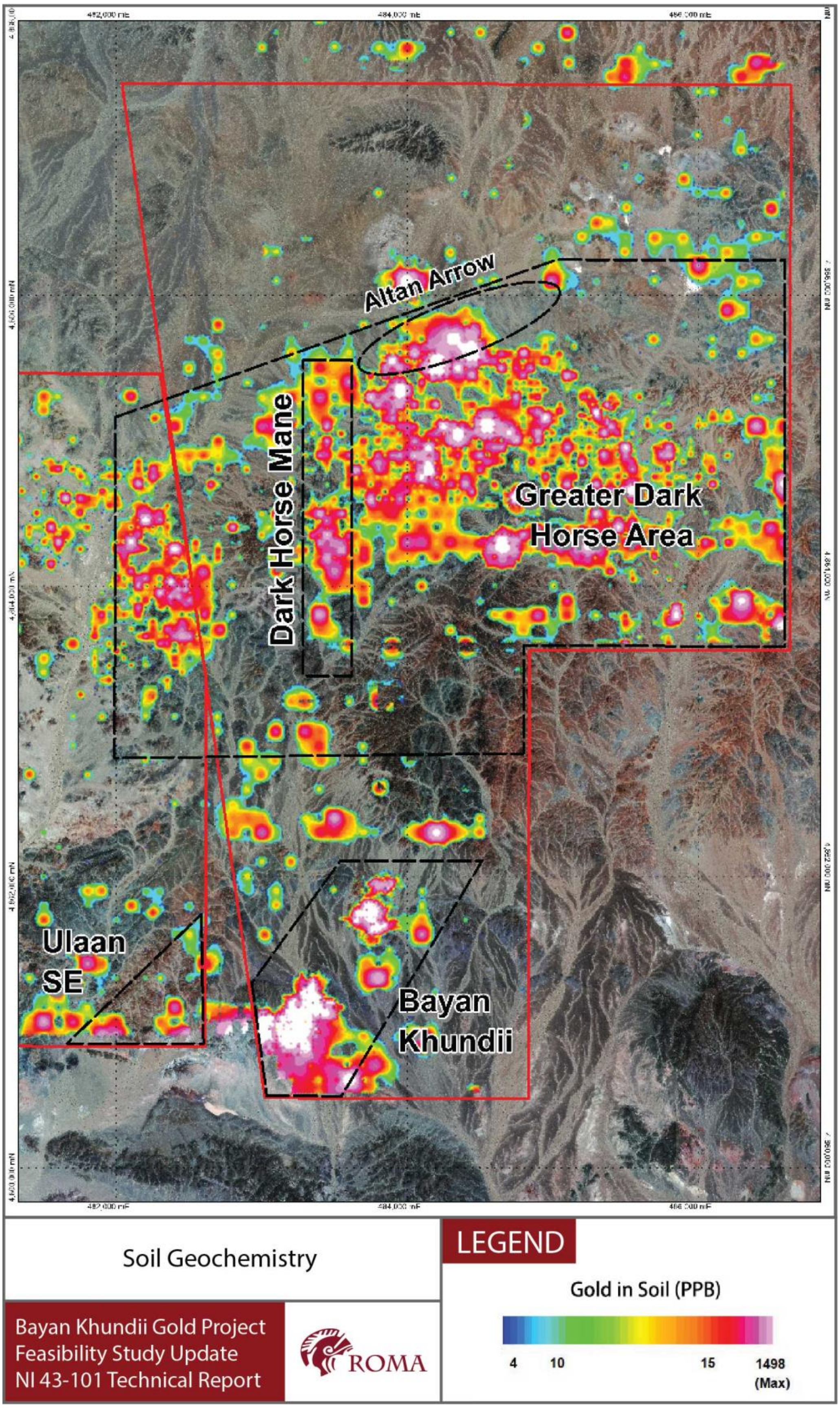


Figure 9-2 Soil Geochemistry (Source – ROMA 2023)

A map showing the various magnetic survey carried out between 2012 and 2018 is provided in Figure 9-3 and a compilation of the RTP magnetic data for the Khundii mining license and neighboring Ulaan exploration license is provided in Figure 9-4.

Figure 9-5 displays the various IP DpDp surveys that have been carried out on the Khundii license and Figure 9-6 show the IP gradient array results for chargeability (left) and resistivity (right), respectively.

The various geophysical data sets, both 2D and 3D products, have proved to be very helpful in helping to interpret the geological data from surface mapping and drill. Areas of greatest interest, associated with known mineralization, including areas of intensely altered (silica-illite), Lower Carboniferous pyroclastic lithologies and structural corridors, all have associated geophysical signature. These signatures are used to help identify similar area with the potential to host the gold mineralization. In so cases, prospective areas are not exposed on surface like at Bayan Khundii where the mineralized unit is overlain by younger, unmineralized Jurassic lithologies. The intensely altered (silica-illite) Devonian pyroclastic lithologies typically have a low magnetic response as well as a positive (or high) resistivity response that is interpreted as reflecting the intense silicification of host volcanic rocks. Using the IP dipole-dipole profiles and 3D model, Erdene geologist were able to interpret the unconformity surface between the Jurassic lithologies and the quartz-illite altered Lower Carboniferous Ulziithar Formation below the unconformity, an important factor in understanding the extent of the altered units, and ultimately gold mineralization, under cover.

The recently completed IP Gradient Array survey at Dark Horse shows major NE trend of structures, as well as a strong north-south trends, supporting the structural interpretation of extension zones opening along a set of NE trending major strike-slip faults, hosting north-south trends of mineralization identified at Dark Horse Mane. A number of parallel zones with similar geophysical signatures to known mineralization at Dark Horse Mane have been identified. These areas are under tested or untested by drilling. These new geophysical anomalies represent strong new exploration targets. Together with other geological and geochemical data, all zones of gradient array IP anomalism will be assessed and prioritized for future drilling.

9.7. Trenching Program

Since acquiring the exploration license in 2009, trenching program have been carried out over areas where soil and/or rock chip sampling has identified gold, and related element, anomalies. Trenching has been completed at Altan Arrow, Bayan Khundii and the greater Dark Horse prospect area. The object of any trenching program is to better understand the associated geology, alteration, mineralization and orientation of mineralized zone, which aids in designing follow-up drilling programs. For example, in 2015 and 2016 a series of 22 shallow trenches (<2 m), totaling 1,060 m and ranging in length from 8 m to 94 m were excavated in the area of the BK Gold Deposit. Prior to the extensive drilling program, trenching was successful in demonstrating wide zones of lower grade gold mineralization in the wall rock and confirming the intensity of mineralization in narrow, orientation of high-grade veins, as well as demonstrating continuity over a wide area that typifies the Bayan Khundii gold deposit. All trenches are channel sampled (1 to 2m intervals), mapped and photographed. Samples are sent to SGS for analysis (gold plus 32 element) and reference samples are retained for further review. All trenches are back-filled once the mapping and sampling is completed and the area of the trenches is reclaimed to its original state.

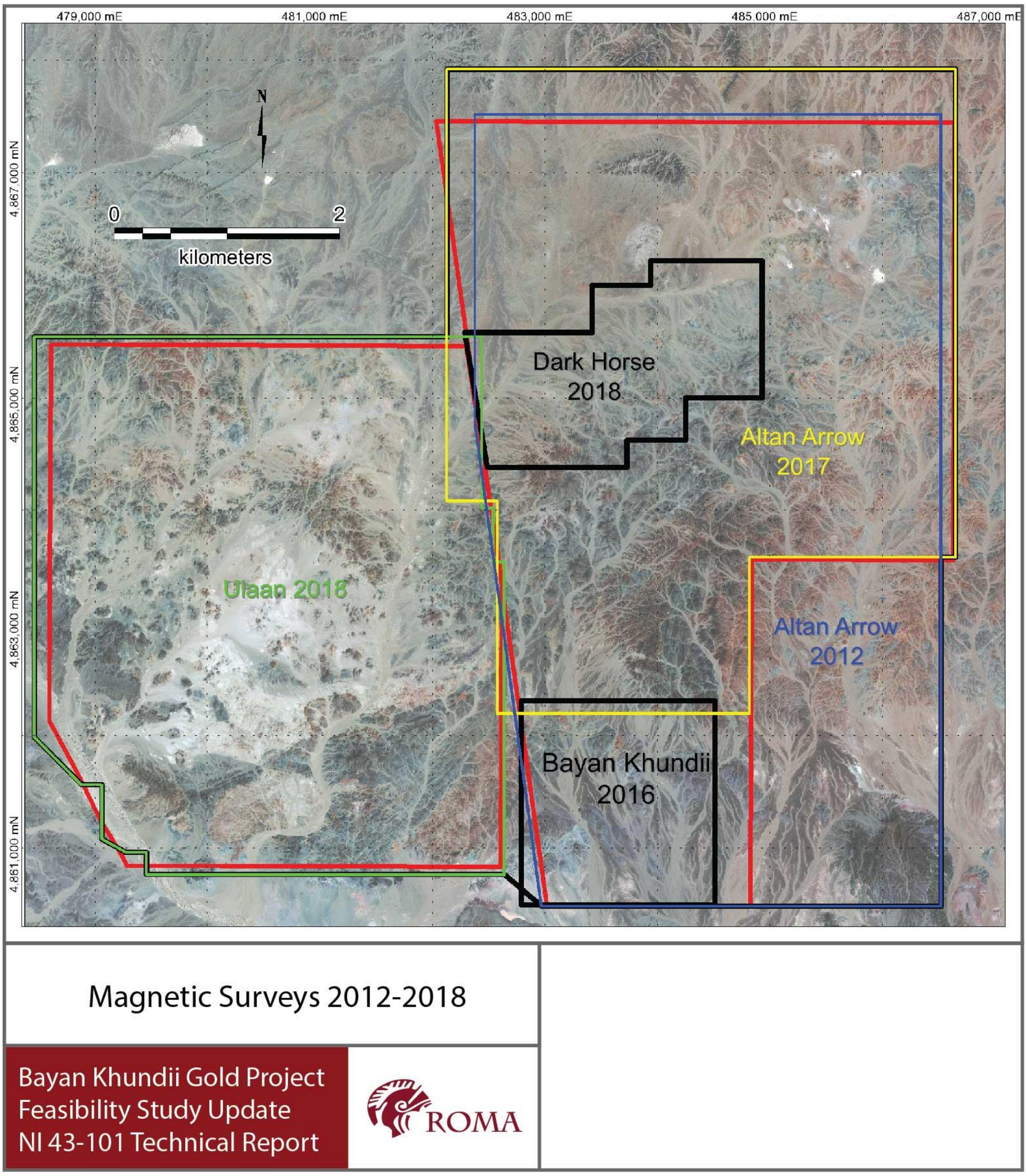


Figure 9-3 Compilation of Magnetic Surveys 2012-2018 – Areas of Interest (Source – ROMA 2023)

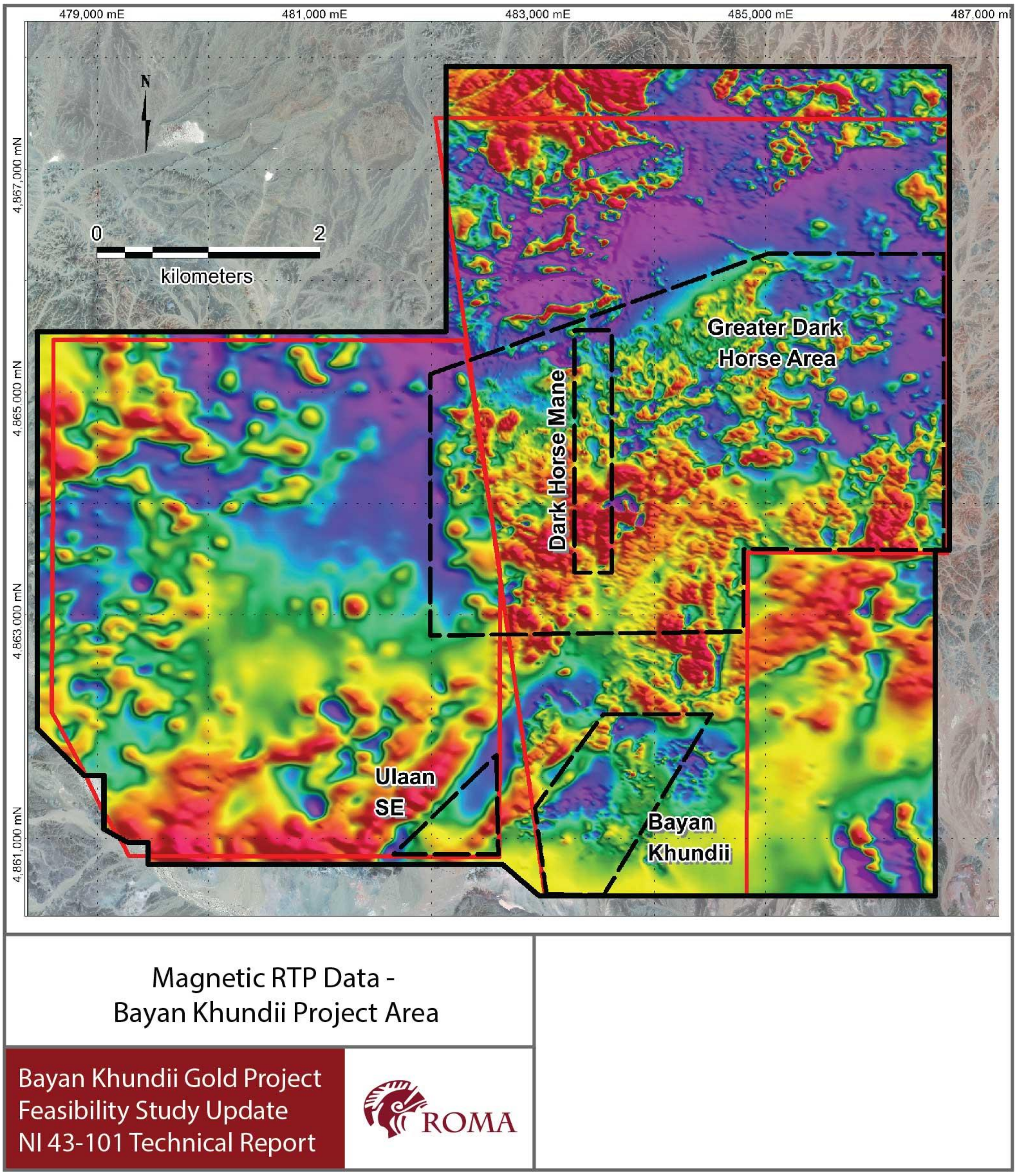


Figure 9-4 Magnetic RTP Data – Bayan Khundii Project Area (Khundii and Ulaan licenses) (Source - ROMA 2023)

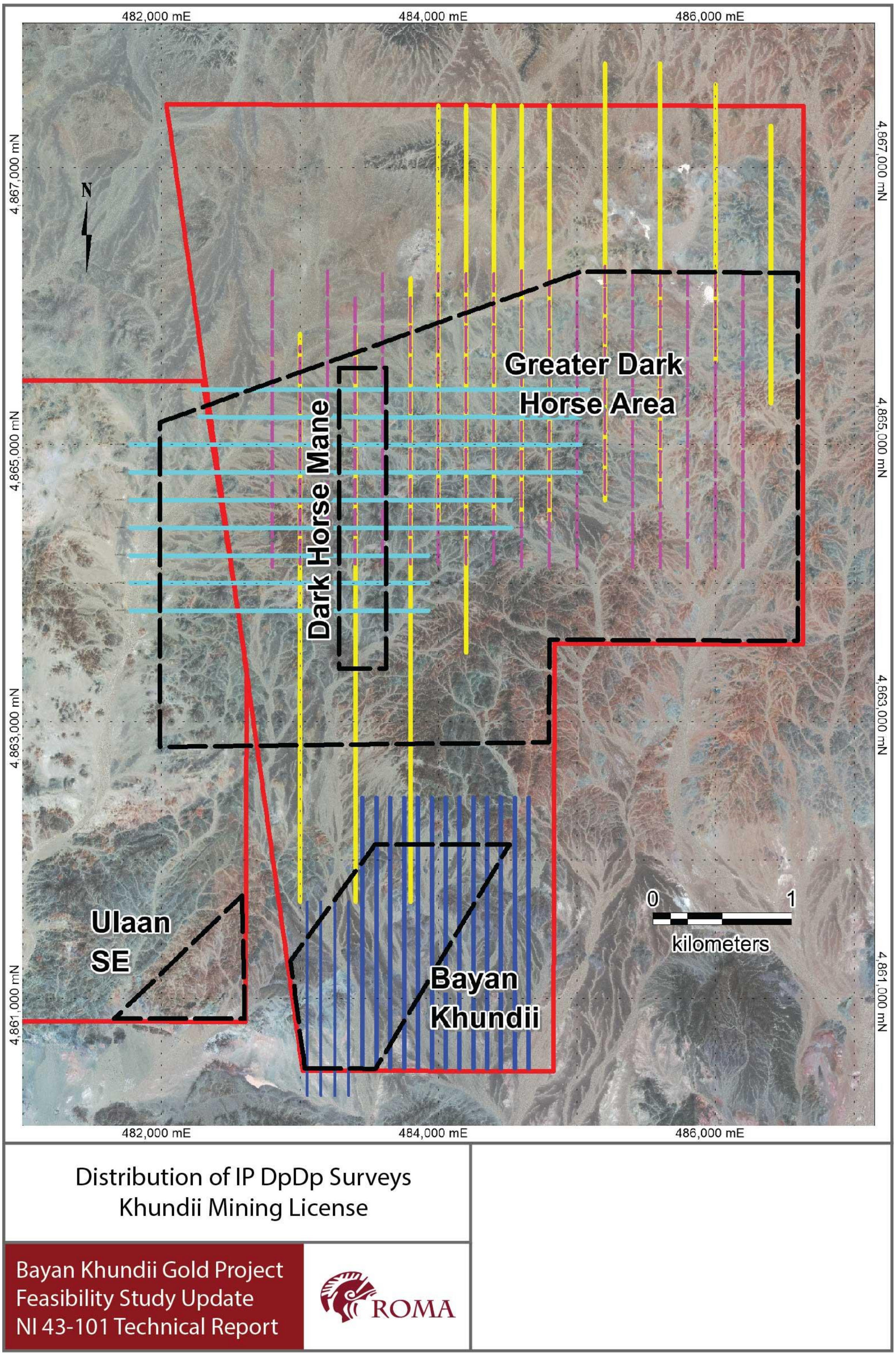


Figure 9-5 Distribution of IP DpDp Surveys, Khundii Mining License (Source - ROMA 2023)

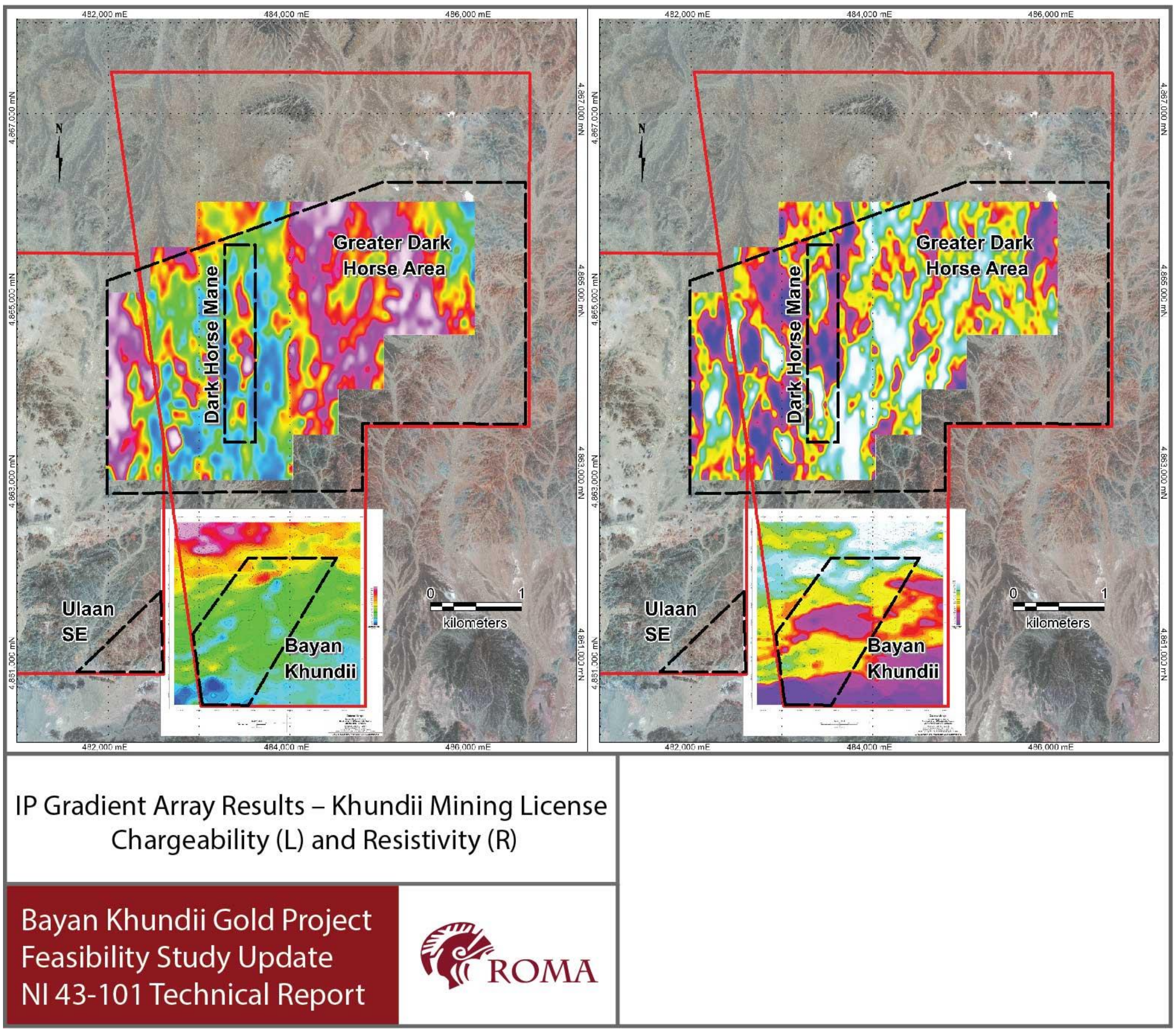


Figure 9-6 IP Gradient Array Results – Khundii Mining License, chargeability (Left) and Resistivity (Right) (Source - ROMA 2023)

10. Drilling

10.1. Bayan Khundii Drilling

The following is a summary of the drilling campaigns carried out on the southern portion of the Khundii Mining License that have culminated in the discovery of the BK Gold Deposit and mineral resource estimate. The drilling was carried out in increasingly more detail, starting in the Striker / Gold Hill area and progressing, undercover, to identify mineralization at Midfield and North Midfield, as well as West Striker.

All drilling at BK was carried out by an independent drilling contractor, Falcon Drilling company. The drill program was executed with a track-mounted wireline Long Year 44 drill rig. The initial 15 holes drilled in 2015 as well as the most recent 25 holes drilled in 2022 were PQ size hole with all remaining holes drilled as HQ size holes. The PQ holes were principally drilled to obtain larger sample sizes. All drill hole collars were surveyed by a professional certified Mongolian surveying company, using a base station and reported in UTM coordinate system using the WGS84 datum Zone N47.

Under the direction of Erdene's senior technical staff, drilling campaigns have been carried out almost yearly between 2015 and 2022 on the BK Gold deposit (See Table 10-1). A total of 375 exploration and resource delineation drill holes (56,249 m) were completed. The majority of these holes were used to determine the Bayan Khundii resource estimate with an effective date of April 2023, as reported in Section 14 - Mineral Resource Estimate.

Drill holes were generally collared to drilled perpendicular to mineralization at a range of azimuths and dips depending on the orientations of the observed mineralization, with 030 (NE) orientation being the most dominant drill direction. Drilling at the deposit extends to a vertical depth of approximately 375 meters and averages 175 meters for 375 holes. Drill hole spacing over the deposit is variable generally ranging from 10m 20m in the main body of the resource area and along the margins up to 40m.

All holes were downhole surveyed. Most holes were surveyed at a depth of 13 meters, then every 50 meters or at the end of the hole. The vast majority of the holes had little dip movement and minor degrees of azimuth movement in the surveyed holes. The survey methods are considered to be appropriate and results acceptable.

Core recovery is good, with average recovery in mineralization and waste zones greater than 95%. Mineralization is mostly hosted within residual silica, breccia and stockwork veining. Core recovery assessment indicates no evidence of recovery-related grade bias in high-grade zones.

During drilling, core was placed in core boxes and a marker showing the depth in the hole was placed in the core box at the end of each drill run. All drill cores were photographed and logged by Erdene geologists prior to sampling. Erdene's logging system records lithology, mineralogy, mineralization, alteration, structure, colour and other primary features. Standard sampling protocol involved the halving of all drill core using a diamond core saw and sampling over either 1 m intervals (in clearly mineralized sections) or 2-3 m intervals (elsewhere). Half of the core was placed in sealed sample bags and dispatched to SGS's Ulaanbaatar laboratory for analysis and the other half remained on-site in core boxes. From September 2016, (BKD-46) an oriented core system was used (Reflex Act3 instrument), allowing geologists to measure and record the true orientation of veins, bedding and structural features, including faults and joints.

A description of drilling completed is shown in Table 10-1.

Table 10-1 Bayan Khundii Diamond Drilling Summary

Period	Drilling Method	Number of Holes	Meters
2015	Diamond Drilling	15	696
2016		81	11,809
2017		138	25,638
2018		24	4,831
2019		12	2,547
2020		80	10,116
2022		25	612
Drilling Total		**375**	**56,249**

The resource estimate reported in Section 14 – Mineral Resource Estimate was based on data from the 375 BK drill holes. Some of the 375 BK drill holes lie outside of the defined limits of the BK mineral resource. These areas remain open for additional discoveries to add to the current BK Gold Deposit mineral resources.

10.2. Peripheral Zones

In addition to the currently defined mineral resource at Bayan Khundii, several areas peripheral to the deposit have the potential to expand the current resource based on preliminary drilling results. Details of results from two of these area, South Bayan Khundii and the Northeast Zone, are provided below.

10.2.1. South Bayan Khundii

Hole BKD-266 was drilled south of the defined resource in 2019 to test for down dip extensions of mineralization to the south of the deposit. The hole intersected a broad zone of moderate to strong silica-illite and magnetite altered volcanics with increased quartz vein density at a depth of 238 m. A 4 m wide quartz vein was intersected in the zone with associated chlorite-magnetite alteration and visible gold at the upper contact. Gold values up to 51.9 g/t over 1 m were returned from this zone. Follow-up work, south of this new discovery, indicated the altered host unit could be traced by geophysics over 500 m to the south under cover and appeared to be coming closer to surface. Subsequent drilling in Q3 2019, (BKD-268) intersected a 100 m thick sequence of altered volcanic tuff, similar to the Bayan Khundii deposit, at approximately 100 m depth, with gold-bearing tuff units intersected up to 1 m of 2.45 g/t gold. This discovery opens up a large area south of the deposit for additional exploration.

10.2.2. Northeast Zone

The Company has completed 11 holes in the Northeast Zone over a 600 m by 400 m area. Hole BKD-122, on the southern boundary of the Northeast Zone (500 m northeast of Midfield), returned 14 m of 0.75 g/t Au from 1 m, including 2 m of 4.4 g/t Au from 11-13 m, and 21 m of 0.72 g/t Au at 65-86 m. Two rock chip samples collected 600 m northeast of hole BKD-122 returned gold assay values of 6.9 g/t and 0.4 g/t Au.

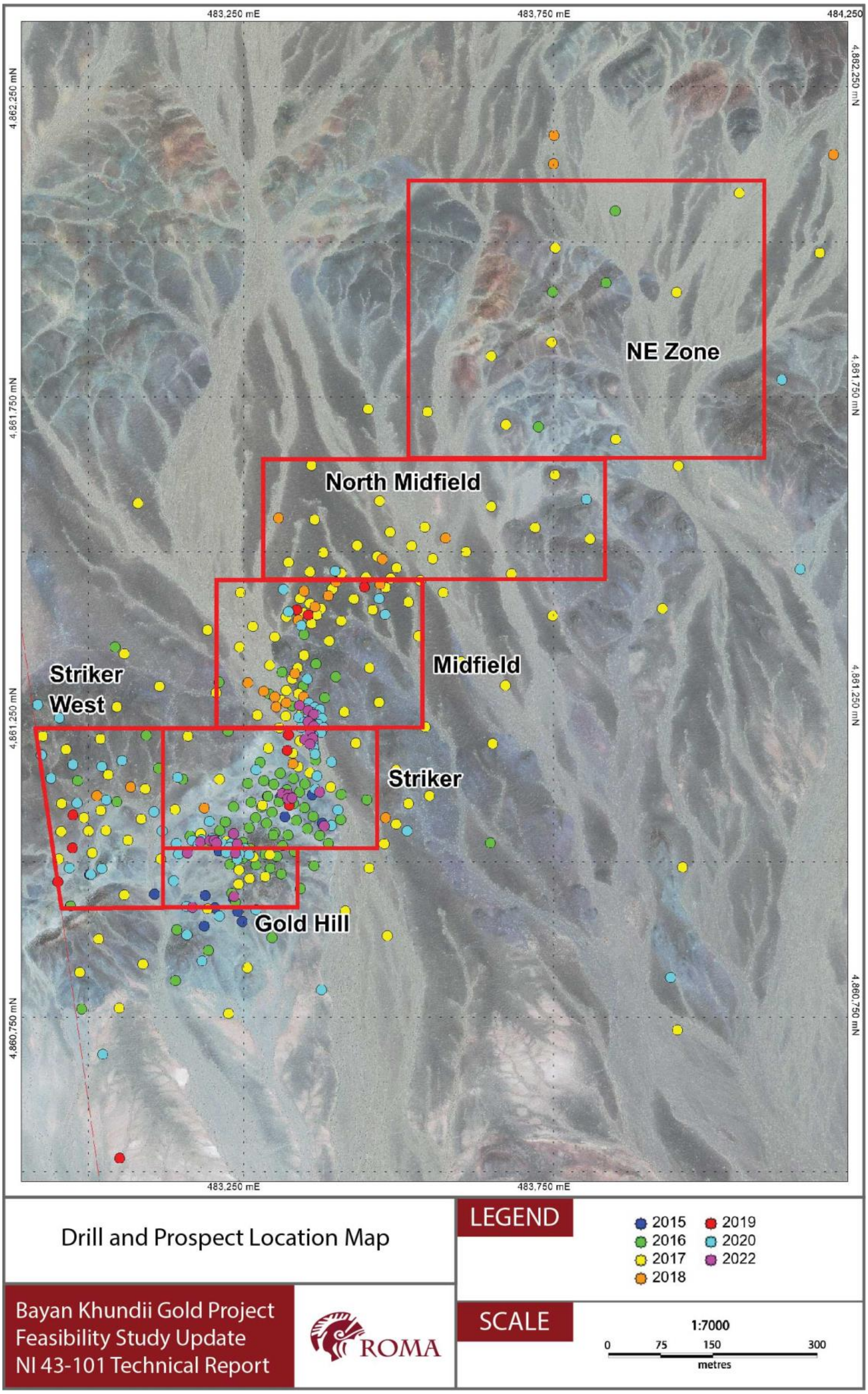


Figure 10-1 Bayan Khundii Drill and Prospect Location Map (Source - ROMA 2023)

10.3. Dark Horse Mane Drilling

Initial test drilling at Dark Horse commenced in early 2016, and systematic exploration drilling followed through 2020 to 2022. By the end of 2022, 204 diamond drill holes were drilled for 23,080 meters, and five trenches were excavated over 230 m. All drilling on the Dark Horse Project was carried out by an independent drilling contractor, Falcon Drilling company. The drill program was executed with a track-mounted wireline Long Year 44 drill rig. Drill holes were collared with PQ (85 mm) core size, reducing to HQ (63.5 mm) core size at variable depths.

A summary of the drilling data in the database is shown in Table 10-1

Table 10-1, hole locations are shown in Figure 10-2, and significant intersections are tabulated in Table 10-2.

Table 10-2 Drilling Summary

Year	In Project		
	Drilling Method	Drill holes	
		Number	Meters
2016	Diamond	7	590
	Trench	5	230
2017	Diamond	5	850
2018	Diamond	25	3,514
2019	Diamond	2	453
2020	Diamond	25	4,660
2021	Diamond	126	11,608
2022	Diamond	28	2,355
Total		**223**	**24,260**

All drill hole collars were surveyed in UTM coordinate system using the WGS84 datum Zone N47 using a base station.

Drill holes were generally drilled perpendicular to mineralization at a range of azimuths and dips depending on the orientations of the observed mineralization, with east-west orientation being the most dominant drill direction. Drilling at the deposit extends to a vertical depth of approximately 290 meters and averages 110 meters for 218 holes. Drill hole spacing over the deposit is variable. Holes were typically drilled on north-south oriented sections with section spacings approximately 20-30 meters north by 20 meters east and drill hole spacing typically widened toward the margins of the deposit to 80m.

All holes were downhole surveyed. Most holes were surveyed at a depth of 13 meters, then every 25 to 50 meters or at the end of the hole. RPM observed little dip movement and minor degrees of azimuth movement in the surveyed holes. RPM considers the survey methods appropriate and results acceptable.

Core recovery is good, with average recovery in mineralization and waste zones at 99%. Mineralization is mostly hosted within residual silica, breccia and stockwork veining. RPM's core recovery assessment indicates no evidence of recovery-related grade bias in high-grade.

During drilling, core was placed in core boxes and a marker showing the depth in the hole was placed in the core box at the end of each drill run. ERD's logging system records lithology, mineralogy, mineralization, alteration, structure, colour and other primary features. All drill holes were logged and digitally photographed. Logging data from all programs were included in the drilling database.

An oriented core system was used (Reflex Act3 instrument), allowing geologists to measure and record the true orientation of veins, bedding and structural features, including faults and joints.

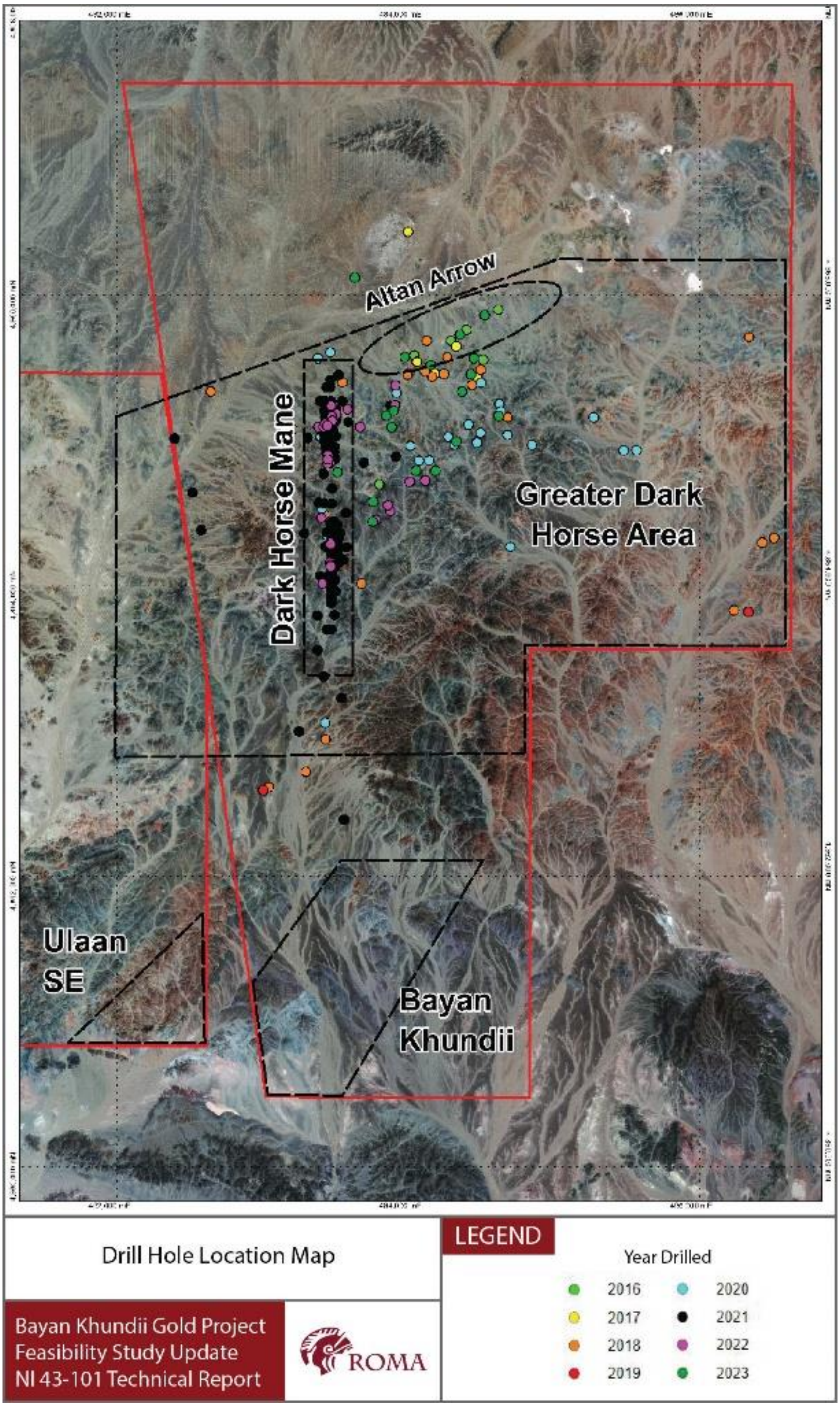


Figure 10-2 Drill Hole Location Map (Source - ROMA 2023)

11. Sample Preparation, Analyses and Security

The details of the sample preparation, analytical methodology and sample security protocols executed by Erdene for soil, rock, trench and drill core sampling from the exploration programs carried out to date on the Bayan Khundii Mining License are included in this section.

11.1. Sample Selection

11.1.1. Soil Samples

Soil samples were taken at regular intervals on a grid varying between 400 m intervals on 400 m spaced lines to down 12.5 m intervals along 50 m spaced lines. Sample locations were determined by hand-held GPS devices with a precision of approximately 3 m in lateral directions. All samples were taken using a consistent sampling methodology which included digging shallow holes (avg. 25 cm) and dry sieving to -2 mm.

11.1.2. Rock Chip Samples

Rock chip and rock grab samples were taken from outcrop /sub-crop, respectively, by Erdene's geologists with locations determined by hand-held GPS devices (±3 m lateral precision). Samples were taken from mineralized and un-mineralized surface rocks that are, as much as possible, representative of the lithological unit identified while in the field. No grid-based rock chip sampling was carried out over the prospect areas.

11.1.3. Trench Samples

All trenches were excavated to bedrock, although zones of intense alteration and deep weathering were encountered and therefore the term 'bedrock' is used loosely. Trench samples were collected at 1 m or 2 m intervals, as determined by the senior project geologist, based on the lithology and mineralization. Samples were chipped from the bottom of the trenches and care was taken to ensure each sample was representative of the entire interval being sampled. Representative hand samples for each interval were also collected for reference.

11.1.4. Drill Core

Drill core was delivered directly from the drill site to Erdene's exploration camp at the end of every shift. All logging and sampling were completed in camp by Erdene geologists. Drill core was logged for geology and RQD, and sample intervals were marked. Core was then photographed before being sawn in half with a core saw after which half-core samples for assay were bagged. Magnetic susceptibly readings were taken for each sample interval. The remaining half-core is securely stored at the Erdene's Bayan Khundii exploration camp.

Sampling of drill core consisted of routine collection of samples at 1 m, 2 m or 3 m intervals (depending on the lithology and style of mineralization) over the entire length of the drill hole, with the exception of more recent drilling where late stage dykes were not sampled. Sample intervals were generally based on meterage, not geological controls or mineralization. However, in the case of early stage or scout drilling programs, samples were sometimes selected based on geological controls to get a better understanding of the distribution of mineralization.

Following the logging and selection of drill core for sampling, a geotechnician took the selected core into the cutting room and cut the marked core in half using a diamond rock saw, such that one half of the core was left in the box as a record. To mitigate the risk of sample bias, the same side of the cut drill core was always placed back in the box. The cutter would then place the other half of the cut core in a polypropylene bag. After the entire sample has been cut, the cutter would then obtain the corresponding sample slip, and place it in the mouth of each bag and subsequently seal the sample bag. The diamond core saw was connected to a hose line which supplied fresh water to the saw, and then discharged the cutting laden water directly into a sump. No water was recirculated during cutting.

11.2. Sample Security

Sample security is performed in accordance with exploration best practices and industry standards. Drill core is taken from the core tube and placed in core boxes at the drill site and brought to the logging and sampling facility at the base camp under the supervision of Erdene personnel. All rock, trench and 2015-2016 drill core samples were organized into batches of 20, while all soil sample and 2017-2022 drill core samples were organized into batches of 30.

Core samples and reference materials are stored in a locked building. Core samples are stored in sealed bags and kept secure until a truck is available to transport samples via Erdene's logistical contractor, Monrud Co. Ltd., to the SGS laboratory in Ulaanbaatar from which point SGS takes responsibility for chain of custody. Drill core is archived at Erdene's core storage area at the project site.

At SGS, all client-submitted material is retained under cover in the secure Ulaanbaatar facility where 24-hour security is maintained. Sample integrity is maintained during the analysis process by laboratory LIMS generated sample labelling throughout the analytical process.

11.3. Sample Preparation

All first assay samples have been prepared and assayed at the Ulaanbaatar laboratory of SGS Mongolia LLC ("SGS"). The laboratory is one of largest commercial laboratories in Mongolia and operated to ISO17025 specifications.

At SGS, all rock samples (drill core, chip and grab) are handled as follows:

- Samples as received are initially sorted and verified against the client Sample Submission Form.
- Samples are air dried at 90°C.
- All samples are crushed to 3.35 mm using a jaw crusher and Boyd crusher in a two-stage process.
- Samples were then split by rotary sample divider to 600-700 g, with reject retained.
- The sample splits are pulverized to 90% passing <75 µm mesh.
- The pulverized samples are mixed and divided manually, with approximately 200 g retained for the client and 300 g retained for laboratory analysis.

At SGS, all soil samples are handled as follows:

- Samples as received are initially sorted and verified against the client Sample Submission Form.
- Samples are air dried at 90°C.
- Whole samples are pulverized to 90% <75 µm.

11.4. Analytical Method

Gold was first analyzed by fire assay with an instrument finish using 30 g aliquots, whereas all other metals analyzed by ICP40B, 4 acid digestion with ICP OES finish (Figure 11-1). All drill core sample rejects are saved and stored at a secure facility and are available for check analyses, as necessary.

Table 11-1 SGS Analytical Methods and Detection Limits

SGS Code	Description	Element	Lower Detection Limit	Upper Detection Limit
FAE303	Fire Assay, Solvent Extraction, AAS[1] finish, 30 g sample	Au	1 ppb	10,000 ppb
FAA303	Fire Assay, AAS[1] finish, 30 g sample	Au	0.01 ppm	1,000 ppm
FAG303	Fire Assay, gravimetric, 30 g sample	Au	0.03 ppm	100,000 ppm
ICP40B	4 acid digestion[2] with ICP OES[3] finish	Ag: 2 ppm-50 ppm; Al: 0.03%-15%; As: 5 ppm-1%; Ba: 5 ppm-1%; Be: 0.5 ppm-0.25%; Bi: 5ppm-1%; Ca: 0.01%-15%; Cd: 1 ppm-1%; Co: 1 ppm-1%; Cr: 10 ppm-1%; Cu: 2 ppm-1%; Fe: 0.1%-15%; K: 0.01%-15%; La: 1 ppm-1%; Li: 1 ppm-1%; Mg: 0.02%-15%; Mn: 5 ppm-1%; Mo: 2 ppm-1%; Na: 0.01%-15%; Ni: 2 ppm-1%; P: 0.01%-15%; Pb: 2 ppm-1%; S: 0.01%-5%; Sb: 5 ppm-1%; Sc: 0.5 ppm-1%; Sn: 10 ppm-1%; Sr: 5 ppm-1%; Ti: 0.01%-15%; V: 2 ppm-1%; W: 10 ppm-1%; Y: 1 ppm-1%; Yb: 0.5 ppm-1000 ppm; Zn: 5 ppm-1%; Zr: 3 ppm-1%		

Notes:

1. *AAS: Atomic Absorption Spectrophotometer.*
2. *4-Acid Digest: Perchloric (HClO4), Hydrochloric (HCl), Nitric (HNO3) and Hydrofluoric (HF).*
3. *ICP OES: Inductively Coupled Plasma Optical Emission Spectrometry.*

Source: Bayan Khundii 43-101 Report, Bayan (Khundii Exploration License), Bayankhongor Aimag, Southwest Mongolia, National Instrument 43-101 Technical Report, Erdene Resource Development Company, M. A. (MacDonald), MSc, P.Geo., March 1, 2018.

11.4.1. Screen Metallic Analysis of Drill Core

All drill core samples returned an initial assay of 5000 ppb (5 g/t) gold were retested using screen metallic fire assay analysis. The analysis used 500 grams of minus 3.35 mm material that was crushed/pulverized to 90% <75 µm. The total sample was then screened to create a +75 µm and a -75 µm fraction, and each fraction was weighed. All of the +75 µm fraction, that will contain all of the coarse Au, was then analyzed by fire assay ("FA"). For the -75 µm fraction, three individual subsamples (30 g) were analyzed by FA methods. The total Au content for the sample was calculated by using the weighted average of the +75 µm fraction results and the mean of the three -75 µm results. The gold assay results from the screen metallic assay analysis were used in calculating the Bayan Khundii resource estimate.

11.5. Quality Assurance and Quality Control

11.5.1. BK Gold Deposit

A Quality Assurance and Quality Control (QA/QC) program was established for the Bayan Khundii Project which included the insertion of CRMs (Certified Reference Material or standards), blanks and quarter core duplicates. Some reject duplicates were also analysed, as well as third party analysis at ALS laboratory in Ulaanbataar.

All samples were submitted to SGS using the same analysis as the core samples including fire assay for gold (SGS Code: FAE303) and 33 multi-element analysis (SGS Code: ICP40B).

Overall standard and blank insertion rates are acceptable, but the frequency of duplicate samples should be increased as the project advances towards a mining phase. One thing of note, the number of samples processed at the lab per batch is quite small, often incorporating only one standard and one blank within each batch. A suitable insertion rate should be selected in the future to adapt to the small batch sizes, or else perhaps request the lab increase the number of samples in each batch.

Table 11-2 presents the QA/QC sample summary for the project.

Table 11-2 Summary of Bayan Khundii QA/QC Program

Description	Number of Samples (% of database)	Remarks
Total Number of Samples	31,775	
Number of Control Samples	2,493 (9.8%)	
CRM Samples	1,395 (4.4%)	
OREAS 62c	90	
OREAS 66a	94	
OREAS 67a	104	
OREAS 62e	522	
OREAS 60c	319	
OREAS 60d	117	
OREAS 62f	92	
OREAS 65a	36	BKD-258 to BKD-269
OREAS 45d	21	BKD-270 to BKD-300
Blanks	929 (2.9%)	
OREAS 24P (blank)	28	BKD-23 to BKD-42
OREAS 26a (blank)	181	
Blanks (ASL coarse)	720	
Duplicates		
Field (Core) Duplicates	453 (1.4%)	from BKD-97
Lab Duplicates	340 (1.1%)	from BKD-97
Third Party Duplicates	500 (1.6%)	

11.5.1.1. Certified Reference Materials

11.5.1.1.1. Standards

The CRMs used as Standards for the QA/QC program were sourced from Ore Research & Exploration PL, based in Perth, Australia. Nine CRMs were employed over the course of the Bayan Khundii drill programs.

Results of the CRMs for gold values were monitored throughout the Bayan Khundii drill program. Erdene's protocol was for any analysis which deviated from the recommended value by more than 15%, that the entire sample batch be re-analyzed. No re-analysis was required to date.

Table 11-3 lists the CRMs used for the Bayan Khundii project and their recommended values.

Table 11-3 CRM Control Samples and Recommended Values

CRM	Source	Au (ppm)	Ag (ppm)
OREAS 45d	Ore Research & Exploration PL	0.023	-
OREAS 60c		2.47	4.87
OREAS 60d		2.47	4.57
OREAS 62c		8.79	8.76
OREAS 62e		9.13	9.86
OREAS 62f		9.71	5.47
OREAS 65a		0.52	7.80
OREAS 66a		1.24	18.9
OREAS 67a		2.24	33.6

The CRMs were chosen to represent different grade ranges for gold on the Project. All the CRMs are individually packaged in 60 g packets and were inserted with the drill core samples with sequential sample tags at a nominal insertion rate of one CRM for every 20 to 30 samples.

The results were plotted in chronological order on graphs depicting the 'recommended value' as well as plus/minus three times the standard deviation of the dataset to provide a check of the precision of the assays.

Table 11-4 summarizes the results of control plots for CRMs for the Project.

Table 11-4 CRM Results Summary, Bayan Khundii

CRM	Recommended Value (ppm Au)	Standard Deviation	No. of Samples	No. of Failures	Percent Failure
OREAS 45d	0.023	0.002	21	0	-
OREAS 60c	2.47	0.08	318	24	7.5%
OREAS 60d	2.47	0.08	117	0	-
OREAS 62c	8.79	0.21	90	3	3.3%
OREAS 62e	9.13	0.41	518	-	-
OREAS 62f	9.71	0.24	92	0	-
OREAS 65a	0.52	0.02	36	2	5.6%
OREAS 66a	1.24	0.05	94	2	2.1%
OREAS 67a	2.24	0.10	104	7	6.7%

OREAS 45d

A total of 23 OREAS 45d standards were inserted into the 2020 drilling program as a low-grade gold standard, with an expected value of 23 ppb Au. No issues were found. Figure 11-1 presents the control plot for CRM OREAS 45d.

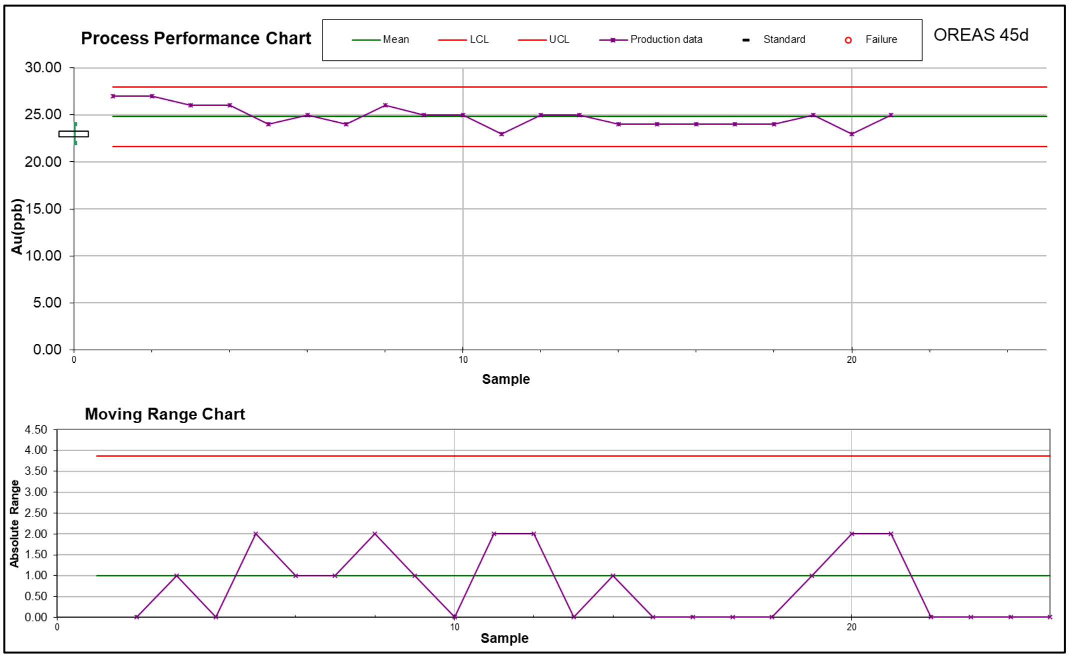


Figure 11-1 Control Plot for OREAS 45d, Gold Values, Bayan Khundii (Source – AGP 2023)

OREAS 60c

A total of 318 OREAS 60c standards were inserted during drill programs at Bayan Khundii. The performance overall is acceptable, with minor deviations above or below the confidence limits. These were noted and accepted. Figure 11-2 presents the control plot for CRM OREAS 60c

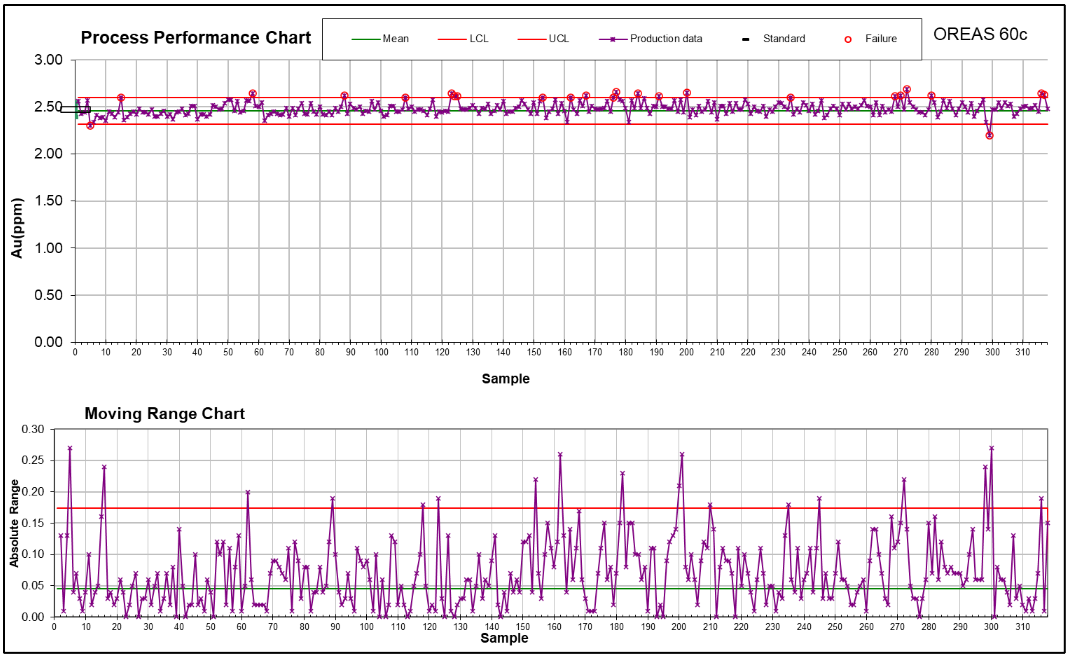


Figure 11-2 Control Plot for OREAS 60c, Gold Values, Bayan Khundii (Source – AGP 2023)

OREAS 60d

A total of 117 OREAS 60d standards were inserted during drill programs at Bayan Khundii. It was noted that all results of this CRM returned results higher than the expected 2.47 ppm Au but were consistent at an average of 2.54 ppm Au. Given that no issues were identified for OREAS 60c, which has a similar expected gold value as standard 60d, it is the QP's opinion that there is an issue with the standard itself, or perhaps the CRM certificate, and not the analytical laboratory. This CRM was removed from further use. Figure 11-3 presents the control plot for CRM OREAS 60d.

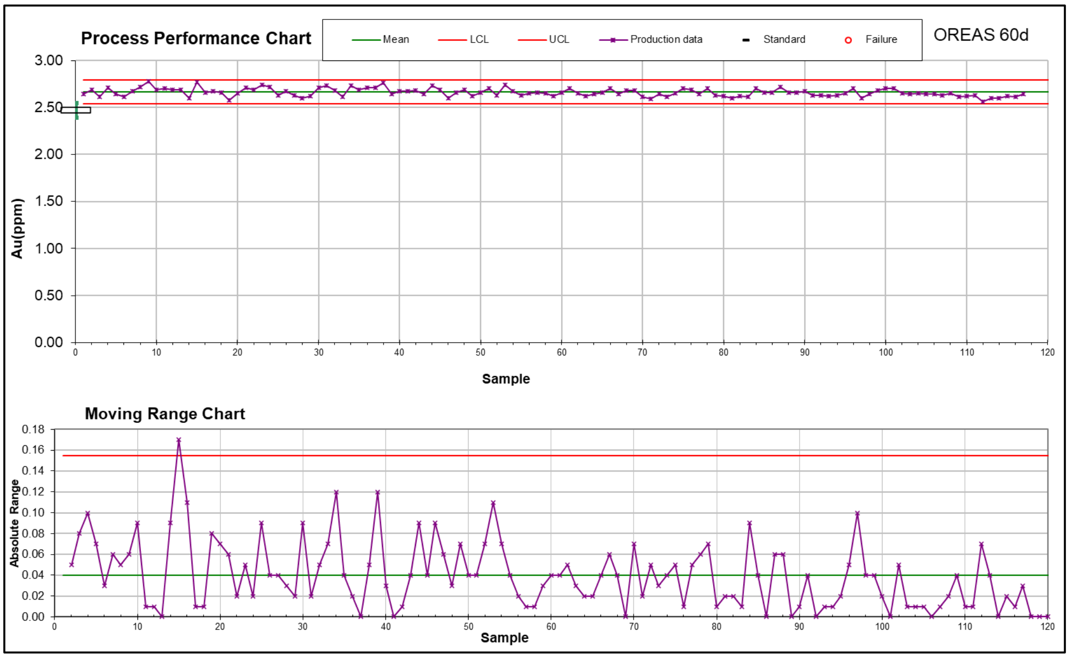


Figure 11-3 Control Plot for OREAS 60d, Gold Values, Bayan Khundii (Source – AGP 2023)

OREAS 62c

A total of 60 OREAS 62c standards were used during Bayan Khundii drilling programs. Standard performance overall is acceptable, with results showing excellent precision, however a consistently low bias for this grade is observed. Considering this trend is not observed in other standards, this low bias is assumed to result from an issue with the standard rather than the laboratory. Figure 11-4 presents the control plot for CRM OREAS 60c.

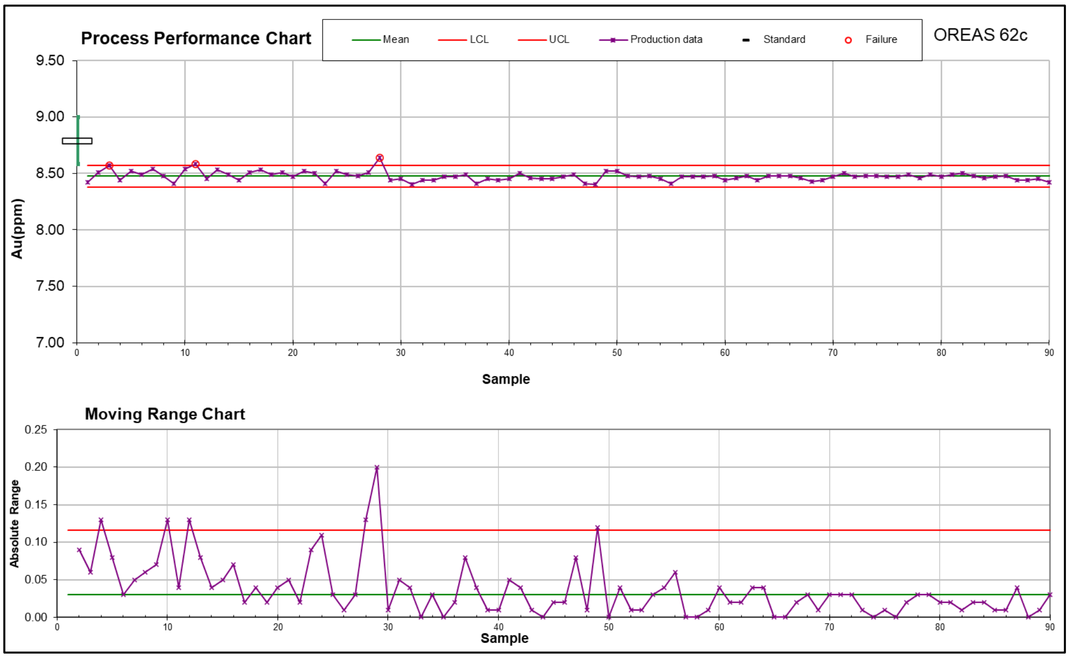


Figure 11-4 Control Plot for OREAS 60c, Gold Values, Bayan Khundii (Source – AGP 2023)

OREAS 62e

A total of 518 OREAS 62e standards have been submitted during drilling programs at Bayan Khundii. Standard performance overall is acceptable, however plotting of results over time identifies two trends. The first two thirds of the standards contain excellent precision but poor accuracy when compared to the reported standard mean grade, whereby the reported grades show a consistent low bias. This bias appears to abruptly disappear for the last third of these standards, where the assayed mean values for the standard are quite close in value to the expected standard mean value. Considering this jump in values is not observed in the performance of other standards in the program, these later standards are likely sourced from a different batch of standard material and is likely not a reflection of an issue with the laboratory.

Figure 11-5 presents the control plot for CRM OREAS 62e.

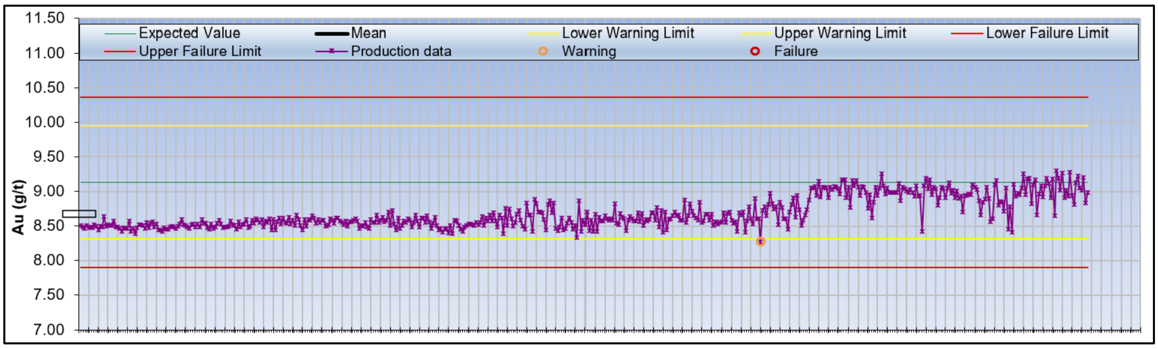


Figure 11-5 Control Plot for OREAS 62e, Gold Values, Bayan Khundii (Source – AGP 2023)

OREAS 62f

A total of 92 OREAS 62f standards were submitted during the 2020 drilling program at Bayan Khundii. Plotting of the results shows the lab has a high precision with this standard, but poor precision with the lab assaying an average grade of 10.21 ppm Au when compared to the expected 9.71 ppm Au value. Standard performance overall is acceptable, with results showing excellent precision, however a consistently high bias for this grade is observed which is presumed to be an issue with the standard rather than the laboratory. Figure 11-6 presents the control plot for CRM OREAS 62f.

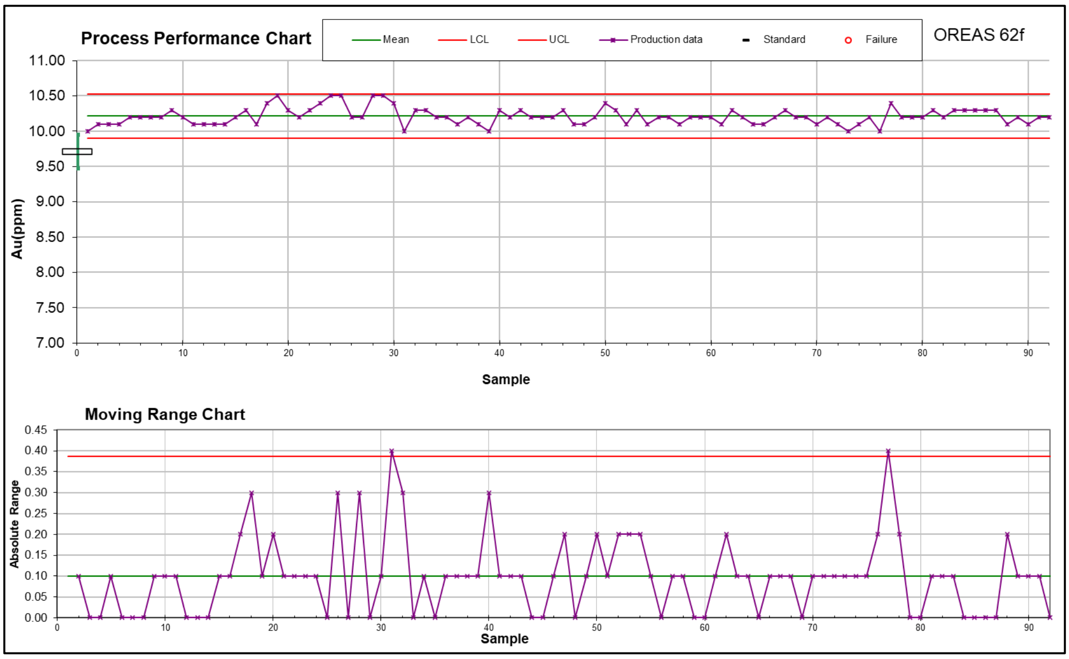


Figure 11-6 Control Plot for OREAS 62f, Gold Values, Bayan Khundii (Source – AGP 2023)

OREAS 65a

A total of 36 OREAS 65a standards were submitted to the lab during Bayan Khundii drilling programs. Standard performance for this range is good, with two samples occurring at the confidence limits. No further issues were noted.

Figure 11-7 presents the control plot for CRM OREAS 65a.

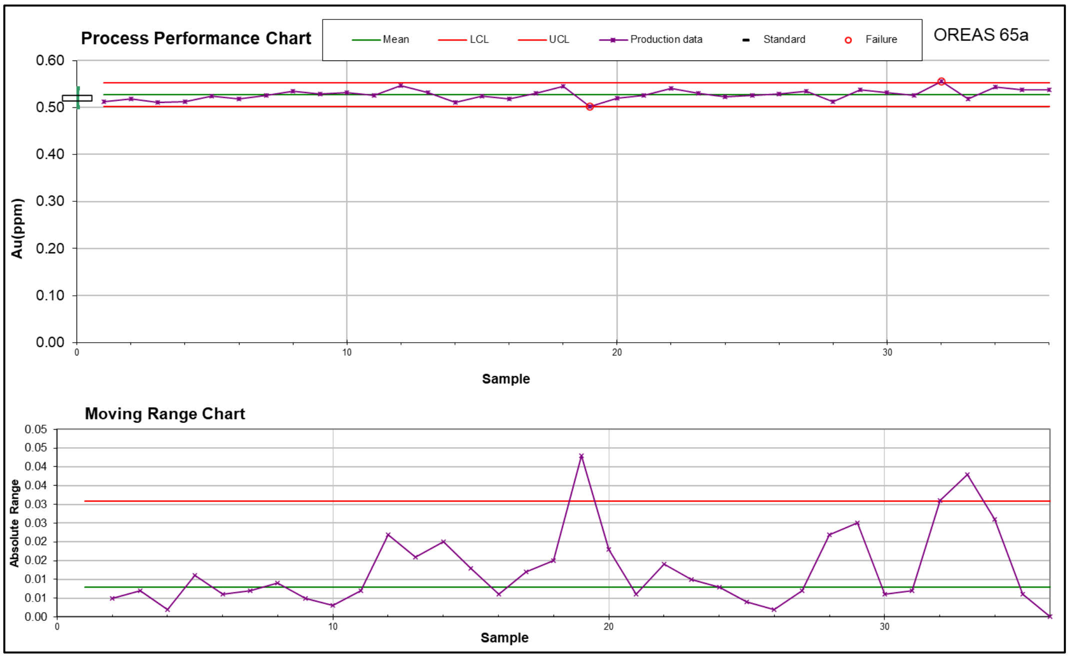


Figure 11-7 Control Plot for OREAS 65a, Gold Values, Bayan Khundii (Source – AGP 2023)

OREAS 66a

A total of 94 OREAS 66a were submitted in the 2020-2022 drilling programs. Standard performance for this range is good, with two samples occurring at the lower confidence limit. No further issues were noted. Figure 11-8 presents the control plot for CRM OREAS 66a.

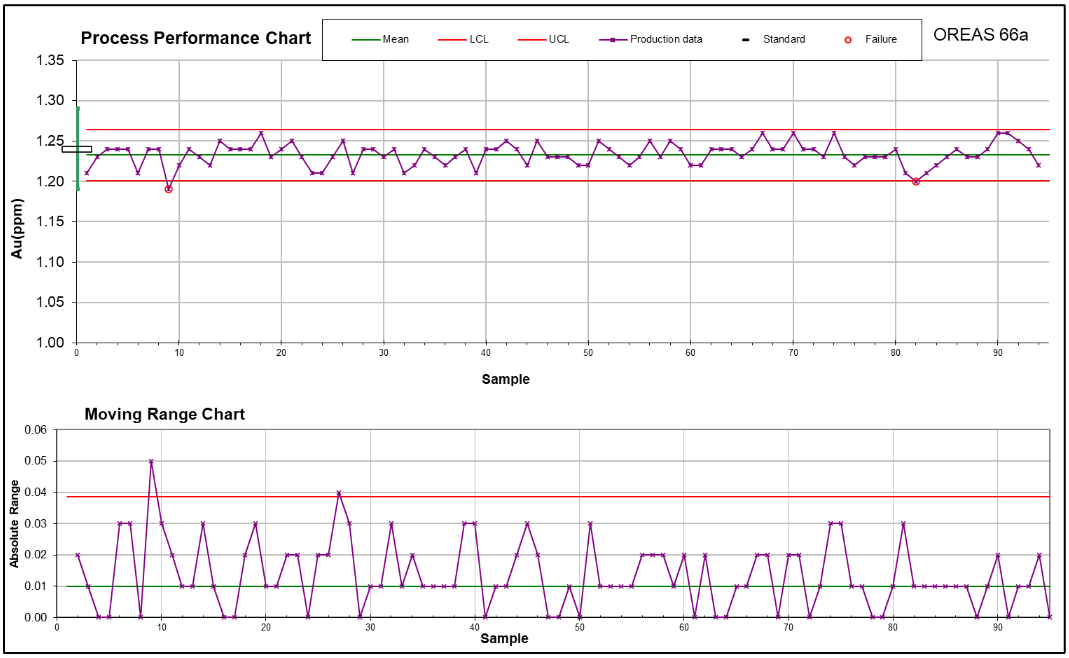


Figure 11-8 Control Plot for OREAS 66a, Gold Values, Bayan Khundii (Source – AGP 2023)

OREAS 67a

A total of 104 OREAS 67a standards were submitted in the early drilling program. Standard performance overall is acceptable, with only three of the samples falling below the lower threshold. Four other samples occur at the limit of the upper and lower threshold. The three early samples were reviewed and accepted. No further action was taken. Figure 11-9 presents the control plot for CRM OREAS 67a.

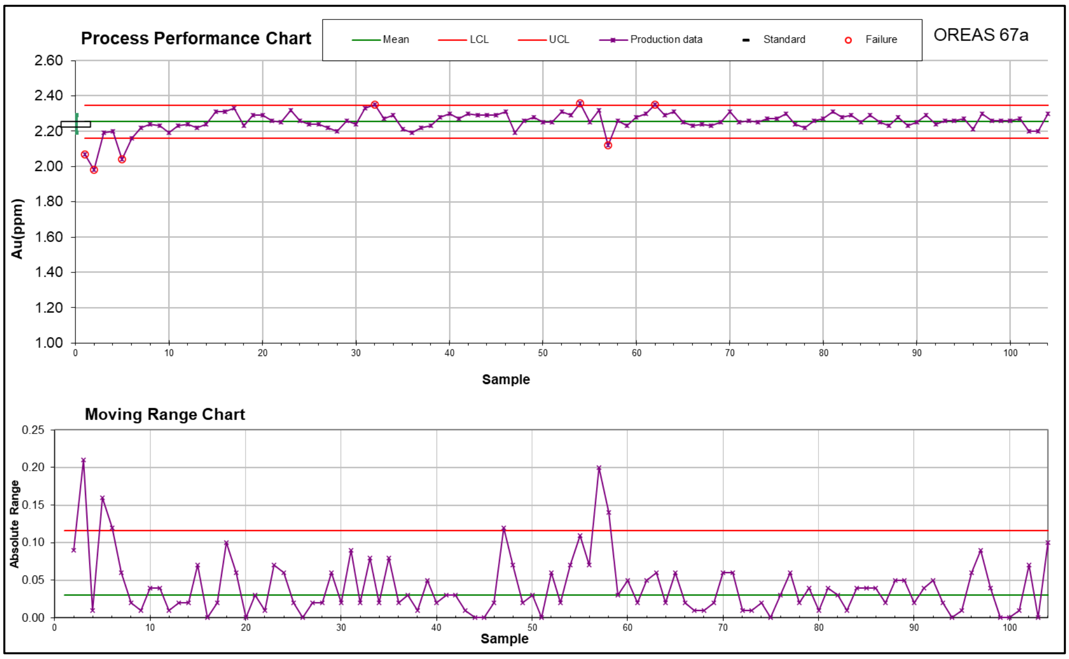


Figure 11-9 Control Plot for OREAS 67a, Gold Values, Bayan Khundii (Source – AGP 2023)

11.5.1.1.2. <u>Blank Analysis</u>

Erdene used three types of blanks in their QAQC program throughout the Bayan Khundii drill program. These include: two CRM blanks (OREAS 24P and OREAS 26a; both olivine basalts) sourced from Ore Research & Exploration, based in Perth Australia; and a coarse silica blank (½" Mesh) from Analytical Solutions Ltd. (ASL), Ontario, Canada.

The OREAS 24P contains less than 2 ppb of gold and the OREAS 26a, another contains less than 1 ppb gold. The ASL coarse silica blank contains 99.7% silicon dioxide and no trace of gold.

Figure 11-10, Figure 11-11 and Figure 11-12 present results of OREAS 24P, OREAS 26a and ASL coarse silica blanks, respectively, for selected drill holes.

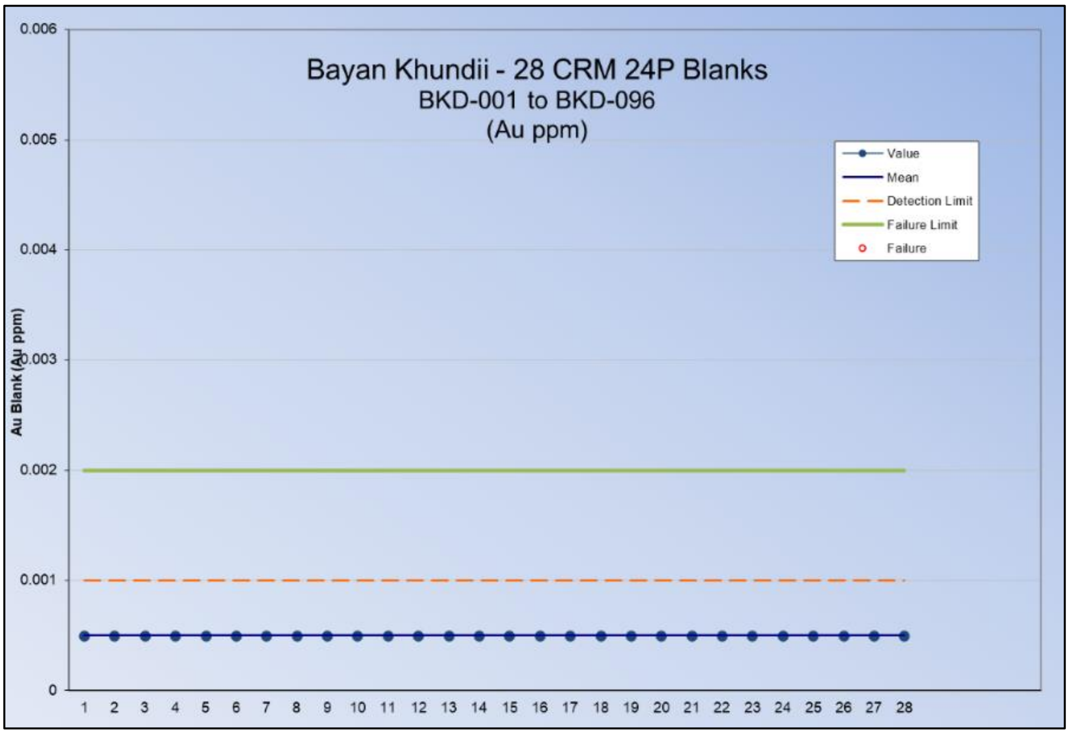


Figure 11-10 OREAS 24p Blanks, BKD-001 – BKD-96, Bayan Khundii (Source – AGP 2023)

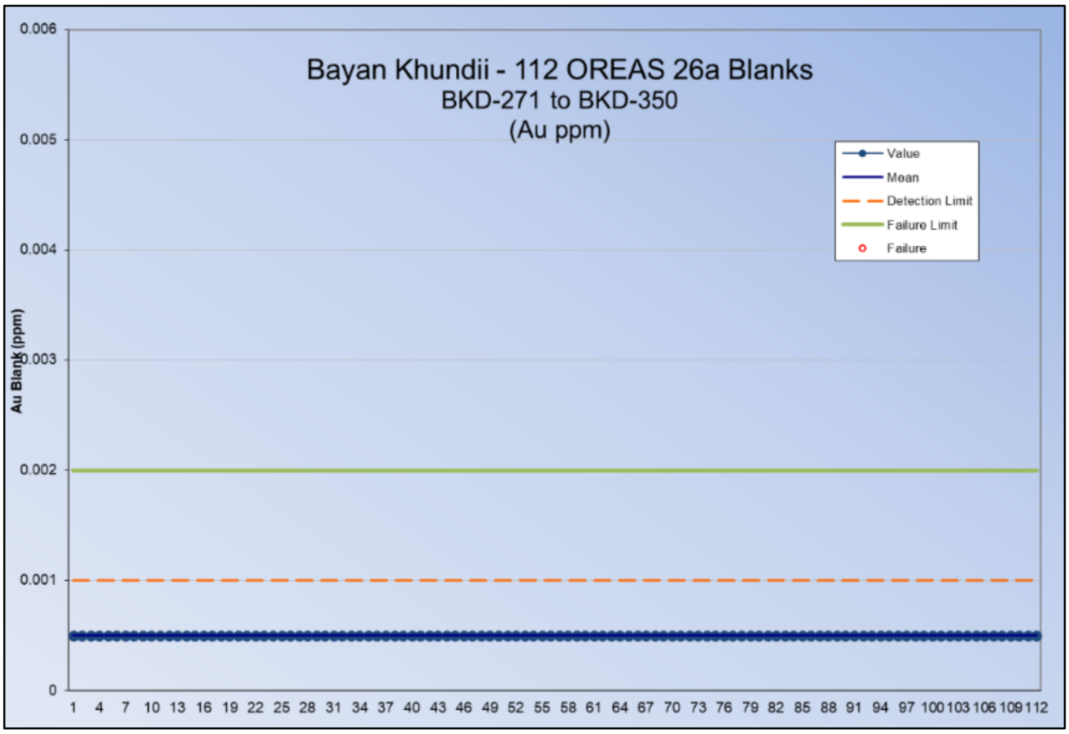


Figure 11-11 OREAS 26a Blanks, BKD-271 – BKD-350, Bayan Khundii (Source – AGP 2023)

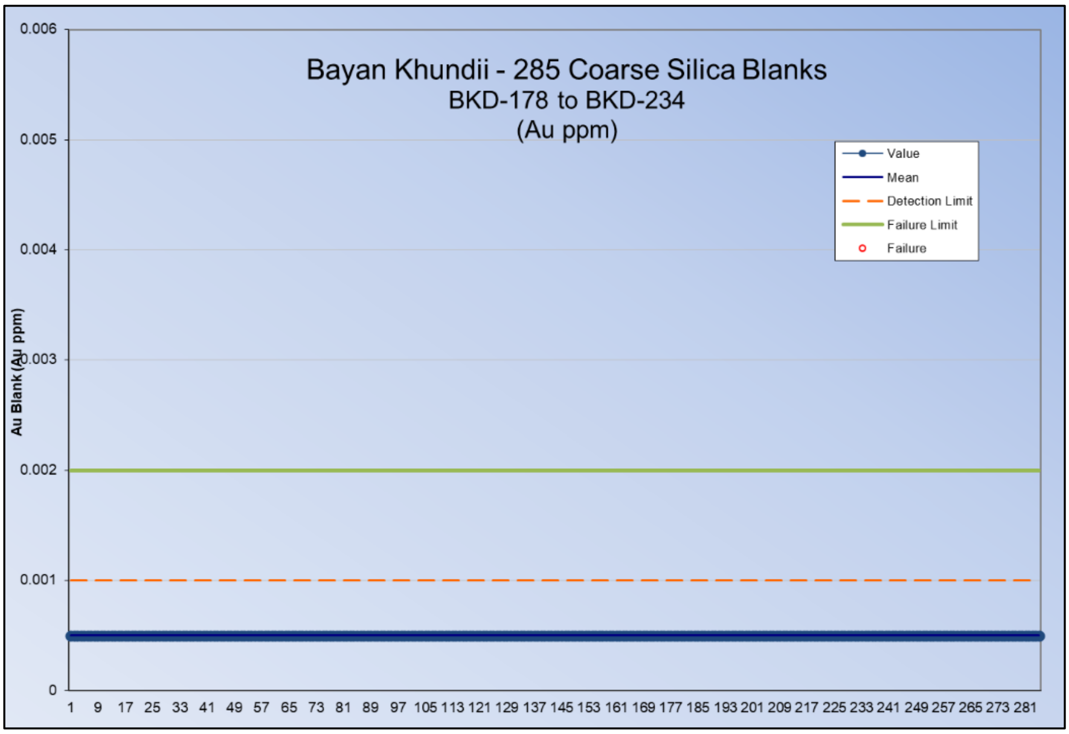


Figure 11-12 Coarse Silica Blanks, BKD-178 – BKD-234, Bayan Khundii (Source – AGP 2023)

11.5.1.1.3. Field Duplicates

A total of 455 quarter core duplicate samples were collected, representing 1.4% of the sample database.

The majority of the duplicate samples fell within the +/- 30% threshold, with 132 out of the 451 samples plotted, fell outside of this relative difference indicating the variability (nugget effect) between the ¼ core samples. Of the 132 samples outside the threshold, 71 results were on samples below 0.1 ppm Au. Only samples above detection limit were plotted.

Figure 11-13 presents the results of the quarter core duplicates.

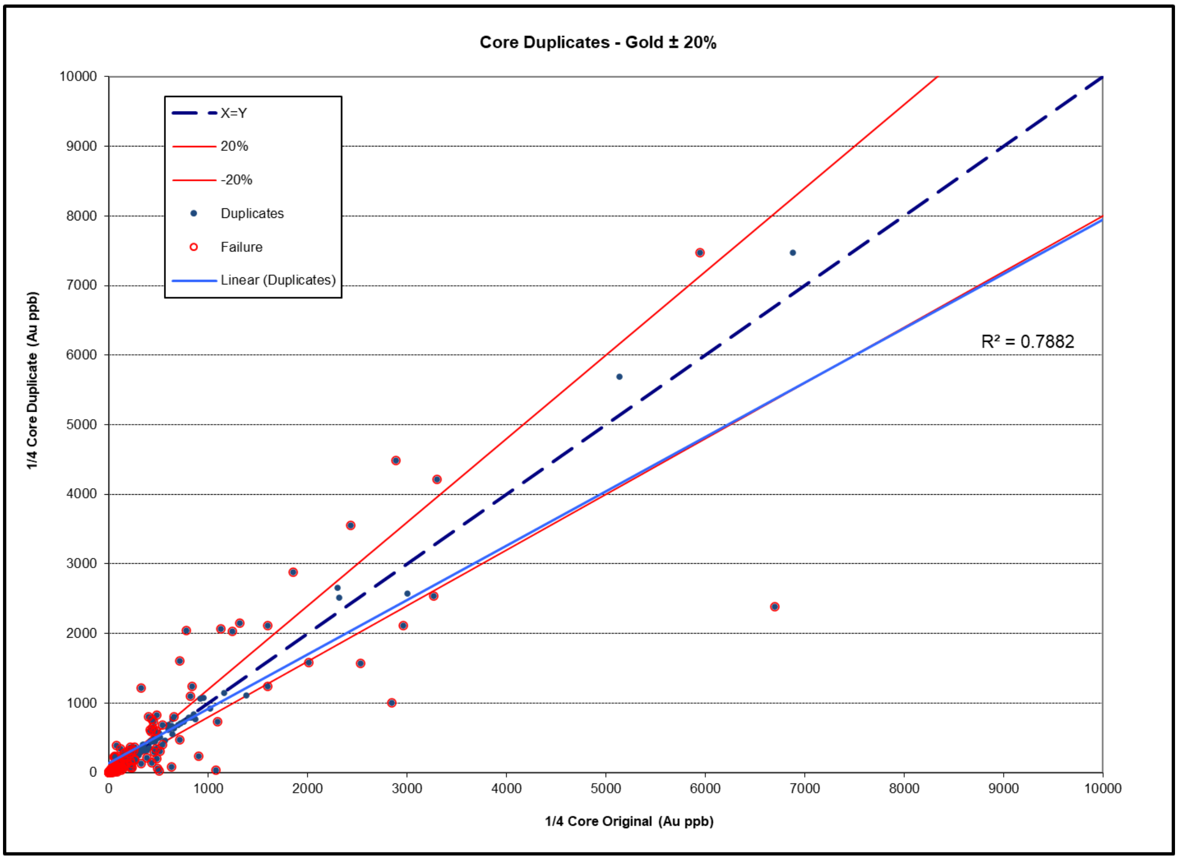


Figure 11-13 Quarter Core Duplicate Samples, Bayan Khundii (Source – AGP 2023)

In submitting quartered core samples as duplicates within nuggety gold deposits, while considered good industry practice, the spatial distribution of gold across a drill core is often not uniform which can make interpreting the duplicate lab results difficult.

Optimally, the best way to obtain a representative gold sample is to submit the entire drill core for analysis. However, in practice, this is not practical since half of the drill core sample should always be retained by the exploration company for their own records and core library.

11.5.1.1.4. Reject Duplicates

A total of 331 samples were collected from lab reject material and analyzed using the same methods as the original assays. A threshold of +/- 20% is considered an acceptable pass/fail rate for reject samples. Only two samples failed above a gold grade of 0.4 g/t Au. Samples which failed below 0.4 g/t Au are considered non-material failures as differences between lower grades is relatively less accurate.

Figure 11-14 presents the results of reject duplicate samples.

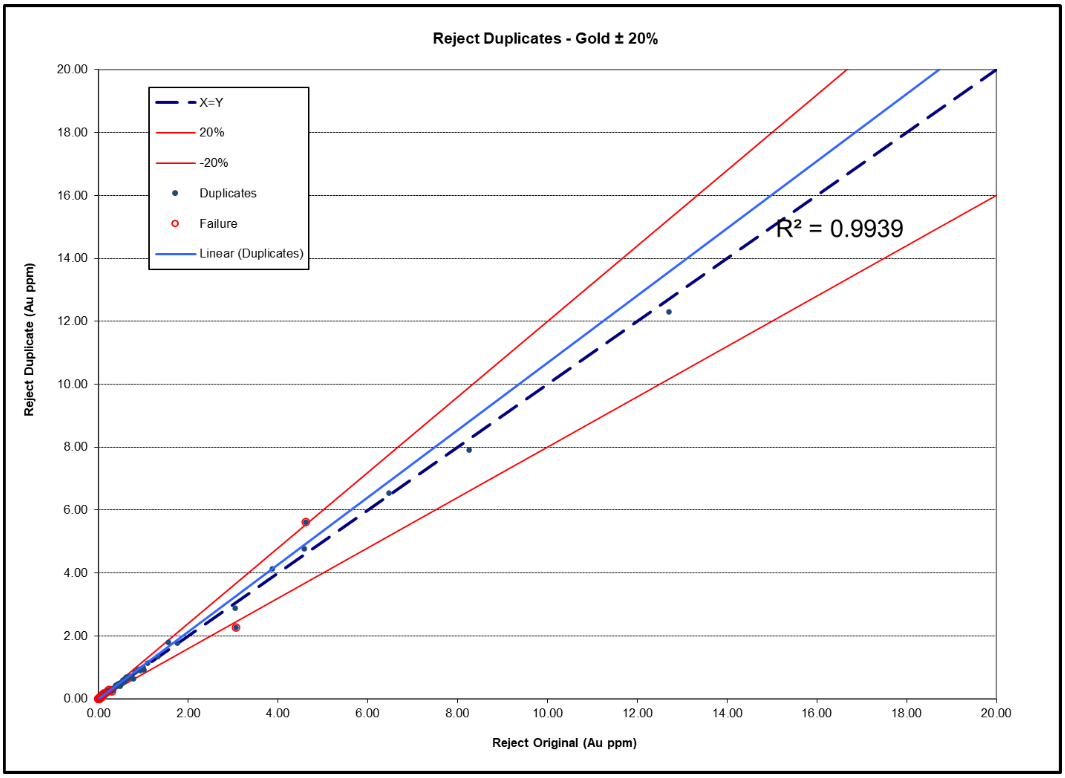


Figure 11-14 Coarse Reject Duplicates, Bayan Khundii (Source – AGP 2023)

11.5.1.2. External Laboratory Assay Verification

A total of 500 pulps were selected to be sent to ALS Chemex, based in Ulaanbataar, as a third-party verification of assay results and represents 1.6% of the samples collected. No sample bias is observed between ALS and SGS.

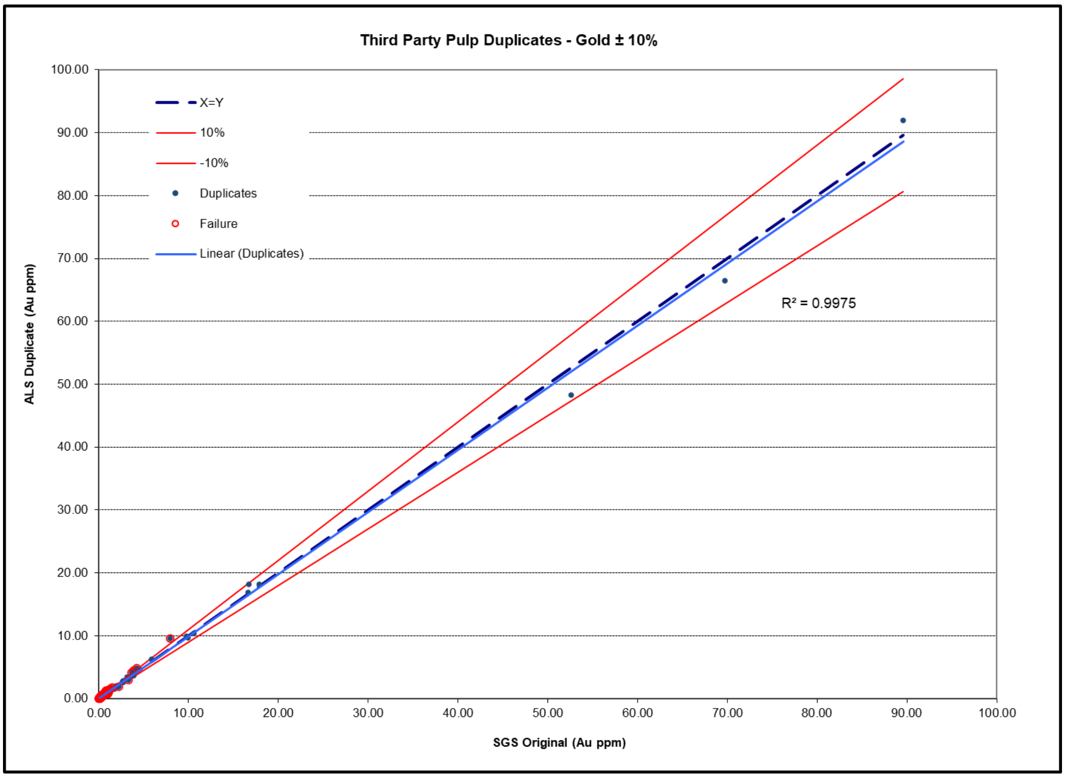


Figure 11-15 Third Party Verification Pulp Duplicates, Bayan Khundii (Source – AGP 2023)

11.5.2. Dark Horse Mane Gold Deposit

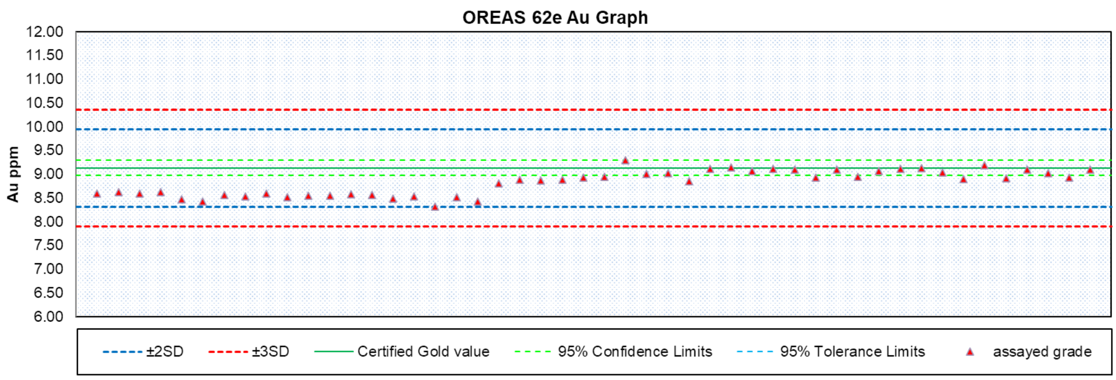
11.5.2.1. Certified Reference Materials

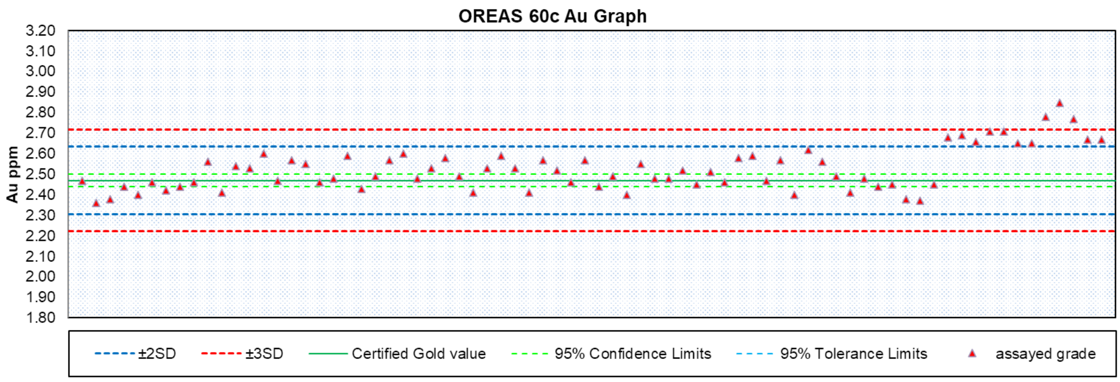
Since the first drilling campaign commenced at Dark Horse, commercial standards obtained and certified by OREAS Pty Ltd were used. ERD used seven certified standards (62e, 60c, 60d, 62f, 65a, 67a and 602b), and these were inserted at a rate of approximately 1:20. A summary table of standards is shown in Table 11-5, and standard control charts are displayed in Figure 11-16.

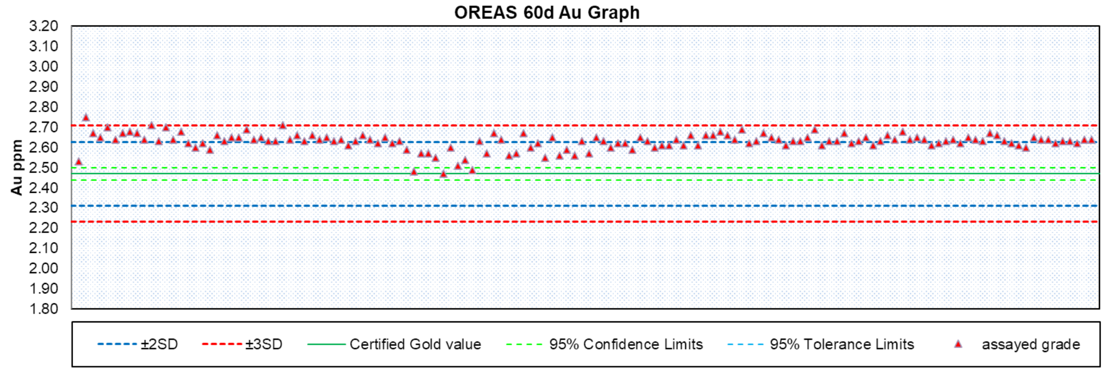
Three certified blanks were used, Oreas26a, Oreas26d and Silica coarse sand (all <1ppb Au). Blanks were inserted at a rate of 1:20.

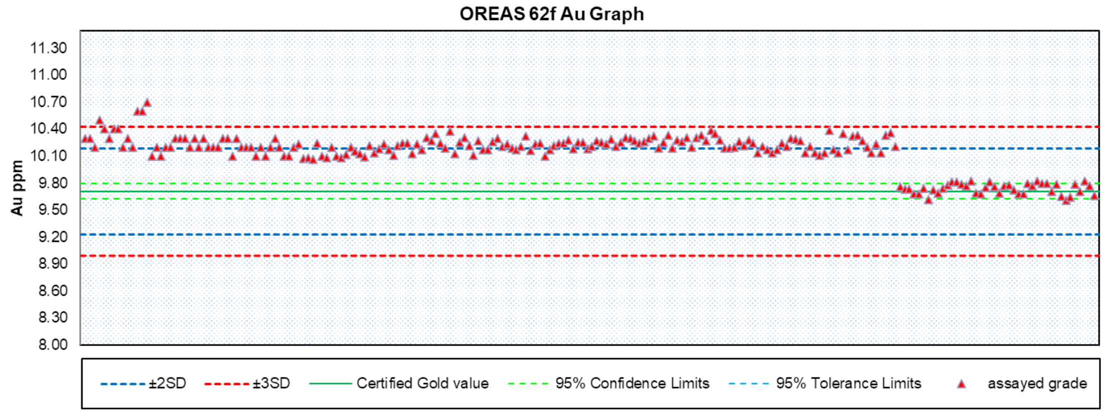
Table 11-5 Certified Standard and Blanks Summary for Dark Horse

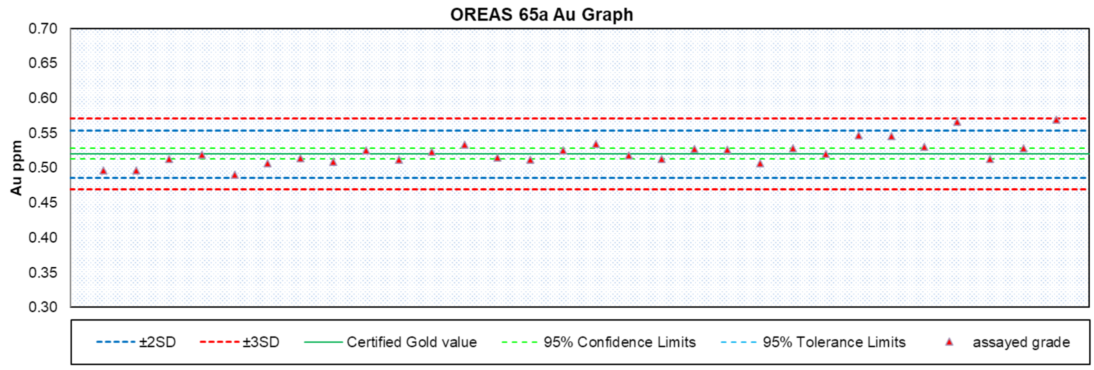
Std_ID	Count	Min Assay	Max Assay	Average Assay	2Std Min	2Std Max	Std Value
Oreas62e	48	8.32	9.29	8.82	8.31	9.95	9.13
Oreas60c	74	2.36	2.85	2.53	2.31	2.63	2.47
Oreas60d	140	2.47	2.75	2.63	2.31	2.63	2.47
Oreas62f	214	9.61	10.70	10.14	9.23	10.19	9.71
Oreas65a	30	0.49	0.57	0.52	0.49	0.55	0.52
Oreas67a	9	2.22	2.29	2.26	2.05	2.43	2.24
Oreas602b	29	2.26	2.31	2.29	2.10	2.48	2.29
Oreas26a	80	<0.01	<0.01	<0.01	-	-	<0.01
Oreas26d	57	<0.01	<0.01	<0.01	-	-	<0.01
Silica Sand	345	<0.01	<0.01	<0.01	-	-	<0.01

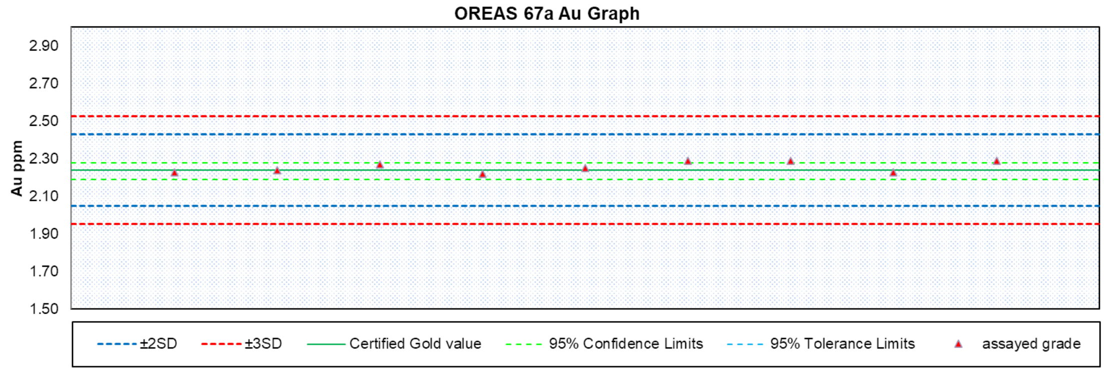





OREAS 60d Au Graph
Au ppm
3.20
3.10
3.00
2.90
2.80
2.70
2.60
2.50
2.40
2.30
2.20
2.10
2.00
1.90
1.80
±2SD
±3SD
Certified Gold value
95% Confidence Limits
95% Tolerance Limits
assayed grade


OREAS 62f Au Graph
Au ppm
11.30
11.00
10.70
10.40
10.10
9.80
9.50
9.20
8.90
8.60
8.30
8.00
±2SD
±3SD
Certified Gold value
95% Confidence Limits
95% Tolerance Limits
assayed grade


OREAS 65a Au Graph
Au ppm
0.70
0.65
0.60
0.55
0.50
0.45
0.40
0.35
0.30
±2SD
±3SD
Certified Gold value
95% Confidence Limits
95% Tolerance Limits
assayed grade


OREAS 67a Au Graph
Au ppm
2.90
2.70
2.50
2.30
2.10
1.90
1.70
1.50
±2SD
±3SD
Certified Gold value
95% Confidence Limits
95% Tolerance Limits
assayed grade

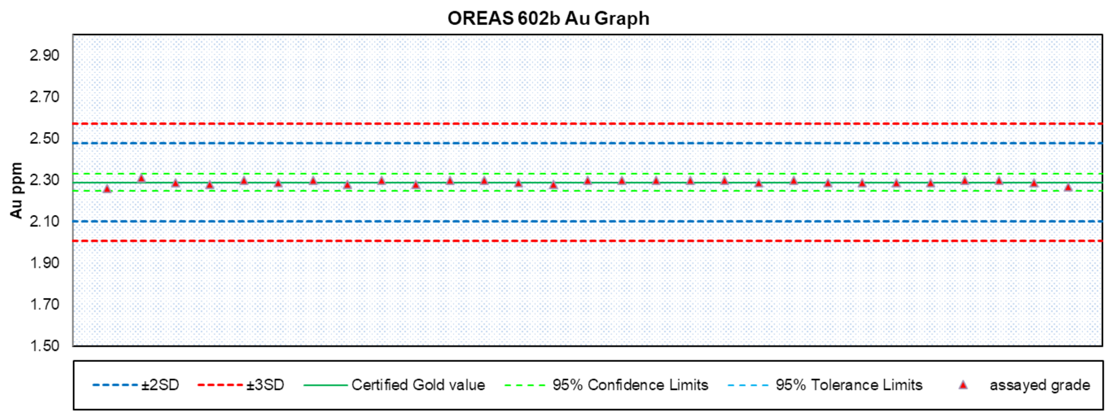
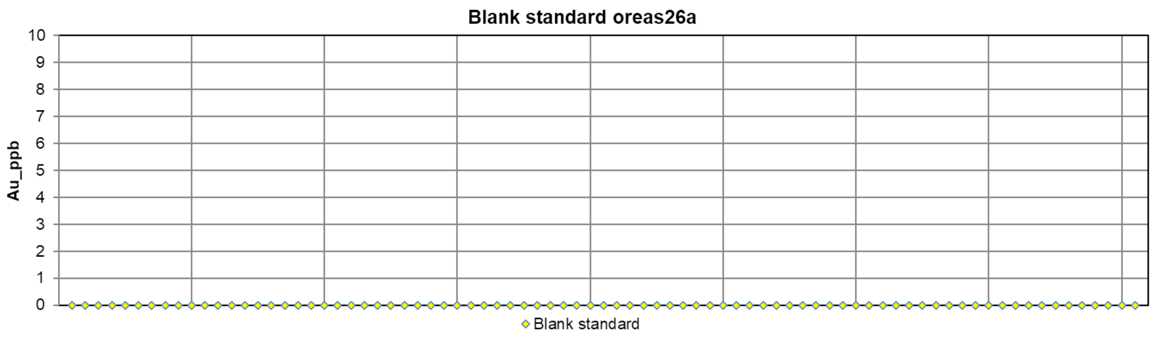
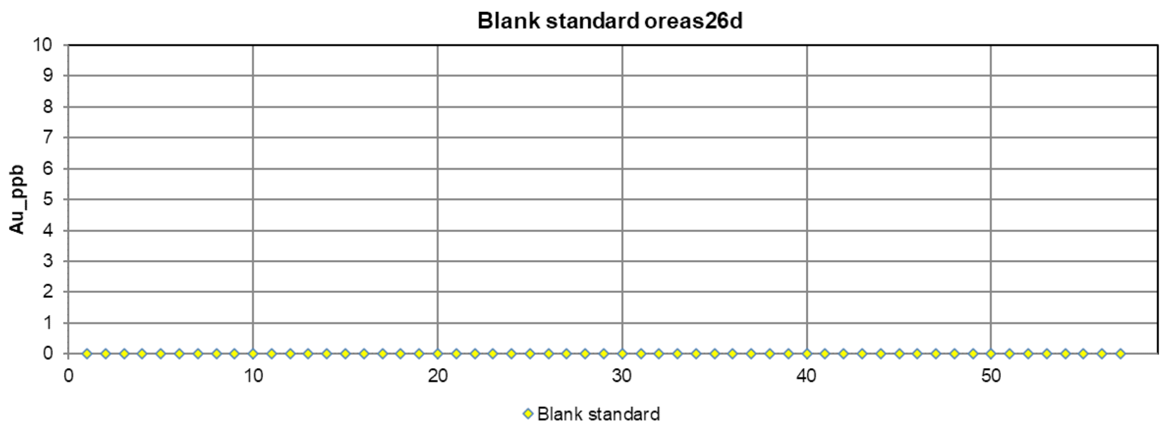


Figure 11-16 Control Charts – Standards (Source – RPM 2023)





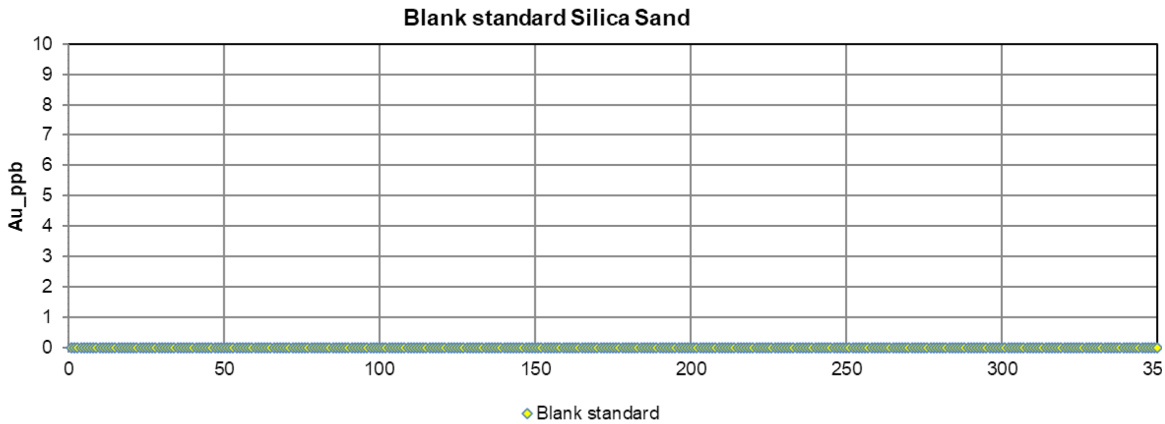


Figure 11-17 Control Charts – Blanks (Source – RPM 2023)

Standard results were mostly within an acceptable range of variability over time. For sample batches, most results were within the upper and lower warning limits (2 standard deviations), especially for OREAS62e, OREAS60c and OREAS 67a standards. A consistent overestimation was observed for OREAS60d (2.47 g/t Au) and OREAS 62f (9.71 g/t Au). These standards were sourced and prepared from low sulphidation epithermal deposits. Similar grade standards such as OREAS62e, OREAS60c and OREAS 67a performed quite well, suggesting the issue is likely related to the standard itself rather than an analytical issue. Nevertheless, close monitoring of the OREAS60d and OREAS 62f are recommended by RPM. More frequent use of OREAS62e, OREAS602b and OREAS67a standards is also recommended.

All blanks returned at or below the laboratory detection limits of 1 ppb Au, indicating sample contamination was not a concern.

11.5.2.2. Field Duplicates

A total of 312 field duplicates were analyzed for the entire drilling program. Field duplicates were prepared from ¼ core samples and inserted at a rate of 1:60. Summary statistics for field duplicates are shown Figure 11-6.

Results are shown graphically in Figure 11-18.

Table 11-6 Summary Statistics for Field Duplicates

Parameter	Original Assay	Duplicate Assay
Count	312	312
Minimum	0.0005	0.0005
Average	0.47	0.48
Median	0.008	0.007
Maximum	84.83	93.69
Standard Deviation	4.89	5.39
Precision Count		
<1% Precision	80	25.6%
1%<Precision<10%	65	20.8%
10%<Precision<20%	49	15.7%
20%<Precision<50%	85	27.2%
>50%Precision	33	10.6%

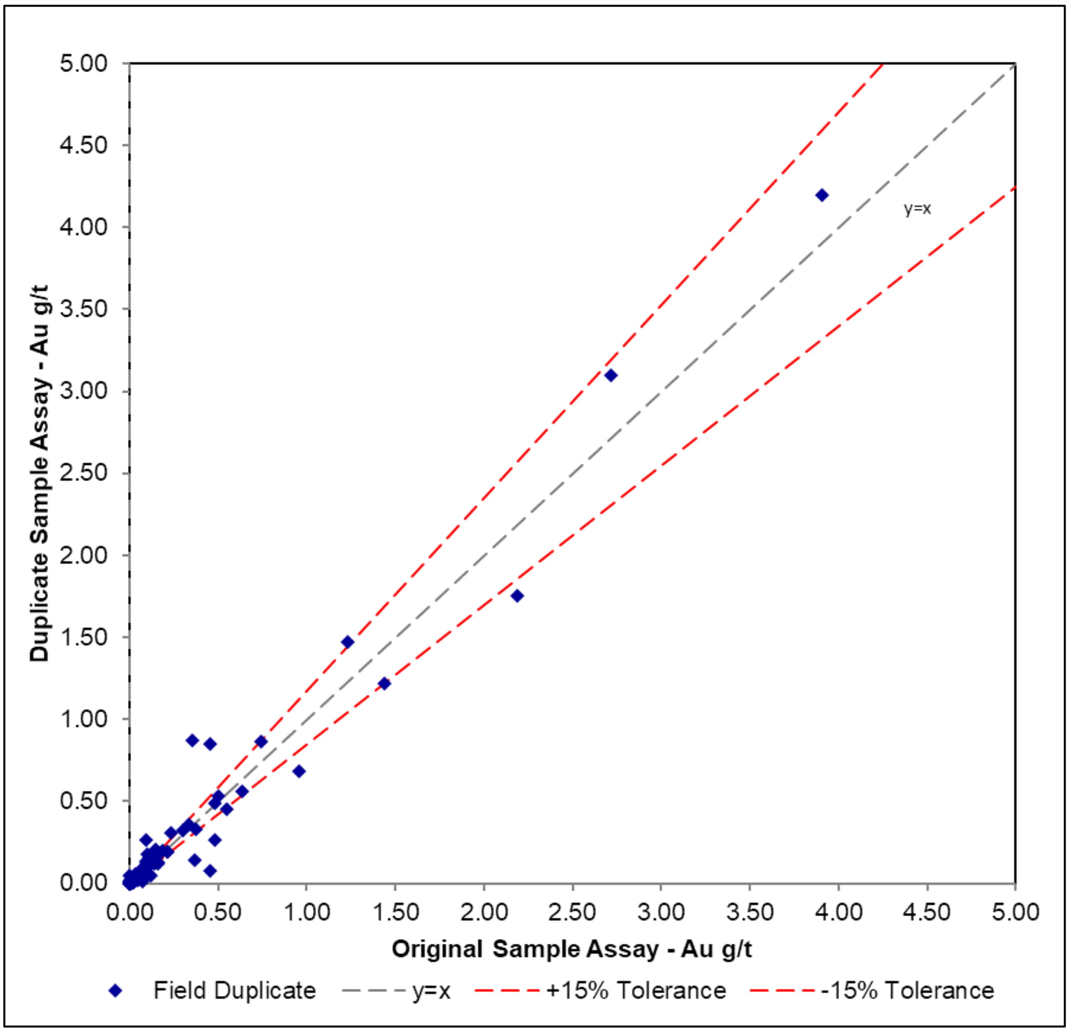


Figure 11-18 Scatterplots of Field Duplicate Results (Source – RPM 2023)

RPM has no concerns over omitting field duplicates for diamond core. As the core is cut in half, it is assumed that there is little margin for error in the sampling process.

The duplicate results indicate a moderate degree of scatter with negligible bias relative to the original assays. The degree of scatter is expected from this style of mineralization and is interpreted to be due to the nuggety nature of the gold mineralization. RPM recommends continued use field duplicates as part of the QAQC program.

11.5.2.3. Pulp Duplicates

A total of 195 pulp duplicates were analysed with the Dark Horse assays. Pulp duplicates were prepared from pulp core samples and inserted at rate of 1:60. Results are shown graphically in Figure 11-19.

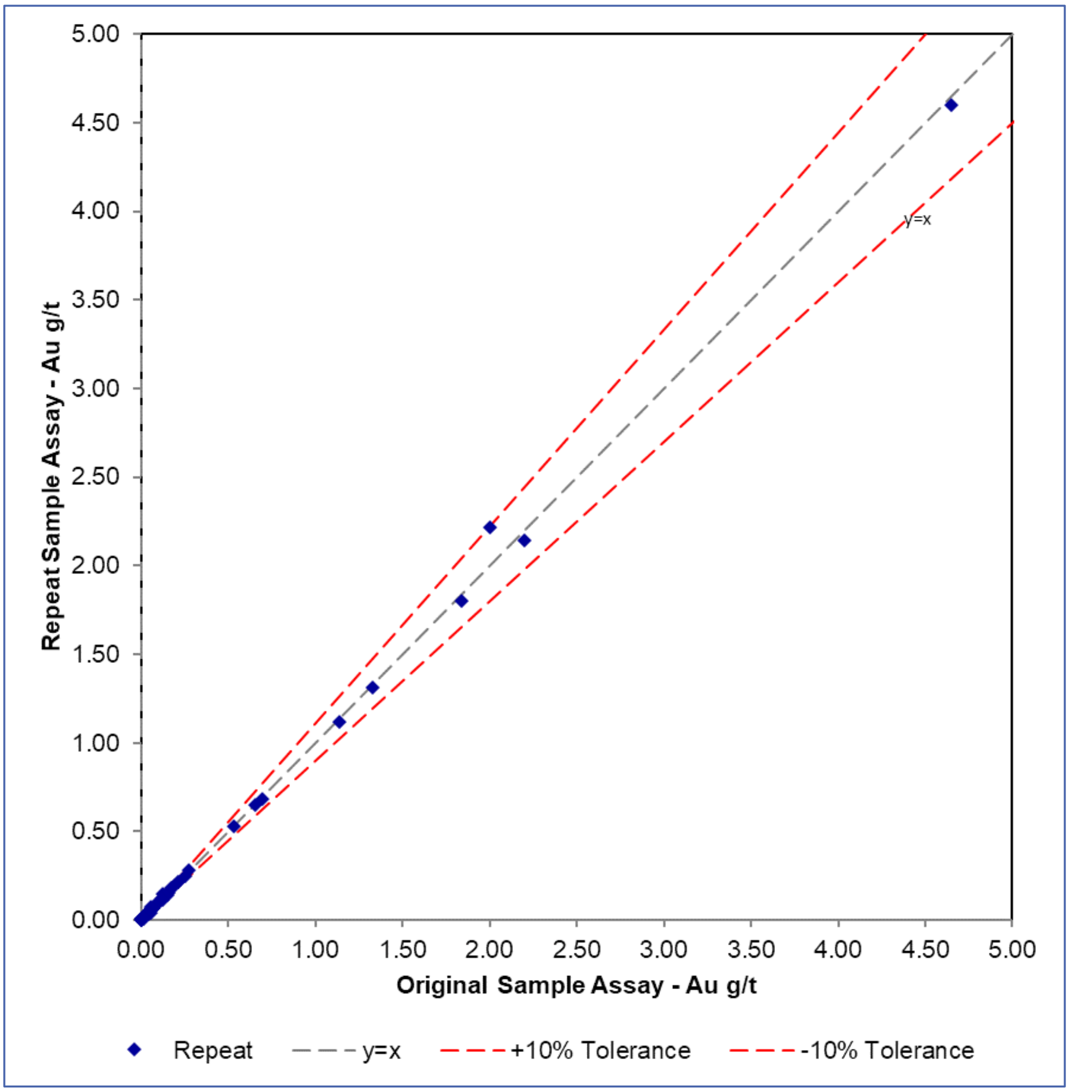


Figure 11-19 Scatterplots of Pulp Duplicate Results (Source – RPM 2023)

Almost all results were aligned on x=y line, and no bias was observed. This suggests the pulps were homogenous, indicates good repeatability of primary pulverized samples, and confirms the quality and precision of the sample preparation and analysis by the SGS laboratory.

11.5.2.4. Screen Metallic Assaying

Due to some very high-grade gold values and visible gold in several drill core samples, metallic screen assaying was carried out. This was to determine if the standard fire assay analysis accurately reflected gold concentrations in high-grade samples and to determine if there was a 'nugget effect', i.e. anomalously high gold grades due to non-uniform distribution of high-grade gold particles in the sample material. Comparative statistics are shown in Table 11-7, and a graphical plot is shown in Figure 11-20.

Table 11-7 Screen Metallic Assaying Summary Statistics

Parameter	Original Assay	Screen Metallic
Count	119	119
Minimum	0.768	0.86
Average	23.80	23.87
Median	13.25	13.14
Maximum	195.60	194.61
Standard Deviation	31.42	31.02
Precision Count		
<1% Precision	29	24.4%
1%<Precision<10%	80	67.2%
10%<Precision<20%	6	5.0%
20%<Precision<50%	3	2.5%
>50%Precision	1	0.8%

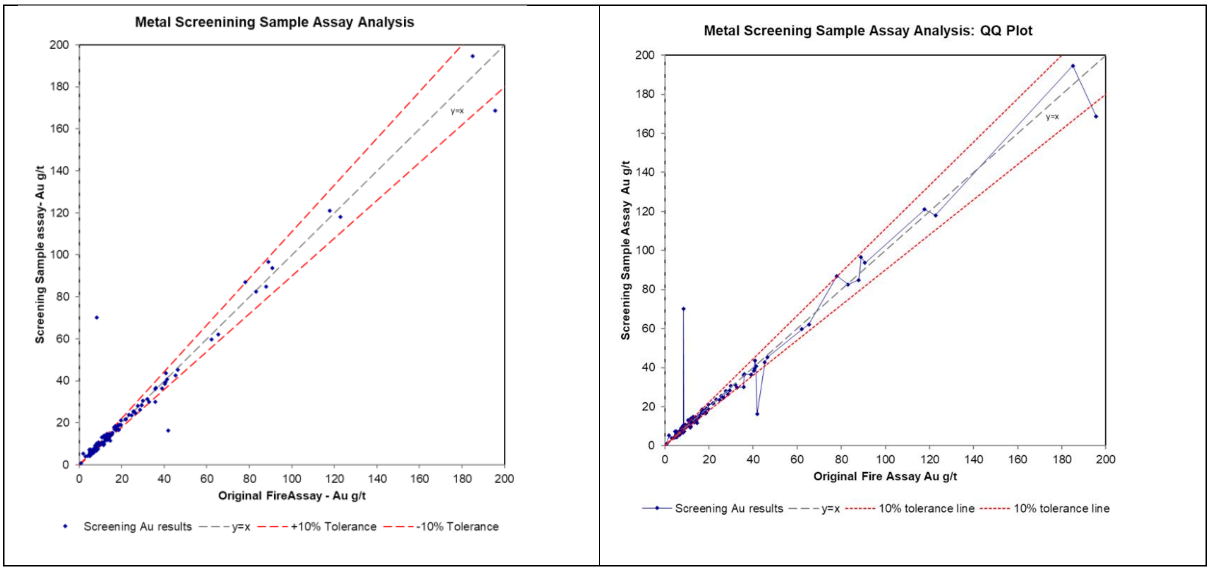


Figure 11-20 Screen Metallic Assaying Results QQ Plot (Source – RPM 2023)

RPM notes that screen metallic assay results show more than 90% of the samples are within the 10% tolerance line. A 0.3% bias in overall grades suggests that the current sampling and assaying procedures used at Dark Horse are optimal.

11.5.3. Dark Horse Mane QA/QC Conclusion

ERD has implemented a program of QA/QC at the Dark Horse Project for all drilling since 2016.

Certified Reference Material (CRM) standards were inserted at regular intervals, and the results reasonably reflected the expected values. A consistent overestimation was observed for OREAS60d (2.47 g/t Au) and OREAS 62f (9.71 g/t Au). Performance of OREAS62f is improved in 2022 drilling program. These standards were sourced and prepared from low sulphidation epithermal deposits. Similar grade standards such as OREAS62e, OREAS60c and OREAS 67a performed quite well, suggesting the issue is likely related to the standard itself rather than an analytical issue. Nevertheless, close monitoring of the OREAS60d and OREAS 62f are recommended by RPM. More frequent use of OREAS62e, OREAS602b and OREAS67a standards is also recommended. RPM also recommends umpire laboratory check of assay data at third laboratory.

All blanks reported at or below 0.01g/t Au, suggesting no contamination occurred during the sample preparation.

The field duplicate analysis indicates a moderate degree of scatter with negligible bias. This indicates a moderate natural variability or “nugget effect” for Au grades. RPM considers this natural variability to be an inherent feature of the mineralization that can be observed within the deposit on a local scale and is expected in this style of epithermal gold deposit. RPM has no concerns over the lower frequency of diamond core field duplicates. As the core is cut in half, it is assumed that there is little margin for error in the sampling process.

11.6. QP Opinion on Sample Preparation, Security and Analytical Procedures

11.6.1. BK Gold Deposit

AGP reviewed the QA/QC program and is of the opinion it is in accordance with standard industry practice and CIM Exploration Best Practice Guidelines. Erdene personnel have taken all reasonable measures to ensure the sample analysis completed is accurate and precise. AGP considers the assay results and database acceptable for use in the estimation of mineral resources.

It is the opinion of the BK Gold Deposit QP, Paul Daigle, that the preparation and analyses are satisfactory for this type of the deposit and that the sample handling and chain of custody meet or exceed industry standards.

11.6.2. Dark Horse Mane Gold Deposit

Overall, the Mineral Resource Estimate QP, Oyunbat Bat-Ohir, holds the opinion that the data from drilling on the Dark Horse Mane deposit has been obtained in accordance with contemporary industry standards, and that the data is adequate for the calculation of Indicated and Inferred mineral resource categories, in compliance with National Instrument 43-101. The QAQC data does not indicate any systematic bias and supports the use of the assay data in the Mineral Resource estimate for the Dark Horse Mane Deposit.

12. Data Verification

12.1. BK Gold Deposit

12.1.1. Database Verification

The drill hole database was supplied by Erdene in the form of an Excel spreadsheets and a Leapfrog project. Additionally, Erdene supplied the assay certificates, by drill hole, in both csv and pdf format.

AGP reviewed approximately 10 % of the gold and silver assay database with a comparison to the assay certificates. No errors were encountered. Downhole surveys were visually inspected for any obvious deviating drill holes and validated for any out of sequence between the from and to entries. No errors were encountered.

12.1.2. Site Visit

Mr. Paul Daigle, the BK Gold Deposit MRE QP carried out his most recent site inspection between 2 April to 4 April 2023, with two days on site. The QP was accompanied on the site visit by:

- Peter Dalton, P. Geo., Senior Exploration Geologist, Erdene
- Bilguun Boldbaatar, Project Geologist, Erdene

The site visit included an inspection of core logging and sampling facilities, core storage facilities, verifying drill hole collar location and coordinates, and reviewing selected drill core against drill logs.

12.1.3. Exploration Camp

Erdene's exploration camp is situated at the north end of the Bayan Khundii deposit. the camp is set up within a fenced off area and includes accommodations, kitchen and dining facilities, washroom and washing facilities, exploration, and administration offices. Accommodations are in Gers (yurts) and kitchen, offices, storage, and washrooms are in semi-permanent modular buildings. Core logging is carried out within a semi-circular tent.

The interior the core logging tent is kept clean and well-maintained. All field and sampling and CRM supplies are kept orderly and organized on shelves within a separate storage building. Sampling facilities is located in a separate building and all samples are locked away prior to transportation.

The core storage area is situated at the south end of the exploration camp and within the fenced compound. Core boxes are stacked criss-cross by drill hole number and are left mainly uncovered.

12.1.4. Drill Collar Verification

Several drill hole collar coordinates were located and verified on the Bayan Khundii deposit area. The locations of the drill hole collars were measured in the field using a hand-held Global Positioning System (GPS) device (Garmin GPS map 62s) using NAD 83 datum, the same datum used by Erdene.

Drill hole collars are evidenced by a cement base around a steel collar with a welded plate cap. The cap has the drill hole number etched on the plate cap. For later drill holes, only the cement base covers the drill hole with the drill hole number pressed into the cement.

The collar coordinates measured by AGP fell within a 6 m tolerance of those reported by Erdene. It is the QP's opinion the coordinates are acceptable given the accuracy of the handheld GPS used to review the drill hole collar locations.

Table 12-1 presents the comparison of the AGP and Erdene drill hole coordinates on the Bayan Khundii deposit area.

Table 12-1 Comparison of Drill Hole Collar Coordinates – Bayan Khundii

Drill Holes	Erdene Easting (m UTM)	Erdene Northing (m UTM)	AGP Easting (m UTM)	AGP Northing (m UTM)	Δ Easting (m)	Δ Northing (m)
BKD-05	483188.5	4860944.6	483188.1	4860946.0	0.4	-1.4
BKD-08	483242.5	4860921.4	483240.6	4860921.0	1.9	0.4
BKD-21	483334.9	4861022.8	483332.2	4861017.0	2.7	5.8
BKD-81,BKD-26	483287.9	4861107.2	483289.1	4861106.0	-1.2	1.2
BKD-82	483282.2	4861137.9	483282.8	4861132.0	-0.6	5.9
BKD-86	483332.6	4861140.3	483331.1	4861135.0	1.5	5.3
BKD-102	483344.1	4861199.7	483341.2	4861195.0	2.9	4.7
BKD-150	483340.3	4861276.9	483338.9	4861271.0	1.4	5.9
BKD-150	483340.8	4861276.4	483338.9	4861271.0	1.9	5.4
BKD-151	483390.8	4861362.2	483388.4	4861357.0	2.4	5.2
BKD-153	483330.6	4861180.5	483329.0	4861176.0	1.6	4.5
BKD-171	483119.0	4861007.3	483117.0	4861005.0	2.0	2.3
BKD-188	483358.8	4861421.5	483357.3	4861417.0	1.5	4.5
BKD-205	483009.8	4861016.6	483005.9	4861014.0	3.9	2.6
BKD-216	482954.8	4861006.9	482952.4	4861005.0	2.4	1.9
BKD-220	482953.1	4861049.3	482955.5	4861050.0	-2.4	-0.7
BKD-226	483192.8	4860927.6	483191.8	4860924.0	1.0	3.6
BKD-231	483346.7	4861404.8	483345.3	4861402.0	1.4	2.8
BKD-233	483376.8	4861219.4	483373.6	4861216.0	3.2	3.4
BKD-234	483296.8	4861016.2	483292.6	4861012.0	4.2	4.2
BKD-239	483389.0	4861435.8	483387.1	4861430.0	1.9	5.8
BKD-262	483361.2	4861251.8	483358.6	4861247.0	2.6	4.8
BKD-272	483352.1	4861252.3	483349.6	4861247.5	2.5	4.8
BKD-322	483369.8	4861118.3	483366.4	4861117.5	3.4	0.8
BKD-344	483368.4	4861140.9	483368.3	4861138.6	0.1	2.3
BKD-346	483355.5	4861297.4	483353.1	4861295.3	2.4	2.1
BKD-353	483365.0	4861243.5	483363.3	4861238.7	1.6	4.8
BKD-356	483359.4	4861211.0	483357.2	4861207.4	2.2	3.6
BKD-357	483353.0	4861202.1	483349.6	4861197.7	3.4	4.4
BKD-360	483309.8	4861112.0	483312.3	4861111.0	-2.5	1.1
BKD-361	483320.1	4861110.4	483321.8	4861109.3	-1.6	1.1
BKD-362	483320.1	4861106.0	483321.4	4861102.3	-1.3	3.6
BKD-364	483373.5	4861113.2	483373.0	4861112.7	0.5	0.4

12.1.5. Drill Core Log Review

A review of the drill core and drill core logs was made on selected drill core intervals from each of the principal areas of the Bayan Khundii deposit. The lithology descriptions and sample intervals in the drill logs were compared and found to be correct and consistent. All sample tag numbers in the core boxes match with the intervals in the database.

Table 12-2 lists the selected drill core intervals examined during the site visit.

Table 12-2 Selected Drill Core Intervals Examined

Zone	Drill Hole	From (m)	To (m)	Interval (m)	Core Boxes
Striker West	BKD-211	95.42	121.60	26.18	27 - 35
Striker	BKD-17	52.00	102.30	50.30	15 - 28
Striker	BKD-50	58.83	99.30	40.47	17 - 27
Striker	BKD-81	51.07	77.00	25.93	15 - 21
Striker	BKD-369	0.00	20.00	20.00	1 - 8
Midfield	BKD-90	37.50	85.53	48.03	11 - 23
Midfield	BKD-153	35.90	64.92	29.02	11 - 18
Midfield	BKD-244	0.00	170.58	170.58	1 - 46
Midfield	BKD-269	0.00	200.00	200.00	1 - 55
MFSE	BKD-288	0.00	30.26	30.26	1 - 8
MFSE	BKD-289	0.00	30.00	30.00	1 - 8
MFSE	BKD-352	0.00	30.00	30.00	1 - 12
Midfield North	BKD-232	94.62	131.12	36.50	26 - 35
Midfield North	BKD-236	123.12	200.85	77.73	34 - 56
Midfield North	BKD-241	65.00	101.07	36.07	18 - 27

12.1.6. Independent Samples

The collection of independent samples is meant to demonstrate the presence of mineralization on the property in similar ranges as reported by the issuer. These samples are not intended to act as duplicate samples. AGP collected four samples selected from the available drill core during the site visit. The sample intervals were selected from four different areas within the Bayan Khundii deposit. The samples were collected from the same sample intervals as those of Erdene for a more direct comparison.

AGP supervised the quartering of the selected samples by rock saw and each sample was placed in a marked sample bag, sealed with a zip tie. AGP placed a sample tag in the core box at the location of the Erdene sample. Collected samples were transported by the QP and brought directly to SGS in Ulaanbaatar for assay analysis.

Once received at SGS, samples were prepared by crushing the sample to 80% passing 10 mesh and then a split of 250 g was pulverized to 85% passing 200 mesh (SGS code: RX1). Samples were analyzed for 33 elements by four acid digestion and ICPOES/ICPMS method (SGS code ICP40B). Gold was analyzed separately by fire assay and atomic absorption (SGS Code FAE303). The list of independent samples is shown in Table 12-3 and the comparison of results are presented in Table 12-4Table 12-4.

Table 12-3 Summary of Independent Samples

AGP Sample No.	Erdene Sample No.	Drill Hole	Sample Interval (m)
A1047857	90259	BKD-17	65-66
A1047858	99031	BKD-90	67-68
A1047859	122523	BKD-289	3-4
A1047860	128784	BKD-241	83-84

Table 12-4 Independent Sample Results

Sample No.	Drillhole	Au (g/t)	Ag (g/t)
AGP			
A1047857	BKD-17	1.45	<2
A1047858	BKD-90	3.85	4
A1047859	BKD-289	2.89	9
A1047860	BKD-241	4.46	3
Erdene			
90259	BKD-17	0.26	<2
99031	BKD-90	3.49	3
122523	BKD-289	4.08	3
128784	BKD-241	2.02	8
Difference			
		1.19	-
		0.36	1
		-1.19	0
		2.44	1

AGP interprets the differences of gold grades of the independent samples to be due to the degree of variability of the gold mineralization within the drill core. AGP considers the grade ranges of the samples to be acceptable and demonstrates the presence of mineralization on the Property.

12.1.7. QP Opinion

Paul Daigle, the BK Gold Deposit QP, is of the opinion the database is representative and adequate to support the mineral resource estimates for the Bayan Khundii deposit. Mr. Daigle is also of the opinion the core descriptions, sampling procedures, and data entries were conducted in accordance with industry standards.

12.2. Dark Horse Mane

Extensive database verification was carried out by RPM in 2021 and 2022. At that time, minor omissions and errors were identified and these were rectified at the time.

Formal validation of a number of drill holes was carried out by RPM during the site visit in 2022. A series of holes was selected by RPM for which the original assay and geology records were requested. The drill core for the AAD-61, 66, 92, 123, 136, 144, and 178 holes was also requested for review. In addition, RPM visited Dark Horse mineralization exposures, reviewed and verified core handling, sampling and density determination procedures and conducted discussion with the Erdene geology team.

Original records and assay certificates for all drilling were provided by Client and 100% checks were carried out with no material differences noted between the supplied database and original certificates.

The data was found to be well organized and able to be validated with readily available information. The core was well organized, and the requested core was located and laid out without issue. The core was in good condition, although core markers were often illegible due to the deterioration resulting from outdoor core storage.

During the site visit to Project area in October 2022, a large number of drill hole collars were identified at surface. RPM located forty five of the collars using a hand held GPS to verify the spatial location of the holes. All holes were found to be within 6 m of the accurately surveyed location, which RPM considers is within the accuracy limits of the hand held GPS. Therefore, the collar locations were verified, and a listing of the holes is shown in Table 12-5**.**

Based on the data supplied, RPM considers that the analytical data has sufficient accuracy to enable a Mineral Resource Estimate for the Dark Horse Project, and on-site checks have provided confidence in the supplied data.

Table 12-5 Drill Hole Collar Verification Summary

Hole_id	GPS Coordinates			Database Coordinates			Difference	
	Y	X	Z	Y	X	Z	Y	X
AAD-159	483,420	4,865,000	1,273	483,418.7	4,864,999.2	1,273.8	-1.3	-0.8
AAD-114	483,416	4,865,053	1,274	483,414.4	4,865,051.8	1,273.0	-1.6	-1.2
AAD-116	483,432	4,864,960	1,272	483,428.9	4,864,958.8	1,274.6	-3.1	-1.2
AAD-126	483,485	4,864,302	1,272	483,482.3	4,864,301.6	1,277.5	-2.7	-0.4
AAD-128	483,505	4,864,275	1,273	483,502.6	4,864,274.1	1,277.1	-2.4	-0.9
AAD-129	483,488	4,864,245	1,275	483,484.1	4,864,244.5	1,278.1	-3.9	-0.5
AAD-131	483,529	4,864,170	1,281	483,527.6	4,864,168.9	1,281.9	-1.4	-1.1
AAD-136	483,474	4,864,301	1,273	483,471.9	4,864,300.0	1,277.2	-2.1	-1.0
AAD-138	483,487	4,864,291	1,274	483,484.0	4,864,290.4	1,277.1	-3.0	-0.6
AAD-140	483,502	4,864,276	1,273	483,498.6	4,864,275.5	1,276.9	-3.4	-0.5
AAD-144	483,494	4,864,233	1,278	483,490.5	4,864,230.6	1,281.0	-3.5	-2.4
AAD-146	483,479	4,864,209	1,280	483,477.2	4,864,211.0	1,282.1	-1.8	2.0
AAD-147	483,518	4,864,212	1,282	483,515.1	4,864,211.0	1,286.3	-2.9	-1.0
AAD-150	483,516	4,864,192	1,280	483,512.2	4,864,194.8	1,281.5	-3.8	2.8
AAD-151	483,482	4,864,353	1,275	483,480.4	4,864,350.7	1,279.3	-1.6	-2.3
AAD-153	483,478	4,864,400	1,279	483,476.0	4,864,398.7	1,281.3	-2.0	-1.3
AAD-157	483,448	4,864,926	1,273	483,443.6	4,864,925.2	1,275.8	-4.4	-0.8
AAD-158	483,435	4,864,986	1,273	483,433.0	4,864,985.8	1,274.5	-2.0	-0.2
AAD-160	483,431	4,865,033	1,277	483,428.9	4,865,031.1	1,273.4	-2.1	-1.9
AAD-165	483,427	4,865,165	1,272	483,424.3	4,865,164.8	1,272.7	-2.7	-0.2
AAD-167	483,428	4,865,192	1,275	483,424.2	4,865,189.9	1,273.9	-3.8	-2.1
AAD-173	483,472	4,864,041	1,272	483,466.5	4,864,041.8	1,273.8	-5.5	0.8
AAD-174	483,475	4,864,092	1,280	483,471.7	4,864,093.8	1,279.5	-3.3	1.8
AAD-175	483,469	4,864,111	1,276	483,465.9	4,864,110.6	1,277.6	-3.1	-0.4
AAD-176	483,469	4,864,132	1,276	483,465.7	4,864,132.2	1,277.7	-3.3	0.2

Hole_id	GPS Coordinates			Database Coordinates			Difference	
	Y	X	Z	Y	X	Z	Y	X
AAD-178	483,474	4,864,168	1,278	483,468.7	4,864,167.8	1,280.7	-5.3	-0.2
AAD-186	483,459	4,864,874	1,275	483,456.7	4,864,872.7	1,276.6	-2.3	-1.3
AAD-189	483,468	4,864,005	1,272	483,467.2	4,864,005.8	1,272.9	-0.8	0.8
AAD-196	483,417	4,865,098	1,274	483,413.8	4,865,096.4	1,272.6	-3.2	-1.6
AAD-198	483,460	4,864,848	1,275	483,457.9	4,864,847.6	1,276.6	-2.1	-0.4
AAD-208	483,431	4,865,122	1,275	483,427.4	4,865,120.5	1,272.9	-3.6	-1.5
AAD-209	483,445	4,865,107	1,272	483,441.6	4,865,106.0	1,273.5	-3.4	-1.0
AAD-210	483,447	4,864,901	1,273	483,444.9	4,864,900.1	1,276.8	-2.1	-0.9
AAD-211	483,446	4,864,875	1,280	483,443.4	4,864,873.8	1,276.0	-2.6	-1.2
AAD-214	483,467	4,864,301	1,272	483,465.1	4,864,300.0	1,277.1	-1.9	-1.0
AAD-216	483,464	4,864,167	1,277	483,460.2	4,864,165.8	1,278.8	-3.8	-1.2
AAD-217	483,467	4,864,146	1,274	483,462.7	4,864,146.0	1,276.7	-4.3	0.0
AAD-218	483,468	4,864,137	1,276	483,465.3	4,864,137.8	1,277.2	-2.7	0.8
AAD-58	483,446	4,864,354	1,277	483,440.5	4,864,350.0	1,278.6	-5.5	-4.0
AAD-74	483,424	4,864,574	1,278	483,421.3	4,864,570.7	1,279.5	-2.7	-3.3
AAD-84	483,498	4,864,170	1,277	483,495.5	4,864,169.0	1,278.4	-2.5	-1.0
AAD-88	483,437	4,864,920	1,275	483,432.8	4,864,919.5	1,275.0	-4.2	-0.5
AAD-96	483,433	4,865,144	1,275	483,430.8	4,865,142.8	1,272.8	-2.2	-1.2
AAD-98	483,470	4,865,221	1,275	483,465.5	4,865,219.8	1,274.0	-4.5	-1.2
AAD-152	483,473	4,864,368	1,277	483,470.3	4,864,366.3	1,280.1	-2.7	-1.7

12.3. Site Visit by O2 Mining

Site visits were carried out to the property by Julien Lawrence, FAusIMM, O2 Mining Principal Mining Engineer, between 9th and 12th of May 2019, and 7th to 10th of November 2019. While at site, Mr. Lawrence visited the proposed sites for the open pit, process plant all non-process infrastructure sites, integrated waste facility and inspected the surrounding topography and site conditions. Mr. Lawrence also inspected site access conditions during the visit.

13. Mineral Processing and Metallurgical Testing

Metallurgical characterization of the Bayan Khundii material for the Bayan Khundii feasibility study is largely based on testwork conducted at Blue Coast Research in 2019 and 2020. In addition to the Blue Coast work, specific comminution tests were conducted by SGS Canada Inc. (Vancouver, BC), and dewatering testwork was conducted by Responsible Mining Solutions Corp (Burnaby, BC). The testwork was designed to expand the metallurgical database and build on past work conducted at Blue Coast in 2016 and 2017. The 2019 test program included a detailed cyanidation program, additional variability tests, a gravity concentration study and a comminution test program. The 2020 study included an expanded comminution program, additional cyanidation testwork, carbon adsorption, dewatering and cyanide destruction testwork. Material from Dark Horse was evaluated at Blue Coast Research during two programs in 2022 and 2023.

A detailed summary may be found in the individual testwork reported, referenced in Chapter 27 - References.

13.1. Prior Metallurgical Testwork Programs

13.1.1. 2016 Metallurgical Testwork

The 2016 testwork program evaluated the response of two Bayan Khundii composites to gravity concentration and cyanidation methods. These composites, having grades of 24.9 g/t (BK-MET_15-01) and 0.71 g/t (BK-MET-15-02), had overall gold recoveries of 99% and 92% respectively through a combined gravity and cyanidation flowsheet. A summary of the metallurgical performance from these composites is summarized in Table 13-1.

Table 13-1 Overall Metallurgical Recoveries from BK-MET-15-01 and BK-Met-15-02

Composite	BK-MET-15-01		BK-MET-15-02	
Process Unit	Au Distribution (%)	Ag Distribution (%)	Au Distribution (%)	Ag Distribution (%)
Gravity Conc	71	27	32	10
Tails Leach	28	34	60	10
Gravity+Tails Leach	**99**	**61**	**92**	**20**

13.1.2. 2017 Metallurgical Testwork

The 2017 metallurgical testwork program expanded the metallurgical database by conducting comminution testwork, a cyanidation optimization program and a cyanide variability program.

Master composite testwork was conducted on global composites made up of samples from across the Bayan Khundii deposit. The optimization testwork pointed to the need for a primary grind in the range of 80% passing 60µm in order to maximize gold recovery. A moderate cyanide concentration of 1.0 g/L was necessary to maintain gold extractions.

The cyanide variability program consisted of 16 discreet samples that were tested under conventional cyanide leach conditions. The composites represented both variations in grade and geography of the Bayan Khundii deposit. The majority of the composites had head grades less than 1.0 g/t Au and were designed to test the limits of recovery from lower grade material. Each test was conducted as a standard 48 hour bottle roll, with a cyanide concentration maintained at 1.0 g/L NaCN. pH was held between 10.5 and 11.0.

Table 13-2 summarizes the gold recovery from various composites and their location. Composites with head grades greater than 1.0 g/t consistently returned gold recoveries that were greater than 90%. Some evidence was noted amongst lower grade samples (BK-MET-16-15 through BK-MET-16-20) whereby recovery decreased marginally at depth.

Table 13-2 Summary of Recoveries compared to Sample Locations

Test	Composite	Location	Grind Size (p80, µm)	Head Grade, Au (g/t)	Au Recovery (%)
CN-31	BK-MET-16-01	no specific area	56	1.88	90.4
CN-30	BK-MET-16-03	no specific area	60	5.01	95.9
CN-20	BK-MET-16-04	no specific area	59	4.72	92.4
CN-4	BK-MET-16-05	no specific area	59	2.30	92.5
CN-5	BK-MET-16-06	no specific area	66	1.18	90.8
CN-6	BK-MET-16-07	no specific area	72	0.60	83.8
CN-7	BK-MET-16-08	no specific area	57	0.35	83.0
CN-8	BK-MET-16-09	BKD-32 – no specific depth	94	0.37	75.4
CN-9	BK-MET-16-10	BKD-32 – no specific depth	140	0.96	83.2
CN-10	BK-MET-16-11	Midfield, BKD-60 – no specific depth	86	0.38	83.0
CN-11	BK-MET-16-12	Midfield, BKD-60 – no specific depth	67	0.84	87.5
CN-12	BK-MET-16-13	Striker/West BKD-40/49 – no specific depth	62	0.41	73.9
CN-13	BK-MET-16-14	Striker/West BKD-40/49 – no specific depth	56	1.10	93.5
CN-14	BK-MET-16-15	Striker/Au Hill 0-40m	67	0.45	86.0
CN-15	BK-MET-16-16	Striker/Au Hill 0-40m	53	0.70	91.4
CN-16	BK-MET-16-17	Striker/Au Hill 40-80m	60	0.40	84.2
CN-17	BK-MET-16-18	Striker/Au Hill 40-80m	47	0.79	84.4
CN-18	BK-MET-16-19	Striker/Au Hill >80m	56	0.37	79.8
CN-19	BK-MET-16-20	Striker/Au Hill >80m	55	0.75	82.4

13.2. 2019 and 2020 Testwork

13.2.1. Samples and Composite Characterization

Samples for the prefeasibility (2019) and feasibility (2020) testwork were collected by Erdene personnel. Prefeasibility composites (having composite ID's BK-MET-COMP_18-xx) were designed to reflect different aspects of the Bayan Khundii deposit. BK-MET-COMP_18-01 was selected from drill holes from the Striker, Midfield and Midfield North areas and was designed to be a global composite representing the average grade of the Bayan Khundii deposit. BK-MET-COMP_18-02 was selected from the Striker area only and targeted an average grade of 10 g/t gold. This composite was designed to reflect the higher-grade portions of the deposit that will be mined early in the mine life. Additionally, 13 variability composites (BK-MET-COMP_18-03 through BK-MET-COMP_18-15) were prepared. These composites were smaller and were designed to represent various geographic areas, grades and rock types (oxidized versus fresh material).

Feasibility composites (with composite ID's BK-COMP-19-xx) were also designed to reflect different areas of the Bayan Khundii deposit. BK-COMP-19-02 and BK-COMP-19-03 represented the upper and lower portions of the Striker area. Composites BK-COMP-19-04 and BK-COMP-19-05 represented the upper and lower portions of the Midfield area. Upper and lower portions of North Midfield were reflected in BK-COMP-19-06 and BK-COMP-19-07. Upper portions reflected the top 50 m of the deposits while lower portions were collected from material in the lower 50 m. Composites 19-02 through 19-07 were primarily used for variability testwork (comminution and cyanidation). Additional comminution samples were also collected. These included full PQ core selected from the Striker area for use in JK Drop Weight tests and Crusher Work Index tests.

To carry out optimization work during the feasibility study, additional average grade drill core was selected to bulk up the deposit wide composite. Approximately 200 kg of crushed material from the BK-MET-COMP_18-xx series composites was blended with an additional 75 kg of average grade material to form an average grade Master Composite.

Chemical characterization of the composites was performed at Blue Coast Research. Gold content was measured by fire assay with an atomic adsorption finish. Silver was assayed with a four acid (near-total) digest followed by an atomic adsorption finish. Total sulphur and total carbon were assayed directly on an ELTRA Carbon-Sulphur analyzer. Sulphide sulphur and organic carbon were determined by first pre-treating the sample with 20% HCl for 1 hour at 75°C. This removed any sulphates and carbonates that may be present. The remaining residue is then analysed on the ELTRA with any sulphur and carbon present being attributed as sulphide sulphur and organic carbon. A summary of the measured head grades of the composites is presented in Table 13-3.

Table 13-3 Summary of Head Assays from Bayan Khundii metallurgical composites

Composite ID	Deposit Location	Description	Au (g/t)	Ag (g/t)	S_{tot} (%)	S_{2-}(%)	C_{tot}(%)	C_{org}(%)
18-01	Bayan Khundii Global	Deposit Wide Master Composite	3.17	2.89	0.05	0.04	0.17	0.02
18-02	Striker	Striker High Grade Master Composite	10.79	4.30	0.02	0.02	0.06	0.01
18-03	Striker	Oxide; ~1.5 g/t	1.31	2.57	0.01	0.01	0.05	0.01
18-04	Striker	Oxide; ~3.5 g/t	6.05	2.97	0.15	0.15	0.16	0.01
18-05	Striker	Fresh; ~3.5 g/t	4.83	2.67	0.06	0.07	0.10	0.01
18-06	Striker	Oxide; ~5.0 g/t	4.71	2.73	0.02	0.02	0.12	0.01
18-07	Midfield	Oxide; ~1.5 g/t	1.07	1.72	0.01	0.01	0.09	0.02
18-08	Midfield	Oxide; ~3.5 g/t	3.02	1.92	0.01	0.01	0.09	0.01
18-09	Midfield	Fresh; ~3.5 g/t	4.73	2.35	0.14	0.14	0.69	0.01
18-10	Midfield	Oxide; ~5.0 g/t	4.37	3.94	0.01	0.01	0.16	0.01
18-11	Midfield North	Oxide; ~1.5 g/t	1.19	2.42	0.01	0.02	0.08	0.01
18-12	Midfield North	Oxide; ~3.5 g/t	4.21	5.64	0.01	0.01	0.11	0.01
18-13	Midfield North	Fresh; ~3.5 g/t	3.31	2.87	0.03	0.04	0.07	0.02
18-14	Midfield North	Oxide; ~5.0 g/t	5.59	6.32	0.00	0.01	0.07	0.02

Composite ID	Deposit Location	Description	Au (g/t)	Ag (g/t)	S_{tot} (%)	S_{2-}(%)	C_{tot}(%)	C_{org}(%)
18-15	Bayan Khundii Global	Heap Leach Amenability	2.31	3.20	0.01	0.02	0.13	0.02
Avg Grade Master Comp	Deposit Wide	Deposit Wide Master Composite, made up of various 18-xx material plus additional drill core	3.60	2.2	0.03	0.17	0.01	0.03
19-02	Striker	Upper 50 m	3.70	1.1	0.03	0.03	0.01	0.03
19-03	Striker	Lower 50 m	2.61	1.3	0.14	0.32	0.01	0.14
19-04	Midfield	Upper 50 m	6.50	1.9	0.01	0.09	0.01	0.01
19-05	Midfield	Lower 50 m	4.71	2.1	0.03	0.22	0.01	0.03
19-06	Midfield North	Upper 50 m	4.26	2.8	0.01	0.14	0.01	0.01
19-07	Midfield North	Lower 50 m	4.86	3.1	0.02	0.26	0.02	0.02

13.2.2. Grindability Testing

A number of grindability test programs were conducted on Bayan Khundii material. An initial program was conducted on 2016 composites and evaluated Bond Rod Mill (RWI) and Bond Ball Mill Work indices (BWI). This composite (BK-16-01) returned BWI and RWI values of 16.1 and 17.8 kWh/ton respectively. The closing screen size for the Bond Ball Mill Work Index test was 150µm. Since this produced a coarser product size than the current design basis (80% passing 60µm) it has been excluded from the more detailed dataset highlighted below.

During the 2019 and 2020 test programs additional grindability testing was carried out on Bayan Khundii material. All composites were subjected to Bond Ball Work Index tests, SMC tests and Abrasion index tests. Most Bond Ball Mill Work index tests were conducted on a closing screen size of 75µm, however composite 18-01 and 18-02 used a slightly coarser closing screen size of 106µm. Additional composites of full PQ core were collected to conduct JK Drop Weight tests and Crusher Work Index tests.

Results indicate the material is moderately hard to hard. The average Bond Work Index is 18.1 kWh/ton, however, there were some geographic trends noted in the hardness of the material. The average BWI from the Striker zone was 17.2 kWh/ton, while the average BWI from Midfield and Midfield North was 18.4 and 19.1 respectively. Since this generally aligns with the proposed mining sequence, then the implication is that feed to the mill will get progressively harder over the course of the mine life. The SMC tests also align with this observation. Abrasion Index results suggest the material is moderately abrasive to abrasive.

Table 13-4 Summary of Comminution Test Results (JK Drop Weight Tests and SMC Tests)

Composite	Sample Location	JK Parameters							
		JK Drop Weight Test				SMC Test			
		A	b	Axb	ta	A	b	Axb	ta
BK-18-01	Deposit Wide	-	-	-	-	69.0	0.52	35.9	0.36
BK-18-02	Deposit Wide	-	-	-	-	63.3	0.62	39.2	0.39
BK-19-02	Striker; Upper 50 m	-	-	-	-	76.5	0.52	39.8	0.39
BK-19-03	Striker; Lower 50 m	-	-	-	-	77.5	0.53	41.1	0.4
BK-19-04	Midfield; Upper 50 m	-	-	-	-	88.6	0.37	32.8	0.33
BK-19-05	Midfield; Lower 50 m	-	-	-	-	74.6	0.5	37.3	0.37
BK-19-06	North Midfield; Upper 50 m	-	-	-	-	71.1	0.51	36.3	0.36
BK-19-07	North Midfield; Lower 50 m	-	-	-	-	82.1	0.39	32.0	0.31
BK-19-08	Striker; Hole BKD-267 From 32.38 to 37.85	60.1	0.84	50.5	0.55	-	-	-	-
BK-19-09	Striker; Hole BKD-267 From 60.4 to 61.67	-	-	-	-	-	-	-	-
Average		**60.1**	**0.84**	**50.5**	**0.55**			**36.8**	**0.36**
Max								32.0	0.31
Min								41.1	0.40

Table 13-5 Summary of Comminution Test Results (Bond Ball Mill Work Index, Crusher Work Index, Abrasion Index)

Composite	Sample Location	Bond Ball Mill Work Index	Crusher Work Index	Abrasion Index
		kWh/ton	kWh/ton	g
BK-18-01	Deposit Wide	18.1		0.426
BK-18-02	Deposit Wide	17.1		0.496
BK-19-02	Striker; Upper 50 m	17.0	-	0.261
BK-19-03	Striker; Lower 50 m	17.4	-	0.404
BK-19-04	Midfield; Upper 50 m	18.6	-	0.572
BK-19-05	Midfield; Lower 50 m	18.2	-	0.444
BK-19-06	North Midfield; Upper 50 m	19.3	-	0.350
BK-19-07	North Midfield; Lower 50 m	18.9	-	0.374
BK-19-08	Striker; Hole BKD-267 From 32.38 to 37.85	-	-	-
BK-19-09	Striker; Hole BKD-267 From 60.4 to 61.67	-	10.3	-
Max		19.3		0.572
Min		17.0		0.261

13.2.3. Gravity Concentration

Gravity concentration studies conducted during the 2019 test program were completed in order to obtain a greater understanding of the gravity response from average grade material (BK-MET-COMP_18-01) and from high grade material which could make up a portion of the mill feed early in the mine life (BK-MET-COMP_18-02). The cumulative gravity recoverable gold (GRG) ranged from 40.5% for BK-MET-COMP_18-01, to 57.7% for BK-MET-COMP_18-02. While there was a reasonable about of gold present as GRG in each composite, that gold was quite fine and late liberating, thus making high recovery by gravity alone quite difficult.

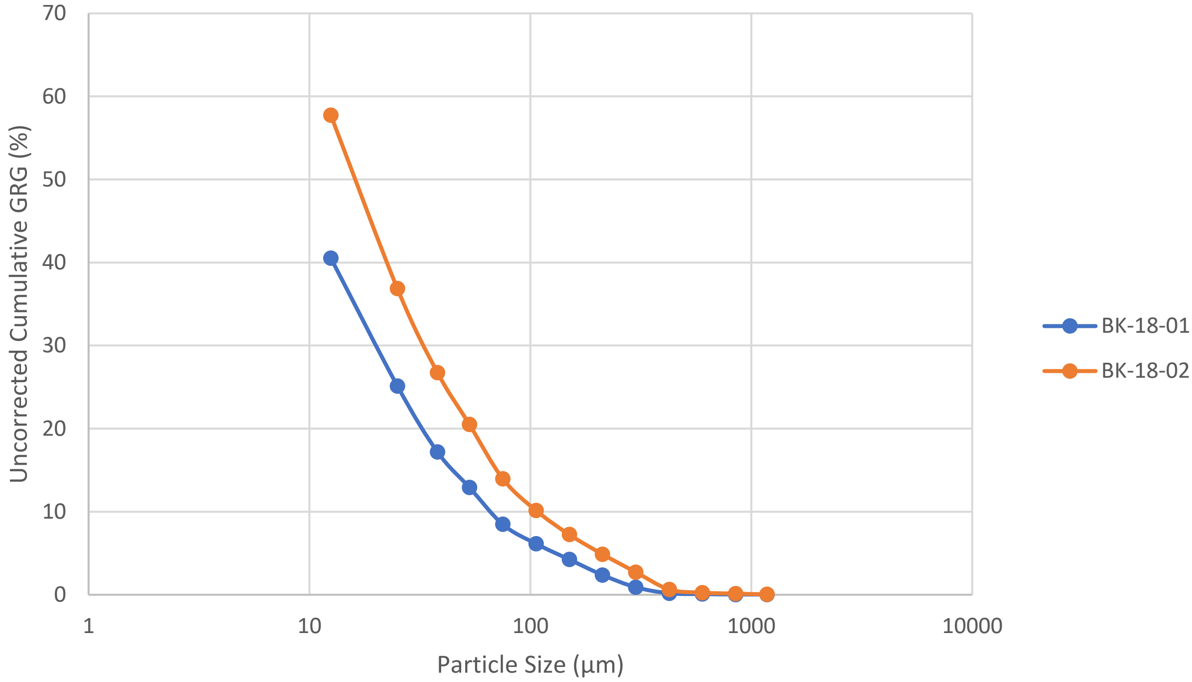


Figure 13-1 Uncorrected Cumulative GRG Recovery (Source – BCR 2023)

13.2.4. Cyanidation Optimization Testwork - 2019

Optimization of Bayan Khundii leach conditions was conducted using the two master composites (BK-MET-COMP_18-01 and BK-MET-COMP_18-02). The program evaluated the effect of primary grind size, cyanide concentration, lead nitrate and oxygen addition. An additional variability study was conducted to further refine the head grade recovery relationships for the deposit.

13.2.4.1. Effect of Primary Grind Size

Grind sensitivity tests were conducted on BK-MET-COMP_18-01 (3.17 g/t Au) and BK-MET-COMP_18-02 (10.79 g/t Au). Grind sizes for each test ranged from a p80 of 146µm on the coarse end to a p80 of 56µm on the fine end. Each test was conducted as a standard 48-hour bottle roll. Cyanide concentration was maintained at 1.0 g/L throughout the test and pH was maintained between 10.5 and 11 with the addition of lime. Results are summarized in Table 13-2.

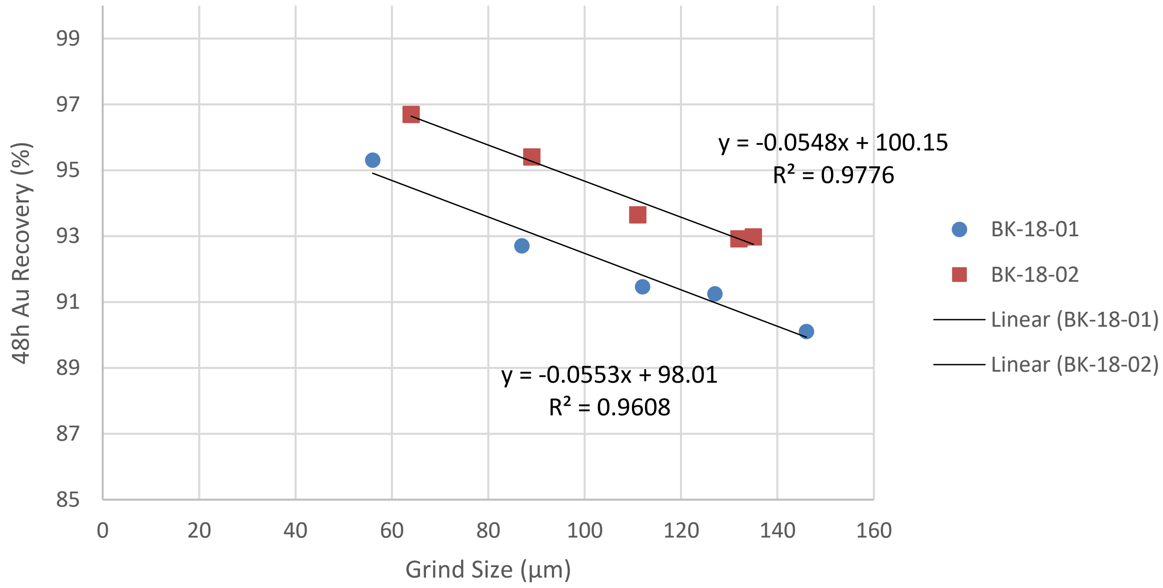


Figure 13-2 Relationship between Grind Size and Gold Recovery (BK-MET-COMP_18-01 and BK-MET-COMP_18-02) (Source – BCR 2023)

These results clearly indicate that finer primary grinds produce higher overall gold recoveries. This is in line with previous Bayan Khundii testwork and the gravity testwork which indicates that a large portion of the gold is relatively fine. Accordingly, grinding to a target p80 of 60µm was selected as the design basis for the process plant.

13.2.4.2. Effect of Cyanide Concentration

A series of three tests was conducted on the average grade composite (BK-MET-COMP_18-01) at differing cyanide concentrations to determine the impact that cyanide concentration had on overall gold recovery. Each test was conducted as a standard 48-hour bottle roll at 40% solids, with a primary grind size of approximately 80% passing 70µm. Three levels of cyanide concentration were evaluated: 0.35 g/L, 0.5 g/L and 1.0 g/L. Initial leach kinetics were faster at a sodium cyanide concentration of 1.0 g/L, however gold extraction converged at approximately 36 hours with recovery being nearly identical. As a result, the intermediate sodium cyanide dosage (0.5 g/L NaCN) is recommended as the design basis. In addition to reducing costs for sodium cyanide, it will also reduce the requirements for cyanide destruction reagents.

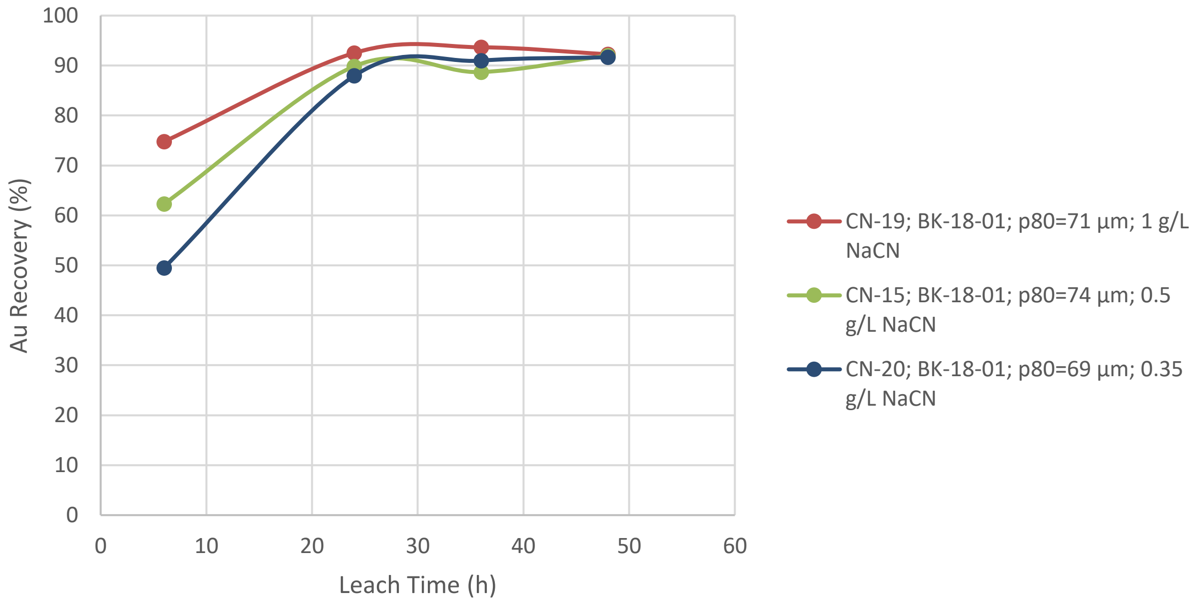


Figure 13-3 Effect of Cyanide Concentration on Bayan Khundii Leach Kinetics (Source – BCR 2023)

13.2.4.3. Impact of Lead Nitrate Addition

Each master composite (BK-MET-COMP_18-01 and BK-MET-COMP_18-02) was subjected to a bottle roll test to determine if the addition of lead nitrate would improve overall recovery from Bayan Khundii material. Each test was conducted with a primary grind of 80% passing 90µm and a pulp density of 40% solids. Sodium cyanide concentration was maintained at 1.0 g/L and lead nitrate was dosed at 50 g/t prior to the start of the test.

No increase in overall recovery was observed after 48 hours of leaching. Lead nitrate addition did result in an increase in the initial gold leach kinetics (measured after the 6-hour mark), however, this performance generally equalized after approximately 36 hours. As a result, lead nitrate addition was not recommended as part of the Bayan Khundii flowsheet.

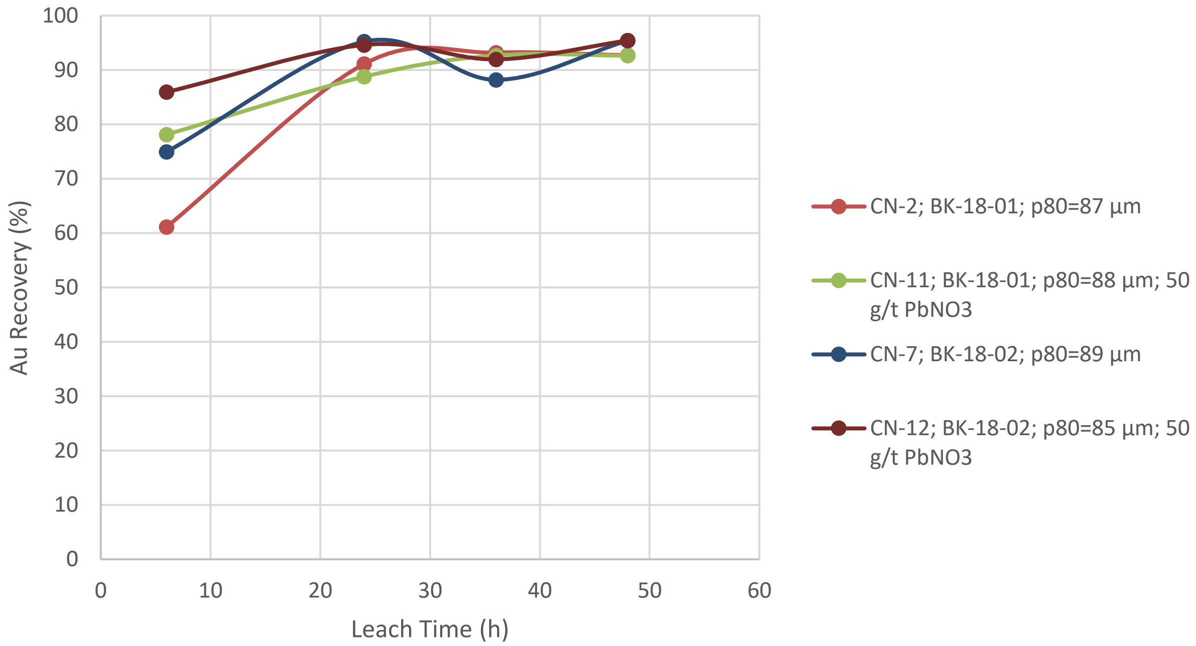


Figure 13-4 Leach Kinetics of Bayan Khundii Material With and Without Lead Nitrate Addition (Source – BCR 2023)

13.2.4.4. Impact of Oxygen Addition

Oxygen availability can be a limiting factor during gold leaching. Two tests were conducted whereby pure oxygen was sparged into the pulp during the first 6 hours of the test thereby substantially increasing the dissolved oxygen content and increasing the oxygen available for gold extraction. Tests were conducted with a primary grind size of 80% passing approximately 90µm, a sodium cyanide concentration of 1.0 g/L and a pulp density of 40% solids.

While the initial gold extraction kinetics increased during the period of oxygen sparging, the overall recovery was essentially unchanged after 48 hours. The limited benefit coupled with the added cost and complexity of adding oxygen meant that it was not recommended for future use as part of the Bayan Khundii flowsheet. Table 13-5 highlighted the leach kinetics with and without oxygen addition.

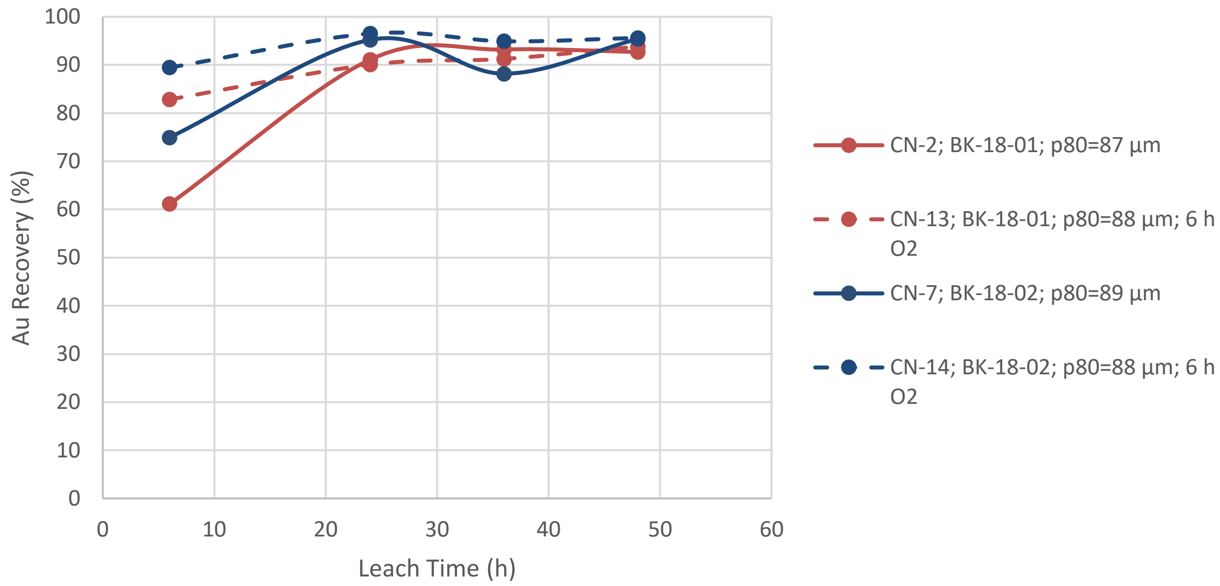


Figure 13-5 Impact of Oxygen Addition on Bayan Khundii Gold Extraction Kinetics (Source – BCR 2023)

13.2.4.5. Retention Time

Kinetic checks conducted on Bayan Khundii material over the entire test program showed that maximum gold recovery was often achieved after 36 hours of leach time. Average gold recovery after 24 hours was 88.6%. After 36 hours the average gold recovery was 93.8% and 93.5% after 48 hours. The slight difference between 36 and 48 hours is not considered significant. The higher grade master composite (BK-MET-COMP_18-02) generally required 48-hour retention times to achieve maximum recovery. The possibility of some slightly coarser gold in this composite may explain the requirement for longer leach times. Master composite BK-MET-COMP_18-01 generally displayed a maximum recovery after 36 hours, however a few tests continued to leach until 48 hours.

Table 13-6 highlights the kinetic curves from the variability tests as well as the master composites under similar conditions.

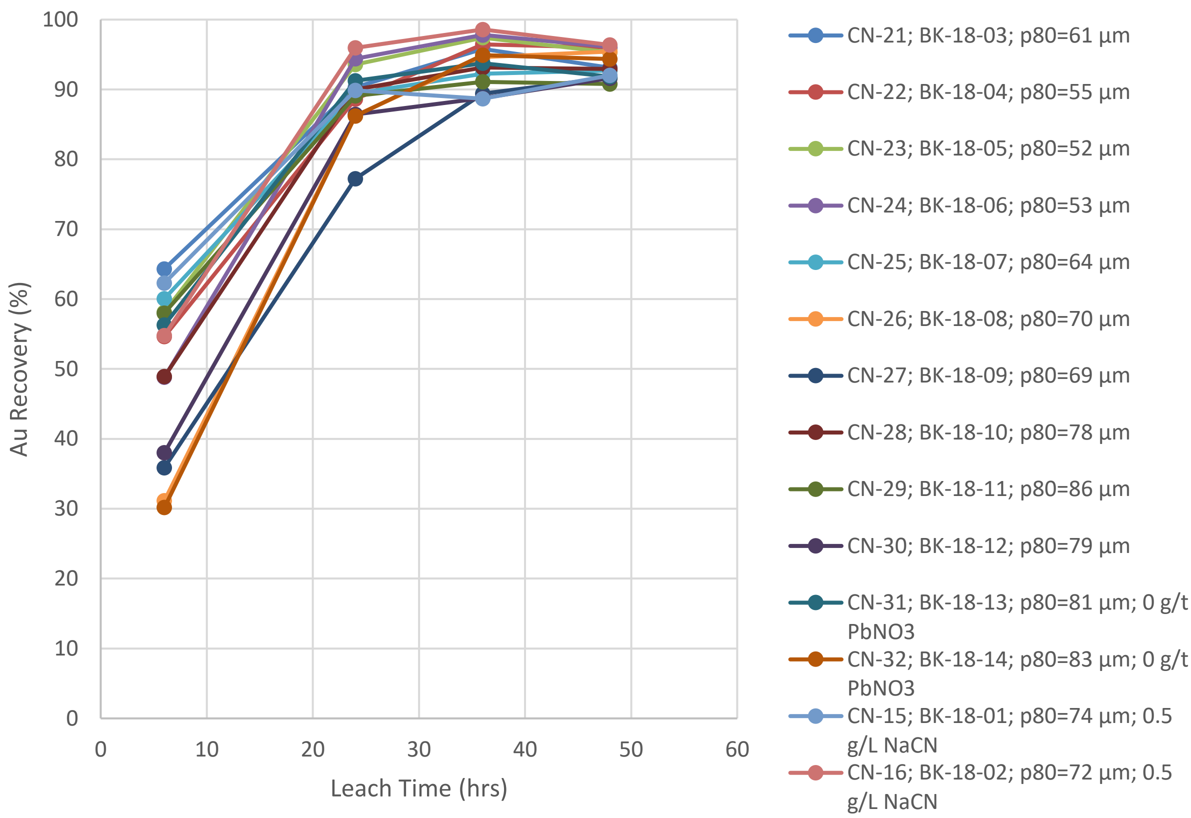


Figure 13-6 Leach Kinetic Curves from Bayan Khundii Master and Variability Composites (Source – BCR 2023)

13.2.4.6. Variability Testwork

A variability study was completed which evaluated the gold extraction of 12 samples under similar leach conditions. The composites represented both variations in grade and geography of the Bayan Khundii deposit. Each test was conducted as a 48-hour bottle roll, with cyanide concentration maintained at 0.5 g/L. Tests were conducted at 40% solids and the pH was held between 10.5 and 11.0. A summary of test results is presented in

Table 13-6 and Figure 13-7. Figure 13-8 highlights the variability test results by geography, rock type and grade band. This highlights a few salient features:

- Gold recovery from the Striker Zone material is higher than that from Midfield and Midfield North.
- Midfield North consistently results in material with the lowest recovery.
- Although there is generally no clear difference in gold recovery between oxide and fresh rock, recovery from the Midfield oxide sample was higher than the corresponding Midfield fresh rock sample.

Table 13-6 Summary of Variability Composite Test Results

CN Test ID	Feed	Composite Location	Description	NaCN Dosage (g/L)	Consumption (kg/t)		Final Recovery (%)	Residue Grade (g/t)	Residue p80 (µm)
				Initial	NaCN	CaO	Au	Au	
CN-21	BK-18-03	Striker	Oxide; ~1.5 g/t	0.50	0.10	0.96	93.1	0.11	61
CN-22	BK-18-04	Striker	Oxide; ~3.5 g/t	0.50	0.18	0.97	96.0	0.22	55
CN-23	BK-18-05	Striker	Fresh; ~3.5 g/t	0.50	0.21	0.95	95.3	0.24	52
CN-24	BK-18-06	Striker	Oxide; ~5.0 g/t	0.50	0.21	0.93	96.1	0.22	53
CN-25	BK-18-07	Midfield	Oxide; ~1.5 g/t	0.50	0.35	0.72	92.7	0.10	64
CN-26	BK-18-08	Midfield	Oxide; ~3.5 g/t	0.50	0.53	0.65	95.4	0.16	70
CN-27	BK-18-09	Midfield	Fresh; ~3.5 g/t	0.50	0.56	0.99	91.7	0.45	69
CN-28	BK-18-10	Midfield	Oxide; ~5.0 g/t	0.50	0.08	0.71	92.9	0.32	78
CN-29	BK-18-11	Midfield North	Oxide; ~1.5 g/t	0.50	0.07	0.93	90.8	0.13	86
CN-30	BK-18-12	Midfield North	Oxide; ~3.5 g/t	0.50	0.18	0.98	91.6	0.33	79
CN-31	BK-18-13	Midfield North	Fresh; ~3.5 g/t	0.50	0.08	0.95	91.8	0.29	81
CN-32	BK-18-14	Midfield North	Oxide; ~5.0 g/t	0.50	0.15	0.97	94.4	0.33	83

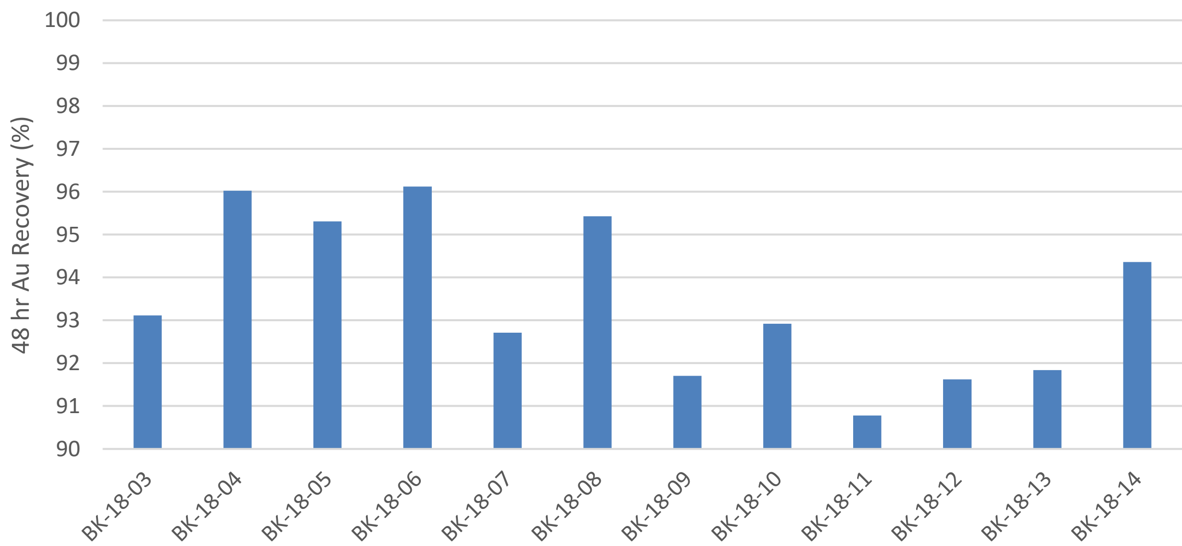


Figure 13-7 Erdene Variability Composite Gold Recovery (Source – BCR 2023)

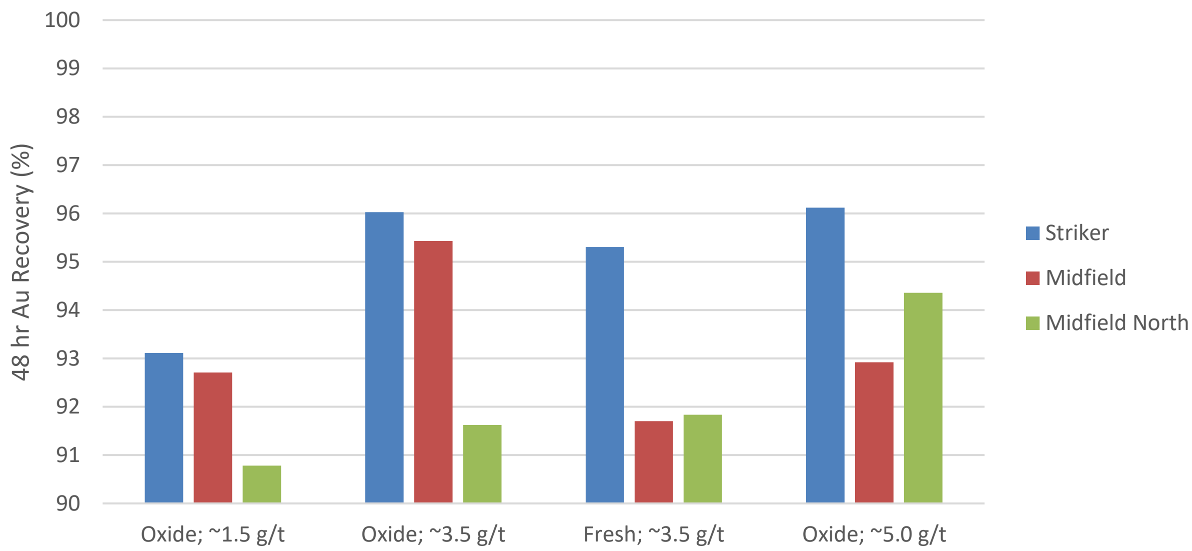


Figure 13-8 Variability Recovery Sorted by Geography, Rock Type and Grade Range (Source – BCR 2023)

13.2.5. Cyanidation Optimization Testwork - 2020

Bottle roll tests were conducted during the 2020 study to evaluate the impact that percent solids had on cyanidation performance and to further study the relationship between primary grind and overall gold recovery. Composites used during this program as outlined in Table 13-7.

Table 13-7 Composites used during the 2020 Cyanidation Program

Composite	Location
BK-Average Grade Composite	Deposit Wide Average Grade Composite
BK-COMP-19-02	Striker; Upper 50 m
BK-COMP-19-03	Striker; Lower 50 m
BK-COMP-19-04	Midfield; Upper 50 m
BK-COMP-19-05	Midfield; Lower 50 m
BK-COMP-19-06	North Midfield; Upper 50 m
BK-COMP-19-07	North Midfield; Lower 50 m

13.2.5.1. Cyanidation Testwork – Effect of Percent Solids

A limited cyanidation study was conducted using the deposit wide master composite to evaluate the impact that percent solids had on the leach performance of the Bayan Khundii material. Tests evaluated solids contents from 35% to 55%. Each cyanidation test was conducted for 48 hours with a sodium cyanide concentration maintained at 1.0 g/L. The primary grind for each test employed the standard Bayan Khundii grind size of 80% passing 60µm. Results are summarized in Table 13-8.

Table 13-8 Effect of % Solids on Leach Extraction of Bayan Khundii Material

Test ID	% Solids	Primary Grind (p80, µm)	48 hr Au Recovery (%)	48 hr Ag Recovery (%)	Residue Grade (Au, g/t)	Residue Grade (Ag, g/t)
CN-1	35	61	95.8	59.9	0.16	1.40
CN-2	40	60	95.8	60.1	0.16	1.43
CN-3	45	59	96.3	61.7	0.17	1.47
CN-4	50	58	95.7	60.3	0.17	1.47
CN-5	55	60	95.6	60.3	0.17	1.50

The results were very consistent with 48 hour gold recoveries from each test essentially 96%. The higher percent solids produce slower leach kinetics in the early stages (between 6 and 24 hours). Aside from the 55% solids test, the ultimate recovery was essentially achieved by the 36 hour mark. The gold kinetics curve, presented in Figure 13-9 below, highlights this fact.

The current design basis and essentially all the testwork to date has used 40% solids as the standard. There is no benefit in reducing the solids content of the leach below 40%. Leaching above 50% solids is not recommended as there is some risk to 36 hour gold recovery, which is the current retention time design for the Bayan Khundii plant. Leach kinetics are impacted as the solids content is increased above 40%, but the result appears to be negligible after 36 hours. However, higher grade material could be impacted as there is some evidence that leach kinetics from higher grade samples is somewhat slower. Therefore, the current design basis of 40% solids is maintained to ensure sufficient extraction kinetics when processing higher grade material.

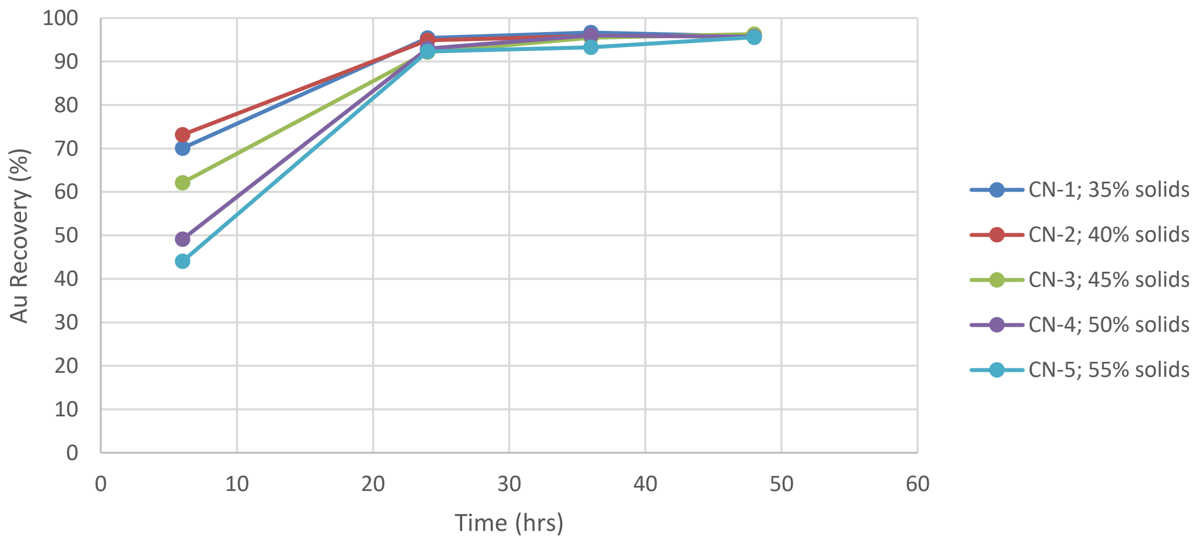


Figure 13-9 Bayan Khundii Leach Kinetics at Various % Solids (1.0 g/L NaCN, p80=60µm) (Source – BCR 2023)

13.2.5.2. Cyanidation Testwork – Effect of Primary Grind Size

Previous testwork identified a strong correlation between primary grind size and overall gold recovery. As a result, the design basis called for a primary grind target of 80% passing 60µm. During the 2020 test program additional testwork was conducted to confirm this design basis. Cyanidation tests were conducted on the 2020 composites to compare gold recoveries with primary grinds of at 80% passing 60µm and 75µm. Results of these tests are summarized in Table 13-9.

Table 13-9 Summary of Bayan Khundii Cyanidation Tests at 60µm and 75µm

Test ID	Composite	Primary Grind Size (µm, p80)	Au Recovery (%)	Ag Recovery (%)
CN-13	BK-Avg Grade Master Comp	61	95.2	55.8
CN-14	BK-19-02	61	95.0	42.7
CN-15	BK-19-03	59	92.8	52.5
CN-16	BK-19-04	61	95.4	56.7
CN-17	BK-19-05	62	91.6	65.6
CN-18	BK-19-06	60	95.7	59.1
CN-19	BK-19-07	64	92.5	66.7
CN-20	BK-19-02	71	96.7	40.5
CN-21	BK-19-03	73	92.0	52.2
CN-22	BK-19-04	74	95.9	52.2
CN-23	BK-19-05	76	92.4	64.8
CN-24	BK-19-06	72	94.5	58.1
CN-25	BK-19-07	78	90.4	64.3
CN-26	BK-Avg Grade Master Comp	74	94.1	56.1

In this dataset the difference in gold recovery from samples with a 60µm primary grind compared to samples with a 75µm primary grind was minor and likely within the measurement sensitivity of the test. However, on average the 60µm primary grind size yielded a gold recovery of 94.1% compared to gold recovery of 93.7% at a 75µm grind size. The design basis of 80% passing 60µm was maintained.

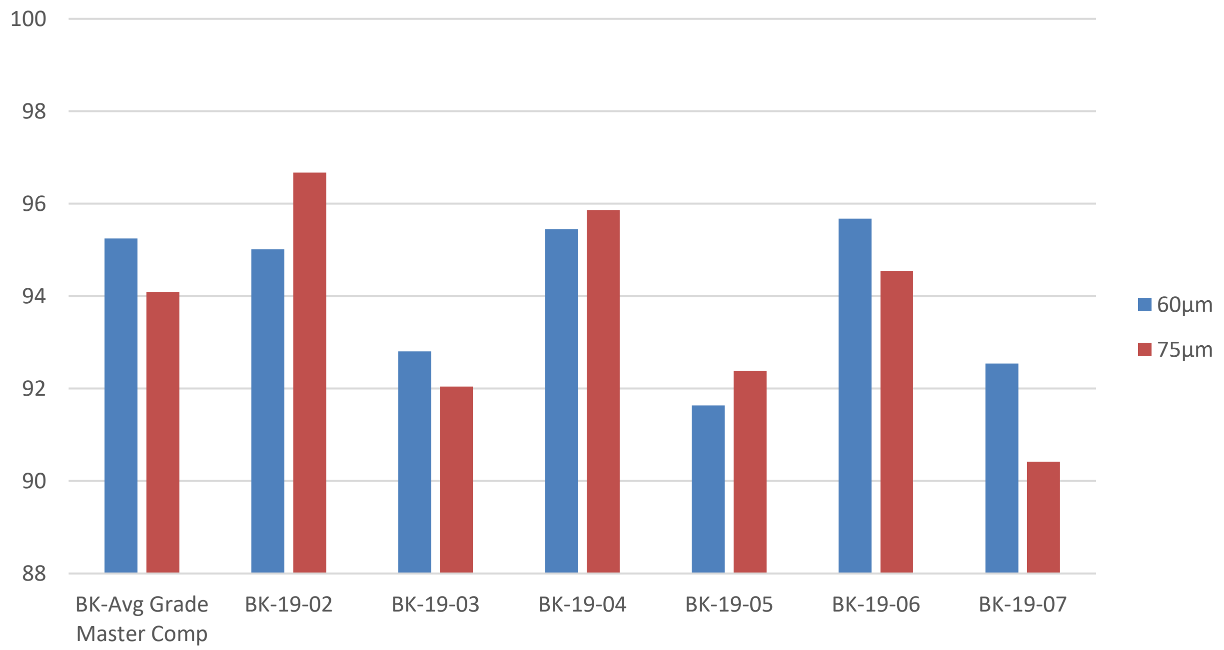


Figure 13-10 Effect of Primary Grind Size on Gold Recovery from Bayan Khundii Composites (Source – BCR 2023)

13.2.5.3. Cyanidation Testwork – Variability Testwork

The prefeasibility testwork noted that gold recovery from Striker was slightly higher than that from Midfield and Midfield North. During this round of testing, composite from Midfield (19-04 and 19-05) and Midfield North (19-06 and 19-07) returned broadly similar recoveries to Striker material (19-02 and 19-03). This may be a head grade effect since the head grades from the Midfield and Midfield North composite are higher than the Striker composites. The deeper composites (19-03, 19-05 and 19-07) all displayed lower overall gold recoveries than the corresponding shallower composites. There may be a slight head grade effect at play here, however not all deep composites were lower grade than the corresponding shallow material. This observation was consistent at both primary grind sizes tested (refer to Figure 13-10).

13.2.6. Carbon Adsorption Testwork

Two separate carbon adsorption tests were conducted on Bayan Khundii leach products to evaluate carbon adsorption of gold and silver leached from Bayan Khundii material. First, an adsorption isotherm was developed based on the Freundlich equation. Five bottle roll tests were completed containing varying carbon concentrations ranging from 0.2 g/L to 10 g/L. The final liquor, carbon and residue were then analyzed for gold and silver. An equilibrium relationship between gold on carbon and gold in solution is developed. All tests were done using virgin Calgon Goldplus 6x12 carbon. Each bottle roll was conducted for 48 hours with a sodium cyanide concentration of 1.0 g/L.

Results are presented according to the Freundlich Equation $Q=bC^n$. Where:

Q = Concentration of gold on Carbon (ppm)
C = concentration of gold in liquor (ppm)
b and n = empirical adsorption constants

The adsorption constants are developed empirically from the dataset. These constants are presented in Table 13-10 and shown graphically in Figure 13-11.

Table 13-10 Bayan Khundii Adsorption Isotherm Coefficients (based on a Freundlich Isotherm)

Coefficients	Au	Ag
n	0.4371	0.5068
b	3131	1117

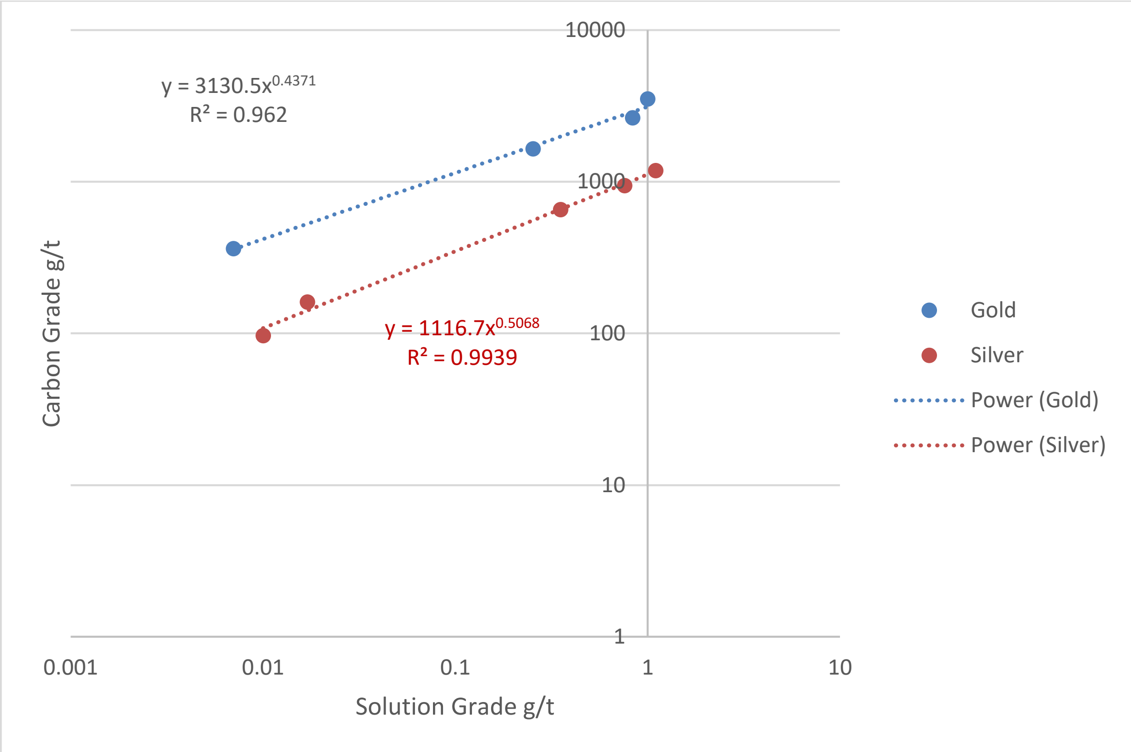


Figure 13-11 Gold and Silver Adsorption Isotherms for Bayan Khundii material (Calgon Goldplus 6x12 Activated Carbon) (Source – BCR 2023)

Additionally, the adsorption rate constants, k and n, were developed by conducting a carbon triple contact test. A bulk sample of Bayan Khundii material was leached according to standard conditions (sodium cyanide concentration of 1.0 g/L; 40% solids; 48 hour retention time) and split into three batches. A single carbon sample was sequentially contacted in each of these batches and gold and silver was adsorbed onto the carbon. Carbon was advanced to the next batch every 2 hours, with the final contact being allowed to run for 20 hours of duration. The rate constants are developed empirically from the equation:

$$[Au]_c = k \times [Au]_s \times t^n$$

Where:

$[Au]_c$ = the concentration of gold on carbon (ppm)
k = adsorption rate constant
$[Au]_s$ = the concentration of gold in solution (ppm)
t = time (hours)
n = constant

Table 13-11 Bayan Khundii Adsorption Rate Constants (k,n)

Adsorption Rate Constants	Au	Ag
k (hr^{-1})	248	194
n	0.61	0.58

Both the adsorption isotherm coefficients and the k and n rate constants developed are within normal ranges and suggest that good carbon adsorption can be expected.

13.3. Cyanide Destruction

A cyanide destruction program was conducted to evaluate conditions required to adequately detoxify process solutions and ensure that weak acid dissociable cyanide (CN_{WAD}) present in tailings liquor complies with the project's stated target of less than 50ppm for impoundment in the Integrated Waste Facility. Testwork used the SO_2/Air process to oxidize CN_{WAD} to cyanate. A summary of tests and results is provided in Table 13-12. Key findings from this program were:

- The significant amount of free cyanide present in Bayan Khundii CIP tailings meant that higher addition rates of copper sulphate were required to catalyze the reaction. Since Bayan Khundii is relatively clean material without many metal cyanide complexes formed in solution then most of the residual cyanide is present as free cyanide.
- Reducing the residual free cyanide in the CIP tailings reduces amount of copper sulphate required.
- A retention time of 40 minutes is sufficient to detoxify the CIP tailings to less than 10 ppm CN_{WAD} from a starting CN_{WAD} concentration of approximately 185-200 mg/L.

Table 13-12 Summary of Cyanide Detox Tests on Bayan Khundii Material

Test ID	Test Type	Feed		Discharge		Cu^{2+} (ppm)	g SO_2 / g CN_{WAD}	Retention Time (hrs)
		Free CN^- (mg/L)	WAD CN (mg/L)	Free CN^- (mg/L)	WAD CN (mg/L)			
D-1	Continuous	571	650	81	104	40	5.0	1
D-2	Continuous	698	663	23	185	80	3.5	1
D-3	Continuous	503	521	75	197	146	6.8	1
D-4	Batch	451	599	13	1.60	300	8.0	2
D-5	Batch	517	533	0	16	624	8.1	2
D-6	Batch	451	599	119	249	100	8.0	2
D-7	Batch	478	489	0	2.20	300	8.0	2
D-8	Batch	478	489	0	3.20	300	5.5	2
D-9	Continuous	469	485	0	110	300	5.5	1
D-10	Continuous	501	502	0	41	500	8.0	1
D-11	Continuous	551	745	0	2.24	500	4.9	2
D-12	Continuous	186	180	0	0.26	300	6.1	1
D-13	Continuous	186	193	0	3.96	100	5.7	0.67

The first three tests (D-1 through D-3) were conducted using a sample of CIP tailings that was prepared from a bulk leach of Bayan Khundii material. Leached gold and silver were removed from solution through contact with activated carbon (Calgon Goldplus 6x12) prior to starting the detox tests. WAD and free cyanide measurements taken at the end of Bayan Khundii bottle rolls indicated that the WAD cyanide concentration at the CIP discharge was approximately 550 ppm, when the sodium cyanide concentration was maintained at 1.0 g/L throughout the cyanidation circuit. The first three tests evaluate the impact that different copper concentrations and SO_2 addition rates had on cyanide oxidation with a reactor residence time of 1 hour. None of these tests proved successful as residual WAD cyanide content was in excess of 100 ppm for each test.

Tests D-4 through D-8 were batch tests designed to test the relative impact of differing reagent dosages on the ability to oxidize WAD cyanide complexes. These tests showed that:

- The presence of sufficient copper was required to catalyze the reaction and appropriately oxidize WAD cyanide. Copper addition in excess of 300 ppm Cu^{2+} was necessary when treating solutions with a free cyanide content of 400-500 mg/L CN^-. Copper concentrations of 100 ppm or less (Cu^{2+}) are insufficient to catalyze the reaction and will result in high WAD cyanide concentrations in the reactor discharge.
- The process is less sensitive to SO_2 addition rates so long as sufficient copper is present. SO_2 addition rates were tested as low as 5.5 g SO_2 / g CN_{WAD}.

Validation tests (D-9 through D-11) were conducted to confirm the batch tests results during continuous operation. The validation tests showed that:

- Higher copper addition rates may be necessary (D-9). The baseline batch test conditions (300 ppm Cu^{2+}; 5.5 g SO_2 / g CN_{WAD}; 1 hour retention time) did not achieve CN_{WAD} concentration at the reactor discharge of less than 50 ppm. Increasing the Cu^{2+} concentration to 500 ppm was able to reduce the CN_{WAD} concentration to less than 50 ppm during a 1 hour retention time.
- Using these conditions and increasing the retention time to two (2) hours was able to reduce the CN_{WAD} concentration at the reactor discharge to less than 5 ppm (2.4 ppm CN_{WAD})

The high reagent additions required during cyanide destruction are a function of the high free cyanide concentration maintained throughout the leach circuit. Given the relatively low cyanide consumption associated with Bayan Khundii material this results in high free cyanide feeding the cyanide destruction process. However, when one considers the impact this has on cyanide destruction reagent consumption, it becomes obvious that reducing cyanide concentration in the leach circuit should reduce the reagent demand during cyanide destruction. Two tests were conducted to evaluate this (D-12 and D-13). When a sodium cyanide concentration of 0.5 g/L is maintained through the leach circuit the residual sodium cyanide at the leach discharge is approximately 0.35 g/L (equivalent to 186 mg/L of CN^-). This cyanide concentration was used as the feed conditions to D-12 and D-13. These tests showed that:

- CN_{WAD} in Bayan Khundii CIP tailings could be detoxified to very low levels (<1 ppm CN_{WAD}) using 300 ppm Cu2+, 8 g SO2 / g CN_{WAD} and 1 hour retention time (Test D-12)
- Reducing the copper content, SO_2 addition rate and retention time did not severely impact the residual CN_{WAD} concentration. 100 ppm Cu^{2+}, 5.7 g SO_2 / g CN_{WAD} and 40 minutes of retention time resulted in CN_{WAD} concentrations at the reactor discharge of 3.96 ppm.

The results of the cyanide destruction testwork highlight that lower cyanide destruction costs can be achieved by reducing the residual free cyanide at the discharge of the CIP circuit. Effectively this means that the sodium cyanide concentration in the leach circuit should be set at 0.5 g/L. As noted in section 13.2.4.2, gold recovery with a sodium cyanide concentration of 0.5 g/L is essentially equivalent to recovery using a sodium cyanide concentration of 1.0 g/L.

13.4. Dewatering Testwork

Dewatering tests were conducted by Responsible Mining Solutions Corp. (RMS) of Burnaby, BC. A sample of Bayan Khundii leach material was prepared at Blue Coast Research and shipped to RMS for dewatering testwork. The sample was ground to 80% passing 60µm, leached with cyanide (1.0 g/L of NaCN) for 36 hours and contacted with carbon to remove soluble gold and silver prior shipping to RMS. The dewatering testwork programme included both static and dynamic thickening to determine parameters for tailings thickening. A filtration program was also conducted which included an evaluation of various types of filtration equipment. Dynamic thickening results are summarized in Table 13-13 and Table 13-14 and filtration results are summarized in Table 13-15.

Flocculant screening tests evaluated six different flocculants with differing molecular weights and ionic charges. Most flocculants showed good settling characteristics. SNF 910 VHM was selected based on its ability to produce the clearest overflow. Dynamic thickening testwork showed that Bayan Khundii CIP tailings could be thickened to underflow densities of 57% to 59%, while still maintaining reasonable overflow clarity. The sample was sensitive to flux rate, and tests conducted at a rate of 0.5 t/m^{2}hr had overflows with high total suspended solids (>30,000 ppm). This test produced the highest underflow density at 66% however it was due to a lack of fines in the underflow. Increasing the floc dosages to 80 g/t improves the overflow clarify. The best results were achieved with a feed solids dilution to 5%. Increasing the feed solids to 7.5% still produced good overflow clarity, however it reduced the underflow solids to 50%. This may be acceptable considering additional filtration stages are found downstream of the tails thickener. A summary of the dynamic thickening tests is presented in Table 13-14.

Table 13-13 Summary of Bayan Khundii Dynamic Thickening Results

Thickening Parameter	Unit	Measurement
Feed Dilution	%w/w	5 & 7.5%
Floc Type		SNF910 VHM
Floc Dose	g/ton	60 &80
Overflow Clarity	mg/L	122-34384
Rise Rate	m^3/ hr.m^2	3.41-9.24
Underflow Solids	%w/w	57-66%
Solids Loading	t/ m^{2}hr	0.2-0.5

Table 13-14 Bayan Khundii Dynamic Thickening Test Results

Run	Flux Rate (t/ m^{2}hr)	Feed Solids(% w/w)	pH of Feed Slurry	Floc Dose (g/t)	Test Time (hr:min:sec)	UF Solids (%w/w)	OF TSS @30 mins (mg/L)
2	0.2	5%	10.8	60	2:30:00	62%	1228
1	0.3	5%	11.0	60	1:34:02	59%	644
3	0.3	5%	11.1	80	1:16:00	57%	294
5	0.3	7.5%	11.2	80	1:52:00	50%	122
4	0.5	5%	11.2	80	1:04:15	66%	34384

Filtration tests were conducted on thickened CIP tailings. Four different filtration systems were evaluated: cloth disc, ceramic disk, vacuum belt and pressure filtration. The lowest cake moisture was achieved with ceramic disc filters and pressure filters. Ceramic disc and pressure filtration were clearly superior to vacuum belt filtration or cloth disc filtration which only achieved cake moistures in the low to mid 20% range. The average moisture content from the ceramic filter test runs was 17%, however a few runs achieved a moisture content of less than 15%. The average moisture content from the pressure filtration tests was 14.1%. Overall filtration capacity between pressure and ceramic disc filtration was similar at cake moistures of 15% at approximately 170 to 200 kg/m^2 hr. Ceramic disc filtration provided clear filtrates, where pressure filtration was slightly cloudy.

Table 13-15 Summary of Bayan Khundii Filtration Results

Test	Cycle Time (sec)	Filtration Capacity (kg/ m^2hr)	Cake Moisture (%w/w)	Filtrate Clarity
Cloth Disc	50-170	101-205	23-26	Cloudy
Ceramic Disc	30-65	140-480	14-18	Clear
Vacuum Belt	190-1050	78-232	21-28	Slightly Clear
Pressure	360-780	134-217	13-18	Slightly Cloudy

13.5. Projected Gold Recovery – Bayan Khundii

The gold recovery equation previously developed for the PEA[3] and updated during the PFS study[4] described a relationship between head grade and gold recovery. This relationship was a series of linear equations based on specific head grade bands. Additional variability tests were conducted during the 2020 testwork conducted as part of this feasibility study. As the 2020 testwork did not include any composites with head grades of less than 1.18 g/t, then the first two bands of the recovery curve remain unchanged.

Adding the 2020 variability tests into the existing dataset adjusts the coefficients in the recovery equation for the 1.18 to 22 g/t grade band. Compared to recovery curve from the 2019 prefeasibility study this results in an increase to the projected recovery of between 0.1% and 0.2% across the grade band from 1.18 g/t to 22 g/t. Recovery was capped at 99%. The grade subject to this cap increased very slightly from 21.9 g/t to 22.0 g/t. The new recovery equations are highlighted in the table below.

Table 13-16 Bayan Khundii Head Grade Recovery Relationship

Grade Band (g/t)	2020 Recovery Equation
0 – 0.35	Au Rec (%) = 230.61*Au Grade (g/t)
0.35 – 1.18	Au Rec (%) = 13.32* Au Grade (g/t) + 76.052
1.18 – 22.0	Au Rec (%) = 0.314* Au Grade (g/t) + 92.045
>22.0	99.0

The equations were fit through the data based on the following criteria:

- A linear regression analysis was conducted using the variability composites with head grades between 0.35 g/t and 1.18 g/t.
- A separate linear regression analysis was conducted suing data points with head grades greater than 1.18 g/t and less than 22.0 g/t.
- Recovery from head grades greater than 22.0 g/t was been capped at 99%.
- A line is drawn between the origin and the 0.35 g/t grade point to describe recoveries below 0.35 g/t.

[3] Preliminary Economic Assessment of the Khundii Gold Project, Bayankhongor Aimag, Southwest Mongolia, prepared for Erdene Resource Development Company, dated 31st January 2019

[4] Khundii Gold Project NI 43-101 Technical Report, prepared for Erdene Resource Development Corp., effective date October 15, 2019

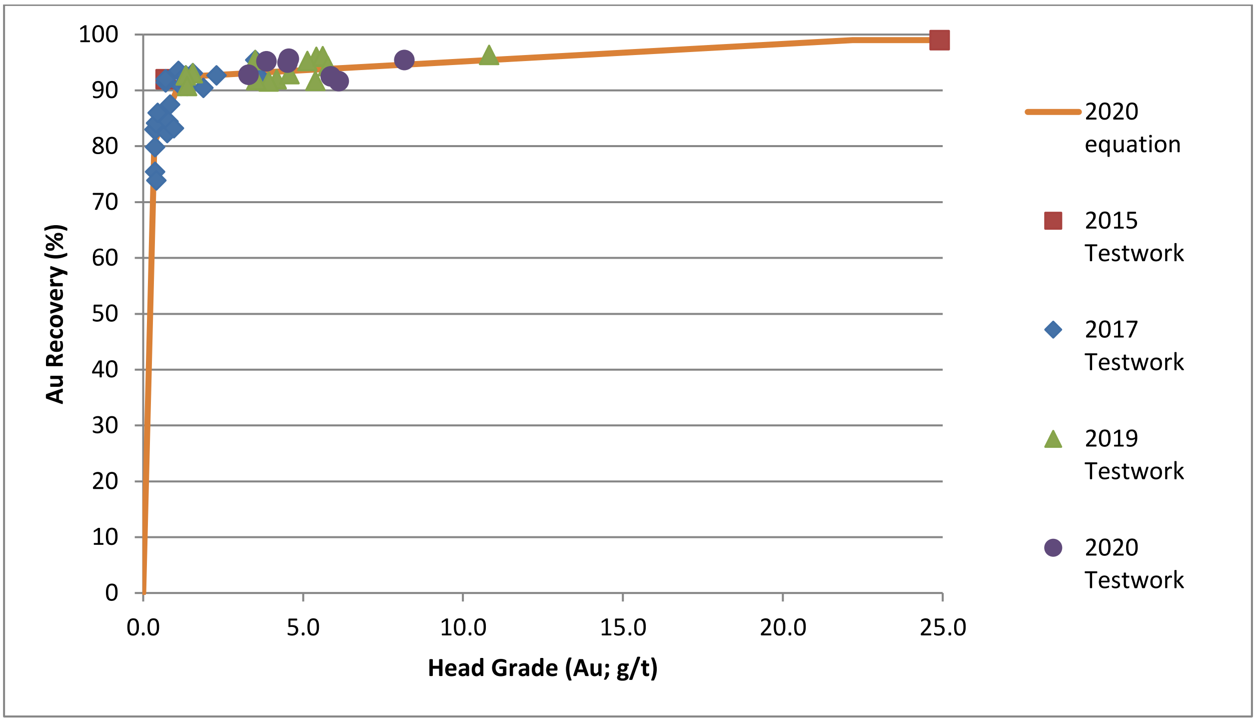


Figure 13-12 Overall Bayan Khundii Head Grade - Recovery Relationship (Source – BCR 2023)

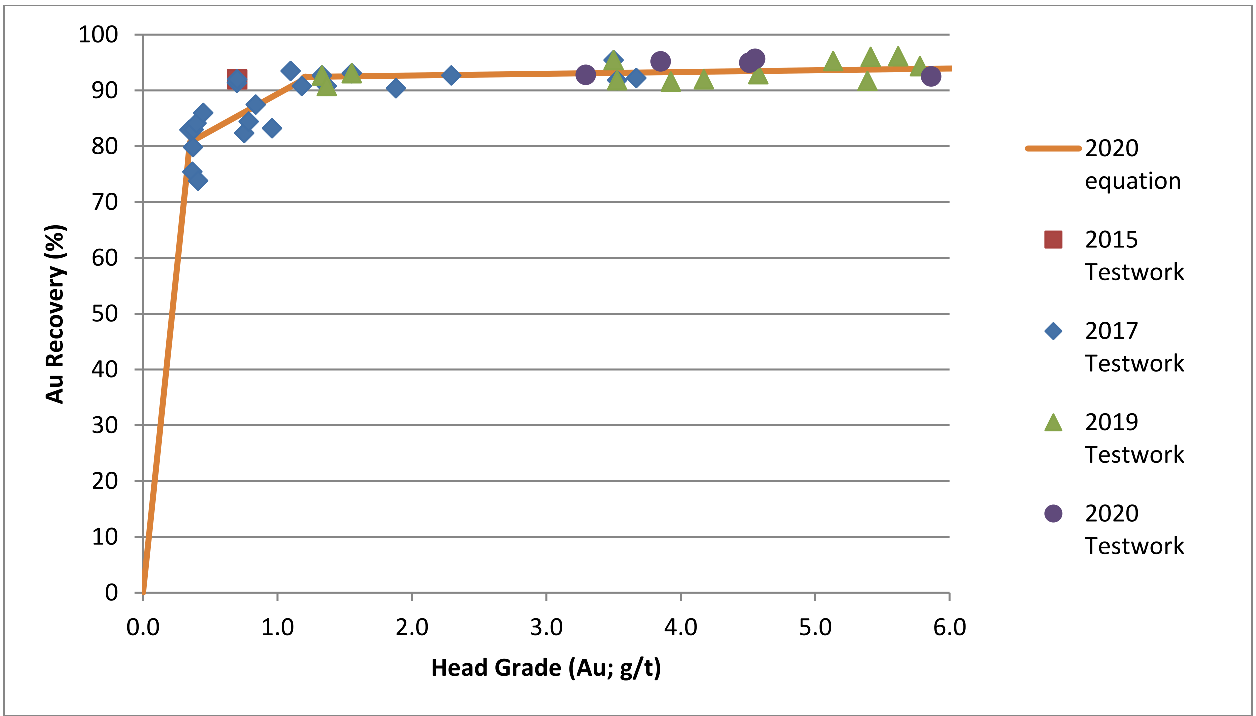


Figure 13-13 Bayan Khundii Head Grade - Recovery Relationship (0-6 g/t Au) (Source – BCR 2023)

13.5.1. Silver Recovery

Silver recovery was tracked throughout the 2020 test program. At the target 60µm grind size the silver recovery amongst the variability composites ranged from 43% to 67%. Average silver recovery from Bayan Khundii material is expected to be 55%.

13.6. Dark Horse Testwork

13.6.1. 2022 Metallurgical Testwork

As part of the 2022 Dark Horse test program a total of 26 variability samples, collected from across the Dark Horse property by Erdene representatives were submitted to Blue Coast Research for variability cyanidation analysis. The sample ID, location and oxidation state of these samples are summarized in Table 13-17 while head assays are summarized in Table 13-18. The samples submitted had a range of gold and arsenic grades. All samples were relatively low in sulphur.

Table 13-17 Variability Sample Location & Oxidation State

<table>
<tr><th>Composite</th><th>Location</th><th>Oxidation state</th></tr>
<tr><td>DHM-MET-21-01</td><td rowspan="16">DHM South</td><td rowspan="20">Oxide</td></tr>
<tr><td>DHM-MET-21-02</td></tr>
<tr><td>DHM-MET-21-03</td></tr>
<tr><td>DHM-MET-21-04</td></tr>
<tr><td>DHM-MET-21-05</td></tr>
<tr><td>DHM-MET-21-06</td></tr>
<tr><td>DHM-MET-21-07</td></tr>
<tr><td>DHM-MET-21-08</td></tr>
<tr><td>DHM-MET-21-09</td></tr>
<tr><td>DHM-MET-21-10</td></tr>
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<tr><td>DHM-MET-21-13</td></tr>
<tr><td>DHM-MET-21-14</td></tr>
<tr><td>DHM-MET-21-15</td></tr>
<tr><td>DHM-MET-21-16</td></tr>
<tr><td>DHM-MET-21-17</td><td rowspan="4">DHM North</td></tr>
<tr><td>DHM-MET-21-18</td></tr>
<tr><td>DHM-MET-21-19</td></tr>
<tr><td>DHM-MET-21-20</td></tr>
<tr><td>DHM-MET-21-21</td><td rowspan="6">DHM South</td><td rowspan="6">Transition</td></tr>
<tr><td>DHM-MET-21-22</td></tr>
<tr><td>DHM-MET-21-23</td></tr>
<tr><td>DHM-MET-21-24</td></tr>
<tr><td>DHM-MET-21-25</td></tr>
<tr><td>DHM-MET-21-26</td></tr>
</table>

Table 13-18 Variability Head Assay Summary

Composite	Au (g/t)	Ag (g/t)	S_{tot} (%)	S^{2-} (%)	C_{tot} (%)	C_{org} (%)	As (ppm)	Fe (%)
Method	FA-ICP	4AD-ICP	ELTRA	HCl-ELTRA	ELTRA	HCl-ELTRA	4AD-ICP	4AD-ICP
DHM-MET-21-01	21.03	2.30	0.08	0.05	0.01	<0.03	11373.09	4.43
DHM-MET-21-02	22.81	3.70	0.07	0.04	0.01	<0.03	4981.71	4.42
DHM-MET-21-03	7.18	2.26	0.04	<0.03	0.01	<0.03	8037.51	4.89
DHM-MET-21-04	7.71	2.08	0.05	<0.03	0.01	<0.03	3258.00	4.89
DHM-MET-21-05	3.44	2.72	0.11	0.04	0.02	<0.03	6810.79	5.16
DHM-MET-21-06	4.72	1.06	0.04	<0.03	<0.01	<0.03	2529.54	4.11
DHM-MET-21-07	2.14	1.48	0.04	0.02	1.33	<0.03	3625.61	4.25
DHM-MET-21-08	2.22	1.92	0.06	0.04	<0.01	<0.03	1320.98	3.81
DHM-MET-21-09	1.46	1.78	0.04	<0.03	0.01	<0.03	4485.99	4.06
DHM-MET-21-10	1.47	0.78	0.04	0.03	<0.01	<0.03	1465.77	3.49
DHM-MET-21-11	1.03	0.79	0.04	<0.03	0.01	<0.03	3611.30	3.98
DHM-MET-21-12	1.05	0.50	0.02	<0.03	<0.01	<0.03	1141.01	2.52
DHM-MET-21-13	0.73	2.12	0.07	0.05	0.02	<0.03	3349.47	4.65
DHM-MET-21-14	0.81	0.45	0.02	<0.03	<0.01	<0.03	598.32	1.60
DHM-MET-21-15	0.44	0.59	0.09	0.06	0.36	<0.03	2518.32	5.87
DHM-MET-21-16	0.41	0.37	0.04	0.03	0.40	<0.03	586.51	4.28
DHM-MET-21-17	2.19	0.59	0.03	<0.03	0.16	<0.03	1584.73	3.96
DHM-MET-21-18	1.22	0.77	0.05	<0.03	0.01	<0.03	2040.84	3.55
DHM-MET-21-19	0.72	0.96	0.03	<0.03	0.09	<0.03	1442.63	4.19
DHM-MET-21-20	0.47	0.75	0.03	<0.03	0.02	<0.03	1569.71	2.86
DHM-MET-21-21	21.70	5.33	0.50	0.40	0.01	<0.03	7416.60	3.68
DHM-MET-21-22	15.04	3.68	0.48	0.43	0.01	<0.03	2102.16	2.97
DHM-MET-21-23	2.04	11.32	0.53	0.47	0.01	<0.03	3340.31	5.80
DHM-MET-21-24	1.81	1.52	0.47	0.40	<0.01	<0.03	1167.13	2.88
DHM-MET-21-25	0.50	2.22	0.56	0.53	0.01	<0.03	3290.60	4.84
DHM-MET-21-26	0.56	2.10	0.60	0.34	0.55	<0.03	520.26	5.65

A 1.0 kg bottle roll test was conducted on each of the 26 variability composites. Standard conditions used during these tests include a primary grind size of 80% passing 60 µm, 40% solids, and a sodium cyanide concentration of 1.0 g/L that was maintained throughout the test. Four additional tests (CN-27 to CN-30) were conducted with an increased sodium cyanide dosage of 3 g/L. A summary of test results may be found in Table 13-19.

Gold recovery ranged from 74% to 96%, with an average gold recovery under the standard leach conditions of 88%. No correlation was observed between gold head grade and final gold recovery. Three of the four samples leached with higher cyanide dosage showed increased recovery at the higher cyanide dose. Sample DHM-MET-21-21 did not show a significant difference in recovery between the two tests.

Table 13-19 Variability Cyanidation Results

Test ID	Feed	NaCN Conc. (g/L)	Primary Grind (p80, µm)	Head Au (g/t)	Final Au Recovery (%)	Final Ag Recovery (%)	Residue Grade (Au, g/t)	Reagent Consumption (kg/t)	
								NaCN	CaO
CN-1	DHM-MET-21-01	1.0	59	21.03	74.5	46.3	5.30	1.45	3.18
CN-2	DHM-MET-21-02	1.0	57	22.81	86.1	46.4	3.07	1.29	2.39
CN-3	DHM-MET-21-03	1.0	57	7.18	88.4	42.6	0.88	1.38	2.50
CN-4	DHM-MET-21-04	1.0	71	7.71	73.8	33.3	2.12	1.45	2.98
CN-5	DHM-MET-21-05	1.0	38	3.44	82.1	51.5	0.57	2.85	5.49
CN-6	DHM-MET-21-06	1.0	59	4.72	85.2	40.1	0.64	1.24	3.32
CN-7	DHM-MET-21-07	1.0	57	2.14	92.3	52.4	0.17	1.40	2.44
CN-8	DHM-MET-21-08	1.0	56	2.22	90.0	48.9	0.23	1.00	2.00
CN-9	DHM-MET-21-09	1.0	63	1.46	91.0	40.0	0.14	0.46	1.40
CN-10	DHM-MET-21-10	1.0	57	1.47	96.6	43.9	0.05	0.86	2.25
CN-11	DHM-MET-21-11	1.0	62	1.03	79.8	28.7	0.24	0.21	1.98
CN-12	DHM-MET-21-12	1.0	62	1.05	90.7	16.2	0.10	0.62	1.20
CN-13	DHM-MET-21-13	1.0	58	0.73	91.0	55.8	0.07	1.98	2.02
CN-14	DHM-MET-21-14	1.0	55	0.81	94.4	55.5	0.05	1.70	0.95
CN-15	DHM-MET-21-15	1.0	58	0.44	83.9	32.9	0.07	1.98	2.42
CN-16	DHM-MET-21-16	1.0	57	0.41	95.5	46.2	0.02	1.24	3.00
CN-17	DHM-MET-21-17	1.0	57	2.19	94.9	40.8	0.11	0.41	1.83
CN-18	DHM-MET-21-18	1.0	61	1.22	91.1	43.7	0.12	1.23	2.76
CN-19	DHM-MET-21-19	1.0	60	0.72	89.3	53.3	0.07	1.49	0.68
CN-20	DHM-MET-21-20	1.0	52	0.47	90.4	57.3	0.05	1.94	0.60
CN-21	DHM-MET-21-21	1.0	63	21.7	86.4	64.5	3.1	1.8	0.9
CN-22	DHM-MET-21-22	1.0	61	15.0	92.4	56.9	1.2	0.3	1.7
CN-23	DHM-MET-21-23	1.0	61	2.04	83.5	92.5	0.38	1.53	3.50
CN-24	DHM-MET-21-24	1.0	57	1.81	88.9	40.0	0.21	0.45	3.98
CN-25	DHM-MET-21-25	1.0	61	0.50	79.8	64.0	0.11	2.19	3.26
CN-26	DHM-MET-21-26	1.0	65	0.56	88.0	71.7	0.07	0.33	1.13
CN-27	DHM-MET-21-01	3.0	57	21.03	85.0	50.9	3.72	1.38	0.73
CN-28	DHM-MET-21-02	3.0	60	22.81	92.9	64.4	1.79	0.99	0.65
CN-29	DHM-MET-21-04	3.0	58	7.71	79.3	40.5	1.72	1.39	0.76
CN-30	DHM-MET-21-21	3.0	61	21.70	86.1	68.3	3.41	1.59	0.69

A number of Master Composites were prepared by combining the variability composites. The Master Composites were combined based on geographic location (Dark Horse South vs. Dark Horse North). Dark Horse South composites were also split into low and high arsenic content. The Master Composites were:

- Dark Horse South High As
- Dark Horse South Low As

- Dark Horse North

One SAG Mill comminution test (SMC), and one Bond Ball Work Index test (BWI) were conducted on an equally weighted blend of the South High As and South Low As master composites. The BWI was conducted with a closing size of 75µm, and the ball charge was checked prior to the test to ensure that standard BWI test parameters were maintained. The BWI results indicate that the Dark Horse South material would be considered moderately hard. The SMC results indicate that the Dark Horse South material would be considered moderately soft. Comminution Results are presented in Table 13-20.

Table 13-20 Dark Horse Comminution Results Summary

ID	BWI	DWi	DWi	A	b	Axb	sg	ta	SCSE*
	kWh/t	kWh/m^3	%						kWh/t
South High/Low As Blend	15.1	4.0	19	61.5	1.06	65.2	2.62	0.64	7.94

A single Extended Gravity Recoverable Gold (E-GRG) test was conducted on an equally weighted blend of the Dark Horse South High Arsenic master composite and Dark Horse South Low Arsenic composite. The gravity recoverable gold (GRG) content was determined to be 14.9%. The GRG is relatively fine, with the majority of the GRG found in particles less than 25µm. The cumulative gravity recoverable gold release curve is shown in Figure 13-14. These results point to gold from Dark Horse that is relatively fine, with limited potential for recovery by gravity concentration.

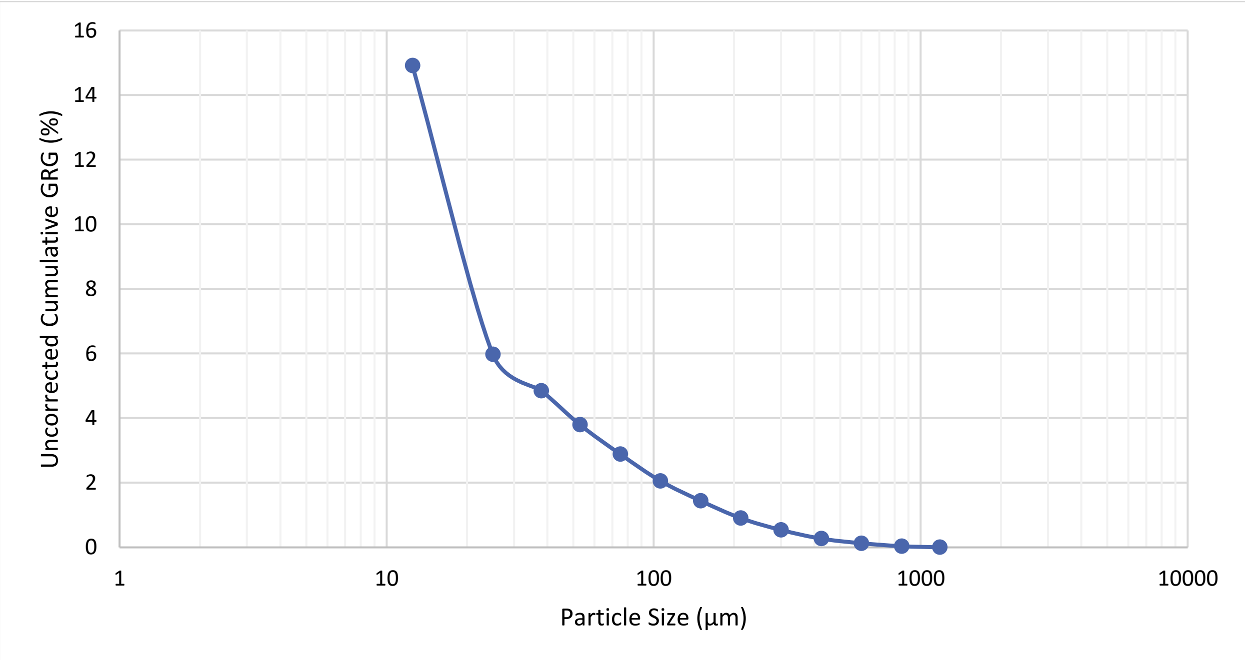

Figure 13-14 Erdene Dark Horse Cumulative GRG (Source – BCR 2023)

A series of three 1.0 kg coarse bottle roll tests were conducted on the North master composite at three different crush sizes (12.5mm, 6.3mm, 3.35mm). A sodium cyanide dosage of 1 g/L employed. Additionally, a series of optimization bottle roll tests were conducted on the South Low Arsenic master composite and the South High Arsenic master composite; these optimization tests explored two primary grind sizes (80% passing 60µm and 100µm) and two cyanide dosages (1g/L NaCN and 3g/L NaCN). The solids content was kept constant at 40% for all tests. A summary of test results may be found in Table 13-21.

Table 13-21 Dark Horse Master Composite Cyanidation Results

Test ID	Feed	NaCN Conc. (g/L)	Primary Grind (p80, µm)	Head Au (g/t)	Final Au Recovery (%)	Residue Grade (Au, g/t)	Reagent Consumption (kg/t)	
							NaCN	CaO
CN-31	North MC -1/2"	1.0	12,500*	1.15	83.7	0.25	0.30	0.99
CN-32	North MC -1/4"	1.0	6,300*	1.15	90.8	0.14	0.24	0.96
CN-33	North MC -6 Mesh	1.0	3,350*	1.15	92.2	0.10	0.31	0.99
CN-34	South Low As MC	1.0	60	3.23	91.2	0.29	1.38	0.86
CN-35	South Low As MC	3.0	60	3.23	91.6	0.27	1.53	0.77
CN-36	South Low As MC	1.0	100	3.23	91.1	0.29	0.54	1.05
CN-37	South High As MC	1.0	60	9.47	88.6	1.27	1.48	0.93
CN-38R	South High As MC	3.0	60	9.47	87.4	1.44	1.91	0.81
CN-39	South High As MC	1.0	100	9.47	86.9	1.39	0.51	1.10

**Sizing for these tests are referenced as 100% passing crush sizes.*

The North master composite coarse bottle roll tests showed high gold recovery across all three crush sizes, ranging from 84% gold recovery at 12.5mm crush size to 92% gold recovery at the 3.35mm crush size. Gold extraction from the both the South High Arsenic and South Low Arsenic master composites did not show any sensitivity to higher cyanide dosages or coarser (100µm) primary grind sizes. Gold extractions in all three South Low Arsenic master composite tests ranged from 91.1% to 91.6%. Gold extractions in all three South High Arsenic master composite tests ranged from 86.9% to 88.6%.

13.6.2. 2023 Dark Horse Metallurgical Testing

Additional metallurgical testing was conducted in 2023 on Dark Horse samples to expand on the metallurgical testwork undertaken in 2022. The 2023 Dark Horse metallurgical test program included an optimization study of the cyanide leach conditions, an expanded variability cyanidation study, additional comminution tests, carbon adsorption and dewatering testwork. Cyanidation blending tests were also conducted using different ratios of Dark Horse and Bayan Khundii material to study co-processing of Bayan Khundii and Dark Horse material.

Ten (10) individual samples were submitted by Erdene for this testwork. Samples were collected from across the Dark Horse deposit and represented a range of gold and arsenic grades. Additionally, a larger master composite was collected that was designed to represent the average of the Dark Horse deposit. Sample head assays are summarized in Table 13-22.

Table 13-22 - Dark Horse Head Assays – 2023 Testwork Program

Composite	Au (g/t)	As (PPM)	S_{total} (%)	S^{2-} (%)	C_{total} (%)	$C_{organic}$ (%)
Method	FA-ICP	4AD-ICP	ELTRA	HCl-ELTRA	ELTRA	HCl-ELTRA
DHM-MET-22-01	4.81	6822	0.08	0.04	0.04	0.02
DHM-MET-22-02	4.26	4344	0.18	0.12	0.22	0.02
DHM-Met_22-03	19.03	10595	0.14	0.06	0.09	0.02
DHM-Met_22-04	11.58	2901	0.10	0.08	0.02	0.01
DHM-Met_22-05	4.12	6580	0.22	0.12	0.03	0.02
DHM-Met_22-06	6.12	2162	0.29	0.14	0.02	0.02
DHM-Met_22-07	2.93	8493	0.08	0.04	0.02	0.01
DHM-Met_22-08	3.37	2063	0.13	0.10	0.02	0.02

Composite	Au (g/t)	As (PPM)	S_{total} (%)	S^{2-} (%)	C_{total} (%)	$C_{organic}$ (%)
Method	FA-ICP	4AD-ICP	ELTRA	HCl-ELTRA	ELTRA	HCl-ELTRA
DHM-Met_22-09	2.04	3436	0.13	0.08	0.02	0.02
DHM-Met_22-10	2.90	1848	0.07	0.02	0.02	0.02
DHM-Met-22-MC	7.35	4859	0.15	0.08	0.05	0.02

13.6.2.1. Comminution Testwork

Two composites (DHM-MET-22-01 and DHM-MET-22-02) were subjected to SMC tests, Abrasion Index tests and Bond Ball Work Index tests. Bond Ball Mill Work Index tests were conducted with a closing screen size of 75µm. The Bond Ball Work Index ranged from 15.8-16 kWh/ton, which classifies the material as moderately hard. SMC results show the material is soft to moderately soft and Abrasion Index results show the sample is moderately abrasive. These results are in line with prior Dark Horse comminution measurements. On average both the BWI and the SMC results suggest that Dark Horse material is somewhat softer than that from Bayan Khundii, indicating that mill throughput should not be a limiting factor when processing Dark Horse. A summary of comminution test results is shown in Table 13-23.

Table 13-23 Dark Horse Comminution Results -2023 Testwork

ID	BWI	DWi	DWi	A	b	Axb	sg	SCSE	AI
	kWh/t	kWh/m³	%					kWh/t	g
DHM-MET-22-01	16.0	3.9	17	61.4	1.12	68.8	2.64	7.8	0.27
DHM-MET-22-02	15.8	4.4	22	61.1	0.96	58.7	2.60	8.27	0.34

13.6.2.2. Cyanidation Testwork

A number of cyanide optimization tests were conducted on Dark Horse material to investigate the impact of primary grind size, cyanide concentration, and lead nitrate addition. High recovery was observed across all optimization tests, ranging from 88.8-90.3% Au recovery (average: 89.9%). Due to the low variation in recovery between test conditions, it was determined that the Dark Horse master composite gold recovery is not sensitive to primary grind size or cyanide dosage across the ranges tested. No benefit to recovery was observed from the addition of lead nitrate and oxygen.

Table 13-24 Dark Horse Optimization Tests

Test ID	Purpose	Recovery (%)		Reagent Consumption (kg/t)	
		Au	Ag	NaCN	CaO
CN-1	Effect of CN Dosage, 0.35g/L, 60µm	88.8	-	0.60	1.15
CN-2	Effect of CN Dosage, 0.5g/L, 60µm	89.7	-	0.82	1.14
CN-3	Effect of CN Dosage, 1.0g/L, 60µm	89.7	-	0.73	0.98
CN-4	Effect of Grind Size, 75µm	89.6	-	0.68	1.05
CN-5	Effect of Grind Size, 100µm	89.5	-	0.20	1.14
CN-6	Effect of Grind Size, 125µm	89.5	-	0.22	1.19
CN-7	Effect of Lead Nitrate & O2	90.0	-	0.39	1.07
CN-8	NaCN 0.35 g/L, 100µm	90.8	51.3	0.11	1.14
CN-9	NaCN 0.35 g/L, 125µm	90.8	-	0.11	1.16
CN-10	NaCN 0.35 g/L, 150µm	90.1	-	0.12	1.08

Variability testwork consisted of 1.0kg bottle roll tests that were conducted on each of the 10 variability composites. Variability test conditions include a primary grind size or 80% passing 100µm, 40% solids, and a sodium cyanide concentration of 0.35g/L. Gold recovery ranged from 87.3% to 92.8%, with an average gold recovery of 90.2%. A summary of test results may be found in Table 13-25.

Table 13-25 Dark Horse Variability Composite Cyanidation Results

Test ID	Sample ID	p80 (µm)	Recovery (%)		Reagent Consumption (kg/t)	
			Au	Ag	NaCN	CaO
CN-11	DHM-MET-22-01	118	91.4	24.2	0.04	0.90
CN-12	DHM-MET-22-02	106	92.8	70.2	0.25	1.14
CN-13	DHM-MET-22-03	100	90.0	64.1	0.14	1.44
CN-14	DHM-MET-22-04	106	90.4	66.9	0.16	0.85
CN-15	DHM-MET-22-05	112	91.1	37.4	0.16	1.22
CN-16	DHM-MET-22-06	101	89.8	28.0	0.19	0.96
CN-17	DHM-MET-22-07	108	87.4	50.0	0.15	1.19
CN-18	DHM-MET-22-08	99	90.9	30.4	0.45	0.73
CN-19	DHM-MET-22-09	100	87.3	33.5	0.41	1.42
CN-20	DHM-MET-22-10	100	90.8	34.1	0.13	1.11

It is anticipated that the Dark Horse material will be processed through the Bayan Khundii plant, and that the Dark Horse and Bayan Khundii material may be co-processed. Three tests were conducted with blends of Bayan Khundii Master Composite and the Dark Horse master composite at varying blend ratios. Test results are summarized in in the Table 13-26.

Table 13-26 Dark Horse - Bayan Khundii Blend Cyanidation Tests

Sample Ratio (%)		p80 (µm)	Recovery (%)	
Bayan Khundii	Dark Horse		Au	Ag
100	0	60	95.2	55.8
75	25	71	93.4	56.5
50	50	69	93.0	58.1
25	75	75	91.7	62.6
0	100	97	89.9	61.4

Figure 13-15 and Figure 13-16 highlight the relationship between gold and silver extraction and the proportion of Bayan Khundii material in the feed. The linear relationship observed for both gold and silver suggests that there is no detrimental impact to co-processing Dark Horse material with Bayan Khundii feeds.

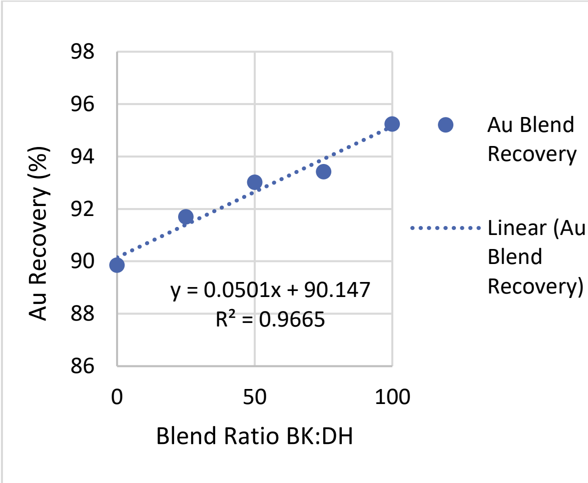

Figure 13-15 BK-DH Blends - Gold Recovery (Source – BCR 2023)

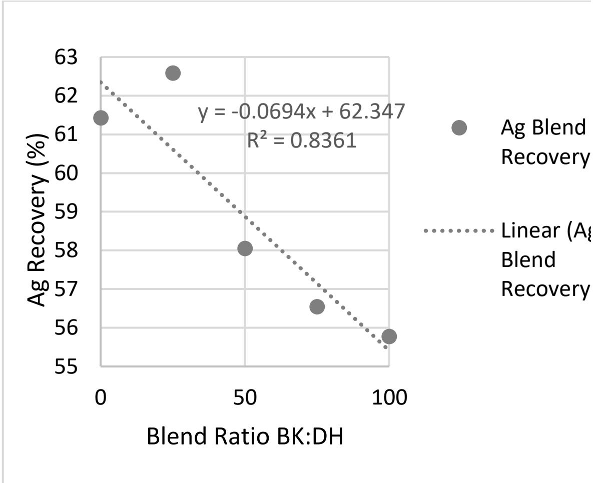

Figure 13-16 BK-DH Blends - Silver Recovery (Source – BCR 2023)

13.6.2.3. Cyanide Destruction Testwork

Cyanide destruction tests on Dark Horse material were performed to evaluate conditions necessary to adequately detoxify process solutions. Testwork used the SO_2 /Air process to oxidize weak acid dissociable cyanide (CN_{WAD}) to cyanate. Test results are summarized in Table 13-27.

Table 13-27 Summary of Dark Horse Cyanide Detox Test Results

Test ID	Test Type	Feed		Discharge		Cu^{2+} (ppm)	SO_2 (g/gCN_{WAD})	Retention Time (min)
		Free CN^- (mg/L)	CN_{WAD} (mg/L)	Free CN^- (mg/L)	CN_{WAD} (mg/L)			
D-1	Batch	122	144	0	8.4	100	5.5	80
D-2	Batch	130	146	0	6.4	125	6.5	80
D-3	Batch	130	146	0	9.5	180	8.0	80
D-4	Continuous	149	151	0	5.0	125	6.5	40
				0	1.6	200	6.5	40

The cyanide present in the Dark Horse tailings is primarily free, without many metal cyanide complexes in solution, therefore sufficient copper sulphate dosages will be required to complex the residual free cyanide. Cyanide destruction testwork conducted under the following parameters resulted in a reduction of CN_{WAD} from 151ppm to 5ppm:

- 40 minutes retention time
- Copper concentration of 125ppm
- SO2 addition of 6.5 g SO2/g CNWAD.
- Increasing the copper concentration to 200ppm further reduced the residual CNWAD content to 1.6ppm.

13.6.2.4. Settling Tests

Static settling tests were conducted on each Dark Horse composite, and compared to the settling characteristics of the Bayan Khundii composite. The settling test conditions were based on conditions developed for Bayan Khundii; these conditions were:

- Flocculant: SNF 910 VHM at 40g/t target dosage.
- Pulp Density: 5% solids target
- Lime at approximately 4.5g/t target

Twelve settling tests were conducted. Overall, the Dark Horse samples settled similarly to Bayan Khundii material. A summary of test results is shown in Table 13-17, and the settling test curves are shown in Figure 13-17.

Table 13-28 Static Settling Test Results

Test ID	Sample ID	Pulp Density (%)	Floc (g/t)	Lime (g/t)	Initial Settling Rate (m/h)	Ultimate U/F Density (% Solids)	Final Supernatant Clarity
ST-01	CN-32 (BK Avg Grade MC)	6.5	32.7	3.7	121.5	44.6	Clear
ST-02	CN-33 (DHM-MET-22-MC)	6.1	34.4	3.9	158.6	33.8	Slightly Cloudy
ST-03	CN-34 (DHM-MET-22-01)	6.5	32.1	3.7	106.7	39.1	Clear
ST-04	CN-35 (DHM-MET-22-02)	6.6	31.9	3.6	101.3	39.4	Clear
ST-05	CN-36 (DHM-MET-22-03)	6.3	33.1	3.8	103.8	34.3	Clear
ST-06	CN-37 (DHM-MET-22-04)	6.5	32.3	3.7	108.0	38.8	Clear
ST-07	CN-38 (DHM-MET-22-05)	7.2	29.4	3.4	110.8	42.9	Clear
ST-08	CN-39 (DHM-MET-22-06)	6.2	33.9	3.9	116.8	38.8	Clear
ST-09	CN-40 (DHM-MET-22-07)	7.1	29.5	3.4	193.1	41.9	Clear
ST-10	CN-41 (DHM-MET-22-08)	6.8	31.1	3.6	117.1	46.1	Clear
ST-11	CN-42 (DHM-MET-22-09)	6.6	31.8	3.6	114.0	38.4	Clear
ST-12	CN-43 (DHM-MET-22-10)	6.7	31.2	3.6	111.6	37.5	Clear

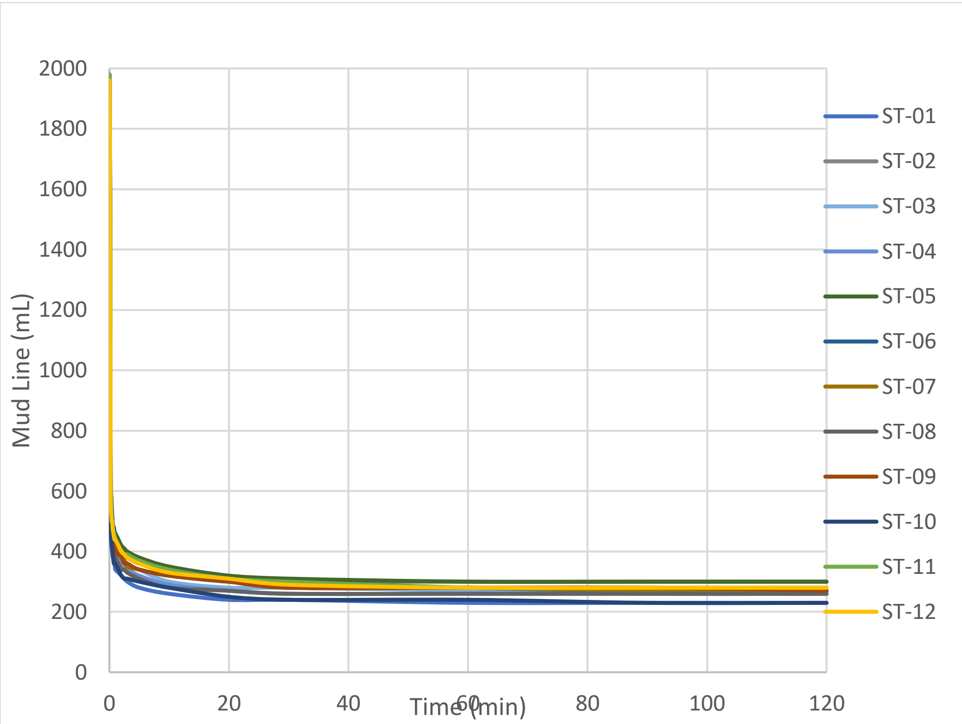

Figure 13-17 Static Settling Test Curves (Source – BCR 2023)

13.7. Projected Gold Recovery – Dark Horse

The Dark Horse variability data was analyzed to determine the best predictor of gold recovery. Upon reviewing all of the available data, no clear correlation was observed between gold recovery and any of the geochemical markers, including gold head grade. Therefore an average gold recovery of 89% was considered the best option to describe the available dataset. The test data and the average recovery is shown in Figure 13-18.

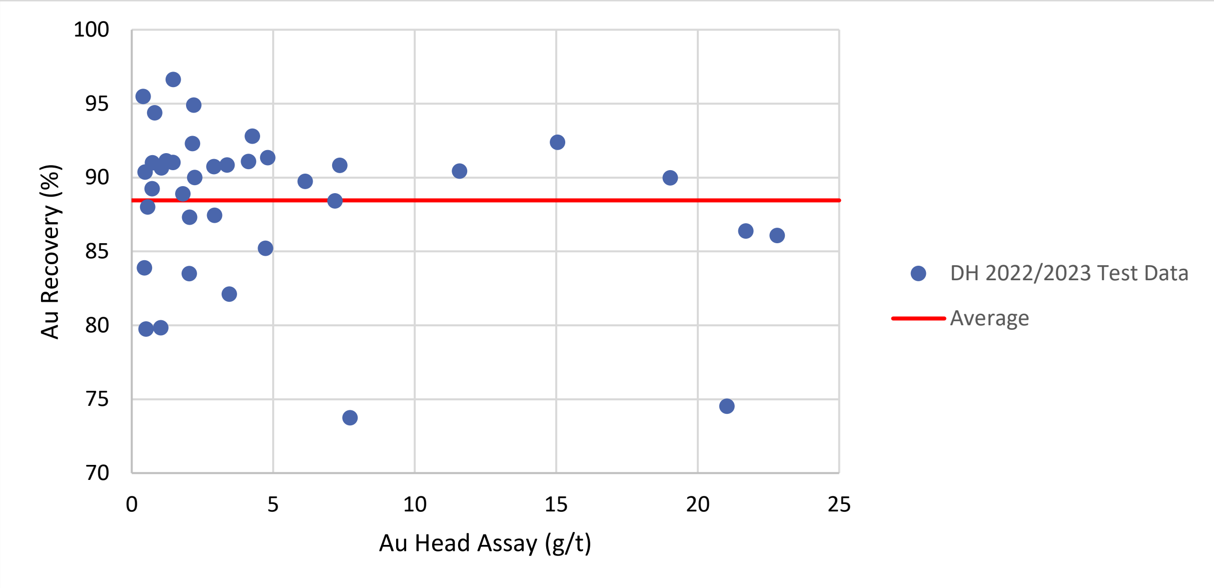

Figure 13-18 Erdene Dark Horse Comparison of Test Data, Average (Source – BCR 2023)

13.8. Conclusions

The following conclusions may be drawn based on the metallurgical testwork to date:

Bayan Khundii

- A relationship between head grade and gold recovery has been developed for the Bayan Khundii material. Life-of-mine gold recovery is expected to be 93%. Silver recovery is expected to average 55%.
- Gold recovery is strongly correlated to primary grind size. Finer primary grind sizes produce higher overall gold recovery. A primary grind of 80% passing 60µm was selected as the design basis of the plant.
- Comminution testwork suggests that Bayan Khundii material is moderately hard to hard. Bond Ball Work Index tests ranged from 17.0 kWh/ton to 19.3 kWh/ton. SMC tests produced Axb parameters ranging from 32.0 to 41.1.
- Comminution tests show that material gets moderately harder when transitioning from Striker through Midfield and North Midfield.
- Moderate cyanide addition rates are able to achieve high gold extraction. A sodium cyanide concentration of 0.5 g/L to 0.7 g/L is appropriate in the leach circuit.
- Most composites achieved maximum gold extraction after 36 hours of leaching. A retention time of 36 hours was selected as the design basis for the plant.
- The addition of lead nitrate and oxygen did not add value to the cyanidation circuit.
- Gold recovery and leach kinetics were insensitive to the solids content during cyanidation. 42% solids was selected as the design basis for the leach plant.
- Since Bayan Khundii ore is relatively clean material, without many metal cyanide complexes, most of the residual cyanide in the CIP tailings is present as free cyanide and requires the addition of copper sulphate to catalyze the SO_2/Air cyanide detox reaction.

- Reducing the residual free cyanide in the CIP tailings (by reducing the sodium cyanide concentration from 1.0 g/L to 0.5) reduces the amount of copper sulphate required during cyanide destruction.
- A retention time of 40 minutes, 100 ppm Cu2+, 5.7 g SO2 / g CNWAD resulted in CNWAD concentrations at the discharge of the cyanide destruction reactor of less than 10 ppm.
- Dewatering tests highlight that CIP tails may be thickened to 50% solids with moderate floc dosage rates of 60-80 g/t. Feedwell dilution to 5% solids improved settling characteristics of the material.
- Filtration of CIP tailings using ceramic disc filters or pressure filters could achieve a final moisture content of 15%.
- Overall filtration capacity between pressure and ceramic disc filtration was similar at cake moistures of 15% at approximately 170 to 200 kg/m2 hr. Pressure filtration was selected as the design basis for the FS update.

Dark Horse

- Life of Mine gold recovery is expected to be 89%.
- Dark horse material was insensitive to primary grind sizes between 60µm and 150µm.
- Low sodium cyanide concentrations (0.35 g/L) are sufficient to achieve the stated gold recovery.
- The Bond Ball Mill Work Index results are classified as moderately hard (Average of 15.6 kWh/t), while the SMC parameters ranged from 58.7 to 68.8, which is moderately soft. Abrasion index results indicate that the sample is moderately abrasive. Overall Dark Horse material is slightly softer than that from Bayan Khundii.
- A retention time of 40 minutes, 125 ppm Cu2+, 6.5 g SO2 / g CNWAD resulted in CNWAD concentrations at the discharge of the cyanide destruction reactor of 5 ppm.
- Settling tests suggest that Dark Horse has similar settling characteristics to that of Bayan Khundii.

14. Mineral Resource Estimate

14.1. Bayan Khundii

This section discloses the mineral resources for the Project, prepared and disclosed in accordance with the CIM Standards and Definitions for Mineral Resources and Mineral Reserves (2014). The QP responsible for these resource estimates is Mr. Paul Daigle, P.Geo., Principal Resource Geologist for AGP. The effective date of these Mineral Resources is 20 April 2023.

14.1.1. Database

The database was supplied by Erdene within a Leapfrog project and Excel file. The database was updated to include 25 additional drill holes, completed in 2022, that included gold and silver assays, and lithology data. The database consists of 398 entries, split between 375 drill holes and 23 trenches.

The geological and grade shell models were updated based on this new information. An additional high-grade domain was established, Midfield Southeast (MFSE), based on a new interpretation and additional drill information.

Descriptive Statistics for Bayan Khundii Table 14-1 presents the summary of records from the drill hole database. Table 14-2 presents the descriptive statistics for the Bayan Khundii assay database.

Table 14-1 Descriptive Statistics for Bayan Khundii Drill Hole Database

No. of Records	Collar	Survey	Assay	Lithology	Bulk Density
Drill Holes	375	1,521	31,051	14,636	1,088
Trenches	23	23	724	0	0
Total	398	1,544	31,775	14,636	1,088

Table 14-2 Descriptive Statistics for Bayan Khundii Assay Database

	Au (g/t Au)	Ag (g/t)	Length (m)
Count	31,775	31,775	31,775
Minimum	0	0	0.09
Maximum	2200.00	948.00	3.00
Mean	0.77	0.55	1.31
Median	0.09	0.00	1.00
Std Dev	14.27	7.22	0.46
CV	18.47	13.23	0.35

14.1.2. Bulk Density

There were no changes in the bulk density values used for the updated Mineral Resources. The same bulk density values were assigned to the block model based on the lithological model. Table 14.3 shows the bulk density used for the block model.

Table 14-3 Descriptive Statistics for Bayan Khundii

	Bulk Density
Basalt	2.66
Jurassic Sediments	2.58
Lapilli Tuff	2.66
Granitoid	2.59
Dacite Dykes	2.66
Monzonite	2.66

14.1.3. Interpretation

The Bayan Khundii deposit occurs within a Lapilli Tuff between a basement granitoid and an upper unconformity with a Jurassic sediment.

The interpretation of the geological model and mineralized domains was updated in the Leapfrog Project based on the July 2021 models. A new Monzonite wireframe was also received from Erdene to include into the updated geological model.

The geological model of the Bayan Khundii model was completed first to obtain the upper and lower contacts of the Lapilli tuff, the boundaries defining the contacts of the mineralized domains. The mineralized domains were captured by a series of grade shells. The numeric, or grade shell, model was updated to include the new drilling data, new upper and lower contacts of the Lapilli Tuff unit, and Monzonite contacts. The resolution was lowered to avoid long processing times. The grade shell models were completed for gold grades greater than 2.0 g/t Au (high grade), and for gold grades between 0.4 and 2.0 g/t Au (low grade halo).

The high-grade shell was split into the four separate areas to emulate the previous interpretation in July 2021. These separate areas, or domains, are Striker West, Striker, Midfield and Midfield North. An additional supergene mineralized domain, Midfield Southeast, was interpreted in the Midfield area, at the contact with the Jurassic sequence.

Table 14-4 summarizes the lithology codes and the mineralized domain codes for the Bayan Khundii solid wireframes.

Table 14-4 Summary of Lithology Codes and Mineralized Domain Codes

Lithology	Litho Code
Basalt	1
Jurassic Sediments	2
Lapilli Tuff	3
Granitoid	4
Dacite Dykes	5
Monzonite	6

Domain	Rock Code	Rock Type
Low grade halo	LG	400
Striker	HG_SW	401
Striker	HG_S	402
Midfield	HG_MF	403
Midfield North	HG_MFN	404
Midfield Southeast	HG_MFSE	405

Figure 14-1 shows the geology model for the Bayan Khundii Deposit. Figure 14-2 and Figure 14-3 show the grade shell models for the five high-grade domains and low-grade domain, respectively.

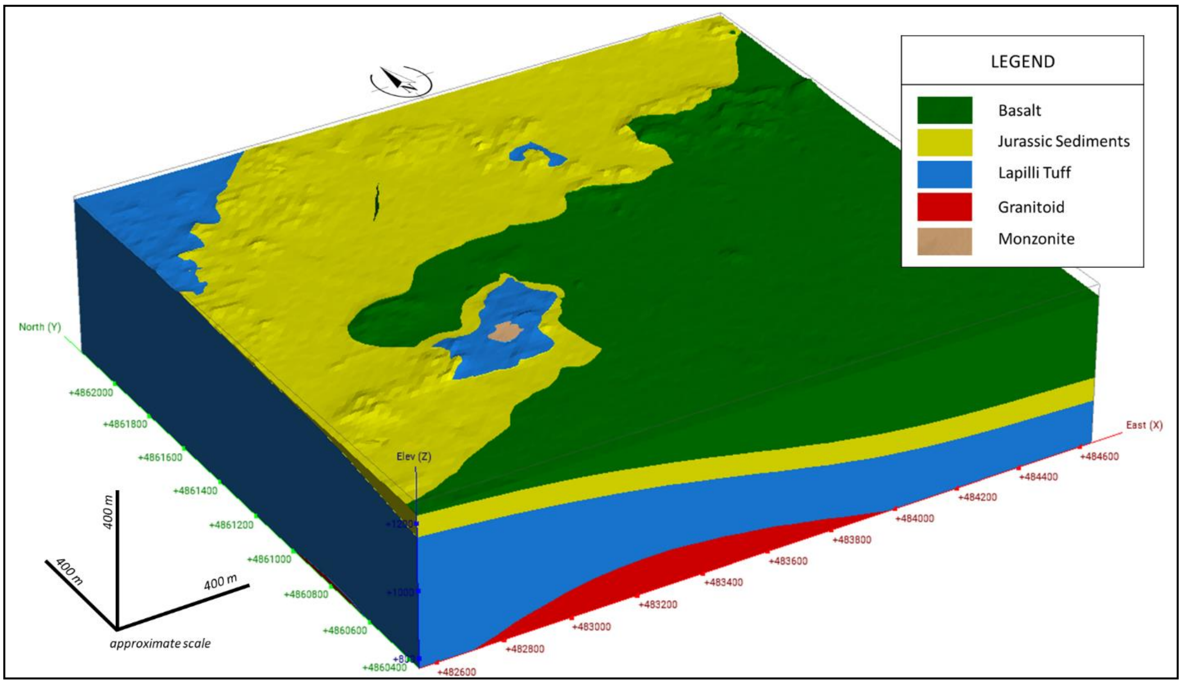

Figure 14-1 Bayan Khundii Geological Model (Source – AGP 2023)

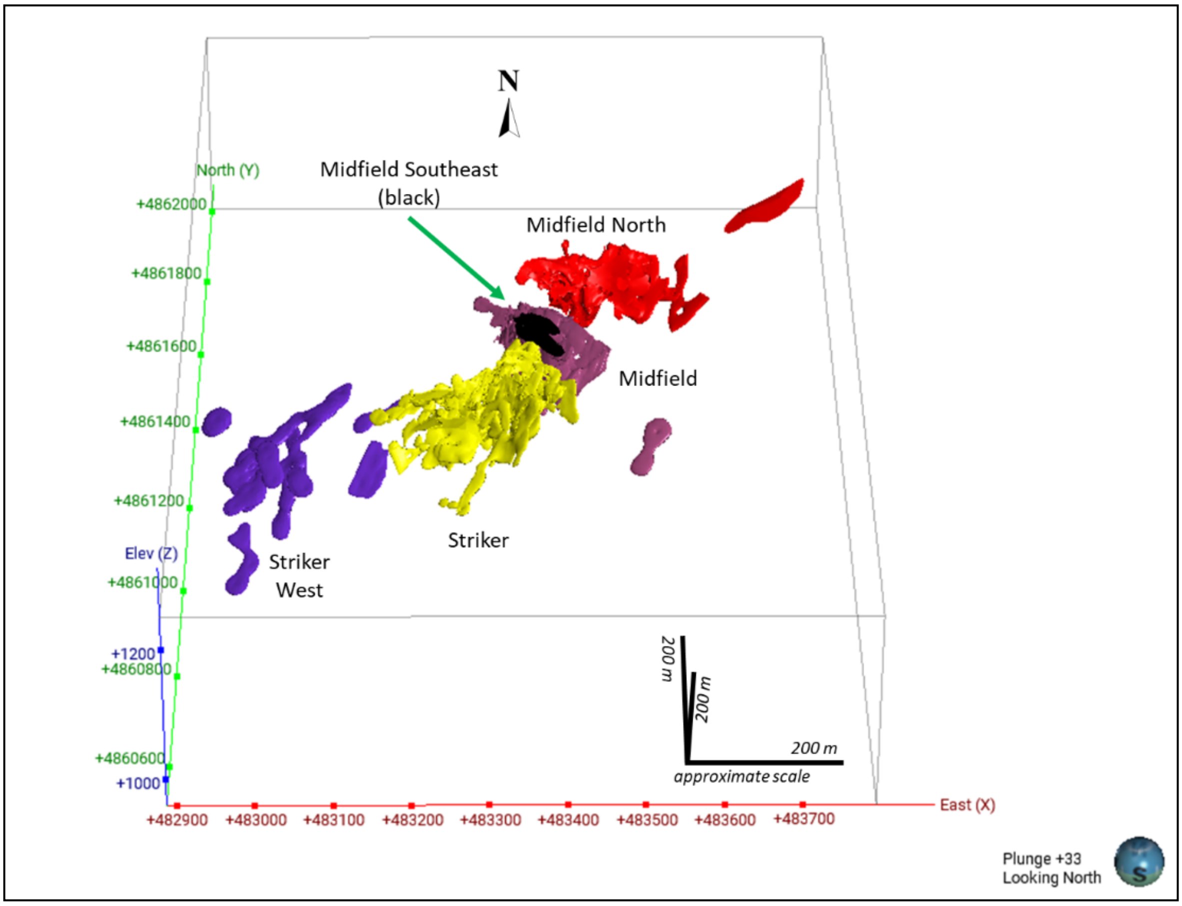

Figure 14-2 Bayan Khundii Grade Shell Model; Showing High-Grade Domains (Source – AGP 2023)

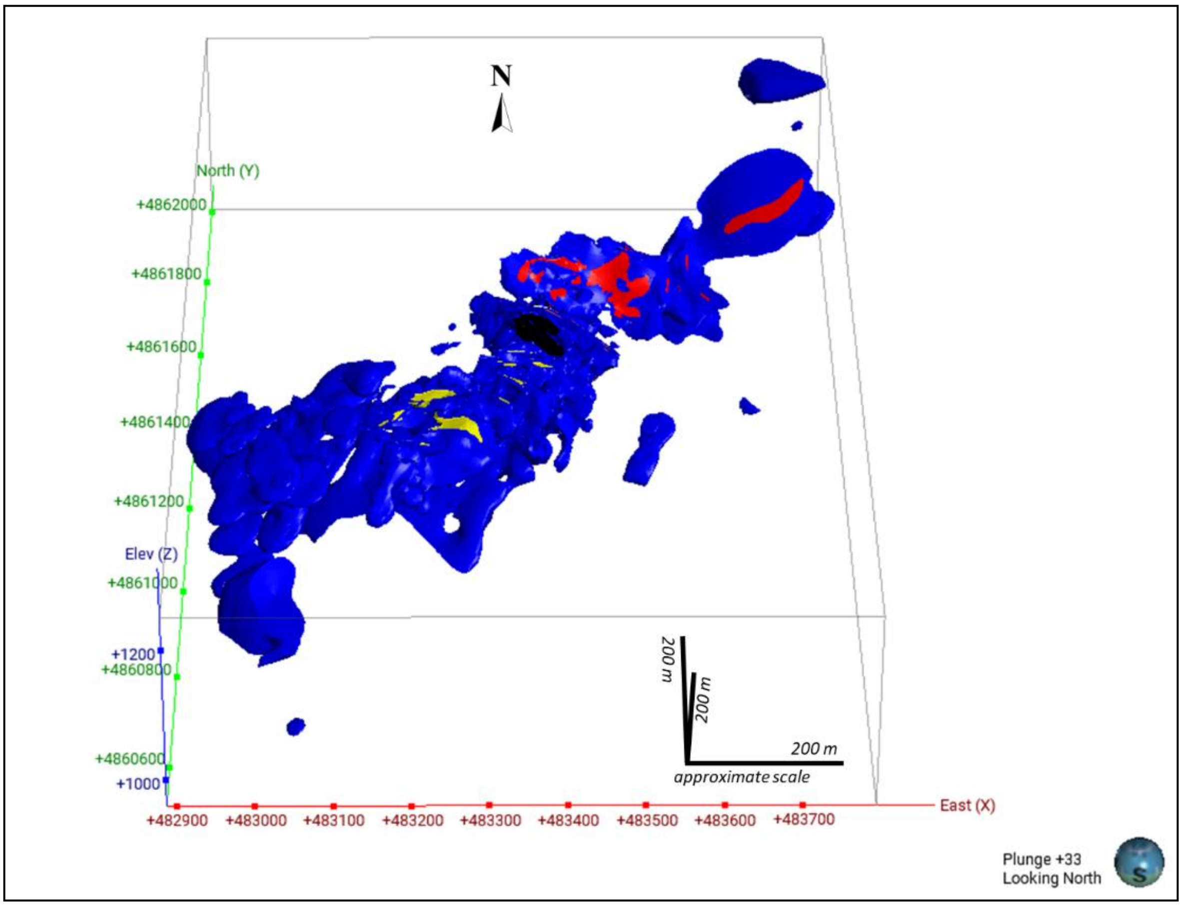

Figure 14-3 Bayan Khundii Grade Shell Model; showing low-grade halo (blue) (Source – AGP 2023)

The grade shell wireframe volumes were validated against the July 2021 wireframe volumes. The overall differences between the two models were less than 1%. The Midfield domain was split in 2023 into the Midfield and Midfield Southeast domains. Table 14-5 shows a comparison between new domain wireframes and the previous wireframes.

Table 14-5 Comparison of April 2023 vs. July 2021 Wireframe Volumes – Bayan Khundii Deposit

Wireframe	AGP 2023 Volume (m^3)	Tetra Tech 2021 Volume (m^3)	Volume Diff. (m^3)	% Diff. (%)
LG 0.4 – 2.0	6,070,000	6,116,800	-46,800	-0.8%
HG 2.0+	883,091	895,550	-12,459	-1.4%
LG	6,070,200	6,116,800	-46,600	-0.8%
SW	173,900	179,470	-5,570	-3.1%
S	233,310	238,420	-5,110	-2.1%
MF	232,810	240,140	-7,330	-3.1%
MFN	211,480	237,520	4,900	+2.1%
MFSE (2023)	30,940			
Total	6,952,640	7,012,350	-59,710	-0.9%

14.1.4. Exploratory Data Analysis

14.1.4.1. Raw Assays

The drill hole database consists of 375 drill holes and 23 trenches. A total of 8,512 raw assays intersects the high grade or low-grade shells, from 307 drill holes. Table 14-6 presents the descriptive statistics of the database by mineralized domain.

Table 14-6 Descriptive Statistics for Raw Gold Assay Values by Domain

Domain	Count	Min	Max	Mean	Median	Std Dev	CV
HG SW	177	0.03	105.90	5.73	1.83	11.63	2.03
HG S	562	0.01	353.00	9.74	3.24	25.58	2.63
HG MF	499	0	496.67	9.73	2.88	29.963	3.08
HG MFN	298	0.05	2200.00	16.33	3.07	128.66	7.88
HG MFSE	273	0.02	581.63	7.25	0.74	43.04	5.94
LG	6703	0	6.63	0.555	0.42	0.548	0.99
Length	8512	0.20	2.85	1.08	1.00	0.28	0.25

Table 14-7 Descriptive Statistics for raw Silver Assay Values by Domain

Domain	Count	Min	Max	Mean	Median	Std Dev	CV
HG SW	177	0	33	2.94	2.00	4.44	1.51
HG S	562	0	68	3.23	1.00	6.91	2.14
HG MF	499	0	137	3.67	2.00	8.05	2.19
HG MFN	298	0	948	11.33	3.00	71.39	6.30
HG MFSE	273	0	32	2.17	2.00	3.27	1.51
LG	6703	0	15	0.60	0.00	1.35	2.25
Length	177	0	33	2.94	2.00	4.44	1.51

14.1.4.2. Composites

The compositing of raw assay grades was the same as the July 2021 resource estimate. Composites were created on a nominal 1 m interval within each domain and the composite length adjusted across the domain intersection.

However, the original database has approximately 52 samples (out of 1,809) with a sample interval of greater than 1.5 m in the high-grade domains and 651 samples (out of 6,703) with a sample interval of greater than 1.5 m in the low-grade domain. It is recommended that the compositing strategy be reviewed to determine the impact of the sample splitting of these larger sample intervals in each of these domains. Sample splitting should always be avoided as this introduces an inherent bias by creating more data points into a domain that is greater than the number original data points. Table 14-8 and 14-9 present the descriptive statistics for the uncapped composite values by Domain for gold and silver, respectively.

Table 14-8 Descriptive Statistics for uncapped 1 m Composite Values for Gold by Domain

Domain	Count	Min	Max	Mean	Median	Std Dev	CV
HG SW	180	0.03	105.90	5.69	1.77	11.55	2.03
HG S	596	0.00	353.00	9.43	3.23	24.87	2.64
HG MF	509	0.05	496.67	9.67	2.93	29.43	3.05
HG MFN	305	0.05	2200.00	16.62	3.20	127.48	7.67
HG MFSE	279	0.00	391.99	6.70	0.84	35.17	5.25
LG	7414	0.00	6.63	0.54	0.41	0.55	1.02
Length	9283	0.50	1.47	1.00	1.00	0.03	0.03

Table 14-9 Descriptive Statistics for uncapped 1 m Composite Values for Silver by Domain

Domain	Count	Min	Max	Mean	Median	Std Dev	CV
HG SW	180	0	33.00	2.91	2.00	4.41	1.52
HG S	596	0	68.00	3.14	1.00	6.73	2.14
HG MF	509	0	137.00	3.64	2.00	7.92	2.18
HG MFN	305	0	948.00	11.18	3.00	70.58	6.31
HG MFSE	279	0	23.00	2.08	2.00	2.87	1.38
LG	7414	0	15.00	0.58	0	1.32	2.27
Length	9283	0.50	1.47	1.00	1.00	0.03	0.03

14.1.4.3. Capping Analysis

AGP employed disintegration analysis, probability plots and histograms for gold and silver assay values and determined that a single capping level was sufficient to apply to the high grade mineralized domains. A capping level of 200 g/t Au and 50 g/t Ag was applied on the 1 m composites. The low-grade domain did not require any capping.

Table 14-10 and Table 14-11 present the descriptive statistics of the capped 1 m composite values for gold and silver, respectively.

Table 14-10 Descriptive Statistics for Capped 1 m Composite Values for Gold by Domain

Domain	Count	Min	Max	Mean	Median	Std Dev	CV
HG SW	180	0.03	105.90	5.69	1.77	11.55	2.03
HG S	596	0.00	200.00	9.12	3.23	21.37	2.34
HG MF	509	0.05	200.00	9.00	2.93	20.86	2.32
HG MFN	305	0.05	200.00	9.91	3.20	23.99	2.42
HG MFSE	279	0.00	200.00	4.83	0.84	18.79	3.89
LG	7414	0.00	6.63	0.54	0.41	0.55	1.02
Length	9283	0.50	1.47	1.00	1.00	0.03	0.03

Table 14-11 Descriptive Statistics for Capped 1 m Composite Values for Silver by Domain

Domain	Count	Min	Max	Mean	Median	Std Dev	CV
HG SW	180	0	33.00	2.91	2.00	4.41	1.52
HG S	596	0	50.00	3.09	1.00	6.31	2.04
HG MF	509	0	50.00	3.47	2.00	5.65	1.63
HG MFN	305	0	50.00	4.86	3.00	7.21	1.48
HG MFSE	279	0	23.00	2.08	2.00	2.87	1.38
LG	7414	0	15.00	0.58	0	1.32	2.27
Length	9283	0.50	1.47	1.00	1.00	0.03	0.03

14.1.5. Spatial Analysis

Spatial analysis was reviewed and no changes to the variogram parameters were deemed necessary for this mineral resource estimate. Table 14-12 presents the variogram parameters.

Table 14-12 Variogram Parameters for the Bayan Khundii Deposit, 1 m gold composites

Sill = 1.00	Az. (°)	Dip (°)	Pitch (°)	Maj Range (m)	Semi Maj Range (m)	Min Range (m)	Variogram Type
C_0 = 0.10							
C_1 = 0.07	40.0	220.0	38.0	57.0	57.0	9.0	Spherical
C_1 = 0.83	40.0	220.0	38.0	89.0	99.0	17.0	Spherical

For the Midfield Southeast domain, a new variogram was completed on this domain in Leapfrog Edge. Table 14-13 shows the variogram parameters for the Midfield Southeast domain.

Table 14-13 Variogram Parameters for the Midfield Southeast domain, 1 m gold composites

Sill = 1.00	Az. (°)	Dip (°)	Pitch (°)	Maj Range (m)	Semi Maj Range (m)	Min Range (m)	Variogram Type
C_0 = 0.38							
C_1 = 0.55	36.6	65.0	16.7	5.0	4.0	9.0	Spherical
C_1 = 0.07	36.6	65.0	16.7	36.0	36.0	6.0	Spherical

14.1.6. Block Model

The block model was set up with a block matrix of 2.5 m long by 2.5 m wide by 2.5 m high. The block model is not rotated. The block model matrix was defined based on the drill hole spacing, with a range of 5 m to 25 m, geological interpretation and in consideration of an open pit mining scenario.

The block model is a whole block model that was estimated in Leapfrog Edge resource software.

Table 14-14 presents the block model origins. Figure 14-4 presents the block model.

Table 14-14 Block Model Parameters

	Minimum	Maximum	No. of Blocks	Block Size
Easting	482550	483850	400	2.5
Northing	4860400	4862400	360	2.5
Elevation	330	1280	100	2.5
No rotation				

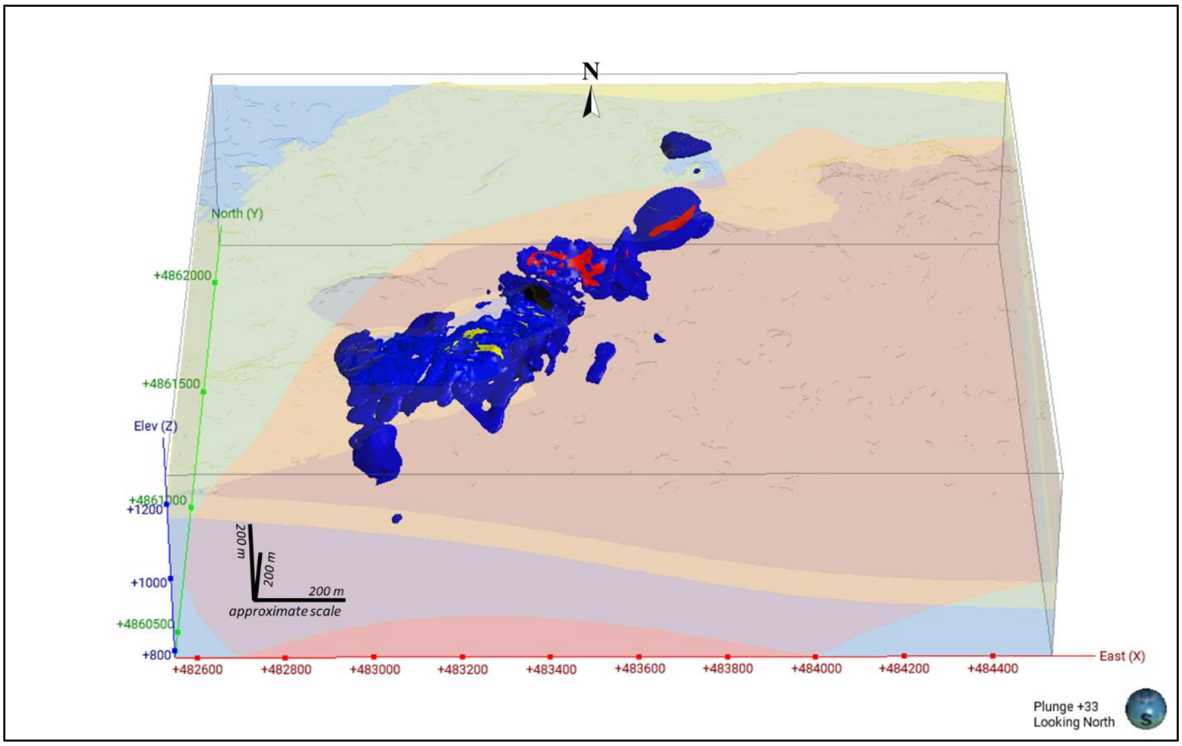

Figure 14-4 Bayan Khundii Block Model; Showing the Mineralized Domains (Source – AGP 2023)

14.1.7. Estimation Strategy

The block model grades were interpolated in Leapfrog Edge using variable orientation in order to maintain continuity along domain directions. The block model was interpolated using Ordinary Kriging for gold and silver grades.

Each domain was estimated in three passes. The first pass used the smallest search ellipse, and blocks were estimated with a minimum of 9 samples and a maximum of 12 samples, with a maximum of 3 samples per drillhole. For the second, Pass 2, the search ellipse ranges were doubled, and blocks were estimated with a minimum of 6 samples and a maximum of 15 samples, with a maximum of 3 samples per drill hole. The third pass, Pass 3, increased the search ellipse by a third to the maximum range of the variogram ranges, and blocks were estimated with a minimum of 4 samples and a maximum of 18 samples, with a maximum of 3 samples per drill hole. Table 14-10 summarizes the estimation parameters for the Bayan Khundii model. Table 14-15 and Table 14-16 show the estimation parameters and search ellipse parameters for the Bayan Khundii resource estimate, respectively.

Table 14-15 Estimation Parameters – Bayan Khundii

Pass	Minimum No. of Samples	Maximum No. of Samples	Maximum Composites per Drill Hole	Minimum No. of Drill Holes
Pass 1	9	12	3	3
Pass 2	6	15	3	2
Pass 3	4	18	3	2

Table 14-16 Search Ellipse Parameters – Bayan Khundii

Domain	Search Orientation			Search Ranges			Search
	Dip	Dip Az.	Pitch	Max	Intermed	Min	
All Domains, except MFSE							
Pass 1	40	220	38	33	30	5	Ellipsoidal
Pass 2	40	220	38	66	60	10	Ellipsoidal
Pass 3	40	220	38	99	90	15	Ellipsoidal
HG_MFSE							
Pass 1	37	65	50	33	30	5	Ellipsoidal
Pass 2	37	65	50	66	66	10	Ellipsoidal
Pass 3	37	65	50	66	66	10	Ellipsoidal

14.1.8. Validation

The block model was validated using the following methods:

- visual inspection and comparison of block grades with composite and assay grades on section and plan
- statistical comparison of resource assay and block grade distributions
- inspection of swath plots with composites and block grades elevations and northings

Table 14-17 presents a comparison of the mean gold grades comparing 1 m composite values to OK interpolated mean grades by mineralized domain. AGP is satisfied that the block model gold grades reflect the gold grades from the drill core samples.

Table 14-17 Comparison of Mean Block Grades and 1 m Composite Gold Values

Domain	HG-SW		HG-s		HG-MF		HG-MFN		HG-MFSE		LG	
	OK	1m Comp	OK	1m Comp	OK	1m Comp	OK	1m Comp	OK	1m Comp	OK	1m Comp
Au (g/t)	4.86	5.69	7.49	9.12	7.63	9.00	8.13	9.91	1.95	4.83	0.50	0.54

Figure 14-5 to Figure 14-6 presents the swath plots for easting and northing for the Midfield domain, respectively.

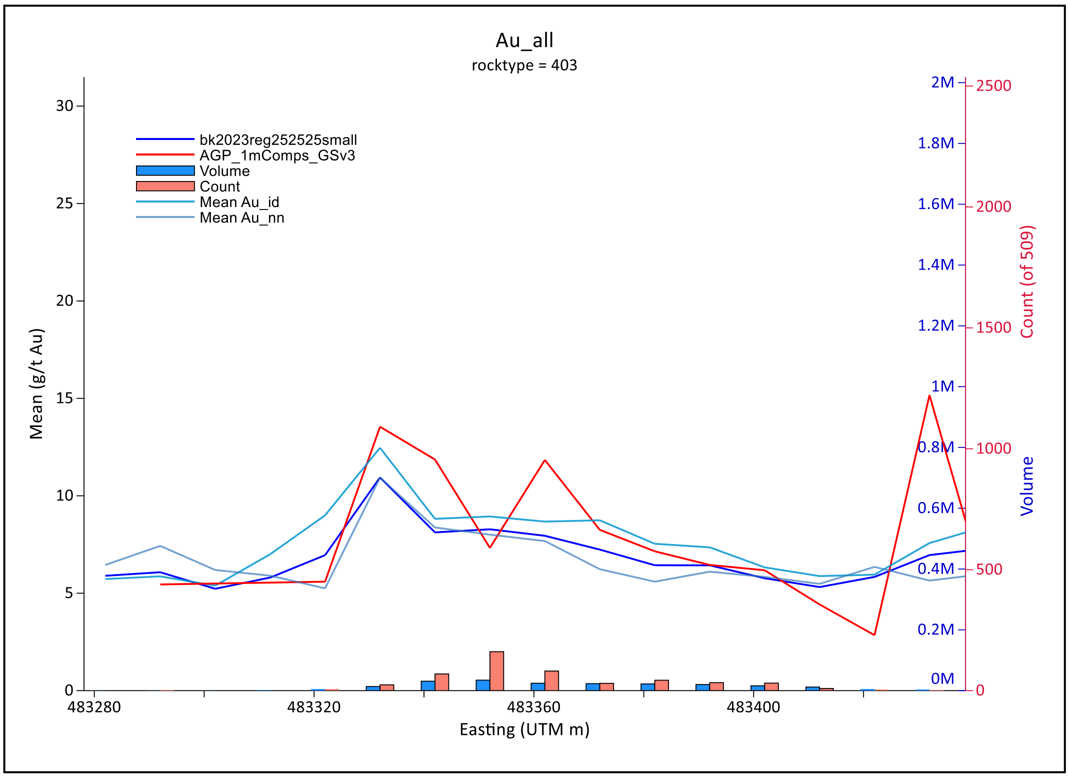

Figure 14-5 Swath Plots for Gold - Easting; Midfield Domain [403] (Source – AGP 2023)

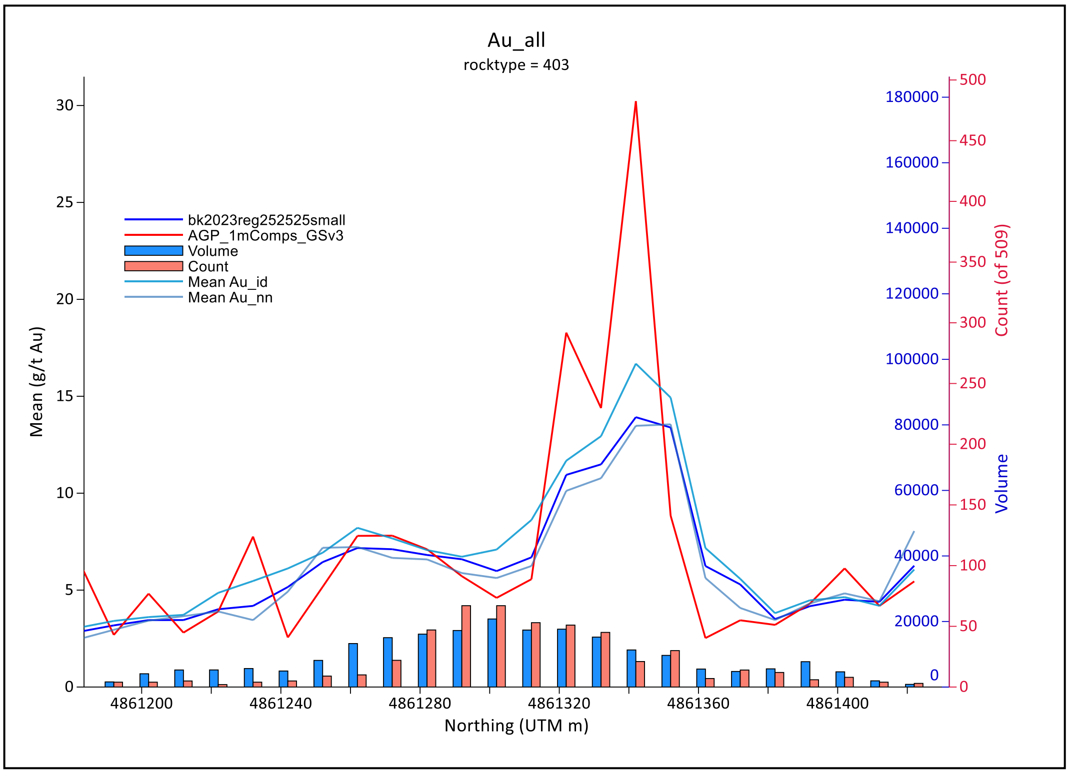

Figure 14-6 Swath Plots for Gold - Northing; Midfield Domain [403] (Source – AGP 2023)

14.1.9. Mineral Resources

14.1.10. Mineral Resource Classification

Blocks were classified as Measured where blocks were estimated with a minimum of 3 drill holes within 33 m. Blocks were classified as Indicated where blocks were estimated with a minimum of 3 drill holes within 66 m. Blocks were classified as Inferred where blocks were estimated with a minimum of 2 drill holes within 99 m, the maximum distance for classification. These roughly equate to Pass 1, Pass 2, and Pass 3, respectively.

Blocks were groomed to remove isolated Measured blocks within Indicated blocks and any isolated Indicated blocks within Measured blocks to uphold. Inferred blocks were maintained on the fringes of the deposit. Figure 14-7 presents the block model showing classification blocks and constraining shell.

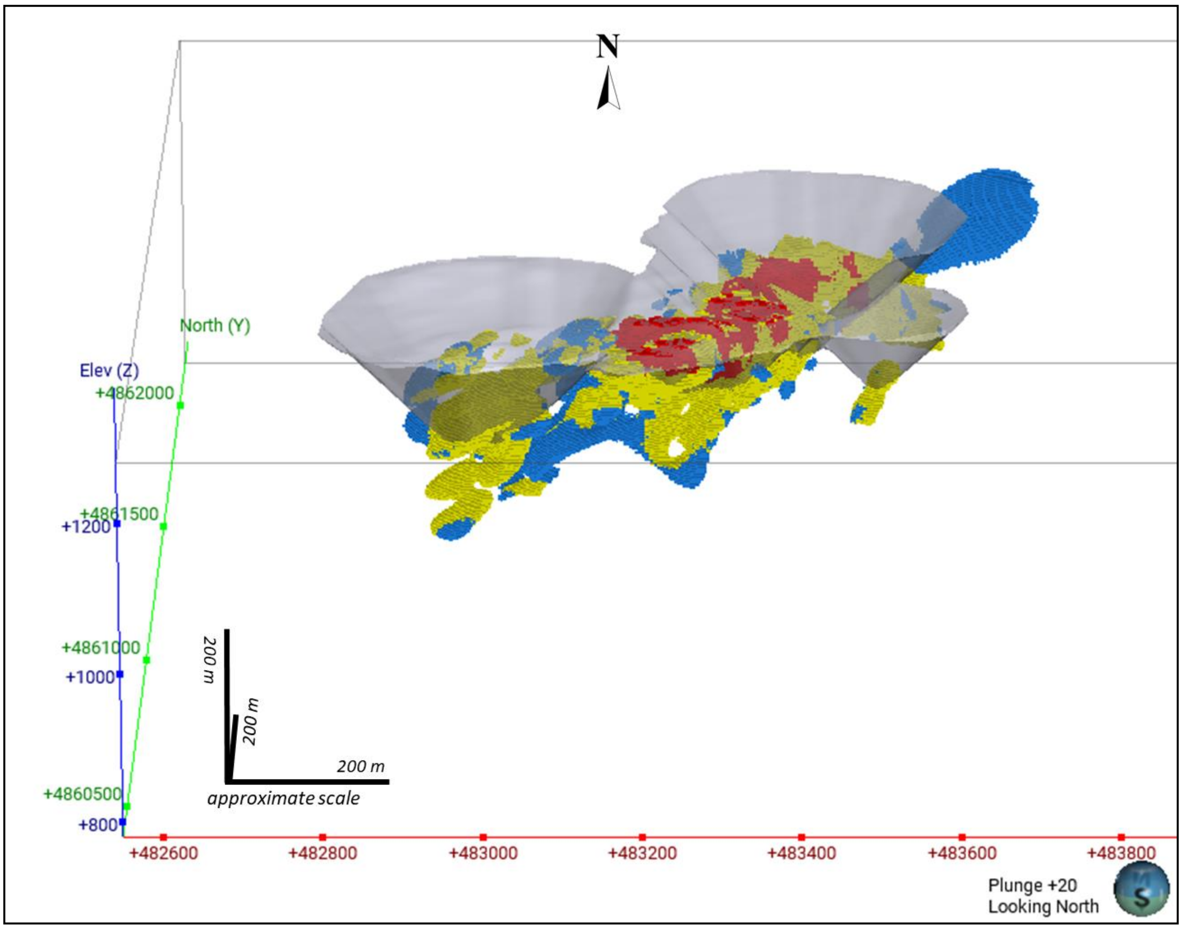

Figure 14-7 Block Model; Showing Constraining Shell and Classification Blocks (Source – AGP 2023)

Note: red = Measured, yellow=Indicated, blue=Inferred

14.1.11. Reasonable Prospects for Eventual Economic Extraction

The Mineral Resources were reported within an optimized constraining shell using the same parameters as the previous Mineral Resources.

Table 14-18 presents the parameters used for the optimized constraining.

Table 14-18 Optimized Constraining Shell Parameters

Description	Parameter	Unit	
Metal Price	Gold	$US/ oz Au	1,600
Metal Recovery	Gold	%	95
Costs	Mining	$US/ t	3.00
	Milling and G&A	$US/ t	16.00
	Pit Slope	°	45

14.1.12. Mineral Resource Statement

The updated Mineral Resources for the Bayan Khundii Project at a 0.4 g/t Au cut-off grade are: Measured Resources of 4.0 Mt at 3.03 g/t Au and 1.44 g/t Ag; Indicated Resources of 3.3 Mt at 2.04 g/t Au and 1.22 g/t Ag; and Inferred Resources of 0.2 Mt at 1.08 g/t Au and 1.32 g/t Ag. The effective date of the Mineral Resources is 20 April 2023

Table 14-19 presents the Mineral Resources for the mineral resources amenable to open pit extraction for the Bayan Khundii Project.

Table 14-19 Mineral Resources for the Bayan Khundii Project

Class	Cut-off Grade (g/t Au)	Tonnes (,000 t)	Au Grade (g/t Au)	Ag GradeU (g/t Ag)	Contained Oz. (oz Au)	Contained Oz. (oz Ag)
Measured	0.40	4,041	3.03	1.44	394,000	197,000
Indicated	0.40	3,337	2.04	1.22	219,000	142,000
Meas + Ind.	0.40	7,378	2.58	1.34	613,000	318,000
Inferred	0.40	186	1.08	1.32	6,000	8,000

Notes:

- *Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability.*
- *Summation errors may occur due to rounding.*
- *The effective date of the Mineral Resources is 20 April 2023.*
- *Open pit mineral resources are reported within an optimized constraining shell.*
- *Open pit cut-off grade is 0.4 g/t Au based on the following parameters:*
    - *Gold Price of $US 2,000/oz Au*
    - *Gold recovery of 95%*
    - *Mining Costs of $US 3.00/t*
    - *Milling Costs and G&A of $22.00/t*
- *Capping of gold grades was 200 g/t Au and 50 g/t Ag on 1 m composite values.*
- *The density varies between 2.58 g/cm^3 and 2.66 g/cm^3 depending on lithology.*

14.1.13. Comparison to Previous Mineral Resources

The most recent drilling consisted of 25 relatively shallow, near surface drill holes (<40 m below surface), therefore, the impact on the gold and silver grades was anticipated to be relatively minor in comparison to the previous Mineral Resources. The most recent drilling also supported the development of a supergene domain (Midfield Southeast) from the Midfield domain.

The principal difference in the Mineral Resources was in the classification of the blocks. The larger block matrix in the most recent model allowed for a more continuous set of Measured blocks were captured along the core of the deposit that upgraded many of the previously classified Indicated blocks. This was followed by a similar decrease in Indicated blocks.

The lower cut-off grade also brought an increase in the Measured + Indicated Mineral Resources with an approximate 5% increase in combined tons and approximate 7% increase in contained gold ounces.

Table 14-20 shows a comparison of the July 2021 block model to the April 2023 block model.

Table 14-20 Comparison of April 2023 vs. July 2021 Gold Mineral Resources – BK Deposit

Cut-off Grade	AGP (April 2023) within pit constraint ≥ 0.4 g/t Au			Tetra Tech (July 2021) within pit constraint ≥ 0.4 g/t Au			Differences		
Class	**Tonnes (,000 t)**	**Au (g/t Au)**	**Contd. Au (oz Au)**	**Tonnes (,000 t)**	**Au (g/t Au)**	**Contd. Au (oz Au)**	**Tonnes (,000 t)**	**Au (g/t Au)**	**Contd. Au (oz Au)**
Measured	4,041	3.03	394,000	3,031	2.39	233,000	1,010	0.64	161,000
Indicated	3,337	2.04	219,000	5,269	2.08	352,000	-1,932	-0.04	-133,000
Meas+Ind	7,378	2.58	613,000	8,300	2.19	585,000	-922	0.39	28,000
Inferred	186	1.08	6,000	512	2.18	36,000	-326	-1.10	-30,000

Note: Summation errors may occur due to rounding

14.1.14. Factors That May Affect the Mineral Resource Estimate

Factors that may affect the Mineral Resource estimates include:

- metal price and exchange rate assumptions
- changes to the assumptions used to generate the gold grade cut-off grade
- changes in local interpretations of mineralization geometry and continuity of mineralized zones
- changes to geological and mineralization shape and geological and grade continuity assumptions
- density and domain assignments
- changes to geotechnical, mining, and metallurgical recovery assumptions
- change to the input and design parameter assumptions that pertain to the conceptual pit and stope designs constraining the mineral resources.
- assumptions as to the continued ability to access the site, retain mineral and surface rights titles, maintain environment and other regulatory permits, and maintain the social license to operate.

14.2. Dark Horse Mane

14.2.1. Resource Database

The exploration database was maintained in Microsoft Excel spreadsheets. All data were exported as comma-delimited text files. The text files contained Au, Ag, As, S, Fe, and Mn analytical results. Au was considered the element with economic value, and the remaining elements were estimated to understand penalty element distribution.

The key files supplied to RPM included:

- AAD01-218_AssayDB_2022_RPM.xls
- AAD_Spacific_Gravity_density_result_2021_vQAQC.xls

- Original laboratory reports (hole AAD-01 to AAD-218)
- Dark Horse Mane_Feb10_22 Leapfrog Working Folder contains all geology interpretations
- TR1-MONGOLIA-BAYANKHONGOR-SO20230837-DEM-Tile-477_4868.msh – dem topography
- RPM_coded_weathering_visual_checked.xls

The supplied drilling data spreadsheets were compiled by RPM into the Access database '*erd_darkhorse_dhdb2022.mdb*'. They contained drilling up to 2022 and included tabulated information for collar, survey, assay, density, lithology and veining. The data was imported into Surpac and Leapfrog Geo software. All Mineral Resource estimation work conducted by RPM was based on drill hole and trench data received as at 1st October 2022.

The Dark Horse deposit was first discovered with rock chip samples in 2019. Erdene carried out initial test and follow up drilling in 2020. This was followed by a systematic drill out in 2021 using conventional diamond core rigs. Additional infill drilling was completed in 2022. A total of 218 diamond drill holes for 24,030 m and 5 trenches totaling 230 m had been completed by the end of 2022. A subset of 117 holes for 10,354 m was used in the Mineral Resource, mostly confined within a N-S structure. No modelling was done for the drill data outside this structure, which is at an early stage of exploration with some good intercepts.

A summary of the drill database is shown in Table 14-21.

Table 14-21 Exploration Summary Data Used in Dark Horse Resource Estimate

Year	In Project			In Mineral Resource			
	Drilling Method	Drill holes		Drill holes		Intersection	
		Number	Metres	Number	Metres	HG Metres	LG Metres
2016	Diamond	7	590	-	-	-	-
	Trench	5	230	-	-	-	-
2017	Diamond	5	850	-	-	-	
2018	Diamond	25	3,514	2	346	1	5
2019	Diamond	2	453	-	-	-	-
2020	Diamond	25	4,660	4	905	42	235
2021	Diamond	126	11,608	94	7,850	378	1,179
2022	Diamond	28	2,355	17	1,254	87	179
Total		**223**	**24,260**	**117**	**10,354**	**508**	**1,598**

No data was excluded from the estimate. Metal screening assaying was completed on samples with over 5 g/t Au (a total of 119 samples) and original fire assay results were replaced with metal screening results prior to use of data in the estimation. Lower detection limit value for Ag for SGS primary laboratory is 2 ppm and 70% of assays reported below 2 g/t Ag in the database. RPM replaced these values with a half detection limit value of 1 g/t prior to use in the estimation.

14.2.2. Bulk Density Data

A total of 167 density determinations were collected by Erdene Technical team from diamond core samples from 30 drill holes. Bulk density determinations were completed on pieces of drill core generally 10 to 15 centimeters in length. Determinations were completed using an industry method that involved weighing the sample in air and then in water (the "Archimedes method"). The bulk density was then calculated according to the following formula:

$$\text{Bulk Density} = \frac{\text{Weight in air}}{\text{Weight in air} - \text{Weight in water}}$$

As part of this program, 38 check measurements were carried out by Geosignal LLC, a local geological service company. Results were near-identical with a small degree of variation, and the overall average of both datasets were 2.59 t/m^3. Results are shown in Figure 14-8.

Density samples included both mineralized and unmineralized core. RPM extracted the density measurements from the database and coded the measurements using mineralization and weathering wireframes. Results are tabulated in Table 14-22.

. A histogram of all density data and box and whisker plots by mineralization and weathering domains are provided in Figure 14-9.

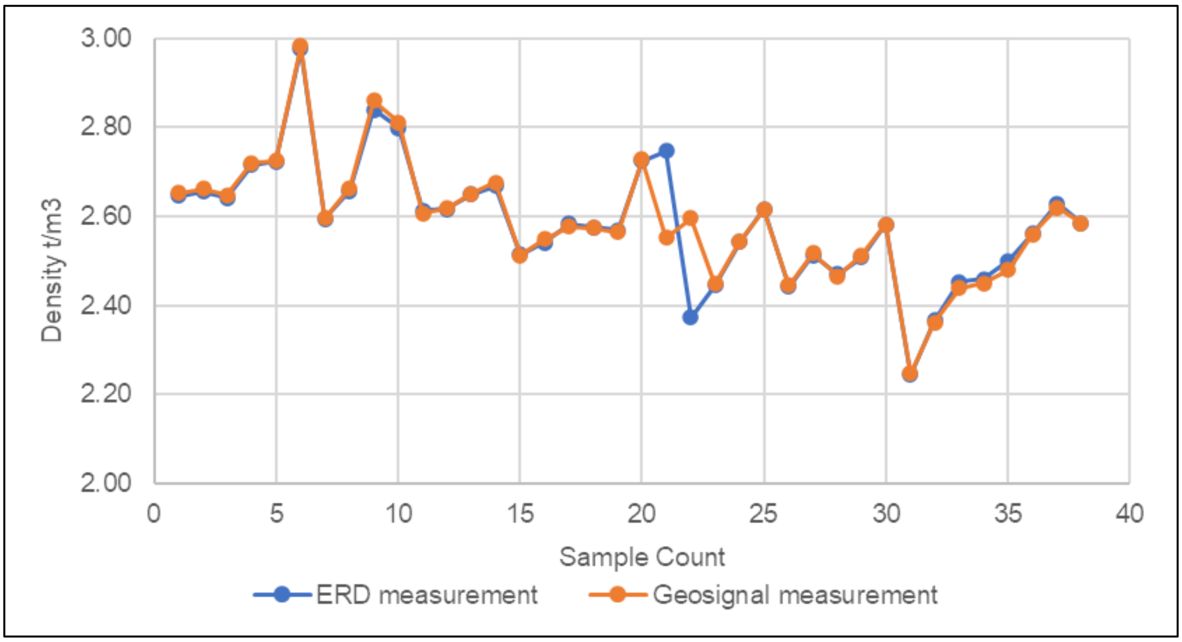

Figure 14-8 Density Determination Checks (Source RPM 2023)

Table 14-22 Bulk Density Data Summary

Type	Weathering	Samples	Bulk density (t/m3)		
			Minimum	Maximum	Mean
Mineralization	oxide	51	2.34	3.01	2.61
	transitional	9	2.37	2.72	2.58
	fresh	2	2.63	2.67	2.65
Waste	oxide	60	2.24	2.88	2.54
	transitional	14	2.50	2.98	2.61
	fresh	31	2.38	2.90	2.67
	overburden	-	-	-	1.60
All		**167**	**2.24**	**3.01**	**2.60**

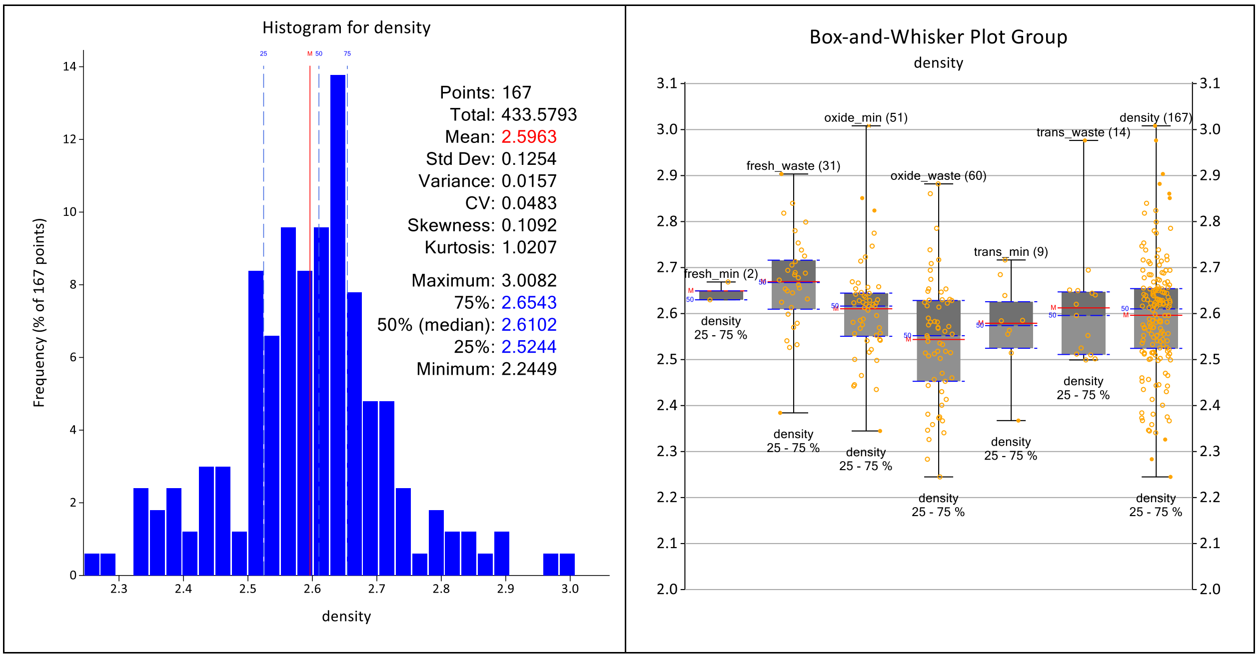

Figure 14-9 Histogram of Density Data (Source RPM 2023)

Correlation analysis was completed for density and other analyzed elements. The highest positive correlation was observed between density and S grade (0.59), however results were quite scattered, and no clear linear correlation was observed.

The bulk density values assigned to mineralized and unmineralized material were derived from Table 14-22. Due to the absence of core measurements, the bulk density assigned to the overburden was derived from known bulk densities of similar geological materials. These values were considered by RPM to be reasonable.

RPM considers the number of samples inadequate to assess the deposit density, however this is mitigated by relatively low variance in the density data for the mineralization zones. RPM considers the bulk density test work to be satisfactory for the purpose of this Mineral Resource estimate. RPM notes that the distribution of the measurements suggests that there may be additional, not yet understood, controls on the density (such as alteration, brecciation or lithology). RPM recommends further investigation to increase the local accuracy of the density assignment.

Overall, RPM recommends the Client take additional density determinations from drill core, especially within mineralization zones, so appropriate densities can be assigned to different domains. It is also recommended that density determination be obtained through the weathering profile.

14.2.3. Geological Interpretation

Mineralization at Dark Horse is considered to be structurally controlled and hosted in andesitic volcanics. Most vein zones are characterized as a breccia with vein, stockwork vein textures and intense iron oxide and sulphide minerals.

Prior to defining the estimation domains, RPM constructed a series of structural trend surfaces that define the mineralization trends, as interpreted by RPM. The structural trends were interpreted based on a combination of inputs, including (but not limited to) the following:

- ERD’s interpretation of lithological units and anisotropic RBF interpolant Au grade shells;
- Discussion with ERD’s Technical Lead Geologists;
- Visual observation of logged vein frequency, oxidation states and orientation.
- Visual observation of continuity of high-grade Au in three dimensions, based on various manipulations of the downhole assay grade, including:
- Composites of different composite lengths, up to 4 meter composites, to filter out small-scale noise;
- Grade filtering using various high grade cut-offs;
- Maximum intensity projection of high-grade assays in Leapfrog Geo, which enhanced high grade values, and
- Creating anisotropic RBF shells to assist in identifying macro trends and filtering out small scale noise.

On this basis, it is concluded that structural trends, quartz vein frequency, and the intensity of the oxidation impact grade distributions however, this is not definitive and is not the case in all portions of the deposit.

Breccia zones seem to have significant control on the overall mineralization at the Dark Horse deposit, and lithology does not seem to significantly impact the gold grade.

14.2.4. Topography

The mineralization and weathering domains models were constructed below a topographic digital elevation model (DEM) wireframe, provided by ERD. The satellite DEM was sourced from an airbus SPOT image collected in 2021. Quality control checks were performed by overlapping orthoimages and comparison of X and Y cartographic references. The overall quality control report demonstrates that good accuracy is achieved with an overall bias of 0.4m and RMSE of 3.1.

RPM notes that holes up to AAD-218 were surveyed with base stations and comparison of DEM surface and base station surveyed holes shows differences up to ±3-4 meters in elevation. RPM then included all base station surveyed collar coordinates into the current DEM surfaces prior to use for modelling, as the base station surveyed coordinates were considered to have higher accuracy than DEM surface.

14.2.5. Mineralization Modelling

RPM utilised the Leapfrog Geo™ vein modelling tool to generate a number of parallel discrete estimation domains, where discrete mineralized structures could be traced across multiple cross-sections of drilling.

The mineralization modelling was based on the gold assay data and the trend surfaces described in Section 14.2.3 – Geological Interpretation.

Typically, the vein-type mineralization is defined by a clear and significant increase in grade relative to the surrounding host rock, which can be clearly identified through visual assessment of the downhole assay grades. That said, a nominal cut-off of 1 g/t Au was used to construct mineralization wireframes, and these wireframes are described herein as the HG Domains. The selection of the relatively high grade 1g/t Au cut-off was based on a statistical analysis of the downhole gold assays for all exploration drilling, for which log probability plot analysis suggested a subtle population break at approximately 1 g/t Au. Population histogram and probability plots for all exploration data are shown in Figure 14-10.

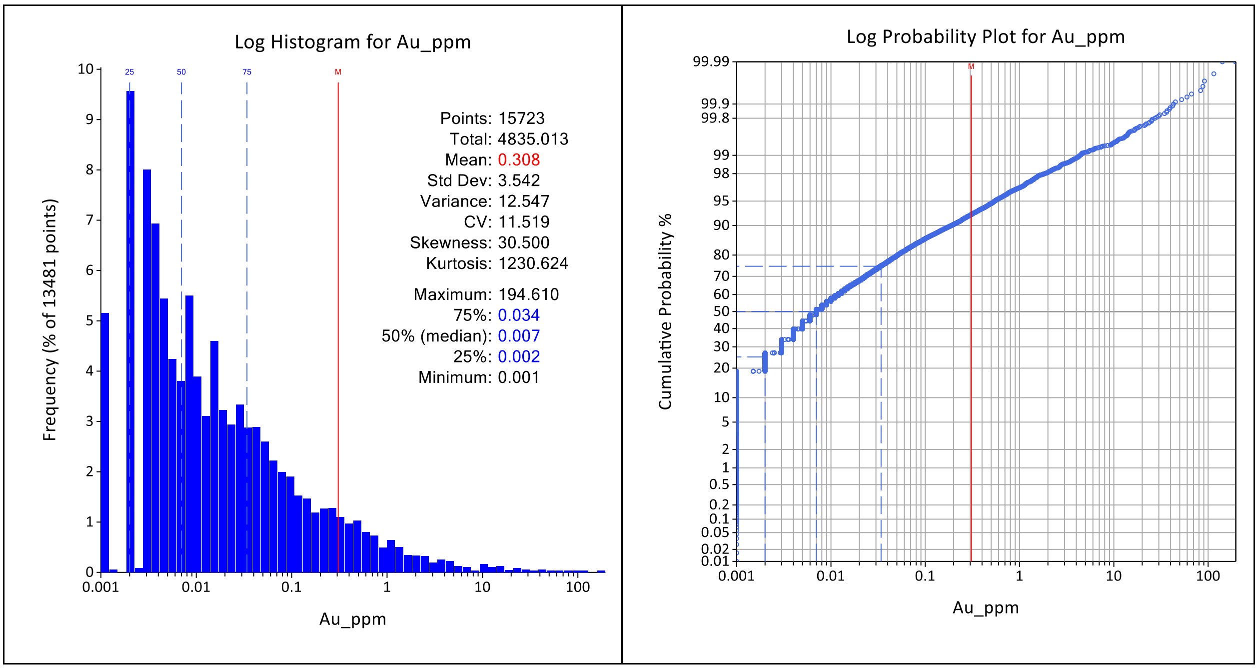

Figure 14-10 Log Histogram and Log Probability Plot for All Assays (Source RPM 2023)

A significant volume of lower grade mineralization of potentially economic grades falls outside the HG Domain wireframes. For this reason, a lower grade "halo" wireframe model, described herein as the LG Domains, was constructed to surround the HG Domains. A nominal 0.1 g/t Au cut-off was used to construct these wireframes. Leapfrog Geo^{TM} trend surfaces created during the construction of the HG domains were used to control the LG Domain wireframe orientations, resulting in LG "halo" domains that follow the trend of the HG Domains and appropriately capture surrounding gold mineralization greater than 0.1 g/t Au.

A total of 28 discrete zones were interpreted, including 10 HG Domains (*wf_darkhorse_final_20221117.dtm*) and 18 LG Domains (*wf_darkhorse_final_20221117.dtm*). Modelled wireframes were exported to Surpac^{TM} 2021. The Dark Horse deposit was divided into two zones based on interpretation: South Dark Horse and North Dark Horse. The South Dark Horse deposit was the primary focus of drilling due to the shallower high-grade mineralization. This domain has a strike extent of 660 meters and a thickness of up to 23 meters. The strike and dip extent and average thickness of all the mineralization domains are provided in Table 14-23.

Table 14-23 Au Grade Domain Details

Area	Domain	Object	Strike extent (m)	Depth extent (m)	Average thickness (m)
North Dark Horse	LG	1	463	122	10.9
		2	772	203	7.7
		3	368	149	4.9
		4	103	93	4.6
		5	237	72	5.7
		7	254	100	6.6
		17	126	98	2.7
		18	97	47	3.2
		19	50	55	2.0
	HG	205	233	110	3.5
		206	149	104	5.5
		207	107	96	2.0
		208	481	197	2.1
		209	49	87	2.5
		210	66	39	1.3
South Dark Horse	LG	8	660	265	10.0
		9	98	58	9.5
		10	46	69	2.0
		11	144	60	2.1
		12	113	60	3.0
		13	189	119	8.3
		14	146	122	8.3
		15	63	84	2.0
		16	84	70	3.3
	HG	201	232	72	8.7
		202	58	45	1.5
		203	158	54	6.3
		204	63	50	1.3

Extrapolation of the wireframe objects is geologically robust and consistent. HG wireframes are extrapolated up to 15 meters, while LG wireframes are extrapolated up to 30 meters from the last drill intersection.

The extents of the interpreted domains are shown in Figure 14-11 to Figure 14-14.

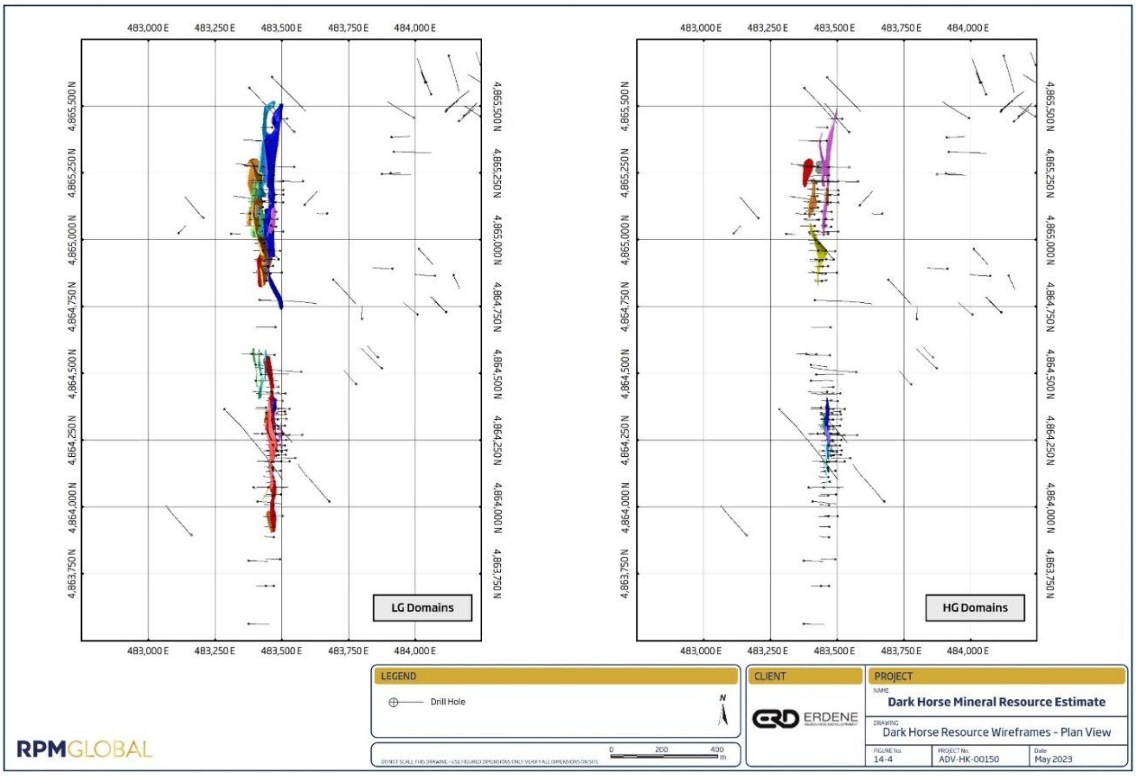

Figure 14-11 Dark Horse Resource Wireframes – Plan View (Source RPM 2023)

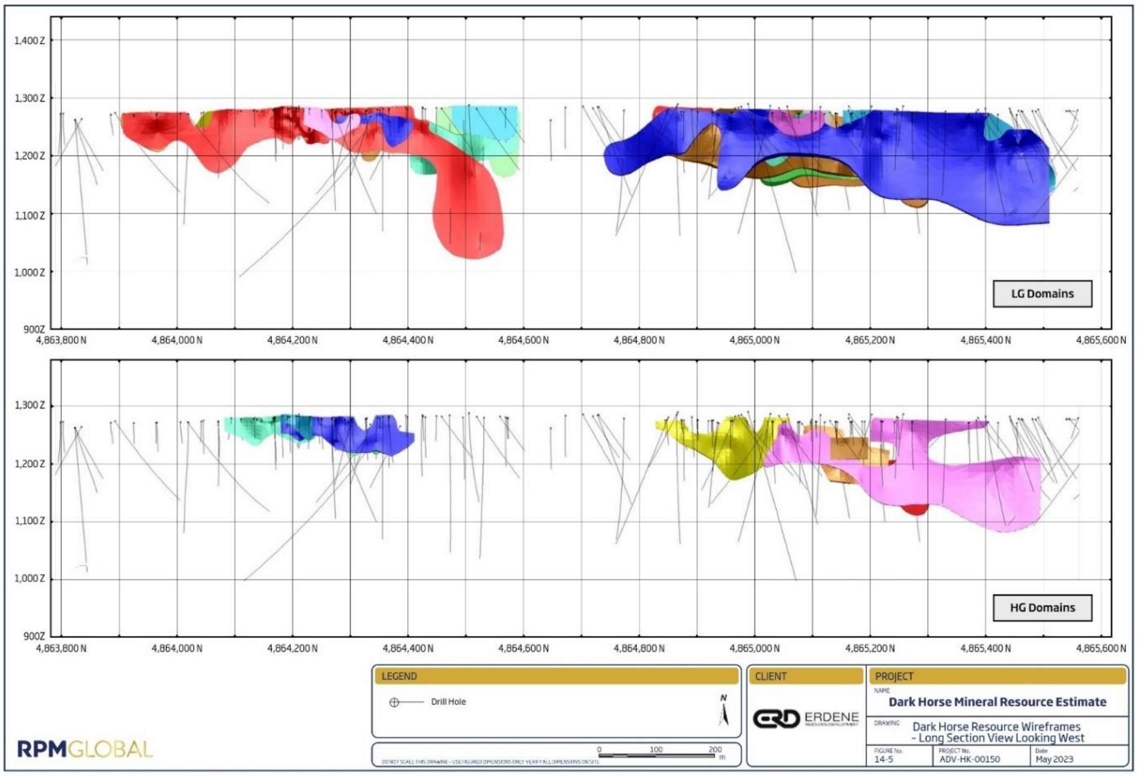

Figure 14-12 Dark Horse Resource Wireframes – Long Section View Looking West (Source RPM 2023)

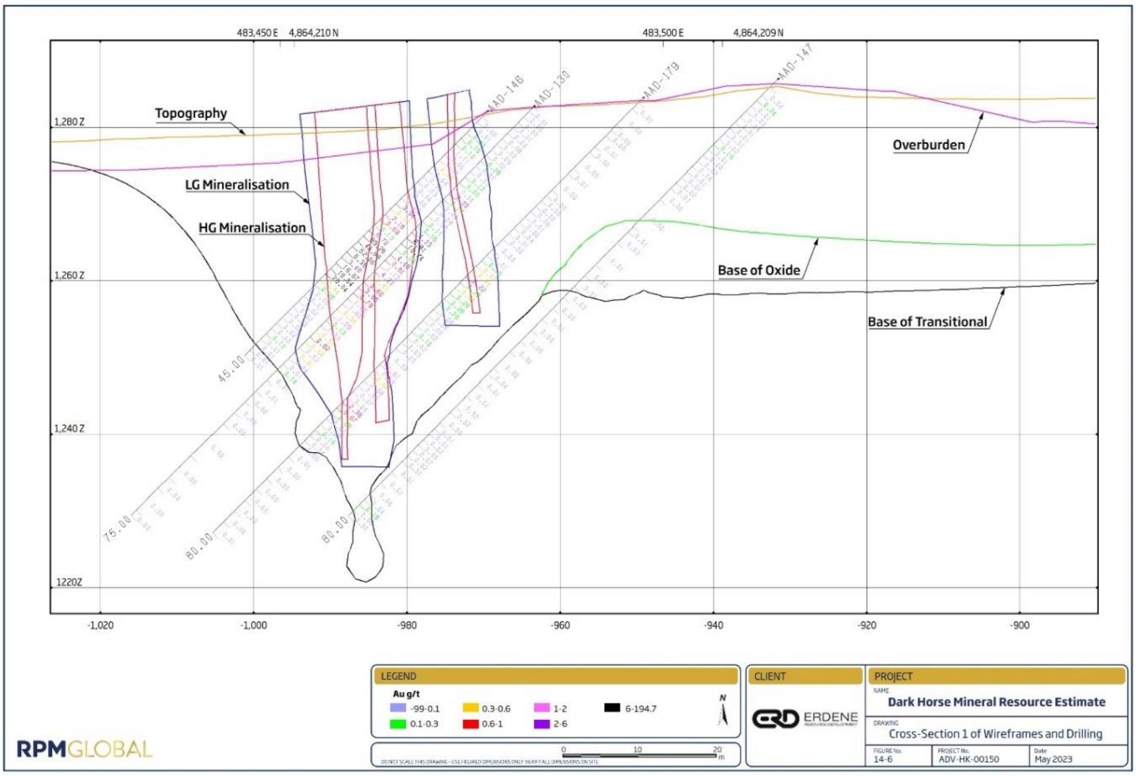

Figure 14-13 Cross-Section 1 of Wireframes and Drilling (Source RPM 2023)

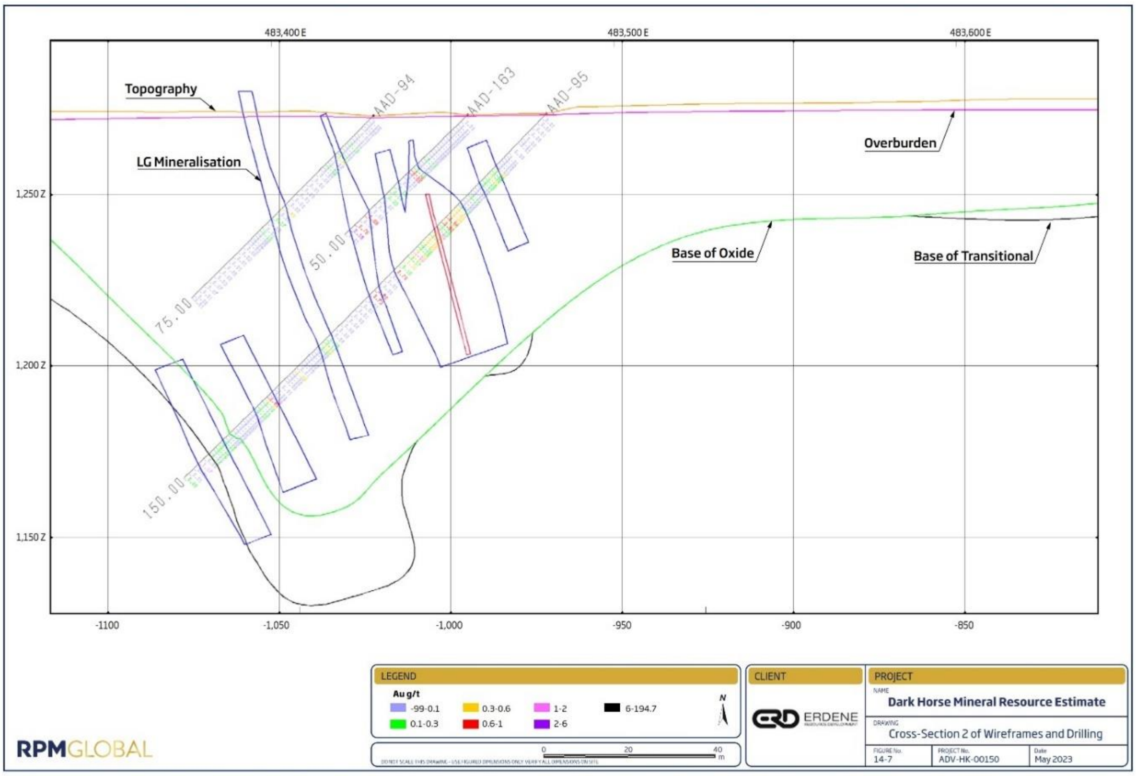

Figure 14-14 Cross-Section 2 of Wireframes and Drilling (Source RPM 2023)

14.2.6. Geology Wireframes

Lithology models were created by the ERD team. Logged lithology codes were grouped into seven main lithologies (refer to Table 14-24). These were re-grouped into main four lithological units (andesite, tuffs, intrusion and silica) by RPM and coded into block model while modelled vein and breccia zones were used to some extent to guide mineralization trends.

Table 14-24 Lithology Model and Grouping

Lith code	Lithology Grouping
1	Andesite, andesite porphyry, dacite porphyry, trachy andesite, dacite, rhyodacite, rhyolite, andesitic dacite
2	Tuffs
3	Intrusions, porphyritic syenite, syenite, monzodiorite, granodiorite, monzonite, quartz monzonite, quartz syenite porphyry, quartz monzodiorite, diorite, dykes
5	Breccia, hyrothermal breccia, fault breccia, silica breccia, quartz breccia, tourmaline breccia, tectonic breccia, epithermal breccia, hematite breccia
6.1	Residual Silica
7	Vein materials (typically observed mineralization)
8	Faults

A surface for the overburden (soil) was prepared by RPM using geological logging, and the logged soil material (*overburden.dtm*) has a depth extent up to 5 meters below topography.

14.2.7. Weathering Wireframes

RPM's visual inspection of drill core photos and logged mineralization suggest that weathering profiles are well developed at the Dark Horse deposit.

Based on preliminary metallurgical test work results, Erdene has calculated an Fe:S ratio based on drill core assays to assist in quantifying the degree of oxidation, on the understanding that an oxidation zone should have a higher concentration of iron relative to sulphur, i.e. a higher Fe:S ratio potentially indicates a greater degree of oxidation. The Fe:S ratio data was then merged with the downhole magnetic susceptibility data to filter out zones where the Fe:S ratio value may be elevated due to lithological factors rather than oxidation processes, based on the premise that that alteration and oxidation related to the gold mineralization tends to exhibit magnetic destruction (low mag susceptibility).

Based on 10 metallurgical samples (5 oxide and 5 fresh samples), Fe:S ratio and downhole magnetic susceptibility data, various weathered material types were defined. This is summarized in Table 14-25.

Table 14-25 Weathering Material Type Definition

Weathering	Definition
Oxide	Fe:S≥20 and Mag sus ≤2
Transition	Fe:S≥5 and Mag sus ≤5
Fresh	Fe:S<5 and Mag sus >5

ERD created weathering isosurfaces using Leapfrog's Indicator RFB Interpolant function. Whilst the resulting model seems to honour the above criteria, RPM is of the opinion that the shapes do not appear geologically reasonable.

Logging data indicates strong hematite iron staining occurs mostly along fractures to fairly deep levels, and seems to coincide with mineralization.

RPM decided to interpret weathering profiles based on both visual logging of oxidation and the above criteria. RPM noted that the logging information supplied by ERD was not specifically designed to record weathering material types. After discussion with the ERD team, the ERD site team revisited all the core and logging information to record weathering material types in all drill holes by visual observation. RPM used this updated information to create weathering surfaces using the Intrusion tool in Leapfrog Geo™. The following workflow was employed by RPM to develop oxide, transition and fresh weathering surfaces from updated weathering data.

- Carry out manual selection of which holes to use based on the oxide logging and consistency with adjacent holes;
- Model the oxide and transition zones using the Intrusion modelling tool;
- Visually check the modelled oxide-transition and transition-fresh contact surfaces against the holes for which only oxide and fresh material (no transition) is logged;
- In the case of holes for which no transition is logged, any cases of the logged oxide-fresh contact being close to the modelled oxide-transition contact were assumed to represent the contact between the oxide and transition. These contact points were extracted and used to refine the modelled oxide-transition contacts.
- The resulting models were compared against the ERD weathering model, and showed an overall good correlation, and the final models were considered more geologically robust (Figure 14-15).

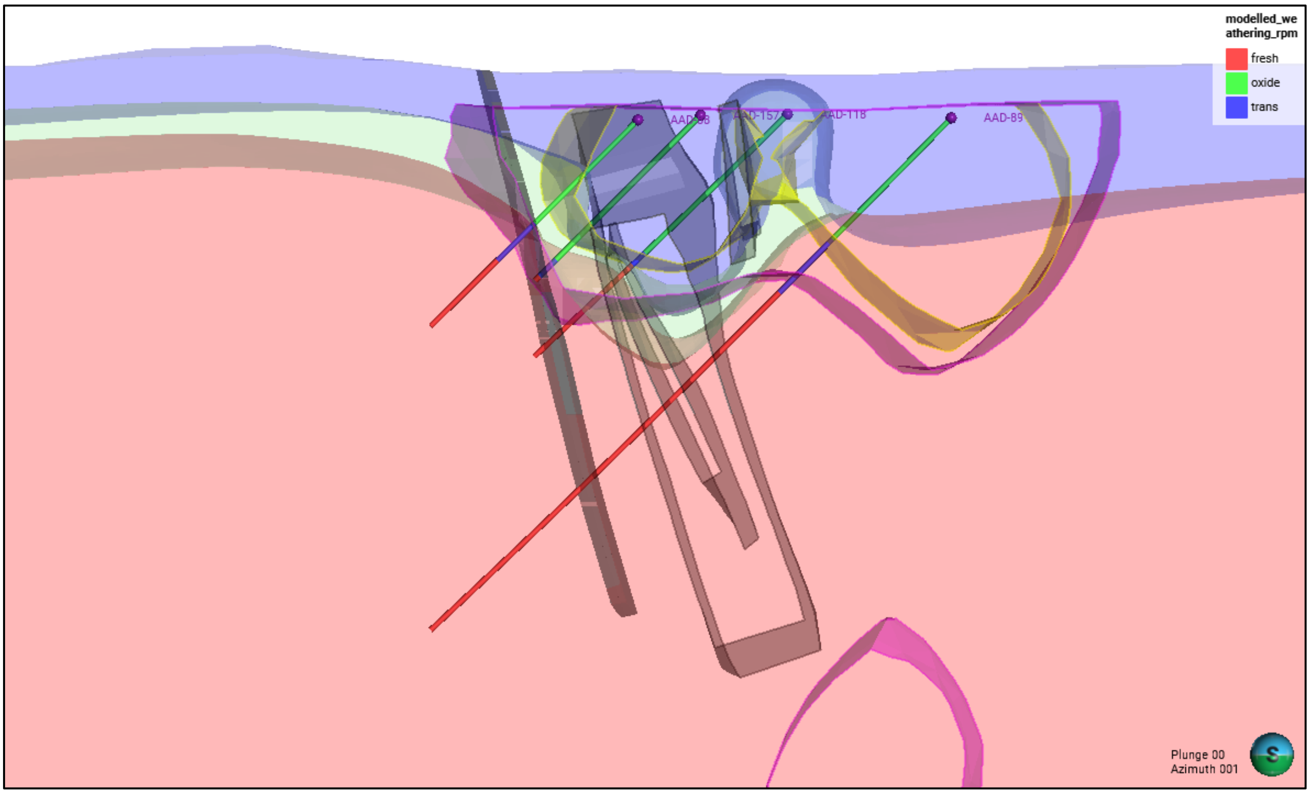

Figure 14-15 Cross Section Showing the Weathering Model and Downhole Oxidation Logging (Source RPM 2023)

Note: Black – Au Mineralization wireframe, RPM model: Fresh (red), transition (green) and oxide (blue). ERD model: Moderate to high oxidation (yellow) and Oxide to transition (Pink)

RPM extracted the Fe, S and magnetic susceptibility data from within the domains of the final weathering model. The summary statistics of Fe and S values within each final weathering domains (refer to Table 14-26) are similar to the criteria defined by Erdene shown in Table 14-25.

Table 14-26 Summary Statistics of Assays by Weathering Profile

Type	Fe:S	Mag sus	Fe %	S %
Oxide	25.4	0.8	4.6	0.2
Trans	11.7	1.5	4.2	0.4
Fresh	4.3	4.8	4.3	1.0

RPM completed a contact analysis of assays between oxide, transition and fresh weathering zones within the mineralization domains. However, as the majority of the samples were within oxide and transitional zones, no meaningful statistics were defined. Considering both weathering and mineralization following the mineralized structure, and the majority of the high-grade samples were within the oxide zone, the weathering model was not used to subdomain the mineralization for block modelling and grade interpolation of gold.

14.2.8. Compositing

Samples were composited within each wireframe boundary using the 'fixed length' option in Surpac™ software. The most common sample length in the raw assay database is 1 metre, with 84% of samples having this length (refer to Figure 14-16). For this reason, a 1 metre composite length was selected. The minimum composite length was 0.2 meters.

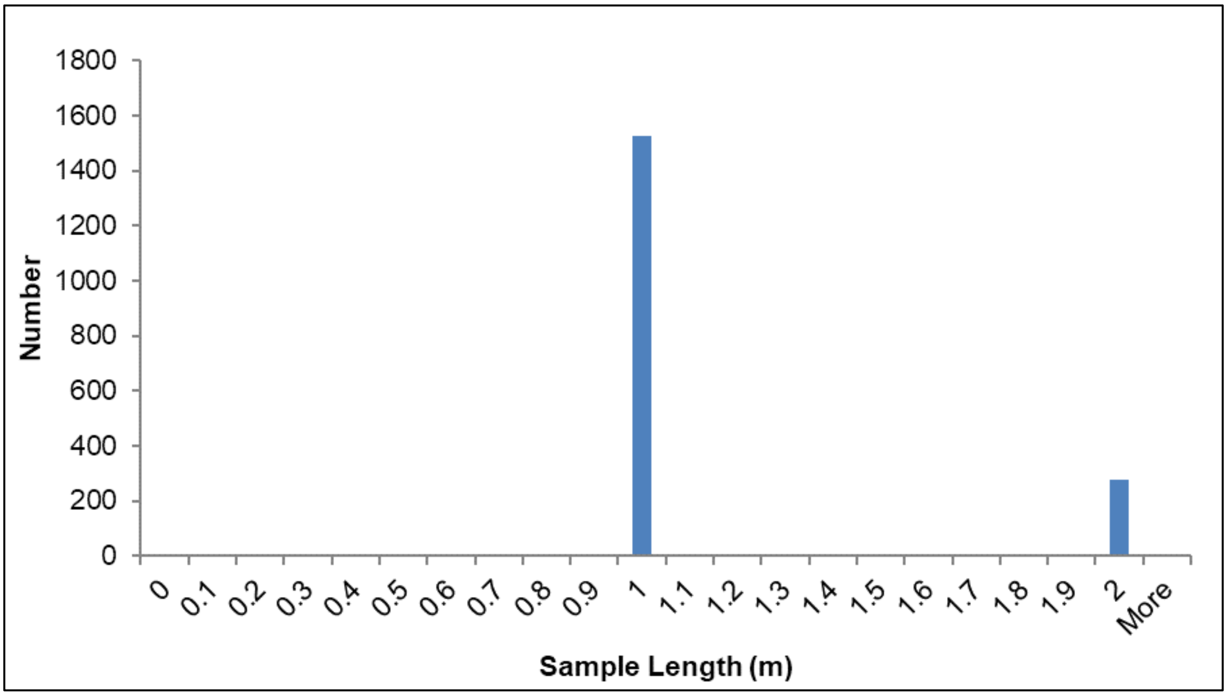

Figure 14-16 Sample Length Inside Wireframes (Source RPM 2023)

The composites were checked for spatial correlation with the wireframe objects, the location of the rejected composites, and zero composite values. Individual composite files were created for each domain in the wireframe models and contained Au, Ag, As, S, Fe and Mn assay data.

The composite data was imported into Supervisor™ version 7.3 software for analysis. Summary statistics for Au, Ag, As, S, Fe and Mn for grouped domains are shown in Table 14-27 to Table 14-23.

.

Table 14-27 Summary Statistics for 1 Metre Composites – Au

Assay	Au g/t				
Area	All	North Dark Horse		South Dark Horse	
Domain		HG	LG	HG	LG
Objects		(205 to 210)	(1 to 7 and 17 to 19)	(201 to 204)	(8 to 16)
Samples	2101	153	865	351	732
Minimum	0.00	0.02	0.00	0.10	0.00
Maximum	194.61	11.40	16.22	194.61	4.65
Mean	2.15	1.92	0.40	10.18	0.41
St Dev	9.27	1.51	0.65	20.85	0.55
Coef Var	4.32	0.79	1.60	2.05	1.36
Variance	86.00	2.29	0.42	434.69	0.31
Percentiles					
10%	0.10	1.01	0.11	1.02	0.07
20%	0.15	1.12	0.14	1.34	0.11
30%	0.21	1.18	0.18	1.93	0.14
40%	0.28	1.30	0.23	2.57	0.20
50%	0.38	1.44	0.29	3.39	0.24
60%	0.53	1.60	0.35	4.54	0.31
70%	0.79	2.00	0.46	7.43	0.41
80%	1.34	2.56	0.57	12.99	0.55
90%	3.30	3.75	0.78	23.79	0.85
95%	7.78	4.06	0.95	38.89	1.28
97.50%	16.35	4.70	1.17	66.67	1.75
99%	36.20	8.39	1.57	107.16	2.78

Table 14-28 Summary Statistics for 1 Metre Composites – Ag

Assay	Ag g/t				
Area	All	North Dark Horse		South Dark Horse	
Domain		HG	LG	HG	LG
Objects		(205 to 210)	(1 to 7 and 17 to 19)	(201 to 204)	(8 to 16)
Samples	2101	153	865	351	732
Minimum	1.00	1.00	1.00	1.00	1.00
Maximum	265.00	15.00	41.00	40.00	265.00
Mean	1.92	1.80	1.35	3.03	2.09
St Dev	7.08	1.92	1.62	4.57	11.36
Coef Var	3.69	1.07	1.21	1.51	5.44
Variance	50.08	3.70	2.64	20.89	128.97
Percentiles					
10%	1.00	1.00	1.00	1.00	1.00
20%	1.00	1.00	1.00	1.00	1.00
30%	1.00	1.00	1.00	1.00	1.00
40%	1.00	1.00	1.00	1.00	1.00
50%	1.00	1.00	1.00	1.00	1.00
60%	1.00	1.00	1.00	2.00	1.00
70%	1.00	1.00	1.00	3.00	1.00
80%	2.00	2.00	1.00	3.00	1.00
90%	3.00	3.70	2.00	6.00	3.00
95%	4.00	4.35	3.00	11.00	4.00
97.50%	7.00	6.35	4.00	17.23	6.99
99%	13.00	10.94	5.00	24.00	9.00

Table 14-29 Summary Statistics for 1 Metre Composites – As

Assay	As g/t				
Area	All	North Dark Horse		South Dark Horse	
Domain		HG	LG	HG	LG
Objects		(205 to 210)	(1 to 7 and 17 to 19)	(201 to 204)	(8 to 16)
Samples	2101	153	865	351	732
Minimum	0	169	80	278	0
Maximum	37,600	11,100	16,200	37,600	16,400
Mean	2,573	2,504	1,919	5,127	2,136
St Dev	2,971	1,824	1,950	4,700	2,401
Coef Var	1	1	1	1	1
Variance	8,826,741	3,328,677	3,801,568	22,089,443	5,764,761
Percentiles					
10%	389	824	366	1,028	297
20%	622	1,091	589	1,580	482
30%	889	1,247	822	2,040	634
40%	1,176	1,703	1,028	2,879	853
50%	1,513	2,186	1,309	3,688	1,192
60%	2,072	2,554	1,578	4,815	1,544
70%	2,787	3,095	2,077	5,951	2,413
80%	3,867	3,324	2,777	8,103	3,428
90%	6,006	4,183	4,294	11,090	5,371
95%	8,529	6,088	5,772	14,365	7,636
97.50%	10,795	8,110	7,977	16,823	8,892
99%	14,097	8,961	9,253	20,398	10,572

Table 14-30 Summary Statistics for 1 Metre Composites – S

Assay	S %				
Area	All	North Dark Horse		South Dark Horse	
Domain		HG	LG	HG	LG
Objects		(205 to 210)	(1 to 7 and 17 to 19)	(201 to 204)	(8 to 16)
Samples	2101	153	865	351	732
Minimum	0.00	0.00	0.00	0.00	0.00
Maximum	5.00	3.53	3.95	5.00	5.00
Mean	0.77	0.86	0.75	0.40	0.95
St Dev	1.01	0.97	0.91	0.73	1.18
Coef Var	1.31	1.12	1.20	1.82	1.24
Variance	1.01	0.93	0.82	0.54	1.39
Percentiles					
10%	0.02	0.01	0.01	0.02	0.02
20%	0.03	0.03	0.03	0.03	0.03
30%	0.05	0.07	0.06	0.04	0.06
40%	0.11	0.22	0.14	0.06	0.12
50%	0.25	0.44	0.38	0.09	0.30
60%	0.56	0.87	0.68	0.14	0.71
70%	1.00	1.19	1.03	0.30	1.40
80%	1.51	1.58	1.39	0.53	1.95
90%	2.33	2.27	2.14	1.22	2.74
95%	2.89	3.02	2.79	2.14	3.18
97.50%	3.33	3.18	3.08	2.47	3.88
99%	3.91	3.47	3.70	3.18	4.91

Table 14-31 - Summary Statistics for 1 m Composites – Fe

Assay	Fe %				
Area	All	North Dark Horse		South Dark Horse	
Domain		HG	LG	HG	LG
Objects		(205 to 210)	(1 to 7 and 17 to 19)	(201 to 204)	(8 to 16)
Samples	2101	153	865	351	732
Minimum	0.35	2.08	0.45	0.89	0.35
Maximum	15.00	6.72	9.12	12.04	15.00
Mean	4.26	4.04	3.98	4.66	4.45
St Dev	1.88	1.04	1.30	2.13	2.34
Coef Var	0.44	0.26	0.33	0.46	0.53
Variance	3.52	1.09	1.70	4.54	5.49
Percentiles					
10%	2.43	2.86	2.58	2.34	2.17
20%	2.99	3.15	3.09	3.02	2.88
30%	3.29	3.36	3.30	3.33	3.22
40%	3.57	3.59	3.51	3.72	3.58
50%	3.83	3.93	3.74	4.24	3.86
60%	4.17	4.17	4.01	4.75	4.22
70%	4.67	4.39	4.34	5.42	4.86
80%	5.41	4.97	4.93	6.23	5.77
90%	6.56	5.62	5.94	7.55	7.58
95%	7.72	5.77	6.51	9.01	9.29
97.50%	9.25	6.09	7.14	9.78	10.99
99%	11.03	6.49	7.51	10.87	13.21

Table 14-32 Summary Statistics for 1 m Composites – Mn

Assay	Mn g/t				
Area	All	North Dark Horse		South Dark Horse	
Domain		HG	LG	HG	LG
Objects		(205 to 210)	(1 to 7 and 17 to 19)	(201 to 204)	(8 to 16)
Samples	2101	153	865	351	732
Minimum	20	52	30	23	20
Maximum	10,000	1,644	4,753	10,000	3,504
Mean	558	507	625	467	534
St Dev	567	347	542	749	523
Coef Var	1	1	1	2	1
Variance	321,788	120,327	293,536	561,183	273,357
Percentiles					
10%	72	98	100	56	57
20%	114	171	182	77	90
30%	192	220	290	105	152
40%	299	393	400	135	255
50%	433	475	517	226	392
60%	566	571	647	314	532
70%	714	629	791	514	705
80%	875	789	914	749	879
90%	1,150	983	1,205	1,101	1,180
95%	1,486	1,100	1,594	1,447	1,507
97.50%	1,931	1,400	1,936	2,024	1,839
99%	2,486	1,417	2,610	2,977	2,457

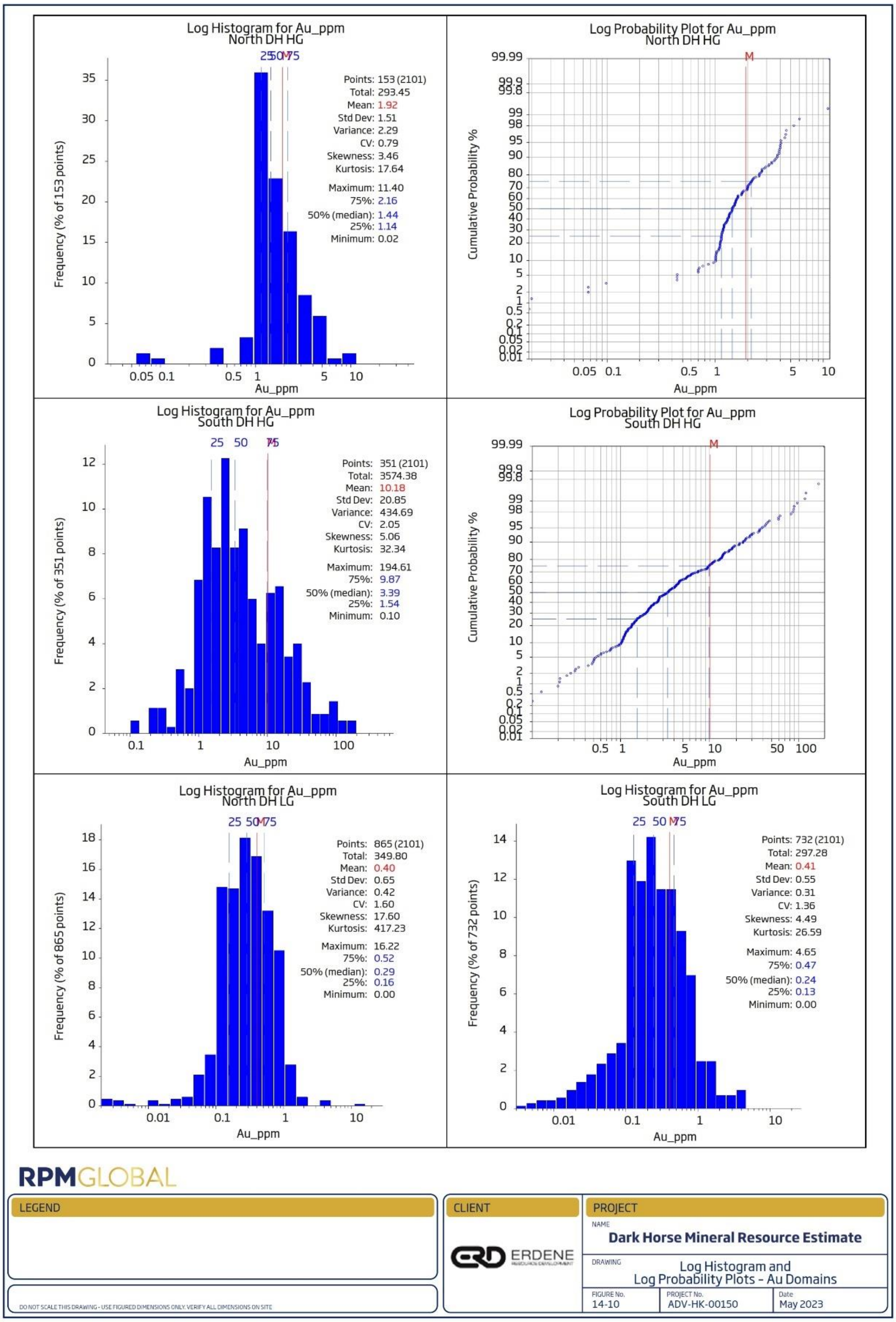

Figure 14-17 Log Histogram and Log Probability Plots – Au Domains (Source RPM 2023)

The distribution of gold grades for each domain were generally log-normal (refer to Figure 14-17). The grade distribution of some of the domains, especially North Dark Horse, was often more erratic due to the relatively small number of samples for these domains. Overall, the low to moderate coefficient of variation (CoV) values indicate that the wireframing strategy used to separate HG and LG Domains was reasonably well defined.

14.2.9. Treatment of High Grade Outliers

High-grade capping is typically undertaken to reduce the impact on the interpolation of sample grades that are considered to be outside the normal observed sample distribution, and that cannot be separately domained and interpolated independently. Values above the cap value are reduced to the cap value. RPM completed a capping analysis on the composite samples based on an assessment of log probability plots, and raw and log histograms. Generally, capping limits were selected based on a change in the form of the log probability curve at high grades indicating the grades are outside of the main population data, and/or the grade at which the histogram starts to show isolated bins or a less predictable grade curve. It was determined that the application of high-grade cuts was warranted for some domains. Capping was only applied to Au and Ag grade and no capping was required for other elements. A summary of the high-grade cuts applied to the estimate is shown in Table 14-33.

Table 14-33 High Grade Cuts Applied

Assay	Au g/t			Ag g/t	
Area	North Dark Horse	South Dark Horse		North Dark Horse	South Dark Horse
Domain	LG	HG	HG	LG	LG
Object	3	201	203	3	8
Samples	68	237	100	68	560
Minimum	0.01	0.10	0.13	1	1
Maximum	16.22	82.53	194.61	41	265
Mean	0.66	7.23	18.17	2.00	2.33
Coef Var	3.05	1.36	1.92	2.51	5.57
Variance	4.04	96.03	1,215.00	25.22	167.84
Top Cut	**5.00**	**50.00**	**90.00**	15	40
Number Cut	1	1	5	1	2
Cut Mean	0.49	7.27	15.68	1.62	1.73
Cut CV	1.66	1.29	1.63	1.36	1.82

14.2.10. Correlation Analysis

Gold is the only element that is currently considered to be of economic interest. The remaining elements were estimated to understand penalty element distribution. Correlation analysis was carried out for all estimated elements and summarized in Table 14-34. Results indicate a moderate correlation between Au and As while other elements are uncorrelated.

Table 14-34 Metals Correlation Matrix All Mineralization

	Au g/t	Ag g/t	As g/t	S %	Fe %	Mn g/t
Au g/t	1					
Ag g/t	0.12	1				
As g/t	0.45	0.08	1			
S %	-0.08	0.01	0.15	1		
Fe %	0.16	0.05	0.19	0.08	1	
Mn g/t	-0.01	-0.01	-0.03	-0.12	0.20	1

14.2.11. Spatial Analysis

14.2.11.1. *Variography*

Mineralization continuity was examined via variography. Variography examines the spatial relationship between composites and seeks to identify the directions of mineralization continuity and to quantify the ranges of grade continuity. Variography was also used to determine the random variability or 'nugget effect' of the deposit. The results provide the basis for determining appropriate kriging parameters for Mineral Resource estimation.

Variography was attempted for all domains. However, it was not possible to generate meaningful variograms for the high grade domains of the North zone due to the relatively small number of samples available for these domains. RPM interpreted experimental variograms for Au, Ag, As, Fe, S and Mn for object 1 of the North zone low grade domain, object 8 for the South zone low grade domain, and object 201 for the South zone high grade domain. Interpreted variogram parameters for object 1 of the low grade domain were assigned to all low grade domain objects for North zones; object 8 of the low grade domain was assigned to all low grade domain objects for South zones. The interpreted variogram parameters for object 201 for HG domain were assigned to all high grade domains for both North and South Dark Horse zones.

The 1 meter composite sample data was transformed into a normal distribution using a normal scores transformation to help identify the main directions of mineralization continuity from the skewed dataset. The experimental variograms were normalised against the sample variance so that the sill value was one, and the structures were ratios or proportions of the sill. A two-structured, nested spherical model was found to model the experimental variogram reasonably well. The down-hole variogram provides the best estimate of the true nugget values for Au, which were 10% (object 1), 14% (object 8) and 14% (object 201).

The orientation of the plane of mineralization was aligned with the interpreted wireframe for the main objects. The experimental variograms were calculated, with the first aligned along the main mineralization continuity, and the second aligned in the plane of mineralization at 90° to the first orientation. The third was orientated perpendicular to the mineralization plane, across the width of the mineralization. The variograms displayed a reasonable structure and tended to show an anisotropic search in all domains. The geospatial analysis confirmed the N-S strike direction of mineralized veins. The directional variograms for Au for all domains are shown in Figure 14-18 to Figure 14-20.

14.2.11.2. *Kriging Parameters*

The Au, Ag, As, Fe, S and Mn grades were interpolated into a Surpac^{TM} block model using the Ordinary Kriging ("OK") algorithm and the nugget, sill values, and ranges were determined from the variogram models discussed in Section 14 - Mineral Resource Estimate.

The ranges obtained from the variogram models were used as a guide for the search ellipse parameters used in the Mineral Resource estimate. The normal score variogram model variance was back-transformed to traditional space after modelling. Search ellipse orientations varied for all veins and were orientated to align with the strike and plunge of their respective wireframe. An anisotropic search ellipse was used for the estimation.

The back-transformed kriging parameters for the domains are summarized in Table 14-35. Variogram parameters applied to subsequent domains were based on mineralization orientation similarities and are summarized in Table 14-36.

Table 14-35 Kriging Parameters

Domain	Object	Element	Direction	Nugget	Structure 1				Structure 2			
					C1	A1	semi1	minor1	C2	A2	semi2	minor 2
LG	1	Au	00-->000	0.1	0.58	33	1.16	16.70	0.32	124	2.14	34.56
		Ag	00-->000	0.08	0.63	33	1.11	15.09	0.29	185	1.57	14.44
		As	00-->010	0.07	0.43	35	1.73	14.42	0.49	125	2.00	5.65
		Fe	00-->010	0.11	0.22	53	1.33	26.30	0.66	204	4.30	15.66
		S	00-->000	0.12	0.4	50	2.49	3.00	0.48	142	3.28	3.54
		Mn	00-->000	0.07	0.64	33	1.01	9.59	0.29	97	1.32	6.38
LG	8	Au	05-->360	0.14	0.52	27	1.13	1.36	0.34	101	1.12	3.16
		Ag	00-->010	0.12	0.76	26	3.14	5.08	0.12	87	1.56	1.87
		As	00-->000	0.1	0.4	46	1.12	10.90	0.50	173	2.75	3.48
		Fe	-15-->003	0.13	0.36	31	2.09	7.48	0.51	62	1.18	4.09
		S	00-->000	0.07	0.32	25	1.31	1.74	0.61	153	1.51	4.10
		Mn	00-->350	0.06	0.41	26	1.11	6.10	0.54	68	1.00	5.25
HG	201	Au	00-->010	0.14	0.38	19	3.39	3.65	0.48	66	2.89	8.23
		Ag	00-->010	0.11	0.53	12	1.28	2.81	0.36	50	1.65	3.51
		As	00-->170	0.07	0.65	18	3.03	4.89	0.28	78	1.89	4.72
		Fe	00-->010	0.13	0.26	13	1.12	5.91	0.61	44	1.86	2.42
		S	00-->000	0.1	0.44	46	6.82	7.73	0.46	61	1.03	3.88
		Mn	00-->000	0.07	0.41	36	7.20	7.50	0.52	61	1.49	5.94

Table 14-36 Variography Applied by Object

Deposit	Domain	Variography Completed	Variography Applied Objects
North	**LG**	obj 1	1 to 7 and 17 to 19
South	**LG**	obj 8	8 to 16
	HG	obj 201	201 to 210

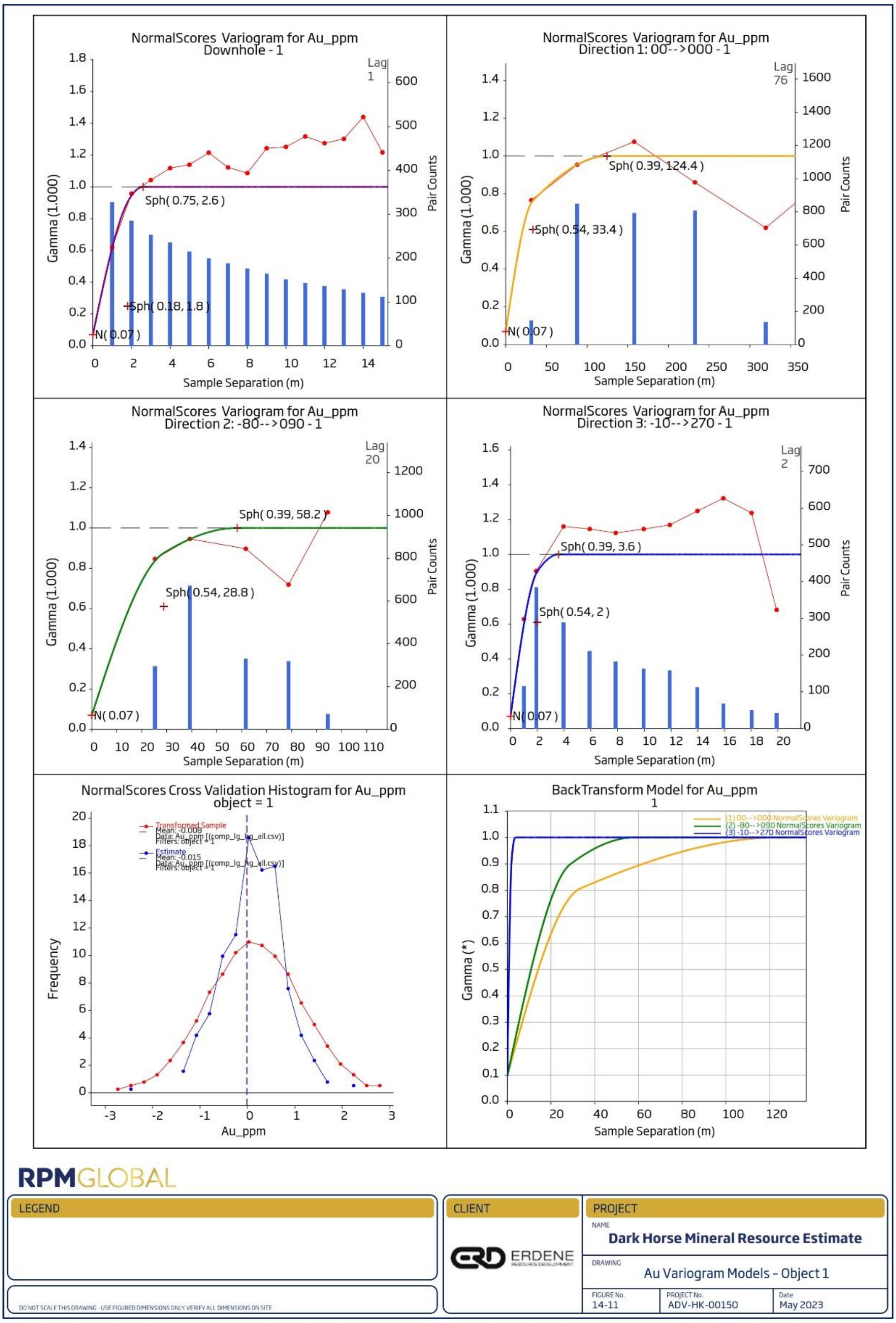

Figure 14-18 Au Variogram Models – Object 1 (Source RPM 2023)

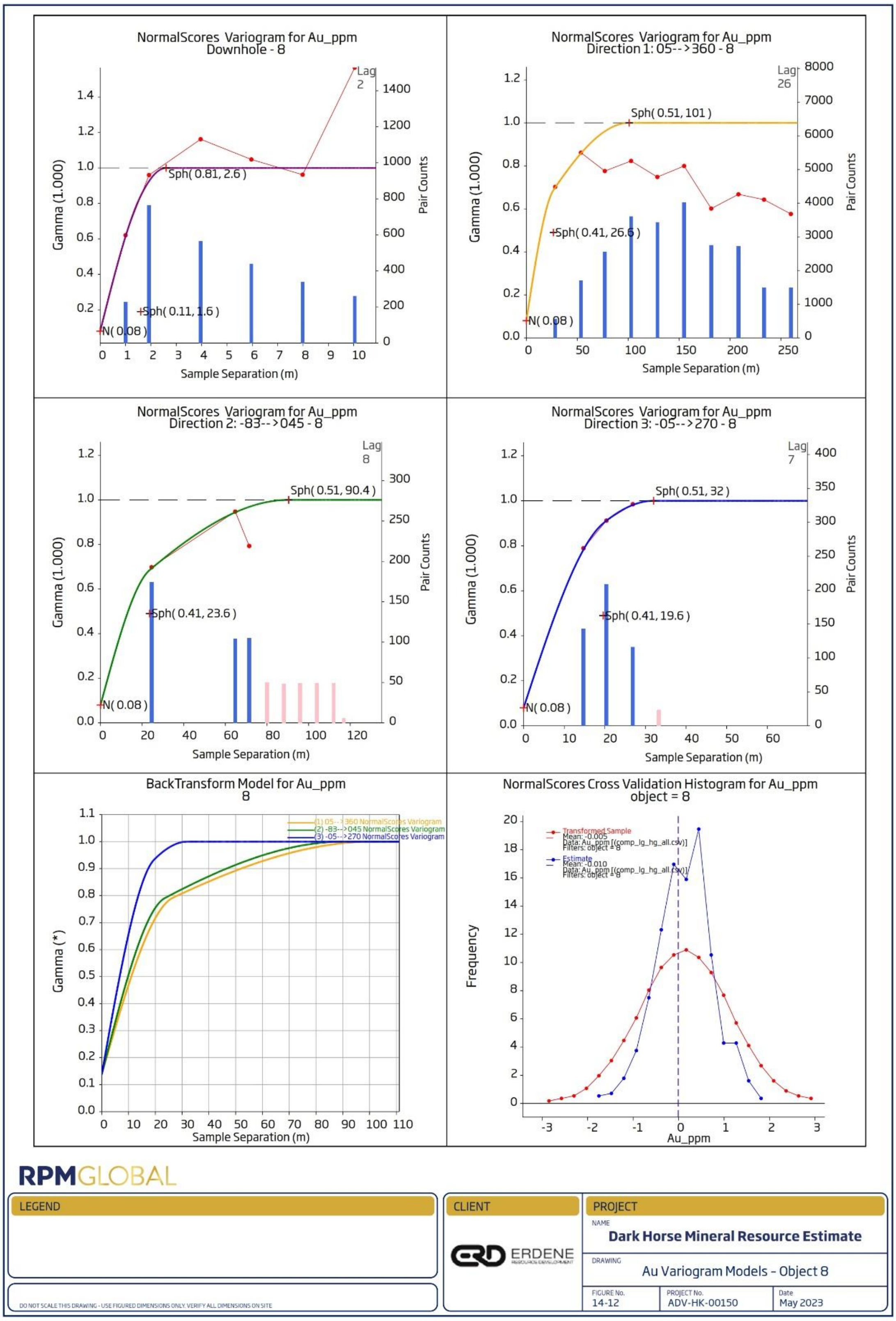

Figure 14-19 Au Variogram Models – Object 8 (Source RPM 2023)

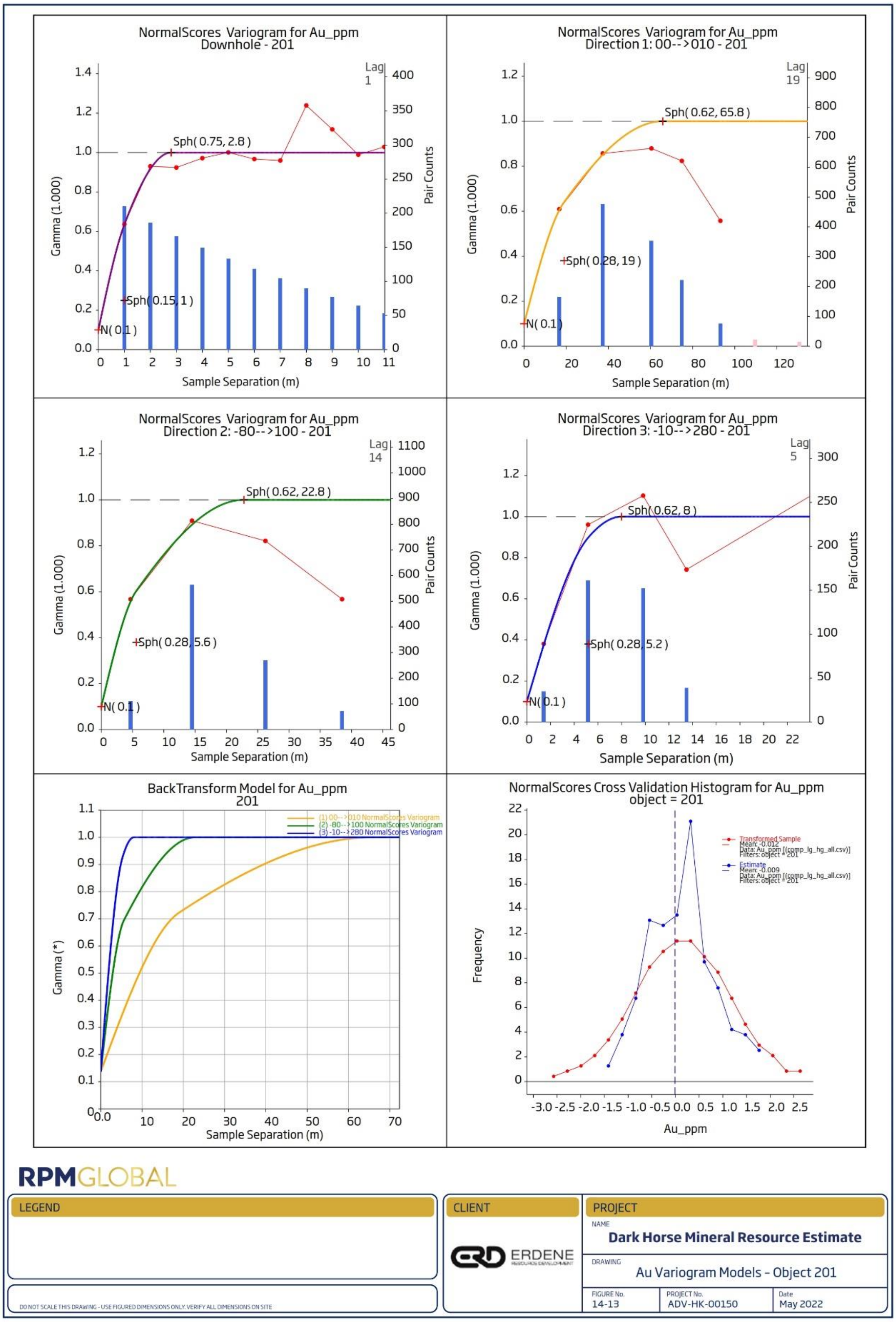

Figure 14-20 Au Variogram Models – Object 201 (Source RPM 2023)

14.2.12. Block Model

A single block model was generated and coded with wireframes of the estimation domains, and the weathering model described in Section 14.2.7. A parent block size of 10 mY x 5 mX x 10 mZ was selected based on the average drillhole spacing of roughly 20-30 m. Kriging neighborhood analysis was also carried out to ensure an appropriate block size was chosen. A minimum sub-block size of 1.25 mY x 0.625 mX x 1.25 mZ was selected to appropriately reflect the geometry and volume of the estimation domains, whilst maintaining a practical block model file size. Block model parameters are listed in Table 14-37.

Table 14-37 Block Model Parameters

Model Name	darkhorse_ok_202201122.mdl		
	Y	X	Z
Minimum Coordinates	4,863,600	483,000	900
Maximum Coordinates	4,865,800	483,800	1400
Block Size (Sub-blocks)	10 (1.25)	5 (0.625)	10 (1.25)
Rotation			
Attributes:			
as_ok	ordinary kriging estimated as g/t grade		
au_cut_idw	capped idw estimated Au g/t grade		
au_cut_ok	capped, ordinary kriging estimated Au g/t grade		
au_cut_nn	capped, nearest neighbour estimated Au g/t grade		
au_uncut_idw	uncapped idw estimated Au g/t grade		
au_uncut_ok	uncapped, ordinary kriging estimated Au g/t grade		
au_uncut_nn	uncapped, nearest neighbour estimated Au g/t grade		
fe_ok	ordinary kriging estimated fe % grade		
s_ok	ordinary kriging estimated s % grade		
mn_ok	ordinary kriging estimated mn g/t grade		
ave_dis	average distance to samples		
bd	bulk density		
bvar	block variance		
class	resource classification		
ke	kriging efficiency		
kvar	kriging variance		
min_dis	mininmum distance to sample		
num_sam	number of informing samples		
panel	validation strike panel		
pass_element	estimation pass		
pod	object number of wireframe		
type	air, oxide, transitional and fresh		
dip	dip angle of mineralization domains		
dip_dir	dip direction of mineralization domains		

14.2.13. Block Model Coding

The block model was coded with domain codes in the “pod” attribute. Table 14-38 shows block model coding for the mineralization domains in the order they were coded.

Table 14-38 Block Model Coding – Mineralization

Area	Domain	Assignment Methodology
North	LG	blocks within mineralized wireframe (wf_darkhorse_final_20221117.dtm) object 1 to 7, 17 to 19
	HG	blocks within mineralized wireframe (wf_darkhorse_final_20221117.dtm) object 205 to 210

Area	Domain	Assignment Methodology
South	LG	blocks within mineralized wireframe (wf_darkhorse_final_20221117.dtm) object 8 to 16
	HG	blocks within mineralized wireframe (wf_darkhorse_final_20221117.dtm) object 201 to 204

14.2.14. Kriging Neighbourhood Analysis

Ordinary Kriging ("OK") was chosen as the preferred methodology for interpolating/estimating grades into the block model.

Kriging Neighbourhood Analysis ("KNA") was conducted to minimise the conditional bias that occurs during grade estimation as a result of estimating block grades from point data. The KNA exercise focused on defining optimum search ellipse dimensions and maximum sample number restrictions, based on the comparison of slope of regression ("SR"). SR is a measure of conditional bias; that is, the tendency for higher grades to be under-estimated and lower grades to be over-estimated. The SR estimates the SR equation between the estimated and theoretical true block grades. A 1:1 relationship between true and estimated block grades would produce a slope of 1, signifying the estimated high grades and estimated low grades correspond accurately to the respective true high and low grades. The flatter the slope (and therefore over-estimation of low grades and under-estimation of high grades), the lower the slope of regression.

The degree of conditional bias present in a model can be quantified by computing the theoretical regression slope and kriging efficiency ("KE") of estimation at multiple test locations within the region of estimation. These locations are selected to represent portions of the deposit with excellent, moderate and poor drill (sample) coverage.

The largest Dark Horse domain (domain 8) for the South Dark horse was selected for KNA. Estimation parameters were selected on the basis of the best-informed blocks which showed the maximum kriging efficiency and best slope of regression. Surpac and Excel software was used for the analysis.

14.2.14.1. *Block Size*

To test the optimal block size for existing drilling at the Project, single blocks within Domain 8 were assessed at the excellent, good and poor sample coverage locations. A range of block sizes were assessed for regression slope and kriging efficiency, the results summarized in Table 14-39 and Figure 14-21.

Table 14-39 Block Sizes Assessed

Iteration	1	2	3	4	5	6	7	8	9	10	11	12
y	2	5	5	10	10	10	20	20	25	50	50	100
x	2	2	5	5	5	10	10	20	20	25	25	50
z	2	2	5	5	10	10	10	10	10	10	25	25

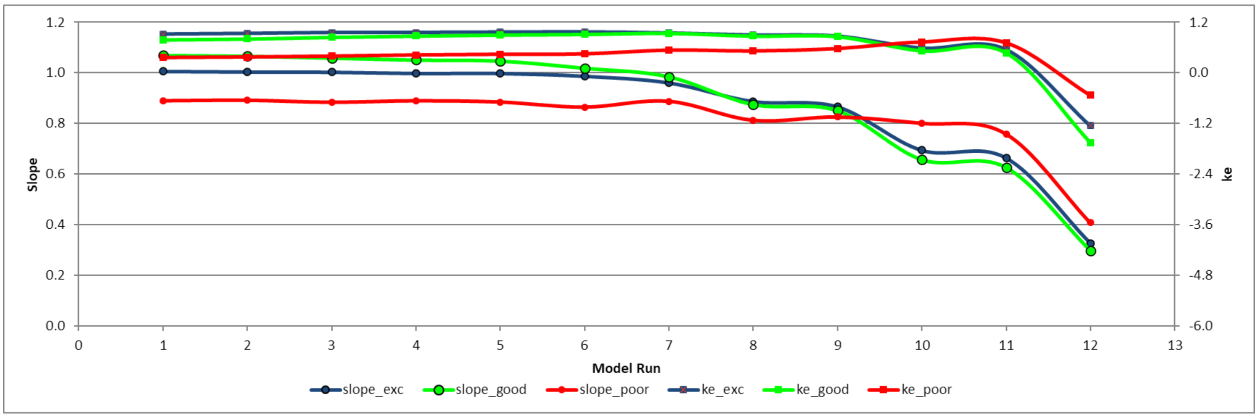

Figure 14-21 Block Size Analysis Chart (Source RPM 2023)

Results from the chart above indicate that the slope of regression and kriging efficiency 'sill' out around model runs four and five. These iterations represent block sizes of 10 m by 5 m in the Y and X planes, and are considered appropriate for the Dark Horse drill spacing. RPM chose iteration five as the optimal block size for the Dark Horse block model.

14.2.14.2. *Search Distance*

To test the optimal search distance at the Project, single blocks within domain 8 were assessed at the excellent, good and poor sample coverage locations. A range of search radii were assessed for regression slope and kriging efficiency, with results summarized in Table 14-40 and Figure 14-22.

Table 14-40 Search Radii Assessed

Run Number	1	2	3	4	5	6	7	8	9	10	11	12
Search Distance	5	15	20	25	30	35	40	50	60	70	80	100

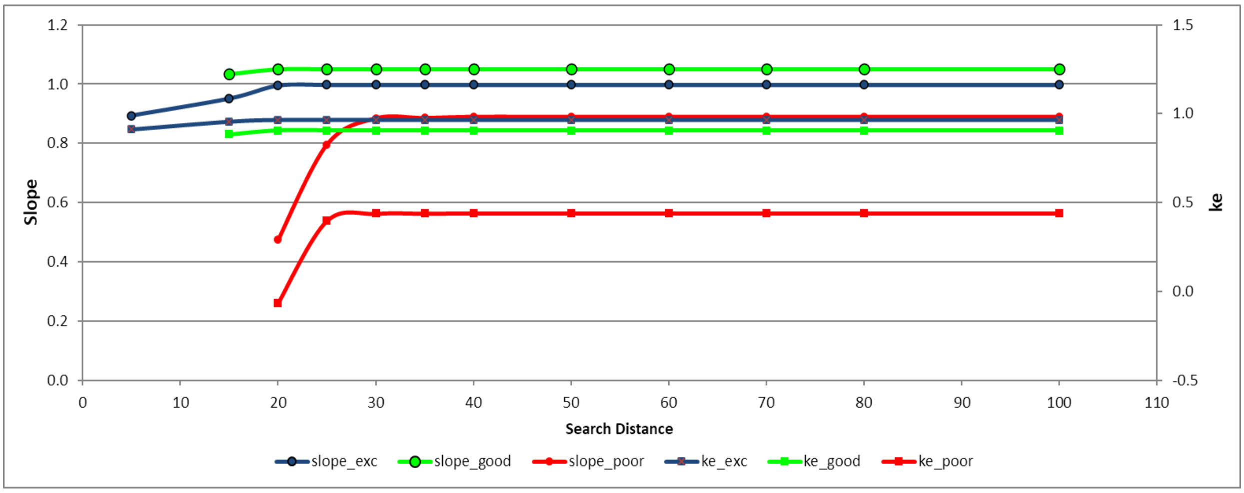

Figure 14-22 Search Radii Analysis Chart (Source RPM 2023)

Typically, the larger the search ellipsoid, the greater the slope of regression, although improvements in SR will normally flatten out beyond certain ellipse sizes. The optimum search ellipse size was selected based upon the greatest SR beyond which any increase in ellipse size results in negligible improvements in SR. A search radius of 30 m was accepted for the first pass of the estimate.

14.2.14.3. *Number of Informing Samples*

To test the optimal maximum number of samples at the Project, single blocks within domain 8 were assessed at the excellent, good and poor sample coverage locations. A range of maximum sample numbers, adjusted in 2-4 sample count increments up to 60 samples, were assessed for regression slope and kriging efficiency, with results summarized in Table 14-41 and Figure 14-23.

Table 14-41 Maximum Number of Samples Assessed

Run Number	1	2	3	4	5	6	7	8	9	10	11	12	13
Max Sample	60	40	36	30	24	20	16	12	10	8	6	4	2

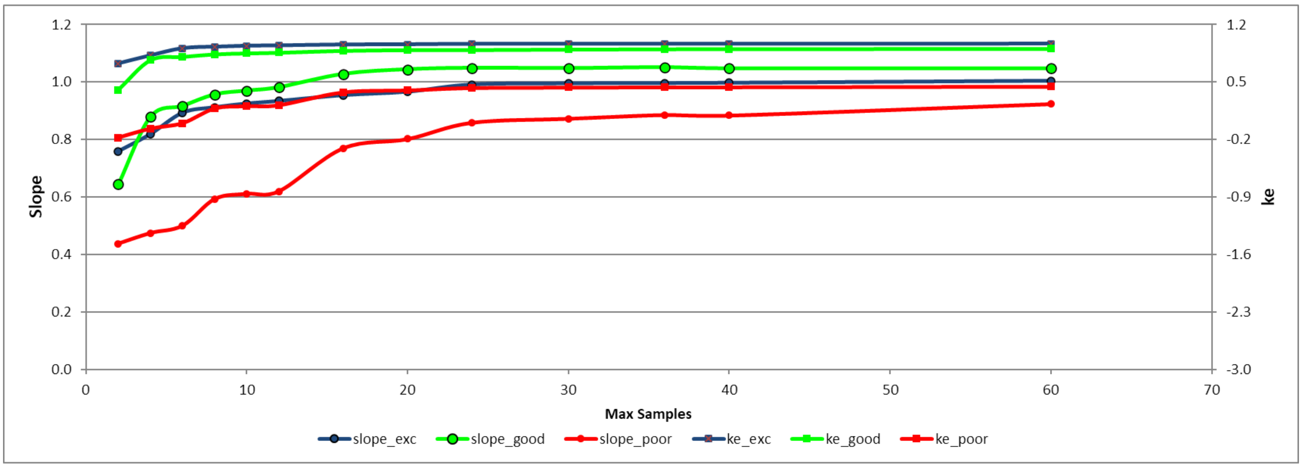

Figure 14-23 Maximum number of sample analysis chart (Source RPM 2023)

The optimum maximum number of samples was selected based upon the greatest SR beyond which any increase in the maximum sample numbers results in negligible improvements in SR. Based on the results above, in combination with a desire to maintain a reasonable degree of local variability, a maximum number of 20 samples was adopted for the Dark Horse estimate.

RPM also reviewed the maximum sample per hole and block discretisation and no significant variation occurs at any chosen parameters.

14.2.15. Search Strategy and Grade Interpolation Parameters

The ordinary kriging ("OK") algorithm was used for the grade interpolation, and the wireframes were used as a hard boundary for the grade estimation of each domain. OK was selected as it allows the measured spatial variation to be included in the estimate and results in a degree of smoothing, which is appropriate for the nature of the mineralization. ID2 and Nearest neighbour estimates were also run on gold to validate the OK results.

For structurally-controlled mineralization, such as at Dark Horse, grade continuity is primarily aligned with the planar geometry of the structures. There is little to no observed influence of grade between the structures, and the interpreted mineralization envelopes are designed to represent the controlling structures. Therefore, OK interpolation within hard boundaries is considered by RPM to provide reliable grade and volume estimation reflecting the geological controls.

RPM completed contact analysis to check the suitability of the modelled mineralization and weathering domains for use as estimation for block modelling and grade interpolation and assess whether to utilise "hard" or "soft" estimation domain boundaries. RPM assessed contact analysis for Au for LG and HG domains. Contact analysis plots show a distinct and sharp reduction in grade across Au domains in all cases. For this reason, it was decided to maintain LG and HG Au domains as separate estimation domains for all elements and employ a hard boundary between domains. Contact analysis was attempted for mineralization domains separated by weathering, however, due to the limited number of samples available per weathering profile, and with the majority of the samples located within the oxide domain, RPM decided to use soft boundary between various weathering profiles. Contact plots for main domains are summarized in Figure 14-24**.**

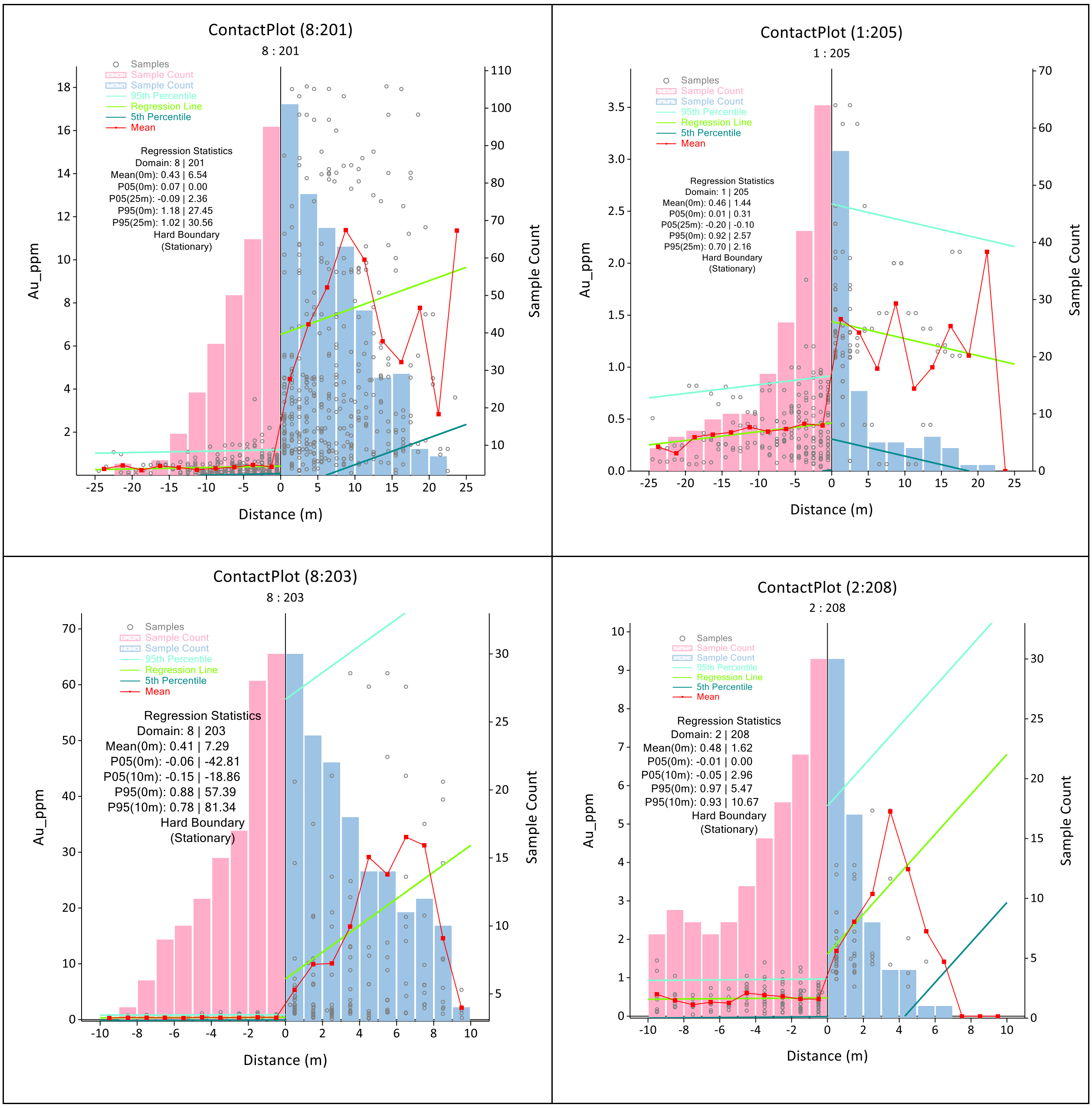

Figure 14-24 Contact Analysis Plot for Main LG and HG Domains (Source RPM 2023)

Note: 1-19 are LG Domains, 201 to 210 are HG domains

14.2.15.1. *Search Parameters*

Dynamic anisotropic search was used to select data for interpolation. Dynamic anisotropy interpolation is a method of defining the search neighborhood which takes into consideration the local variation of the domain orientation in the block estimation (refer to Figure 14-25). Sectional lines were created from mid-point of the plane of each wireframe at 10 m window sections, with additional smoothing applied to avoid creating sharp angles in the lines. These were then used to create trend surfaces and the dip and dip direction of that surface was coded into each block of the block model. Those directions were then used to define the search direction for each block, allowing the search direction to follow the variable geometry of the defined lodes.

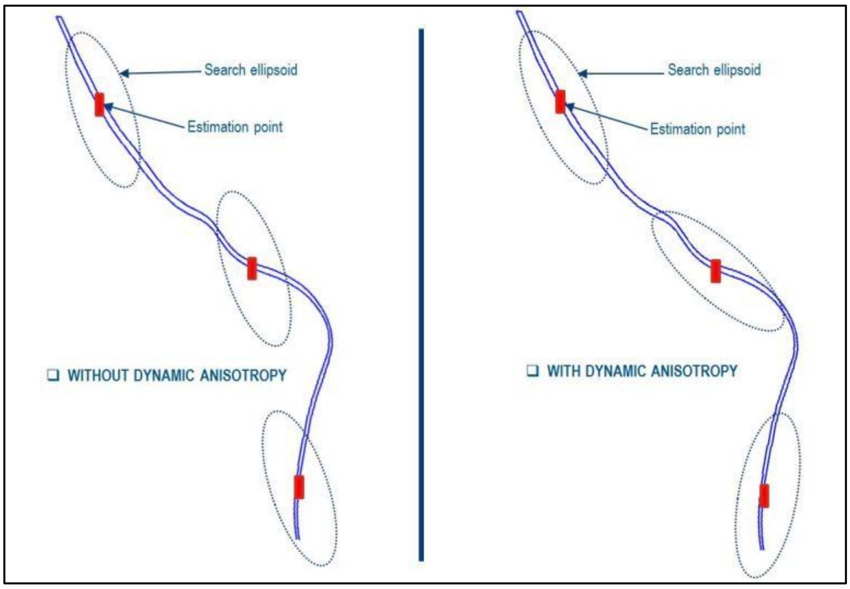

Figure 14-25 Principle of Dynamic Anisotropy (from Geovia) (Source RPM 2023)

An orientated search ellipse with an 'ellipsoid' search was used to select data for interpolation. Each ellipse was oriented based on variogram parameters, and these were consistent with the interpreted geology. Variogram parameters of the main lodes were applied to the associated adjacent lodes. Differences between the variogram parameters and the search ellipse may occur to honour the continuity analysis and the mineralization geometry. Search neighbourhood parameters were derived from the KNA analysis discussed in Section 14.2.14. The search parameters are listed in Table 14-42.

Three interpolation passes were used to estimate Au, Ag, As, Fe, S and Mn into the block model. More than 66% of the blocks were filled in the first two passes. A lower number of maximum samples was used for the third estimation pass, as higher maximum sample numbers were noted to cause over-smoothing.

Table 14-42 OK Estimation Parameters – Au

Parameter	Pass 1	Pass 2	Pass 3
Search Type	Ellipsoid	Ellipsoid	Ellipsoid
Bearing	Based on trend surface		
Dip	Based on trend surface		
Plunge	Based on trend surface		
Major-Semi Major Ratio	1.3		
Major-Minor Ratio	5		
Search Radius	30	60	600

Parameter	Pass 1	Pass 2	Pass 3
Minimum Samples	10	6	2
Maximum Samples	20	16	6
Max. Sam. per Hole	5	5	5
Block Discretisation	3 X by 4 Y by 4 Z		
Percentage Blocks Filled	17%	49%	34%

14.2.16. Model Validation

A three-step process was used to validate the Mineral Resource estimate. Firstly, a qualitative assessment was completed by slicing sections through the block model in positions coincident with drilling. Overall, the assessment indicated that the trend of the modelled grade was consistent with the drill hole grades (refer to Figure 14-26).

A quantitative assessment of the estimate was completed by comparing the average grades of the input composites against the block model output for all the lodes. The comparative results have been tabulated and included in Table 14-43 and Table 14-44.

To check that the interpolation of the block model appropriately honoured the drilling data, swath plots were compiled to compare the average grades of the input composites against the interpolated blocks within distance slices by northing (i.e. 30-50 metre strike panels) and by elevation. Validation swath plots for the Dark Horse estimate are shown in Figure 14-27 and Figure 14-28.

Table 14-43 Average Composite Input v Block Model Output - HG Domain

Objects	Block Model												Composites								Difference
	Resource Volume	Ordinary Kriging							Nearest Neighbour		Inverse Distance										
		Au Uncut g/t	Au Cut g/t	Ag Cut g/t	As g/t	Fe %	S %	Mn %	Au Uncut g/t	Au Cut g/t	Au Uncut g/t	Au Cut g/t	Number of Comps	Aut Uncut g/t	Au Cut g/t	Ag Cut g/t	As g/t	Fe %	S %	Mn %	BM vs Comps % Au
201	59,576	6.47	6.36	3.9	4,684	4.4	0.5	417	6.29	6.29	7.10	6.97	237	7.23	7.27	3.2	4,512	4.3	0.4	408	-14%
202	1,855	2.85	2.85	1.6	2,096	5.2	0.3	303	3.32	3.32	3.06	3.06	9	3.03	3.03	1.6	2,105	5.1	0.3	308	-6%
203	24,254	15.10	12.95	2.6	6,805	5.3	0.3	681	16.01	16.01	17.95	14.98	100	18.17	15.68	2.8	6,901	5.5	0.3	616	-21%
204	1,731	3.46	3.46	1.5	3,742	6.1	1.9	456	3.35	3.35	3.42	3.42	5	3.37	3.37	1.6	4,224	6.3	2.0	552	3%
205	28,378	1.47	1.47	2.0	3,586	3.4	1.2	355	1.41	1.41	1.43	1.43	49	1.36	1.36	1.6	3,112	3.3	0.7	371	7%
206	47,508	2.02	2.02	1.3	2,296	4.5	0.7	670	2.01	2.01	1.96	1.96	55	2.17	2.17	1.4	2,214	4.3	0.7	656	-7%
207	13,745	1.70	1.70	2.8	2,069	5.0	1.7	346	1.70	1.70	1.71	1.71	6	1.69	1.69	4.2	1,865	5.0	1.7	340	1%
208	81,644	2.55	2.55	2.8	2,117	4.9	1.0	582	2.73	2.73	3.10	3.10	34	2.40	2.40	2.4	2,474	4.3	1.1	460	6%
209	10,043	1.58	1.58	1.9	1,250	4.6	0.6	706	1.56	1.56	1.49	1.49	5	1.48	1.48	2.2	1,224	4.6	0.8	726	7%
210	3,792	2.36	2.36	1.0	1,934	4.5	1.0	571	2.55	2.55	2.11	2.11	4	2.09	2.09	1.0	1,866	4.4	1.2	527	12%
Total	**272,526**	**4.24**	**4.03**	**2.6**	**3,253**	**4.6**	**0.8**	**536**	**4.34**	**4.34**	**4.78**	**4.49**	**504**	**4.65**	**4.43**	**2.4**	**3,258**	**4.4**	**0.8**	**492**	**-10%**

Table 14-44 Average Composite Input v Block Model Output - LG Domain

Objects	Block Model													Composites								Difference
		Ordinary Kriging							Nearest Neighbour		Inverse Distance											
	Resource Volume	Au Uncut g/t	Au Cut g/t	Ag Cut g/t	As g/t	Fe %	S %	Mn %	Au Uncut g/t	Au Cut g/t	Au Uncut g/t	Au Cut g/t	Number of Comps	Au Uncut g/t	Au Cut g/t	Ag Cut g/t	As g/t	Fe %	S %	Mn %	BM vs Comps % Au
1	321,172	0.40	0.40	1.19	2,449	4.0	0.8	642	0.40	0.40	0.40	0.40	382	0.39	0.39	1.3	2,508	3.9	0.8	614	2%
2	514,188	0.39	0.39	1.72	1,359	4.1	0.6	668	0.40	0.40	0.41	0.41	264	0.36	0.36	1.3	1,515	3.6	0.6	586	8%
3	111,080	0.62	0.42	1.64	1,129	4.9	0.4	828	0.66	0.62	0.68	0.45	68	0.66	0.49	1.6	1,109	4.6	0.5	748	-18%
4	26,354	0.52	0.52	1.60	930	3.9	1.7	570	0.57	0.57	0.49	0.49	32	0.51	0.51	1.4	974	3.9	1.6	582	2%
5	81,323	0.52	0.52	1.16	1,342	4.4	0.7	544	0.58	0.58	0.57	0.57	40	0.54	0.54	1.2	1,250	4.5	0.8	617	-4%
7	85,930	0.29	0.29	1.17	1,227	5.5	0.7	621	0.29	0.29	0.28	0.28	33	0.31	0.31	1.1	1,219	5.6	0.7	673	-8%
8	341,643	0.46	0.46	1.78	2,613	4.5	1.1	625	0.47	0.47	0.45	0.45	560	0.42	0.42	1.7	1,997	4.5	0.7	568	8%
9	21,184	0.22	0.22	1.32	395	6.1	1.4	268	0.22	0.22	0.23	0.23	38	0.22	0.22	1.4	438	6.6	1.4	303	1%
10	4,771	0.38	0.38	1.23	878	4.2	1.7	310	0.29	0.29	0.43	0.43	10	0.42	0.42	1.2	822	4.1	1.7	260	-12%
11	8,920	0.30	0.30	2.28	2,287	4.0	1.7	443	0.25	0.25	0.27	0.27	19	0.32	0.32	2.8	2,031	4.1	1.7	462	-7%
12	12,635	0.22	0.22	1.00	1,977	2.2	1.4	55	0.22	0.22	0.24	0.24	6	0.24	0.24	1.0	2,185	2.3	1.6	56	-10%
13	60,865	0.41	0.41	1.09	4,571	3.7	2.2	515	0.45	0.45	0.43	0.43	50	0.50	0.50	1.1	4,553	3.8	2.3	517	-24%
14	41,420	0.23	0.23	1.00	2,754	3.4	1.5	277	0.23	0.23	0.20	0.20	33	0.21	0.21	1.0	3,248	3.5	1.7	314	8%
15	4,074	0.78	0.78	1.00	1,023	4.3	1.0	660	0.83	0.83	0.77	0.77	6	0.77	0.77	1.0	1,007	4.0	1.0	601	1%
16	13,747	0.33	0.33	1.00	2,661	4.0	1.0	1,102	0.31	0.31	0.31	0.31	10	0.32	0.32	1.0	2,765	3.9	1.1	945	2%
17	18,901	0.27	0.27	1.27	3,142	3.5	1.2	707	0.25	0.25	0.26	0.26	24	0.29	0.29	1.5	3,381	3.5	1.3	673	-9%
18	13,035	0.24	0.24	1.00	1,009	4.4	0.1	698	0.25	0.25	0.24	0.24	16	0.26	0.26	1.0	1,007	4.5	0.1	670	-7%
19	4,176	0.30	0.30	1.00	1,262	4.7	0.4	1,383	0.32	0.32	0.31	0.31	6	0.30	0.30	1.0	1,256	4.6	0.4	1,352	1%
Total	**1,685,419**	**0.41**	**0.40**	**1.50**	**1,965**	**4.3**	**0.9**	**634**	**0.43**	**0.42**	**0.42**	**0.41**	**1,597**	**0.40**	**0.39**	**1.4**	**1,909**	**4.1**	**0.8**	**593**	**2%**

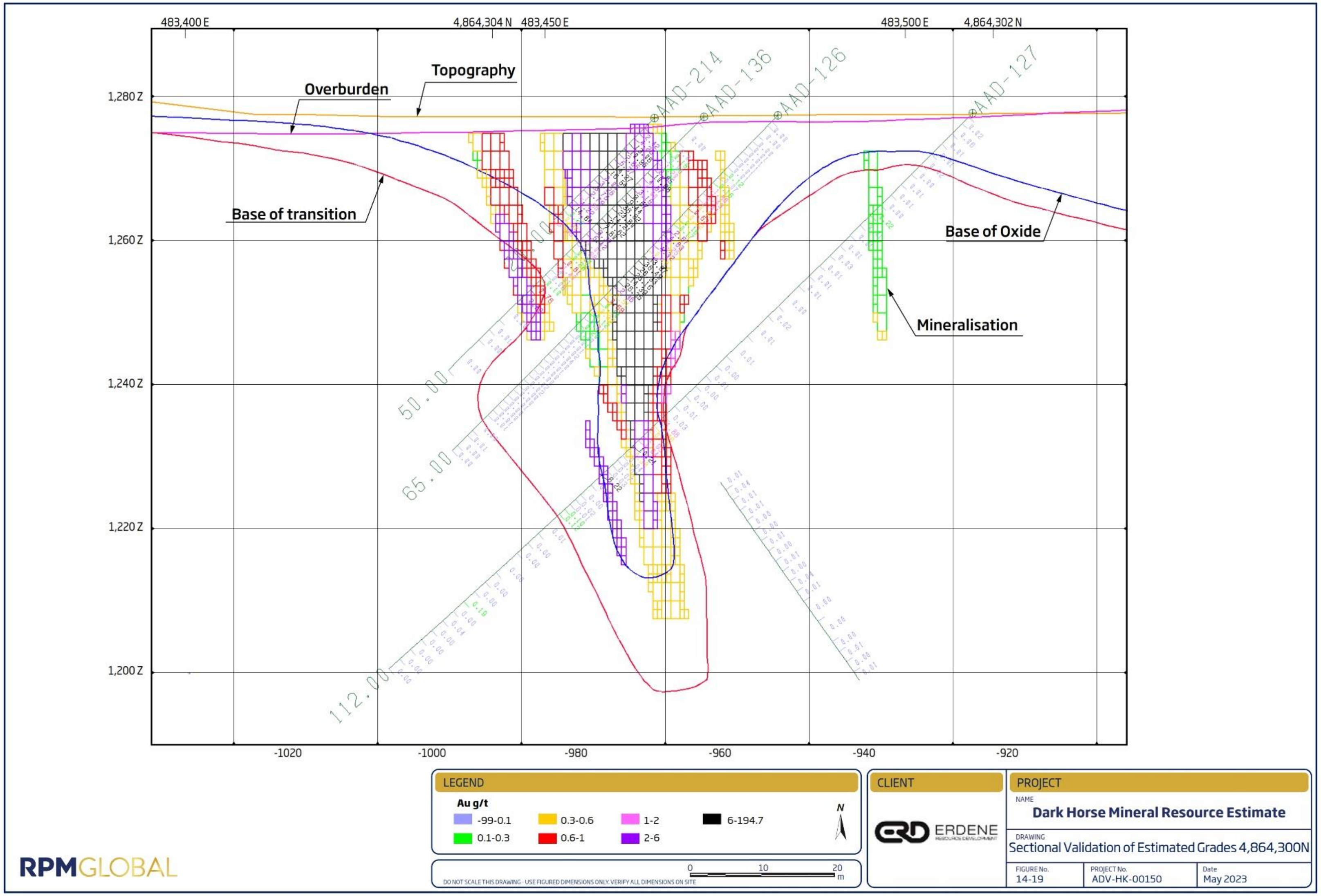

Figure 14-26 Blocks and Drilling Colored by Au grade (4,864,300N) (Source RPM 2023)

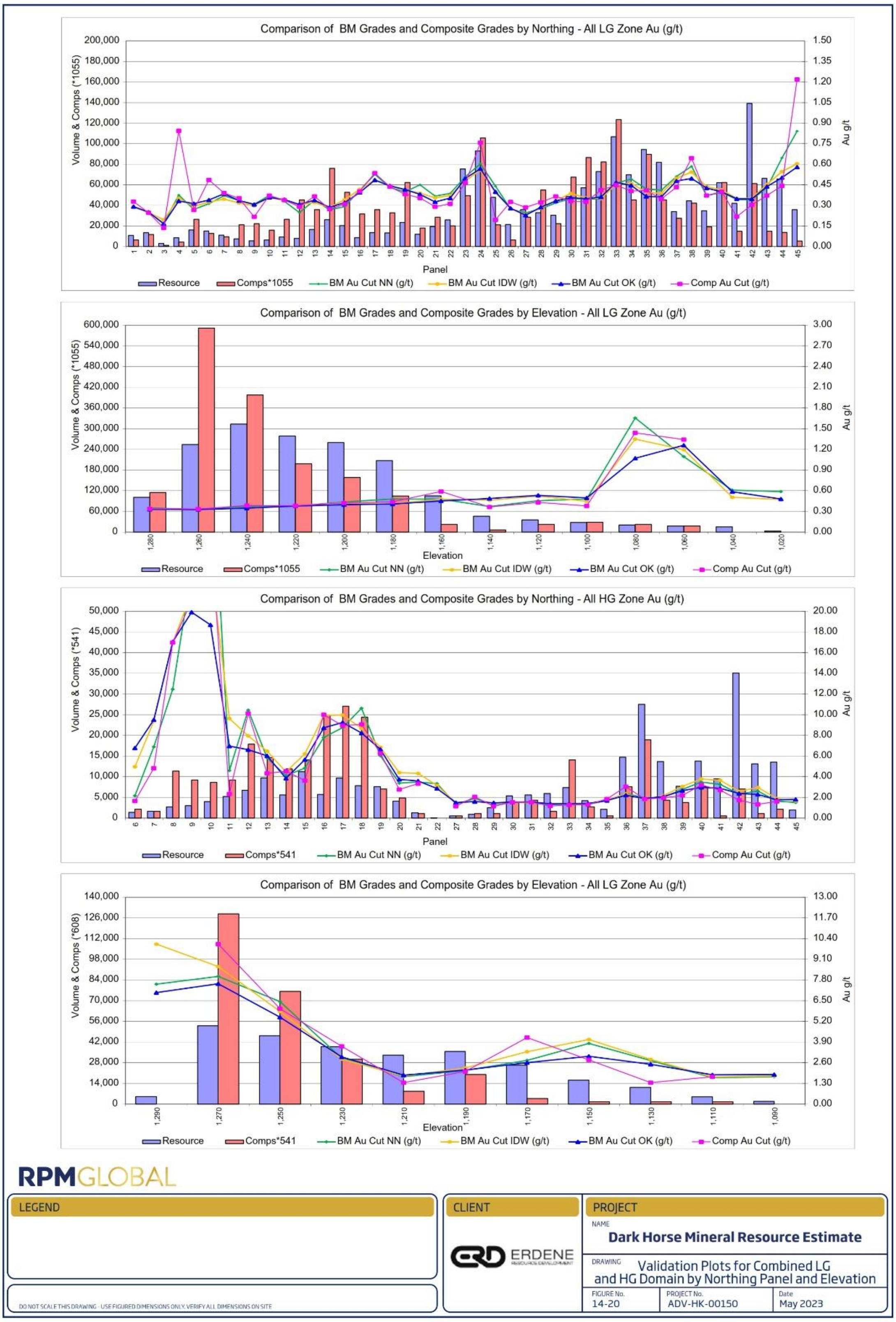

Figure 14-27 Swath Plots for Combined LG and HG Domain, by Northing and Elevation (Source RPM 2023)

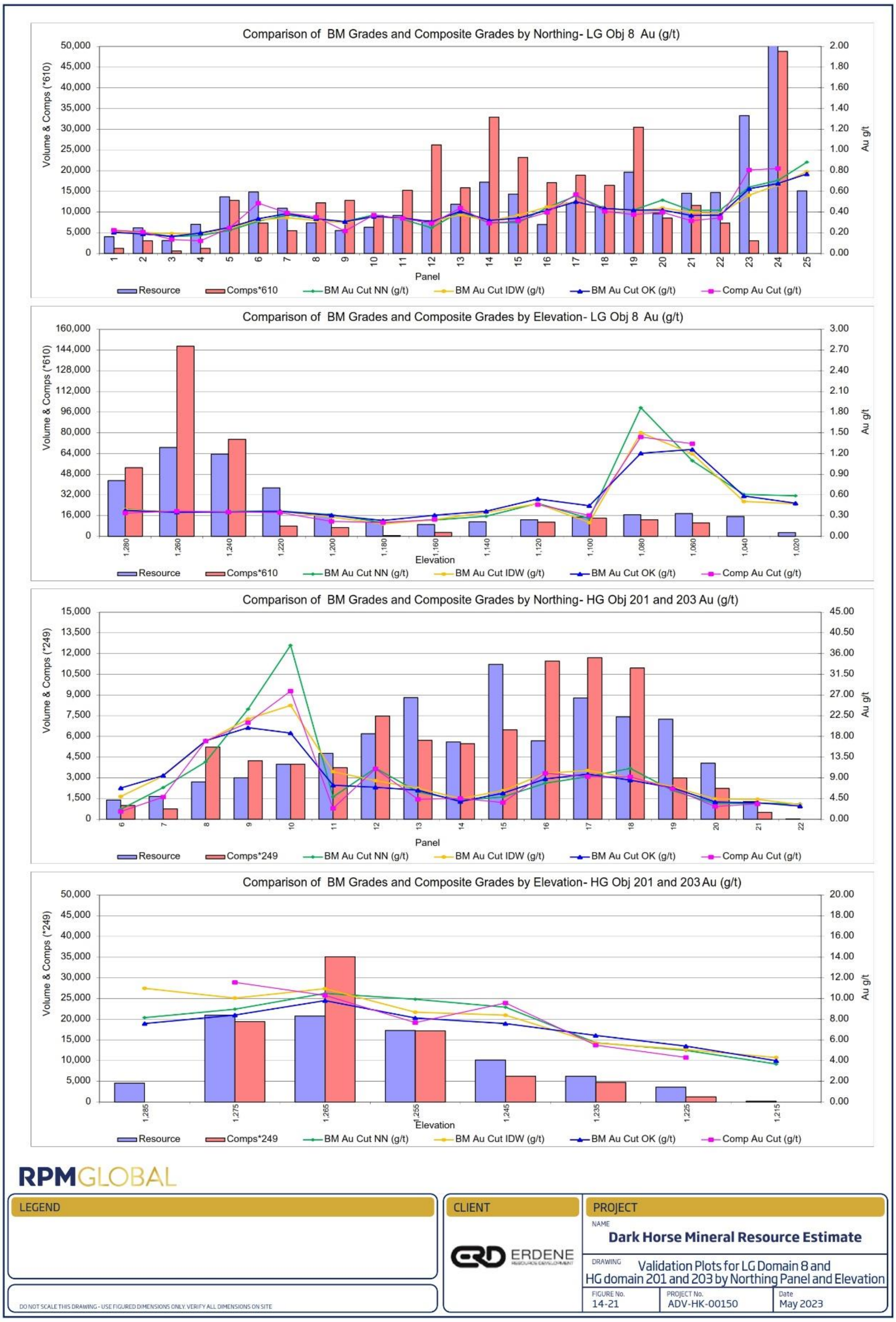

Figure 14-28 Swath Plots for LG Domain 8 and HG Domain 201 and 203, by Northing and Elevation (Source RPM 2023)

The swath plots showed a reasonable correlation between the composite grades and the block model grades by northing and elevation. The trends shown by the composite data are honoured by the OK estimate. The comparisons show the effect of the interpolation, which results in smoothing of the block grades compared to the composite grades. The Nearest Neighbour estimate, which is effectively a de-clustered estimate, correlates well with the OK estimate. Considering the validation results, RPM considers the estimate to be representative of the composites and is indicative of the known controls of mineralization and the underlying data.

14.2.17. Alternative Domaining Approach

At the request of the Client, RPM tested an alternative estimation approach that used an "Ultra-High Grade" (UHG) domain to segregate areas with gold grades greater than 10 g/t Au during estimation at South Dark Horse. This UHG domain was estimated along with the LG (0.1g/t Au) and HG (>1g/t Au) domains.

With the separate UGH domain modelled, statistical analysis indicates that the CoVs are relatively low for all three domains, suggesting no high-grade cuts were required for the estimate. No meaningful variogram could be interpreted for the UGH domain. RPM used hard boundaries between LG, HG and UHG domains to interpolate Au grade into the block model. To assess the two scenarios, a comparison of estimated grades between the base scenario HG domain (top cut applied) and alternative scenario HG domain + UHG (no top cut applied) returned an identical mean grade of 4.22 g/t Au, suggesting there was no material difference.

RPM believes that the review of histograms of the assay data indicates no clear evidence of a statistical grade population to justify UHG domaining. Core photos for various high grades were also reviewed by RPM, however, it was concluded that there was yet enough evidence for creating three grade domains that would occur as concentric rings circling high grades in the deposit, and RPM is of the opinion that this is not sound practice. Having separate concentric arbitrary grade domains will likely alter the population of grades across the deposit, and the block model will likely not be a reasonable representation of the mineralization. RPM only used LG and HG domains model for the resource estimate.

14.2.18. Classification

Block model quantities and grade estimates for the Dark Horse deposit were classified in accordance with the CIM Standards. Mineral Resource classification considers both the confidence in the geological continuity of the mineralized structures, the quality and quantity of exploration data supporting the estimates, and the geostatistical confidence in the tonnage and grade estimates. Appropriate classification criteria aim to integrate all of the above to delineate areas with a similar resource classification.

Much of the Southern Dark Horse deposit is drilled at a close spacing of 20-30 m or less, which helps to negate concerns over uncertainties surrounding structural control and continuity of the high-grade mineralization. The Dark Horse mineralization shows good continuity within the main mineralized lodes, which allowed the drill hole intersections to be modelled into coherent, geologically robust wireframes. Consistency is evident in the thickness of the structure, and the distribution of grade appears to be reasonable along strike and down dip.

The distribution of the resource categories for Dark Hose mineralization is shown Figure 14-29**.**

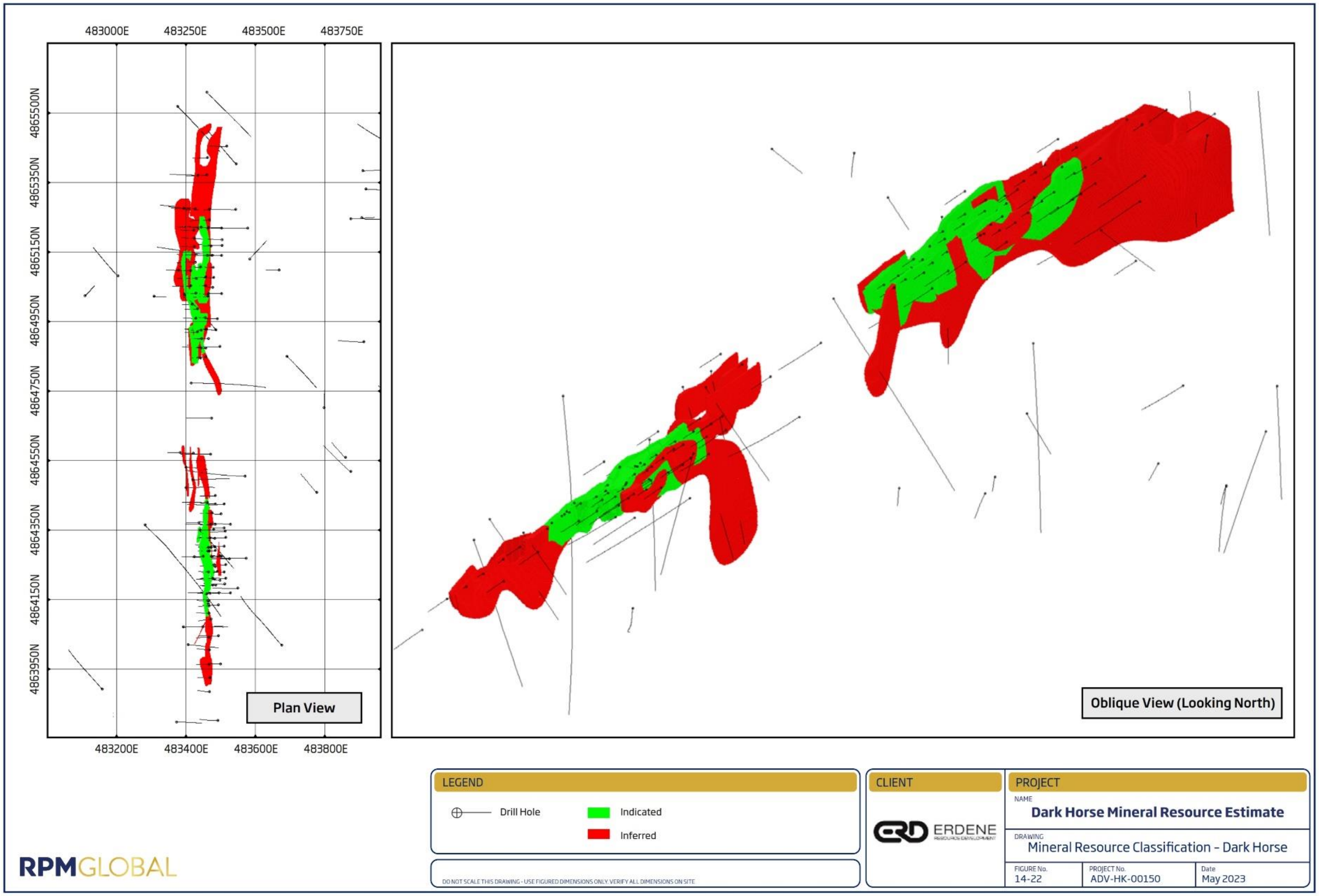

Figure 14-29 Mineral Resource Classification – Dark Horse (Source RPM 2023)

The Indicated Mineral Resource was confined within areas of close-spaced diamond drilling of 30 meter by 30 meter or less. In these areas, domains were informed by a reasonable number of drill holes, the distribution of estimated gold grade was relatively predictable and not overly erratic, and there was good confidence in the trend of the domain. This 30 meter spacing is equivalent to approximately 70% of the total sill or one half of the maximum variogram range for the shortest-range high-grade domain (66 m). By comparison, the low-grade domains tend to have maximum ranges over 124 m.

The remainder of the Mineral Resource was classified as Inferred. These areas have at least 2-3 drill hole intersections and reasonable confidence in the geological continuity.

Additionally, estimation quality as defined by kriging efficiency (KE) and slope of regression (SR) were reviewed to determine if they could assist as a quantitative method for applying classification. The SR and KE was reasonable (0.2 and 0.7 overall respectively) in the Indicated portions demonstrating that the estimated block grades correlate well with the theoretical true block grades. It is worth noting that even in well drilled areas at the Dark Horse deposit, blocks have even lower KE and in some cases negative values within 20 m from drill holes. This was considered to be result of the variable assay data at close spacing.

Internal audits have been completed by RPM, which verified the technical inputs, methodology, parameters and results of the estimate. The lode geometry and continuity have been adequately interpreted to reflect the applied level of Indicated and Inferred Mineral Resource. The data quality was good, and the drill holes have detailed logs produced by qualified geologists. A recognised laboratory has been used for all analyses. The Mineral Resource statement relates to global estimates of tons and grade.

14.2.19. Mineral Resource Reporting

RPM has independently estimated the Mineral Resources contained within the Project, based on the data collected by ERD as at the 1st of October 2022. The Mineral Resource estimate and underlying data comply with the guidelines provided in the CIM Definition Standards under NI 43-101, therefore RPM considers it suitable for public reporting. The Mineral Resources were completed by Mr. Oyunbat Bat-Ochir (Qualified Person).

The Statement of Mineral Resources for the Dark Horse deposit is reported above a gold cut-off grade of 0.35 g/t Au for oxide and transition mineralization and 1.02 g/t Au for fresh mineralization, and within a US $2,000/oz optimized pit constraint which is 1.4 times the long-term consensus forecast price as of October 2022.

RPM notes that the break-even cut-off grade is calculated using US $1,723/oz, which is 1.2 times the long-term consensus forecast price of October 2022 (US $1436 oz), while a 1.4 revenue factor optimized pit was selected for depth constraint.

The Mineral Resource estimate for the Dark Horse deposit is presented in Table 14-45.

Table 14-45 Dark Horse November 2022 Mineral Resource Estimate Summary

Type	Indicated Mineral Resource		
	Tonnes t	Au g/t	Au ounces
Oxide	578,000	3.0	56,220
Transitional	99,000	1.5	4,770
Fresh	5,000	4.9	710
Total	**682,000**	**2.8**	**61,690**
Type	**Inferred Mineral Resource**		
	Tonnes t	**Au g/t**	**Au ounces**
Oxide	75,000	1.1	2,710
Transitional	109,000	1.2	4,130
Fresh			
Total	**184,000**	**1.2**	**6,840**

Note:

1. *The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Oyunbat Bat-Ochir who is a full-time employee of RPM and a Member of the Australian Institute of Geoscientists. Mr. Bat-Ochir has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity that he has undertaken to qualify as a Qualified Person as defined in the CIM Standards of Disclosure.*
2. *All Mineral Resources figures reported in the table above represent estimates at 1st November 2022. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.*
3. *Mineral Resources are reported on a dry in-situ basis.*
4. *The Mineral Resource is reported using a 0.35 g/t Au cut-off grade in oxide and transition mineralization and 1.02 g/t Au cut-off in fresh mineralization and is constrained above conceptual optimised pit shell. Cut-off parameters were selected based on an RPM internal cut-off calculator, assuming an open cut mining method with 5% ore loss and 10% dilution, a gold price of US $1,723 per ounce, an open mining cost of US $3 per ton and a processing cost of US $16 per ton milled and processing recovery of 90% for oxide, 87% for transitional and 30% for fresh Au mineralization. The conceptual optimised pit shell was constructed using a gold price of US 2,000/oz, which is 1.4 times the long-term consensus forecast price.*
5. *Mineral Resources referred to above, have not been subject to detailed economic analysis and therefore, have not been demonstrated to have actual economic viability.*

To show the tonnage and grade distribution by depth, a bench breakdown has been prepared using 5 meter bench height, shown in Figure 14-30.

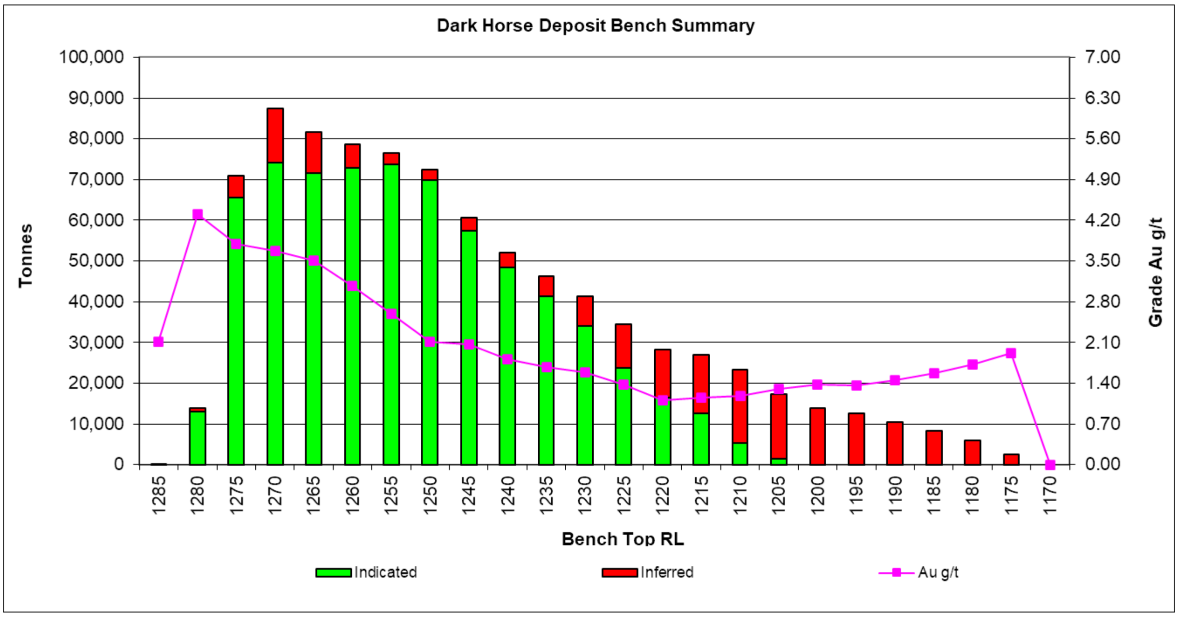

Figure 14-30 Dark Horse Tonnage and Grade – 5 m Bench Elevation (Au) (Source RPM 2023)

RPM has also reported silver that could possibly be recovered as credit and summarized in Table 14-46 below and shown for indicative purpose only.

Table 14-46 Possible Credit Element

Type	Indicated Mineral Resource		
	Tonnes t	Ag g/t	Ag ounces
Oxide	578,000	2.0	37,400
Transitional	99,000	1.7	5,400
Fresh	5,000	4.8	700
Total	**682,000**	**2.0**	**43,500**
Type	**Inferred Mineral Resource**		
	Tonnes t	**Ag g/t**	**Ag ounces**
Oxide	75,000	1.3	3,000
Transitional	109,000	1.2	4,100
Fresh			
Total	**184,000**	**1.2**	**7,100**

Table notes as per Table 14-45.

RPM is not aware of any environmental, permitting, legal, title, taxation, socio-economic, marketing, political, or other relevant factors that could materially affect the Mineral Resource estimate.

14.2.20. Reasonable Prospects for Eventual Economic Extraction

The CIM Definition Standard requires a reported Mineral Resource to have reasonable prospects for eventual economic extraction. The following addresses this requirement for the Dark Horse Mineral Resource.

For reporting of the Dark Horse Mineral Resource, RPM carried out a cut-off grade calculation which derived a break-even grade of 0.35 g/t Au for oxide and transitional mineralization, and 1.02 g/t Au for fresh mineralization, using a Whittle optimisation shell to define a limit of mineralization that could be mined by a conceptual open pit.

The mining and cost parameters used in the cut-off grade estimate were based largely on results of the 2020 FS conducted on the nearby Bayan Khundii gold deposit. Metallurgical recoveries were based on preliminary test work carried out on Dark Horse deposit. The gold price used in the break-even cut-off grade calculations was USD1,723/oz, and to construct the conceptual open pit shell was USD2,000/oz. Hence the parameters have sufficient accuracy and are considered reasonable for resource estimation. The parameters are set out in Table 14-47.

Table 14-47 Reporting Cut-off Grade Inputs

Description	Units	Oxide	Transition	Fresh
Incr. Ore Mining Cost	US $/t ore	3	3	3
Milling and G&A costs	US $/t ore	16	16	16
Refining	US $/tr.oz	4.7	4.7	4.7
Royalty	%	5	5	5
Processing Recovery (at cut-off grade)	%	90	87	30
Selling Price	US $/oz	1,723	1,723	1,723

The conceptual open pit shell is shown in Figure 14-31. The depth of the pit shell at the Dark Horse deposit is predominantly controlled by weathering profiles due to varying metal recovery in this zone.

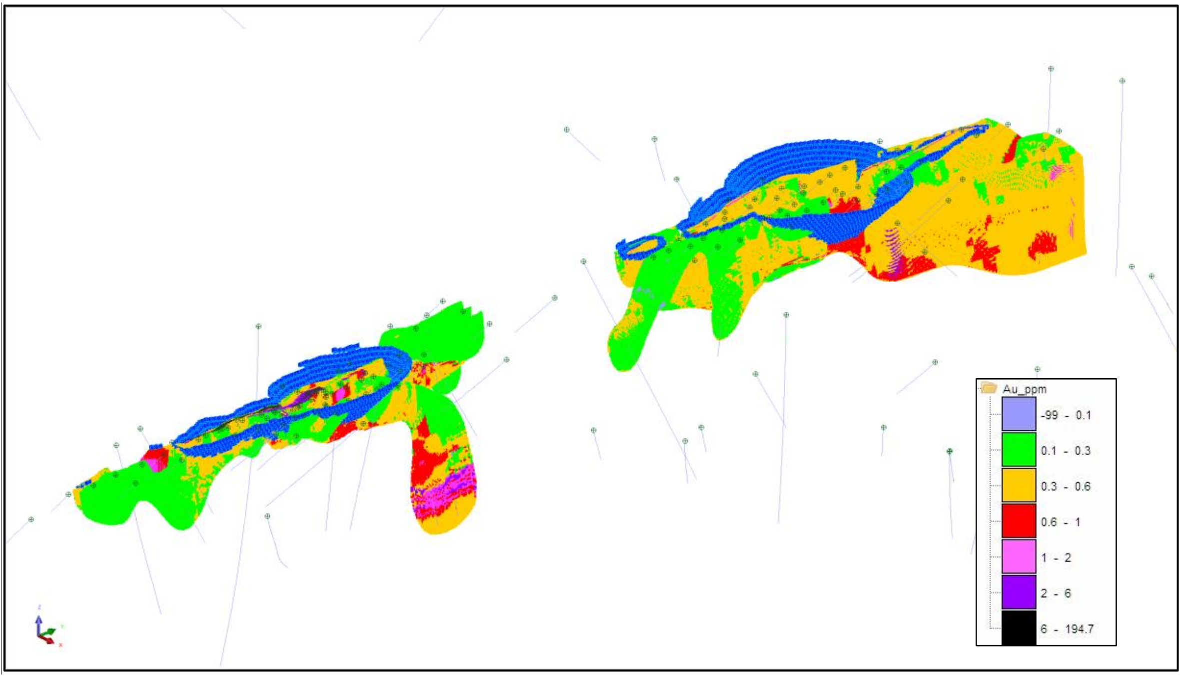

Figure 14-31 Dark Horse Model Showing the US $2,000/oz Pit Shell (looking NW) (Source RPM 2023)

The sensitivity of the Mineral Resource to the metal price is illustrated in Table 14-48. The table data was created using Whittle pit limit optimisation software and shows the potential resource outcomes across a range of pit shells based on varying metal prices. The results indicate that the Mineral Resources are sensitive to metal price.

Table 14-48 Sensitivity of Dark Horse Total Mineral Resource to Metal Price (Whittle output)

Au Price $	Rock Tonnes	Ore Tonnes	Strip Ratio	Au g/t	Au Oz	Au Kg
800	1,132,411	194,953	4.8	7.4	46,354	1,442
900	1,235,468	204,889	5.0	7.2	47,159	1,467
1,000	1,314,469	216,335	5.1	6.9	47,677	1,483
1,100	1,455,358	231,152	5.3	6.5	48,426	1,506
1,200	1,560,826	248,706	5.3	6.1	49,031	1,525
1,300	1,663,878	271,283	5.1	5.7	49,658	1,545
1,400	1,791,093	299,428	5.0	5.2	50,388	1,567
1,500	1,887,456	328,731	4.7	4.8	51,045	1,588
1,600	4,163,098	573,694	6.3	3.2	59,178	1,841
1,700	4,602,309	677,078	5.8	2.8	61,336	1,908
1,800	4,845,159	773,384	5.3	2.5	62,853	1,955
1,900	5,220,410	884,412	4.9	2.3	64,754	2,014
2,000	**5,563,122**	**1,001,102**	**4.6**	**2.1**	**66,497**	**2,068**
2,100	5,910,492	1,100,431	4.4	1.9	68,023	2,116
2,200	10,140,714	1,484,336	5.8	1.6	78,651	2,446
2,300	10,823,968	1,665,681	5.5	1.5	81,272	2,528
2,400	11,353,996	1,779,315	5.4	1.5	83,054	2,583
2,500	12,166,718	1,918,444	5.3	1.4	85,349	2,655
2,600	12,479,584	1,987,392	5.3	1.4	86,318	2,685
2,700	13,044,535	2,058,600	5.3	1.3	87,628	2,726
2,800	13,380,586	2,123,389	5.3	1.3	88,543	2,754

14.2.21. Dilution and Ore Losses

The block model is undiluted with no ore loss factors applied. Appropriate dilution and ore loss factors must be applied for Mineral Reserve estimation. Dilution and ore loss was applied to the COG calculation.

14.2.22. Other Information

RPM is not aware of any other factors, including environmental, permitting, legal, title, taxation, socio-economic, marketing and political or other relevant factors, which could materially affect the Mineral Resource.

15. Mineral Reserve Estimate

15.1. Introduction

Mineral Reserves for the BK and DH deposit are based on the Measured and Indicated Resources presented in Section 14 and use FS level engineering designs for the pit and associated operating parameters. Reserve calculations are valid at the time of estimation and use cut-off grade assumptions which were made prior to finalization of the economic model. The Mineral Reserve estimates are based on the mine plan and open pit mine design developed using modifying factors including gold price, gold recovery based on estimated performance of the processing plant from test work completed by Blue Coast Research ("BCR"), and operating cost estimates developed by ERD and validated by O2 to be sufficient for use in the development of this technical report. Further details of methodology and outcomes of the operating cost estimation for the project can be found in Section 21.

The study has confirmed the mine plan and accompanying financial model indicate there are no periods of negative operating cash flow from the commencement of processing operations through to the ultimate completion of production using a three-year moving average gold price average of US$1,800/tr.oz.

The mineral reserve estimate is based on several input parameters including the multi-dimensional geological resource model provided by Erdene and reported in Section 14 of this report.

A regularized resource block model of 2.5 x 2.5 x 2.5 m is prepared and provided by Erdene, applying a reportable cut-off grade of 0.4 g/t Au, Measured and Indicated Resources only.

Table 15-1 Resource Estimate Summary using a reportable COG of 0.4 g/t Au.

Classification	Tonnage (Mt)	Grade (g/t Au)	Contained Au (Koz)
Bayan Khundii			
Measured	4.7	2.67	402
Indicated	4.0	1.76	227
Sub-total Total	**8.7**	**2.25**	**629**
Dark Horse			
Indicated	1.2	1.83	71
Grand Total	**9.9**	**2.2**	**700**

The following inputs and constraints were utilized for pit optimization and further defined in the following sections:

- Resource model with associated assay grades and densities for mineralized zones (Section 14)
- Topographic surface survey provided by certified surveyors, Base Point LLC.

15.2. Mining Ore Loss and Dilution

There are 4 major types of considerations relating to defining the impact of dilution and loss:

- Equipment selection (Smallest Mining Unit known as SMU)
- Resolution of digging boundaries according to material type
- Blasting movement near the contact between ore and waste
- Inconsistent minable shape

Table 15-2 below is the dilution and loss summary from block model regularization completed in the previous FS[5] work, and it represents the factor 1 and part of factor 3 above.

Table 15-2 Dilution and Loss within Ultimate BK Pit Design at COG 0.669g/t (FS 2020)

Model Size	Reserve (Kt)	Metal (Au Kg)	Grade (Au g/t)	Ore Tonnes Dilution	Metal Loss	Au Dilution
Resource Model	3,232	12,839	3.98			
2.5 x 2.5 x 2.5 m	3,461	12,665	3.66	7.1%	-1.4%	-7.9%

When considering only Measured and Indicated Resources and within the previous FS ultimate pit limit constraints on the resource, an internal ore dilution and mineral loss of 7.9% and 1.4%, respectively. In addition, an external ore dilution and loss caused by the other two factors would also be considered. Thus, comprehensively, O2 has assumed an overall 10% ore dilution and 2.5% loss, provides a credible representation of ore dilution and loss for this style of ore deposit. Given the level of control that can be expected considering the excavation selectivity and the bench height, the 2.5 x 2.5 x 2.5 m SMU was selected for all further mine planning and analysis.

15.3. Geotechnical Parameters

The geotechnical study was conducted by Fugro, and the recommendation for each deposit in comparison with the parameters applied by O2 is listed in Table 15-3.

Overall a disturbance factor (DF) of 0.7 is selected as the base for pit design parameters determination. However, a slight difference in detailed design parameters is adopted by Fugro and O2M with both within a reasonable FoS. In Table 15-3, the two sets profile in pit design is not materially different in overall, but does have some differences for the top 20m. O2M has completed two pit designs on both profiles, and the waste volume by using Fugro design profile is approximately 2.8% more than applying with O2M design profile, with little variance on ore volume. Overall O2M believed that there is no materially difference between the ultimate pit designs applying with the two sets of design profiles, and the following schedule and fleet capacity has escalated for both utilization and redundancy concern, and O2M believes that the additional volume of waste is able to be mined with little cost increase and impact on overall mine schedule and its financial performance.

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[5] Bayan Khundii Gold Project Feasibility Study, NI 43-101 Technical Report', dated August 31, 2020, with an effective date of July 20, 2020 filed on SEDAR September 2, 2020.

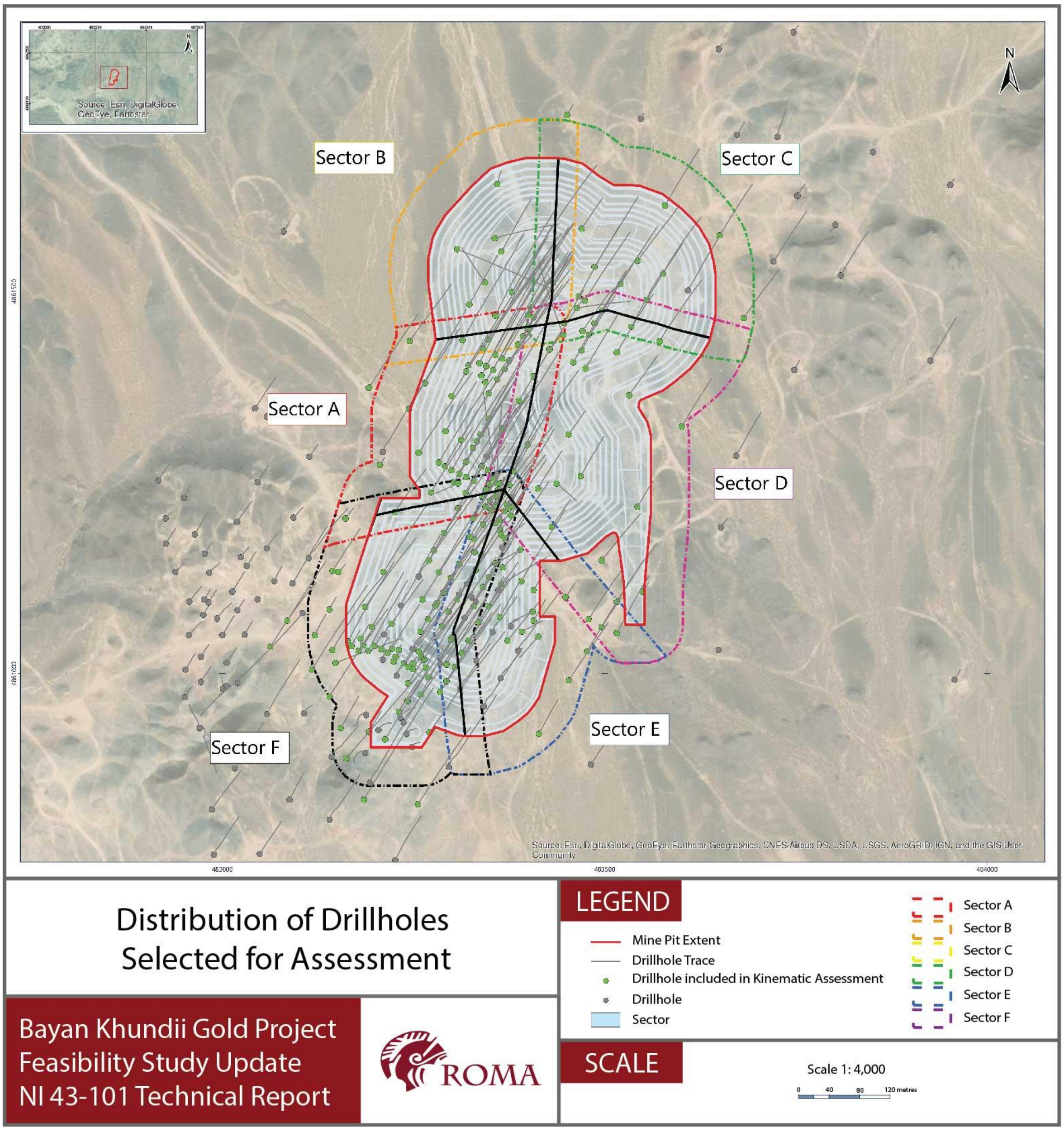


Figure 15-1 BK Geotechnical Sectors (Source Fugro 2021)

Table 15-3 BK Pit Design Parameters Comparison (O2M vs Fugro)

Sector	<20m Depth		>20m Depth	
	O2M Design Profile	Fugro Recommendation	O2M Design Profile	Fugro Recommendation
A	70/15/8	65/8/8	70/15/8	70/16/8
B	70/15/8	65/8/8	70/15/8	70/16/8
C	70/15/8	65/8/8	70/15/8	70/16/8
D	70/15/8	65/8/8	70/15/8	70/16/8
E	70/15/8	65/8/8	70/15/8	80/16/8
F	70/15/8	65/8/8	70/15/8	70/16/8

The potential mining area of Dark Horse deposit is also divided into 6 sectors, shown in Figure 15-2, and the design parameters applied to the DH pit design in comparison with Fugro geotechnical recommendation is shown in Table 15-4. The design profile for both above 20m and below 20m is both slightly different, however, the overall influence on total mining quantity is considered as minimum to influence the subsequent mine planning, as well as the fleet requirements to be applied. Overall, O2M believes there is no material difference between the two designs. In addition, DH deposit is not yet to be finalized and not planned to be mined until after 3 years. If there is any update on reverse boundary or geotechnical modification, a new ultimate pit design should be conducted.

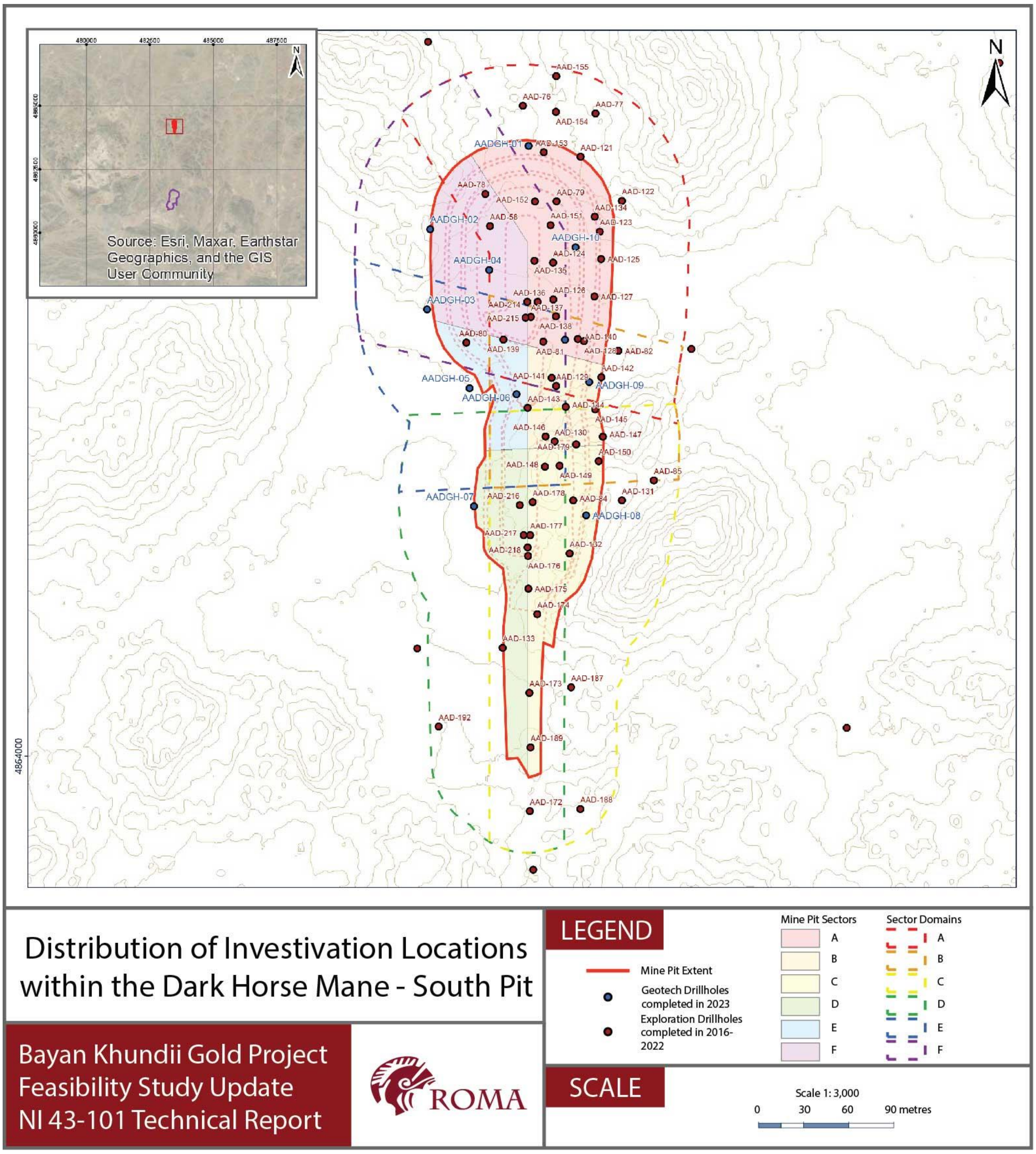


Figure 15-2 DH Geotechnical Sectors (Source Fugro 2023)

Table 15-4 DH Pit Design Parameters Comparison (Fugro vs O2M)

Sector	<20m Depth		>20m Depth	
	O2M Design Profile	Fugro Recommendation	O2M Design Profile	Fugro Recommendation
A	70/15/8	65/15/8	70/15/8	75/15/8
B	70/15/8	65/15/8	70/15/8	75/15/8
C	70/15/8	65/10/6	70/15/8	75/15/8
D	70/15/8	65/15/8	70/15/8	75/15/8
E	70/15/8	65/10/6	70/15/8	70/15/8
F	70/15/8	65/15/8	70/15/8	75/15/8

For pit wall stability and safety operation concern, Fugro as an experienced geotechnical expert has recommended and agreed with O2 for the pit wall monitoring and control as below:

1. **Blast Design**: Assess the blasting techniques and practices used in the mine. Proper blast design can minimize ground vibration, fragmentation, and damage to the surrounding rock mass. Consider factors such as drilling patterns, explosives type, and blast timing.
2. **Monitoring and Instrumentation**: Implement a comprehensive monitoring and instrumentation program to continuously track slope movements, ground vibrations, and stress changes. This data can provide real-time feedback on the impact of blasting and excavation activities.
3. **Numerical Modeling**: Utilize numerical modeling software to simulate the effects of blasts and excavation on slope stability. These models can help predict potential failure mechanisms and suggest mitigation measures.
4. **Seismic Analysis**: Conduct seismic analysis to assess the potential for induced seismicity resulting from blasting. Evaluate the magnitude and frequency of induced seismic events and their impact on slope stability.
5. **Disturbance Factor Assessment**: Develop a disturbance factor assessment that quantifies the impact of blasting and excavation activities on slope stability. This may involve considering factors such as energy release, stress redistribution, and the potential for loosening of the rock mass.
6. **Risk Assessment**: Perform a risk assessment to identify potential hazards associated with slope instability due to blasting and excavation. This can guide the implementation of safety measures and emergency response plans.
7. **Mitigation Measures**: Based on the assessment, implement appropriate mitigation measures. These could include modifying blasting techniques, adjusting excavation methods, or reinforcing slope structures with rock bolts or mesh.
8. **Continual Monitoring and Adaptation**: Slope stability conditions can change over time due to various factors, including weather and ongoing mining activities. Continually monitor and adapt your assessment and mitigation strategies as needed.

15.4. Mine Hydrological Parameters

15.4.1. Bayan Khundii Mine Pit

The Bayan Khundii mine pit covers an area of 850 m by 360 m and a maximum depth of 155 m in the North Midfield zone.

Three hydrogeological investigation boreholes were drilled at the mine site and tested in 2018. The borehole depth of all three boreholes is 150 m. Two of the boreholes were pumped dry immediately suggesting that no water bearing aquifers were penetrated. The last well (BKHG-02) penetrated an apparent water bearing fracture at 67.75 m depth. However, the test results suggest that even when pumping at a low pumping rate the drawdown is large and upon cease of the abstraction the water level does not seem to recover. It was concluded that the water bearing fracture provides limited groundwater.

Further, seven hydrogeological investigation boreholes were completed at this site in April and May 2023. The borehole depths vary between 46 and 190 m. The location of the boreholes is provided in Figure 15-3.

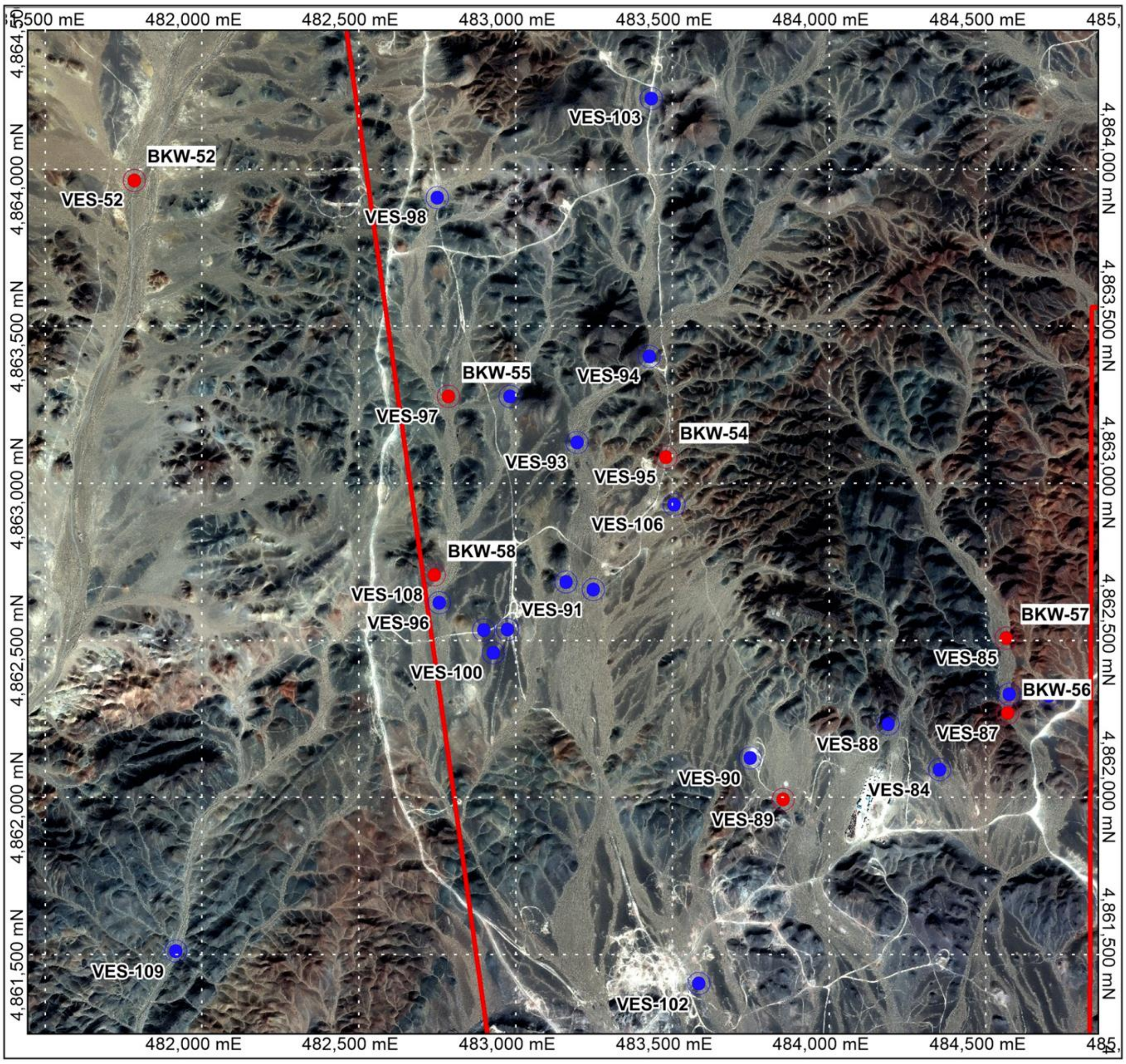


Figure 15-3 Bayan Khundii Mine Pit Investigation Boreholes (marked with red) (Source Ramboll 2023)

Six of the investigation boreholes indicate that no or very limited volumes of groundwater are encountered during drilling. Thus, no further testing has been completed. Only BKW-54 encounters groundwater with a reported water table at 44 m depth. This borehole is located some distance north of the pit and therefore not anticipated to be representative of the groundwater lowering requirements for the Bayan Khundii pit.

The results from the investigations carried out at the Bayan Khundii Mine Pit indicate no permanent groundwater lowering will be required to maintain a dry pit during operation. It is anticipated that dry conditions can be maintained by drains and localized pump sumps to manage seepage from the unsaturated zone and precipitation.

15.4.2. Dark Horse Mine Pit

The Dark Horse mine pit is 350 m by 135 m and a maximum depth of about 55 m.

Three hydrogeological investigation boreholes targeting 50 m depth have been completed at this site in March to May 2023. The location of the boreholes is provided in Figure 15-4.

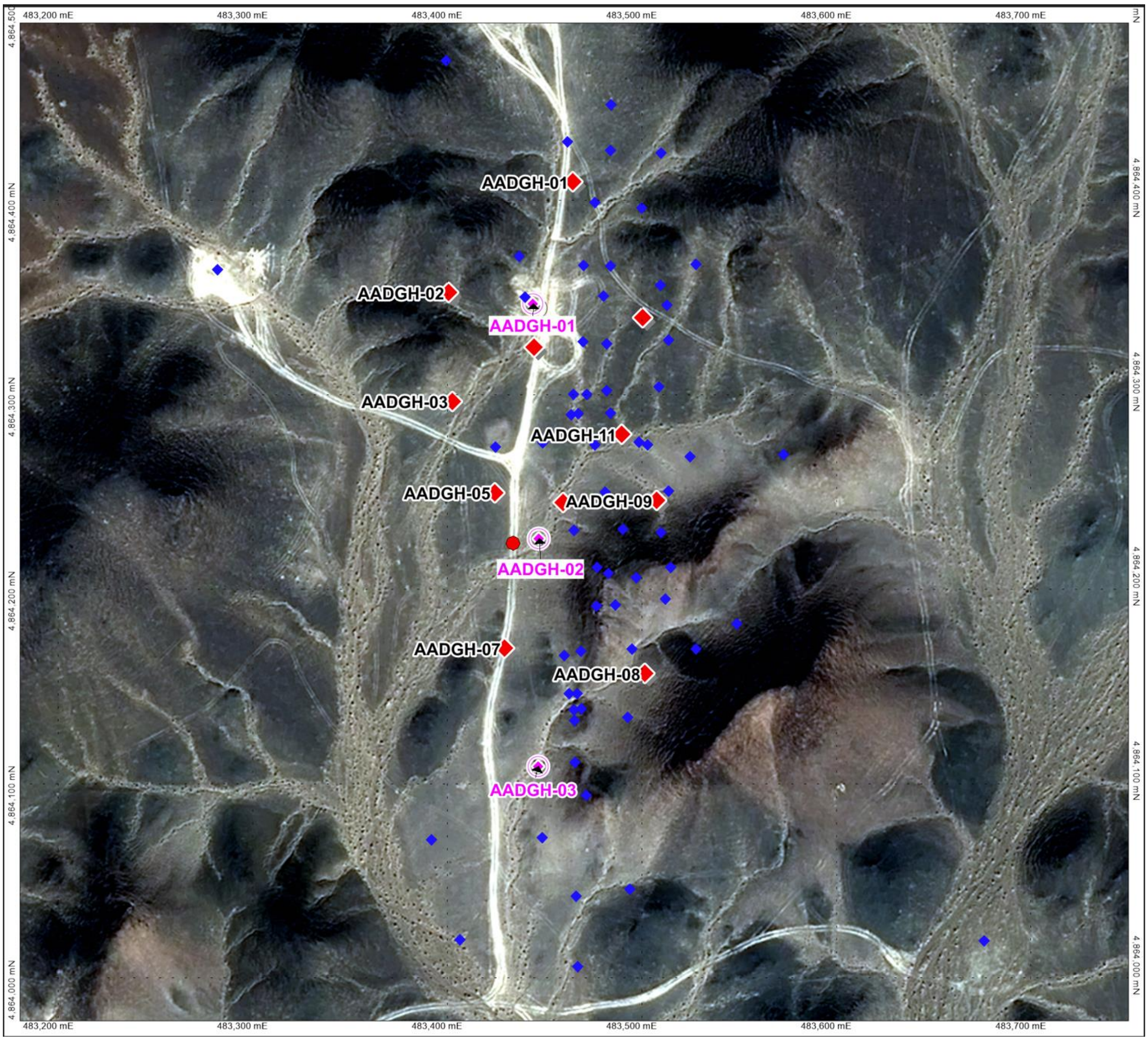


Figure 15-4 Dark Horse Mine Pit Investigation Boreholes (marked with pink) (Source Ramboll 2023)

No water was encountered at this site and thus no pumping tests were carried out.

The results from the investigations carried out at the Dark Horse mine pit indicate no permanent groundwater lowering will be required to maintain a dry pit during operation. However, to mitigate potential seepage from the unsaturated zone, precipitation drains and localized pump sumps may likely be required periodically, even though the volumes are expected to be insignificant.

15.5. Pit Limit Determination

15.5.1. Approach

The mining industry has seen several software packages developed, based on proven algorithms and techniques, to help identify the most profitable reserve and mining sequence. These computer-based software systems are known as pit optimizers. Whittle™ software sold by Geovia is one of the leading pit optimizer packages and well respected within the industry.

Whittle™ uses a calculation called the Lerchs-Grossmann ("LG") Algorithm developed by H. Lerchs & I. F. Grossmann in 1964. Using this algorithm, a net value of each block, in a block model, is calculated and then, based on pit slopes and other defined mining constraints; the blocks are progressively mined top-down. The resulting pit outline will be defined by the blocks that give the highest combined net return whilst adhering to all imposed constraints.

The Whittle™ optimization process then works to develop a set of nested pit shells based on application of scaling revenue factors. The revenue factors for a project generally start at 0.4 and are increased in increments of 0.05 up to a revenue factor 1.5. The expected base case revenue for each block is then multiplied by these factors and run through the LG Algorithm to generate a series of pit shells representative of the revenue factors. This series of nested pit shells are then used to help identify what sequence the ore body should be mined in and what is the ultimate pit limit.

The Whittle™ system allows users to build up a project containing multiple scenarios and compare the results of each of the scenarios to identify the most "optimum" scenario. It is also possible to perform sensitivity analyses on the inputs and drivers for the optimization.

A brief summary and sequence of each of the scenarios has been included below:

- **Step 1:** Prepare the regularized block model of 2.5 m x 2.5 m x 2.5 m for export into Whittle™ software including mining cost adjustment factors ("MCAF"), rock code attributes based on Measured and Indicated Resource categories;
- **Step 2:** Import the associated block model into Whittle™ and set up pit slope constraints, processing cost adjustment factor ("PCAF") and MCAF, gold selling price and selling cost. Also compare the block model grades and tonnages in Whittle™ with the grades and tonnages reported in Surpac™ to ensure no material differences ensuring these values have been transferred accurately;
- **Step 3:** Prepare a base case operational scenario to generate a series of pit shells with associated value measures. A representative graph of the base case scenario has been included inFigure 15-5, Figure 15-6;
- **Step 4:** Evaluate the base case graph and select appropriate iterations of push backs to identify the best performance (based on NPV) for the project;
- **Step 5:** Once the push backs have been selected run iterations of the schedule to identify the most achievable schedule based on mining equipment identified for the project (smooth out production) and consider any stockpiling strategies;
- **Step 6:** Select the most optimum pit sequence and schedule and output the results for use in other analysis software such as Microsoft excel (schedule) and Gemcom Surpac™ (pit design); and
- **Step 7:** Repeat steps 3 to 6 for each operational scenario.

The sequence for running and completing the pit optimization is broken into two distinct phases. The first involves identifying the optimum pit shells (pit optimization phase, Steps 1 to 4) and the second involves development of a strategic schedule for the pit shells within the Whittle™ software (strategic scheduling phase, Steps 5 & 6). In addition to these phases, sensitivity analysis is completed on key input parameters to better understand what parameters have most influence over the final pit selection.

15.5.2. Input Data & Parameters

The optimization input data and parameters are predominately sourced from the final results of the FS study completed by O2 for the Bayan Khundii deposit in 2020, with the update of gold price and slope profile recommended by Erdene. There is no mining capacity limitation applied during the optimization process, but the ore processing capacity is limited to 500 Ktpa for Year 1 and 600 Ktpa from Year 2 and onwards.

15.5.3. Geological Model

The original geological model for each of the BK and the Dark Horse Mane gold deposits was provided by Erdene, representing a resource model produced by AGP and RPM, respectively.

For the BK (AGP) model, the resource model was produced at a 2.5 x 2.5 x 2.5 parent cell size so no resizing was necessary.

For the Dark Horse Mane (RPM) model, a parent block size of 10 mY x 5 mX x 10 mZ was selected based on the average drillhole spacing of roughly 20-30 m. A minimum sub-block size of 1.25 mY x 0.625 mX x 1.25 mZ was selected to appropriately reflect the geometry and volume of the estimation domains, whilst maintaining a practical block model file size. To better reflect the effects of dilution and loss, re-blocking of the original Dark Horse Mane geological model was conducted and a 2.5 x 2.5 x 2.5 m regularized model was formed for optimization and reserve calculation purpose, as discussed in Section 15.2.

Both models also contained classifying attributes defining Measured, Indicated and Inferred Resource categories. Only Measured and Indicated Resources were classified as ore in the geological model. All Inferred material is classified as waste.

15.5.4. Topography

Erdene contracted the certified surveying firm Base Point LLC to undertake multiple surveys across the site, and the results of those surveys were provided in the form of DWG files. The FS study utilizes the most recent survey information provided in April 2020 (Full Site UTM47-2000-english-none piket). Very little site disturbance has occurred to date, in the form of preparation of exploration drill hole pads and basic roads on the site for access. There was no evidence of previous mining activities at the site at the time of preparing this FS Update Report.

15.5.5. Physical Constraints

The current mining license provides sufficient space in and around the ore deposit to fully extract economic ore and undertake associated mining activities including road access, drainage, the construction of infrastructure and the placement of waste materials in the BK IWF and the DH waste rock dump without any physical constraint. The mining license boundary was incorporated into the optimization to ensure no mining development was planned off the license.

15.5.6. Mining Parameters for Optimization

Mining parameters during the optimization included all activities and their associated direct and indirect costs to remove overburden and place this material in the IWF or DH waste rock dump and extract the ore and deliver ore to the process plant feed and/or ROM pad. The activities included:

- Contract drill and blast of all waste material and ore;
- Load and haul of ore to the ROM and waste to the IWF;
- ROM re-handle to achieve a blended ore feed to the process plant;
- Dry cake tailings haulage from the process plant to the IWF cells;
- Grade control drilling, sampling and analysis according to typical industry practice for this style of deposit;
- All equipment maintenance is costed as part of the rental agreement quoted to ERD;

- Pit dewatering necessary for slope stability and to ensure dry mining conditions;
- Environmental protection and progressive rehabilitation; and
- All direct and indirect labor.

The base mining cost assumes mining of material from surface and delivery to the required location. Incremental mining costs are considered for each 5 m bench below the topographical surface. The mining costs extracted from the PFS are included in Table 15-5.

Table 15-5 Optimization Parameters - Mining

Description	Unit	Value
Avg. Mining Cost	US$/t mined	3.03
Variable Base Mining Cost	US$/t mined	2.1
Fixed Base Mining Cost	US$/t mined	0.66
Total Base Mining Cost	US$/t mined	2.76
Additional Mining Cost for Darkhorse	US$/t mined	0.84
Incremental Mining Cost per bench	US$/t mined per 5 m bench	0.028

15.5.7. Processing Parameters for Optimization

The processing cost adopted is inclusive of all processing activities including crushing, milling, leaching, gold recovery, carbon regeneration, thickening, filter drying of tails and associated water recovery and recycling. Processing costs used for the optimization are summarized in Table 15-6.

Table 15-6 Optimization Parameters – Processing

Description	Unit	Value
Ave. Processing Cost	US$/t plant feed	25.56
Additional Processing Cost for Darkhorse	US$/t plant feed	0.84
Recovery Bayankundii	%	93
Recovery Dark Horse	%	89
Throughput Year 1	Plant feed t/year	500,000
Throughput Year 2 onwards	Plant feed t/year	650,000

15.5.8. Selling Costs and Downstream Considerations

Gold price, royalty, smelting, site general administration and processing overhead costs are also considered in the optimization, these costs are included in Table 15-7.

Table 15-7 Optimization Parameters – Selling and Analysis.

Description	Unit	Value
Gold Price	US$/oz	1,816
Discount rate (optimization)	%	10
Smelting recovery	%	99.85
Smelting cost	US$/oz	4.98
Processing Overhead	US$/oz	166.40
Site General and Administration	US$/oz	41.36
Royalties	US$/oz	108.63

15.5.9. Pit Limit Optimization

Revenue factor ranges from 40% to 150% were selected for the optimization study. The ore and waste contained in each pit shell at differing revenue factors as a result of the optimization are shown in Figure 15-5, Figure 15-6 and the quantity of ore and its associated grade in each pit is included in Figure 15-7, Figure 15-8.

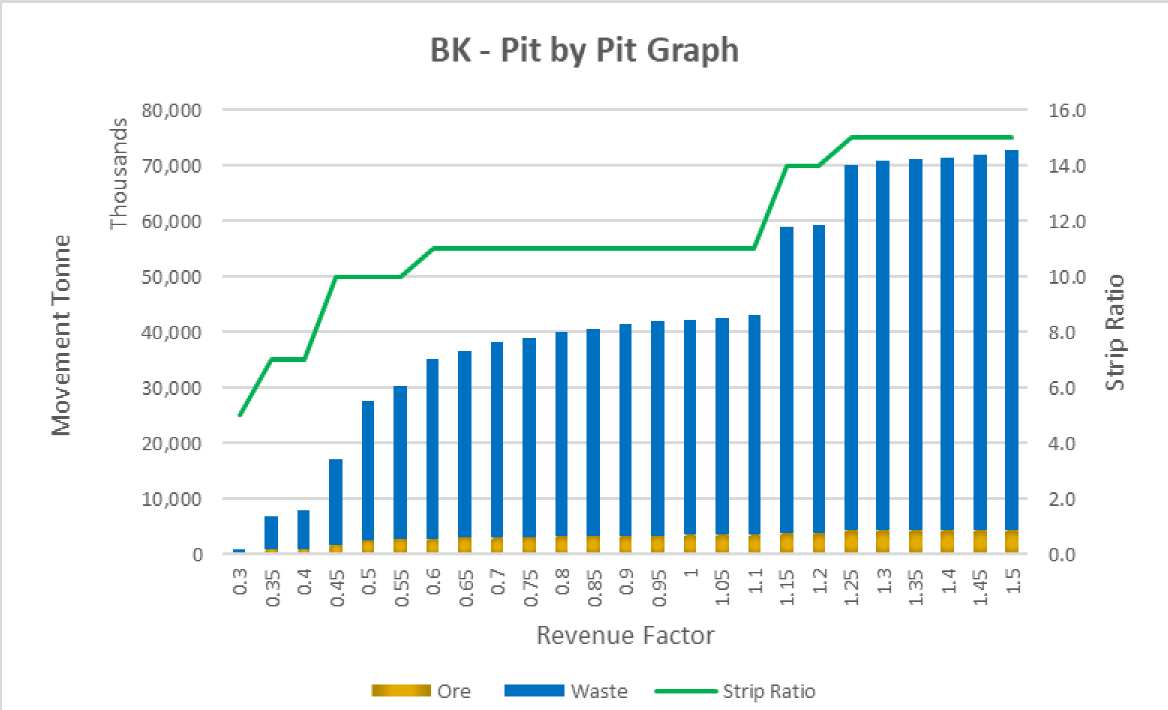


Figure 15-5 BK Pit-by-pit graph – Waste, Plant Feed and Strip Ratio (Source O2 2023)

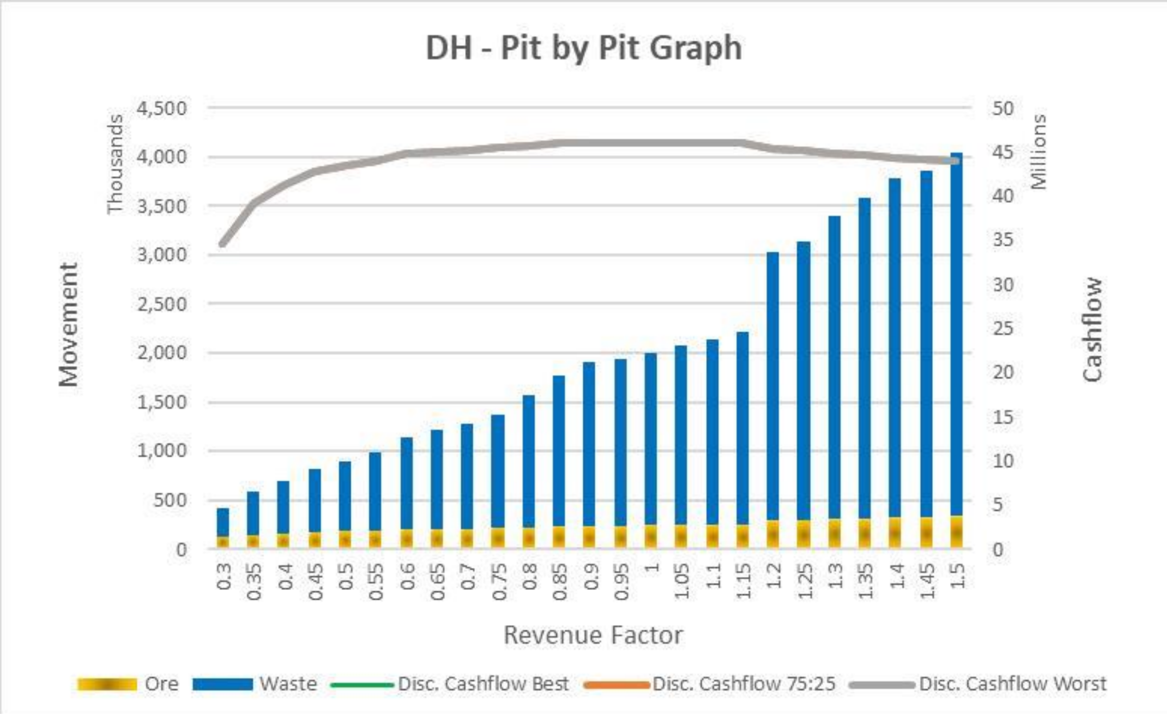


Figure 15-6 DH Pit-by-pit graph – Waste, Plant Feed and Strip Ratio (Source O2 2023)

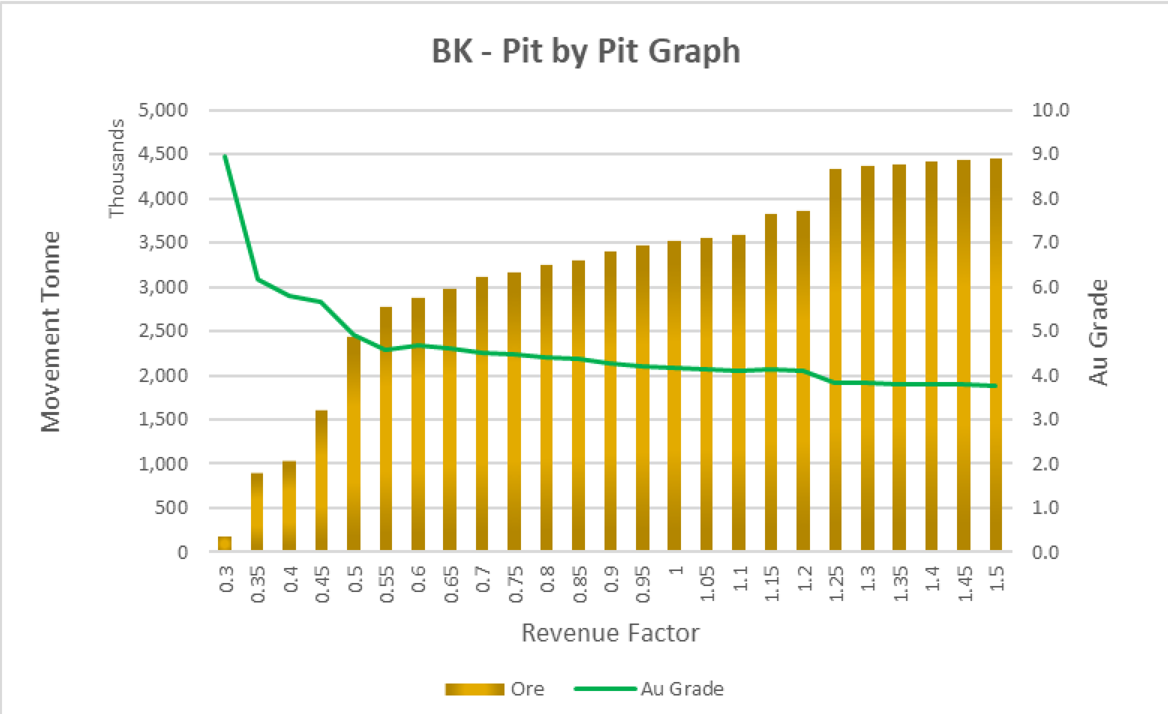


Figure 15-7 BK Pit-by-pit graph – Plant Feed and Average Feed Au Grade (Source O2 2023)

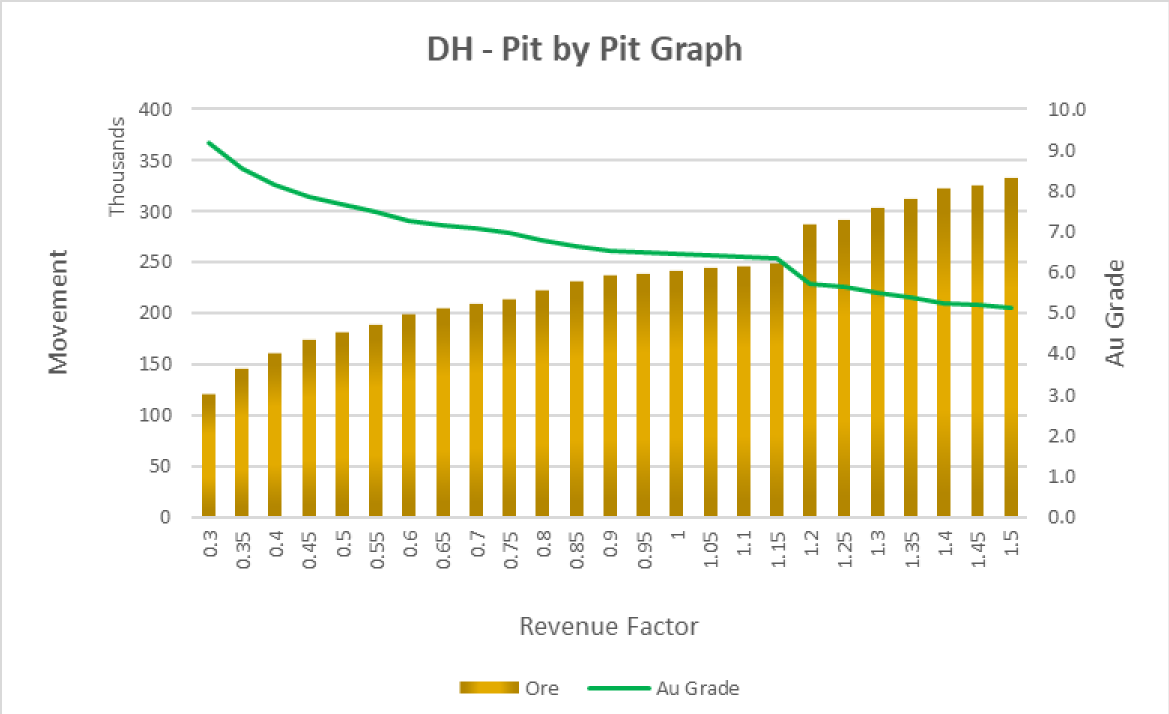


Figure 15-8 DH Pit-by-pit graph – Plant Feed and Average Feed Au Grade (Source O2 2023)

The estimated discounted cash flow for each pit and indication of the optimum pit is depicted in Figure 15-9 and Figure 15-10.

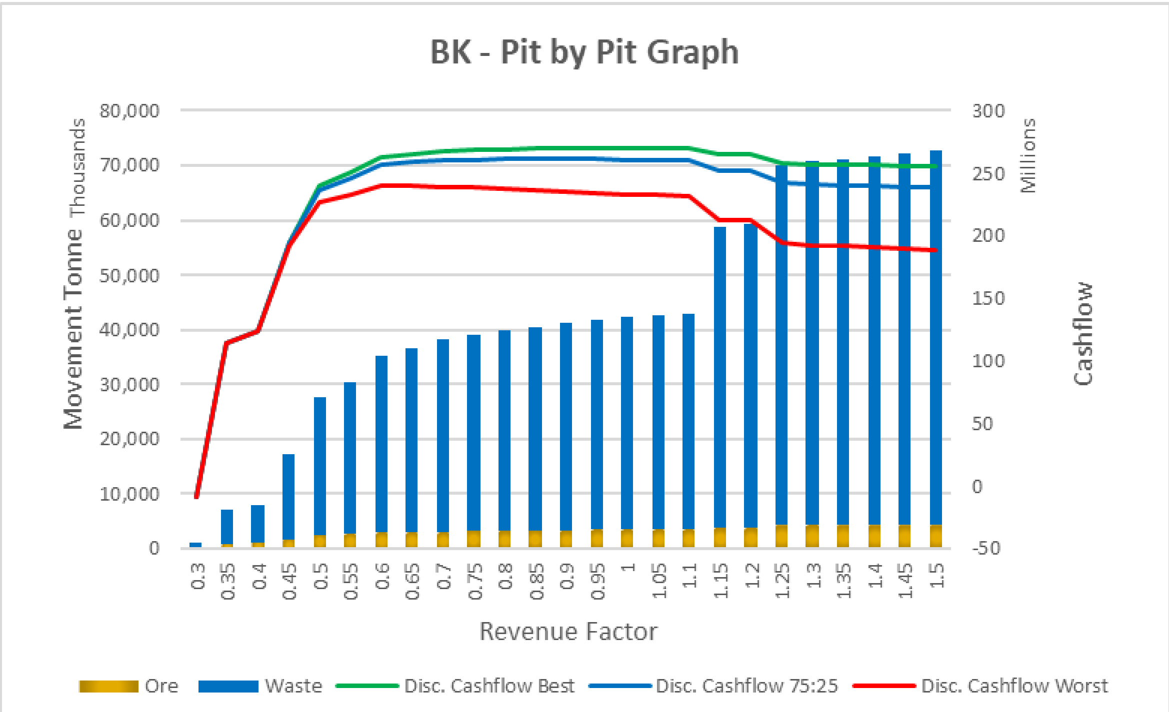


Figure 15-9 BK Pit-by-pit graph – Cashflow Analysis (Source O2 2023)

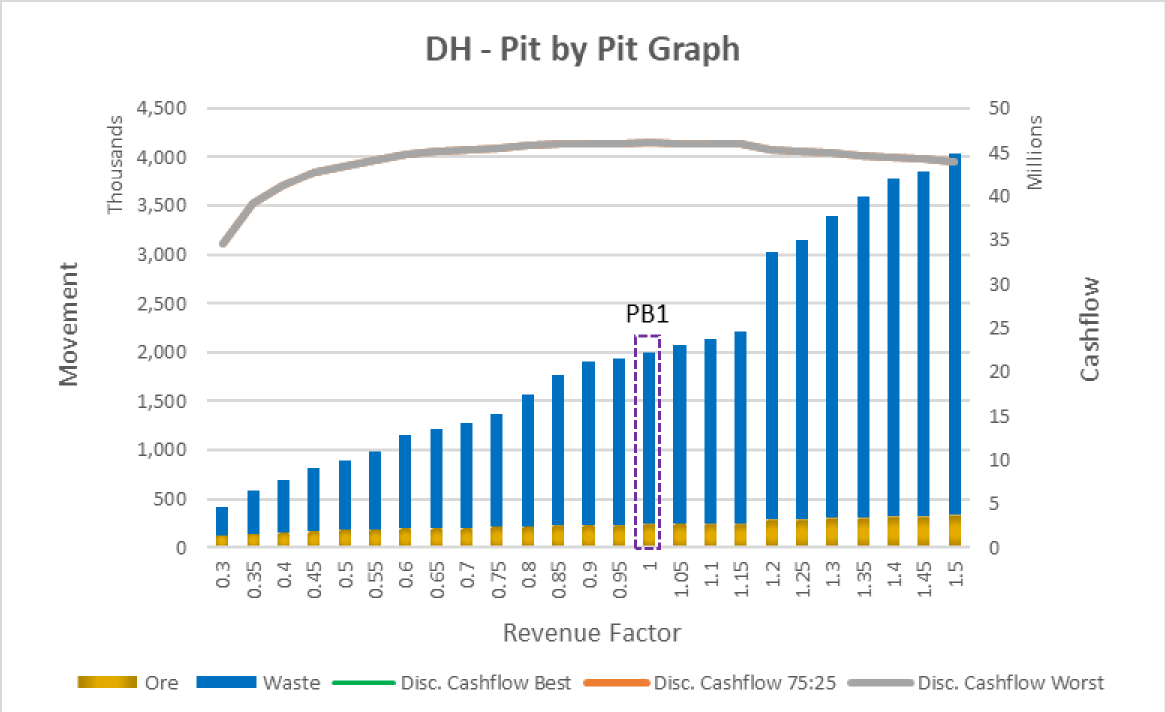


Figure 15-10 DH Pit-by-pit graph – Cashflow Analysis (Source O2 2023)

The pit optimizer represents the generated pit by pit data in graph format (output from step 3 outlined in Section 15.5.1. The information contained in the graph is defined as:

- **Blue bar** – represents the total waste material within the best pit limits;
- **Orange bar** – represents the total ore material within the best pit limits;
- **Red line** – indicates the "worst" case scenario. This scenario would be mining all the material within that pit limit from the highest elevation down to the lowest elevation without any sequential pushbacks;
- **Green line** – indicates the "best" case scenario. This scenario represents starting at pit shell 1 and then progressively mining each pit shell as interim pits from top to bottom up to the specified pit limits (final pit shell); and
- **Black line** – indicates the "specific" case scenario. This scenario represents 75% of best case and 25% of worst case. O2 has used this metric as a guideline for selecting the final optimum shell using a realistic approach to push back mining. The optimum pit is indicated when there is no further incremental NPV improvement.

The optimal pit shell of revenue factor 100% is selected based on the best value of discounted cashflow of 75:25 specific case scenario. As described previously, Inferred Resources are not considered during the optimization. The total ore contained within the optimal shell for BK can be defined as approximately 3/4 classified as Measured Resource and 1/4 is classified as Indicated Resource and for DH all ore within the optimal shell is classified as Indicated further summarized in Table 15-8.

Table 15-8 Whittle™ Optimal Shell Physical Attributes Summary

Deposit	Revenue Factor	Total (Mt)	Waste (Mt)	Ore (Mt)	Strip Ratio (t/t)	Grade Au (g/t)	Measured Ore (Mt)	Indicated Ore (Mt)
BK	100%	42.3	38.8	3.54	11.0	4.17	2.60	0.94
DH	100%	2.0	1.8	0.24	7.2	6.47	0	0.24

Deposit	Revenue Factor	Total (Mt)	Waste (Mt)	Ore (Mt)	Strip Ratio (t/t)	Grade Au (g/t)	Measured Ore (Mt)	Indicated Ore (Mt)
Total		**44.3**	**40.6**	**3.78**	**11.0**	**4.3**	**2.6**	**1.18**

Table 15-9 Whittle™ Optimal Shell Economic Summary

Pit shell	Revenue Factor	Au Qty Feed (Koz)	Au Qty Rec (Koz)	Disc. NPV Best ($M)	Disc. NPV Worst ($M)	Disc. NPV Specific ($M)
BK	100%	474	441	267	261	234
DH	100%	50	45	46	46	46
Total		**524**	**486**	**313**	**307**	**280**

It is important to note these NPV's are not representative of what could be considered a final NPV result for several reasons including:

- Estimated capital cost prior to completion of the FS update was used. For BK, capital costs were set at $77M, and for DH they were set at $10M. Residual capital values of $10M was used for BK and $1M for DH; and
- The pit shells developed do not consider all necessary constraints of mining including the need to install ramps to access material at depth, sufficient mining width must be maintained at all times in all locations within the pit and berm widths are typically larger than a block width, therefore the pit limit boundary does not provide sufficient resolution on the final pit design to define the contained material within the final pit shell as reserve.

In addition, in BK, the pit-by-pit graphs above also present the most sensitive relationship between metal price vs pit volume and economic performance when revenue factor ranges from 30% to 60%, with a flattening of the NPV improvement from 60% to 110%, and then a step reduction in NPV as a result of higher strip ratio from revenue factor 110% and beyond. This rapid expansion on pit size also matches with the resource structure and location. The optimization presents four distinct groups of shells where material increases in strip ratio occurs when moving between each step.

However, in DH, the pit-by-pit graphs present the much less sensitive relationship between metal price vs pit volume and economic performance under all the revenue factors selected. Therefore, the staging of DH would be much more related to the real pit geometry and location rather than cashflow consideration.

15.5.10. Pit Shell Selection

The Pit-by-Pit graph produced by Whittle™ is commonly used by the industry as a tool for open pit interim pit shells selection, and it shows very defined pushback options as shown in Figure 15-11 and Figure 15-12.

Bayan Khundii Pit Shell Selection

In Bayan Khundii apparently the whole resource could be developed in 3 stages as shown clearly in Figure 15-11 below (PB 1 through 3).

However, PB 3 is not considered for this study as it falls out of the optimal shell pit – it is considered not economic. O2 has excluded the southeast pit from PB2 ultimate pit design because of its limited ore blocks and potential high strip ratio within the independent pit shell, which is considered as high mining risks. However, the final pit design could be modified once the ore blocks at the bottom can be further verified or it is proved that a lower strip ratio can be achieved.

It is also tested by a conceptual schedule (Milava NPV) run in Whittle with the initial processing and mining target, and the results show positive output. See details in the next section below.

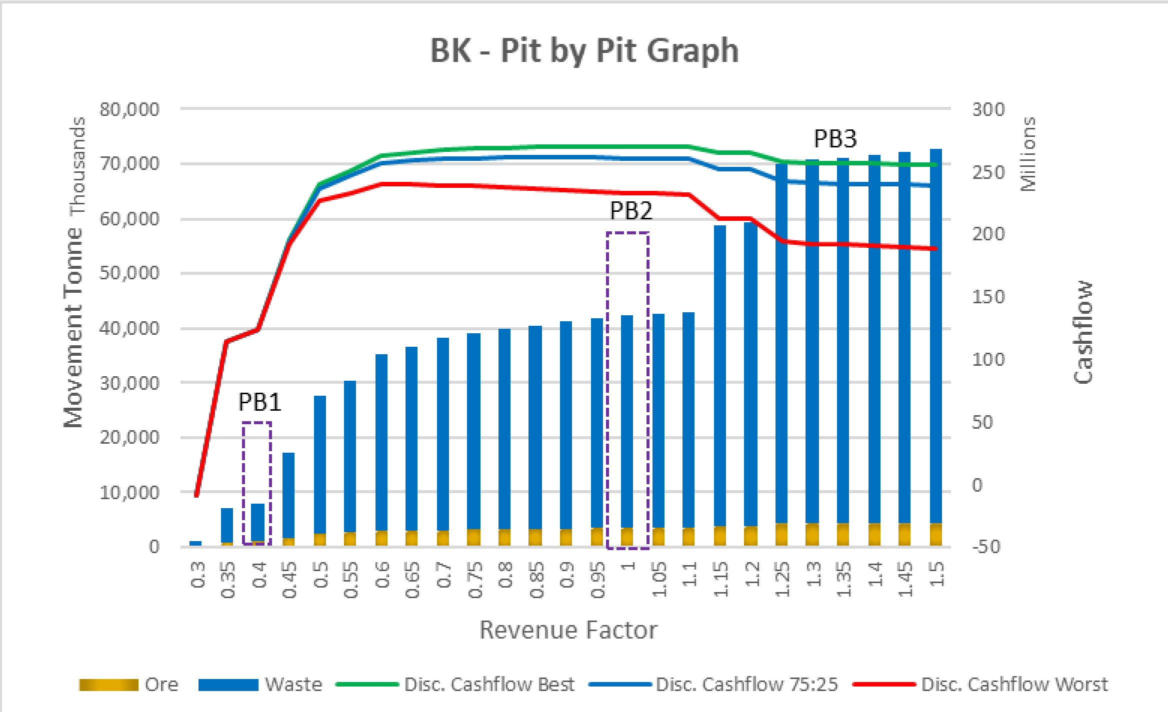


Figure 15-11 Bayan Khundii Pit-by-pit graph – Interim Pit Selection (Source O2 2023)

The two pushbacks are as shown in Figure 15-12 and Figure 15-13. Further recommendations on pit selection are:

- **1st Stage is Striker and near surface higher grade Midfield**: The optimization output has an initial large cut and then two narrow cuts to final depth – O2 has used the final pit limit in the Striker area and the near surface Midfield area as Stage 1 pit.
- **2nd Stage is Lower portion of Midfield and North Midfield:** Incorporates the balance of material contained in the Optimum pit as a final Stage 2.

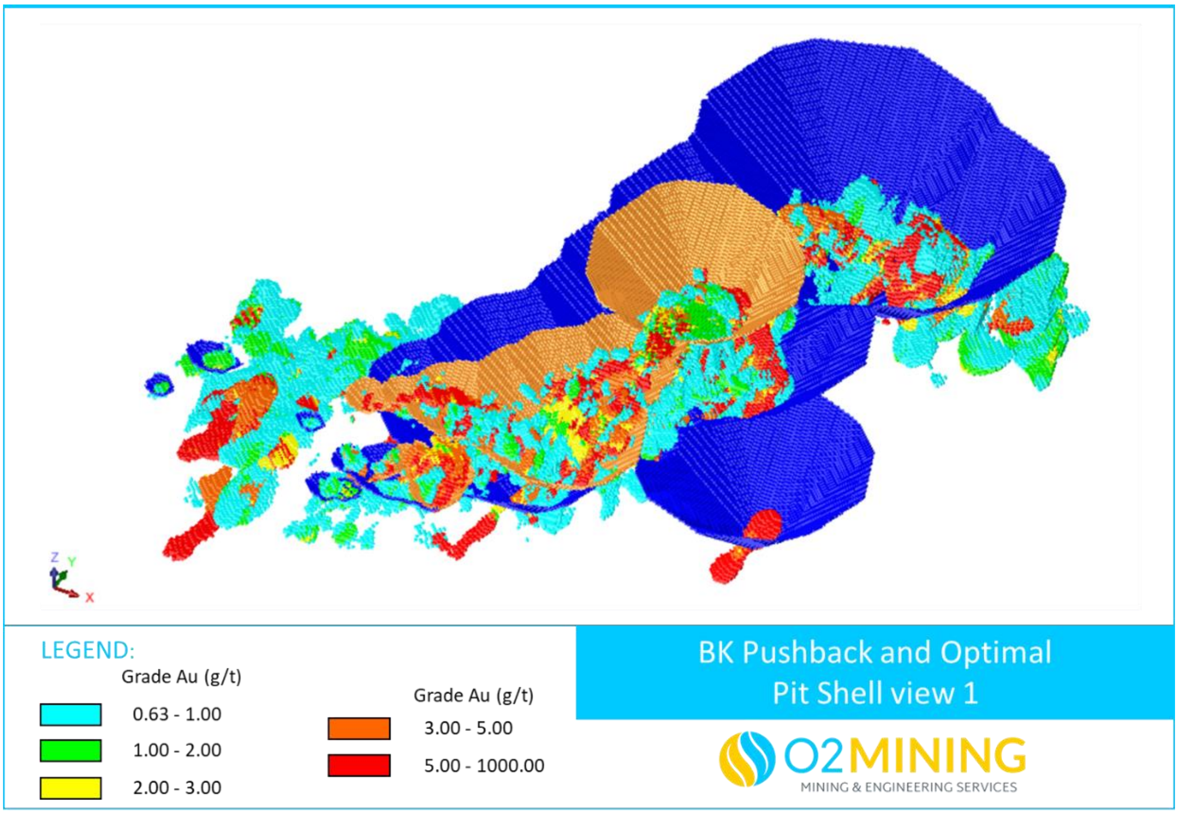


Figure 15-12 BK Pushback and Optimal Pit Shell view 1 (Source O2 2023)

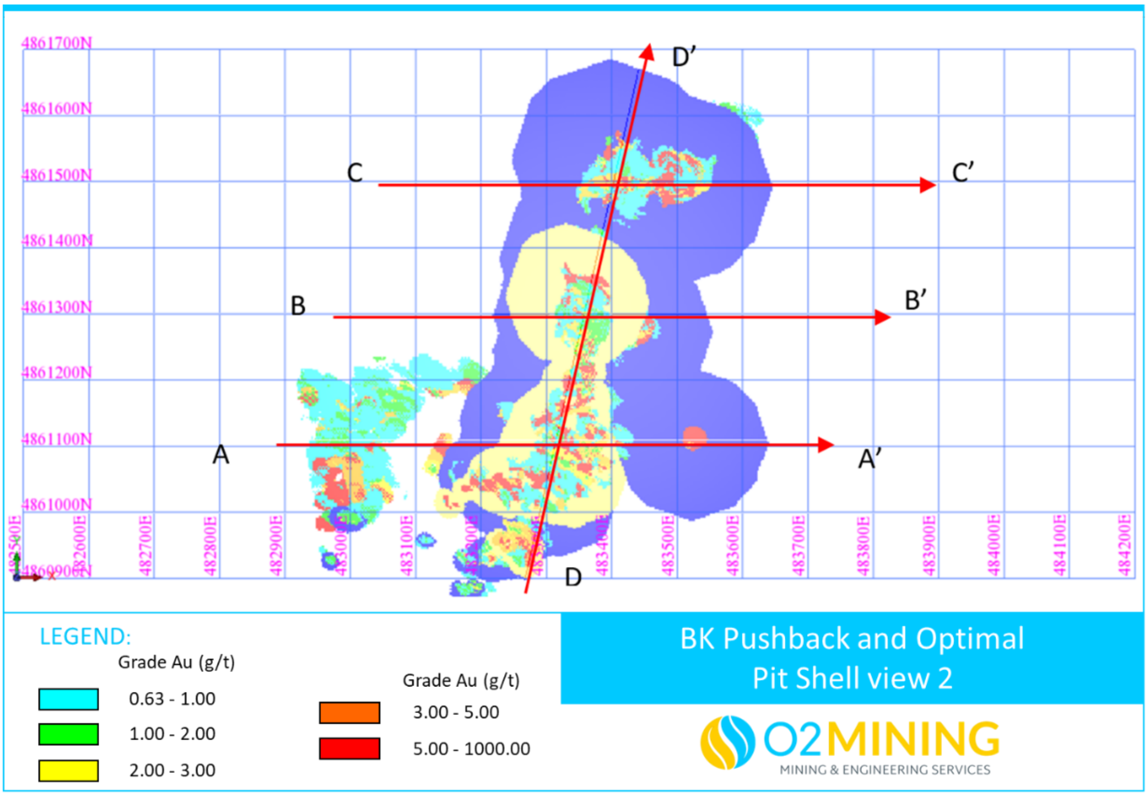


Figure 15-13 BK Pushback and Optimal Pit Shell view 2 (Source O2 2023)

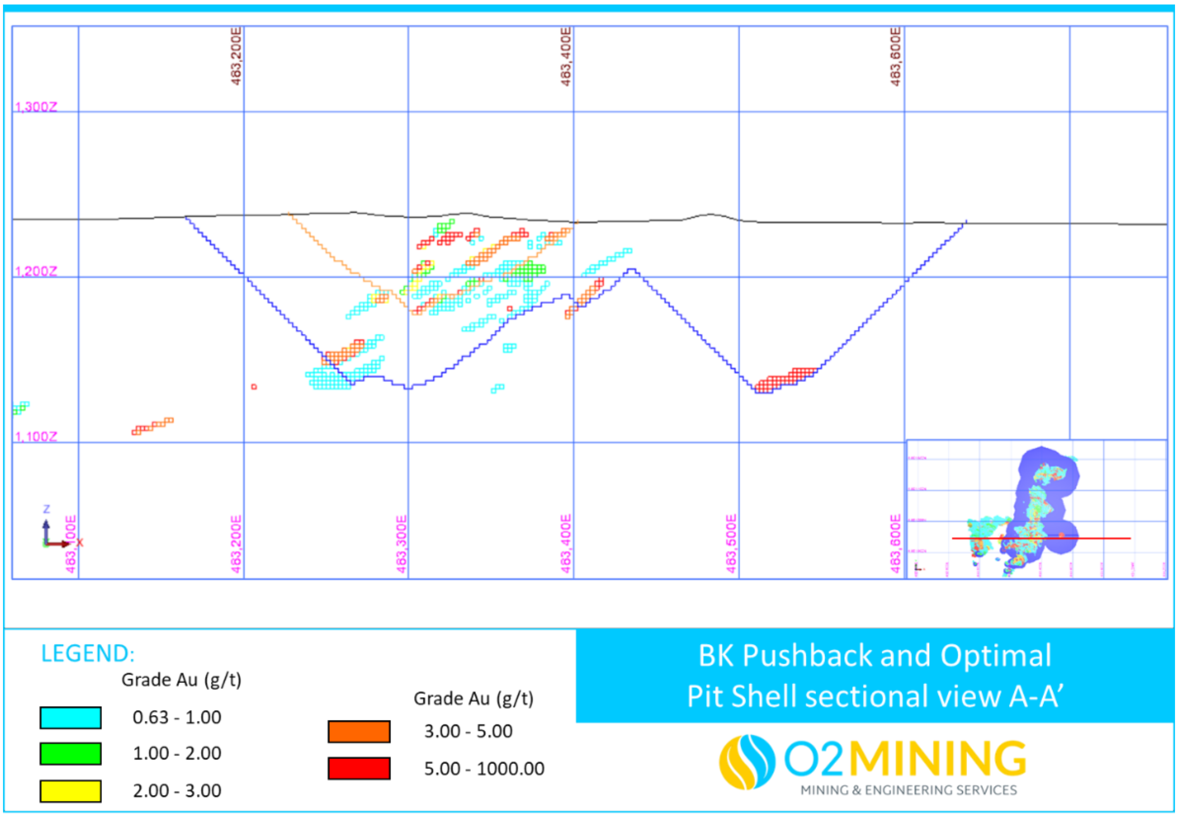


Figure 15-14 BK Pushback and Optimal Pit Shell view A-A' (Source O2 2023)

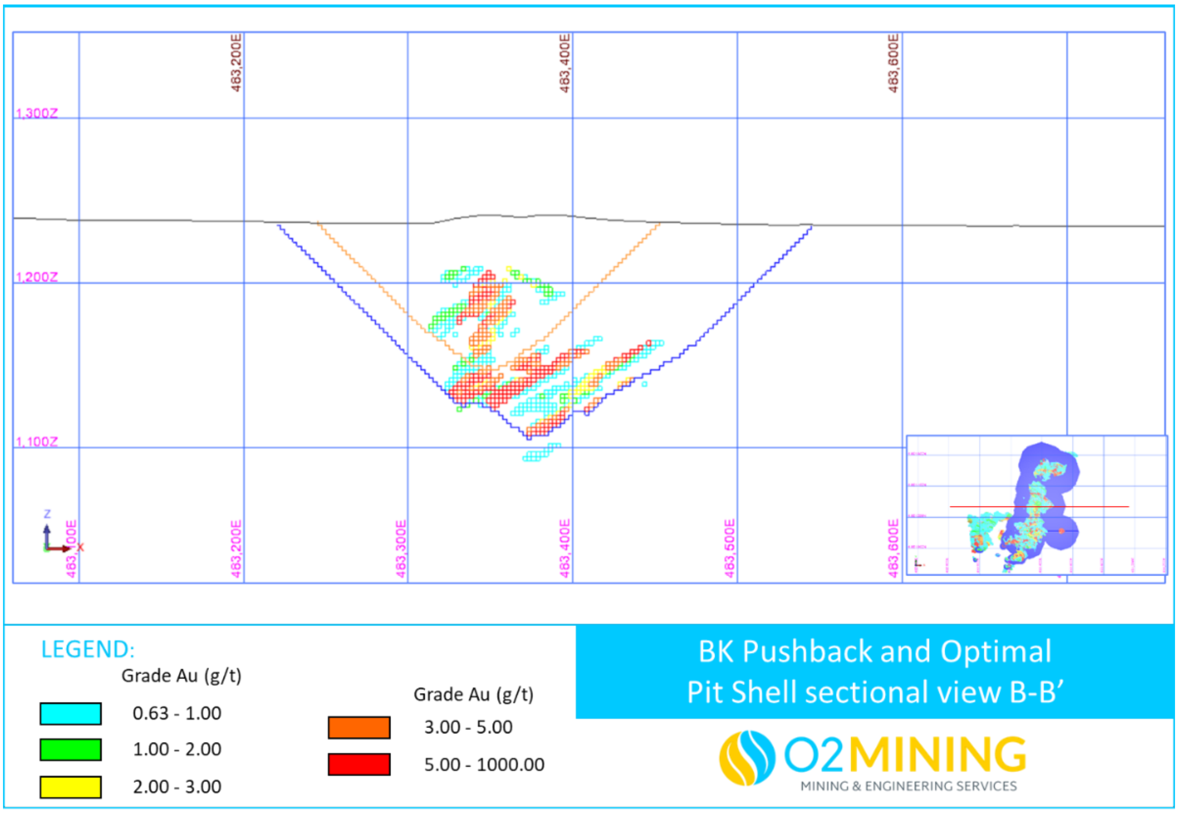


Figure 15-15 BK Pushback and Optimal Pit Shell view B-B' (Source O2 2023)

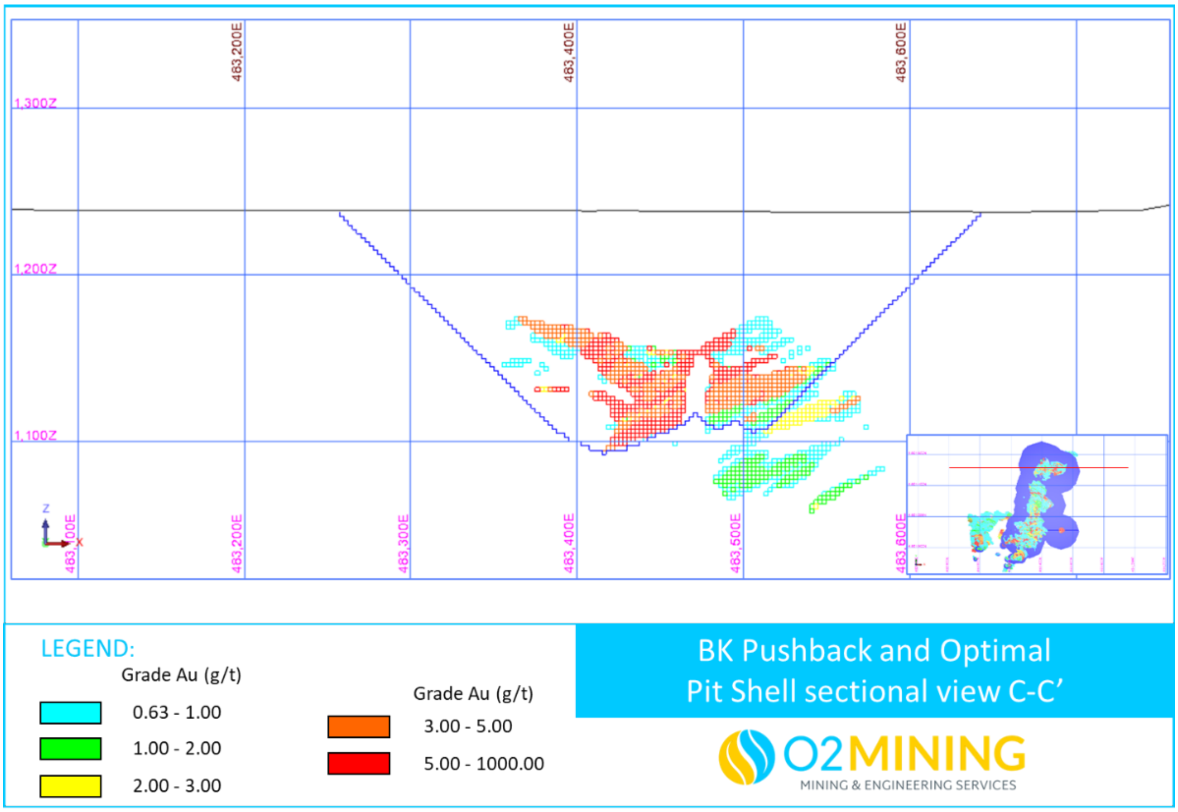


Figure 15-16 BK Pushback and Optimal Pit Shell view C-C' (Source O2 2023)

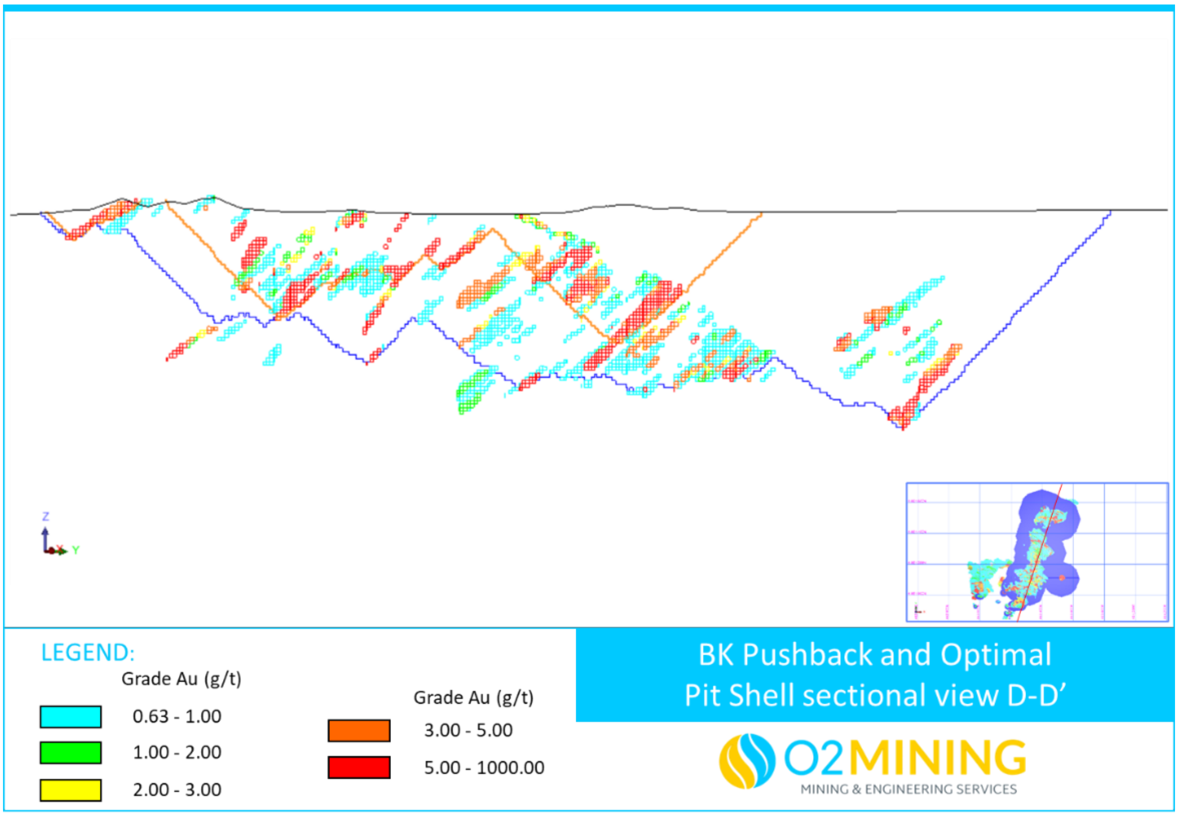


Figure 15-17 BK Pushback and Optimal Pit Shell view D-D' (Source O2 2023)

It can be seen from Figure 15-13, the pit located in the southeast of the current optimal shell only contains one high grade ore body at a significant depth, and O2 has evaluated this portion of the resource to be high and relatively low economic confidence given the high likelihood of increased strip ratio in developing a pit design to access this ore, and the potential for further ore loss and dilution in a small pit. Therefore, this isolated pit has been excluded from the Bayan Khundii ultimate pit design and as well as reserve calculation.

The below Table 15-10 shows the BK pushback and Whittle output summary.

Table 15-10 Bayan Khundii Pushback and Whittle Output Summary

Deposit	Total	Waste	Ore	Strip	Dil. Au	Gold Recovered
	Mt	Mt	Mt	Ratio	g/t	tr.oz
BK – PB1	7.9	6.8	1.0	6.5	5.8	169,263
BK - PB2	34.4	32.0	2.5	13.0	3.5	271,650
BK sub-total	**42.3**	**38.8**	**3.5**	**11.0**	**4.2**	**440,913**

Dark Horse Pit Shell Selection

According to the DK optimization output pit by pit graph below, there is no remarkable interim pit/pushback identified, and with consideration of the total pit volume and ore distribution, there is no need for pushback at DH deposit as the study output this time. O2 recommends proceeding with a single pit development and schedule for DH.

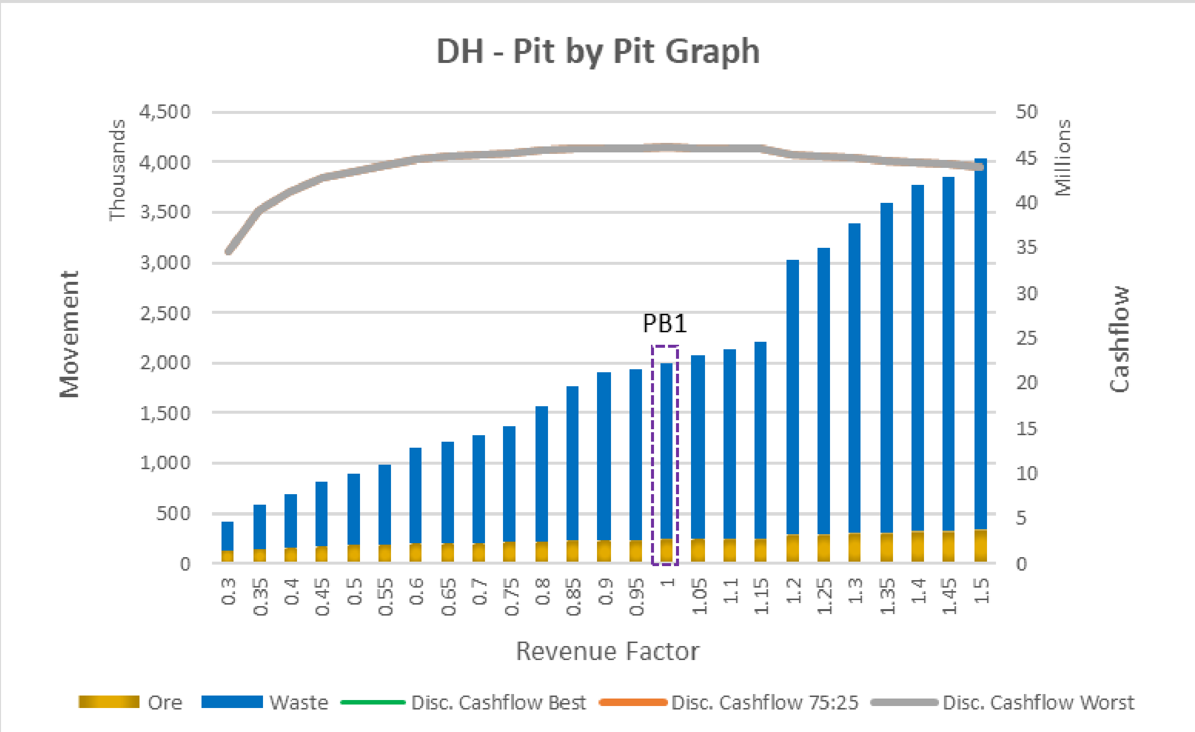


Figure 15-18 Dark Horse Pit by pit graph - Interim Pit Selection (Source O2 2023)

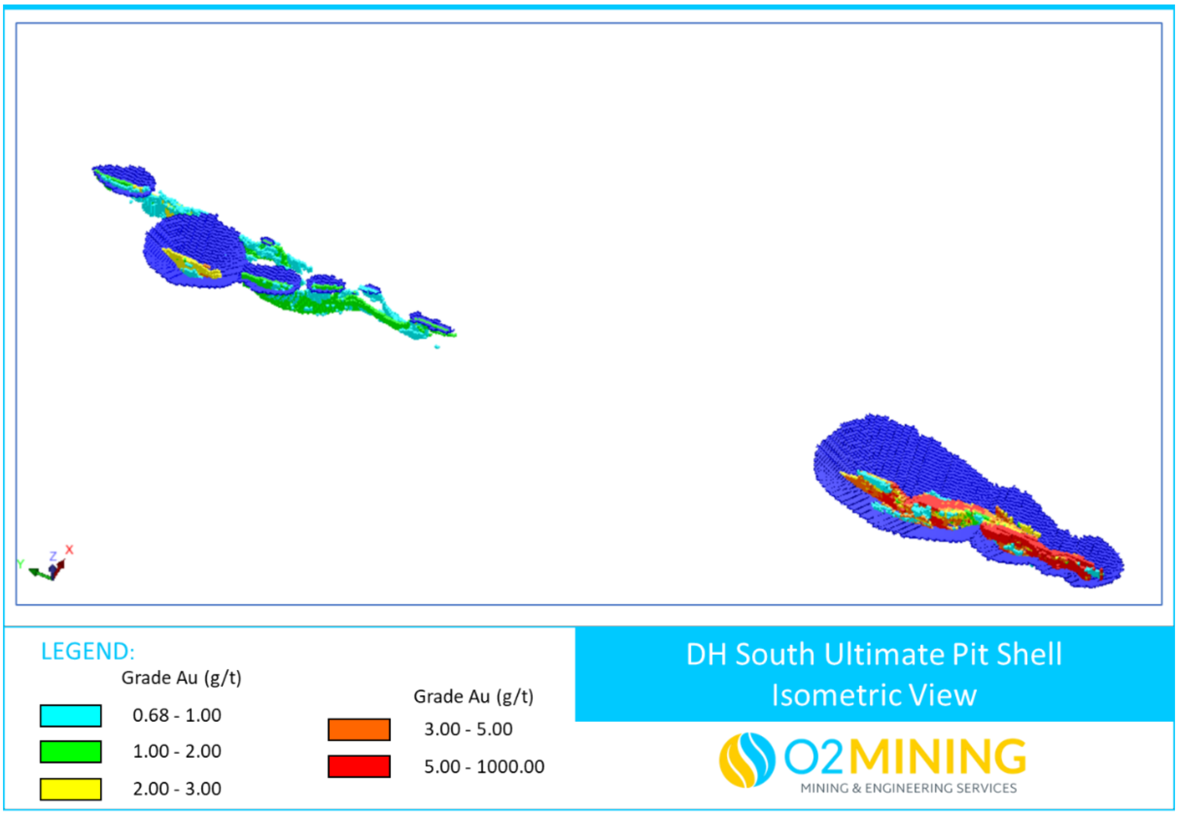


Figure 15-19 Dark Horse South Ultimate Pit Shell Isometric View (Source O2 2023)

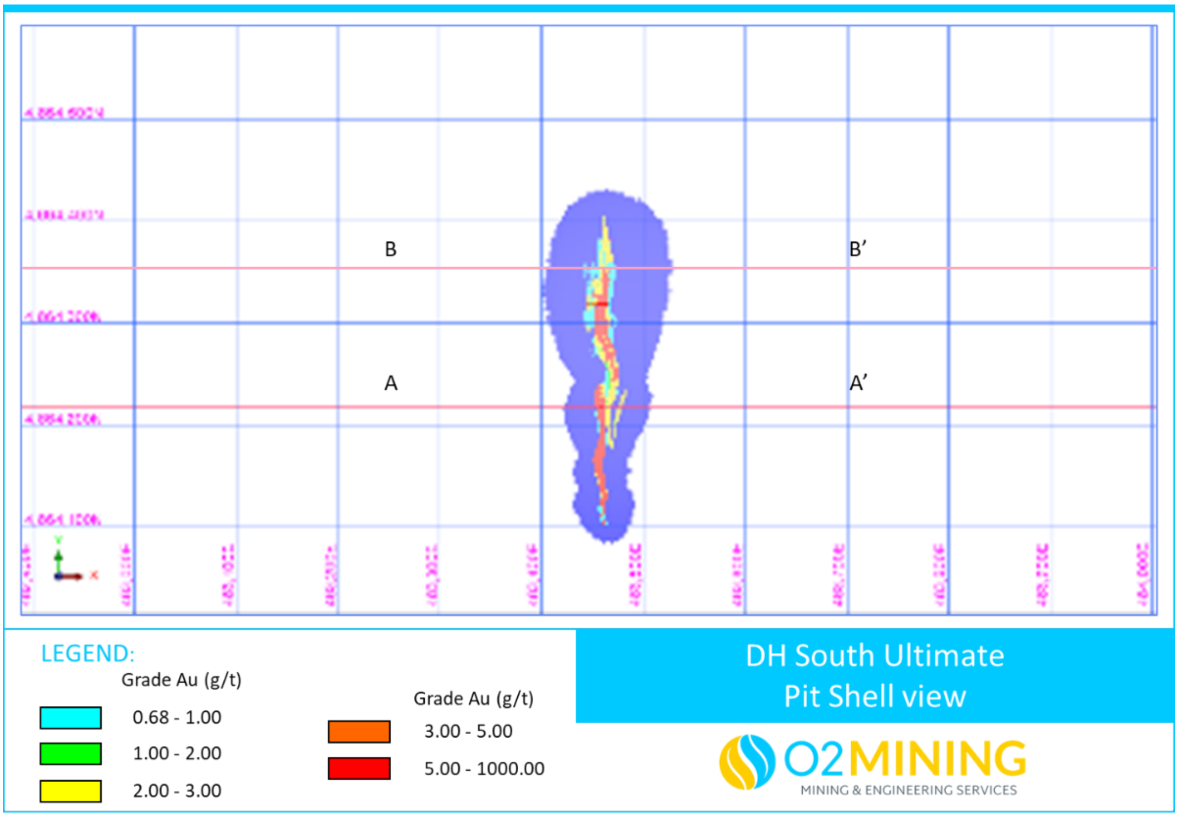


Figure 15-20 Dark Horse South Ultimate Pit Shell View (Source O2 2023)

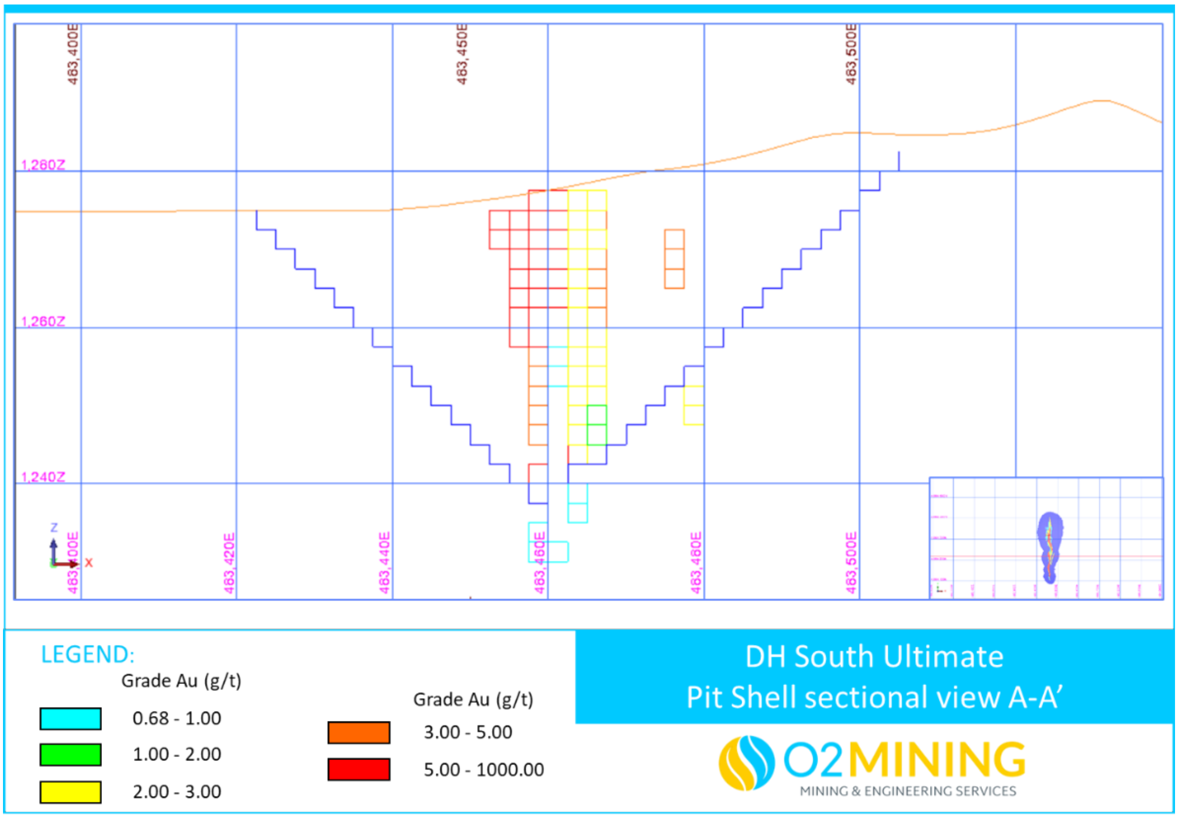


Figure 15-21 DH South Ultimate Pit Shell view A-A' (Source O2 2023)

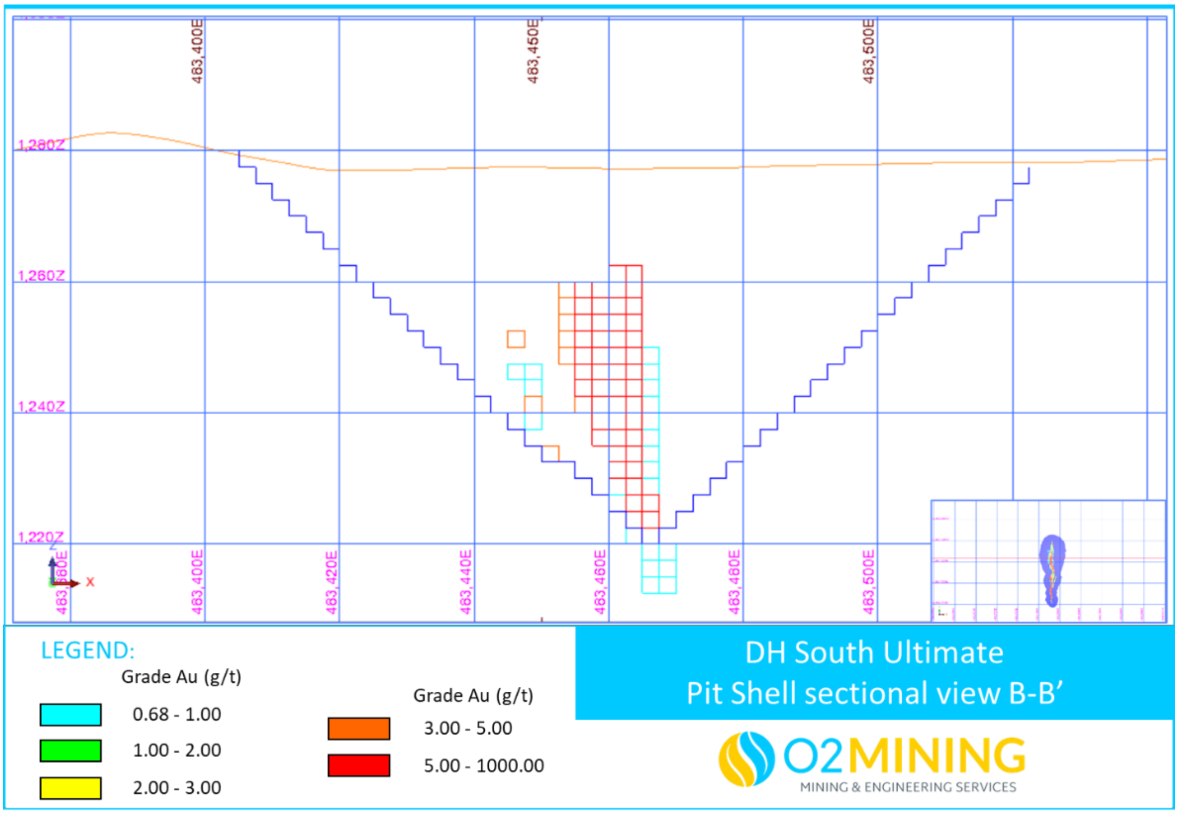


Figure 15-22 DH South Ultimate Pit Shell view B-B' (Source O2 2023)

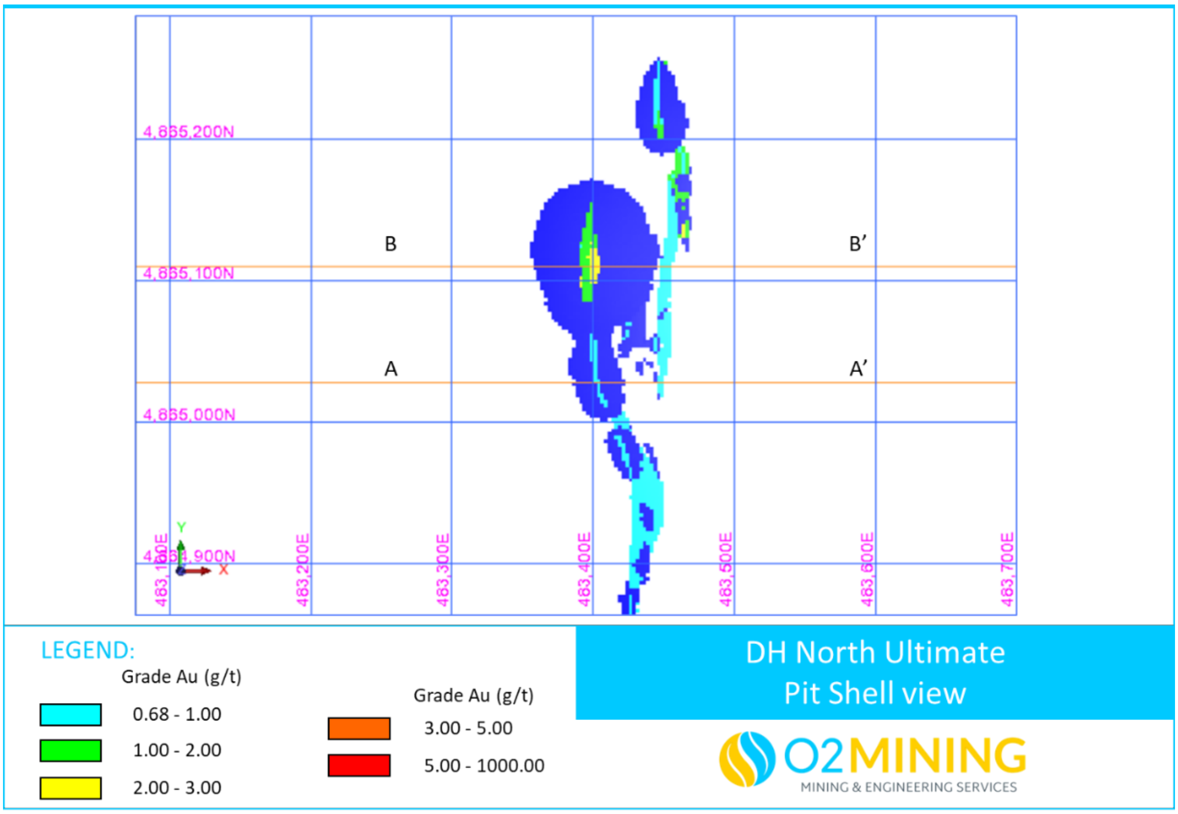


Figure 15-23 Dark Horse North Ultimate Pit Shell View (Source O2 2023)

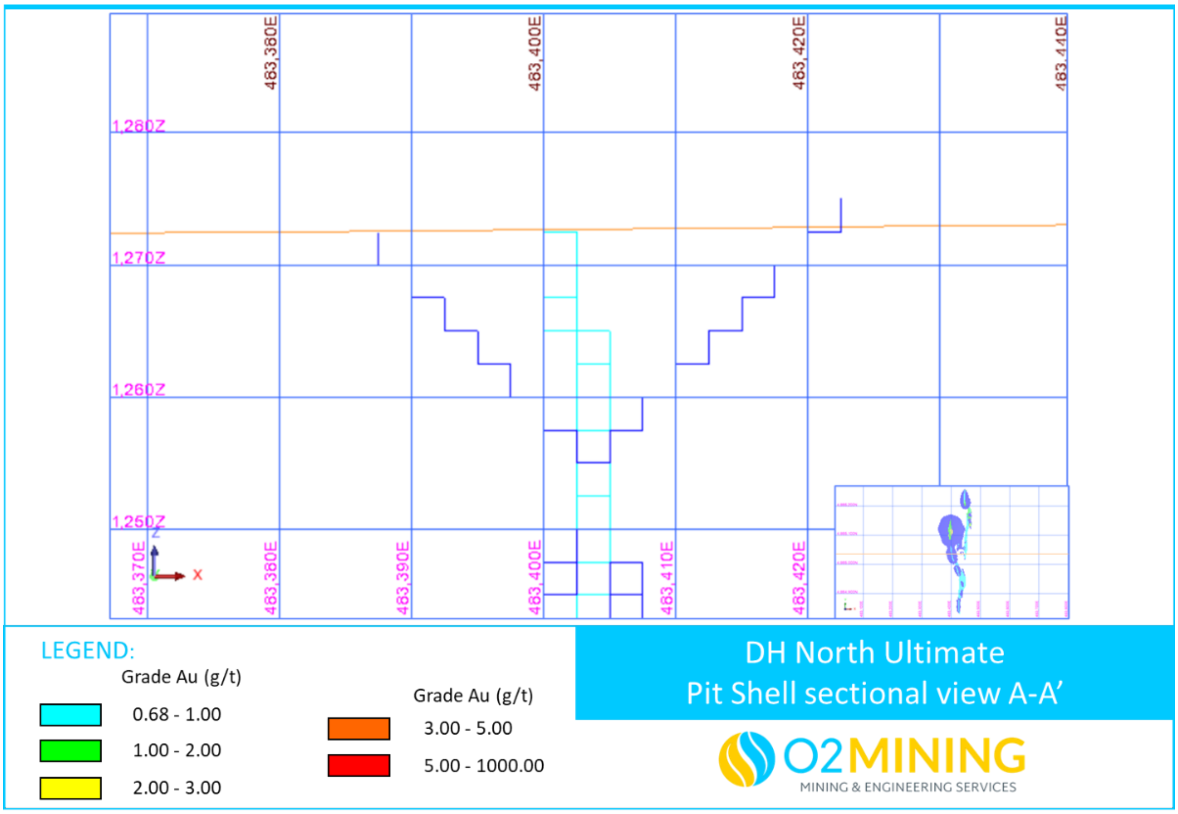


Figure 15-24 DH North Ultimate Pit Shell view A-A' (Source O2 2023)

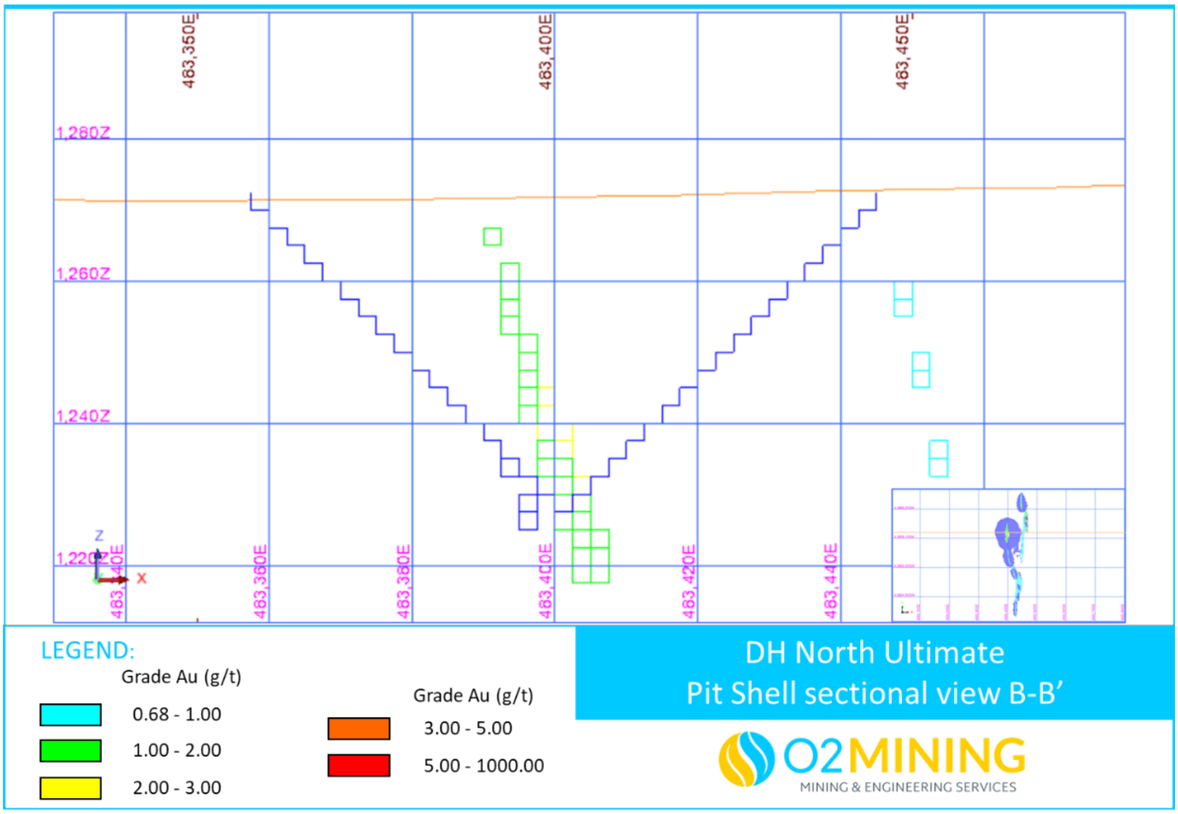


Figure 15-25 DH North Ultimate Pit Shell view B-B' (Source O2 2023)

Table 15-11 below shows the DH Whittle output summary.

Table 15-11 Dark Horse Whittle Output Summary

Deposit	Total	Waste	Ore	Strip	Dil. Au	Gold Recovered
	Mt	Mt	Mt	Ratio	g/t	tr.oz
DH sub-total	2.0	1.8	0.2	7.2	6.5	44,922

DH South pit is the high-grade pit, but north pit is reasonably small, therefore high strip ratio is foreseeable in pit design. As a result, the northern pit has not been included in the further pit design, schedule or reserve for this study.

15.6. Cut-off Grades

The cut-off grade applied is to physically distinguish ore and waste when mining, as well as support the calculation of overall economic reserve. Cut-off grade determination is driven by all economic factors which can fluctuate period by period, such as gold price, royalty, processing cost, process recovery, overhead, metal price and opportunities cost etc. Cut-off grade is calculated for reserve estimation, mine schedule and cashflow estimation and project economic performance based on a set of fixed factors shown in Table 15-12 and Table 15-13. The cut-off grade is selected based on when the processing cost of a ton of ore equals to the return of gold sales recovered from this ton of ore.

Work completed following the pit optimizations resulted in changes to some economic inputs for the cut-off grade calculation and ultimate financial analysis. The global impact of the changes was deemed to have no material impact on the original optimizations following a validation process. This is further validated by the financial model which shows no periods of negative operating cash flow.

Table 15-12 BK Au Cut-off Grade Factors and Calculation

Factor	Value	Units
Gold Price	1816	$/oz
Gold Price	58.4	$/g
Processing Recovery at COG (1)	93	%
Processing Variable Cost	25.56	$/t
Sell Cost (Royalty)	3.49	$/g
Sell Cost (Smelting)	0.16	$/g
Sell Cost (Processing Overhead)	5.35	$/g
Sell Cost (G&A)	1.13*	$/g
Calculated COG (2)	0.63	g/t

Table 15-13 DH Au Cut-off Grade Factors and Calculation.

Factor	Value	Units
Gold Price	1816	$/oz
Gold Price	58.4	$/g
Processing Recovery at COG (1)	89	%
Processing Variable Cost	26.40	$/t
Sell Cost (Royalty)	3.49	$/g
Sell Cost (Smelting)	0.16	$/g
Processing Recovery at COG (1)	89	%
Sell Cost (G&A)	1.13	$/g
Calculated COG (2)	0.68	g/t

Notes:

**G&A cost excludes offsite costs*

1. *Processing recovery is dependent on grade, an iterative approach was used to calculate the recovery and cut-off grade.*
2. *COG = Processing Variable Costs/Processing Recovery x (Gold Price - Sell Costs).*

15.7. Pit Design

15.7.1. Ultimate Pit design

The ultimate design parameters proposed honor the findings from pit optimization, the various operational constraints associated with mining activities, and the final geotechnical recommendation from Fugro except for within the weathered zone, where the Fugro recommendation suggests a 5 degree shallower batter face angle and reduced bench height from 15m to 8m. O2 undertook an evaluation of the impact on ore and waste quantities in the final pit limit used as the basis of the FS update. Using the Fugro recommended pit slope parameters would increase total waste moved by 2.8% and ore by 0.1% for an overall total movement increase of 2.6%. O2 notes that Fugro have adopted a relatively conservative ground disturbance factor of 1.0, whereas, with careful blasting and excavation practices, a ground disturbance factor of 0.7 could be achieved. O2 recommends further optimization of design may be required should early blasting and excavations in BK result in higher ground disturbance factors and/or pit slope stability issues. Close monitoring of blasting and excavation practices along with frequent pit slope stability assessments by a qualified geotechnical professional during the development of upper pit section at BK pit are advised.

Table 15-14 Pit Design Parameters

Parameter	Value	Unit
Bench Height	15.0	m
Batter Angle	70	degree
Berm Width	8	m
Ramp width - Dual Lane	21	m
Ramp width - Single Lane	13	m
Switch Back Radius	11	m

Bayan Khundii Ultimate Pit Design

Figure 15-26 shows the final pit design. Single permanent ramps are used to reach the bottom of the Striker pit at 1145 mRL, Midfield pit at 1120mRL and North Midfield pit also at 1120 mRL.

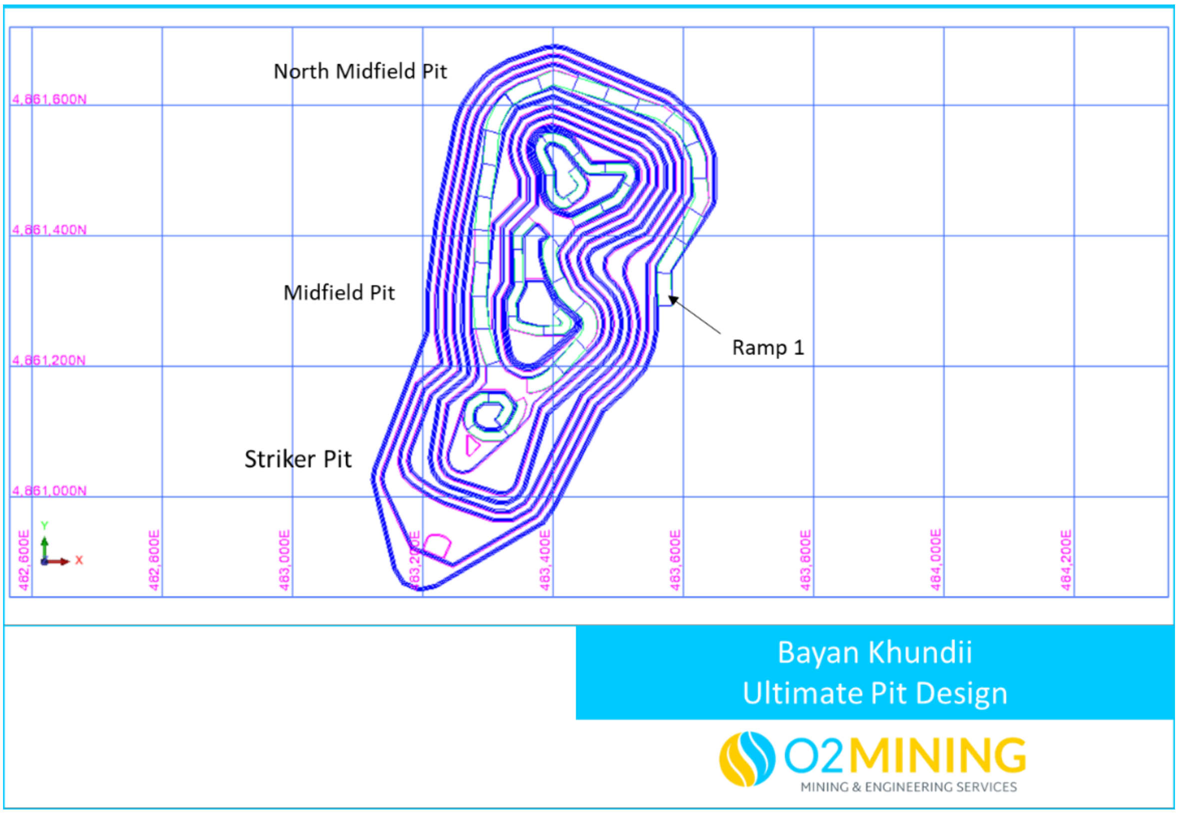


Figure 15-26 BK Ultimate Pit Design – Plan View (Source O2 2023)

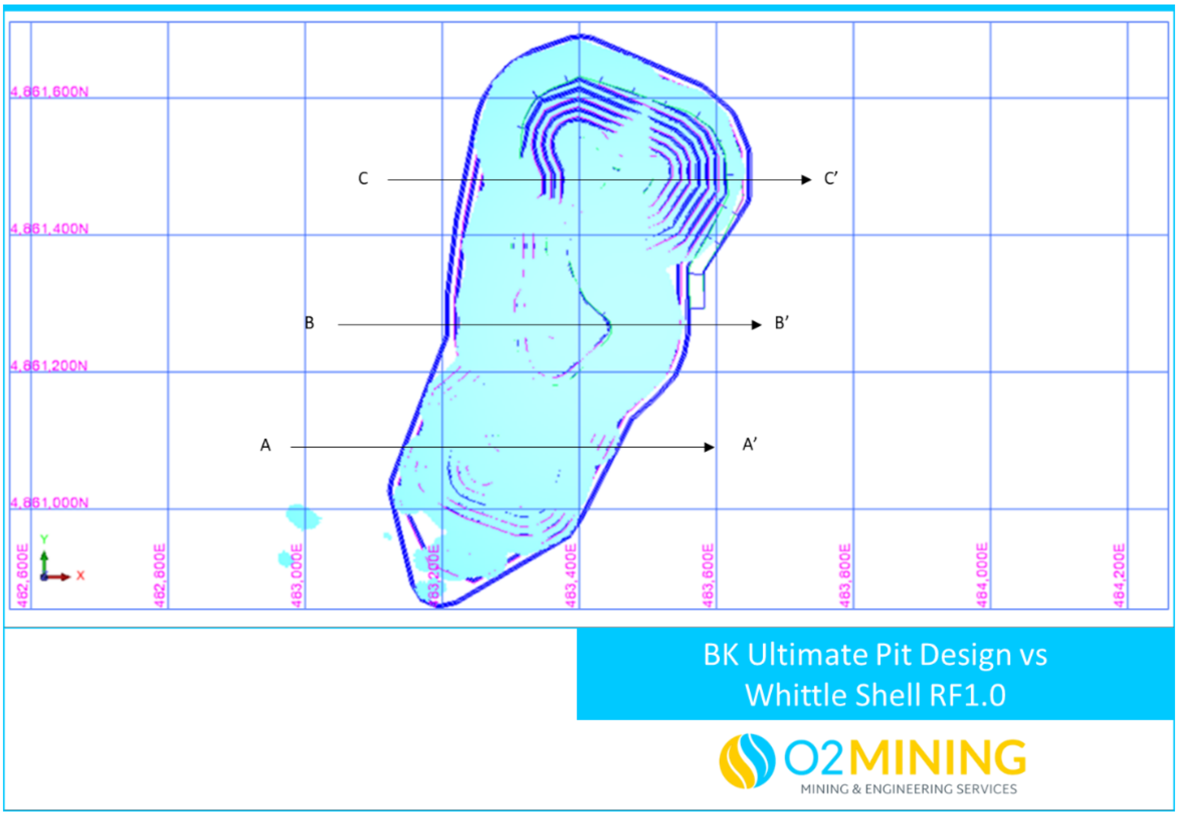


Figure 15-27 BK Ultimate Pit Design vs Whittle Shell RF1.0 (Source O2 2023)

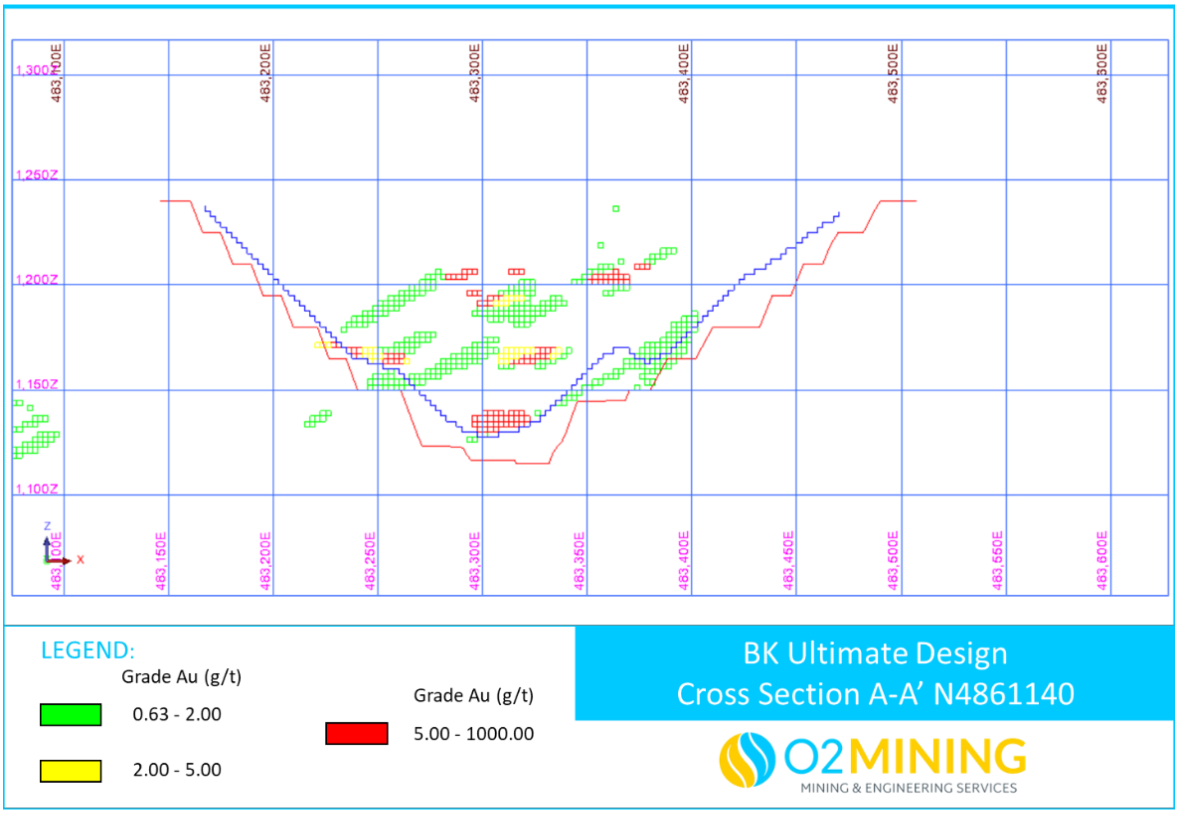


Figure 15-28 BK Ultimate Design Cross Section: A-A' N4861140 (Source O2 2023)

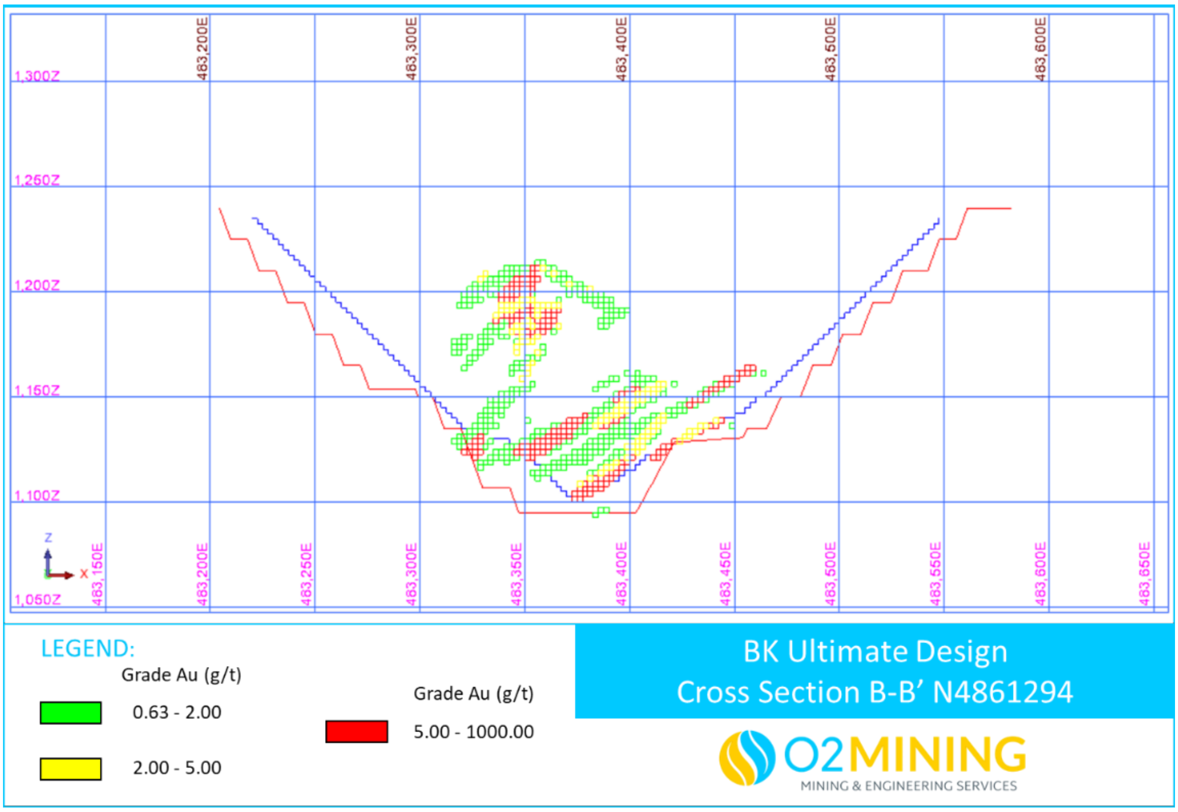


Figure 15-29 BK Ultimate Design Cross Section: B-B' N4861294 (Source O2 2023)

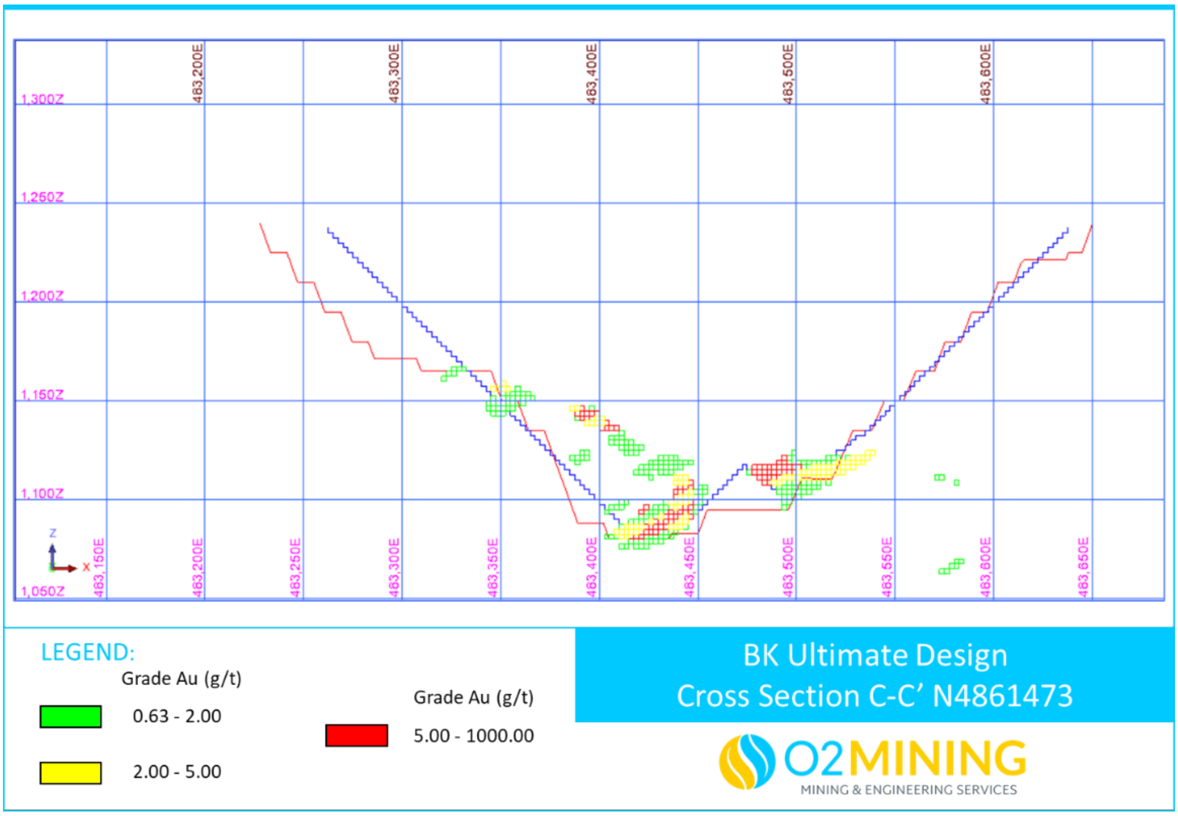


Figure 15-30 BK Ultimate Design Cross Section: C-C' N4861473 (Source O2 2023)

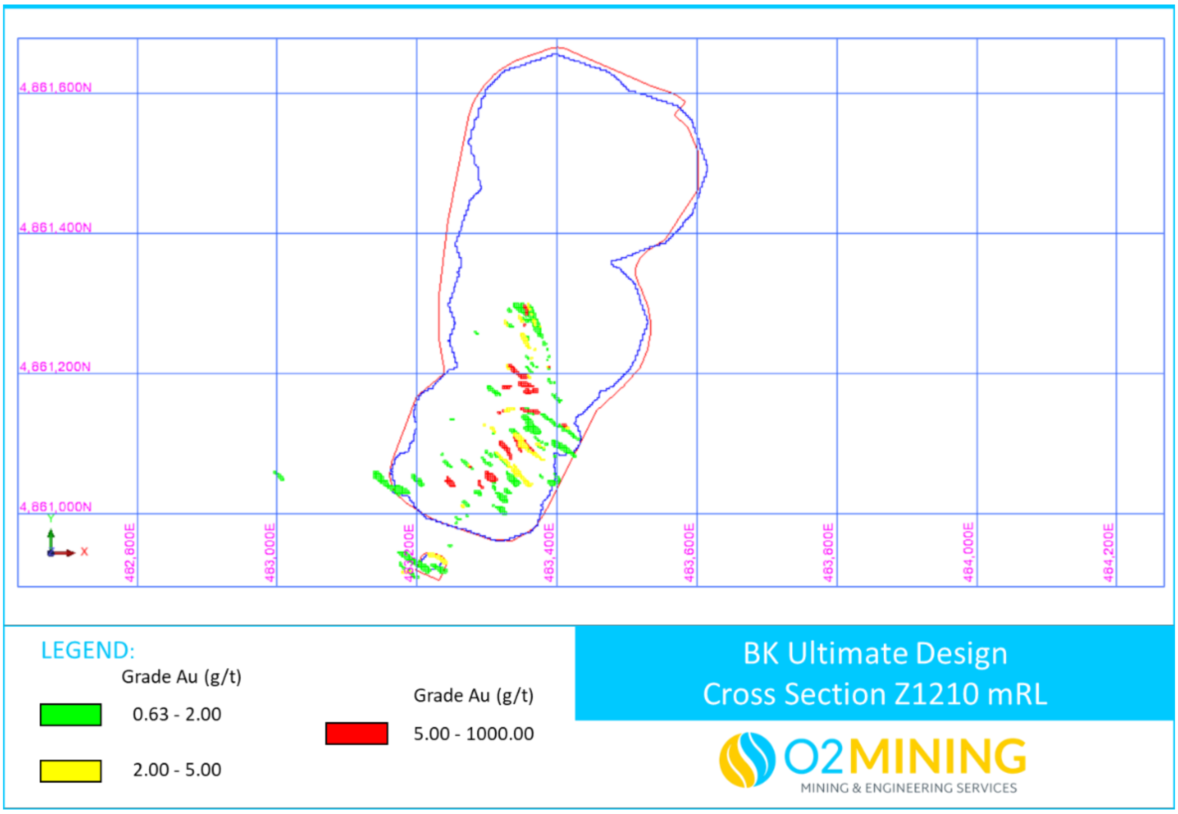


Figure 15-31 BK Ultimate Design Cross Section: Z1210 mRL (Source O2 2023)

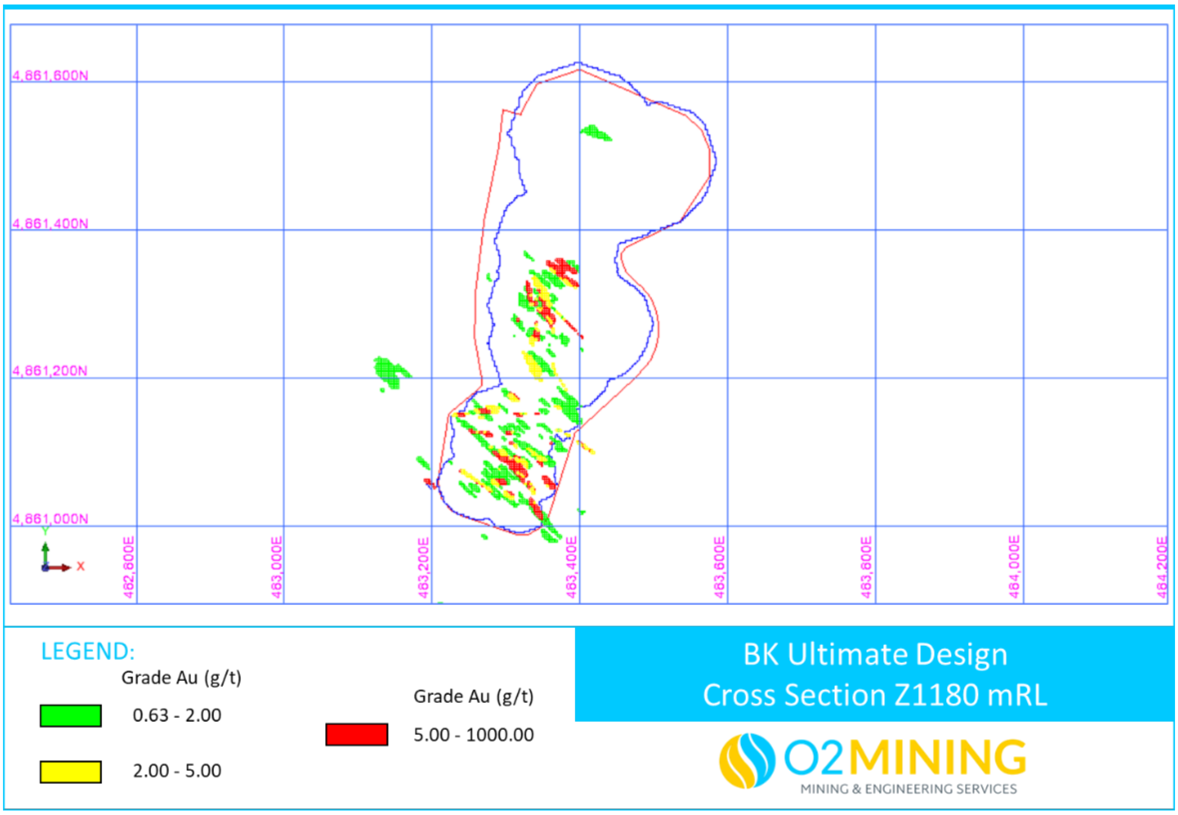


Figure 15-32 BK Ultimate Design Cross Section: Z1180 mRL (Source O2 2023)

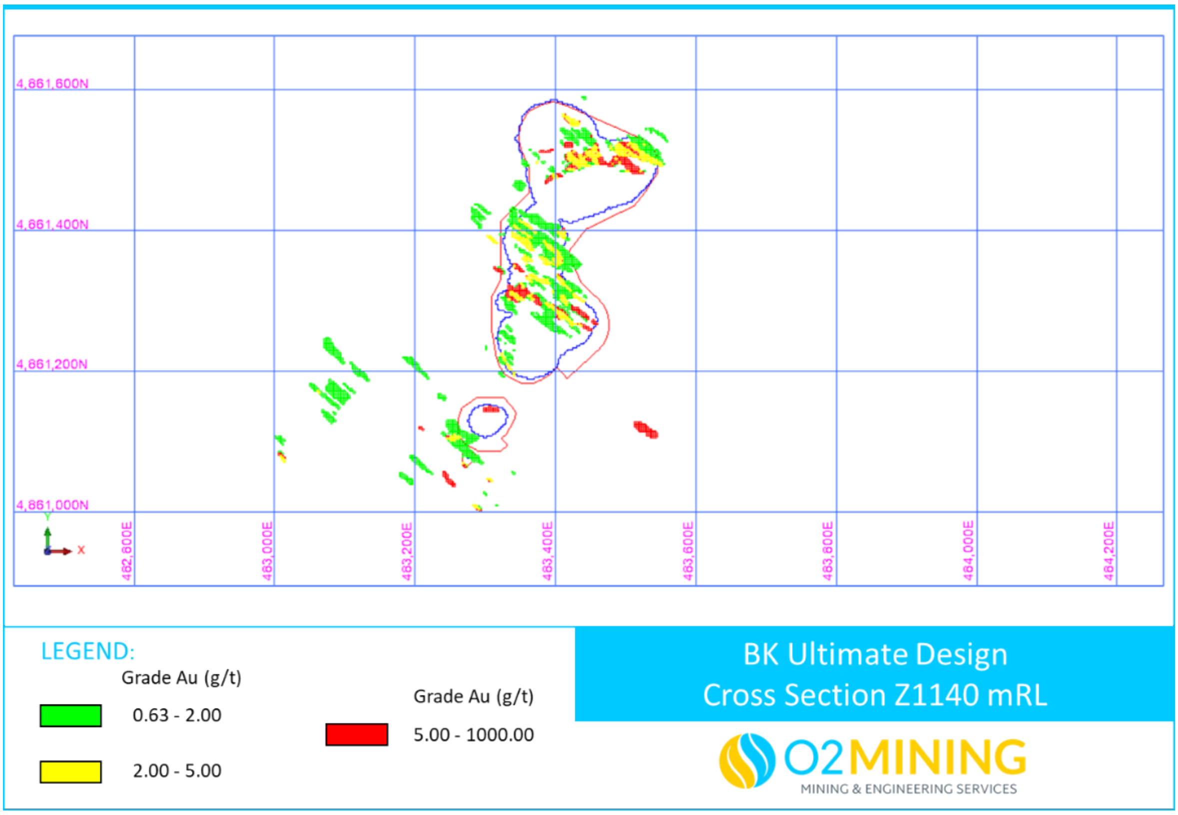


Figure 15-33 BK Ultimate Design Cross Section: Z1140 mRL (Source O2 2023)

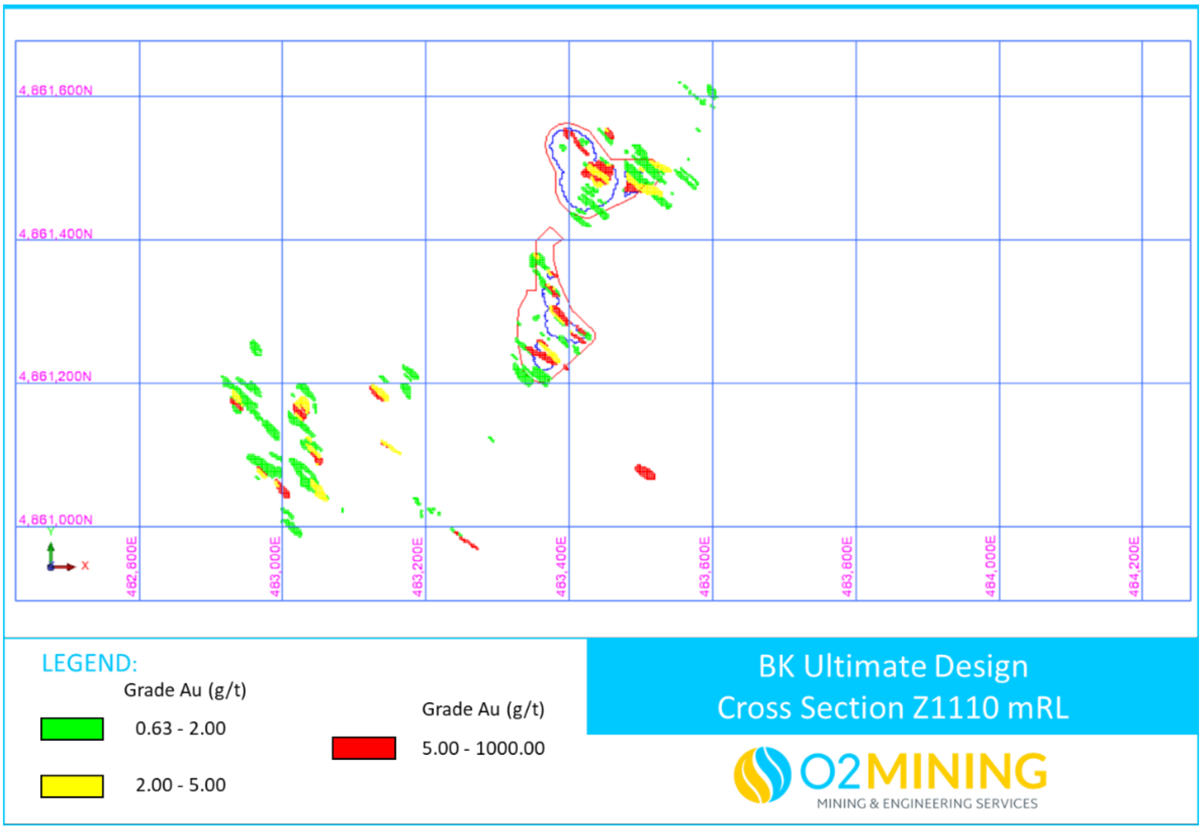


Figure 15-34 **BK Ultimate Design Cross Section: Z1110 mRL (Source O2 2023)**

Dark Horse South Ultimate Pit Design

Figure 15-35 shows the final pit design for Dark Horse South.

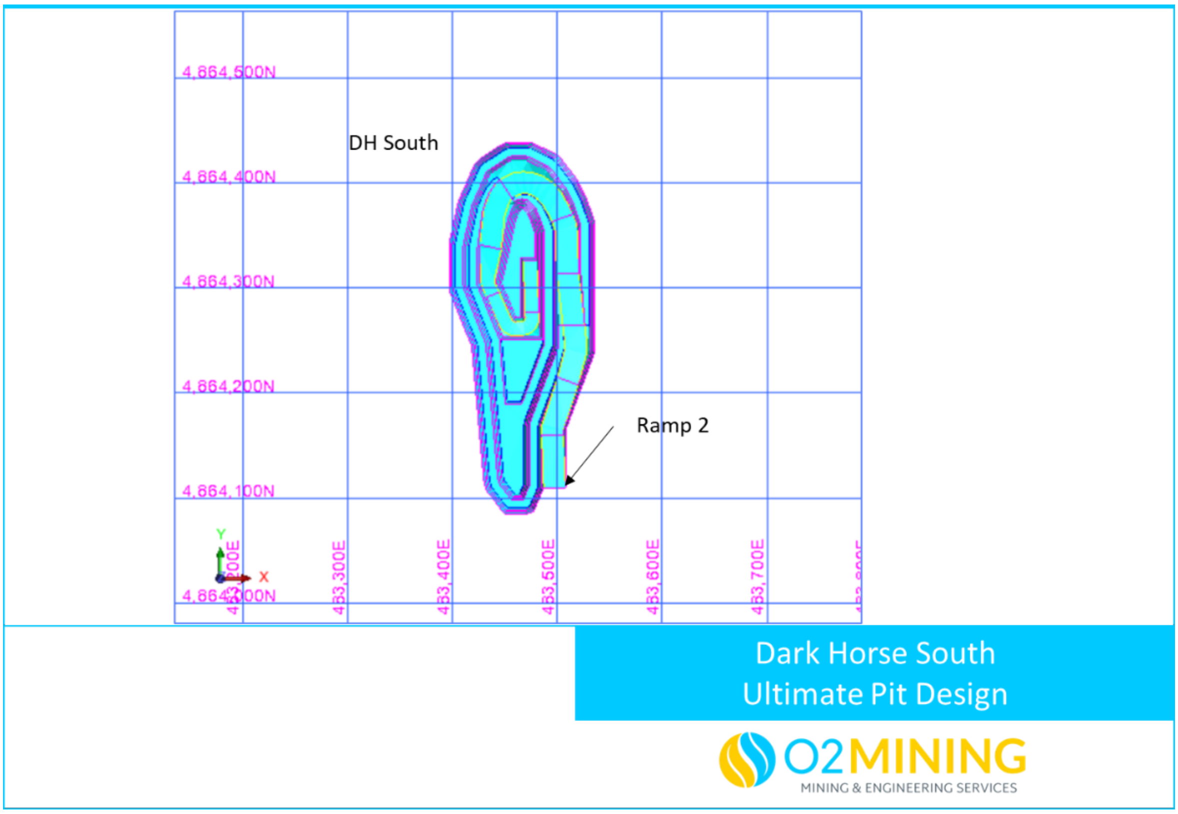


Figure 15-35 DH South Ultimate Pit Design – Plan View (Source O2 2023)

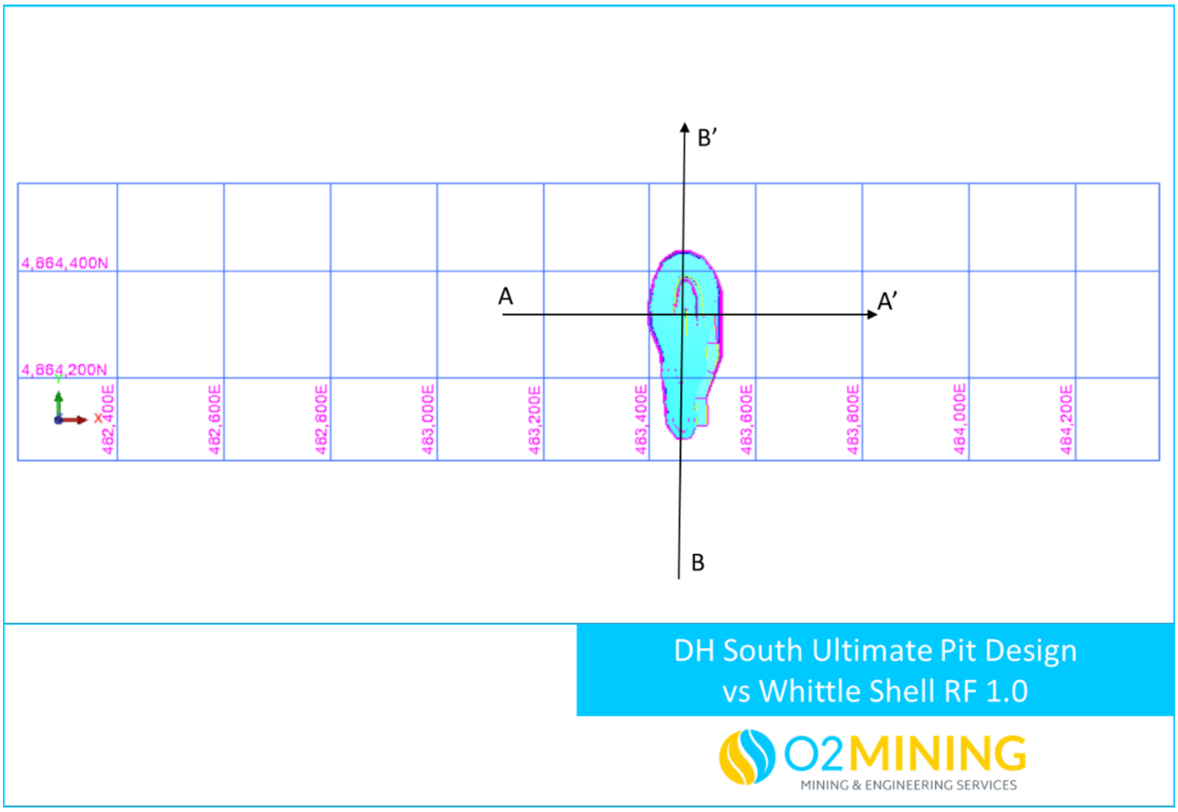


Figure 15-36 DH South Ultimate Pit Design vs Whittle Shell RF1.0 (Source O2 2023)

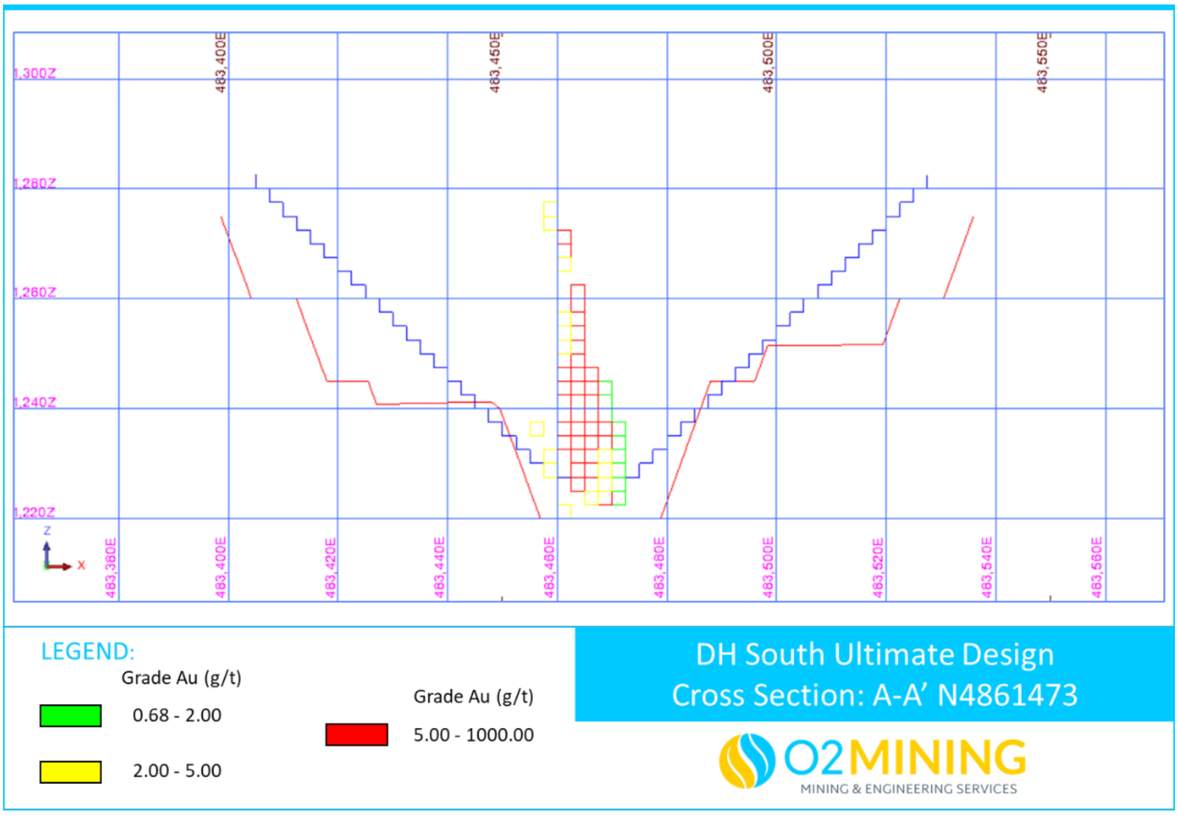


Figure 15-37 DH South Ultimate Design Cross Section: A-A' N4861473 (Source O2 2023)

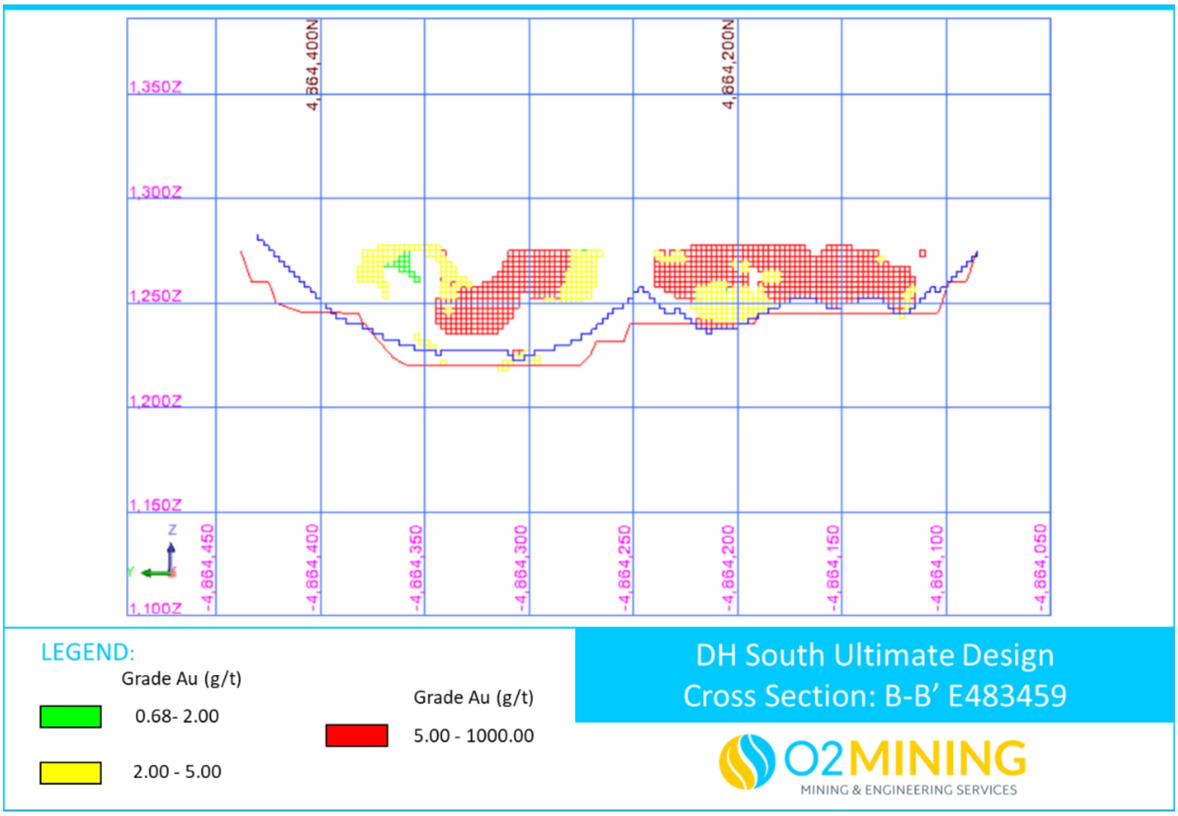


Figure 15-38 DH South Ultimate Design Cross Section: B-B' E483459 (Source O2 2023)

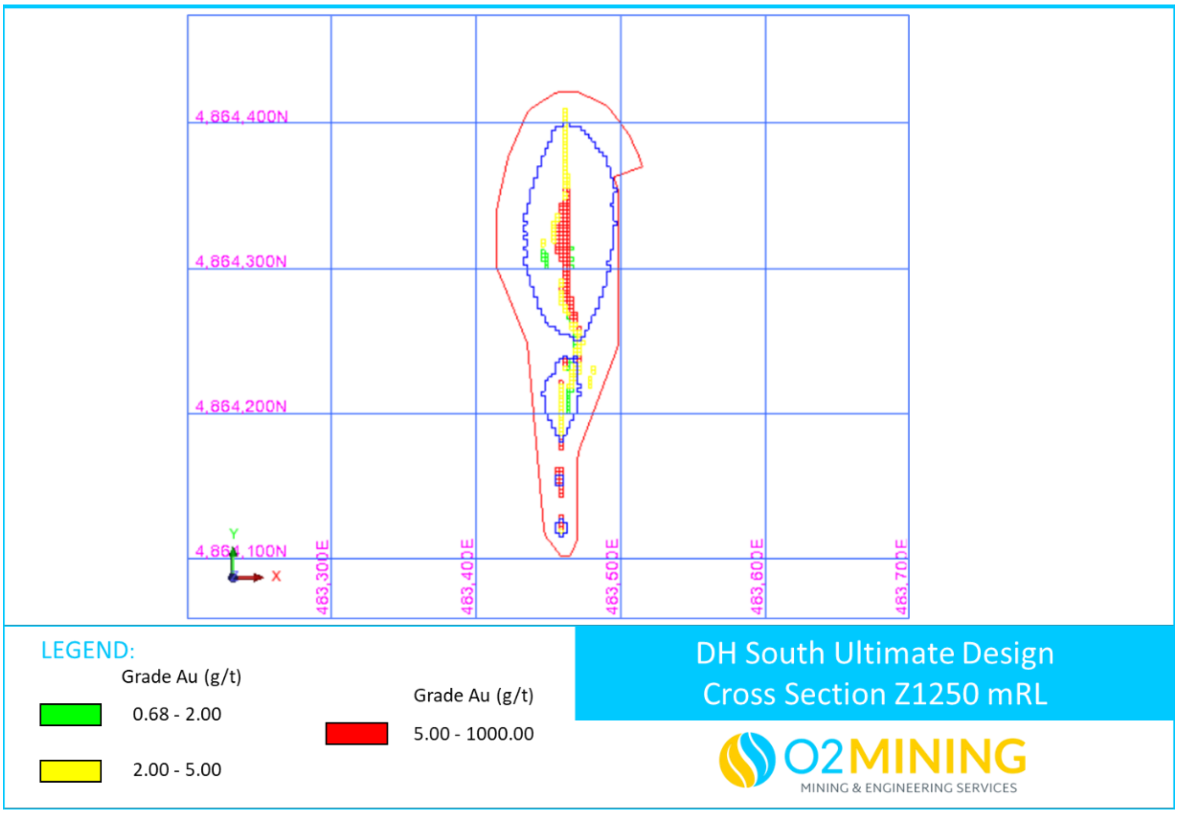


Figure 15-39 DH Ultimate Design Cross Section: Z1250 mRL (Source O2 2023)

15.7.2. Stage Design

15.7.2.1. BK Staging Design

The Project adopted a staged pit development approach. The objective of conducting pit staging design is:

- Identify a feasible overall mine development strategy;
- Maintain consistent process plant feed rate throughout the mine life with a consistent approach to mine development;
- Maintain consistent overall annual mining productivity to efficiently use mobile mining fleet capital investment;
- Maintain consistent fleet performance; and
- Minimize the peak volume of ore stockpiling.

The stage design has considered the interim pit development strategy from the Whittle outcome whilst ensuring adherence to good industry practices regarding minimum mining widths and logical pit development.

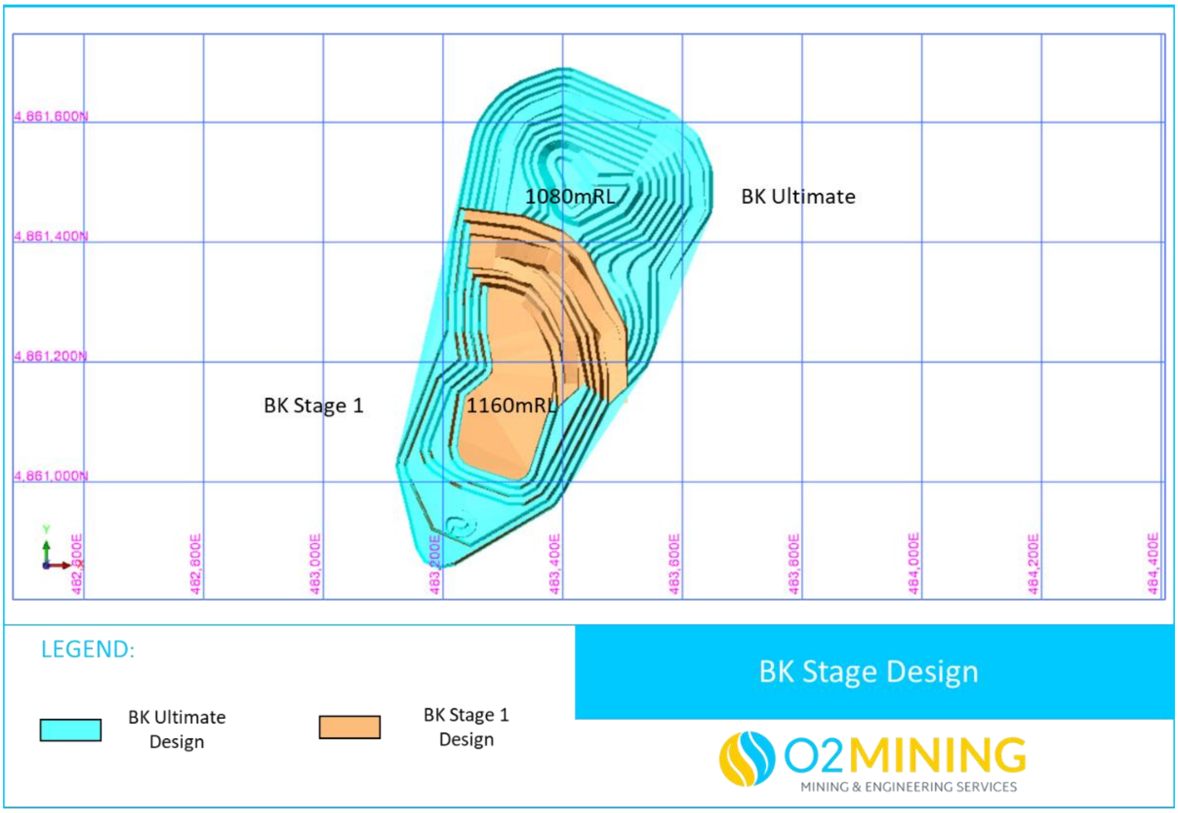


Figure 15-40 BK Stage Pit Design (Source O2 2023)

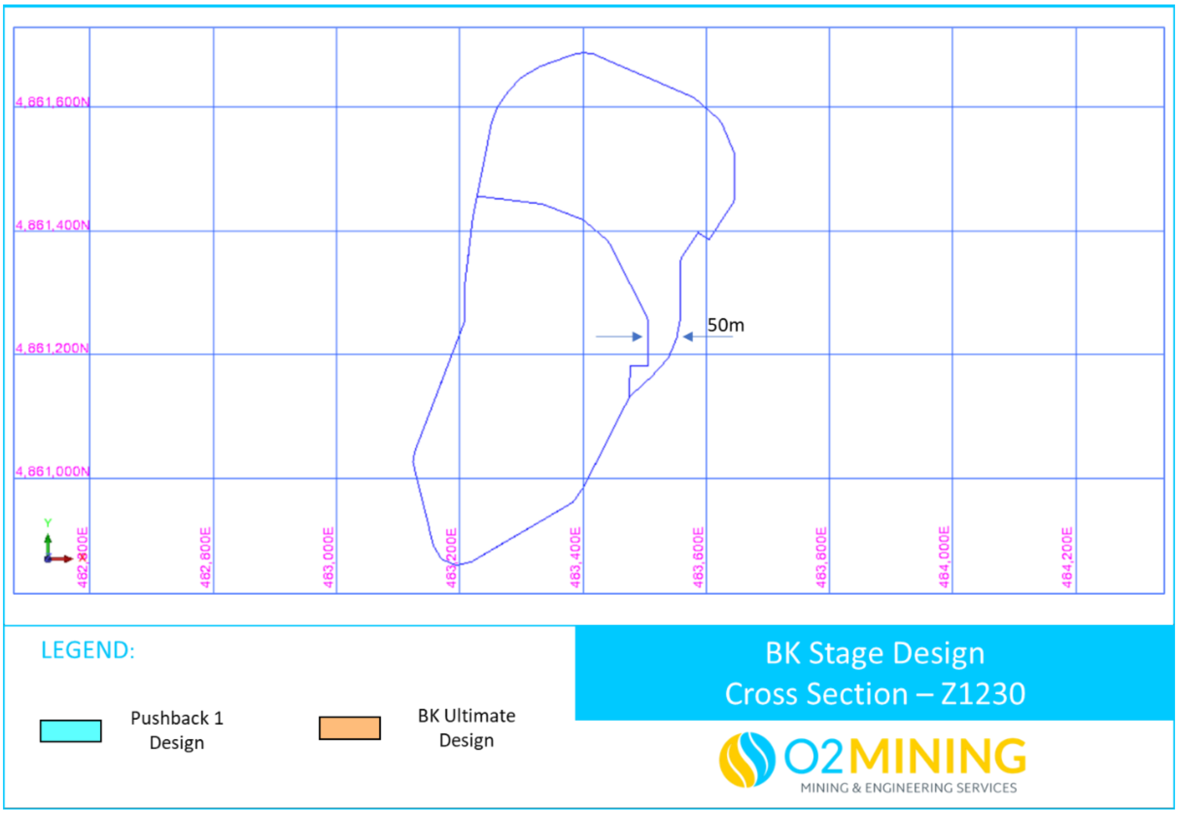


Figure 15-41 BK Stage Design Cross Section – Z1230 (Source O2 2023)

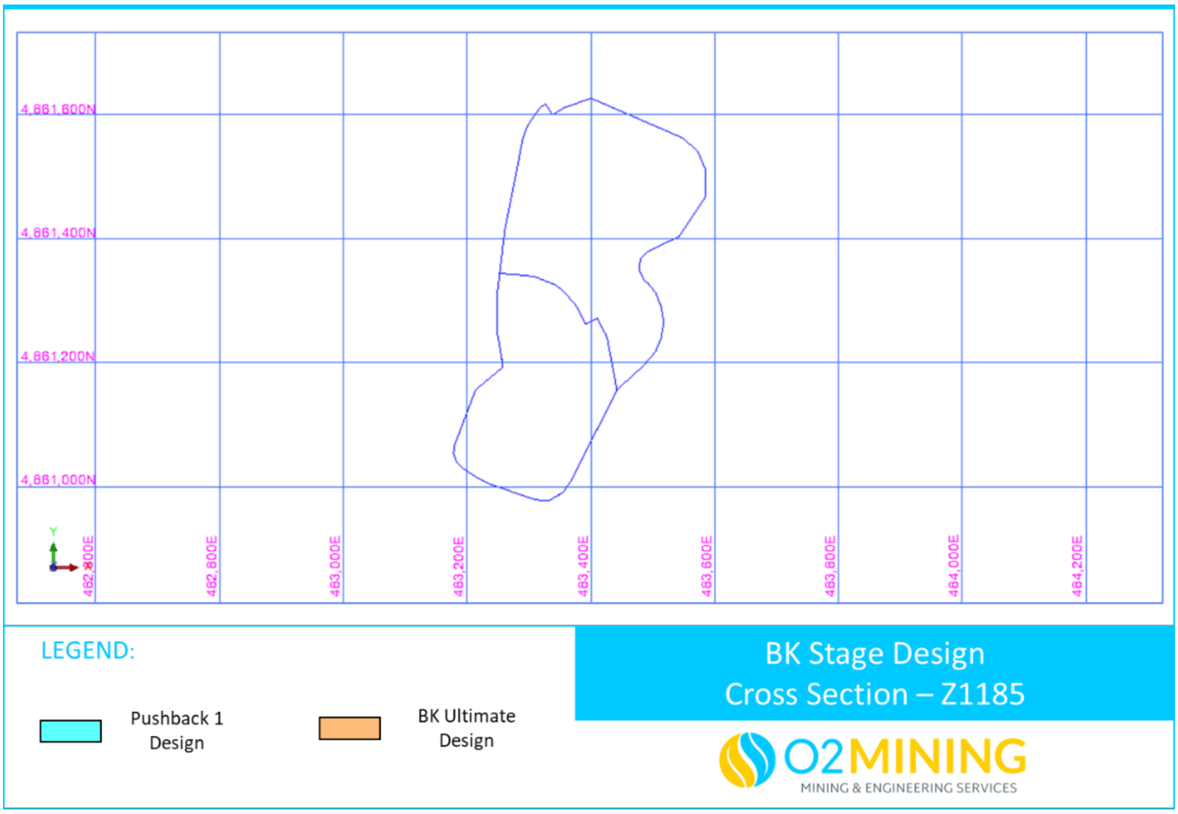


Figure 15-42 BK Stage Design Elevation Section – Z1185 (Source O2 2023)

15.7.2.2. DH Staging Design

Given the relatively low volume contained within the DH overall pit, there is no additional value in using a staged mining approach and therefore a single stage is proposed.

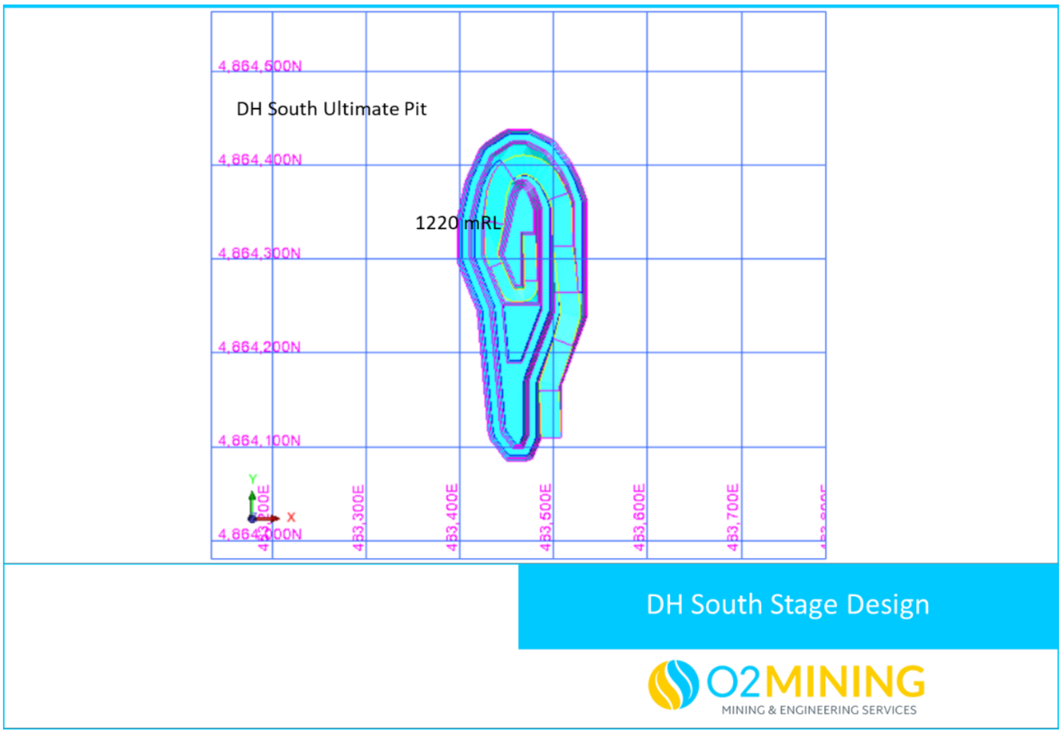


Figure 15-43 DH South Stage Pit Design (Source O2 2023)

The staged mining approach presented allows for progressive pit slope development trials and evaluation as mining progresses throughout the mine life. This will enable a better understanding of progressive pit slope stability in future pit development and allows the operator to adjust the pit design where necessary based on those findings progressively throughout the mine development to ensure an acceptably safe outcome.

15.8. Mineable Quantities

Mineable quantities have been classified as outlined in Table 15-15 and Table 15-16.

Table 15-15 Bayan Khundii Material Classification

Material Type	Description
Bulk Waste	Au = 0.0 g/t
Mineralized Waste	0 g/t< Au < 0.3 g/t
Subgrade Waste	0.3 g/t < Au < COG (0.63 g/t)
High-Grade ore	(Au>6g/t)
Mid-Grade Ore	(6 g/t>Au>2g/t)
Low-Grade Ore	(2 g/t >Au>COG 0.63g/t)

Table 15-16 Dark Horse Material Classification

Material Type	Description
Bulk Waste	Au = 0.0 g/t
Mineralized Waste	0 g/t< Au < 0.3 g/t
Subgrade Waste	0.3 g/t < Au < COG (0.68 g/t)
High-Grade ore	(Au>6g/t)
Mid-Grade Ore	(6 g/t>Au>2g/t)
Low-Grade Ore	(2 g/t >Au>COG 0.68g/t)

Mineable quantities have been classified into the following categories.

- Ex-pit Mineable Quantity – all mineable quantity is to be classified as waste or ore. Ore inventory is further classified into 3 types by Au grade ranking for the purpose of stockpiling and blending strategy to meet consistent grade targets.
- Drill and Blast Quantity – Classification of drilling and blasting parameters for ore, waste, trim, and pre-split blasts have been developed and output from the schedule.

15.8.1. Ex-pit Mineable Quantity

Table 15-17 below provides the total mineable by stage within Bayan Khundii and Dark Horse pits.

Stage 1 of BK is much bigger than the Whittle shell selected as the base for stage 1 design. The reason for this is O2 would have more productivity focus rather than overall pit volume constrained by final Whittle shell. For example, pit wall, especially temporary wall and access is not strictly following the Whittle pushback 1 shell boundary.

Table 15-17 Ex-pit Mineable Quantity Total Summary

Stage	Total	Waste	ORE_Dil	AU_Dil	AU_Qty DIL	Au_Qty REC	Gold Process Recovery	AG_Dil	AG_Qty DIL	AG_Qty REC	Silver Process Recovery	Strip Ratio
No.	Mt	Mt	Mt	g/t	k tr oz	k tr oz	%	g/t	k tr oz	k tr oz	%	t/t
BK Stage 1	17.8	16.2	1.6	3.5	178.7	165.6	92.7%	1.5	77	42	55.0%	10.32
BK Stage 2	27.5	25.3	2.2	4.0	286.2	266.9	93.3%	2.0	144	79	55.0%	11.34
DH South	2.7	2.5	0.2	7.0	48.8	43.5	89.0%	0.0	0	0	0.0%	11.30
Total	47.96	44	4.0	4.0	513.7	476.0	92.7%	1.7	221	121	55.0%	10.94

Table 15-18 below provides the summary of the waste mineable by category in each of the mining stages.

Table 15-18 Ex-pit Mineable Quantity Waste Summary

Pit Phase	WST_BULK	WST_MIN	WST_SUB
	ton	ton	ton
BK Stage 1	13,468,285	1,045,298	1,679,498
BK Stage 2	23,000,776	512,882	1,787,481
DH South	2,167,013	106,259	177,795
Total	38,636,074	1,664,439	3,644,774

Note: Wst_Sub is the sub-grade material 0.3g/t<au<COG; Wst_Min is the mineralized material 0g/t<au< 0.3g/t, Wst_Bulk is waste material with Zero au grade.

Sub-grade material is currently treated as waste, but it is designed to be stockpiled separately from other waste within the IWF near the process plant (southwest corner of the IWF). This material is potentially economically viable to re-handle and process in the future in the event modifying factors improve.

Table 15-19 provides a summary of the ore types by grade categories in each of the mining stages.

Table 15-19 Ex-pit Mineable Quantity Ore Summary

Stage	High Grade (Au>6g/t)		Mid-Grade (6g/t>Au>2g/t)		Low Grade (2g/t>Au>COG 0.63g/t)	
No.	ton	g/t	ton	g/t	ton	g/t
BK Stage 1	294,243	11.7	409,340	3.5	865,886	0.8
BK Stage 2	464,255	13.1	528,936	3.6	1,238,181	0.8
DH South	102,354	11.5	92,408	3.5	22,203	1.0
Total	860,852	12.4	1,030,683	3.5	2,126,270	0.8

Table 15-20 provides a summary of the mineable quantity categorized into blasted, free-dig and selective material by stage.

Table 15-20 Ex-pit Mineable Quantity Excavation Summary.

Stage No.	Free Dig Waste*	Blasted Waste	Selective Material**
	ton	ton	ton
BK Stage 1	3,206,464	10,367,916	4,188,170
BK Stage 2	2,899,011	20,252,608	4,380,896
DH South	0	2,181,680	486,352
Total	6,105,474	32,802,205	9,055,418

**The free dig material is only from bench 1225mRL and above.*

***Selective material is defined as material classified as waste but immediately adjacent to ore body boundaries, and the high selectivity of excavation is required to expose the ore body but minimize the dilution and loss. In this schedule, mineralized waste and sub-grade waste and ore are all classified as selective material which requires excavation using the smaller-sized excavator and detailed grade control methodology.*

15.8.2. Drill and Blast Quantity

The drill and blast quantities are determined and calculated based on:

- Material type: waste and ore
- Blast type: production blast, trim blast, and pre-split blast.

To determine the quantity of drill and blast we follow the procedures:

Table 15-21 Drill and Blast Material Classification Outline

Step 1	**Production Blast**		**Trim Blast**	**Pre-split**
Step 2	Waste	Ore	Waste	
Blast Quantity Identification and Calculation	All bulk waste exclusive of material broken by trim blast and Free-dig waste material	Ore and material which is within or close to the mineralized zone, where less material movement and selective mining are required.	2 rows of trim blast of row length of the bench perimeter in waste zone only. If there is ore next the wall, it will be blasted as ore material.	Bench perimeter of every 5m bench

Table 15-22 Drill and Blast Pattern Design

Parameter	Unit	Bulk Waste		Ore		Trim Blast		Presplit
Class		1.0		2.0		3.0		4.0
Hole Type		dry	wet	dry	wet	dry	wet	dry
Density	t/bcm	2.53	2.53	2.61	2.61	2.53	2.53	
Drill Hole Diameter	mm	140.0	140.0	89.0	89.0	115.0	115.0	89.0
Explosive Type		ANFO	Emulsion	ANFO	Emulsion	ANFO	Emulsion	Package Emulsion (32mm)

Parameter	Unit	Bulk Waste		Ore		Trim Blast		Presplit
Explosive Density (t/bcm)	t/m3	0.84	1.25	0.84	1.25	0.84	1.25	0.93
Bench	m	5.0	5.0	5.0	5.0	5.0	5.0	5.0
Sub-drill	m	0.5	0.5	0.5	0.5	0.5	0.5	0.0
Burden	m	3.6	3.6	2.3	2.3	3.2	3.2	1.3
Spacing	m	4.2	4.2	2.6	2.6	3.7	3.7	1.5
Yield per Hole	m3/hole	75	75	29	29	58	58	0
Stem Height	m	1.80	1.80	1.80	1.80	1.80	1.80	0.00
Est. PF	kg/bcm	0.64	0.95	0.66	0.98	0.56	0.83	0.00
Est. PF	kg/t	0.25	0.38	0.25	0.38	0.22	0.33	0.00
Ave. PF	kg/t	0.28		0.28		0.24		

Table 15-23 Drill and Blast Quantity Summary

Stage No.	Bulk Waste	Ore & Selective Waste*	Trim Material**	Pre-split
	ton	ton	ton	m
BK Stage 1	9,555,941	4,188,170	811,975	10,150
BK Stage 2	17,801,948	4,380,896	2,450,660	30,977
DH South	1,796,454	486,352	385,226	4,867
Total	**29,154,343**	**9,055,418**	**3,647,861**	**45,994**

**Selective waste is min of 0-0.3g/t au grade ore, and sub of 0.3-0.63g/t for Bayan Khundii, and 0.3-0.68g/t for Dark Horse au grade ore.*

***Inventory of trim blast is based on the 5m bench perimeters, regardless of classification as waste or ore.*

15.9. Mineral Reserve Statement

Mineral Reserves estimated for the Bayan Khundii and Dark Horse deposit are based on Measured and Indicated Resources, with an effective data of August 1, 2023 and calculated by O2 Mining, and use FS level engineering designs for the pit and associated process plant operating parameters.

The cut-off grade for mineral reserve calculations is 0.63 g/t Au for Bayan Khundii and 0.68g/t Au for Dark Horse deposit, and was based on gold price of $1,816/oz. The Resource as defined by the regularized block model contains modelled mineral losses of 2.5% and average internal dilution of 10% within the ultimate pit.

A summary of the Mineral Reserves estimated for the Bayan Khundii and Dark Horse deposit with an effective date of August 1, 2023 can be found in Table 15-24 and Table 15-25.

Table 15-24 Bayan Khundii Gold Deposit – Mineral Reserve Statement, August 1, 2023.

Classification	Tonnage (Mt)	Grade (g/t Au)	Contained Au (Koz)	Grade (g/t Ag)	Contained Ag (Koz)
Proven	2.7	4.1	360.2	1.8	159.4
Probable	1.1	3.0	104.7	1.7	61.1
Total	3.8	3.8	464.9	1.8	220.5

Table 15-25 Darkhorse Gold Deposit – Mineral Reserve Statement, August 1, 2023.

Classification	Tonnage (Mt)	Grade (g/t Au)	Contained Au (Koz)
Proven	0	0	0
Probable	0.2	7.0	48.8
Total	0.2	7.0	48.8

Notes:

1. *The effective date of the Mineral Reserve estimate is August 1, 2023. The QP for the estimate is Mr. Julien Lawrence of O2 Mining Limited;*
2. *The Mineral Reserve estimates were prepared with reference to the 2014 Canadian Institute of Mining, Metallurgy and Petroleum ("CIM") Definition Standards (2014 CIM Definition Standards) and the 2003 CIM Best Practice Guidelines;*
3. *Reserves estimated assuming open pit mining method;*
4. *Waste to ore cut-offs were determined using a NSR for each block in the model. NSR is calculated using prices and process recoveries for each metal accounting for all off-site losses, transportation, smelting and refining charges;*
5. *Reserves are based on a gold price of $1,816/oz; and*
6. *Mineral Reserves were calculated from a diluted "mining" block model which included average dilution of 10% and losses of 2.5%.*

16. Mining Methods

The FS update has included only Measured and Indicated mineral resources of Bayan Khundii and Dark Horse as defined and summarized in Section 14 – Mineral Resource Estimates.

16.1. Mine Characteristics

Evaluation of the resource geometry and grade found that the predominant factor to influence the selection of mining method is ore depth, followed by structure and grade distribution of the modelled deposit. Figure 16-1 shows a north-south section of the orebody, demonstrating the depth to the orebody in its defined zones.

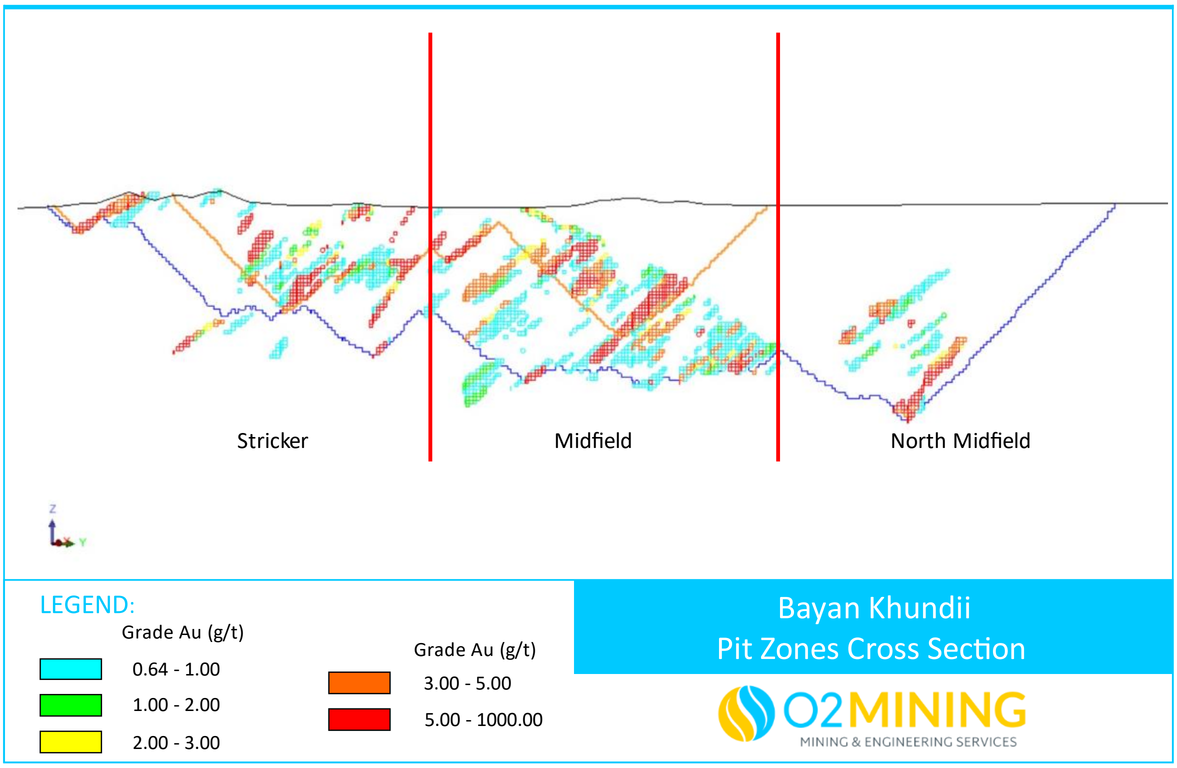


Figure 16-1 Bayan Khundii Pit Zones Cross Section (Source O2 2023)

Open pit development is planned in two phases.

The first phase targets the western and south areas, as included in the optimal pit shell, with consideration of allowing productive mining width and operation safety. This first phase will excavate near surface, high grade resources, reaching as deep as possible at the striker and midfield zones while leaving sufficient mining width and access for the ultimate pit design.

The second phase pit development will excavate deeper materials covering multiple ore grade levels down to the calculated cut-off grade.

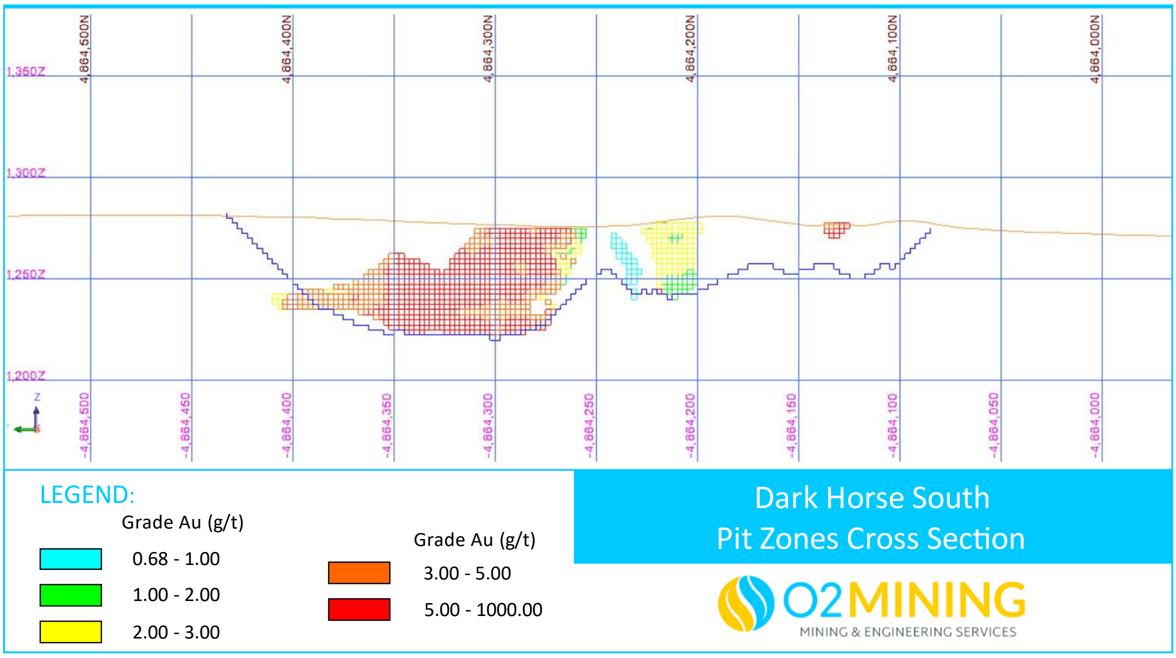


Figure 16-2 Dark Horse South Pit Zone Cross Section (Source O2 2023)

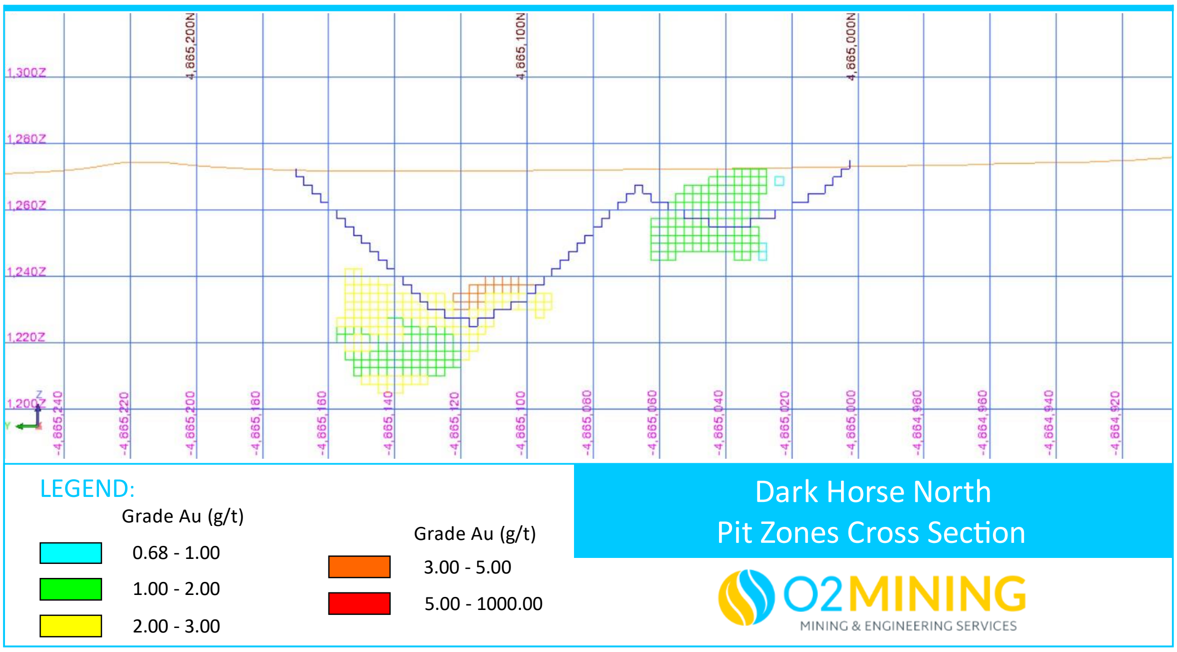


Figure 16-3 Dark Horse North Pit Zone Cross Section (Source O2 2023)

All study work completed to date, including this FS update, has grouped the Bayan Khundii orebody into three zones: Striker, Midfield, North Midfield. For Dark Horse, the South zone orebody has been included in the reserves.

16.1.1. Bayan Khundii - Striker Zone

The Striker zone is located on the southern end of the deposit with the orebody outcropping on the surface resulting in the lowest stripping ratio area of the deposit. As demonstrated by the pit optimization presented in Section 15.5, an open pit mining method is suitable for this portion of the orebody given its proximity to the surface.

16.1.2. Bayan Khundii Midfield

Midfield is in the central portion of the deposit. The orebody begins near surface. However, the average gold grade within Midfield is relatively low until approximately 55m below surface. Given proximity to surface and the associated stripping ratio, the pit optimization has demonstrated this section of the deposit is amenable to open pit mining.

16.1.3. Bayan Khundii North Midfield

North Midfield is located on the northern end of the deposit with ore grades above the cut-off grade generally not beginning until approximately 80m below the surface. The pit optimization undertaken in this study has demonstrated that North Midfield is amenable to open pit mining.

Given a strip of nearly 80m overburden, and relatively high-grade zones contained within the North Midfield deposit, further evaluation of an underground mining method was explored through the PFS undertaken by Tetra Tech. Whilst scoping level economics presented a case to further evaluate underground mining opportunities, insufficient technical studies have been undertaken to define the potential to develop this portion of the orebody through underground mining. As a result, North Midfield forms part of the reserve presented within the open pit mining method demonstrating positive discounted cash flows.

16.1.4. Dark Horse South

Dark Horse South is located on the southern part of the Dark Horse deposit with ore grades above the cut-off grade generally beginning below the surface. The pit optimization undertaken in this study has demonstrated that Dark Horse south is amenable to open pit mining methods.

16.1.5. Dark Horse North

Dark Horse North is located on the northern part of the Dark Horse deposit. An open development of Dark Horse North was evaluated. However, due to the relatively low volume and grade of mineral resources defined so far and therefore a relatively high strip ratio in pit design, Dark Horse North zone was not considered economical for the purpose of this feasibility study.

16.2. Selection of Mining Method

An open pit mining method has been selected for the Bayan Khundii deposit and Dark Horse deposit as the basis for this FS update. The following sequence of activities are required to extract ore and place on the Run of Mine ("ROM") Stockpile prior to blending and/or as direct feed to the processing plant:

- Topsoil Removal - Prior to the commencement of mining operations, all topsoil (estimated to 0.3 m depth from surface) is removed via dozer, pushed to windrows, then loaded on to trucks and hauled to a topsoil stockpile located adjacent to the respective pits.
- Drill and Blast - Rock is drilled and blasted in bench heights ranging from 5 to 10 m depending on the level of ore control necessary in order to fragment the waste rock sufficient for loading to trucks, and to maximize the benefit of "mine to mill" style blasting of ore, whilst controlling any ore or waste rock movement that could result in ore loss or dilution.
- Load and Haul – Overburden is removed and stockpiled to the designated waste stockpile; Ore is then selectively excavated and hauled to the ROM. At the ROM, ore is either directly fed into the crusher feed bin, where no blending is required, or stockpiled on the ROM in bins for future re-handle and blending as feed for the processing plant. It is anticipated that the majority of ore will be classified by grade and stockpiled on the ROM prior to rehandling with a front end loader in accordance with a blending plan to the crusher feed bin.

Considering the variable grade nature of the orebody, a selective mining method for grade control is necessary to prevent unnecessary ore dilution and loss. Effective blast movement control requires a combination of precise techniques, thorough planning, ongoing monitoring, and continuous improvement. To achieve this primary goal on ore mining:

- Careful blast design is crucial. Blast pattern design should be deployed to minimize the impact of blast-induced movement on the ore zone. This may involve using smaller blast hole diameters, closely spaced holes, and proper burden and spacing ratios.
- Utilize advanced drilling technologies, such as GPS-guided drilling rigs, to ensure accurate hole positioning. Properly aligned holes help maintain the integrity of the ore zone and prevent unnecessary movement
- Implement electronic initiation systems that allow for precise timing of detonations. This can help control the direction and intensity of blast movement, minimizing its impact on ore boundaries
- Implement monitoring systems, such as high-speed cameras and GPS tracking devices, to record blast movement and assess its impact. Analyzing this data can provide insights into the effectiveness of blast designs and help refine future approaches. There are specialized software and tools available that can predict blast movement based on blast design parameters and rock properties. These tools can help anticipate movement and adjust blast designs accordingly.
- Conduct thorough geotechnical surveys to understand the rock properties and stress conditions in the area. This knowledge can guide blast design and help predict potential movement.
- Consider selective mining practices that involve mining ore in smaller benches or increments. This can help reduce the amount of ore exposed to blast movement at once.
- Ensure that the blasting team is well-trained and experienced in minimizing blast movement. Regularly review and evaluate blast performance to identify areas for improvement; and
- Ongoing engagement with experienced blasting consultants, engineers and geologists who specialize in blast movement control.

Grade control drilling is undertaken in advance of mining activities to better define ore classification boundaries for further drill and blast design and mine planning.

16.3. Development Strategy

In defining the mining sequence strategy for the Bayan Khundii and Dark Horse mine plan, the Project considered a number of factors including:

- Maintain stable ore supply to meet the process plant operating requirements.
- Maintain the maximum feed grade from the early stage of mine life where possible to improve return on capital investment.
- Focus on Bayan Khundii deposit prior to Dark Horse deposit development which should be started from year 3 onwards.
- Locate and supply stockpiles to assist in optimizing process plant feed as above.
- Adopt a relatively consistent total monthly material movement rate early in the mine life given the project economic performance is not sufficiently sensitive to mining costs. Higher upfront stripping costs were found to be offset by the improvement in feed grade and recovered ounces during this initial period; and
- Ensure the scheduled vertical rate of advance can be achieved in practice.

16.4. Production Schedule

The following key objectives have been pursued during the mine scheduling exercise:

- Allow for a pre-production overburden strip of 3 months to develop sufficient waste rock to establish the ROM pad, haul roads infrastructure and initial development of the IWF. Ore mining during this period is minimal and placed on the ROM stockpile in advance of process plant commissioning.
- Allow for a 6 month ramp up of feed rate to the process plant in the first year, resulting in a processing target of 500kt of ore feed in the first 12 months, and 650 Ktpa nameplate ore feed capacity scheduled thereafter.
- Retain sufficient stockpile capacity to supplement ore feed from the pit and stabilize the ore feed grade throughout the mine life.
- Maintain consistent process plant feed grade with no monthly ore feed period exceeding 4.5 g/t Au.

The annual production schedule is presented in Table 16-1.

Table 16-1 LOM Schedule Summary in Year

Schedule Items	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Total
Total Mining Inventory										
Total Ex-pit	Kt	2,737	12,600	12,600	12,600	3,390	2,760	1,276	0	47,963
Waste	Kt	2,685	12,010	11,673	11,919	2,726	1,964	969	0	43,945
Ore	Kt	52	590	927	681	664	796	307	0	4,018
Au Grade	g/t	3.66	4.02	3.23	5.35	3.71	3.54	4.86	0.00	3.98
Mined Gold	oz	6,159	76,260	96,317	117,108	79,337	90,597	47,950	0	513,728
Ag Grade	g/t	1.16	1.62	1.47	1.98	1.98	1.49	2.06		1.71
Mined Silver	oz	1,951	30,670	43,881	43,444	42,223	38,022	20,316	0	220,506
Processing and Stockpile Balance										
Mill Feed	Kt	0	500	650	650	650	650	650	268	4,018
Feed Au Grade	g/t	0	4.50	4.50	4.50	4.50	4.50	2.77	0.86	3.98
Au Process Recovery	%	0	93.8	91.8	92.0	92.9	92.5	93.3	92.7	92.7
Gold Recovered	oz	0	67,836	86,362	86,476	87,336	86,976	54,155	6,860	476,001
Feed Ag Grade	g/t	0	1.72	1.91	1.30	2.61	1.94	1.27	0.51	1.71
Ag Process Recovery	%	0	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%	55.0%
Silver Recovered	oz	0	15,215	21,902	14,896	29,988	22,285	14,588	2,405	121,278
Stockpile Balance										
Balance ton	Kt	52	143	419	451	464	611	268	0	
Balance Au grade	g/t	3.66	2.19	0.92	2.44	1.26	0.88	0.86	0.00	
Balance Ag grade	g/t	1.16	1.08	0.67	1.75	0.87	0.54	0.51	0.00	
Rehandl Total	Kt	0	41.8	21.8	162.1	34.0	3.2	365.7	267.8	896.4

The life of mine material movement schedule by pit stage is presented in Figure 16-4.

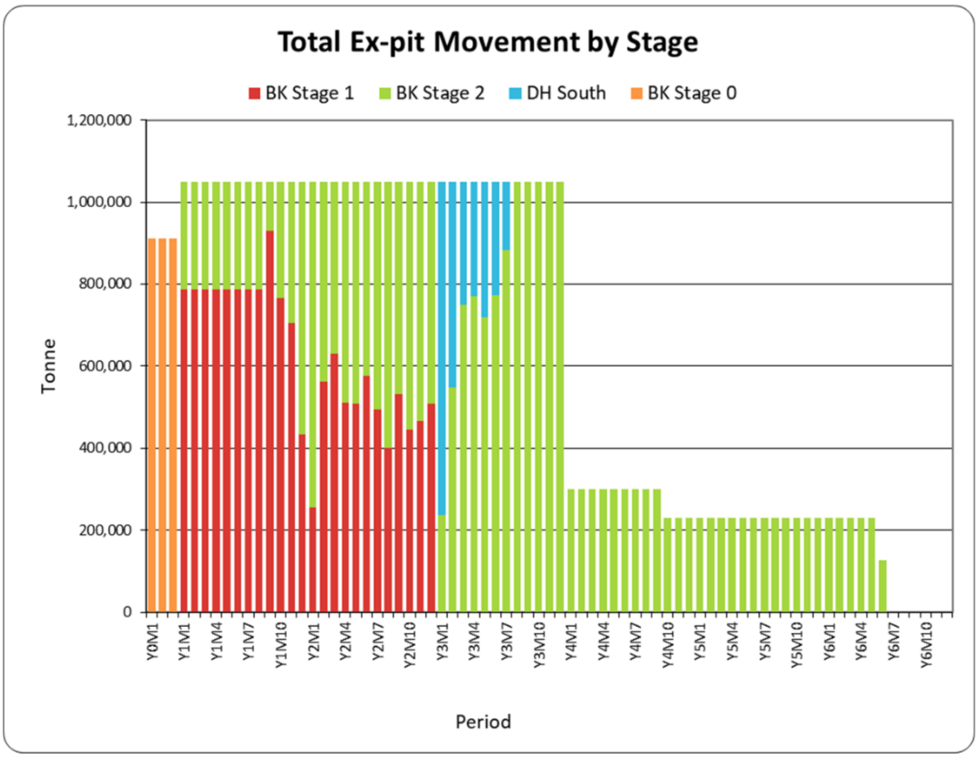


Figure 16-4 LOM Ex-pit Mining Schedule (Source O2 2023)

The life of mine ore schedule by ore type is presented in Figure 16-5.

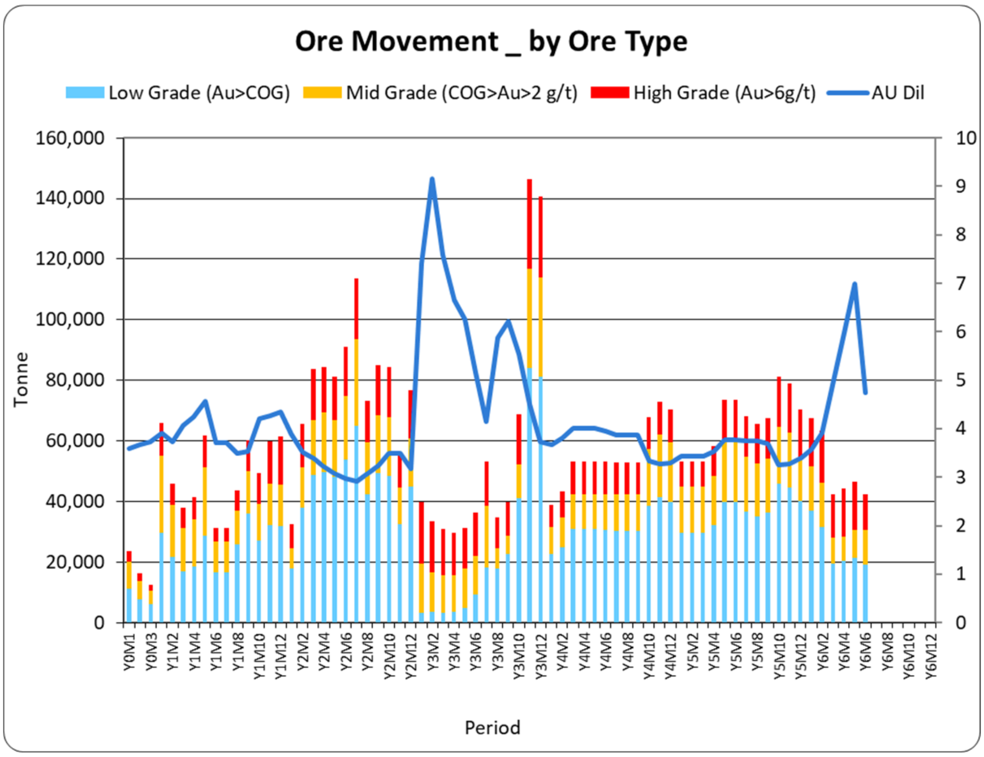


Figure 16-5 LOM Ore Mining Schedule (Source O2 2023)

The life of mine material movement schedule by pit stage is presented Figure 16-6.

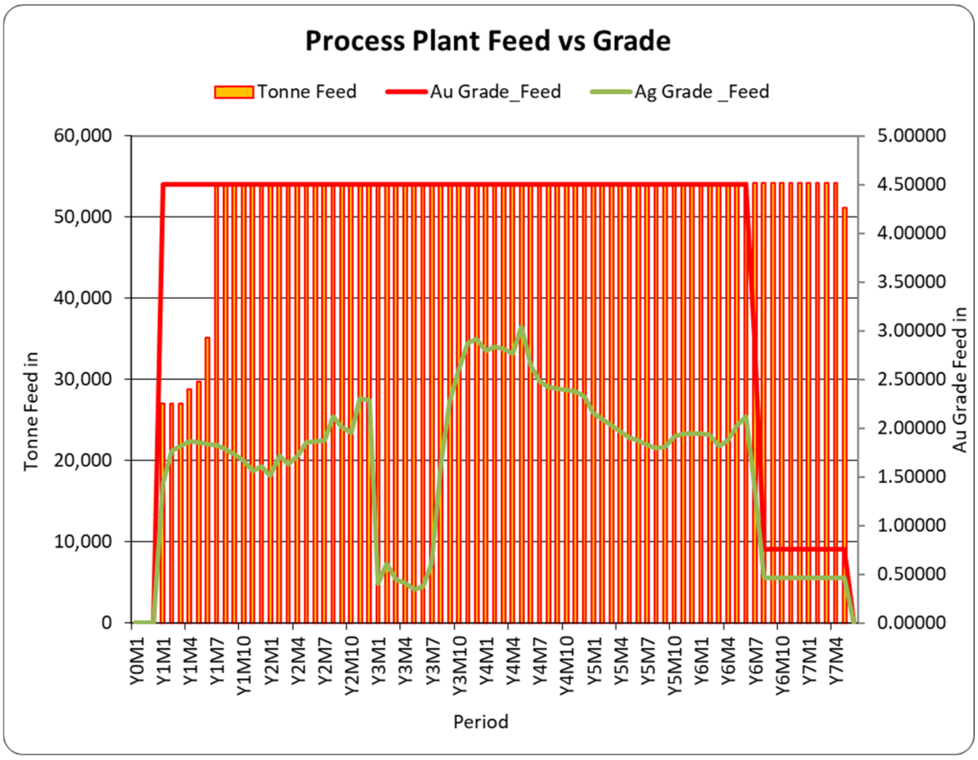


Figure 16-6 Process Plant Feed vs Au Grade Distribution (Source O2 2023)

The life of mine stockpile balance and grade by month is shown in Figure 16-7.

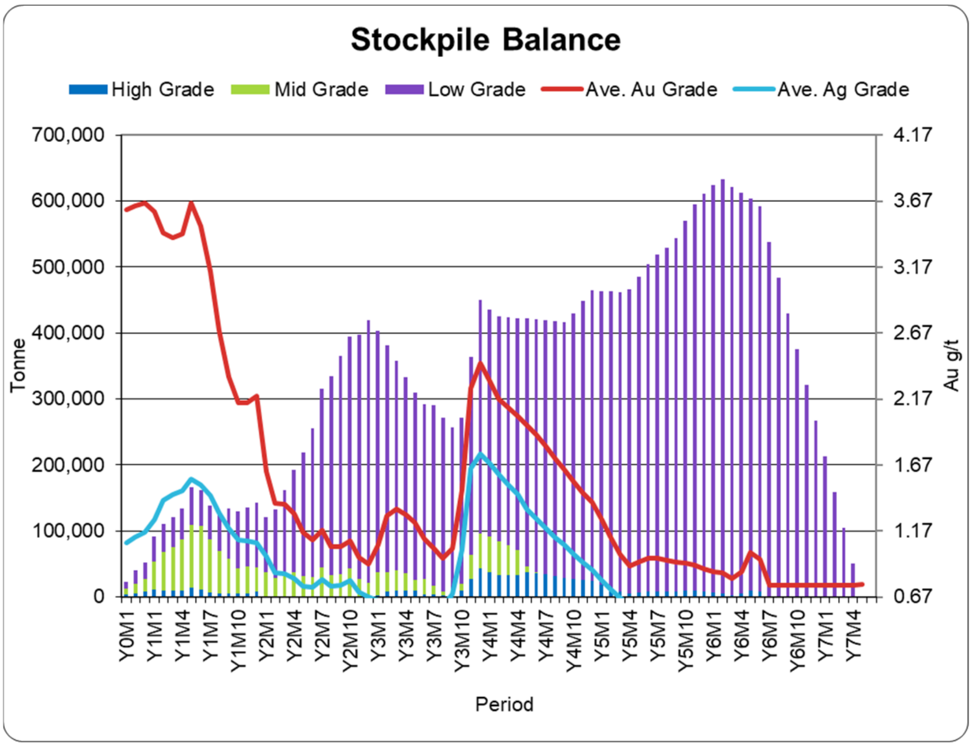


Figure 16-7 LOM Stockpile Balance (Source O2 2023)

16.5. Mining Equipment

16.5.1. Fleet Selection

The loading fleet has been selected primarily based on bench height and the requirement to selectively mine ore. Standardization of equipment sizing for better reliability, the number of required active faces and the overall material movement has also been considered.

O2 has assumed a backhoe excavator configuration and working benches of 2.5 m for ore, and up to 5 m for waste with consideration of mining production and the selectivity required, as well as the cost effectiveness, local maintenance capacity and operating flexibility.

- Hydraulic R1250_9 Excavator ("HEX") & China Wide Body Dump Truck 60T payload ("CDT60") - Primary for bulk waste excavation
- Hyundai HX520 HEX & China Wide Body Dump Truck 60T payload (CDT60) – Primary for ore, selective waste excavation

Drilling fleet has been selected based on the blast pattern assumption and the conventional rock blasting sequence: pre-splitting, trim shot blasting and production blasting. Two types of drills are recommended:

- Epiroc SmartROC D65 or equivalent: for waste and trim blast pattern at drill hole diameter 140mm and 115mm
- Sandvik DP1500: for ore and pre-split blast pattern at drill hole diameter 89mm

16.5.2. Fleet Operation Hours

In consideration of the application for Bayan Khundii and Dark Horse, and from benchmarking against other similar operations in Mongolia and regionally, the service meter unit operating hours of excavator, dump trucks, drills and ancillary equipment are different mainly due to their mechanical availability and continuous utilization. The service meter units for each type of major equipment range from 5,100 hours to 6,400 hours.

16.5.3. Fleet Productivity Calculation

16.5.3.1. Excavators

The productivity of excavators will vary based on material properties as well as the need for selectivity (when mining ore and waste on grade control boundaries for example). Considering the potential selectivity required, material is classified into 3 types resulting in differing productivity factors between each type. Selective waste is identified as mineralized waste and sub-grade waste due to the high excavation selectivity required. Table 16-2 illustrates the productivity build-up for each fleet and material type.

Table 16-2 Productivity Build-up – Excavation

Description	Unit	Fleet. 1	Fleet. 2	Fleet. 3	Fleet. 4	Fleet. 5	Fleet. 6
Material Type	-	Free Dig	Blast Bulk Waste	Selective Dig	Free Dig	Blast Bulk Waste	Selective Dig
Excavator/Shovel /Loader Type	-	Hyundai HX520	Hyundai HX520	Hyundai HX520	Hyundai R1250-9	Hyundai R1250-9	Hyundai R1250-9
Truck Type	-	CDT60	CDT60	CDT60	CDT60	CDT60	CDT60
Annual Production Capability	tons	2,739,863	2,650,194	2,009,296	6,049,317	5,495,857	4,649,807
Productivity per engine hour	t/PEH	**429**	**415**	**315**	**947**	**860**	**728**

16.5.3.2. Drills

Four types of drill patterns will be used, and they are classified based on the level of energy and energy distribution required. It is assumed 80% of holes are dry and 20% holes are wet and ANFO and Emulsion are used respectively. The drill numbers are calculated based on the drill pattern assigned, drill penetration rate and available equipment production hours per period.

Table 16-3 Productivity Build-up – Drilling

Parameter	Unit	Bulk Waste	Ore	Trim Blast	Presplit
Hole Diameter	mm	140	89	115	89
Explosive Type		ANFO/Emulsion	ANFO/Emulsion	ANFO/Emulsion	Package Emulsion (32mm)
Est. PF	**kg/t**	**0.28**	**0.28**	**0.24**	**n/a**

16.5.3.3. Trucks

The truck productivity is calculated based on simulations run using Talpac™ software under truck model GINAF X5376 T MX E3 (closest match to CDT60) haulage routes developed according to the production schedule. The haulage routes vary by pit stage, material destination, period of mining, and travel speed.

- **Stage:** haulage routes are firstly based on stage as travel access is different for different stages.
- **Material**: haulage routes are secondly based on the material type due to the different destinations for those types. Waste destination is determined according to the IWF face position provided by ATC Williams. Selective waste, sub-grade, and mineralized waste will be placed in a separate stockpile. Ore will be sent to the ROM. Considering the low-grade stockpile and live stockpile on the ROM are very close to one another, there is no fundamental difference between those travel routes. Tailings are sent to the designated location in the IWF. The face position of tailings is also provided by ATC Williams.
- **Period**: each material type in each stage is from a certain level of the pit, and the level is the weight average bench of the material type. For this study work, year by year material source level is applied to identify the haulage route start locations. On a month-to-month basis there will be some variation, however we expect that considered medium term planning will ensure sufficient trucking capacity by varying hauls to maximize truck utilization.

- Travel speed adjustment of 30% reduction is applied considering the truck payload and engine capacity when compared to the selected unit used in the haulage simulation.

Each haul cycle time consists of fixed time and travel time. Fixed time is assumed to remain constant, but travel time varies when the haulage route is changed.

Travel speed within the area of the IWF and ROM is set at 20km/hour, this is lower due to consideration for congestion and visibility in tight working spaces.

Material allocation of the excavator fleet is applied to truck productivities and is calculated based on the fixed delay time, travel time, truck payload and 54min/hour effective production time. 19x CDT60 dump trucks are needed to achieve the peak production requirement on average.

16.5.4. Total Fleet Summary

Table 16-4 Fleet Number Summary

Fleet Names	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Major Fleet								
Hyundai HX1250_9	2	2	2	2	0	0	0	0
Hyundai HX520	0	0	0	0	1	1	1	0
CDT60	12	15	18	18	8	6	6	0
CDT60	0	1	1	1	1	1	1	1
Epiroc Smart ROC D65	0	2	3	3	1	1	1	0
Sandvik DP1500i	1	1	1	1	1	1	1	0
Ancillary Fleet								
Loader XCMG LW900KN	0	2	2	2	2	2	2	1
Dozer - XCMG SD9N	5	5	5	5	3	3	2	1
Hyundai HX520	0	1	1	1	1	1	1	0
Grader - XCMG GR3005Tpro	2	2	2	2	2	2	2	1
Water Carts – CDT60 with tank	1	1	1	1	1	1	1	0
Service Truck CAT 773	1	1	1	1	1	1	1	0
Compactor - 10T	1	1	1	1	1	1	1	1
Support Fleet								
Skid Steer	0	1	1	1	1	1	1	0
2.5T Forklift	0	1	1	1	1	1	1	1
Integrated Tool Carrier (5T)	0	1	1	1	1	1	1	1
175 kVA Genset	1	1	1	1	1	1	1	1
10 kVA Genset	2	4	4	4	4	4	4	2
6kVA Lighting Plant	7	10	10	10	8	8	8	4
6-inch pump	1	2	2	2	2	2	2	0
400A Welder	1	1	1	1	1	1	1	1
180CFM Compressor	1	1	1	1	1	1	1	1
Maxi Heater	2	2	2	2	2	2	2	1

Fleet Names	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7
Fire Truck	0	1	1	1	1	1	1	1
Ambulance	0	1	1	1	1	1	1	1
Dual Cab LV	3	6	6	6	6	6	6	4
Single Cab LV	1	2	2	2	2	2	2	1
20-Seater Bus	1	2	2	2	2	2	2	1
30T Rough terrain crane	1	1	1	1	1	1	1	1
2 x4 Utility Truck (2T crane)	1	1	1	1	1	1	1	1
Low Bed	0	1	1	1	1	1	1	1
Fuel Truck (5T)	1	1	1	1	1	1	1	0

16.6. Workforce

The work force for the life of mine was outlined by ERD and validated by O2 on the basis to define the team required by the owner to run the operations, and also considering the personnel proposed by the contractor elements of the mining operations to operate the project. The grand total of site-based personnel during operations peaks at 535 before dropping back to approximately 420 in Year 4 in line with a reduction in total material movement. Total site employment falls to around 300 personnel in Year 6 (final productive year), as a result of a reduction of total material movement. No less than 90% of the site operations workforce will be made up of Mongolian nationals, and the Company has prioritized recruitment from the local sub-provinces of Shinejinst and Bayan-Undur as well as Bayankhongor province.

16.7. Integrated Waste Facility

The Bayan Khundii site is comprised of the open pit mine, processing plant and support facilities, and IWF, which will comprise the co-disposal of waste rock and processed dry cake tailings.

The ultimate shell geometry for the IWF has been designed based on the mine production schedule which defines a seven-year LOM for the BK project. The IWF is expected to store waste rock from the BK pit and also store processed ore (tailings) from both the BK and DH pits. The schedule assumes that the plant will run at 75% capacity during the first year of operations, with production ramping up to 0.65 Mtpa of tailings for the next 5 years before reducing to 0.27 Mt for Year 7. Approximately 2.7 Mt of waste rock will be available in Year 0 for startup construction, with the annual production of waste rock for Years 1 to 3 being just less than 12 Mtpa. 5.7 Mt of waste rock is estimated to be available from Years 4 to 6 with no waste rock production estimated for Year 7.

Various iterations of the ultimate LOM IWF shell were undertaken during the development of the basis for design and the feasibility study, with the ultimate shell being chosen in order to maximize the use of available land within the approved mine lease boundaries for the estimated mine production schedule.

The IWF shell will have a total height of 73 m at its highest section which is located along the southern flank of the structure and has a maximum crest elevation of RL 1,300 m. The shell will see the construction of intermediate benches which will aid in the overall constructability and stability of the structure as well as facilitating revegetation and rehabilitation efforts during the closure stage, as a flat surface is more likely to store moisture and support vegetation with decreased levels of erosion. The final overall slope of 2.8H:1V or 19.7 degrees complies with the Mongolian closure guidelines, which specify that the overall slope at closure should be no greater than 25 degrees. Additionally, the shell sees a reduced footprint area, which in turn allows for the construction of contaminant-related auxiliary infrastructure to be placed within the already approved waste storage boundary.

The geometry of the IWF over the 7-year life of mine has been defined to accommodate annual tonnage production for waste rock and dry cake tailings disposal. Table 16-5 summarizes the LOM IWF geometry.

Table 16-5 Updated Feasibility Design Final LOM IWF Shell Geometry

IWF LOM Shell Element	Dimensions	Units
Final Crest Elevation	RL 1,300	Meters above sea level
Ultimate IWF Shell Height	73	Meters (at the critical section)
IWF Footprint Area	69	Hectares
Intermediate Bench Elevations	RL 1,246, RL 1,266 and RL 1,286 (every 20m elevation gain)	Meters above sea level
Intermediate Bench Crest Width	20	Meters
Inter-beach Outer Slope	2H : 1V	Meters (H:V)
Overall IWF Shell Outer Slope	2.8H : 1V	Meters (H:V)
Total Storage Volume	23.6	Mm^3

The tailings are to be placed within the IWF as dry cake tailings and expected to have a final moisture content of around 15%. The reduced moisture content is a key requirement to facilitate the loading and transportation of the tails from the process plant via a truck fleet.

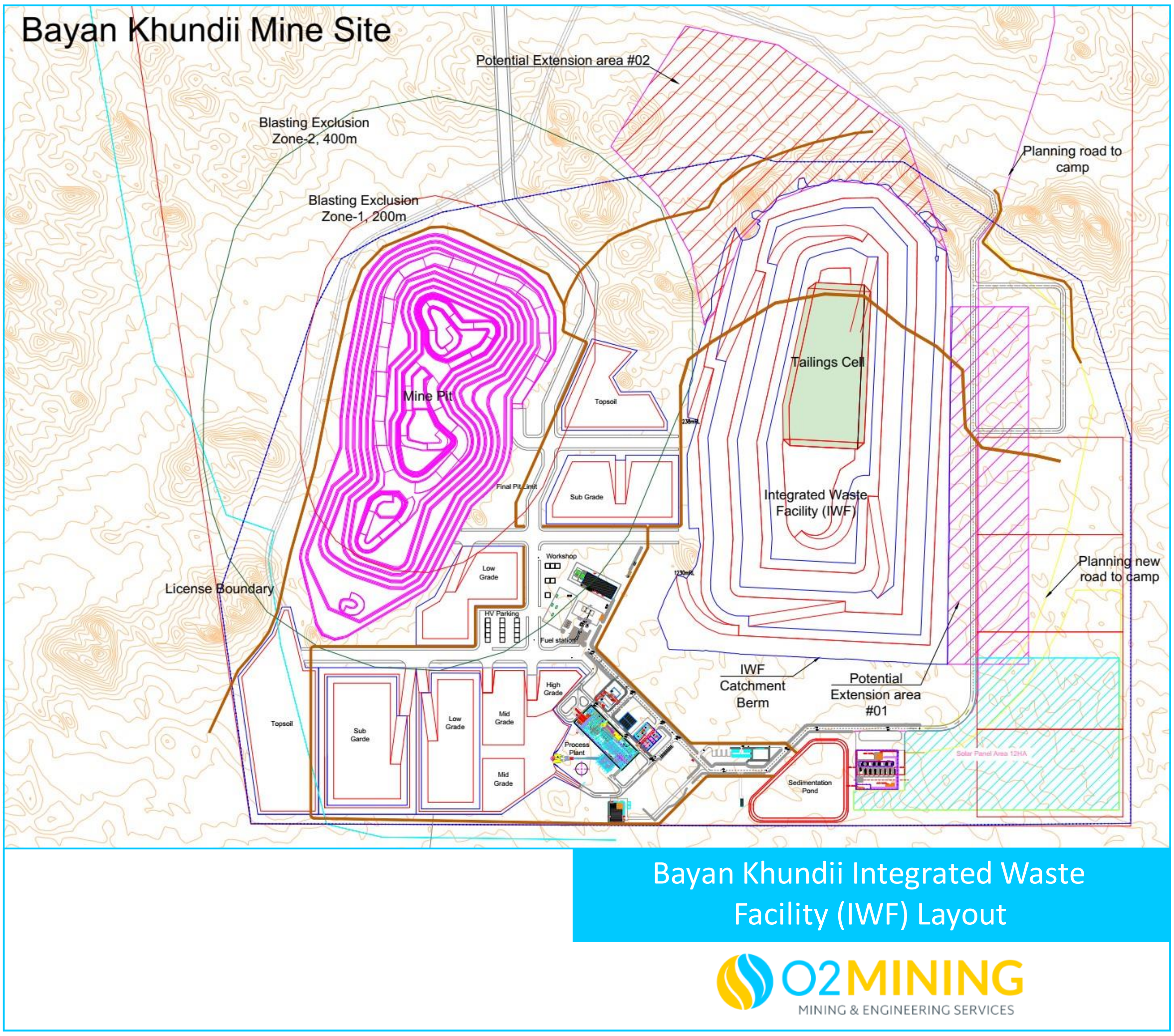


Figure 16-8 BK Integrated Waste Facility ("IWF") Layout (Source O2 2023)

16.8. Dark Horse Waste Dump

The Dark Horse site is comprised of the open pit mine and waste rock dump ("WRD"). The waste rock extracted from the DH pit will be stored within the DH WRD and the ore will be transported to the BK process plant, with the dry cake tailings stored in the BK IWF.

The shell geometry for the WRD has been designed based on the mine production schedule from the DH pit, which estimates that 2.45 Mt of waste rock, from Year 3 of the mine schedule, will require storage in the WRD. The WRD dump shell will have a total height of 30m in its highest section and a maximum crest elevation of RL 1,302m. Based on the initial geochemistry assessment of waste rock samples from the DH pit Figure 16-9, it is estimated that 20% of the waste rock will be PAF. The PAF waste rock is designed to be encapsulated by NAF rock. This design includes construction of a 5m NAF waste rock basal layer prior to the placement of any PAF waste rock. The encapsulated PAF waste rock layer is up to 15m high. The PAF waste rock is then designed to be covered by a 10m NAF waste rock layer. The WRD is to be constructed with 20 m high benches with batter slopes of 2H:1V. However, the final overall slope for closure is designed to be 3H:1V, which complies with the Mongolian closure guidelines.

The estimate of 20% of the waste rock being PAF is an estimate only. It should be noted that the actual percentage of PAF material may vary significantly from this estimate. Should the volume of PAF identified during open pit mining significantly increase from the estimate, there are two design contingencies to accommodate encapsulation of the PAF waste rock. The first design contingency is that additional NAF waste rock will need to be sourced to ensure a 10 m NAF waste rock cover layer is constructed. The second design contingency is that excess PAF waste rock can be hauled and stored to the BK IWF. The encapsulation requirements of storage of PAF rock in the BK IWF is the same as for the DH WRD.

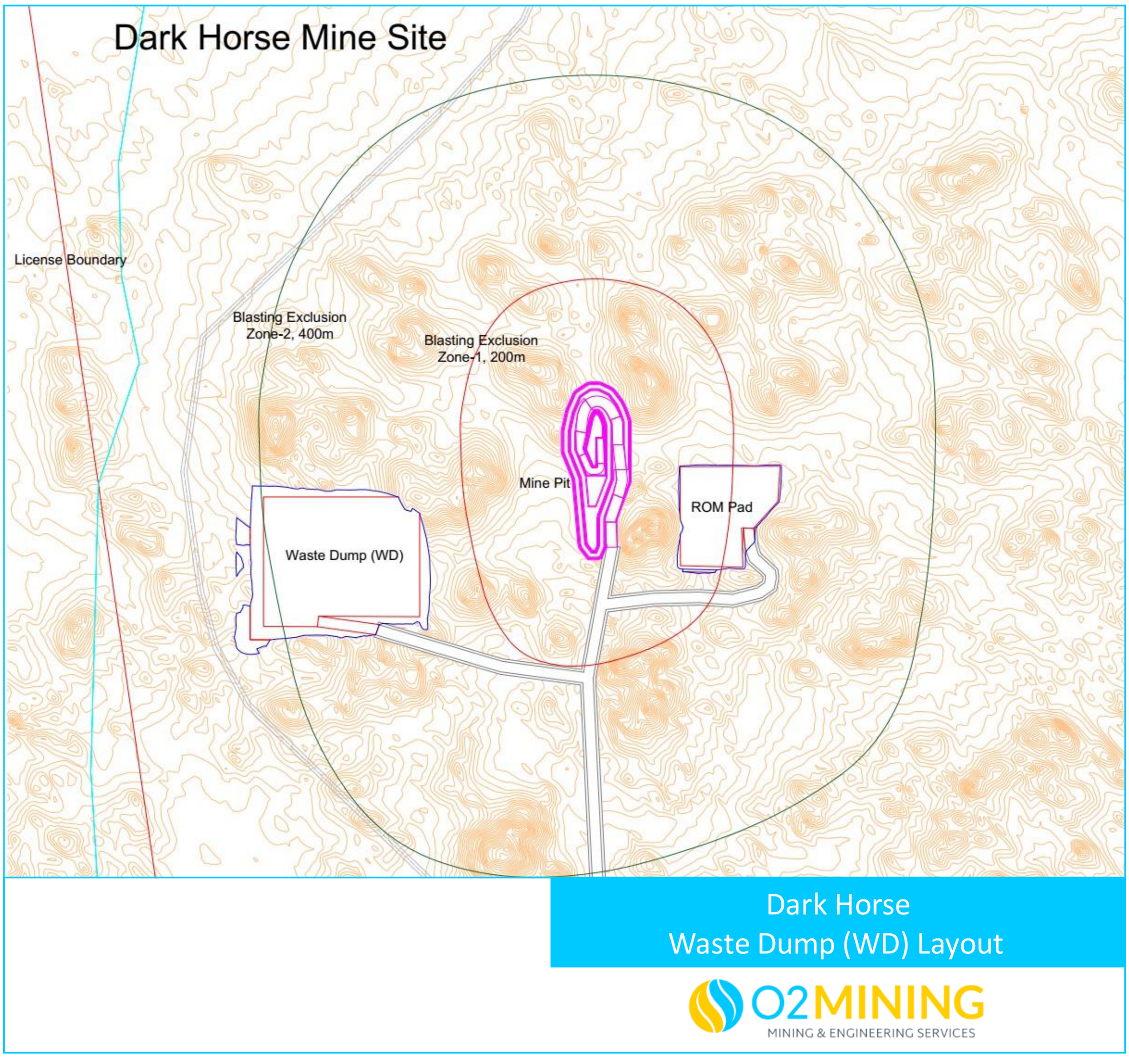


Figure 16-9 DH Waste Dump ("WD") Layout (Source O2 2023)

16.9. Geotechnical Review

16.9.1. Bayan Khundii

16.9.1.1. Background

Fugro (Hong Kong) Limited ("Fugro") completed an initial geotechnical assessment of the proposed Bayan Khundii open pit mine plan as part of the ERD 2020 FS (ROMA 2020). Later in 2020, Fugro was engaged by Erdene to complete a supplementary geotechnical assessment of a proposed updated 2020 mine pit design by O2 Mining ("O2M"). The scope of work for the 2020 updated Geotechnical Review focuses on:

- Review of all available geotechnical data, including additional data from Erdene, and address the issues identified in Fugro's previous Geotechnical Review for the ERD 2020 FS (ROMA, 2020).

- Re-assess all joint data on 'Mine Pit Sector' and 'Lithological Domain' approaches and previous kinematic analyses;
- Identify (if any) potential instability, geohazards or parameter uncertainties which may impose unexpected project risk;
- Provide recommended mine pit parameters;
- Provide conclusions and any recommendations for additional geotechnical investigations.

Fugro carried out a desktop review of existing data provided by Erdene, which included:

- Geological and geotechnical data for 357 drill holes (57,242 m) completed between 2015 and 2020;
- Geotechnical report by Sardonyx LLC (Sardonyx, 2018);
- NI 43-101 Technical Report and Preliminary Economic Assessment completed by RPM Global (RPM, 2018 & 2019);
- NI 43-101 Technical Report and Preliminary Feasibility Study by Tetra Tech Canada Inc. (Tetra Tech, 2019a);
- NI 43-101 Technical Report and Feasibility Study by ROMA Limited. (ROMA, 2020); and
- Hydrogeology report by Pando Australia (Pando, 2020).

16.9.1.2. Previous Studies

In studies previous to the ERD 2020 FS (ROMA 2020), 6 geographic sectors (NW, NE, E, SE, S, SW & W) and 4 lithological domains (Basalts; Jurassic Sequence; Carboniferous Volcanics – lapilli & ash tuffs; & intrusives – granitoids) were identified for the geotechnical stability assessment of the proposed mine pit plans. Structural data from a selection of drill holes, 14 for RPM/Sardonyx and 26 for Tetra Tech, were used to assess the slope stability of the proposed mine pit walls. In both studies, the kinematic and limit equilibrium analyses recommended a generalized Bench Face Angle (BFA) of 65°, bench width between 6-10 m and bench height between 10-15 m. Subsequent review of geotechnical data found inconsistencies with interpretation of alpha and beta angles (bottom-line verses top-line), and as such the previous kinematic analyses were considered unrepresentative as the calculated structural attitudes would be different.

Given the general uncertainties regarding the level of confidence of the previous data, the geotechnical review for the ERD 2020 FS (ROMA, 2020) focused on the six geotechnical/hydrological drill holes drilled in 2019. The results indicated a general acceptance of the 2020 updated mine pit design (80° BFA) by O2M in the first pushback for the Striker Pit, except for the northern to eastern sectors in the Midfield-North Pit, where the potential for instability may warrant a reduced BFA. Based on the previous analyses, a general reduction to 75° BFA was considered appropriate to overcome some of the identified instability with the exception of those in the northern to eastern sectors, where a 65° BFA may be required for the Basalts domain. However, given the limited data set of the 6 drill holes, further assessment of a larger set of available data was recommended to increase the robustness of the kinematic and stability assessment.

16.9.1.3. Approach and Methodology

The review of all available geotechnical data provided by ERD, includes over 94,000 discontinuity measurements from 357 drill holes completed between 2015 and 2020. However, the 357 drill holes cover a large area encompassing the BK gold deposit and surrounding areas. This study focuses on those within the O2M 2020 proposed BK mine pit (Figure 16-10) and the immediate vicinity.

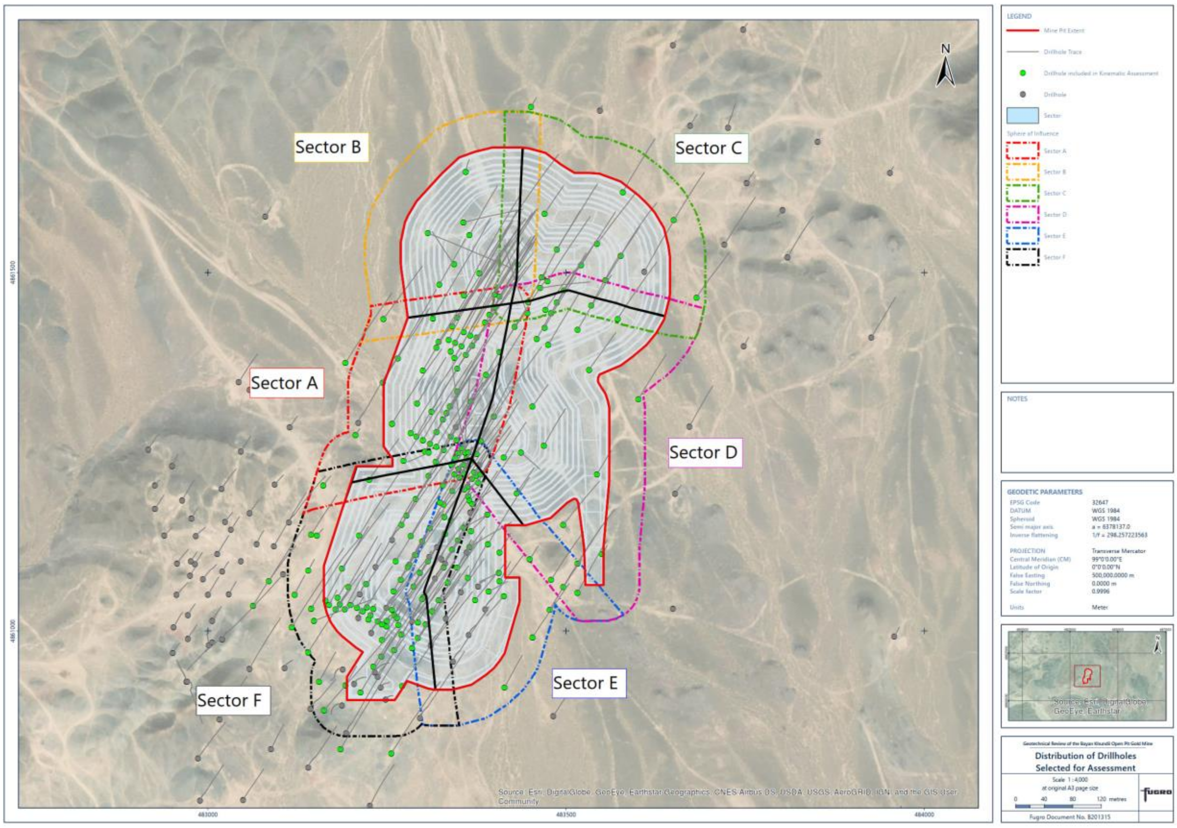


Figure 16-10 Distribution of drill Holes Selected for Assessment, O2M's 2020 Mine Plan (Source Fugro 2020)

The geotechnical data has been classified based on lithological domains similar to the previous assessments: Basalts, Jurassic Sequence, Carboniferous Volcanics and Intrusives.

Kinematic assessments have been made for individual slope orientations within each Sector (Table 16-10). The slope orientations have been updated from previous studies to better reflect O2M's updated 2020 mine plan. A review of the limit equilibrium assessments has also been completed using the assigned mine sector divisions.

16.9.1.4. Summary of Geotechnical Parameters

Geotechnical parameters were reviewed based on the available laboratory testing data from the 6 drill holes in late-2019 (BKHGD series) and the previous investigations (BKD series) including the geotechnical engineering parameters extracted from the Sardonyx study (Sardonyx, 2018).

The available geotechnical data included:

- 1,191 density tests;
- 76 unconfined compressive strength tests;
- 148 point load tests;
- 48 tensile strength tests; and
- 48 wave velocities tests.

16.9.2. Rock Density

The density data of the individual lithological types was collated and assessed in the previous report (FUGRO, 2020). A review of the rock densities shows that the average density of each geological domain is broadly consistent across the 6 mine Sectors as summarized in Table 16-6.

Table 16-6 Rock Density Variation Across Mine Sectors

Material	Global Density [Mg/m3]			Sector Average Density [Mg/m3]					
	Min	Max	Avg.	A	B	C	D	E	F
Basalts	2.48	2.79	2.65	2.62	2.69	2.69	2.63	2.64	2.59
Jurassic Sequence	2.32	2.70	2.52	2.53	2.52	2.53	2.54	2.49	2.54
Carboniferous Volcanics	1.80	5.47	2.66	2.67	2.68	2.65	2.63	2.65	2.65
Intrusions	1.78	3.74	2.59	2.59	2.60	2.55	2.58	2.62	2.59
Dyke	2.43	2.87	2.65	2.59	2.70	2.71	2.62	2.62	2.62
Vein/Breccia	2.50	3.96	2.68	2.73	2.64	2.64	2.63	2.60	2.60

16.9.2.1. Unconfined Compressive Strength

Unconfined Compressive Strength (UCS) is a measure of the deformation and strength properties of the core sample. A total of 72 UCS results are available from the geotechnical investigations with a broad range from 5.5 to 132.4 MPa. The deformation and strength properties of rock cores tested in the laboratory usually do not reflect large-scale in situ properties because the latter are strongly influenced by joints, faults, heterogeneity, weakness planes, and other factors. However, in conjunction with other rock material mass parameters, the UCS is used to compute Generalised Hoek-Brown (GHB) criteria for limit equilibrium analysis.

The UCS data of each of the geological domains has been analysed on a global and Sector basis. Typically, the UCS strengths range from 20 to 60 MPa over the global pit areas. Global UCS values have been derived based on engineering judgement considering data variation. A review of the globally derived values with the 6 Sectors has established some lower sector variations from the global UCS values as summarized in Table 16-7.

Table 16-7 Summary of Derived UCS Strengths

Material	Unconfined Compressive Strength (UCS) [MPa]			Adopted Global UCS [MPa]	Adopted Sector UCS [MPa]					
	Min.	Max.	Average		A	B	C	D	E	F
Basalts	11.8	58.6	31.6	28	-	-	-	-	15	-
Jurassic Sequence	12.9	57.5	30.3	30	-	-	24	-	-	-
Carboniferous Volcanics	5.5	132.4	41.2	36	23	-	-	-	23	23
Intrusions	12.8	111.8	60.7	50	-	-	-	-	-	-

16.9.2.2. Point Load Strengths

Point load (PL) strength is an index test for rock strength classification and provides a quick assessment. With sufficient data, PL can be used to establish a site-specific correlation with UCS values. A review of the PL-UCS relationship was part of Fugro's previous geotechnical review (Fugro, 2020). The results are reproduced in Table 16-8.

Table 16-8 Summary of Point Load Data

Material	Axial & Diametrical Index Strength, Is50 [MPa]			Correlation Factor, k
	Minimum	Maximum	Average	
Basalts	0.10	8.51	3.21	7.4
Jurassic Sequence	0.01	3.33	0.95	21.6
Carboniferous Volcanics	0.07	7.92	3.41	16.0
Intrusions (SyP/dSy)	0.52	0.75	2.97	19.3
Intrusions (dDacP/DacP)	0.01	1.89	8.98	7.3
Notes: Conversion factor k averaged values excluding extreme outliers.				

The correlation factor is dependent on lithology. The correlation factors generally vary between 15 and 24 depending on the referenced studies. Correlation factors vary from 2 to 190 due to the scatter of test data. The extremes of these correlations are not considered within normal data bounds. With the extremes excluded, the data conversion factor falls between 16 and 22 for the various lithologies.

16.9.2.3. Rock Mass Parameters

Within the limit equilibrium analyses, the rock is modelled as Generalised Hoek-Brown (GHB) material using a non-linear shear-normal strength model. The GHB materials are derived from 4 input parameters:

- Uniaxial compressive strength (UCS);
- Intact rock parameter (mi);
- Geological strength index (GSI); and
- Disturbance factor (D).

The UCS value for each of the 4 main lithologies and Sector variations were established as discussed in Section 16.9.2.1. Where identified lower Sector strengths were adopted in the limit equilibrium assessments for the given Sector.

Values for mi have been based on from published data for various rock types (Hoek, 2007).

The GSI provides an estimation of the reduction of the rock mass strength for different geological conditions as identified in field observations. The GSI is mainly based on a visual description of the rock structure in terms of blockiness and surface conditions. The GSI values were based on the geological description of the logs as part of the review of the 6 BKHGD-series drill holes and published charts (Hoek, 2007). GSI values for the Jurassic Sequence are generally lower with an average about 40 and with lower value of 36 generally localized to shallow material depths (typically <15 m). These lower values result from observations of occasional pockets (1 to 2 m extents) of highly fractured or closely spaced joints and/or zones of weathered weak material within drill holes BKHGD-09, BKD-124, BKD-236, BKD-161, BKD162 and BKD-244.

The Disturbance ('D') factor is an indication of the amount of disturbance the rock may have undergone during excavation or blasting. Values of 'D' range from 0 (indicating little or no disturbance) to 1 (significant disturbance). A 'D' factor of 0.7 is considered representative of small-scale blasting with modest rock mass damage or mechanical excavation methods whilst the upper values of 0.9 and

1.0 represent significant disturbance of large production blast mining with limited controls (Hoek et al, 2002).

A summary of the four input parameters adopted to define the GHB materials are Table 16-9.

Table 16-9 Generalized Hoek-Brown Input Parameters

Material	Mine Sector	Density [kN/m3]	UCS(1) [MPa]	mi	GSI	D
Basalts	Global	26.5	28	17	50	0.7, 0.9, 1.0
	Sector E	26.5	15	17	50	
Jurassic Sequence	Global	25.7	30	17	40	
	Global (<15 m)	25.7	30	17	36	
	Sector C	25.7	24	17	40	
	Sector C (< 15 m)	25.7	24	17	36	
Carboniferous Volcanics	Global	26.6	36	13	51	
	Sectors A, E & F	26.6	23	13	51	
Intrusives	Global	26.2	50	20	54	

Notes: 'D' factor range to assess sensitivity to blasting disturbance ranging between:
D = 0.7 for good blasting management & optimal geological/ geotechnical ground conditions;
D = 1.0 for poor blasting management & more fractured geological/ geotechnical ground conditions.

16.9.2.4. Conversion of Rock Parameters in Slope/W Analyses

Within the limit equilibrium analyses, the rock is modelled as GHB material using a non-linear shear-normal strength model. To establish the strength curve, SLOPE/W computes the normal stress for a range of confining stress values from which a spline curve is generated. Since the equivalent Mohr-Coulomb parameters are derived from 'best fitting' to the spline curve, these parameters will vary dependent on the adopted stress ranges. Therefore, the value of confining stress should be determined for each particular situation.

Within the limit equilibrium analyses, the confining stress range limits have been determined for double bench height in the bench stability analyses. In the pit stability analyses, the confining stress limits have been set on the maximum depth for each geological domain.

Whilst the Hoek-Brown formulas have been used to derive the limiting confining stresses other authors (Li et al, 2007) have proposed alternative derivations for steep and shallow slopes. Generally, the adopted Hoek-Brown derivation is more conservative than the alternative derivations.

16.9.2.5. Kinematic Stability Assessment

The kinematic stability assessment concentrates on the typical rock instability (i.e. planar, wedge and toppling) in relation to slope orientations and joint sets within the rock mass. The stereographic analyses identify the critical modes of failure governing the configuration of BFA.

16.9.2.6. Summary of Structural Data

Structural data was compiled from the 228 drill holes, reviewed and incorporated into the structural data assessments. The BK mine pit was divided into six (6) Sectors, A to F (Table 16-10) with a 25 m buffer zone. The data, based on dip / dip direction data, were grouped into the three (3) unique geological domain datasets; Basalts, Jurassic Sequence and Carboniferous Volcanics (including Intrusives).

In summary, the combined structural data for the mine pit consists of 65,407 individual vectors. Of these, a total of 1,880 vectors (3%) occur within the Basalts, 7,156 (11%) within the Jurassic Sequence and 56,371 (86%) within the Carboniferous Volcanics geological domains.

Density plots were projected for each geological domain using global (i.e. within 50 m of the proposed mine pit boundary) and Sector-specific data into stereoplots. These plots were used to identify the main joint sets. A single global and two sector specific main joint sets were classified for the Basalts, one global and one sector specific main joint sets for the Jurassic Sequence, and three global main joint sets for the Carboniferous Volcanics.

A typical, conservative friction angle of 30° was considered in the kinematic stability assessment since there are no frictional measurements available together with the observations of joint infills and coatings. However, a sensitivity analysis using a friction angle of 40° was also carried out a selection of slope orientations with more critical kinematic issues. The results indicated limited to no improvements in kinematic instability. Analyses of only two slopes showed minor improvements, other kinematic instability are generally governed by BFA and prevail irrespective of a higher friction angle.

In summary, the kinematic assessment identified ‘high’ to ‘medium’ significance planar and wedge instability within the Carboniferous Volcanics along the western to north-western pit walls. Whilst a reduction of the BFA to 70° will reduce much of the instability to a ‘low’ level, the potential for wedge instability remains with ‘medium’ significance in Sectors B and F. A BFA of 65° will reduce this further to ‘low’ significance level.

However, the kinematic assessments using stereoplots of drill hole data are not able to consider the geospatial prevalence and persistence of the joint sets. Therefore, it may be acceptable to consider a BFA of 70° at the initial pushback at the Striker Pit where ‘medium’ significance wedge instability exists in Sector F. Detailed geotechnical mapping of the exposed rock faces will provide more information, such as persistence and spacing, to better determine the associated hazards.

With consideration on the limitation of kinematic assessment based on drill hole data alone, a ‘low’ significance level of kinematic instability is generally acceptable, Table 16-10 indicates the recommended BFA based on kinematic assessment. Further consideration with results from limit equilibrium analyses are summarized in Section 16.9.2.9.

Table 16-10 Recommended BFA Based on Kinematic Assessment

Sector	Domain	Recommended BFA [°]
A, B & F	Basalts & Jurassic Sequence	80
	Carboniferous Volcanics	70
C, D & E	Basalts, Jurassic Sequence & Carboniferous Volcanics	80

16.9.2.7. Limit Equilibrium Stability Assessment

In addition to the assessment of the bench angle configurations assessed in the kinematic stereoplots, limit equilibrium analyses have been undertaken to review both the proposed bench stability under assumed ramp loading, as well as the overall mine pit slope design. Limit equilibrium analyses have been undertaken using Slope/W-GeoStudio 2007 with the adoption of Generalised Hoek-Brown materials. A typical acceptance criteria Factor-of-Safety (FoS) (Table 16-11) adopted from Sowers (1979) was used for bench and overall pit slope stability assessments.

Table 16-11 Typical FoS Acceptance Criteria for Open Pit Slopes (Sowers, 1979)

FoS	Significance
Less than 1.0	Unsafe
1.0-1.2	Questionable safety
1.3-1.4	Satisfactory for cuts, fills; questionable for dams
1.5-1.75	Safe for dams

16.9.2.8. Rock Bench Stability

Limit equilibrium analyses for the rock bench stability have been carried out on an 80° rock bench angle. The analyses adopted dry conditions on the assumption that the groundwater drawdown will be away from the immediate rock face as excavation proceeds. A 40 kPa loading has been applied over the ramp to an extent within 3.7 m of the bench crest based on the proposed ramp layout given in the O2 pit design (O2, 2020). The bench stability assessments use global and sector parameters for each of the key rock materials. A Disturbance (D) factor of D=1 was conservatively assumed for the blast face rock mass.

The stability of the 80° BFA has been checked over 1 to 2 bench faces. Larger failure profiles are analysed under the pit slope stability assessments (Section 16.9.2.10). The minimum FoS for each of the geological domains are summarized in Table 16-12.

Table 16-12 Summary of Minimum FoS for Bench Stability

Material	Min FoS - Global	Min FOS - Sectors		
Basalts	1.80	Sector E	Reduced UCS	1.39
Jurassic Sequence	1.27	Sector C (< 15 m)	Reduced UCS & GSI	0.93
Carboniferous Volcanics	2.47	Sectors A, E & F	Reduced UCS	2.02
Intrusives	2.77	-		

Based on the limit equilibrium assessments, an 80° BFA is considered satisfactory in the Basalts, Carboniferous Volcanics and Intrusives domains. However, in the Jurassic Sequence the FoS is not considered satisfactory. A further stability check of 70° BFA for the Jurassic Sequence in Sector C shows the minimum FoS for shallow failure is increased to 1.20, which is still considered questionable. It is considered that the lower GSI compared to other geological domains is affecting the stability in the Jurassic Sequence. Therefore, it is recommended to undertake a review of the GSI with available core records and with any additional investigation work.

The results of limit equilibrium assessments are also dependant on the level of disturbance considered. Subject to the application of excavation methods and techniques, the sensitivity checking of 'D' factor shows that adequate FoS for 80° BFA can be attained with sound blasting planning and management to control the disturbance to the rock mass strength. A comparison of 'D' factor at 1.0 and 0.7 shows a typical increase of around 39% in the FoS of bench stability (Table 16-13).

Table 16-13 Sensitivity of 80° Bench Stability to Blasting Disturbance

Material			Min FoS D=1.0	Min FoS D=0.7
Basalts	Sector E	Reduced UCS	1.39	2.00
Jurassic Sequence	Sector C (<15-20 m)	Reduced UCS & GSI	0.93	1.32
Carboniferous Volcanics	Sectors A, E & F	Reduced UCS	2.02	2.66
Intrusives	Global		2.77	3.79

Further assessment of the 80° BFA in the Jurassic Sequence has reviewed the ranges in FoS with variations of 'D' factor, sector strengths and GSI with depth (Table 16-14). Whilst the assessments indicate that 80° BFA is satisfactory subject to the control of blasting disturbance (D=0.7), the FoS of Sector C at shallow depths (<15 m) is marginally satisfactory (FoS=1.32).

Table 16-14 Range of FoS for 80° Bench Stability in Jurassic Sequence

Sector	Global		Sector C (Reduced UCS)	
Depth	Upper (Reduced GSI)	>15 m	Upper (Reduced GSI)	>15 m
UCS (MPa)	30	30	24	24
GSI	36	40	36	40
D = 1.0 Min FoS	1.00	1.27	0.93	1.11
D = 0.7 Min FoS	1.51	1.82	1.32	1.61

A lower BFA may be required for the pit excavation encountering the Jurassic Sequence, primarily over the northeast to east (Sectors C & D) if the disturbance resulting from the excavation process is not adequately controlled (D=1.0). Without any additional review of the rock strength parameters, an initial 70° BFA is recommended to provide a marginal FoS in the Jurassic Sequence and a 65° BFA would be recommended in the upper materials (15-20 m depth), subject to the assessment of actual disturbance encountered. Further assessment of the UCS and in particular the GSI variations may dispense of the lower BFA recommendation and support an 80° BFA in the case that rock mass parameter improvements are warranted.

16.9.2.9. Overall Mine Pit Slope Stability

Limit equilibrium analyses for the pit slope stability have been undertaken assuming the proposed pit profiling provided in the O2M revised pit design (Jun 2020) and the geological modelling. The analyses have been undertaken for 8 pit profiles in the N, NW, NE, W, E, SW, SE and S based on an 80° BFA.

The analyses assume that groundwater drawdown will be away from the immediate rock face as excavation proceeds. The overall pit slope stability assessments using the parameters for each of the mine pit sectors are in Figure 16-7.

The minimum range of FoS are proved in Table 16-15.

Table 16-15 Minimum FoS for Mine Pit Slopes by Sector

Parameters	Disturbance	Minimum FoS by Sector							
		A	B	B/C	C	D	E	E/F	F
Sector-specific	0.9	1.36	1.34	1.47	1.28	1.39	1.72	1.55	1.75
Sector-specific	0.7	1.60	1.56	1.67	1.54	1.66	2.00	1.82	2.05

Based on the Sector-specific parameters, the stability of the O2 2020 pit profiling is considered suitable on the basis of the limit equilibrium analyses (i.e. assuming no adverse kinematic stability issues resulting from adverse joint sets) with an assumption of groundwater drawdown.

The sensitivity checking of the 'D' factor demonstrates the increases in FoS that can be attained subject to excavation methods and techniques to control the disturbance to the rock mass strength. A comparison of 'D' factor at 0.7 and 0.9 shows a typical improvement of around 17% in the FoS of overall pit wall stability.

The lowest FoS is in Sector C where the majority of the mine pit wall is intersecting the Jurassic Sequence where the requirement for an initial lower BFA is subject to a review of the rock strength parameters and control of blasting disturbance. Adopting a lower BFA will reduce the overall pit slope angle, thereby improving the FoS further.

The suitability of the proposed pit profiling is subject to maintaining a groundwater drawdown away from the proximity of the slope faces. Sensitivity checking over the Sector specific regions shows that the pit slope stability is more significantly affected by the groundwater conditions than the reduced rock strengths in these zones.

16.9.2.10. Mine Pit Parameter Findings

Compared to the previous Geotechnical Review (FUGRO, 2020) where there were only some 2,000 elements of structural data available, this study verified about 90,000 sets of 'high confidence' data for the kinematic analyses. The stereoplots showed stronger correlations of structural orientation across the mine pit area and reduced some probable 'Joint Sets' in the previous assessment as 'noise' or of less significance in terms of hazards and risk.

Based on kinematic assessments, potential planar, toppling and wedge instability have been identified within all geological domains, and in particular within the Carboniferous Volcanics. Toppling failures are unlikely to be prevented by reduction of the BFA alone, but by avoidance of undermining the pit slopes during operations. Therefore, toppling instability is not considered for further assessment. The significance of potential kinematic instability is classified as 'medium' to 'high' within the Carboniferous Volcanics along the western wall of the propose pit in Sectors A, B and F. Some 'low significance' potential planar instability issues have also been identified in the Basalts and Jurassic Sequence within the northern pit walls in Sectors B and C. In contrast, potential planar and wedge failure issues identified for the Basalts in the previous assessment have been reduced after more detailed assessment in this study. However, it may still be prudent to consider lowering the BFA due to weakening of near-surface layers due to weathering.

Variable BFA sensitivity analyses indicated at 70° BFA, the significance level of potential wedge instability reduced from 'high' to 'medium' and further reduced to 'low' when a 65° BFA was applied. Whereas at 70° BFA, potential planar instability reduced to 'insignificant' in Sectors D and F, but maintained a 'low significance' within Sectors B and C. All potential planar instability reduces to 'insignificant' at BFA of 65°. However, given the limitations of kinematic assessments based solely on geotechnical data collected from drill cores, it may be acceptable to consider a 70° BFA for the western to north-western pit walls in the initial pushback and to reduce the risk from planar and wedge instability by active monitoring and/or removal of any daylighting unstable blocks (Table 16-16).

Table 16-16 Summary of Recommended Mine Pit Parameters

Depth	Pit Parameter Recommendations [BFA / Height / Berm Width]			
	<20 m		>20 m	
Sector	**Disturbance, D =0.7**	**Disturbance, D = 0.9 / 1.0**	**Disturbance, D = 0.7**	**Disturbance, D = 0.9 / 1.0**
A	70° / 10 m / 6m	70° [65°](1) / 10 m / 6m	70° / 10 m / 6m	70° / 10 m / 6m
B	70° / 10 m / 6m	70° [65°](1) / 10 m / 6m	70° / 10 m / 6m	70° / 10 m / 6m
C	70° / 10 m / 6m	70° [65°](1) / 10 m / 6m	80° / 10 m / 6m	70° [65°](2) / 10 m / 6m
D	70° / 10 m / 6m	70° [65°](1) / 10 m / 6m	80° / 10 m / 6m	70° [65°](3) / 10 m / 6m
E	70° / 10 m / 6m	70° [65°](1) / 10 m / 6m	80° / 10 m / 6m	80° / 10 m / 6m
F	70° / 10 m / 6m	70° [65°](1) / 10 m / 6m	70° / 10 m / 6m	70° / 10 m / 6m

Notes: [ ] Possible required reduction subject to review as detailed in points below.
** Recommendation for BFA in Sectors A, B & F is based on kinematic assessment and not affected by disturbance factor.*
(1) 70° BFA is subject to actual ground conditions, if weathering of the surficial layers had significantly weakened the rocks, a 65° BFA may be necessary.
(2) 70° BFA is subject to further confirmation on GSI within Jurassic Sequence. 65° BFA may be necessary.
(3) 80° BFA is subject to further confirmation on GSI value and UCS withing Jurassic Sequence. 70° BFA may be necessary.

With good blast planning and management together with sound mining production techniques, a lower 'D' factor can be considered and a BFA of 80° maintained for the pit walls in Sectors C, D and E (Table 16-16). Subject to confirmation of the reduced GSI value within the Jurassic Sequence, a lower BFA of 70° may need to be considered. However, this recommendation can be dispensed in the case that an improved GSI value is determined.

Due to the effect of weathering and generally lower rock strengths, it is recommended that a 70° BFA be considered for the upper 15-20 m of the entire proposed mine pit (Table 16-16). However, if stability issues are encountered during mining operations, a further reduction to 65° may be necessary.

16.9.3. Dark Horse

16.9.3.1. Background

Fugro (Hong Kong) Limited ("Fugro") was contracted in April 2023 to assist in the design and supervision of a geotechnical assessment of the proposed Dark Horse Mane open pit mine plan. The scope of work for the Dark Horse geotechnical assessment included:

- Desk top review of existing drill hole and geotechnical data availability for Dark Horse Mane South (DHM_S);
- Provide specifications for Geotechnical Investigation and testing programs;
- Remote Oversight of Geotechnical Investigation
- Data Analysis and Reporting

16.9.3.2. Approach and Methodology

Between 2016 and 2022 Erdene completed a number of exploration campaigns in the greater Dark Horse prospect area, with 218 drill holes completed and totalling about 24,091 m drilled. An additional 11 geotechnical drill holes were completed in 2023 with a meterage of approximately 620 m. For the assessment of the proposed DHM-S mine pit, data points within a 50-m buffer were selected, totalling 62 drill holes from the exploration campaigns and 11 drill holes from the geotechnical investigation.

The data was further categorised into the six Sectors (see Figure 16-11) and lithological domains for detailed analyses.

Only structural measurements and assay data were available from the previous exploration campaigns, while the 2023 geotechnical investigation included laboratory testing for geotechnical parameters as well as structural measurements.

As advised by ERD, the structural data collected by ERD in previous exploration campaigns followed the alternative 'Top-of-Hole' measurement methodology while the recent geotechnical investigation completed by Sardonyx used the conventional 'Bottom-of-Hole' method. Relevant conversions were conducted on the alpha and beta angles to convert into dip and dip orientation measurements for plotting onto stereoplots for assessment.

Table 16-17 Summary of Structural Measurement Datasets

Structural Measurement Datasets	Drillholes [nos.]	Discontinuity Data [nos.]
Previous exploration campaigns	62	4,163
2023 geotechnical investigation	11	3,402

A generalized comparison between the two datasets, previous exploration campaign and the 2023 GI, showed substantial differences. However, investigations into the methodologies of the collection of structural data proved inconclusive on any inaccuracies of either set of data. Therefore, both datasets are considered as valid and combined for the kinematic analyses.

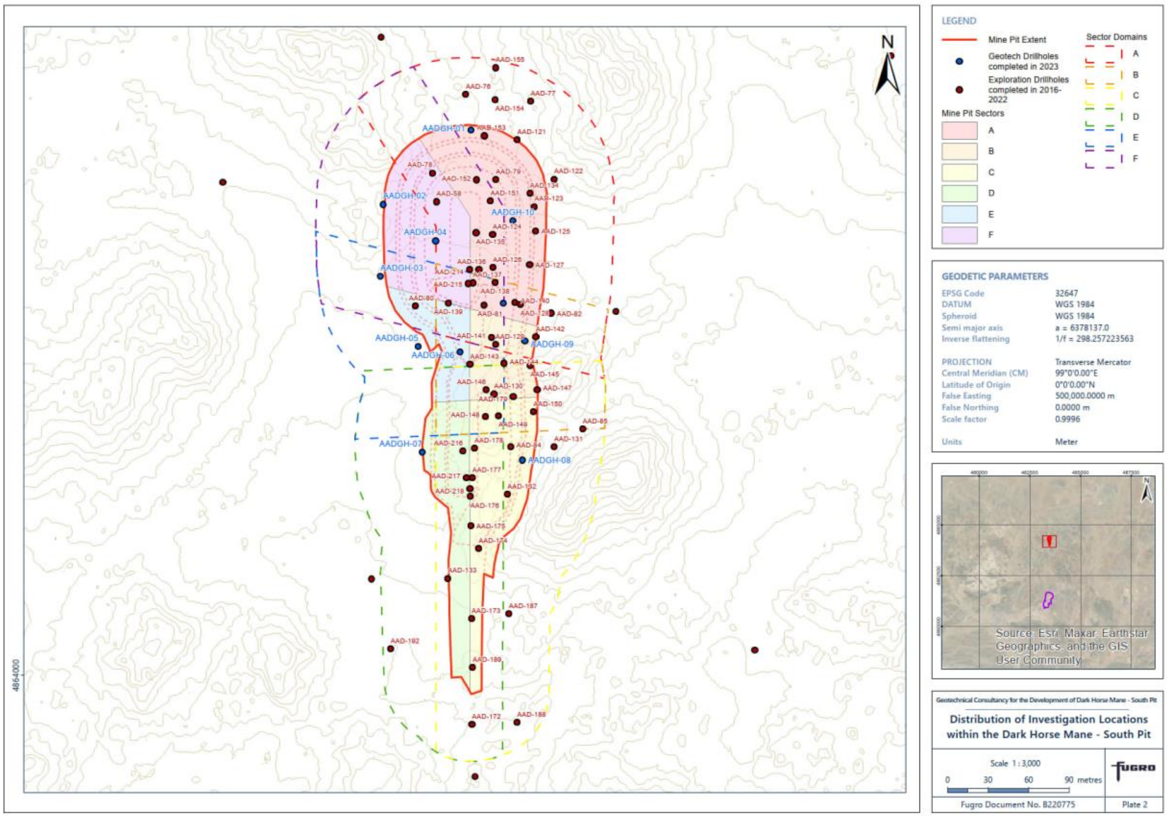


Figure 16-11 Dark Horse Mining Sector with Drill Hole (Source Fugro 2023)

16.9.3.3. Summary of Geotechnical Parameters

The recent 2023 drillhole campaign included a programme of geotechnical laboratory testing to evaluation the rock material properties for use in the geotechnical evaluation of mine pit parameters and stability. The geotechnical testing included:

- 112 density (unit weight, UW) tests
- 56 unconfined compressive strength (UCS) tests
- 22 direct shear (DS) strength tests on rock discontinuities
- 252 point load (PL) tests

16.9.3.3.1. Rock Density

Density testing of the rock types was untaken in accordance with ASTM D7263 (Methods A & B). The density tests were undertaken on rock samples assigned for UCS testing. Density measurements were determined by both water displacement method and by direct measurement using the prepared UCS test specimen. The density measurements obtained by the two methods are well correlated with less than 1% difference.

A review of the rock densities shows some moderate spread within the 2 main geological units (Volcanic & Tuffaceous) and over the 6 mine Sectors (see Figure 16-11) as summarized in Table 16-18.

Table 16-18 Rock Density Variation Across Mine Sectors

Material	Global Density [Mg/m3]			Sector Average Density [Mg/m3]					
	Min	Max	Avg.	A	B	C	D	E	F
Volcanic	2.42	2.79	2.64	2.62	2.75	2.67	2.72	2.59	2.64
Tuffaceous	2.49	2.77	2.65	2.64	2.73	2.54	2.73	2.58	2.67
Intrusive	2.55	2.65	2.60	2.61	-	-	-	-	2.56
Breccia	2.58	2.69	2.63	2.63	-	-	-	-	-
Alteration	2.55	2.55	2.55	-	-	-	-	2.55	-

16.9.3.3.2. Unconfined Compressive Strength

Unconfined compressive strength tests were undertaken in accordance with AASTM D7263 (Method D). A total of 56 UCS tests were carried out with a broad range from 4.4 to 71.1 MPa (excluding the results from 8 invalidated tests). The UCS data of each of the geological domains has been analyzed on a global basis. There is a wide variation of UCS values in each of the geological domains and in the mine sectors. Whilst the UCS data has been reviewed against the sector domains, the number of tests for a given geological domain within the individual sectors is relatively small and so sector adjustment of the global values has not been considered. Global UCS values have been derived considering data variation and confidence. The globally derived UCS values and values with the 6 Sectors are summarized in Table 16-19.

Table 16-19 Summary of Derived UCS Strengths

Material	Unconfined Compressive Strength (UCS) [MPa]				Adopted Global UCS [MPa]	Sector Median UCS* [MPa]					
	Min.	Max.	Average *	Median*		A	B	C	D	E	F
Volcanic	4.4	71.1	23.6	16.8	16	16.6	23.0	32.0	17.4	16.4	12.9
Tuffaceous	7.2	67.9	24.5	24.9	21	25.3	18.0	36.3	7.2	16.4	26.2
Intrusive	25.4	65.9	34.5	32.5	33	39.1	-	-	-	-	25.4
Alteration	51.5	51.5	51.5	51.5	33	-	-	-	-	51.5	-
Note:	** excluding outliers*										

16.9.3.3.3. *Direct Shear*

A total of 22 direct shear (DS) tests were carried out in accordance with ASTM D5607. In general, the majority of friction angles derived from the DS tests were uncharacteristically low with 20 of 22 results with a friction angle less than 25°. The low results are more likely attributable to testing issues rather than the rock properties itself. The shear results were not considered appropriate to adopt in the kinematic assessments. Same as for the Bayan Khundii pit assessments, a typical conservative friction angle of 30° was adopted.

16.9.3.3.4. *Point Load Strengths*

Point load (PL) strength is an index test for rock strength classification and provides a quick assessment. With sufficient data, the point load index strength, Is50, can be used to establish a site-specific correlation with UCS values. However, since the point load test data was provided as equivalent UCS strengths without the Is50 values, the correlation has not been reviewed.

A total of 252 point load tests were carried out, including 126 axial and 126 diametrical tests (i.e. a pairing of axial and diametrical at each test location). The point load UCS (UCSPL) results exhibit considerable scatter, demonstrating variability throughout the rock mass. The average results are observably higher than those from UCS testing. Within an axial/diametrical pair, the UCS variation was high, although the averaged axial and diametrical results within each geological domain were comparable.

The range of UCSPL and comparison with UCS results are summarized in Table 16-20.

Table 16-20 Comparison of UCS Strengths From Point Load Tests

Material	Unconfined Compressive Strength (UCS) [MPa]							
	From UCS Tests				From Point Load Tests			
	Min.	Max.	Average *	Median*	Min.	Max.	Average	Median
Volcanic	4.4	71.1	23.6	16.8	1.6	177.0	54.14	40.2
Tuffaceous	7.2	67.9	24.5	24.9	7.6	213.6	62.5	51.5
Intrusive	25.4	65.9	34.5	32.5	18.1	142.4	65.7	56.3
Alteration	51.5	51.5	51.5	51.5	43.3	53.7	48.5	48.5
Note:	** excluding outliers*							

16.9.3.3.5. Geological Strength Index

The geological strength index, GSI provides an estimation of the reduction of the rock mass strength for different geological conditions as identified in field observations. GSI values for the key rock types is variable over locations and depth. The GSI exhibited a wider spread in the upper ~20 m and so typical parameters for assessment were adopted for shallower materials (< 20 m) and deeper materials (> 20m) as summarized in Table 16-21.

Table 16-21 Review of GSI Ranges

Material	Global GSI Values		Sector Specific GSI	
	Depth: <20 m	Depth > 20m	Depth: <20 m	Depth > 20m
Volcanic	28	42		
Tuffaceous	27	38		27 (Sector B)
Intrusive	30	50		
Alteration	18	30		

16.9.3.3.6. Summary of Generalised Hoek-Brown (GHB) Parameters for Assessment

Within the limit equilibrium analyses, the rock is modelled as Generalised Hoek-Brown (GHB) material using a non-linear shear-normal strength model. The GHB materials are derived from 4 input parameters:

- Uniaxial compressive strength (UCS);
- Intact rock parameter (mi);
- Geological strength index (GSI); and
- Disturbance factor (D).

Table 16-22 Generalized Hoek-Brown Input Parameters

Material	Mine Sector	Density [kN/m3]	UCS [MPa]	mi	GSI (<20m / >20m)	D
Volcanic	Global	26.3	16	25.0	28 / 42	0.7, 0.9, 1.0
Tuffaceous	Global	26.0	21	13.0	27 / 38	
	Sector B	26.0	21	13.0	27 / 27	
Intrusive	Global	25.5	33	20.5	40 / 50	
Alteration	Global	25.0	33	20.0	20 / 30	

Notes: 'D' factor range to assess sensitivity to blasting disturbance ranging between:
D = 0.7 for good blasting management & optimal geological/ geotechnical ground conditions;
D = 1.0 for poor blasting management & more fractured geological/ geotechnical ground conditions.

16.9.3.4. Kinematic Analysis

Structural data was compiled from 73 drill holes within relevant vicinity of the proposed mine pit and then separated into six Sectors for kinematic analyses. Following similar methodologies and classifications used for the geotechnical assessment at the Bayan Khundii deposit, the structural data at DHM-S were classified according to their lithological domain and displayed in stereoplots. Three primary joint sets were identified from the pole density shown in Figure 16-12 and summarized in Table 16-23.

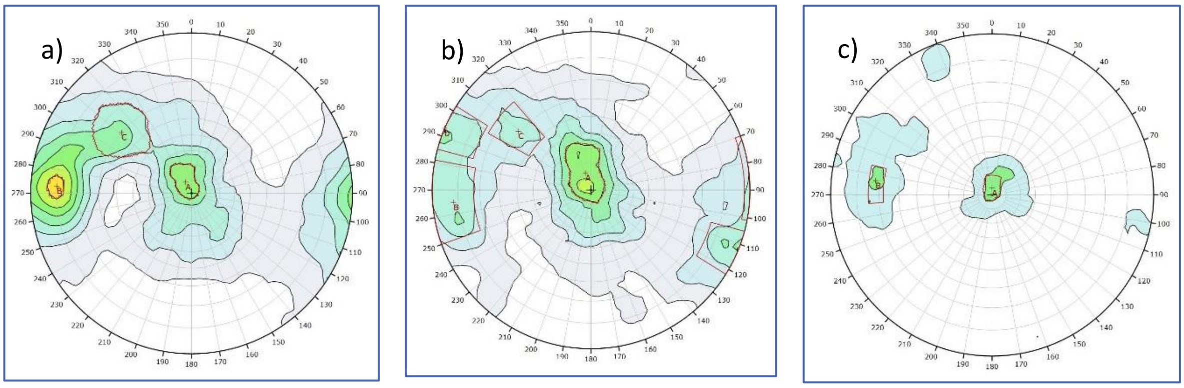


Figure 16-12 Stereoplots of vector densities for the three lithological domains

Note: a) Global Volcanics; b) Global Tuff & Tuffaceous sediments; c) Global Intrusives

Table 16-23 - Summary of Main Joint Set Data (Source Fugro 2023)

Volcanics (Unit 1)	Global		Sector A		Sector B		Sector C		Sector D		Sector E		Sector F	
Joint Set A	81/093	Moderate	80/092	Major	78/093	Major	79/096	Major	88/283	Moderate	90/089	Minor	82/096	Minor
Joint Set B	63/124	Minor	63/122	Moderate	59/130	Major	63/131	Moderate	-	-	-	-	-	-
Joint Set C	11/148	Minor	09/134	Moderate	12/141	Major	17/156	Major	13/186	Moderate	11/174	Minor	10/192	Moderate
Joint Set D	-	-	22/319	Minor	17/342	Minor	-	-	-	-	-	-	36/304	Moderate
Joint Set E	-	-	25/036	Minor	37/038	Minor	18/029	Minor	-	-	-	-	-	-
Joint Set F	-	-	-	-	-	-	-	-	-	-	61/164	Minor	-	-

Tuffaceous (Unit 2)	Global		Sector A		Sector B		Sector C		Sector D		Sector E		Sector F	
Joint Set A	87/095	Minor	82/094	Minor	-	-	-	-	-	-	-	-	88/289	Moderate
Joint Set B	-	-	62/131	Minor	63/122	Minor	-	-	-	-	-	-	-	-
Joint Set C	14/162	Moderate	16/166	Minor	19/162	Moderate	13/154	Moderate	-	-	10/170	Moderate	12/186	Moderate
Joint Set D	21/324	Minor	-	-	18/316	Moderate	-	-	-	-	23/300	Minor		
Joint Set E	-	-	29/028	Minor	24/043	Moderate	-	-	-	-	23/006	Moderate		
Joint Set F	-	-	-	-	-	-	-	-	-	-	45/166	Moderate		

Intrusives (Unit 3)	Global		Sector A		Sector B		Sector C		Sector D		Sector E		Sector F	
Joint Set A	72/094	Minor	79/183	Minor	-	-	-	-	-	-	-	-	-	-
Joint Set C	08/199	Minor	80/211	Minor	-	-	-	-	-	-	-	-	-	-

These joint sets were then used as guides to classify the structural data within each Sector for kinematic analyses, and the summary is shown in Table 16-24.

Table 16-24 Summary of Sector-based Kinematic Analyses

Sector	Slope Orientation [°]	Design BFA [°]	Volcanics [Unit 1]			Tuffaceous [Unit 2]			Intrusives [Unit 3]		
			Planar	Wedge	Toppling	Planar	Wedge	Toppling	Planar	Wedge	Toppling
A	180	80	-	Low	-	Low	Low	-	(Not encountered within these two pit orientations)		
	225	80	-	Low	-	-	Low	-			
	270	80	-	-	High	-	-	High	-	-	High
B	270	80	-	-	High	-	-	Low	(Not encountered within the pit walls of these sectors)		
C	270	80	-	-	High	-	-	-			
	300	80	-	-	High	-	-	-			
D	045	80	-	-	-						
	090	80	Low	Low	Medium						
E	110	80	-	Low	Medium	-	-	-			
	030	80	-	-	-	Low	-	-			
F	090	80	Medium	Low	Low	-	-	Medium			
	135	80	-	Low	Low	-	-	Low			

Note: Instability significance considers the percentage of vectors of primary joint sets within the failure envelope. However, the actual number of vectors across the global dataset could be considerably lower than indicated.

Toppling instability is not considered to be preventable by the reduction of slope angle alone but by avoidance of undercutting and undermining the slopes during operations and hence, will not be considered further in the kinematic assessment.

Overall, the significance for kinematic instability (planar & wedge) is considered 'Low', particularly on the west-facing slopes (Sectors A to C). Significance for planar instability is 'Low to 'Medium' on the east-facing slopes (Sectors D to F). Sensitivity analyses indicated that a reduction in BFA to 70° in Sectors D to F would reduce the potential kinematic instability significance and summarized in Table 16-25.

Table 16-25 Summary of Sensitivity Analyses for Problematic Instabilities

Sector	Slope Orientation [°]	Design BFA [°]	Volcanics [Unit 1]		Tuffaceous [Unit 2]	
			Planar	Wedge	Planar	Wedge
D	090	80	Low (11%)	-	(Not encountered within this Sector)	
		70	- (< 5%)	-		
E	110	80	(Overall Low – 7%)	Low (13%)	-	-
		70	(Overall Low – 5%)	Low (6%)	-	-
F	090	80	Medium (27%)	Low (7%)	-	-
		70	- (< 5%)	- (< 5%)	-	-

Note: The planar instability in Sector F corresponds to a 'minor' joint set with density concentration between 2-3%. The actual density concentration compared to the whole Sector falling within the planar failure envelope is considered 'Insignificant'.

With consideration on the limitation of kinematic analysis based on drill hole data alone, where the geospatial prevalence and persistence of joint sets may not be clearly indicated, a 'Low' significance for kinematic instability is generally acceptable. Furthermore, sensitivity analyses indicated an improvement in kinematic stability when a 70° BFA was adopted, therefore based on the kinematic stability, it is recommended to consider a BFA of 70° at the current planning and design stage.

16.9.3.5. Limit Equilibrium Analysis

16.9.3.5.1. <u>Bench Stability</u>

Limit equilibrium analyses for the rock bench stability have been carried out on the proposed 80° BFA with bench heights of 15 m and 10 m and a berm width of 8 m as adopted in the preliminary mine pit model. Additional analyses for 70° and 65° BFA and berm width of 6 m were also undertaken for the Volcanics and Tuffaceous materials.

Disturbance (D) factors of D=1, 0.9 and 0.7 were considered to represent different disturbances the rock may have undergone during excavation or blasting. In considering the reporting FoS, the disturbance factor adopted is dependent on the proximity of the failure profile to the blast face. For shallow failures close to the bast face (where the disturbance has a greater influence), disturbance factors of D=1 or 0.9 are considered. For failures extending deeper into the rock mass, where the failure profile is further from the blast face, D=0.7 has been considered.

The results of the rock bench stability assessments and the minimum FoS for each of the geological domains are summarized in Table 16-26.

Table 16-26 Summary of Minimum FoS for Bench Stability

Configuration		**Bench Height 15 m / Berm Width 8 m**						**Bench Height 10 m / Berm Width 6 m**					
Depth		< 20 m			> 20 m			< 20 m			> 20 m		
Material	BFA	Disturbance, D			Disturbance, D			Disturbance, D			Disturbance, D		
		1.0	0.9	0.7	1.0	0.9	0.7	1.0	0.9	0.7	1.0	0.9	0.7
Volcanic	80°	0.66	0.75	0.93	1.04	1.16	1.39	0.76	0.88	1.09	1.20	1.35	1.62
	70°	0.90	1.03	1.28	1.36	1.52	1.82	1.03	1.19	1.47	1.59	1.77	2.12
	65°	1.02	1.18	1.46	1.54	1.75	2.04	-	-	-	-	-	-
Tuffaceous	80°	0.60	0.69	0.88	0.91	1.04	1.28	0.69	0.80	1.02	1.06	1.21	1.48
	70°	0.79	0.92	1.16	1.17	1.33	1.63	0.91	1.06	1.35	1.38	1.56	1.92
	65°	0.89	1.04	1.31	1.31	1.48	1.81	-	-	-	-	-	-
Intrusive	80°	1.27	1.43	1.75	1.97	2.15	2.57	-	-	-	-	-	-

The low FoS results are generally localised failures within 6 m of the bench face within the upper 20m zone which is more susceptible to instability resulting from the lower GSI values. Based on the above FoS, and with adequate control of disturbance by excavation methods, the following recommended pit parameters are summarized in Table 16-27.

Table 16-27 Summary of Recommended Pit Parameter

Sector	Governing Materials	Pit Parameter Recommendations [BFA / Height / Berm Width]	
		< 20 m Depth	> 20 m Depth
A	Volcanic	70° / 10 m / 6 m or 65° / 15 m / 8 m	75° / 15 m / 8 m
B	Volcanic	70° / 10 m / 6 m or 65° / 15 m / 8 m	75° / 15 m / 8 m
C	Tuffaceous	65° / 10 m / 6 m	NA
D	Volcanic	70° / 10 m / 6 m or 65° / 15 m / 8 m	NA
E/F	Tuffaceous	65° / 10 m / 6 m	80° / 10 m / 6 m or 70° / 15 m / 8 m
F	Volcanic	70° / 10 m / 6 m or 65° / 15 m / 8 m	75° / 15 m / 8 m

16.9.3.5.2. Overall Mine Pit Stability

Limit equilibrium analyses for the pit slope stability have been undertaken assuming the preliminary pit profiling and geological modelling provided. The analyses have been undertaken for 6 pit profiles, one in each Sector, based on the provisional 80° BFA. The analyses have been undertaken using a general disturbance factor of D = 0.7 as well as disturbance factors of 1.0 and 0.9 for shallow failures in the vicinity of the pit face.

The results of the pit slope stability assessments and the minimum range of FoS are in Table 16-28.

Table 16-28 Minimum FoS for Mine Pit Slopes by Sector

Instability Type	Relevant Disturbance Factor	Minimum FoS by Sector					
		A	B	C	D	E	F
Localised bench face	1.0	0.72	0.63	0.61	0.64	0.67	0.82
	0.9	0.83	0.72	0.71	0.73	0.77	0.93
	0.7	1.03	0.92	0.91	0.91	0.96	1.17
Overall pit *	0.7	1.42	1.22	1.23	1.17	1.17	1.58
*Note: * excluding the localised bench face failures.*							

16.9.3.6. Summary

The kinematic assessments indicated that the most significant instability results from potential toppling failure along the eastern pit slopes in Sectors A to C. However, as toppling failure is not considered preventable by reduction of slope angle alone, the recommendation would be to avoid undercutting and/or undermining the slope during operations. Low to medium planar and low wedge failure potentials have been identified in the western pit slopes in Sectors D to F. Sensitivity analyses indicated that a reduction of bench face angle (BFA) would improve the potential hazards. Based on kinematic analyses it is recommended that BFA is designed to 70° to reduce the potential for kinematic instabilities in Sectors D to F.

The recommendations for the pit parameters are largely governed by the limit equilibrium stability of shallow bench face failures in the upper 20 m of the pit. Within the upper 20 m of the mine pit profile, it is provisionally recommended to adopt a 70° BFA with 10 m bench height or a 65° BFA with a 15 m bench height in the Volcanics. In the Tuffaceous materials in Sector C and E/F, it is provisionally recommended to adopt a 65° BFA with a 10 m bench height. Below 20 m depth, a 70° BFA with 15 m bench height is considered acceptable for all geological and sector domains. In general, berm widths not less than 8 m are recommended for 15 m bench heights and not less than 6 m for 10 m bench heights.

Based on the sensitivity checking of shallow failures with a disturbance factor of D=0.7, a 70° BFA with 15 m bench height may be acceptable with good blast planning and management together with sound mining production techniques. It is recommended that the performance of the rock mass behaviour and effects of the excavation techniques be carefully reviewed during the initial mine strike. The planning of excavation sequence and operations should maintain an ability to fall back to the lower pit parameter recommendations of 65° BFA and/or 10 m high bench heights subject to the evaluation of overall rock mass behaviour and response during initial blasting.

In general, the rock mass stability for the Tuffaceous materials is lower than that of the Volcanics. The Tuffaceous materials are prevalent in the mine pit profiles of Sectors C and E to F. The presence of Volcanics in Sector C is mainly around the end of the proposed entry ramp into the pit where it is exposed in the face up to around 25 m high. Any shallow, pit face instabilities may be addressed locally and are not anticipated to pose significant implication. In Sector E/F (northwest corner) of the mine, the Tuffaceous materials are encountered over the majority of the pit wall. Around these sectors in particular, provisions should be made to potentially adopt the lower bench face angle or bench height in the upper 20 m subject to further review of any additional investigation data and initial mine strike evaluation.

The preliminary recommendations for pit parameters are based on the data acquired under the recent site investigation work. Since there is generally a spread of measured geotechnical data, in particular the GSI and UCS values, it is recommended that any further exploratory drilling ahead of the commencement of excavation be used as an opportunity for design validation review. Additional geotechnical data, similar to that gathered under the recent site investigation, should be collected and reviewed alongside current data to ensure the assumptions remain valid. Further recommendations for geotechnical data acquisition and review are given in Section 26.2.

16.10. General Arrangement

The site general arrangement for the Project is developed based on due consideration of site conditions, prevailing weather patterns, cost optimization, and the unique operating requirements. The overall Project layout is given in Figure 16-13 below.

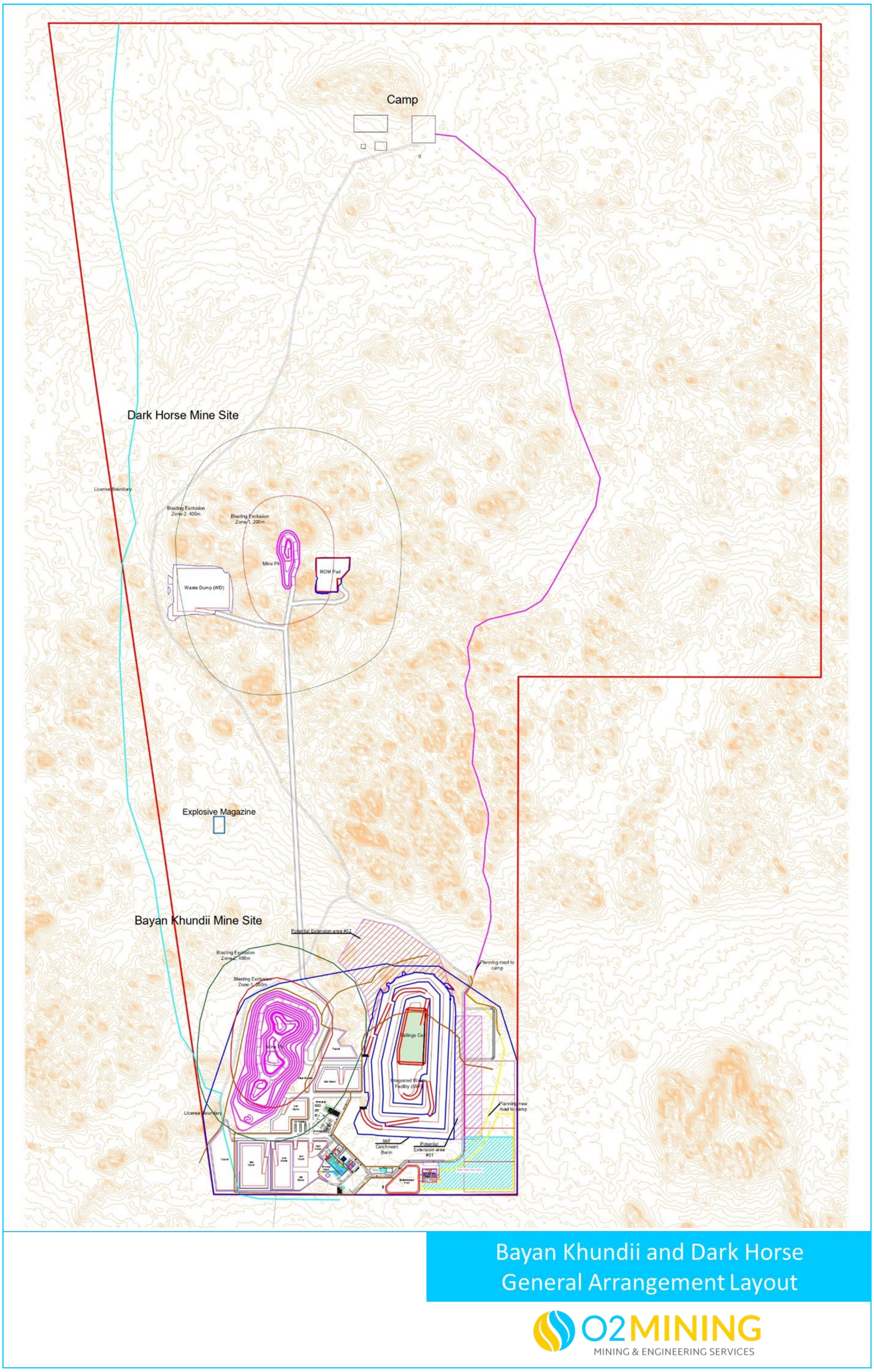


Figure 16-13 Project General Arrangement Layout (Source O2 2023)

17. Recovery Methods

17.1. General Description

This study is based on an AACE International Class 2 estimate (AACE, 2005). To achieve this level of confidence, the plant design has been progressed to a complete engineered design with only detailed design and incorporation of specific vendor information remaining, including equipment layout, unit sizes, and comprehensive design of concrete, structure and cladding. This is based on Mongolian structural design standards and norms and the Eurocode (EN 1990). The Eurocode was used as an overarching internationally recognized code, as it addresses gaps in the Mongolian guidelines, and is comprehensive and prescriptive as to the application of design loads.

A significant body of metallurgical and process test work was completed during the Prefeasibility Study ("PFS") for the Bayan Khundii deposit. Supplementing this is additional work completed for the FS and detailed in Section 13. The body of test work has been sufficient to fully develop the process design, which in turn has allowed the development of the design to the level required.

The feed grade to the plant will vary with the mine plan and plant feed strategy, averaging 3.98 g/t gold over the life of mine, and capped at 4.5 g/t on a monthly average basis. The plant operational capacity is capable of processing feed ores up to 6.0 g/t gold, or up to 9 g/t precious metal content including recovered silver, with no impact on the plant recoveries. The ore is relatively low in silver, and the gold to silver ratio generally increases with higher gold grades.

Overall, the test work shows that the ore is amenable to conventional cyanide leaching with reported recoveries averaging in the low to mid 90's at the proposed head grade. The recovery versus grind size correlation shows continued improved recovery down to 60 µm, implying a fine-grained mineralogy.

Gravity recovery has not indicated any additional overall recovery beyond the leach recoverable gold, at this grind size. Based on this, a gravity circuit has not been included in the design, but it is noted that a potential ability to reduce the load to the leach and Carbon in Pulp ("CIP") circuits by removing some gold and silver from high grade feeds prior to the leach circuit, may allow higher overall feed grades to the plant without any risk of gold recovery loss.

Cyanide and water conservation methods have been utilized in the tailing management of the design, including a washing of residual cyanide from the CIP tail in the tail thickener, detoxification on a high solid phase tailing pulp, and pressure filtration to produce a dry stack tail material to be encapsulated in the IWF.

The FS has determined that the most effective circuit will be a conventional CIP circuit with single stage crushing, a Semi Autogenous Grinding ("SAG") and ball mill grinding circuit at the front end, with a modular Pressure Zadra elution circuit, cyanide recovery, air/sulphur dioxide detoxification and filtration prior to dry stack disposal. The process plant will have an annual capacity of 650,000 tpa throughput and is expected to produce an average 78,200 oz per year of gold within a doré, over the planned mine life, at an average 92.7% recovery.

17.2. Process Design Criteria

The process design criteria for the plant are included in Table 17-1. These criteria were used to size and cost the processing plant for this phase of the project.

Table 17-1 Headline Process Design Criteria

Description	Value	Units
ROM Ore		
Throughput	650	Ktpa
F100	300	mm
P80	160	mm
CWi (Crusher Work Index)	23.2	kWh/t
SMC Tests® (A x b)	33.4	
Bwi (Bond Ball Mill Work Index)	18.9	kWh/t
Rwi (Bond Rod Mill Work Index)	22.7	kWh/t
Ai (Abrasion Index)	0.416	
Average Gold head grade	3.98	g Au/t ore
Average Silver head grade	1.80	g Ag/t ore
Crusher		
Type	Jaw	
Utilization	70	%
CSS	60	mm
P80	63	mm
SAG Mill		
Utilization	92	%
Length	3.1	m
Diameter	5.49	m
Installed Power	1300	kW
SAG Mill Circuit P80	1500	micron
Recirculating Load	20	%
Ball Mill		
Utilization	92	%
Length	7.0	m
Diameter	4.0	m
Installed Power	1750	kW
Ball Mill Circuit P80	60	micron
Recirculating Load	300	%
Leach		
Residence Time	36	hours
Slurry Density	42	% solids w/w
Oxygen Source	Compressed Air	Low Pressure
Cyanide Concentration	0.5	g/l
Cyanide Consumption	0.12	Kg NaCN/t feed
pH	11	

Description	Value	Units
Carbon in Pulp ("CIP")		
Carbon Concentration	30	g/l
Carbon Loss	20	g C/t feed
Carbon Gold Loading	3000	g Au/t Carbon
Carbon Silver Loading	2000	g Ag/t Carbon
Tailings Treatment		
Tailings Thickener Underflow Density	50	% solids w/w
Specific Settling Rate	0.25	t feed solids/m²/h
Flocculant Dose	60	g/t feed solids
Detoxification Method	SO_2/air	
Detoxification pH	8	
SMBS dosing rate	4	g SO_2/g WAD CN
Copper concentration	100	mg/l
Dissolved Oxygen Concentration	3	ppm
Specific Filtration Rate	250	Kg solid/m²/h
Cake Solid Content (to IWF)	85 (15% moisture)	% solids w/w
Gold Room		
Elution method	Pressure Zadra	
Elution time	18	hours
Total cycle time	22	hours
Carbon Batch Size	3.0	t
Reagents		
Preferred supply phase	Solid	
Nominal mixing tank size	1	day
Nominal storage tank size	2	days

17.3. Recovery Methods and Process Selection

From the PFS, completed in 2019, a CIP circuit was determined as the most appropriate type of circuit, consisting of single stage crushing, two stage grinding, atmospheric leaching, multi stage carbon-in-pulp, counter-current AARL elution, with tail stream managed via thickening, detox, and pressure filtration, before being conveyed to a stockpile for rehandling to the waste facility.

During the FS completed in 2020 and then subsequently reviewed and revised during this Feasibility study update, all of the selected circuits were challenged to determine if this defined the most appropriate circuit. Sizing of the unit processes was also further developed with the initial test-work undertaken during the PFS, and supplementary test-work during the FS. The circuit was further enhanced by operability, maintainability, and reliability considerations underpinning design philosophies. To this end, pumps within the primary process in continuous use were specified as Duty Standby sets and all multi-tank processes were designed with a launder system to enable temporary bypass of individual tanks for maintenance purposes.

The crushing area, which has the lowest availability in mineral processing generally, was duplicated to improve overall reliability, and decoupled from the grinding circuit by the inclusion of an emergency stockpile of crushed ore, and a provision to return this to the SAG mill feed, independent of the SAG

Mill Surge Bin. Provision of the standby crusher eliminates the need for a Coarse Ore Stockpile ("COS"), substantially reducing the amount of engineering and construction costs in the comminution circuit, whilst providing a higher level of reliability and crushing capacity for the process plant.

The grinding circuit was further optimized to accommodate a wider variability in the ore hardness. The classification on the SAG mill is by screen, with the transfer size by screen with a nominal aperture of 2 mm. To manage the power draw in the SAG mill, a variable speed drive was incorporated to enable mill speeds between 60% and 75% of critical speed.

A leach feed thickener in the leach circuit will control the leach feed density. Four tanks will retain a 36 hours leach time at leach densities above 38% solids by mass.

The CIP circuit residence time is 6 hours, and the tank configuration matches the carbon batch size. A review of the appropriateness of the CIP v CIL circuit was conducted. This analysis concluded that CIP was the preferred option with higher kinetics from the completed leaching prior to carbon contact, and higher carbon concentration, leading to higher gold concentrations on loaded carbon.

The elution circuit will be a Pressure Zadra circuit due to considerations for water quality, and the relative simplicity of the minerology.

The tails thickener flow includes a feed dilution system to maximize cyanide recovery, replacing some of the cyanide containing fluids in the underflow with raw water.

The filtration was changed from ceramic disk vacuum filtration to plate and frame pressure filtration to minimize the water and residual cyanide content to the dry cake tailings.

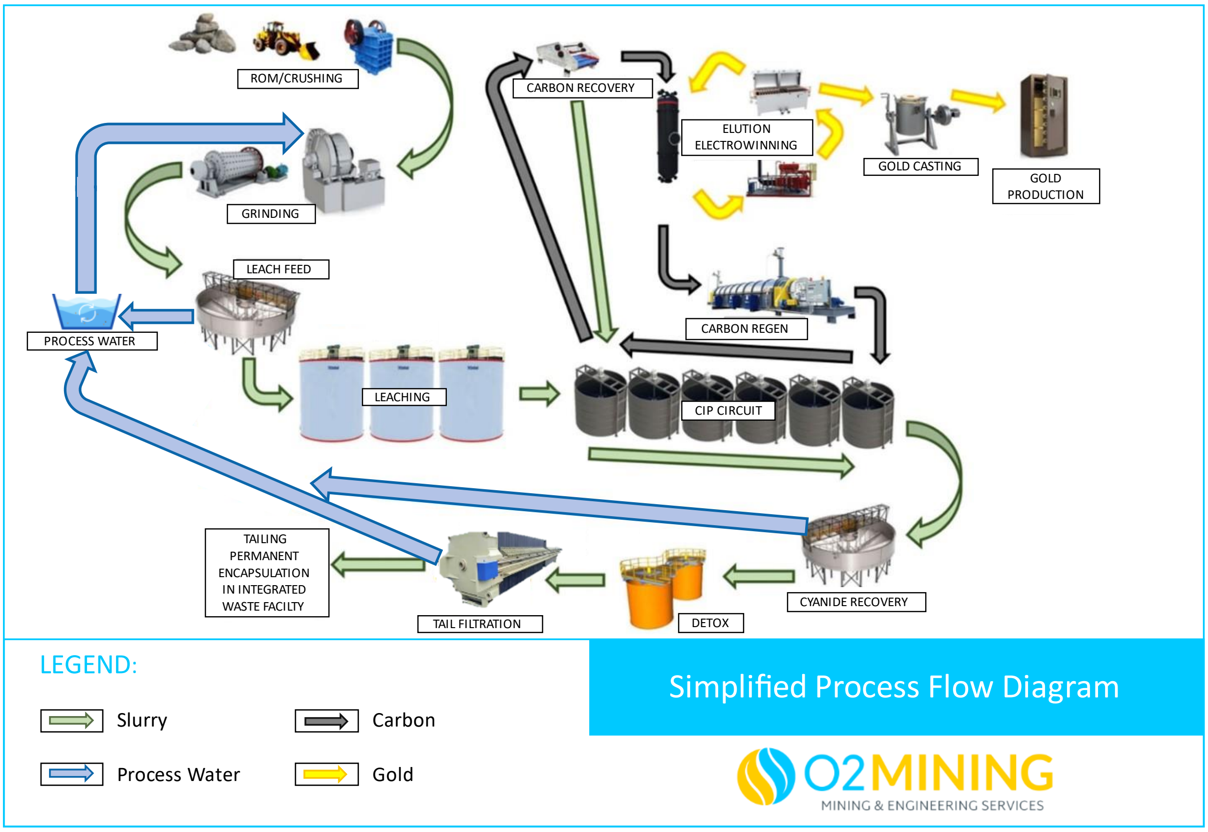


Figure 17-1 Simplified Process Flow Diagram for Project (Source O2 2023)

17.4. Plant Design Basis

The Process plant design was developed from the Prefeasibility design and the additional metallurgical testing undertaken during the feasibility study.

The process plant design basis has an overall plant operating time of 92% or 8,060 hours per annum. The process plant has been designed to produce up to approximately 88 Koz/a gold as doré bar (as achieved in Year 5), but averages approximately 77 Koz per year over the life of mine.

Key criteria selected for the process plant design include:

- Ore throughput of 650,000 tpa, or 11,950 tonnes per day;
- Nominal Maximum Feed Size P100 of 300 mm, based on the small block size, and close pattern drill and blast;
- Grinding product of nominal P80 of 60 µm;
- Plant utilization of 92%;
- Average ore head grade of 3.98 g/t for gold;
- Ore head grade capped at 4.5 g/t planned over a month interval;
- Short term head grade capped at 6 g/t (constrained by the elution capacity); and
- LOM average gold recovery of 92.7%

The Bayan Khundii orebody is a relatively simple ore to process in that it is a gold orebody containing some silver, has low levels of sulphide and base metals, has no carbonaceous material, very low levels of arsenic, and virtually no preg-robbing or cyanide consuming minerals. The complexity of the circuit relates to the management of water to mini320mise the makeup water requirements; cyanide management, both in the recovery of unused cyanide from the CIP tail and the detoxification of remnant cyanide prior to disposal; and the management of the process tailings in an environmentally friendly and commercially optimized manner.

An overview general arrangement ("GA") is shown in Figure 17-2, defining each of the operating areas.

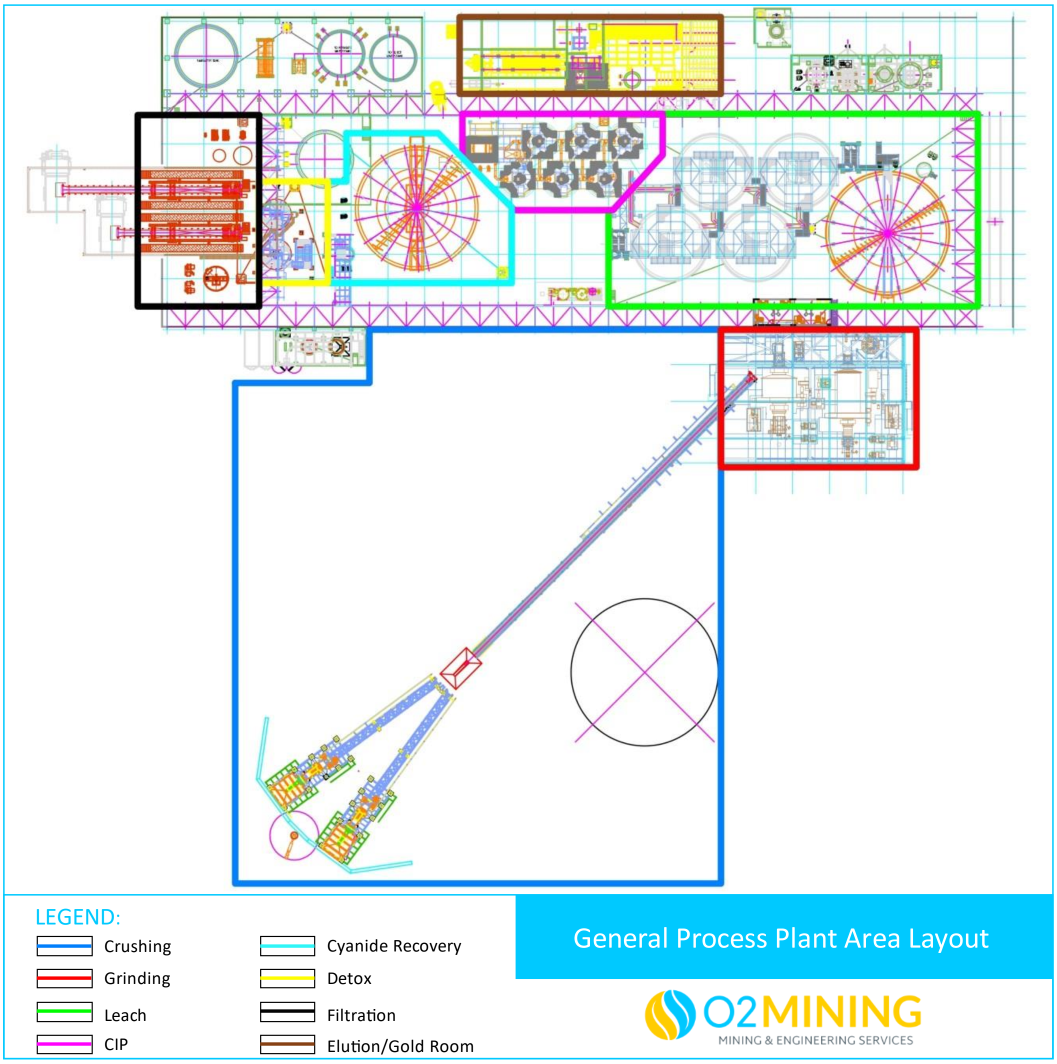


Figure 17-2 General Process Plant Area Layout (Source O2 2023)

17.5. Process Description

17.5.1. Crushing

There are 2 permanently installed crusher circuits and each circuit consisting of:

- ROM bin;
- Apron feeder;
- Vibrating grizzly, to allow the passing of smaller material;
- Jaw crusher; and
- Discharge conveyor.

Both circuits discharge to a common SAG feed surge bin, which has an apron feeder discharging to the SAG mill feed conveyor. The SAG feed surge bin has an overflow chute to allow material to be stockpiled as an emergency crushed stockpile, which is fed back to the SAG mill feed belt when required via a hopper and belt feeder.

This is to ensure that minor disturbances in the ROM feed and crushing rate are not affecting the constant feed to the grinding circuit, and giving a measure of control to the plant feed rate. This is critical to ensure consistency in the grind size, and control over the mill circuit.

The ROM bin has been sized to accommodate the size of trucks proposed for use in the mining operation, but the plant feed is envisioned to be a combination of direct tip, and front end loader from the ROM to control feed blend on a day to day basis. A grizzly will be placed over the feed bin to control oversize material to minimize crusher blockages, and any material that pegs the grizzly will be managed by a rock breaking hammer fixed to an excavator.

From the apron feeder, smaller material passes through the vibrating grizzly, directly to the discharge conveyor, while larger material is crushed to a nominal P80 100 mm by the Jaw Crusher and then discharges to the conveyor.

It is conveyed to the SAG feed surge bin, which will have approximately 1 hour capacity, allowing for shift changes, loader refueling and in-field servicing, and minor crusher downtime, without affecting the feed to the grinding circuit. This surge bin has a designed overflow to a crushed ore bunker to be moved to the Emergency Stockpile, via endloader.

Emergency Stockpile reclamation is to a small hopper of approximately 2 loader buckets, to a belt feeder. As with the SAG feed surge bin reclaim feeder, these will be controlled via a belt weigh scale on the SAG mill feed conveyor, to ensure a consistent feed rate to the grinding circuit.

17.5.2. Grinding

After additional modelling work on the overall comminution circuit, conducted by Orway Mineral Consultants-Perth, AU (“OMC”), the mill sizes were changed to accommodate the likely range of rock hardness expected to be encountered, and a variable speed drive specified for the SAG mill. The SAG mill classification includes a screen, with a 2 mm aperture. The SAG mill is grate discharge, while the ball mill is an overflow mill. SAG mill speed will be used, as a manual adjustment, to control SAG mill circulating load, while water addition rate will be used to control the fluidity of the mill contents and to minimize recirculation of undersize material.

Ball mill discharge size will be controlled by cyclone pressure.

It is predicted that maintenance cycles can be spaced at every six months for major mill maintenance and liner changes. This will allow these maintenance periods to be done in the fall and spring, to minimize planned downtime during the winter months.

17.5.3. Leach

The Leach circuit has a feed thickener to reduce the volume of the leach feed and increase the solid percentage to the optimum level as determined by the test work program. This will be targeted at 42% solids by mass.

The design has bypass launders, so any one of the 4 tanks can be taken out of circuit for maintenance while the remainder still operates.

Pumps from the thickener underflow are installed as duty/standby sets to ensure pump maintenance does not affect the continuous operation of the process plant.

Considerations were made for the change to a CIL circuit, rather than CIP, however the CIP circuit is preferred due to the reduced leach time, and the simplification of process understanding, in that there are not two separate dynamics occurring at the same time. Although there is possibly a minor capital saving in a CIL circuit, there is a higher variability in the recovery, resulting in overall recovery losses. There are also higher operating costs with a higher volume of carbon in circuit, and a higher amount of gold retained in circuit. With the CIP, the leach dynamics can be controlled by the cyanide level throughout the circuit, and the absorbance by the carbon density, carbon movement and pH.

17.5.4. CIP

The CIP circuit has 6 tanks, while overall residence time has been increased from 2 hours to 6 hours. The primary driver for this was to match the carbon contained in the first CIP tank to the required carbon for each elution batch.

Carbon movement is managed by airlift in the inter tank movements, and a recessed impellor pump for the lifting of carbon to the loaded carbon screen, in the elution circuit. Carbon control is by intertank rotary screen.

The CIP circuit also includes bypass launders, such that the circuit can be operated with one tank under maintenance.

Duty/Standby for the carbon recovery pump has not been included as the carbon recovery cycle is estimated to be approximately 6 hours every 24, giving sufficient time for maintenance between cycles. Screen maintenance can also be conducted during these times between cycles.

17.5.5. Elution and Gold Room

The Elution circuit is a modularized Pressure Zadra circuit. The benefit of this is that at the relatively high grade expected in the elution circuit, there is a circulation of the stripping solution to allow the progressive stripping down to a lower level. The dynamics are slower on a pressure Zadra circuit, as the rate constraining step is the electrowinning to reduce the gold grade of the solution recycled back to the elution column. This has been addressed by the installation of excess electrowinning capacity to maximize the gold deposited per pass to maintain a positive drive for the gold to desorb from the carbon back into solution.

The packaged modular solution considered for the project is complete with all interconnecting pipework, a self-contained Process Logic Controller (PLC automated control system), and a built in gold room containing the filters, driers, furnace and gold safe so the high value material does not leave the high security area during the process.

Carbon reactivation and handling are also incorporated into the same facility.

All water used in the elution process, including flushing water for the carbon transfer is from the reverse osmosis ("RO") plant to minimize carbon blinding and improve operational efficiency.

17.5.6. Tails Dewatering

The diameter of the tails thickener, based on the settling tests, is 20 m.

The circuit allows additional cyanide to be flushed from the CIP tail before the detoxification circuit by routing the transfer of raw water to the process water tank by way of the tails thickener feed. This additional feed dilution allows for the displacement of cyanide containing fluids back to the process water tank for further utilization and will assist in the densification of the Thickener underflow by reducing the settling hinderance in the upper part of the thickener.

17.5.7. Detoxification

The detox is based on the sulphur dioxide/air method of conversion of free and WAD cyanide to the chemically stable form of cyanate.

The circuit comprises of two agitated aerated tanks, in which the slurry is mixed with sodium metabisulphite ("SMBS") and copper sulphate. As the ore is low in contained copper, a larger than typical copper dosing is required to activate the process. In operation, however, it is likely that there will be a build-up of copper within the process water circuit, due to the high proportion of water recovered from the filtration stage, which potentially could offset the copper sulphate reagent cost to some degree.

17.5.8. Tails Filtration

The tails disposal circuit uses plate and frame pressure filtration, which can produce a discharge cake with as little as 12% moisture. This has the lowest risk of refluidization and transport of any residual cyanide from the tails storage. The filter cake discharges to a conveyor, which are discharged into mine trucks and taken directly to the IWF without rehandling.

The filter cake will be stored in cells within the IWF.

2 filters have been included as 1 Duty/1 Standby, to ensure this does not impact on the plant operations during maintenance.

17.5.9. Water Circuits

The five water circuits (Raw Water, Process Water, Fire Water, Filtered Water, Potable Water) have been developed to support the requirements of the plant, and in the case of the potable water circuit, the surrounding infrastructure.

The Raw water transfer to the process water tank is now achieved via the tails thickener feed dilution, with the thickener overflow pumped to the process water tank.

A dedicated fire water volume has been allocated within the raw water tank.

Filtered water from a RO plant is further treated by a UV sterilization unit for Potable water requirements. Potable water is used in the safety showers and eyewash stations, and for potable water reticulation to the non process infrastructure. Filtered water is used primarily in the elution circuit to minimize contamination of the carbon.

In addition, a gland water circuit has been incorporated, supplying gland water to all slurry pumps within the process. This is fed from the raw water tank to a stand-alone gland water tank, with particle filtration on the suction side of the gland water pumps.

The fire water circuit is powered by a typical fire water skid consisting of a primary electric fire water pump, and a pressure maintaining jockey pump, plus an emergency diesel powered fire water pump to ensure there is still fire water available in the event of loss of power to the process plant.

17.5.10. Air Services

This circuit consists of low-pressure plant air compressors, supplying air to the Leach, CIP and detox, plus a high-pressure instrument air circuit supplying air for operational purposes. This is located under the tailings filter and tailings conveyors together with the vendor-supplied air compressors for the filters, with floors above fully sealed and equipped with a drainage system. Air accumulation tanks are used to maintain a steady air pressure within the cycle operation of the compressors.

17.5.11. Reagents

As the reagent requirements have been firmed up with additional test-work, the reagent make up systems for each have been sized according to the utilization expected, with a mix required per day for major reagents – cyanide, sodium hydroxide, SMBS, lime, and every 3 or 4 days for copper sulphate. Hydrochloric acid, used in the elution circuit, will be supplied as a 33% strength in 1,000- liter bulky cubes.

All reagent areas using bulk bags for mixing have a dedicated reagent hoist to lift the chemicals into the bag breaker, located above the mix tank. The flocculent make up system is based on a 25 Kg bag mix size.

The reagent systems consist of a mixing tank, and a separate dosing tank to ensure consistency in the dosage strength and sufficient conditioning time is applied to each mixed chemical. The pH monitoring of the cyanide mixing tank will be used to ensure that the pH is sufficiently high before cyanide is added to the mix tank to avoid the evolution of hydrogen cyanide gas.

17.5.12. Building Enclosure

The building size has been designed to contain the plant as described above with a main service crane running the length of the building from the Leach tanks to the filters. A drop-zone bay is at the leach end of the building.

The building has been designed with the Mongolian cladding engineering standards, and the HVAC system heats incoming air and maintains airflow across the building.

The crushers and crushed ore conveying system has been moved 35 degrees anti-clockwise in order to keep dust away from the plant HVAC system and accommodate changes to the tailings handling system. From the original 15 degrees between the building and the conveyor, it is now 50 degrees.

18. Project Infrastructure

18.1. Introduction

The infrastructure component of the Bayan Khundii Gold Project includes all supporting facilities located outside the mine pit area. Infrastructure includes the engineering design, procurement, construction, and management for the following site infrastructure works:

- Main and internal access roads;
- Bulk earthworks, including clearing of all required areas, installations, including culverts, box cuts for landfill, backfill and compaction of construction locations, hard stands, dams, drains, catchments, services trenching and water storage ponds;
- Accommodation village installation, reticulated services, waste disposal, water treatment, medical facility, and associated infrastructure;
- Communications system;
- Buildings, including ablutions, laboratory, reagents storage and bus shelters;
- Steel-framed buildings, including an Office (inclusive of emergency medical facility), HV/LV workshops, Warehouse, Central Heating Plant and Security Guard House;
- Fuel Storage and distribution facility;
- Power related civils and genset/solar generation area;
- Power, water, heating, and wastewater reticulation across the project site;
- Site fencing and security;
- Process plant and gold room security; and
- Bore field water supply.

Figure 18-1 Render of the Site Looking West (Source O2 2023)

18.2. Geotechnical Conditions

The foundation conditions for the site infrastructure were assessed by Soil Trade LLC through geotechnical and hydrogeological activities conducted in 2019 and 2023 and by Engigeotech in 2020 Geotechnical investigations were conducted on a total of 44 boreholes to depths of between 7 and 22 meters.

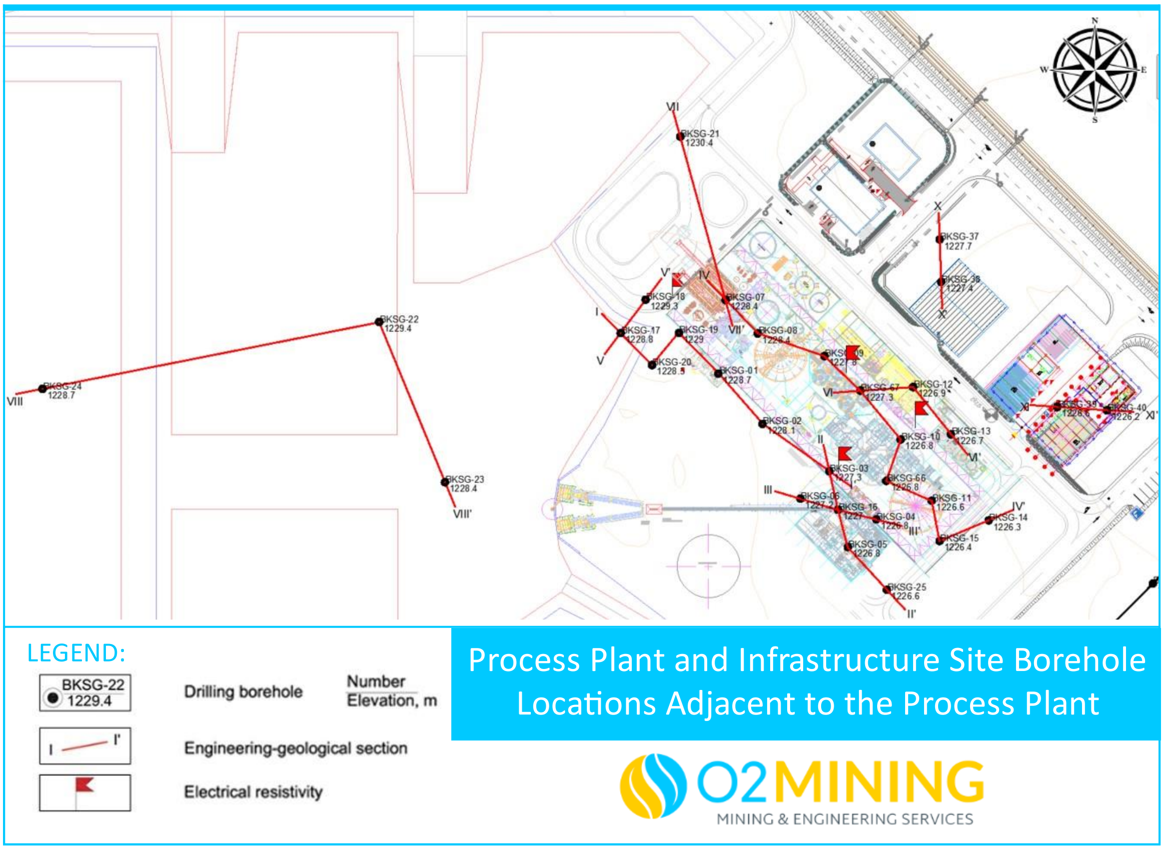


Figure 18-2 Process Plant and infrastructure Site Borehole Locations Adjacent to the Process Plant (Source O2 2023)

Selected infrastructure locations including the crushing circuit of the processing plant, have moved since the geotechnical investigation was completed in 2019. This represents a moderate risk and we recommend that further evaluation of the geotechnical conditions be undertaken based on the revised layout prior to construction.

Figure 18-3 Magazine Site Borehole Locations (Source O2 2023)

The explosives magazine in the current GA has been moved approximately 200 meters from the previous design location. The updated location has not been sterilized and geotechnical investigation has not been cited by the author. Given the size and design of the facility, this is considered a very low risk.

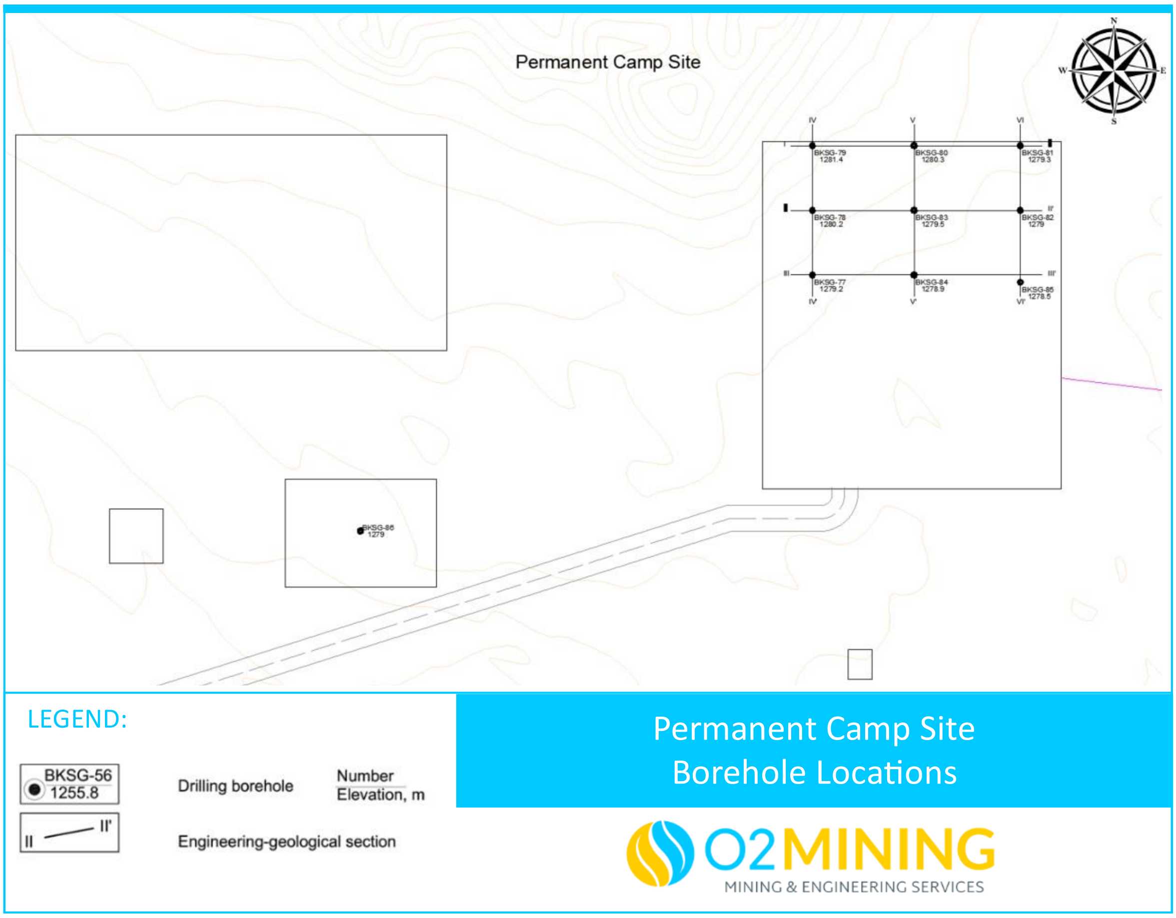


Figure 18-4 Permanent Camp Site Borehole Locations (Source O2 2023)

The 2019 geotechnical work covered the initial camp location proposed in 2020. An updated concept design and for the permanent camp included in this FS partially overlaps with the geotechnical borehole area. Updated permanent camp facility locations must be referenced against the 2019 geotechnical work. If required, additional sterilization and geotechnical drilling and evaluation must be completed.

Figure 18-5 HV/LV Workshop Site Borehole Locations (Source O2 2023)

HV/LV workshop location doesn't align fully to all geotechnical drill hole locations. However the footing design adopted is conservative, and therefore risk appears relatively low for needing any material changes. Updated sterilization drilling and geotechnical drilling and evaluation should be completed covering the footprint of the facility.

The site is described by rolling topography surrounded by low hills to the north and south, Dund Nuruu and Edrengiin Nuruu, respectively. The site is located in a moderately sloping area trending from the northwest towards the southeast, surface drainage exists over the site and hydrology studies have indicated a medium amount of surface drainage activity.

Geologically, the site is underlain by Carboniferous Ulziithar Formation consisting of volcanic (andesite, andesite porphyry) and pyroclastic rocks (ash, lapilli, and block and ash tuffs) unconformably overlain by Jurassic Ovoot Ulaan Formation volcanic (basalt) and sedimentary units (basal conglomerate and overlying red to red and white mottled sandstone and siltstone). Both units are overlain by the denudated formation of eluvium deposit including clayey soil with gravel Upper-Modern Quaternary aged diluvium-proluvium aged deposit predominating clay soil including various size grained material. The encountered soils and rocks are described by 6 different engineering geological elements in accordance with ASTM D2487 Standard of Unified Soil Classification System.

Laboratory testing of samples collected during the geotechnical drilling program have identified the soil grading size, physical properties and mechanical properties of various soil types further described below. Other mechanical properties are based on the correlation of in-situ testing of Standard penetration testing ("SPT") and construction norms and calculation of Mongolian standard BNbD 50-01-16. Based on the in-situ test results of SPT, the Nvalue of Sandy Lean Clay ("CH") and Clayey Gravel with sand ("GC") soils vary to Nvalue 25-78, thus Unconfined compressive strength ("UCS") varies to Rc >250-400 kH/m^2. Nvalue Silty Sand ("SM") soil varies to 17-19, thus UCS varies to Rc >192-250 kH/m^2. Since the density of SM varies to Pd=1.60 g/cm^3, and voids ratio of e=0.672, this soil classified as subsidence soil. The thickness of settlement is between 0.0 m and 0.8 m.

The CH, GC and SM are all subject to freeze/thaw heave to depths of 2.1 m, 3.1 m and 2.6 m respectively. From the geotech analysis of the holes in the non process areas (and the process plant) these layers underlie the Process Plant and proximate non process infrastructure by 10 to 14 m. Considerations of the geotechnical study have been incorporate into the infrastructure building designs including the use of spread foot footings where required. In addition, during construction, excavations should not be opened in conditions of ground freezing without being immediately covered and compacted to the required depth, to avoid extending the freeze/thaw zone.

The heavy vehicle workshop location is mostly unconstrained by the above soil conditions, except at the southern side of the building, where the GC extends only 1.5 m before the basalt layer is encountered. The rest of this area is directly on the basalt layer.

The Power station location will require consideration, as this area is underlain by 7 m of CH and GC type material.

In the accommodation camp area, there are around 5 m of GC soils in the north western corner. However, there is no planned building elements in this area. The building area of the camp is underlain by between 1 and 2 meters of GC type soils prior to the rock below.

18.3. Construction Site Establishment

Construction site establishment will be undertaken by the EPC contractor and includes early works to be undertaken on site. Early works are intended to provide the necessary infrastructure to enable mobilization of full construction crews. Key construction site establishment activities include:

- Temporary Cafeteria / Dining Hall
- EPC Office Hangar (with Pre-Start Hangar)
- ERD Office Hangar
- Construction Camp
- Ger Camp
- Ger Camp Ablutions
- Site Ablutions
- Warehouse Hangar
- Warehouse Container
- Painting Workshop
- External Utilities
- Concrete Batching Plant
- Road Repair (on-site and off-site)

At the time of report preparation, construction site establishment work had begun, with progress as follows:

Table 18-1 Site Establishment Progress at Time of Report Preparation

Facility	Progress
Cafeteria / Dining Hall	Framing and wall installation complete
EPC Office Hangar (with Pre-Start Hangar)	Earthworks complete
ERD Office Hangar	Earthworks complete
Construction Camp	Earthworks complete
Ger Camp	Complete
Site Ablutions	Complete
Warehouse Hangar	No Progress
Warehouse Container	No Progress
Painting Workshop	No Progress
External Utilities	Complete
Concrete Batching Plant	Complete
Road Repair	50% Complete

Figure 18-6 Construction Site Establishment Progress at time of report writing (Source ERD 2023)

Figure 18-7 Infrastructure Area Early Works Progress at Time of Report Writing (Source ERD 2023)

18.4. Fencing

A safety perimeter consisting of 5,521 meters of chain link fencing has already been installed around the key infrastructure of the site, encompassing the open pit, IWF, process plant, and mine infrastructure. In addition, a high security fence will be installed around the Process Plant and Gold room as part of construction.

Figure 18-8 Mine Infrastructure Area Perimeter Fence (Source ERD 2023)

18.5. Early-Stage Civil Works

Early bulk earthworks will include the following key work activities:

- Site preparation;
- Earthworks including detailed excavation required for construction site establishment. Covered both permanent and temporary infrastructure.
- Repair to selected sections of existing site access roads
- Process Plant – topsoil excavation (up to 80cm); first layer excavation from bottom of topsoil to -1.20m level; compaction; blinding
- Grinding Station – topsoil excavation, first layer excavation, blinding

18.6. Balance of Bulk Earthworks

During the main construction phase, the following bulk earthworks will be required:

- **Site Infrastructure:**
  - Balance of Process Plant;
  - Balance of Crushing Station;
  - Laboratory;
  - Chemical Storage;
  - Heavy Vehicle Workshop;
  - Mine Office;
  - Warehouse;
  - Central Heating Plant;
  - Camp;
  - Switchrooms, Transformers & MCC's;
  - Wastewater Treatment Plant;
  - Guard House;
  - Main Control Room;
  - External Water and heating supply line
  - External waste water line
  - External power supply line
  - Landscaping
- **Other:**
  - Rain Water Surface Drainage;
  - Flood Water Surface Drainage;
  - Water Supply;
  - Power Plant and Line;
  - Waste Management Area;
  - IWF;
  - Contamination Runoff Collection Pond; and
  - Pit Topsoil Clearance;
  - ROM Land Clearance.

18.7. Mine Buildings

18.7.1. Mine Office

This building is two stories to reduce the footprint and allow for an appropriate amount of dedicated spaces. The building is located at the southern side of the process plant and adjacent to the security gate. The building is 30 m wide by 18 m deep and incorporates meeting rooms, personnel offices, and open office areas.

Detailed design for the mine office has been fully expertised. The structure consists of a steel framed structure with 150mm sandwich panel exterior walls; 120mm brick interior walls; and a 150mm sandwich panel roof.

The structure will provide administrative and management space for general staff and contractors as well as specialist mining and geology staff. Parking for passenger and light vehicles is located directly outside the office building to the east. The Office building will consist of the following main components:

- Reception Area;
- Pre-start and Operational Briefing Rooms
- Meeting Rooms
- Training Rooms
- War Room – Stand up Room
- Offices and storage for senior leadership
- Open office space for staff, contractors, and visitors;
- A designated Emergency Response Room (Clinic);
- Dining area, storage, ablutions, technical rooms, and support staff facilities;
- Facility will cater for disability access and trolleys;
- Access Control will be utilized for ingress and egress (turnstiles, bio-metrics) and the building will be accessible from both sides;
- Reverse cycle air-conditioning will service all rooms. A hot air curtain will service the main entrance;
- Space heating will be serviced by radiators with heat provision from Central Heating Plant;
- Facility will provide offices for Management employees and Open Plan for general employees; Management Offices include whiteboard, personal file storage, and can serve as additional meeting room space; and
- An ambulance fitted out for emergency response will be located close to the emergency clinic.

18.8. Security Guard House

The security guard house ("SGH") is a single-story steel framed building, 9 x 12 m with 150mm sandwich panel insulated walls and a 200mm sandwich panel roof on a concrete pad for use by security staff. The facility is designed for use of 5 security officers with the following dedicated spaces:

- Vehicle access boom gate
- Administrative workstation area
- CCTV equipment and monitoring area
- Kitchenette
- Segregated entry and exit areas for employees
- Waiting area and meeting room.

The design facilitates the following functional features:

- Access control;
- Security searches and physical checks
- Alcohol and drug testing
- Staff, contractor, and visitor registration
- Full height turnstiles, biometric access control

- Security control room with CCTV, access control, fire and emergency systems
- Surveillance cameras installed at strategic locations across the site will be linked to CCTV monitoring system within the guardhouse
- Main fire alarm panel

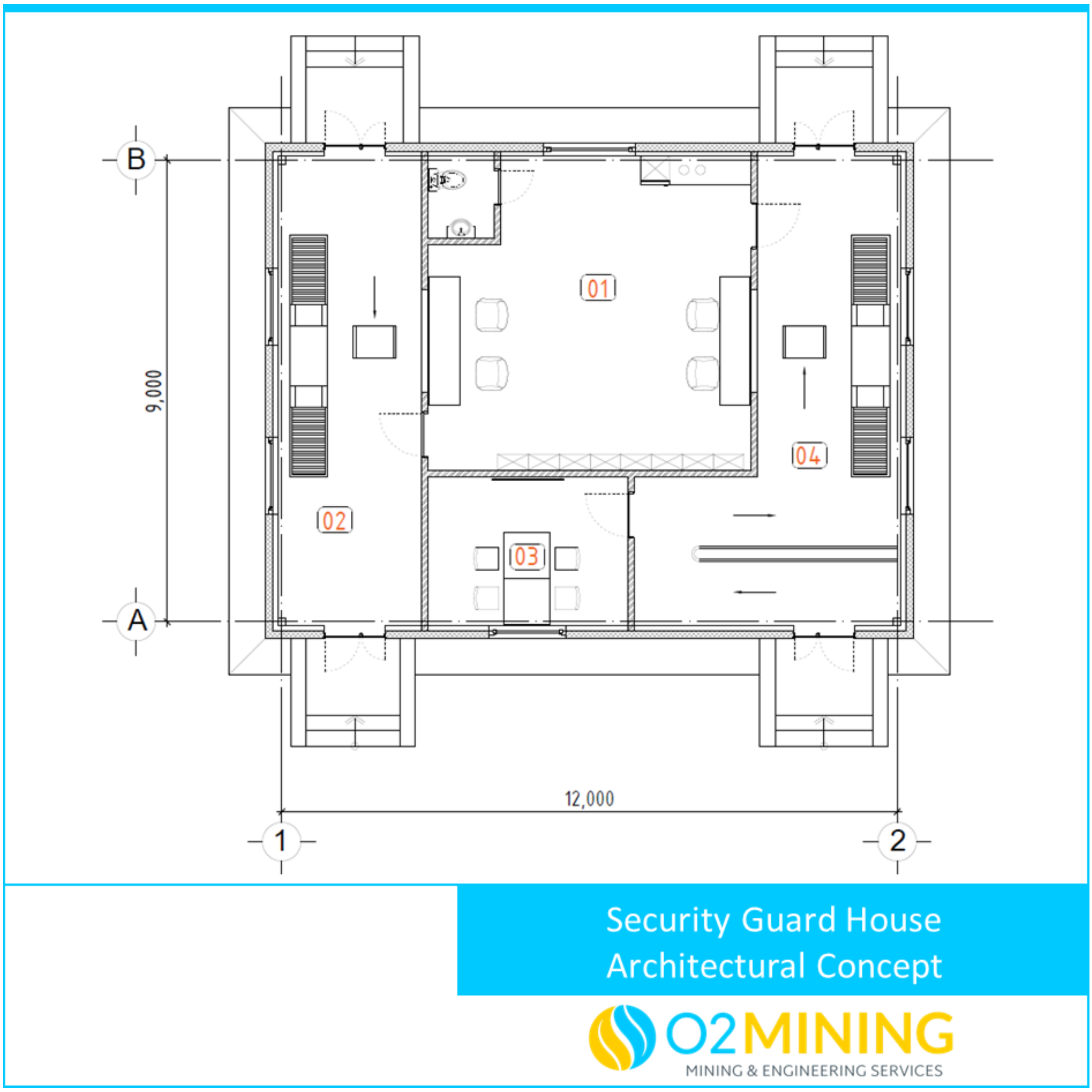


Figure 18-9 Security Guard House Architectural Concept (Source O2 2023)

18.9. Warehouse

Detailed design for the warehouse facility has been fully expertised. The warehouse is a single story in-situ steel frame building with 150mm sandwich panel insulated walls, 120mm brick interior walls, and a 150mm sandwich panel roof set on a concrete pad with an area of 24 x 24 m. This structure comprises:

- Material issue desk at front entrance to the facility;
- Small workshop area with segregated entrance
- Lockers and clothes changing area (4 lockers)

No	Room name	Size	Remark
1	Storage area	513.4m2	Storage area based on Plant chain supply materials storage enough for 14 days.
2	Workshop area	69.2m2	Workshop area will include Carpenter, Welding, Mechanical and Electrical areas.
3	Changing area	5.04m2	Max 4-8 lockers

Additionally, the facility includes:

- Material unloading area, warehouse floor with storage shelves, racks;
- Access Control for delivery access and stock / material issue desk. Access Control will be linked to stock / material issue to enable accurate stock keeping;
- CCTV – Internal;
- Forklift Access Door;
- Ventilation system
- Heating via on-wall radiators fed from central heating plant
- Firefighting system will be fire extinguishers.

Figure 18-10 Warehouse Render (Source O2 2023)

18.10. Chemical Storage

The chemical storage is located to the northeast of the process plant. Within the chemical storage area, cyanide storage is planned on the southeast side of the fenced area; acid warehouse is planned on the northeast side of the fenced area; and a hazardous waste storage area is planned between the two. A storage facility for alkalai/leach materials is planned on the northwest side of the fenced area.

Chemical storage is divided into 6 main areas:

- Area 1 - cyanide warehouse. This is a 12.8x16m, 1 story building with a clear height of 4.0m. 1.13m x 1.13m x 1.1m wooden boxes will be stored in this building 2 layers deep. The building includes 4 storage rooms, a technical room, and a first aid-room.
- Area 2 – acid warehouse. This is a 9m x 12m, 1 story building with a clear height of 4.0m. 1.15m x 0.96m x 0.98m IBC tanks will be stored in this building 2 layers deep. The building includes 2 storage rooms, a technical room , and a first aid room.
- Area 3 – Alkaline warehouse. This is made up of two 40 ton shipping containers, insulated with rockwool.
- Area 4 – Other substances warehouse. This is made up of ten 40 ton shipping containers insulated by rockwool.
- Area 5 – Hazardous waste storage. This is made up of a single 40 ton shipping container divided into two compartments with separate doors. Insulated by rockwool.
- Area 6 – Staff and security. This is made up of a single 40 ton shipping container and comprises a security room, staff clothes changing room, restroom, and first-aid room.

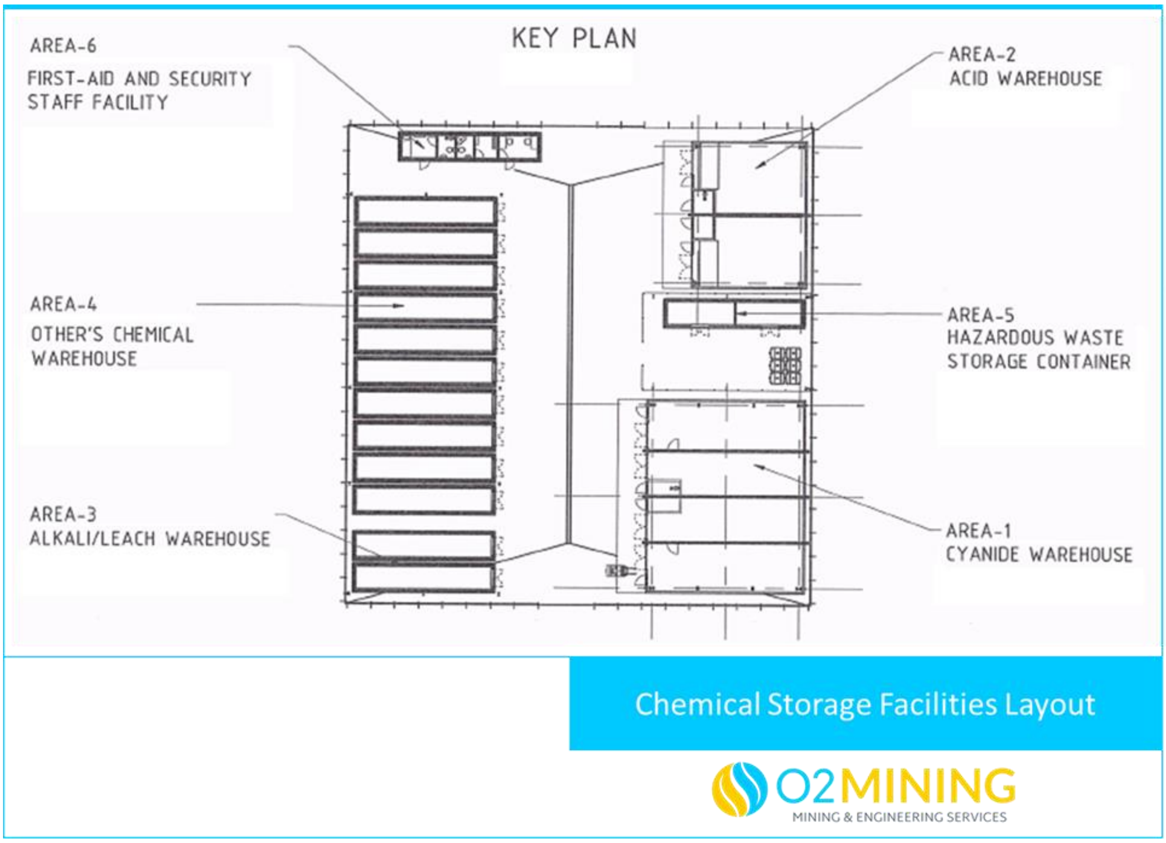


Figure 18-11 Chemical Storage Facilities Layout (Source O2 2023)

Chemicals storage consists of a flat roofed shelter fixed to sea containers on a concrete floor slab. Sea containers provide additional storage space for reagents. Structure integrates lighting, perimeter fencing, and access control for security. Safety measures include strict access control, security gates with controlled access to keys, eyewash, compliant Personal Protective Equipment, fire suppression, and detailed emergency management plans. Material safety data sheets (MSDS) will be available, spill response and disposal measures in place, and the storage facilities will be bunded to prevent unintentional release to the environment. Chemicals delivery and use will be strictly controlled and subject to regular inspection and audit.

Table 18-2 Chemical Storage Quantities

Name	Number of Storage Areas	Total Area / m2	Storage Capacity	Reagent Name	Type
Area – 1	1	204.5 m2	200 T	Sodium Cyanide	Solid Chemical
Area – 2	1	119.2 m2	100 T	Hydrocholoric Acid, Nitric Acid	Liquid Chemical
Area - 3	2	25.8 m2 x2 = 51.6 m2	40 T	Alkali / Leach	Solid Chemical
Area – 4	10	25.8 m2 x2 = 258 m2	40 T	Other	Liquid Chemical
Area – 5	1	25.8 m2	40 T		
Area - 6	1	24.7m2			

Chemical storage quantities are anticipated to be sufficient for a minimum of 14 days processing.

18.11. LV/HV Workshop

The light vehicle ("LV") and heavy vehicle ("HV") workshop is a steel framed structure with an area of 66.5 x 24 m^2. The LV/HV Workshop detailed design has been fully expertised and incorporates a steel framed structure with 150mm sandwich panel exterior walls, 120mm brick interior walls, and a 150mm sandwich panel roof.

Two 9m x 25m HV maintenance bays are served by an overhead gantry crane and are suitable for tracked equipment as well as large waste haul trucks. A LV maintenance bay is accessed from the opposite side of the building to minimize interaction between heavy and light vehicles. These two areas are separated by offices, employee change rooms, and a toilet area.

The south east side of the building is a 590 square meter parts storage area.

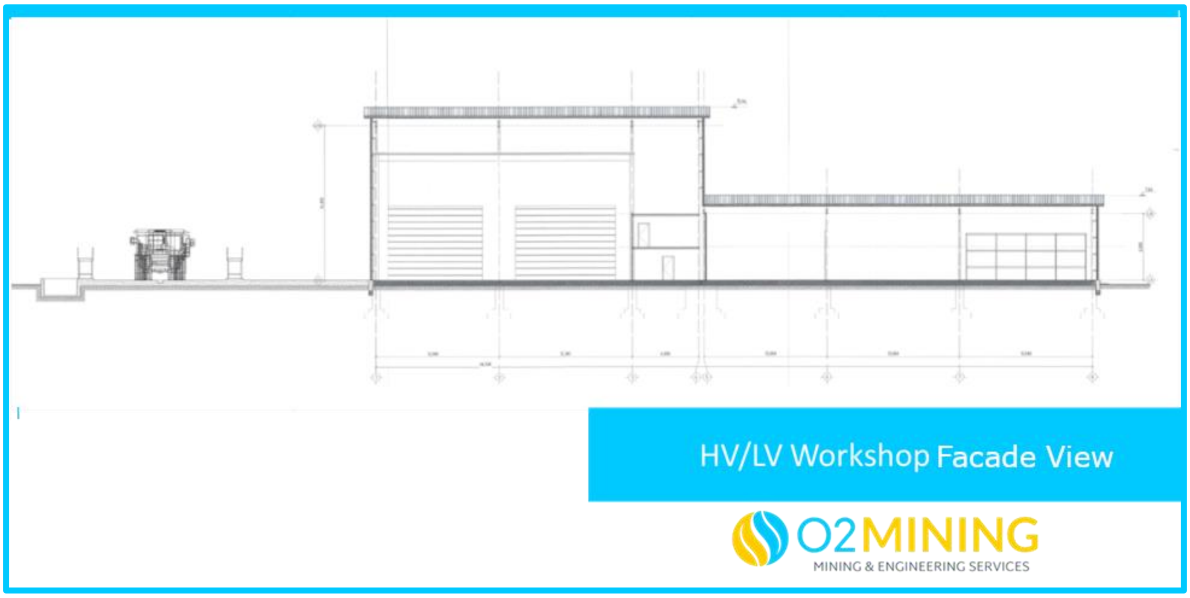


Figure 18-12 HV/LV Workshop Facade View (Source O2 2023)

This building has also been designed with provision for a warehouse for all equipment parts and tools necessary for maintenance. In addition, this workshop and warehouse complex will host supply chain activities and is designed with offices for maintenance management, planning, and supply chain staff. A change and dry area with lockers and a break room is also included. A separate wash-down bay next to the main Workshop will furnish heavy and other mobile equipment when required.

Figure 18-13 Heavy Equipment Workshop / Warehouse Render (Source O2 2023)

18.12. Laboratory

Construction of the laboratory will be undertaken by the EPC contractor.

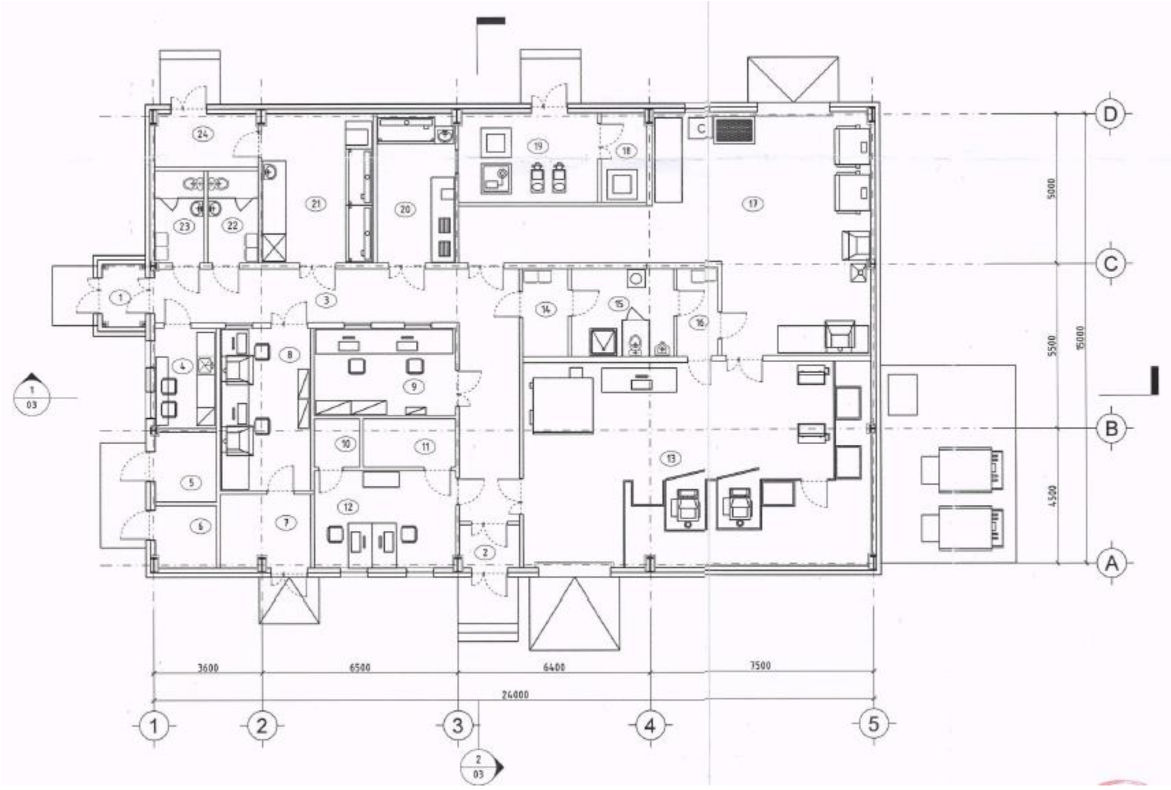


Figure 18-14 Laboratory Layout (Source O2 2023)

Final lab dimensions will be approximately 15.4m x 24m inclusive of the loading bay, and features the following distinct spaces:

- Scrubber and neutralization room
- Wet laboratory
- CN Leach
- Sample Preparation
- Fire Assay
- Sample receiving area
- AAS
- Balance Room
- Office
- Utility rooms including acetylene and compressors, server room, storage room, chemical storage room

An independent contractor is planned to provide the on-site Laboratory services, including, manage and operate the on-site mine and plant support laboratory to process approximately 135 samples per day, or 4,083 samples per month, taking into consideration the relevant Mongolian and industry standards for HSE, Quality and Production.

The lab operator’s scope of work includes:

- Equipment (supply and installation—covering all required equipment) inclusive of office equipment, IT equipment, Preparation equipment, Fire Assay equipment, Analytics equipment, and other.
- Operations inclusive of HSE expenses, labor costs, and maintenance and cleaning costs. Also inclusive of additional operating costs such as permitting and approvals, hazardous waste disposal, and additional insurance coverage required for lab staff.

18.13. Magazine

A Request for Proposals ("RFP") was developed and distributed to determine the most economic option for the design, construction, and operation of an Explosives Magazine. The RFP also included general Drill & Blast open pit applications, such as trim blasting, production blasting and presplit blasting. The selected vendor provided the provisional magazine design layout given in Figure 18-15 below, which complies with the applicable Mongolian regulatory requirements and standards. The magazine has been located approximately one km north of the BK open pit.

The preferred vendor's proposal is inclusive of all magazine establishment costs. The facility is designed to utilize 10x 40-ton shipping containers and 4x 20-ton shipping containers as storage, administrative, and security buildings.

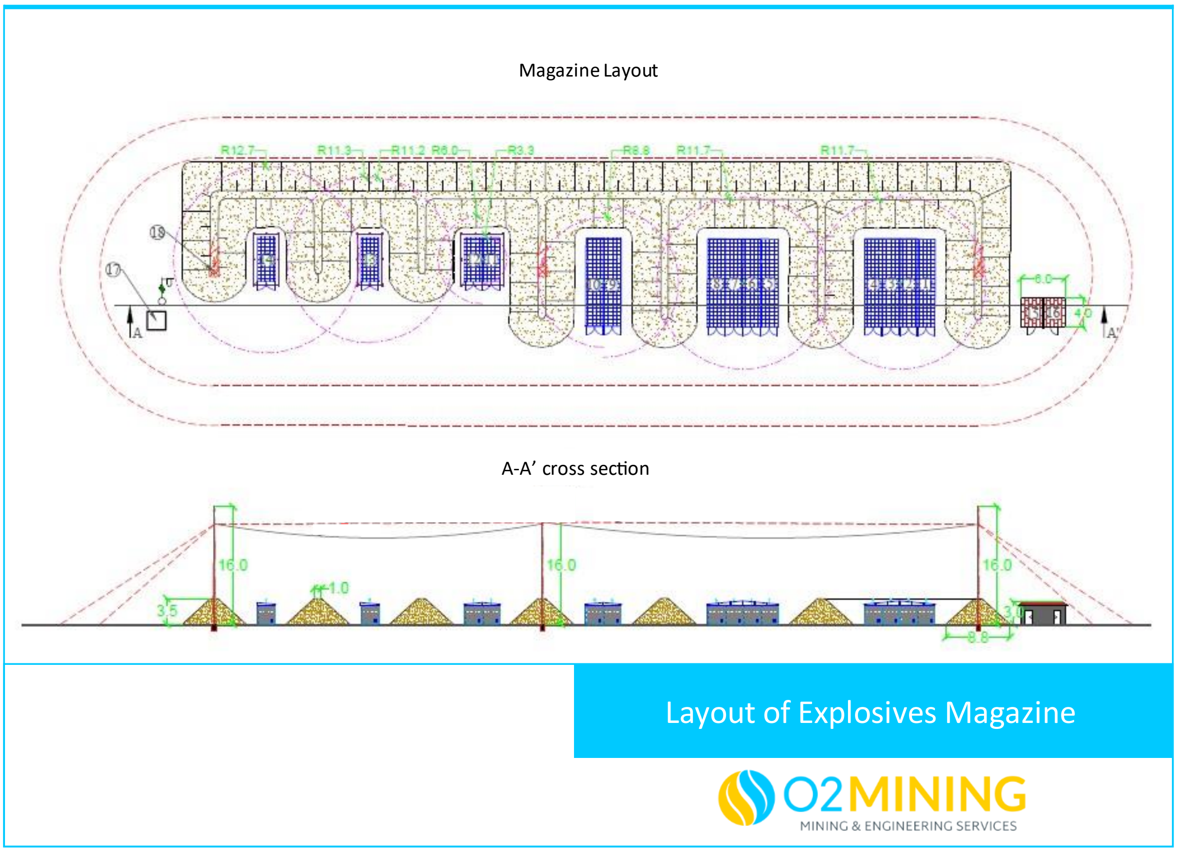


Figure 18-15 Layout of Explosives Magazine (Source O2 2023)

The magazine is designed with a 433m exclusion zone for equipment and buildings, and an 866m exclusion zone for people and primary roads.

- Explosives storage – 173 ton

- Supporting material storage including:
  - Detonators and ignition materials (5,700 ton) 18,300pc
  - 32mm emulsion – 7 ton
  - Reporting and registration office
  - Security building
  - Lighting protection
  - CCTV and lighting
  - Fire suppression station
  - Access control and registration
  - Parking
  - Fencing
  - Drainage

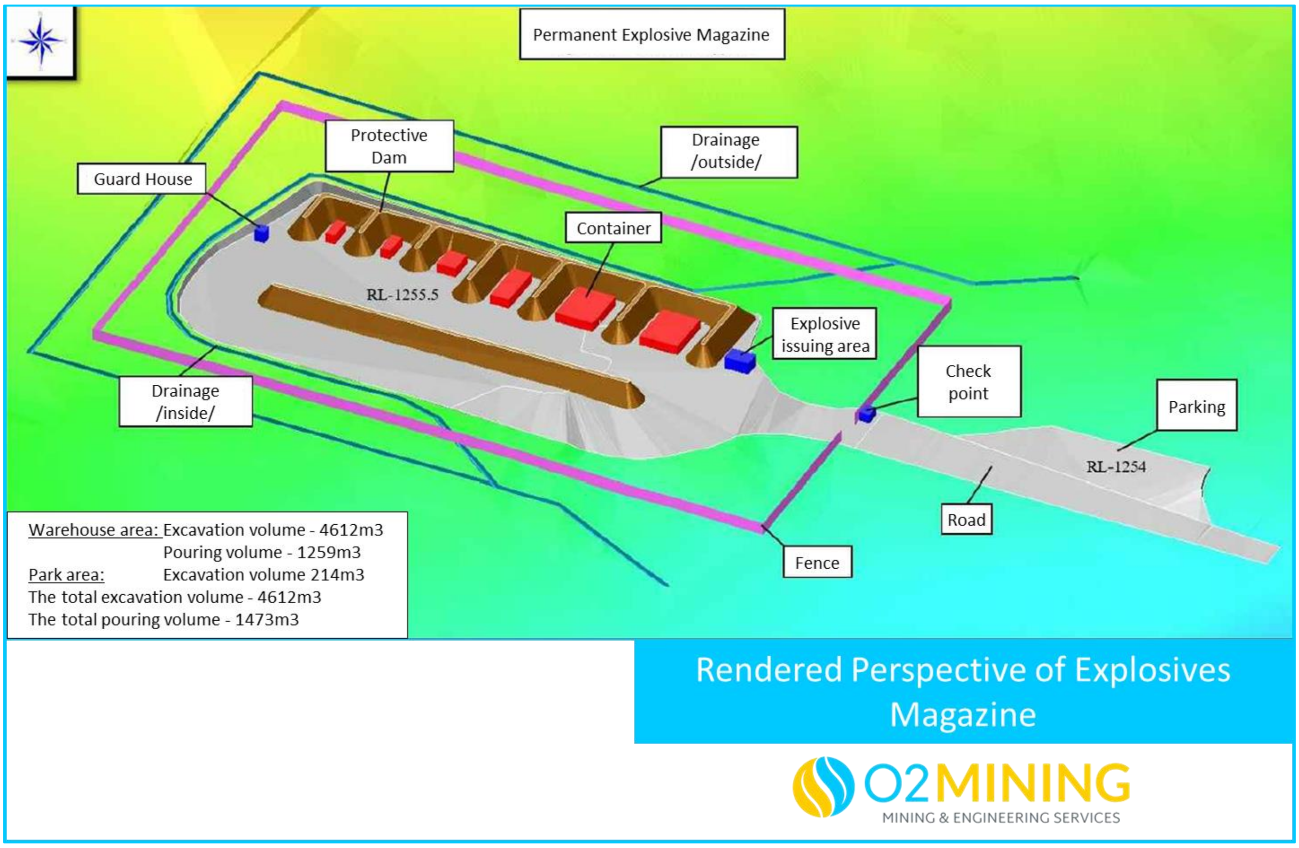


Figure 18-16 Rendered Perspective of Explosives Magazine (Source O2 2023)

18.14. Accommodation Camp

The Bayan Khundii Gold Project accommodation camp will be located approximately 6 km north of the Process Plant, near the site access road. The accommodation camp will be built for rostered staff and have a capacity of 370 personnel. The design is comprised of five 105m x 77m blocks with a gross floor area of 4,000 sqm.

The accommodation camp design and build work have been included under the EPC contract. Design was completed for architectural and general arrangements.

Figure 18-17 Accommodation Camp (Source MCSP 2023)

18.15. Site Services

18.15.1. Water Supply

Site water supply will be sourced from aquifer borefields located 1 to 4 km south-southwest of the processing plant. Two separate production bores have been developed adjacent to the permanent camp. It is expected that a significant proportion of water demand will be attributed to the process plant, with the current expected process plant make-up water requirement being 15 m^3/hr or 4.3 L/s:

- Each bore pump will pump to a booster pump station which will supply raw water to the process plant raw water tank, which will then provide distribution to the rest of the site;
- Shallow buried pipeline will be used to transport water from the bore field to a raw water tank adjacent to the processing plant for use or desalination and water hardness treatment;
- Site reticulation will be fed from the raw water tank which will include feed lines to all infrastructure;

- Water will be processed by a Reverse Osmosis plant and a portion subject to final UV treatment;
- The camp has a separate water source drawn from boreholes; and
- Waste water treatment will be provided by a Membrane Bioreactor (“MBR”) for sewerage, plant and grey water. The waste water will be treated to achieve an MNS 4943:2011 standard prior to discharge or reuse.

18.15.2. Bulk Fuel Storage

A Request for Proposals (“RFP”) was developed and distributed to determine the most economic option for the design, construction, and operation of bulk fuel storage facility.

The site-based diesel fuel storage requirement is projected to be approximately 700 m3. Diesel will be stored primarily at a fuel farm, with a separate dedicated 100 m3 storage capacity at the power generation facility. The fuel facilities are located near the LV/HV workshop. Storage will be achieved using a containment design that fully meets the requirements of regulatory and design standards. The facility is intended to ensure a minimum of 2 weeks supply of diesel.

Design details are planned as follows:

- Diesel fuel will be stored in double-skinned, above ground tanks in a designated fuel compound with re-fueling station;
- Tanks will have an external fuel gauge and appropriate signage;
- Fuel will be delivered by road tanker at a rate to ensure that stocks are maintained at agreed levels at all times;
- The tanks will be situated on an impermeable surface with adequate spill containment measures, including berms, diversion channels, drains and collection sumps which will regularly be inspected and maintained;
- The compound will be fenced as appropriate, manned and installed with security cameras and with adequate firefighting and spill response equipment;
- Material safety data sheets (“MSDS”) will be kept available and regularly updated and the company Spill Prevention and Emergency Response Plan and relevant training will be provided to attending personnel; and
- The facility will also include compliant storage for greases and lubricants. Lubricants required will include lubrication oils, transmission oils, hydraulic oils and waste oils. Where small amounts of fuel or oil are to be stored (e.g. lube oil) which do not require a containment facility or sump, the storage containers will be placed on absorbent material, enough to immediately capture spills and leakage. Any contaminated absorbent material would be cleaned up and dispose of in an appropriate facility from time to time.

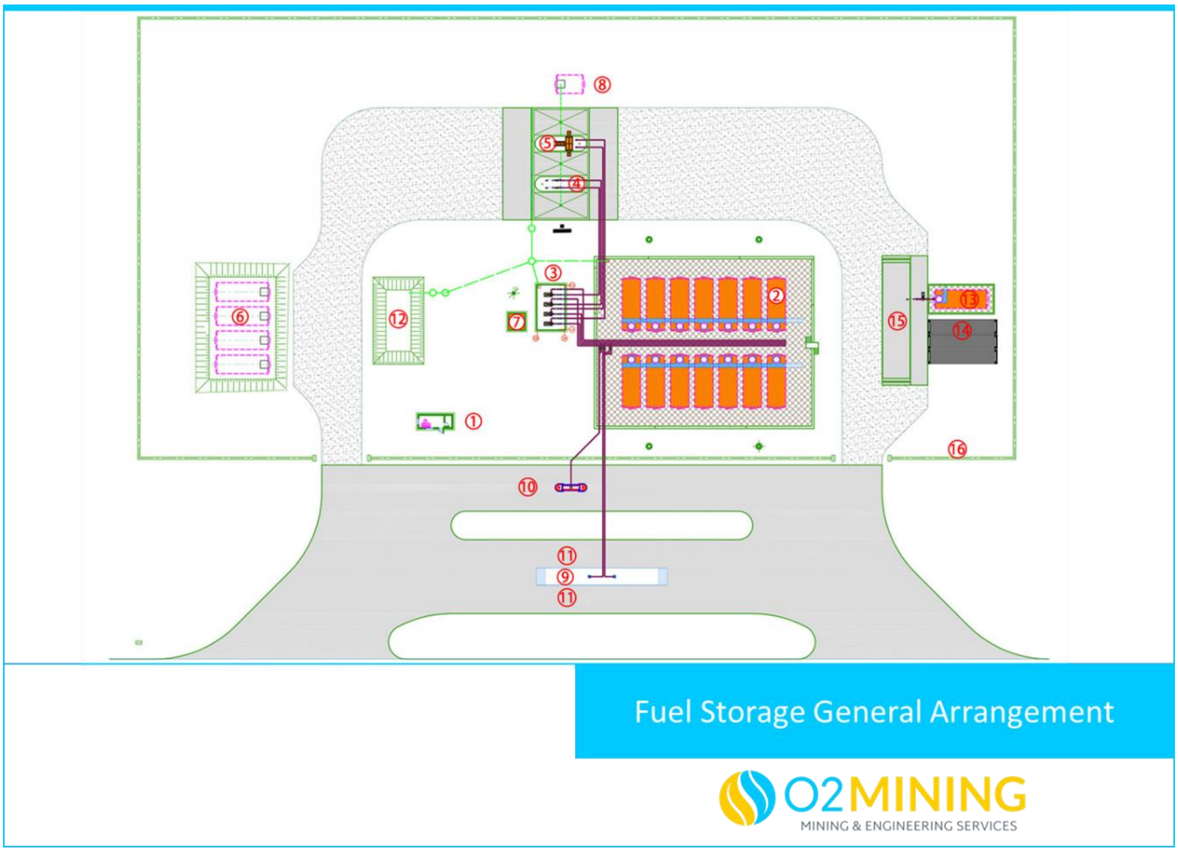


Figure 18-18 Conceptual Fuel Storage General Arrangement (Source O2 2020)

Notes:

1. *Operator building;*
2. *Horizontal aboveground tank 50 m^3, 14 pc;*
3. *Pump station;*
4. *Fuel-truck unloading bay;*
5. *Fuel-truck loading bay;*
6. *Firefighting water storage tanks 200 m3;*
7. *Power distribution block 3.0 x 3.0 m;*
8. *Emergency spill collection tank 25 m3;*
9. *Heavy duty vehicle filling bay 20.0 x 3.0 x 1.5 m;*
10. *Light vehicle filling square 1,000 m2;*
11. *Heavy duty vehicle filling square 2,000 m2;*
12. *Lubrication storage 40 ft container, 3 pc;*
13. *Used lubrication collect tank 50 m3;*
14. *Used lubrication tank's pump;*
15. *Lubrication unloading and loading square; and*
16. *Fence 450 m.*

The above requirements for fuel storage were developed in 2020 by O2 Mining and have been used as the basis for requirement in the RFP sent to fuel supply vendors. Detailed design will be undertaken by the selected fuel vendor.

18.15.3. Power Generation/Supply and Reticulation

Power at the site is proposed in the form of an off-grid hybrid power station to be supplied, constructed, and operated by an independent power producer. Design and costing were developed through a Request for Proposal to a short-list of pre-qualified potential suppliers. Electricity to the project is proposed to be delivered under a Power Purchase Agreement ("PPA").

Although the process plant utilizes 6kV motors at the ball mill, the main voltage of the power supply has been specified at 10kV to increase efficiencies with the diesel generators, and improve efficiencies across the distribution network. The main consumers of electricity are divided into two categories: consumers fed by 10kV lines and consumers fed by 0.4kV lines.

Consumers fed by 10kV lines include:

- Sag mill
- Ball mill
- Workshop
- CHP

Consumers fed by 0.4kV lines include:

- Process plant exclusive of mills
- Filtration
- Gold room
- Water supply
- Camp
- Mine buildings including offices, laboratory, warehouse.

The selected solar-diesel-battery power station has been designed with a 14.5MW diesel plant, 5 MW solar farm, and 3MWh battery energy storage.

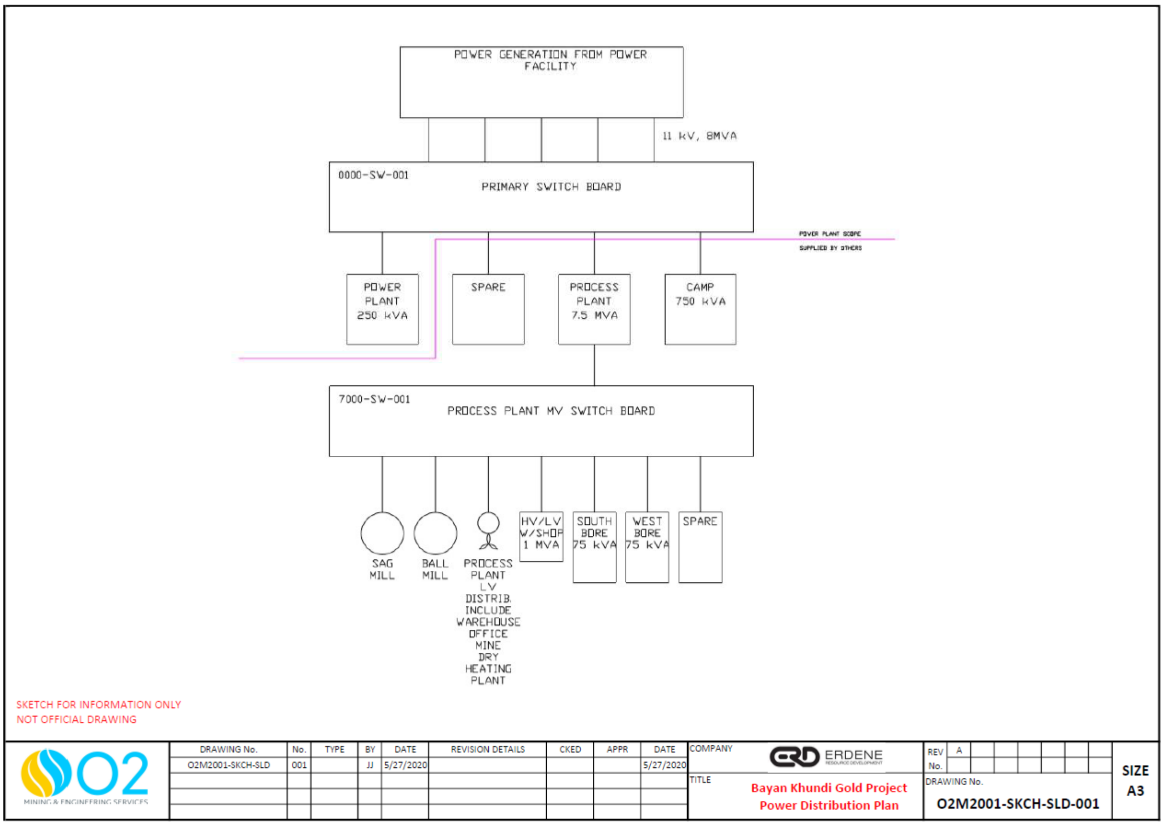


Figure 18-19 BK Power Distribution Plan (Source O2 2023)

18.15.4. Central Heating Plant

The Central Heating Plant main structure is a steel frame with non-load bearing infill walls and a reinforced concrete foundation. The building is single story 36 m x 24 m with a height of 7.6m. The boilers specified are horizontal, single cylinder type.

- 1 x coal fired 2.8 MW boiler for use in the winter – which will operate at full load;
- 1 x coal fired 2.8 MW boiler to be used as backup;
- Coal is planned to be sourced from a coal deposit in Shinejinst, approximately 80 km from BK.

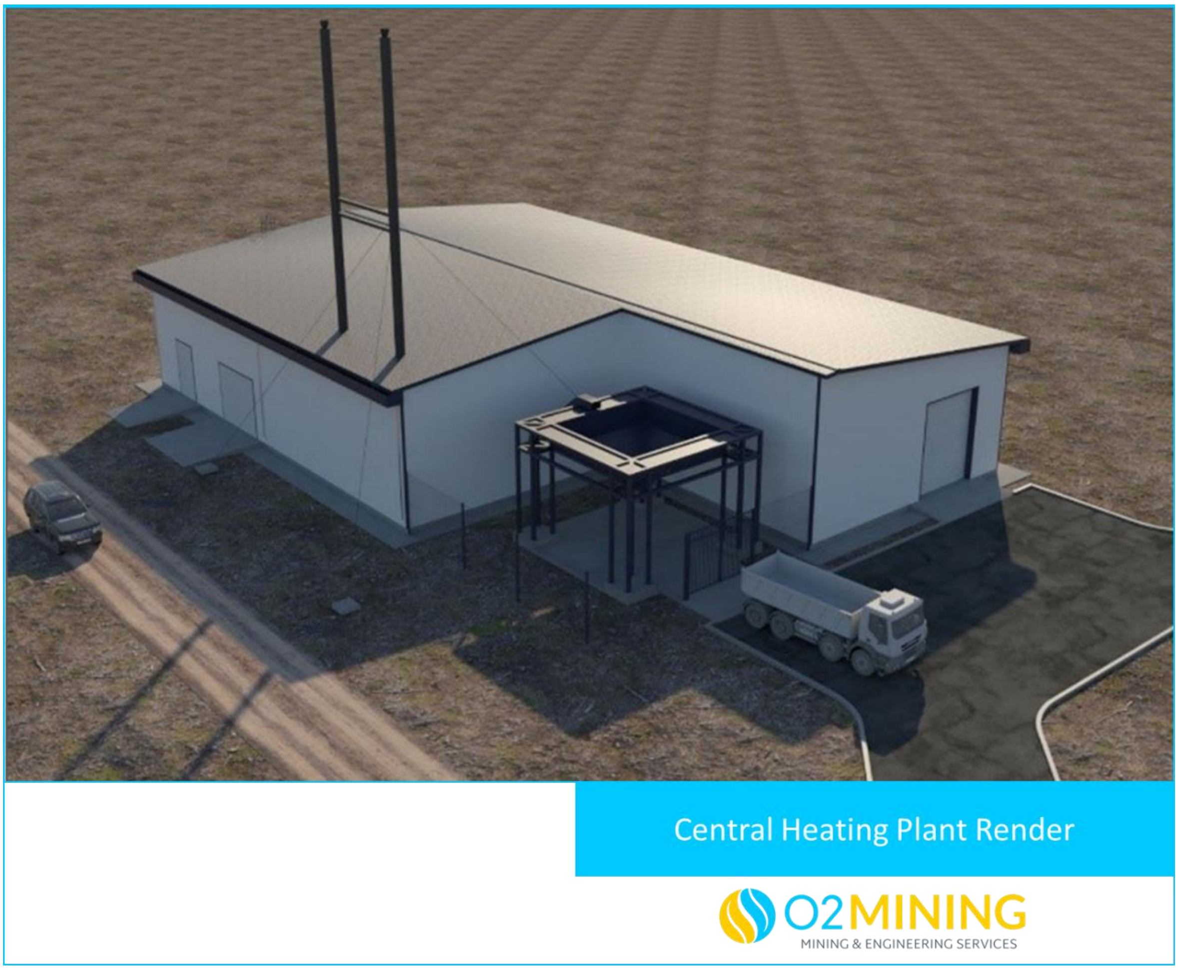


Figure 18-20 Central Heating Plant Render (Source O2 2023)

18.15.5. Wastewater Treatment

The water balance prepared for the FS have determined a wastewater treatment capacity requirement of 60 m^3 per day. A Membrane Bioreactor ("MBR") type packaged sewage treatment plant has been selected to treat domestic strength sewage, which can achieve "MNS 4943:2011" treated effluent, standard for reuse applications (dust suppression, irrigation) or for discharge to sensitive environments. The standard treatment process includes influent screening, balance tank mixing, anoxic & aerobic treatment, flat sheet membrane filtration with air scouring and CIP system, and effluent disinfection (hypochlorite dosing).

The bioreactors will be constructed of corrosion resistant FRP, are self-contained, and modular for easy deployment to remote locations. The system is designed to operate in extreme cold (it is recommended as an underground solution).

18.16. Access Road

General site access will be achieved via an access road from Shinejinst, which is approximately 70 km in length to the currently proposed accommodation village and approximately 80 km in length to the Bayan Khundii Pit. A partially improved dirt road currently exists from Shinejinst to site, and road conditions are fair to poor.

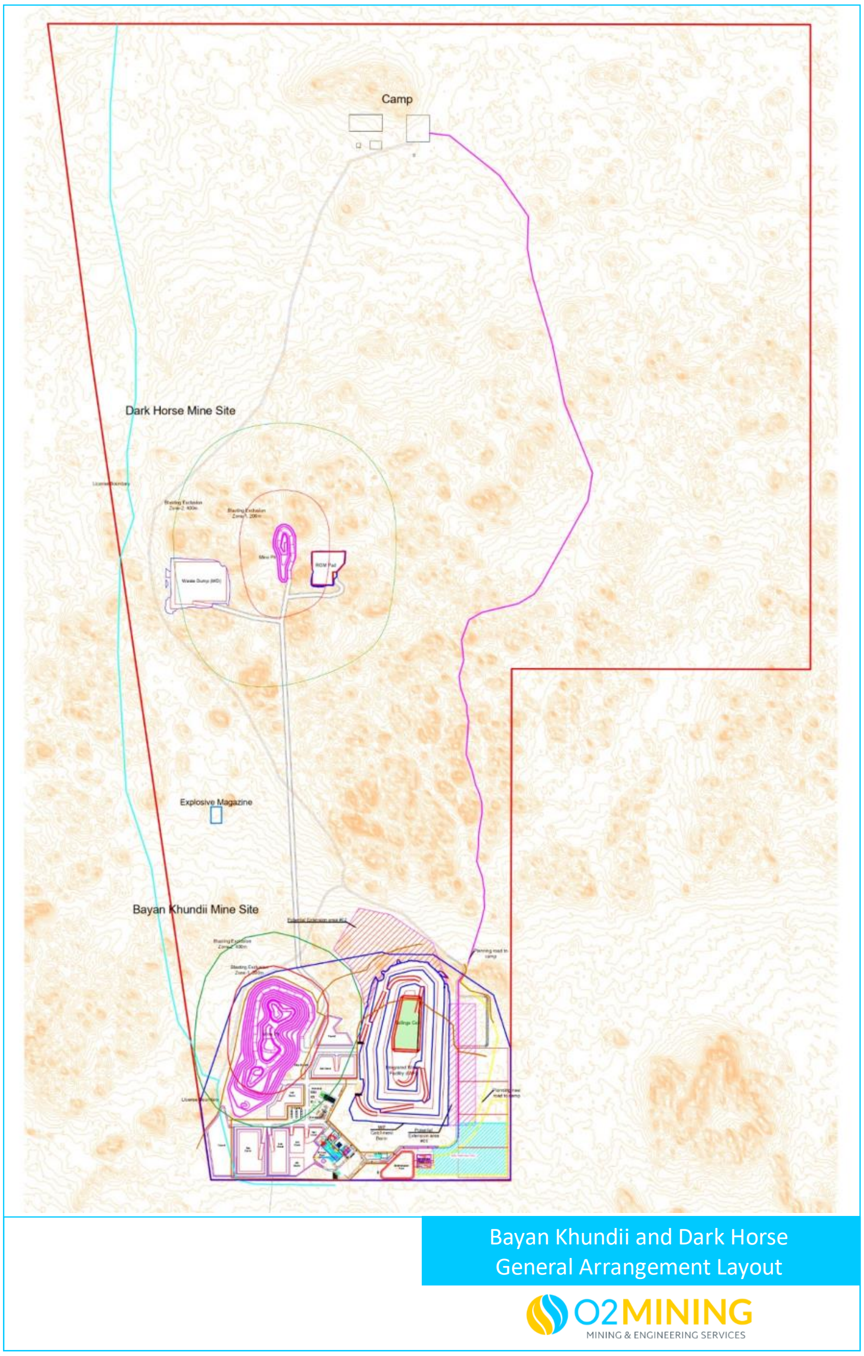


Figure 18-21 Site General Arrangement (end of mine life) (Source O2 2023)

An access road that follows the east side of the IWF has been included to allow vehicular traffic for plant consumable supply (reagents, liners, media etc.), diesel fuel supply for the power station and general LV traffic for maintenance and landfill. This access road will be the primary access for this type of traffic and serves to reduce LV traffic interaction with haul truck operations between the IWF and the Bayan Khundii Pit. A further road has been proposed to the east of the pit to allow easy access for blast guards and general security response.

18.17. Communications and IT Systems

The isolated nature of the Bayan Khundii site and the anticipated amount of data and communications for the project means a reliable means of communication will have to be installed. Microwave and fiber optic cable connections were examined and costed for this FS Update Report. The site communications will provide a site wide network with the following main elements:

- Public mobile phone cell at the camp;
- Private LTE network over the entire project area;
- CCTV system;
- Access Control System;
- Corporate Local Area Network ("LAN");
- Corporate IT infrastructure;
- Fiber-optic cabling;
- Camp entertainment system;
- Communications masts/towers;
- Communications shelters;
- Communications power systems; and
- Private microwave radio.

Mobile phone service and internet service have been established at the site.

18.18. Integrated Waste Facility

General

Mining waste (waste rock) and processing waste (dry cake tailings) will be contained within an integrated waste facility (IWF) as a single above ground structure. The following provides information regarding auxiliary infrastructure and seepage collection system associated with the co-disposal of waste rock and dry cake tailings. All elements of the system have been designed to ensure a structurally and environmentally safe waste storage is achieved and maintained at the BK Gold Project.

The IWF has been designed as a dry storage containing internal tailings cells surrounded by a perimeter embankment made up of waste rock from the pit. The design also includes staging that show how the IWF is to be developed to ensure the footprint of the tailings is minimised and limited to the central cells of the IWF. The east and northwest portions of the IWF consist of waste rock only.

Geochemical testing of the waste rock as well as the tailings indicate that both have a non-acid forming ("NAF") nature and hence the containment collection requirement imbedded within the design is not driven by the materials' geochemistry (acid, salt, metals) but rather by their potential cyanide content. Hence the lined seepage collection system will only be applicable to areas that will encounter cyanide leachate from the tailings.

Although the resulting cyanide content within the tailings is expected to be relatively low due to the detoxification process prior to hauling into the IWF, the design ensures that any potential contaminants from the tailings is safely routed, stored and managed as to protect the wider environment from contamination.

In order to achieve the design intent of the IWF, several other infrastructure elements have been considered and designed including:

- Containment Runoff Collection System
    - Underdrainage System,
    - Seepage collection system, which includes:
        - Perimeter Clay Bund,
        - HDPE Lining,
        - HDPE Seepage Collection Pipes,
        - Cushion Geotextile and Sand Protection Layers.
    - Containment Runoff Collection Pond (CRCP), which includes:
        - CRCP Emergency Spillway,
        - CRCP Silt/Sediment Trap.
- Clean Water Diversion Drains (CWDD), including:
    - Northwest CWDD,
    - Southwestern and Southeastern CWDD.

18.19. The Containment Runoff Collection System

General

The Containment Runoff Collection System has been designed with the purpose of safely routing, storing and facilitating the handling of potentially contaminated runoff water that comes into contact with tailings that is generated after a heavy rainfall event. Its purpose is to minimize the likelihood of containment transport migrating into the wider environment.

Elements of this system are described below.

18.19.1. Re-Grading of the Tailings Cell Foundation Area

As part of the foundation preparation works to facilitate successful construction of the Containment Runoff Collection System, the natural surface of the central area where tailings will be stored within the IWF requires surface re-grading. The surface re-grading is limited to an area of 8.1 ha. The re-graded surface is designed to slope towards the south to facilitate collection of water in the CRCP to the south. The surface is also to be graded towards a "central spine" in which a V-shape (running north to south) is created along the center of the re-shaped area. This foundation preparation work is required prior to the installation of the underdrainage and seepage collection systems, so all underdrains and seepage collection pipework facilitate flow towards the CRCP to the south.

18.19.2. Underdrainage System

Given a rainfall event, potentially contaminated water can be generated due to cyanide leachate from the tailings. An underdrainage system has been designed to sit underneath the tailings cells and the seepage collection system. The purpose of the underdrainage system is to capture any potential tailings seepage water and redirect it towards the CRCP.

The underdrainage system consists of 7 leachate intercepting alignments, one running centrally down the "central spine" of the area, and 6 alignments running east-west in a herringbone layout that intercept leachate flowing in a southerly direction and re-directing it towards the central spine. Construction of the underdrainage system requires the excavation of 0.5m deep trenches within the re-graded *surface* footprint, which are to be backfilled with gravel wrapped in geotextile. The design also incorporates perforated HDPE PE100 PN25 DN140 pipes to be installed within the gravel backfill to facilitate water flow.

18.19.3. Seepage Collection System

The Seepage Collection System consists of four key components:

- Perimeter Clay Bund,
- HDPE Lining,
- HDPE Seepage Collection Pipes,
- Cushion Geotextile and Sand Protection Layer.

<u>Perimeter Clay Bund</u>

The seepage collection system is bounded by a perimeter clay bund that diverts clean water around the seepage collection system and encapsulates contaminated water within the tailings cell area. The perimeter bund is designed to be nominally 1 m high, and to be constructed of compacted clay sourced from the surface re-grading works. The anchor trench for the anchoring of the HDPE lining is located along the crest of the embankment to ensure a low permeability barrier is created on the ground surface and along the upstream bund face for the contaminated water.

The extent of the perimeter clay bund was determined by projecting a 45-degree line from the maximum extents of the tailings storage at final height to the ground surface. Projection of a 45-degree line is expected to provide a sufficient offset distance to ensure contaminated water is encapsulated within the confines of the perimeter clay bund and hence the seepage collection system.

<u>HDPE Lining</u>

The HDPE lining forms a low permeability barrier at the base of the facility that is designed to capture water contaminated by the tailings. In a rainfall event, water will percolate through the tailings (becoming contaminated) before forming a small pond of water at the base of the facility. The water will be collected by the HDPE pipes installed on top of the liner before being conveyed to the CRCP to the south.

The design allows for a 1.5 mm thick HDPE liner to be installed on a compacted re-graded clay surface. However, significant quality control and quality assurance measures will need to be implemented during construction to minimise the risk of puncturing the liner during installation, construction of protection layers and the placement of tailings and waste rock.

<u>HDPE Seepage Collection Pipes</u>

The HDPE seepage collection pipes are designed to collect contaminated water that seeps to the base of the tailings cells. The seepage collection system consists of three types of pipes:

- Southern Collection Pipeline. All flow from the seepage collection system pipe is designed to be collected at the inlet of the Southern Collection Pipe, located at the southernmost point of the collection system. The collected seepage flows will be carried by the Southern Collection Pipe through the perimeter clay bund to the CRCP to the south.
- Central Spine Pipeline. This pipe is located along the central spine of the surface re-grading, with its alignment running north-south of the facility. This pipe collects seepage flow from the herringbone pipelines and carries flow towards the Southern Collection pipe inlet.
- Herringbone Pipelines. These pipes are perforated and allow seepage water to be collected. The seepage collection pipeline arrangement includes seven (7) herringbone pipes, spaced at 200 m intervals.

It should be noted that the pipes are only expected to withstand 35 to 40 m of waste rock material placed above them before potentially buckling. This is expected to impact the pipelines capacity installed in the central area and to the north in the latter stages of the IWF development. However, the overburden for the southernmost herringbone pipes and the Southern Collection Pipe is less than 35 m (limited to 25m overburden), meaning it will continue to operate throughout the life of the facility. Potential reduction in flow capacity or at worst-case, loss of operation of the central/northern pipelines is considered acceptable given that the re-graded surface will ensure water continues to report to the seepage collection pipelines to the south. In practice, the buckled pipes are still expected to provide an annulus that facilitates water flow to the south of the facility.

ATCW have specified the following pipelines for the seepage collection system based on withstanding the 35 to 40m of overburden pressure:

- Southern Collection Pipe: HDPE PE100 PN25 DN450.
- Central Spine Pipeline: HDPE PE100 PN25 DN450.
- Herringbone Pipelines (perforated): HDPE PE100 PN25 DN225.

<u>Cushion Geotextile and Sand Protection Layer</u>
The cushion geotextile and sand protection layers are required where waste rock is going to be placed. The protection layers will require:

- A cushion geotextile installed on top of the HDPE liner, and
- A 1m thick sand protection layer placed on top of the cushion geotextile.

The cushion geotextile shall be a non-woven geotextile (made of polyester or polypropylene). ATCW completed an empirical analysis to estimate the geotextile requirements of the lining system. Given the significant trafficking loads and placement of large waste rock particles, ATCW recommends placement of a geotextile immediately over the HDPE geomembrane with a mass of 1000 g/m^2 (minimum average roll value (MARV)). This is a heavy-duty geotextile; however, it shall be tested for suitability using trial pads.

Placement of this protection layer will be done though bridging, by avoiding heavy machinery transit directly above the prepared lining system. The erosion sand protection layer should be placed and then pushed by a dozer transiting over it.

In areas where there is no waste rock placement, there is potential to place the tailings directly on the HDPE liner and pipes (with not geotextile or sand protection).

In order to confirm the suitability of the HDPE protection and construction methodology, two trial pads will need to be carried out prior to construction of the actual HDPE lining system:

1. Trial pad for waste rock placement on the protected HDPE lining system. This involves installing HDPE liner on a compacted clay surface, then installing protective layers of cushion geotextile and sand as per the feasibility design. As part of the trial, the trial pad is to be trafficked with equipment to be used as part of the IWF construction and placement of a 2m layer of waste rock. The waste rock and protective layers will need to be removed and the HDPE liner inspected to confirm the suitability of the protection layers for the actual onsite construction methodology.
2. Trial pad for tailings placement on exposed HDPE liner. This involves installing HDPE liner on a compacted clay surface before placing and compacting tailings on top of the HDPE liner. The compacted tailings will need to be removed to inspect the HDPE liner to confirm the suitability of not using protective layers for tailings placement on the lining system.

18.19.4. Contaminant Runoff Collection Pond

The CRCP is designed to collect, store and facilitate the handling of containment runoff and is located directly downstream from the IWF to the south. It is expected the pond will store water only after rainfall events, as the dry cake tailings and waste rock are not expected to generate seepage under dry weather conditions.

The CRCP will have a capacity to store 19,000 m^3 of runoff water, which will have an exceedance probability of 1%. The estimated storage capacity is estimated to the invert of the underdrainage trench and assumes 0.5m of silt build-up in the base of the pond.

Once collected within the CRCP, the contaminant runoff will be left to evaporate to the environment (cyanide decomposes with sunlight), and if deemed necessary, excess clean water can be returned to the process plant for reuse.

18.19.5. CRCP Sediment Trap

The CRCP design integrates a sediment trap. It is expected for some fine particles within the tailings to be mobilised with seepage and be transported to some extent to the pond. The sediment trap allows for sedimentation of fine particles to the bottom of the pond, ensuring that any water that is returned to the process plant has a low content of fines.

The CRCP has been designed to have two excavated levels, with the lower level acting as the sediment trap. Once the level of water within the pond rises above the lower excavation storing capacity, water can then be extracted. The design concept sees silts being deposited at the bottom of the pond. This lower level can therefore be cleaned during dry seasons if the amount of silt is substantial. The silts can then be redeposited within the IWF tailings cells.

18.19.6. CRCP Emergency Spillway

The CRCP has been designed to withstand an inflow of water from a one in 100-year extreme storm event. However, it is known that the location of the Bayan Khundii mine can experience unprecedented high volumes of rainfall. In the event that the CRCP storage capacity is exceeded, an emergency spillway will safely route the excess water away from the pond and into the surface water drainage system, hence having minimal environmental and social consequences. Additionally, it is expected for any stored water within the pond to be further diluted during a heavy rainfall event, minimising any potential environmental risk due to discharge into the mine wide surface water drainage system.

18.20. Clean Water Diversion Drains

General

This system has been designed with the purpose of minimising the influence of external runoff into the IWF area, as well as divert water runoff that is deemed “clean” away from the Contaminant Runoff Collection System and into the environment. By diverting the clean flows, the overall surface drainage system becomes more cost-effective.

18.20.1. Northwest CWDD

The northwest CWDD is to be constructed around the northwest perimeter of the IWF footprint. The purpose of this drain is to reduce the catchment area for the IWF site by diverting runoff flows from the west of the IWF’s northern rock outcrop towards the open pit area. Additional to this drain, a diversion bund is to be constructed along the east side of the southern portion of the drain as to intercept any flows not captured by the drain. Furthermore, in conjunction with the northern rock outcrop, the system also ensures that no rainfall to the north of the IWF will flow into the area.

18.20.2. Southern CWDD

The southern CWDDs run along the southeast and southwest flanks of the IWF, and outlet south into the mine wide surface drainage infrastructure. Runoff generated from the waste rock deposited within the IWF is considered to be "clean" as it is not expected to come in contact with the internal tailings cells. The design of these surface drains ensures that the clean runoff is not deposited into the CRCP.

18.21. Dark Horse Waste Rock Dump

The footprint of the proposed WRD is designed to be founded on rock outcrops, outside of any drainage channels. This was proposed to minimise any infrastructure requirements associated with the WRD. The WRD only require 1 m deep toe drains along the west and south edges of the dump to minimise the migration of sediment from rainfall runoff and direct flow towards the west.

18.22. Construction Delivery Model

Erdene plans to engage an EPC contractor to deliver the bulk of the construction work.

Under and EPC model, the contractor assumes full responsibility for their elements of the project's design, procurement, and construction—this approach will minimize coordination challenges and streamline communication. Moreover, under this model the EPC contractor assumes a significant portion of the construction risks, including cost overruns and delays.

EPC Scope of Work

- Processing Plant
- Central Heating Plant
- Crushing Station
- Admin Building
- Chemical Storage
- Warehouse
- Heavy Vehicle Workshop
- Guard House
- Laboratory
- Wastewater Treatment Plant
- Switchrooms, Transformers, & MCC's
- Main Control Room
- Water Supply System
- Permanent Camp

In addition to construction and general procurement for the facilities listed above, the EPC contractor will undertake:

- Detailed Engineering
- Construction Permitting (as builts and commissioning)
- Construction readiness planning

In parallel to the work undertaken by the EPC contractor, Erdene will manage:

- Mechanical package procurement
- Fencing and site security
- IWF Establishment
- ROM Pad Establishment
- HV Haul Roads
- Magazine
- Permanent Fuel Depot

- Power Station
- Other owner's facilities

Each work package in the Project is to have its own Level 3 Construction Schedule to reflect the methodology, sequence, logic, interfaces and milestone dates of the works. The schedules for each work pack are based on the goal of achieving the safest outcome for the project, consistent with meeting the overarching milestone dates.

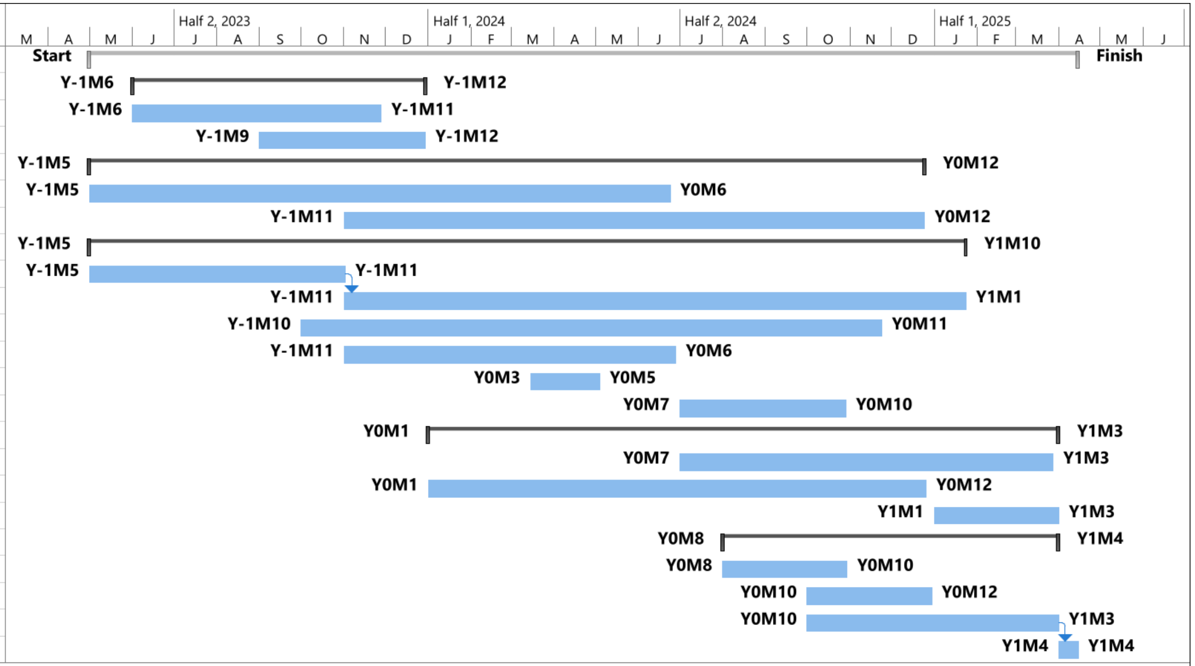
Each sub-area may have some in-built float to allow for delays, such as high winds, so that the overall end-date is secure. Completion of construction and testing is the responsibility of the contractors up to a state of Mechanical Completion, the point at which a given system is handed over to pre-commissioning and commissioning activities.

Construction activities will include installing and testing all facilities to achieve Mechanical Completion, after which the Completions Manager takes over the plant/facility and carries out pre-commissioning and commissioning activities through to handover to the companies operating team as applicable.

18.23. Indicative Construction Schedule

The following preliminary schedules have formed the basis for cost estimation in this FS Report:

ID	Task Name	Duration	Start	Finish
0	**BAYANKHUNDII PROJECT**	**715 days**	**Start**	**Finish**
1	**DESIGN & ENGINEERING**	**212 days**	**Y-1M6**	**Y-1M12**
2	Design for Construction - EPC	180 days	Y-1M6	Y-1M11
3	Design for Construction - others	120 days	Y-1M9	Y-1M12
4	**PROCUREMENT & LOGISTICS**	**604 days**	**Y-1M5**	**Y0M12**
5	For Construction	420 days	Y-1M5	Y0M6
6	For Mine Operations	420 days	Y-1M11	Y0M12
7	**PROJECT CONSTRUCTION**	**634 days**	**Y-1M5**	**Y1M10**
8	EPC-Site Establishment & Early Works	185 days	Y-1M5	Y-1M11
9	EPC Balance of Works & Demob	450 days	Y-1M11	Y1M1
10	Power Supply (Design & Construction)	420 days	Y-1M10	Y0M11
11	Fuel Supply (Design & Construction)	240 days	Y-1M11	Y0M6
12	Explosive Magazine	50 days	Y0M3	Y0M5
13	Mine Facilities (ROM, IWF, Haul Road)	120 days	Y0M7	Y0M10
14	**OPERATIONS READINESS**	**456 days**	**Y0M1**	**Y1M3**
15	People	270 days	Y0M7	Y1M3
16	Systems	360 days	Y0M1	Y0M12
17	Mine pre-production	90 days	Y1M1	Y1M3
18	**TESTING & COMMISSIONING**	**243 days**	**Y0M8**	**Y1M4**
19	Testing & Technical Commissioning	90 days	Y0M8	Y0M10
20	State Commissioning	90 days	Y0M10	Y0M12
21	Chemicals Commissioning	182 days	Y0M10	Y1M3
22	**FIRST GOLD**	**14 days**	**Y1M4**	**Y1M4**



Project: BAYANKHUNDII PROJE
Date: Fri 9/22/23

Task, Split, Milestone, Summary, Project Summary, Inactive Task, Inactive Milestone, Inactive Summary, Manual Task, Duration-only, Manual Summary Rollup, Manual Summary, Start-only, Finish-only, External Tasks, External Milestone, Deadline, Progress, Manual Progress

Figure 18-22 Indicative Project Timeline (Source O2 2023)

18.24. Hydrogeology and Hydrology

18.24.1. Background

Existing information about the geology and hydrogeology and work and assessments carried by Okhi-Us (2019) and Tetra Tech (2019a,c) suggest a conceptual groundwater model based on the following description by Pando (2020):

- Shallow ephemeral related aquifers are locally present and typically fresher due to recharge from irregular precipitation and subsequent runoff.
- Deeper brackish to saline groundwater aquifers are present within the bedrock across the project area at an approximate depth of 1216mRL (~10.0 mbgl) within the pit area and between 1206mRL and 1212mRL (3.3 to 10.8mbgl) in the KT-BS wellfield.
- Geochemistry and flow tests indicate the bedrock aquifers are localised and constrained to flow within discrete fracture sets i.e. secondary permeability.
- It is expected that the bedrock aquifers are vertically stratified due to increasing salinity and density with increasing depth.
- In general, the fractured bedrock aquifers are typically low yielding and highly varied hydraulic responses when compared to sedimentary aquifers. Apparent hydraulic conductivities are considered typically in the order of 1E-06 m/s.

The lateral and vertical extent of both the shallow fresh and the deeper bedrock brackish/saline aquifers are unable to be determined based on the available data.

18.24.2. Data Collection

Ramboll reviewed the existing data for hydrogeology (pits and supply), including the reports developed by Okhi Us (2019, 2022), ROMA (PANDO, 2020), and Tetra Tech (2019).

18.24.2.1. Borehole Drilling and Well Installations

A number of boreholes have been drilled in the period from 2019 through 2023 to investigate the potential for completing them as groundwater supply wells. The well locations have been selected based on prior geophysical investigations. Following in-situ tests it was decided whether to proceed with pumping tests or to abandon the boreholes.

It is noted that the target depth of the completed abstraction wells varies from 90 m to 196 m depth. This is based on information from borehole geophysics and drill cuttings and decisions made by the driller and the on-site hydrogeologist based on the findings as drilling progressed.

18.24.2.2. Pump Testing

The most promising hydrogeological investigation boreholes were tested to assess the potential yield. Tests included specific capacity, step-drawdown and constant rate aquifer tests using nearby monitoring wells where available.

The boreholes BKW16, BKW30, BKW44, BKW46 and BKW48 have been tested and assessed with the objective of being used for permanent groundwater supply abstraction.

The pumping tests have been aimed at a maximum yield assessed on site but occasionally limited by the available pump equipment. The collected data have subsequently been assessed and where viable higher operational pumping rates have been recommended.

18.24.3. Results – Groundwater Supply

Constant rate pumping tests followed by recovery periods were carried out in the wells BKW16, BKW30, BKW44, BKW46 and BKW48 using nearby wells as monitoring wells where appropriate. A summary of the results is provided in Table 18-3. Borehole locations are shown in Figure 18-23.

Table 18-3 Summary of Pumping Test Results

Pumping well ID	Depth [m bgl]	Static Water Level [m bgl]	Pumping rate [m3/h]	Maximum Drawdown, s [m]	Transmissivity T [m2/day]	Specific capacity, Q/s [m3/h/m]
BKW16	128.0	3.89	3.6	67.26	10.17	0.05
BKW30	145.0	3.20	11.5	24.47	22.76	0.47
BKW44	90.0	7.17	6.8	15.20	12.23	0.45
BKW46	185.0	8.49	12.9	76.34	13.16	0.17
BKW48	196.0	14.71	13.1	30.39	9.57	0.43

The drawdown curves support the information provided by borehole logging data that the dominant flows come from fractures. Large sudden increases in drawdown indicate that the water level is reduced to below the upper fracture.

The results suggest the inflows are from two dominant fracture zones where the primary inflow is from the uppermost fracture zone. However, the upper fracture zone seems to be completely drained when pumping BKW16 and BKW46 and thus resulting in poor long-term yields. This is also supported by the fact that the water level recovery is relatively slow indicating that the total sustainable yield of the aquifer is relatively low.

Even though the calculated transmissivity of the aquifer(s) is in the same order of magnitude, the assessed sustainable yield from the individual wells varies significantly. This is partly due to well construction details, but in particular due to the wells connectivity to a high yielding fracture. The results show that the specific yield is not related to well depth.

18.24.3.1. BKW16

The investigations in BKW16 indicate that the well penetrates two fracture zones but can provide relatively low long-term yields. This is mainly due to the upper fracture being drained relatively quickly and therefore not contributing to the sustainable flows. The recovery period is slow suggesting that the aquifer can only be sustainably abstracted at relatively low rate of 1.0 L/s, with intermittent pumping to ensure adequate recovery.

18.24.3.2. BKW30

The results from BKW30 indicate that even after a relatively long pumping period the water level in the pumping well is still dropping significantly and there are no indications of a semi steady state level approaching. This indicates that there is a long-term risk of draining the aquifer at least in the vicinity of the pumping wells but potentially also at distance from the wells. The sustainable yield of this well is therefore difficult to predict but it is likely limited if the wells are being operated on an ongoing scheme with constant abstraction. The well should be operated intermittently at 2-3 L/s to allow the water level to recover.

18.24.3.3. BKW44

Even though BKW44 has been tested at a rate of 6.8 m3/h (1.9 L/s) the results from the well indicate that it can be sustainably abstracted with pumping rates of 2-3 L/s because of the limited drawdown. This was re-confirmed in 2023 by a short specific capacity test followed by a recovery period indicating that the well can be pumped at a rate of 3 L/s with a drawdown of 17.52 m resulting in a significantly higher specific capacity than obtained during the original pumping test.

18.24.3.4. BKW46

BKW46 is dominated by fracture flow from the upper system which is drained quickly resulting in a large drawdown. The results indicate that the transmissivity of the aquifer(s) is relatively high but because of the quick drainage, the sustainable yield of the well is relatively low. However, it could be feasible to operate the well intermittently at the target rate to allow for the water level to recover.

18.24.3.5. BKW48

The results from BKW48 show that the sustainable yield of this well is assessed to be around 3.5 L/s. The specific capacity is relatively high, and the recovery period suggests that the aquifer is not being depleted. The results to date indicate that the highest yielding wells in the area can be drilled around BKW48.

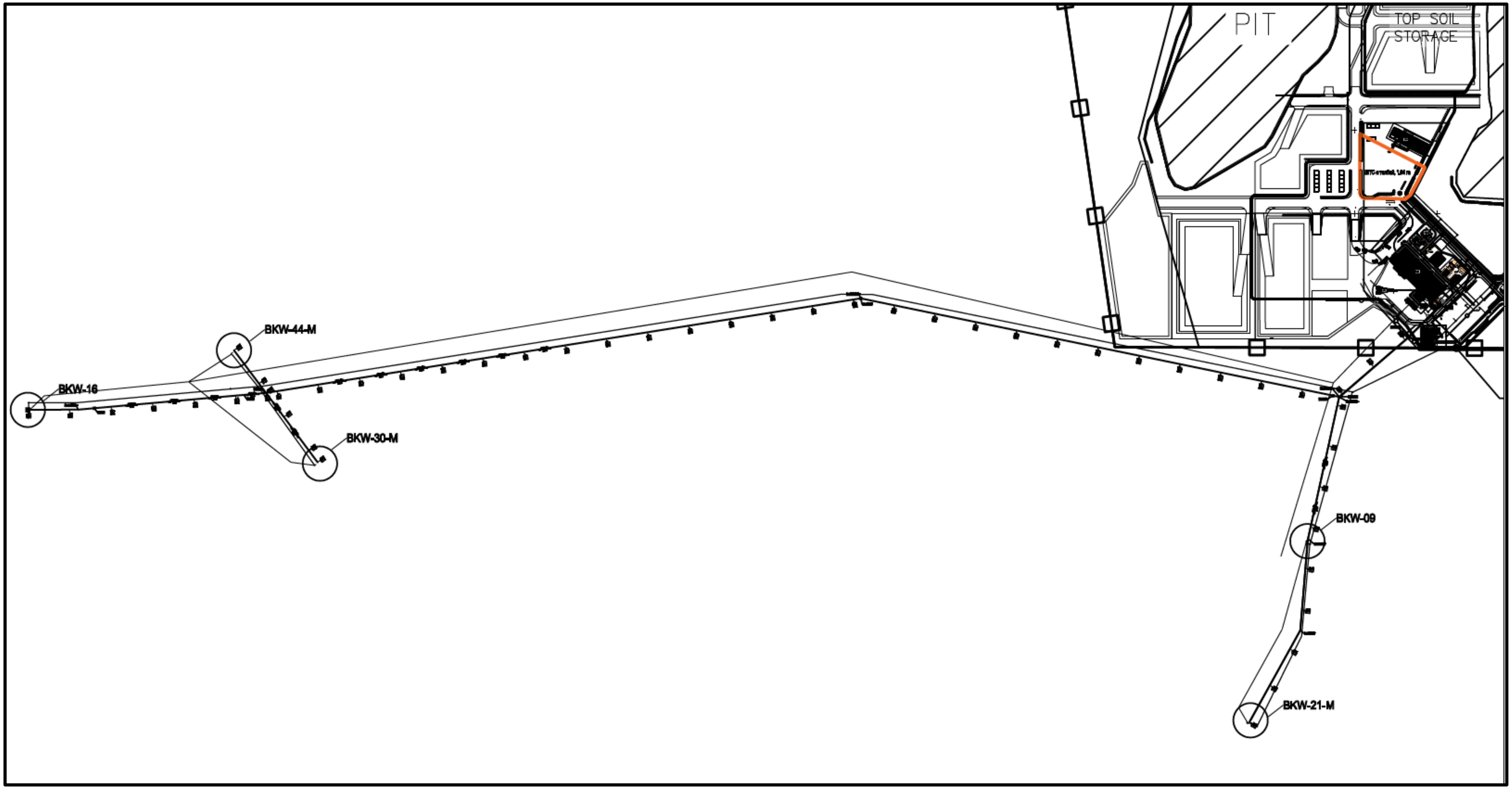


Figure 18-23 Hydrogeology Map for Bayan Khundii (Source – ERD 2023)

18.24.4. Discussion
Given the relatively small demand it is assessed that the water supply is potentially sufficient to meet the project requirements for the initial 7 years of operation. However, the maximum sustainable yield of the aquifer is generally considered to be limited.

The water level and flow of the upper fracture system seem to be controlled by precipitation and thus may have a slow recovery once drained. To mitigate this the abstraction wells should be secured with a sanitary seal to prevent ingress of surface water. It is considered that the lower fracture zone is fed by more regional systems allowing for a more secure supply.

BKW44 and BKW48 appear to be the most productive abstraction wells. The combined yield of these wells is assessed to be in the range of 5-6 L/s with BKW48 being the most promising well. The sustainable yield of the remaining wells, BKW16, BKW30 and BKW46, is relatively low and it is considered unlikely that these wells can be operated individually at a constant rate in the long term. However, intermittent operation of the abstraction wells, especially BKW16, BKW30 and BKW46 is recommended as a water supply source.

The desired maximum yield from this borefield to support the mining project is 5.7 L/s. It is concluded that this yield could be abstracted sustainably from the borefield. However, the current well configuration provides limited contingency. It should therefore be considered to establish 1-2 new exploration wells in the area north of BKW48 to secure the desired total yield and to allow for additional contingency.

The northern end of the Bayan Khundii pit is located relatively close to the highest yielding aquifer zone around BKW48. The extent of this zone is at present not well known and interference between the pit and the water supply abstraction could potentially result in a reduced yield from the abstraction wells.

18.24.5. Site Process-Water Operations
Site water is proposed to be supplied from the nearby Khuren Tsav – Bosgyn Sair ("KT-BS") wellfield located between approximately 1 to 4 km southwest of the Bayan Khundii Pit. The KT-BS wellfield was identified through an exploration and borehole development program principally carried out in 2019 by the Mongolian hydrogeological consulting firm, Okhi-Us LLC, at the Company's request (Okhi-Us, 2019). This program consisted of geophysical surveys, exploration drilling, development of four production wells with adjacent monitoring wells within the KT-BS wellfield and two wells for domestic use near the proposed permanent camp location. This work culminated in registration and approval of the KT-BS wellfield water resource with the Mongolian government for extraction of up to 10 L/s over a period of 7 years for the mine operation.

The nearby KT-BS wellfield indicatively has capacity to meet the annualized demand rate for the BK processing plant. Confirmatory draw-down was carried out during the construction phase to quantify the aquifers storage and spatial extents. The groundwater in the KT-BS wellfield is primarily hosted in localized fracture systems which are highly variable with limited connectivity which makes it is difficult to quantify the exact long-term performance of the wellfield.

The site requires an average of approximately 573 m3/day (equating to 6.6 L/s) of raw water to sustain mineral processing, mine dust suppression and camp domestic water requirements. A component of the raw water supply will be quality conditioned to a potable quality with a reverse osmosis treatment plant. The below figure diagrammatically describes the fundamental components of the planned mine water circuit with their demands and potential provisions.

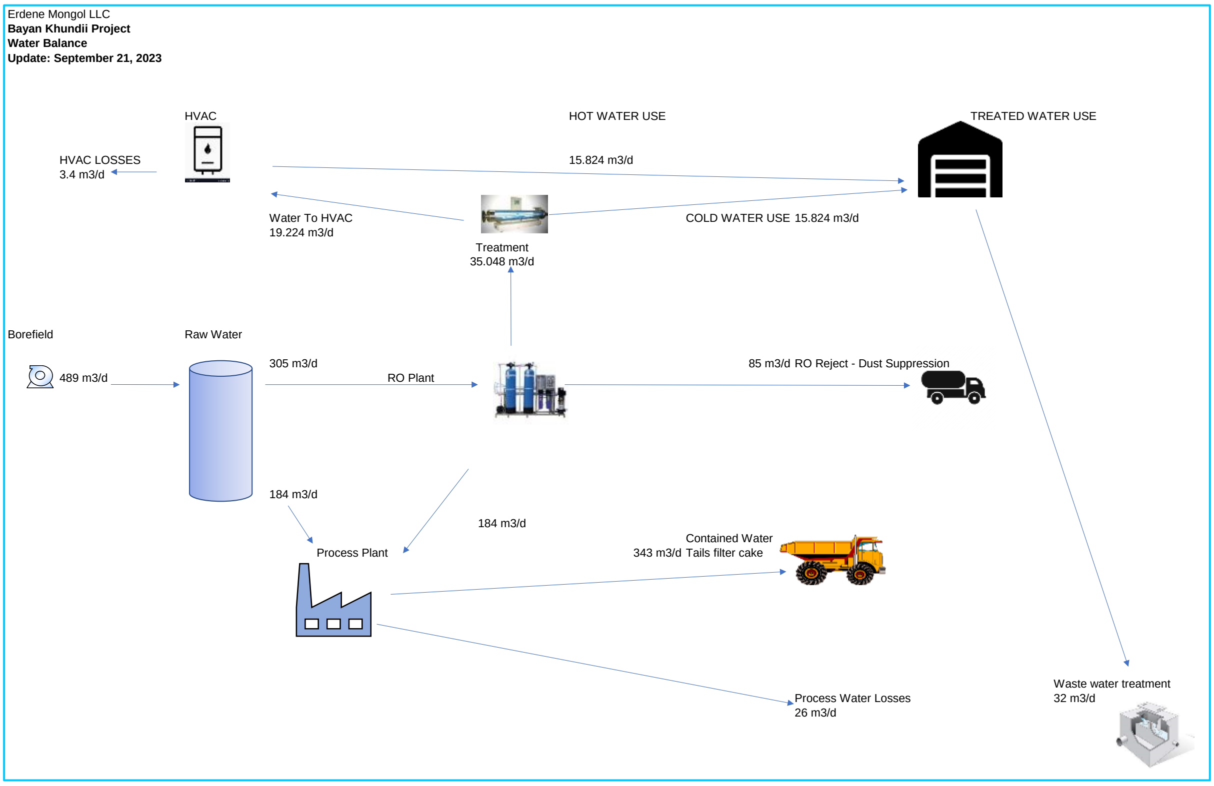


Figure 18-24 Mine Water Balance (Source - ERD 2023)

A below ground pipeline will transport bore water to the raw water tank located near the process plant. The terrain between the tank and the varying bore field locations is relatively flat and has little shrubbery, which will lend itself to decreased earthworks during the construction phase. Site reticulation will be fed from the raw water tank which will include feed lines to mining infrastructure, power station/fuel farm and plant infrastructure.

19. Market Studies and Contracts

19.1. Marketing Studies

Gold and silver are commodities that freely trade on the world market and for which there is a steady demand from numerous buyers. It is also possible to sell gold and silver for delivery at a fixed price at a future date (forward sale). There are a number of refiners in the world whose bars are accepted as "good delivery" through associations like the London Bullion Market Association ("LBMA").

In Mongolia, the Government of Mongolia supports the purchase of gold and silver doré through Mongolbank, the central bank. Sales of gold and silver to Mongolbank have a fixed, discounted royalty, currently set at 5 percent of the selling price. Mongolbank purchases are transacted according to the daily spot price on the London Metals Exchange. Exports of gold and silver from Mongolia are subject to a graduated royalty scheme, ranging between 5 and 10 percent.

As freely-traded commodities with a clear framework for sales domestically in Mongolia, no marketing studies were considered necessary for this study.

19.2. Metal Selling Price

The selling prices used in this study were US$1,800/oz for gold and US$23.62/oz for silver.

The gold and silver selling prices are based on the three-year trailing average prices for each metal, for the period ending July 1, 2023. Given the variability and uncertainty surrounding future gold price, gold prices from $1,400 to $2,200 were considered in the sensitivity analysis.

O2 considers this approach reasonable for the purposes of the BK FS.

19.2.1. Sales Contract

No sales contract is required for the sale of doré to the Mongolbank. At the time of study, at least four points of sale for doré had been identified. In the closest provincial center (Bayankhongor aimag center) to the Project, Mongolbank operates a point of sale. Additionally, at least two commercial banks (Khan Bank and Golomt Bank) purchase doré at Mongolbank rates in Bayankhongor aimag center. In Ulaanbaatar, the Mongolbank also purchases doré. For the purposes of this study, the point of sale of Project doré is assumed to be Bayankhongor aimag center, due to its proximity to the Project site, and Ulaanbaatar, in order to allow for at least two points of sale for security purposes.

The Company is responsible for transportation, insurance, laboratory, and other charges associated with delivering the doré to the point of sale. For the purposes of this study, these charges have been calculated directly using budgetary quotations provided by licensed services providers in Mongolia.

No precious metals refinery currently operates in Mongolia. Refinement of doré purchased by Mongolbank is managed directly by Mongolbank.

Alternatively, the doré may be exported and sold internationally. Due to the increased royalty for precious metals export, export sale is not as economically viable as direct sales to Mongolbank.

20. Environmental Studies, Permitting and Social Impact

20.1. Environmental Assessment

Mongolia's environmental assessment process for mining projects involves two steps:

- General Environmental Impact Assessment ("GEIA"); and
- Detailed Environmental Impact Assessment ("DEIA"), including a baseline study and an Environmental Management Plan ("EMP").

The GEIA of a project is a preliminary screening based on the nature, scale, and location of the project. The GEIA is carried out by the Ministry of Environment and Tourism as part of the mining license application process.

The Detailed Environmental Impact Assessment acts as the statutory assessment of potential environmental and social impacts of a given project, including the project's baseline research and initial Environmental Management Plan. The environmental and social ("E&S") baseline study examines the existing context within which the project is planned, drawing upon both primary and secondary data. The E&S baseline is documented in full in the Detailed Environmental Impact Assessment.

The DEIA covers potential environmental and community (or social) impacts. A DEIA is obligatory for all mining projects in Mongolia and must be carried out by an independent Mongolian entity with professional certification for DEIA services granted by the government. The DEIA of a given project must be filed within 12 months of issuance of the statutory technical and economic assessment for a given mining license. As prescribed by the government, the DEIA methodology examines the potential impacts of a proposed mine relative to the baseline conditions and proposes mitigation and management measures. Prior to the Ministry approval of the DEIA, consultation with the local government is required for the purpose of providing feedback on potential impacts and proposed management plans.

20.2. Environmental Permitting

20.2.1. Detailed Environmental Impact Assessment

The approved DEIA acts as the Project's statutory environmental assessment and the basis for issuing operating permissions for the Project. An independent DEIA for the Project was prepared and approved by the Ministry of Environment and Tourism in 2021.

20.2.2. Local Cooperation Agreement

Pursuant to Article 42 of the Law on Minerals of Mongolia, minerals license holders are required to enter into a Local Cooperation Agreement with the local government of the jurisdiction within which a given minerals license is located. In 2016, the Government of Mongolia approved model Local Cooperation Agreements for minerals license holders that commit companies to undertake environmental management in the course of operations and encourage public information sharing about the license holder's activities locally. The Company has in place a Local Cooperation Agreement with local government through to the end of 2024.

20.2.3. Land and Water Use

Land use permissions are required for the mine and its facilities and associated infrastructure and are issued by the soum government authorities. The Company has received all necessary land use permits for the Project development, including the open pit, processing plant, mineral waste facility, and all associated support infrastructure.

Water use permission is based on the availability of surface and sub-surface resources and is issued by local, regional, or national authorities, depending on the required annual water consumption. The Company has registered with the government the Khuren Tsav-Bosgyn Sair water reserve for the purposes of mining and mineral processing at the Project for the life of mine. Application for water use permits must be submitted upon commissioning of the Project water supply system.

20.2.4. Annual Environmental Management Plan and Report

License holders are required to submit and implement Environmental Management Plans for operations planned in a given year. Performance is reported annually to the government. The Project remains in compliance and in good standing with its annual environmental reporting requirements as of the date of this Report.

20.2.5. Hazardous Materials

Additional permitting is required for chemicals, explosives and other selected hazardous materials transport, handling, use, and storage, prior to the commissioning of the Project's process plant. The Company holds an approved statutory risk assessment for hazardous materials as required in the Project DEIA. Formal application for hazardous materials permission for the Project must be submitted subsequent to the construction and state commissioning of the process plant and critical support facilities.

20.2.6. Other

Other environmental permits or approvals may be required for the Project in the course of its development. The Company did not have any other additional environmental permit applications outstanding as of the date of this Report.

20.3. Environmental and Social Studies and Plans

From 2016 to 2018, the Company engaged Eco Trade LLC – a Mongolian certified DEIA consultant – to complete the environmental and social baseline studies for the Project, in accordance with Mongolian rules and regulations. Building upon the initial studies, in 2019-2020, a consortium led by Sustainability East Asia LLC, including Eco Trade LLC and Ramboll Australia Pty, completed additional baseline studies and impact assessment for the Project, culminating in the Project's ESIA disclosed in 2020. In parallel, Eco Trade LLC prepared the statutory Mongolian DEIA for the Project, which was approved by the government in 2021.

The following section summarizes the results of the Project ESIA and draft DEIA, including baseline conditions, potential impacts, and plans for mitigation and management of the potential impacts.

20.3.1. Climate and Air Quality

The Project is in the northern part of the Altai Southern Gobi Desert region. The regional landscape is characterized by Gobi low hills which exhibit porous, rough surfaces. These hills have typically been eroded by water, temperature and wind, to create gullies that can be affected by erosion between hills, small dry channels, and the flat steppe between low hills. The central part of the Project area is flat in terms of land surface. The southern part of the license area hosting the mineral deposits has been conducted is composed of knolls with an elevation between 1,250 to 1,300 m.

Air quality in the Project area is generally good due to the lack of emission sources. The only man-made emission sources affecting the area are dust from the use of local roads, including public traffic, and natural wind-blown dust as a result of local weather conditions. The Company commissioned periodic air quality monitoring within the Project area in 2016 and 2019, which provided an indication of the prevailing dust levels. Data collected showed relatively consistent conditions for rainfall, air temperature, humidity, wind speed and wind direction. The lowest rainfall in the region occurs from

October to April. Relative humidity is consistently low throughout the year. Wind speeds peak in April and November, with calmer conditions in June/July and December/January. Winds prevail from the south-west and west throughout the year, indicating the impacts from emission sources are more likely to be experienced to the north-east and east of their location.

Potential impacts on seasonal herder winter camp sites to the south-west of the processing plant were considered. The identified camp sites were not inhabited but could be occupied sporadically and temporarily for weeks or months under favorable prevailing wind conditions (i.e. located upwind of the mine). Should herder winter camps be occupied, it is considered that herders could experience some potential air quality impacts, mainly during operations of the mine.

The following mitigation and management measures are proposed:

- Management of mining and transport activities to minimize dust emissions will include limiting vehicle speeds.

20.3.2. Noise and Vibration

The Project is located in a greenfield area with no industrial or human settlements nearby. Wind is the main source of noise within the study area. The baseline noise levels within the study area were under the day-time noise level thresholds recommended by Mongolian and International standards. No information was available for baseline vibration levels in the study areas. However, due to the remoteness of the Project site from any industrial development or human settlements, it is believed that the vibration level is within a natural range.

The total mine site noise impact to the workers' accommodation camp and potential temporary herder camp sites near the Project site will not exceed the Project standard. Noise impacts will be negligible. Noise levels from the blasting may be over the Project noise level standards, but they are unlikely to exceed the trigger value thresholds due to the very short nature of blasting events. Thus, no significant impacts are expected from blasting activities, provided the necessary safety and mitigation measures are in place.

The following mitigation and management measures are proposed:

- Optimizing, as possible, the number of heavy earth-moving equipment to reduce the total noise levels;
- Selecting equipment with noise and vibration abatement technology, where possible;
- Regular maintenance of equipment according to the manufacturer's specifications;
- Erecting, where required and feasible, noise shields around high noise generating equipment; and
- Notifying community member and workers of the mine blasting schedule.

20.3.3. Topography, Landscape, Geology, Soils and Seismicity

There are no sensitive landscape features within the Project Sites, and the overall topography and landscape sensitivity is low. Local herders who may graze sporadically and seasonally in and around the Project area comprise the main receptors of potential impacts. The sensitivity of the geology in environmental terms is considered low in relation to the construction and development of the Project site. Soil is generally poorly developed and formed beneath sparse vegetation cover. The soil is also susceptible to natural erosion and freeze-thaw conditions. The baseline data collected for the site have shown that in certain locations there are high natural levels of heavy metals occurring in soils, including arsenic and molybdenum.

During construction, topsoils from the footprint of the permanent infrastructure within the Project will be stripped and stockpiled, where possible, for re-use in rehabilitation and restoration. Soil structure beneath the permanent infrastructure / buildings will be lost for the duration of the project. During operations, there may also be ongoing disturbance to soils from vehicle movements on unsealed roads. However, these are considered to be minor, as transport will occur on designated routes, and drivers will be prohibited from off-road driving.

The Integrated Mineral Waste Facility ("IWF") will present the most significant topographical change resulting from the Project. Additionally, the mine pit void will create a significant change to the existing landscape. The mine will bring extracted material to the surface where it can oxidize and potentially form acid drainage. However, the risks of potential acid generation ("PAG") appear very low for the Bayan Khundii deposit and moderate for the Dark Horse deposit, as described separately in this Report.

The following mitigation and management measures are proposed:

- A Hazardous Materials Management Plan and Waste Management Plan will be prepared and implemented, including measures such as spill response plans and supply of critical protective other necessary equipment onsite; and
- Rehabilitation of all facilities will be conducted prior to closing the site, in accordance with Mongolian and any applicable Project standards.

20.3.4. Surface Water Quality, Hydrology, and Hydrogeology

Groundwater is proposed to be provided from a borefield within the Khuren Tsav and Bosgyn Sair ("KT-BS") aquifer, which will provide the raw water supply for the Project, located approximately 3 km to the south of Bayan Khundii.

The Project Site and KT-BS aquifer lie within the arid climate of the continental Gobi Desert region where there are no permanent surface water sources, outside of the brief flow events in the ephemeral watercourses following a significant rainfall. Recharge of groundwater and ephemeral streams including the generation of surface flows depends on the intensity of the rainfall, duration, slope and surface runoff capacity.

These surface flows are short-lived and unpredictable, and of limited use to the local population and wildlife. They are important for the recharge of shallow aquifers. The climatic records of the region indicate that an average year would include between two and five rainfall events resulting in surface water flows. Analysis of climate data has identified that approximately 70% to 80% of surface water flow events occur during the months of July and August (Tetra Tech, 2019a).

In the region, shallow groundwater has traditionally been the main source of water for the herders and their animals and where shallow enough, can also be exploited by larger wildlife. This shallow groundwater also locally supports small stands of groundwater dependent vegetation.

Elevated concentrations for salinity, hardness, chloride, sodium, sulphate, calcium, ammonium, fluorine, arsenic, manganese, antimony, ammonium and strontium have already been recorded in many of the wells. These elevated concentrations are regarded as naturally occurring and water quality is expected to decrease with time, that is, concentrations will increase, due to abstraction of the near surface fresher waters which overlie denser more saline aquifers. Groundwater monitoring will be undertaken regularly, follow any additional legislative or permit requirements, where dataloggers provide near real-time monitoring of any changes to groundwater.

Key potential water resources impacts include water use impacts, impacts to surface and groundwater resources and quality, and impacts to the surface water regime. Given that the water supply for the project will be provided via groundwater abstraction, environmental impacts are considered possible during operations.

Groundwater monitoring of the water resources will comprise routine water level measurement, monitoring extraction rates, and periodic sampling of groundwater bores. Should monitoring identify exceedances of criteria, response actions would be triggered to mitigate impacts. Response actions may include changes in the pumping rates from individual water supply bores. The Project will also consider providing assistance or infrastructure to ensure access to water for herders is maintained to the same extent to which access was available prior to the operation of the KT-BS borefields.

Project site structures and infrastructure may impact the natural hydrological regime and alter surface water flows downstream of the Project Sites. Infrastructure has been designed to minimize interference with natural flow regimes and to accommodate any stormwater runoff.

The following mitigation and management measures are proposed:

- A Water Resources Management Plan ("WRMP") will be prepared and implemented; and
- A Water Monitoring Plan ("WMP") will be prepared and implemented.

20.3.5. Biodiversity Conservation

The ecology of the Project area is characterized by desert and steppe vegetation typical of the south Gobi region of Mongolia, a region with some high value biodiversity species. A total of nine plant species legally recognized as 'rare' or 'very rare' were recorded in the vicinity of the Project. The fauna species in the area are common in the region. Surveys recorded eight mammal species in the area. Goitered gazelle, listed as vulnerable in the International Union for Conservation of Nature ("IUCN") and Mongolian Red List, were observed during the survey, as the region is within this species' distribution range. Reptile diversity is relatively low, but reptile occurrence is common. This group provides important food resources for predatory birds and mammals. Out of the total of six reptile species found, the slender racer and Gobi naked-toed gecko were found to be legally recognized as 'rare' by Mongolian legislation. Bird diversity is relatively high with 23 species of birds observed, most of which were common species. However, two birds—the houbara bustard and Mongolian ground jay—were found to be of high conservation value according to the IUCN and/or Mongolian Red List. No important bird areas exist in the Project vicinity. The site access road from Shinejinst soum does not cross any existing protected areas.

While certain temporary impacts may occur, the overall impacts to flora and fauna are considered to be low.

The following mitigation and management measures are proposed:

- Rehabilitation and revegetation will occur for areas of temporary disturbance due to Project construction activities to the extent possible.

20.3.6. Waste

There is limited domestic waste currently generated within the Project Area by the Project's field program activities. Both non-hazardous and hazardous waste will be generated during the Project's construction and operations phases.

The Project plans to utilize a duly permitted landfill for the disposal of domestic, non-hazardous wastes, including on-site and off-site. All potentially hazardous wastes will be collected and safely stored for transfer to an appropriate, licensed facility for recycling or disposal. A purpose-built waste water treatment plant will be constructed for treatment of waste water in accordance with national standards. With the implementation of mitigation measures proposed below, the overall waste-related impacts are considered to be negligible to minor.

With respect to mineral waste management, geochemical characterization was undertaken to assess the properties of the waste expected to be generated by the mining of the BK and DH deposits and to also determine the geochemical suitability of materials for use as construction material. The sampling program for BK focused on the Basalt, Jurassic Sediments and Lapilli Tuff lithologies. The results of the geochemical characterization program for BK indicate that the three waste lithologies are non-acid forming (Tetra Tech, 2019a). The sampling program for DH focused on the Andesite-Dacite, Lapilli Tuff, Syenite-Monzon and Residual Quartz lithologies. The results of the geochemical characterization program for DH indicate that a portion of lithologies display some level of potential acid formation risk, the safe management and disposal of which has been considered in the design of the DH waste rock facility (ATCW, 2023).

Erdene has developed an integrated approach to the disposal of waste rock and dry cake tailings. This approach involves the disposal of both waste rock and detoxified filtered tailings into a single, engineered integrated mineral waste facility (“IWF”). This process of co-disposal encapsulates tailings within clean mine waste and creates a landform with maximum possible strength.

The following mitigation and management measures are proposed:

- Use of fit-for-purpose landfill for non-hazardous waste generated at site; and
- A wastewater treatment plant will be installed and commissioned for use.

20.3.7. Population and Demography

At the end of 2022, the population of Bayankhongor aimag was 88,397 people in approximately 26,600 households. As of 2019, in Shinejinst soum there were a total of 2,449 people in 754 households.

The development of the Project may result in a small increase in the population that may have an impact on residents living in Shinejinst soum (mainly the soum center), as well as on schools and hospitals (staff and users) in the soum. These impacts are considered to be minor.

The following mitigation and management measures are proposed:

- Accommodation of workers on site to minimize the potential for influx into local communities;
- Providing workers with facilities and services on site to minimize any additional pressure on regional services;
- Measures to minimize the risks of gender-based violence and harassment in the project social impact area, including a policy of non-harassment and Code of Conduct for employees; and
- Contractor workforces will be required to comply with all of Erdene’s site rules and requirements.

20.3.8. Economy and Employment

At the soum level, Shinejinst soum has 1,381 economically active people (2019). In the soum, the majority of working-age people work in the agriculture sector, almost entirely in livestock herding. Animal husbandry is also the primary source of household income in the Project area.

The key impact sources during construction and operations will primarily be due to the beneficial effects of Project-related taxes and royalty payments, direct and indirect employment, and procurement of goods and services. In addition, indirect employment and associated business opportunities may arise, collectively resulting in induced employment.

The following mitigation and management measures are proposed:

- Provide training for personnel and contractors to ensure that the Project has access to an appropriately skilled and trained workforce;
- Conduct an inventory and pre-qualification survey on local sourcing opportunities to identify potential suppliers and/or supplier development opportunities;
- Establish eligibility for 'local hiring preference' through a specific timeframe of residency in the Project Area of Impact and / or proof of diaspora status;
- Clearly communicate employment estimates, timeframes and skills requirements to local communities on an ongoing basis through trained Project personnel;
- Promote employment and career development of women, including managerial and technical / engineering positions;
- Apply a strict policy of non-harassment to reduce workplace risks to women; and
- Conduct community consultation to further define potential community development activities for support by the Company through its Local Cooperation Agreement, as appropriate.

20.3.9. Land Use

Land use in the Project area is predominantly rangeland-based transhumant animal husbandry, with goats, sheep and camels being the most typical types of livestock raised. Seasonal migration of livestock, at times over considerable distances, is necessary for livestock survival. The pattern of pastureland use is highly variable both annually and seasonally. Herder households frequently move in other seasons depending on pasture conditions. However, herders may often return to a given winter camp site, subject to adequate pasture availability.

No winter camps were identified or recorded within the boundaries of the Project Mining License Area. Within 10 km of the Project license areas, three winter camps were recorded near Bayan Khundii. There are no permanent structures associated with any of these locations.

There is no physical displacement associated with the Project. Potential impacts may include the following:

- Pasture impacts from nuisance issues to pasture users, such as increased noise, dust, and / or vibration;
- The potential for an increase in competition for and conflict about grazing due to loss of and / or restricted access to seasonal pasture; and
- Minor economic displacement due to potential loss and / or disrupted access to seasonal pasture.

With the implementation of the mitigation measures proposed below, the overall impacts related to displacement are considered to be minor.

The following mitigation and management measures are proposed:

- Project construction and operations phases will be designed and managed to enable the continued functioning of local animal husbandry practices, where feasible; and
- A Herder Livelihood Support Program ("HLSP") will be developed to address potential impacts on land use.

20.3.10. Cultural Heritage

Within the mining license area, no archaeological and palaeontological cultural heritage resources were discovered during the surveys conducted as part of the Mongolian statutory process. Furthermore, the surveys noted a low probability of future findings. Household surveys identified a number of intangible cultural heritage practices amongst local residents, such as traditional games, song, and herding practices.

There may be potential physical loss of or damage to undocumented archaeological or palaeontological objects or features that are encountered within the footprint of the Project, if not properly identified. Traditional frameworks, practices and customs may also be impacted as residents in Shinejinst soum engage with the non-local construction and operations phase workforce at the Project.

The following mitigation and management measures are proposed:

- A Chance Finds Procedure, designed to ensure the safety, integrity and proper handling of any objects of cultural or historical significance will be implemented;
- A Code of Conduct among the workforce (including contractors) and induction program that stipulates norms of acceptable behavior in relation to cultural heritage to enhance workers' respect for local cultural assets and practices will be provided; and
- The Project will continue to collaborate with local communities on strengthening and supporting local cultural heritage through the Local Cooperation Agreement.

20.3.11. Occupational and Community Health, Safety and Security

The quality and scope of medical services are limited in the Project area. Basic medical care is provided through a soum hospital. The Shinejinst soum hospital has ten beds and two doctors. The soum hospital is limited to providing emergency and maternal care, as needed. Mortality data indicate that the leading causes of death are cardiovascular disease, stroke, cancer, and cirrhosis, and a similar pattern is observed at the aimag and soum levels. While the incidence of communicable diseases is generally low, sexually transmitted infections accounted for over 70% of total communicable diseases in 2018 in Bayankhongor aimag. In Shinejinst soum, there are very low levels of reported crime, and crime is mainly associated with the consumption of alcohol, including public nuisance and domestic violence offences.

The key potential impacts in relation to occupational and community health, safety and security are linked to the remote nature of the site and associated potential occupational health and safety impacts, including emergency events for workers. The overall impact on the community health, safety, and security is considered to be minor.

The following mitigation and management measures are proposed:

- Erdene will operate a fit-for-purpose medical facility for Project personnel at the site. In the event of an emergency, medivac capabilities will be available at the site;
- Dedicated measures for emergency response will deal with the potential for off-site incidents that may affect local communities and will include arrangements for prompt notification, communication and evacuation as well as collaboration with the local authorities and communities to build capacity for emergency preparedness;
- The Project will apply the principles of the International Cyanide Management Code for the manufacture, transport and use of sodium cyanide to ensure good international industry practice; and
- Potential illegal small scale mining incursion at the mine site will be mitigated through the presence of employees on site that will discourage such activity, targeted communication and engagement with local communities and law enforcement authorities, and ensuring

security and community-facing personnel are appropriately trained in the provisions enshrined in the Voluntary Principles on Security and Human Rights.

20.3.12. Transport

The Project area is characterized by limited traffic management infrastructure, and the extensive use of motorbikes is prevalent. Existing roads are largely unimproved and of a poor standard. There are low existing vehicle and traffic movement numbers. Low traffic volumes for both the construction and operations phases of the Project mean that there will likely be minor to negligible impacts on wildlife and livestock, dust and noise, and damage to existing road networks.

The following mitigation and management measures are proposed:

- Ensure measures are in place to mitigate any transport through community centers, including speed restrictions and bypass routes where appropriate;
- Maintaining or improving road sections for safe passage, where feasible and appropriate;
- Strict adherence to speed limits, traffic regulations and pre-agreed traffic routing; and
- Use of vehicle escorts especially for convoys of oversized or overweight Heavy Goods Vehicles.

20.4. Community Engagement

Erdene consults with stakeholders in the course of its business, including both statutory and voluntary methods.

20.4.1. Statutory Consultations

Mongolian law requires consultation with local stakeholders during the DEIA process. The Project proponent must provide information about the Project’s potential impacts and management plans to the public in accordance with the law. The Project’s statutory DEIA consultations were completed in 2021.

The Local Cooperation Agreement also commits the Project to ongoing consultation with local stakeholders over the course of the Project life cycle.

20.4.2. Company Stakeholder Engagement Policy

In addition to the DEIA consultation process, Erdene engages with stakeholders on an ongoing basis. All material information regarding the company’s performance is translated into Mongolian language within approximately 48 hours of disclosure and made available on the websites of Erdene and the Mongolian Stock Exchange. The company maintains a grievance handling mechanism for both internal and external stakeholders at the Project site and Ulaanbaatar office, and provides training for company personnel on how to implement the mechanism.

20.5. Mineral Waste Management - Bayan Khundii Integrated Waste Facility

General

The following provides an explanation for how the IWF and surrounding auxiliary infrastructure will ensure that the wider environment is not negatively impacted. The following outlines requirements and plans for the disposal of waste rock and tailings, continuous site monitoring throughout the life of mine as well as water management practices to be undertaken during operations. Actions to be undertaken post mine closure are also defined to ensure rehabilitation of the IWF is successful.

20.5.1. Containment of Contaminated Water

Placed dry cake tailings within the IWF are considered to contain potentially hazardous substances which present a threat to the environment if not properly managed. Any moisture which comes into contact with the tailings must be contained and treated. As a result of this, it is scheduled that several types of infrastructure must be constructed prior to any tailings placement, so as to ensure that any potential contaminant is managed and not allowed to migrate into the wider environment. These infrastructure items include:

- Contaminant Runoff Collection System
  - Underdrainage System,
  - Seepage collection system,
  - Containment Runoff Collection Pond (CRCP), which includes:
    - CRCP Emergency Spillway,
    - CRCP Silt/Sediment Trap.
- Clean Water Diversion Drains (CWDD), including:
  - Northwest CWDD,
  - Southwestern and Southeastern CWDD.

In order to mitigate the threat of environmental damage, engineering measures have been incorporated into the IWF design. These include construction of an HDPE-lined seepage collection system underneath the tailings cells and strategic placement of the waste rock within the IWF.

It has been identified that moisture can migrate through the tailings and infiltrate the environment. The HDPE lining is therefore incorporated in the design under the proposed locations where tailings are to be placed within the IWF to manage this risk. The purpose of this liner is to intercept any moisture (generated from rainfall events) permeating through the tailings and allowing the perforated collection pipes to drain the water. This water is then discharged into the CRCP.

20.5.2. Monitoring

Monitoring requirements for the IWF will incorporate the installation of two (2) groundwater monitoring bores in the downstream area of the IWF and CRCP to monitor groundwater conditions throughout the life of the facility.

Similarly, movement monitoring monuments will be installed on the crest edges of each intermediate bench making up the final IWF shell. Installation will be undertaken progressively as the bench final level is achieved during construction. This will allow for continuous monitoring of the IWF in terms of settlement and movement.

Surveillance requirements for the IWF will involve routine monthly inspections, as well as annual audits, or audits specific to frequencies required by the Mongolian Regulators.

20.5.3. Closure and Rehabilitation

The IWF has been designed to allow progressive rehabilitation. It is envisioned that each intermediate bench will start being rehabilitated once construction of the IWF exceeds that bench’s final height. Progressive rehabilitation will lessen the requirement for large volumes of topsoil to be imported at the conclusion of the LoM as well as identify if rehabilitation methodologies implemented are successful in anticipation of the IWF closure.

It is proposed that progressive rehabilitation will involve the placement of a low permeability layer (2m thickness) to make up the final bench height, followed by selective placement of topsoil that will permit revegetation. The final benches should also include the construction of drainage shuts to allow for free drainage of the structure. However, the feasibility of this will need to be confirmed in the course of final design for closure.

The objective for the final closure of the IWF is threefold, these being:

- Integral stability - maintain stability under seismic events, water & wind erosion,

- Resist the flux of water through the IWF that may flush contaminants into the receiving environment, and
- Retain plant available moisture in the outer surface to promote the growth of endemic vegetation to the greatest extent possible.

To achieve this, the Concept Closure Strategy calls for the placement of a 'Store & Release' (SAR) type cover on the flat bench surfaces of the IWF. The purpose of the SAR cover is to minimize the generation of surface runoff that would give rise to erosion and maximize the storage of plant available moisture that would facilitate plant growth. A secondary benefit of a SAR cover is that it limits the flux of water through the body of the IWF and therefore minimizes the risk of contaminant transport into the receiving environment.

The Design of the SAR cover will comprise three (3) elements:

1. A Reduced Permeability Layer (RPL) that reduces the infiltration of water,
2. Placement of topsoil, and
3. Establishment of suitable vegetation species, on those exterior surfaces that may support it (likely limited to the bench flat surface).

It is recommended that activities during the operations phase give due regard to final closure of the IWF according to a strategy of Progressive Closure. For example, under the base case production schedule, it is highly likely that mining at the Khundii open pit will cease prior to the completion of the processing campaign. In this instance, waste rock will need to be reserved to ensure that a suitable inventory is available to complete the final pass of waste rock over the last tailings to be placed. Further, suitable soils and/or meta-soils need to be identified and reserved to place as the moisture storage layer.

To progress this Concept Closure Strategy to an execution level plan, additional assessments and refinements will have to be completed during the operations phase, such as suitable methods to establish vegetation on disturbed ground in this relatively hostile environment. Much of this work can be modelled, but in many regards, demonstration by field trial is the most conclusive approach.

Erdene has already commenced initial vegetation trials at Bayan Khundii in order to increase the probability of success of re-vegetation efforts during reclamation and closure.

If after the first years of operation, vegetation growth has not been successful on the lower benches, alternative approaches should be trialed and implemented.

The Design is expected to see vegetation establishment only in areas of slope below 5% in an effort to maximize soil moisture storage, hence the flat surface of the benches will provide the most likely areas of revegetation during closure.

20.6. Mineral Waste Management – Dark Horse Waste Rock Dump

General

The following provides an explanation for how the WRD will ensure that the wider environment is not negatively impacted. The following outlines requirements and plans for the disposal of waste rock from the Dark Horse deposit, continuous site monitoring throughout the life of mine as well as water management practices to be undertaken during operations. Actions to be undertaken post mine closure are also defined to ensure rehabilitation of the WRD is successful.

20.6.1. Containment of Potentially Acid-Forming Waste Rock

The presence of PAF waste rock poses environmental risks. To minimize the risk of oxidation of these materials it is proposed to adopt the encapsulation method, whereby the PAF is placed within the body of the WRD and surrounded by a minimum thickness of NAF material. This approach is currently adopted at other mines in Mongolia and globally.

This method entails the development of internal PAF waste rock cells that aim to minimize the interaction between oxygen, PAF material and water infiltration over the waste dump which leads to a reduction of the acid rock drainage (ARD) potential. A minimum thickness of 5 m of NAF is required between the foundation and PAF material and a minimum 10 m of NAF cover on outer slopes and top of the WRD.

20.6.2. Closure and Rehabilitation

Closure of WRD will need to be aligned with Erdene's overall closure commitments, the objects of the closure concept for the WRD are:

- Integral stability of WRD under seismic events, water, and wind, and
- A profile that is sympathetic to the surrounding landscape.

The concept for closure of WRD, in keeping with the landscape will be:

- Reshape the outer slopes of the WRD to a 3H:1V planar slope,
- Reshape the top of the WRD to shed water, and
- Spread soils, stockpiled from foundation preparation over the reprofiled surface.

20.7. Mine Closure and Rehabilitation Framework

Mine closure and reclamation will be performed in accordance with Mongolian regulations and guidelines. All buildings and facilities not identified for a post-mining use will be removed from the site during the salvage and site demolition phase. Mine closure costs have been estimated to be US$3.1 million. The conceptual mine closure plan ("CMCP") for the Project will be reviewed and continually improved during the development and operations phases of the project. A statutory mine closure plan must be filed with the government three years prior to the planned completion of mine operations. Consideration will be given to the following statutory and voluntary Project standards for mine closure and reclamation planning:

- The Minerals Law of Mongolia (2006);
- Environmental Impact Assessment Law of Mongolia (2012);
- Mine closure and rehabilitation regulations, Mongolia (2019);
- Applicable guidelines and MNS standards of Mongolia;
- EBRD Performance Requirements;
- Statements of Financial Accounting Standards (FAS 143 - Asset Retirement Obligation-ARO); and
- International Cyanide Management Code (2009).

The framework for Mine Closure and Rehabilitation Planning is as follows:

- **Primary**: The primary purpose of the Mine Closure and Rehabilitation Plan is to:
    - Describe the proposed post-closure landforms and land-uses and the performance criteria that will be used to measure successful closure and rehabilitation;
    - Demonstrate that there is an adequate level of engineering and planning in support of the closure cost estimate and hence the derivation of closure and rehabilitation accounting provision; and
    - Demonstrate that risk-based closure planning at the Bayan Khundii Gold Project is fully integrated into operational planning to ensure that the appropriate level of study (and where necessary research), engineering and management will be implemented during

the life of the operation in order to achieve successful closure with acceptably low post-closure risks.

- **Secondary**: The secondary purpose of the Mine Closure and Rehabilitation Plan is to:
  - Identify and document the legal requirements, liabilities, obligations, commitments, design and completion criteria for closure;
  - Identify, document and manage risks associated with closure in consideration of Bayan Khundii Gold Project standards and the guidance notes provided by the Mongolian Government;
  - Provide the basis for the ongoing review of rehabilitation and closure assumptions, risks and risk controls, and the ongoing refinement of closure designs and planning;
  - Integrate closure planning with operational planning;
  - Identify and schedule opportunities for progressive rehabilitation (where practical).
  - Identify the need for further research, assessments and studies in order to ensure the reduction of the uncertainties around closure and the effective and optimum use of available resources and technology;
  - Ensure, through a consultative process, that the plan developed is technically achievable, agreed to and followed during the operating life to minimize rework and life-of-mine costs; and
  - Address the social and community aspects associated with closure including socio-economic impacts following closure and support end land use opportunities that will benefit the community post-closure.

21. Capital and Operating Costs

21.1. Overview

The FS capital cost estimate for the Bayan Khundii Project was developed to provide a detailed cost estimate which includes the design, procurement, construction and commissioning of the facilities.

Throughout the period of 2020 through to 2022, O2 Mining assisted with the design and cost estimation process for:

- Process Engineering Studies; FEED and DED completion and engineering sign-off, Project Risk Assessment, Construction Schedule, Process Plant Capital Costing, Infrastructure Procurement estimate, Process Plant CAPEX and OPEX;
- Mine Infrastructure Studies inclusive of FEED design completion, Non-Process Infrastructure design and cost estimation, construction materials sourcing, power, fuel, explosives, logistics, communications, wastewater treatment, and access roads;
- Mine Closure Planning compliant with Mongolian Standards and the approved ESIA/DEIA, Financial provisioning for Closure;
- Cost and Economic Modelling, based upon RFP responses, develop a first principles CAPEX model, Economic analysis and cost optimization;
- Project Readiness and Execution Planning to a FS level of detail; and
- Final Presentations and Report in support of the FS completed in 2020 and subsequently updated to the end of 2022.

A Request for Proposal/Quotation framework, dependent upon the nature of the service/work/materials required was prepared for each work/costing package. This framework included the establishment of a proposal development process to ensure that the needs and requirements of the project were understood and satisfied by all Stakeholders. A total of 54 Process Plant related RFPs were sent to suppliers in Mongolia, China, Europe, Asia, Australia and South Africa. A further 66 Non-Process RFP/RFQ were sent to suppliers in a similar range of countries. The RFPs were issued for process plant equipment, construction materials, mining equipment, all-in construction of site infrastructure, freight and logistic costs. Finally, power, fuel, and laboratory services were subject to a design, build, manage and potentially transfer set of criteria.

The RFPs for Process and Non-Process requirements were based upon Mongolian Standards, EBRD requirements, Equipment Datasheets, Technical drawings, an indicative Bill of Materials (“BOM”), and other supporting information as required and available. Mongolian standards were used as the baseline, although where necessary, international standards were applied.

Proposals and quotes were assessed against agreed criteria including commercial terms, presentation of proposal, technical description of equipment or service, understanding of the RFP, and past performance of the potential supplier.

In 2023, ERD management received EPC proposals for the majority of process plant and mine infrastructure, and selected a preferred vendor for these works. ERD management also solicited updated proposals/quotations for the balance of capital required for the Project.

O2 undertook a process to validate updated capital costs provided by ERD. This process was broken into three parts:

1. Facilities and work covered under the EPC contract were validated by ensuring the work package was explicitly included under the EPC quotation and ensuring the work package was explicitly included in the EPC scope of work document. Further due diligence was undertaken

to confirm the design specifications that formed part of the EPC RFP were in line with previously estimated work.

2. Capital costs for machinery and equipment that ERD plans to procure directly were validated by reviewing supplier quotations provided by ERD. These quotations were reviewed to confirm that they matched the agreed specifications, incorporated the complete list of equipment in the specifications, were based on recent pricing, adequately considered logistics costs, and were fit for purpose.
3. Capital costs for infrastructure to be developed under a design, build, operate or similar contracts were verified by reviewing recent proposals received by ERD. These proposals were checked to ensure they included pricing for the infrastructure design and build, and to ensure the RFP developed by ERD described a fit for purpose facility. Where the cost of developing this infrastructure was included in the operational service fee this development cost was included in the operating costs only.

The following section presents the elements used during the financial evaluation: income, capital and operating costs. Most of the costs were evaluated in US dollars and converted where necessary.

21.2. Project Currency, Foreign Exchange and Measurement System

21.2.1. Currency and Foreign Exchange Rates

This estimate uses US dollars ("US$") as the base currency. All dollar figures are presented in US$, unless otherwise noted. Foreign exchange rates noted in Table 21-1 were applied as required, based on average exchange rates between May and June, 2023.

Table 21-1 Currency Exchange

Project Currency	Exchange rate to US$1
MNT	3,450
AUD	1.47
CAD	1.32
CNY	6.75
EUR	0.889
ZAR	17.39

Quotations for mechanical packages were quoted in USD or converted to USD at the time of quotation.

21.2.2. Taxes and Duties

A 10% Value Added Tax ("VAT") is included in the estimate for all services and goods. In addition, a 5.5% import duty is included for all process equipment, materials and consumables sourced internationally. The import duty rate is applied to the total cost of material and transport.

21.2.3. Measurement System

Unless otherwise stated, the metric system of measurements was used in this estimate.

21.3. Cost Estimating Methodology

The development of this estimate followed a structured process to ensure accuracy and comprehensiveness. A significant portion of the capital costs were derived from a detailed quotation provided by an Engineering, Procurement, and Construction (EPC) contractor with experience in executing complex projects, including a coal mining facility, underground mine materials management systems, beverage manufacturing and medical facilities, commercial high rise, and residential developments in Mongolia.

In parallel, a substantial portion of the CAPEX was calculated through a first-principles approach. This involved breaking down the project into its fundamental components, and estimating, based on raw materials, labor, equipment, and other essential pricing inputs. This method allowed for a granular understanding of the project's cost structure.

21.3.1. Estimate Supporting Documents:

The capital cost estimate was based on the following documents:

- Quotation from EPC contractor;
- Major equipment and supply quotations from vendors;
- Pre-production development cost estimates;
- Process flow diagrams;
- Process equipment list;
- General arrangement drawings;
- Layout drawings;
- Project work breakdown structure ("WBS");
- Supplemented sketches where required; and
- O2 Mining in-house data;

21.3.2. Scope of Work Priced Under EPC Contract

The following facilities have been priced in the CAPEX according to the EPC quotation provided by ERD for a turn-key construction solution.

1. Temporary facilities
    a. Site temporary infrastructure
    b. Temporary site offices, camps, and support facilities
    c. Temporary site workshops and material laydowns
    d. Operation costs associated with temporary facilities
2. Design
    a. Engineering design coordination
    b. Shop detailed drawings
    c. As-built red line drawings
    d. Local design author services
    e. Design supervision
3. Early Stage Works
    a. Earthwork
        i. Off site road construction
        ii. On site road construction
        iii. Excavation and backfilling works
    b. Civil
        i. Reinforcement
        ii. Concrete
        iii. Embedded components
        iv. Waterproofing and geotextile
        v. Supply of concrete (including equipment)
        vi. Supply of aggregate
        vii. Other associated Costs
4. Process Plant Construction (excluding mechanical equipment supply and delivery)
    a. Structural steel works
    b. Tank and plate works
    c. EICT
    d. Architectural Works

   e. Piping
   f. HVAC
5. Non-Process Infrastructure
   a. Permanent camp (design, supply, install)
   b. Heating plant (exclusive of boiler equipment)
   c. HV/LV Workshop
   d. Chemical warehouse
   e. Site office
   f. Warehouse
   g. Water reticulation System
   h. Water supply
   i. Onsite laboratory
   j. Waste Water Treatment Plant
   k. Security Guard House

21.3.3. Construction Direct Costs

Construction costs are priced on EPC turnkey quotation as discussed in the section above.

Facilities and work covered under the EPC contract were validated by ensuring the work package was explicitly included under the EPC quotation and ensuring the work package was explicitly included in the EPC scope of work document. Further due diligence was undertaken to confirm the design specifications that form a part of the EPC RFP were in line with previously estimated work.

Capital costs for machinery and equipment that ERD plans to procure directly were validated by reviewing supplier quotations provided by ERD. These quotations were reviewed to confirm that they matched the agreed specifications, incorporated the complete list of equipment in the specifications, were based on recent pricing, adequately considered logistics costs, and were fit for purpose.

Capital costs for infrastructure to be developed under a design, build, operate or similar contract were verified by reviewing recent proposals received by ERD. These proposals were checked to ensure they included pricing for the infrastructure design and build, and to ensure the RFP developed by ERD described a fit for purpose facility. Where the cost of developing this infrastructure was included in the operational service fee, this development cost was included in the operating costs only.

21.3.4. Cost Basis – Indirect Costs

The following costs were built up from vendor estimates and contractor proposals:

- **Spares**: Allowances have been made for spares based on the value of the original equipment. The following allowances have been included in the estimate:
  - 10% of equipment cost for Elution capital spares; and
  - 5% of equipment cost for Reagent Pump, Scrubbers, Dust Collectors, capital spares;
  - 5% of equipment cost for Scrubbers capital spares; and
  - 12% of equipment cost for Mills capital spares.

- **Stores & Inventories (Initial Fills):** An allowance of $782 K was included for the stores and inventories, including grinding media, office furniture, comms and IT equipment, warehouse racking, and process plant workshop tools and maintenance equipment.
- **Vendors' Assistance during Construction:** The estimate included an allowance of $229,595 for vendor assistance based on vendor quotations.
- **Freight & Logistics:** Freight and logistics were estimated based on packing data from vendors and competitive quotations from logistics companies. Freight & Logistics includes:
    - International and Domestic freight;

- Land transportation, including rail and truck;
- Loading and offloading, including craneage; and
- Bonds and insurance.

- **Contingency:** Contingency was applied at a flat 12% rate across the CAPEX as described in Section 21.4
- **Escalation:** No allowance for escalation
- **Estimate Classification and Accuracy:** This estimate has been prepared in accordance with the Class 2 Cost Estimate standards of the AACE. The accuracy of the estimate is ±10 – 15%.
- **Estimate Base Date:** This Cost Estimate is prepared with a base date of Q2 2023 and does not include any escalation beyond this date.
- **Validity:** The quotations obtained for this study estimate were obtained between Q4 2022 and Q3 2023 and have an average validity period of 90 days.

21.3.5. Assumptions & Exclusions

- **Assumptions** - The following assumptions have been made for the capital cost estimate:
  - All equipment and materials will be purchased outright new, except for mining equipment which will be supplied through a rental agreement;
  - The labor rate used in the estimate is based on statutory law governing benefits to workers in effect at the time of the estimate; and
  - Build-up of trade labor benefits and burdens is based on typical market practice in Mongolia, supported by an independent remuneration study commissioned by ERD and rates agreed by ERD;

- **Exclusions** - The following items have been excluded from the capital cost estimate:
  - Working or deferred capital;
  - Financing costs;
  - Land acquisition;
  - Currency fluctuations;
  - Lost time due to severe weather conditions;
  - Lost time due to force majeure;
  - Additional costs for accelerated or decelerated deliveries of equipment, materials, or services resultant from a change in project schedule;
  - Additional months of warehouse inventories, other than those supplied in the cost estimate;
  - Project sunk costs (studies, exploration programs, etc.);
  - Mine reclamation costs (included in financial model);
  - Mine closure costs (included in financial model);
  - Escalation costs; and
  - Community relations beyond simple good will allowances made in the indirect cost estimate.

21.4. Capital Costs

The estimated pre-production capital costs for an annual mine production of 650 Ktpa ore feed was estimated to be US$100.4 million, or US$90.0 million exclusive of contingency. The capital cost breakdown for the Project is included in Table 21-2.

Table 21-2 Project Capital Cost Estimate

TOTAL CAPEX	000 US$	$ 100,427
Construction indirect Costs	**000 US$**	**$ 28,051**
Site Establishment & Early Works	000 US$	**$ 6,381**
Construction Temporary Facilities	000 US$	**$ 884**
Contractor Establishment Costs	000 US$	**$ 420**
Construction Indirects - General	000 US$	**$ 17,037**
Mobile Equipment	000 US$	**$ 3,329**
Construction Direct Costs	**000 US$**	**$ 60,589**
Project Site General Works	000 US$	**$ 12,163**
Process Plant	000 US$	**$ 46,251**
Electrical/Water/Heating Distribution	000 US$	**$ 2,175**
Owners Project Costs	**000 US$**	**$ 1,383**
Contingencies	**000 US$**	**$ 10,403**

21.5. Scope of the Estimate

AACE defines direct costs as: "costs of completing work that are directly attributable to its performance and are necessary for its completion. In construction, it is the cost of installed equipment, material, labor and supervision directly or immediately involved in the physical construction of the permanent facility" (AACE, 2005).

21.5.1. Process Plant

Process includes crushing, conveying, grinding, classification, leaching, acid wash, electrowinning, carbon regeneration, detoxification, tailings discharge and reagents. The capital cost breakdown for the processing plant is included in Table 21-3.

Table 21-3 Processing Plant Cost Estimate

Process Plant Summary	Total
Supply & Fabricate & Install	$ 15,811,400
Mechanical Equipment Supply	$ 12,773,154
EICT	$ 8,130,100
Civils & Earthworks	$ 5,649,600
Architectural Works & PP CHP	$ 3,616,800
HVAC	$ 1,156,100
TOTAL	**$ 47,137,154**

21.5.2. Non-Process Infrastructure

Project infrastructure includes all earthworks for the site, administration building including emergency and crib facilities, process plant warehouse, chemical storage, laboratory, workshop and warehouse, remote ablution facilities, security guardhouse, site utilities supply (electrical, water, heating), and surface drainage and sediment control. The capital cost breakdown for non-process infrastructure is included in Table 21-4.

Table 21-4 Non-Process Infrastructure Cost Estimate

Non-Process Facility Summary	Total	
Permanent Camp	$	4,202,000
HV/LV Workshop	$	2,193,400
Chemical Storage Facility	$	1,633,500
Administration Office	$	1,544,400
Warehouse	$	1,104,400
Water Reticulation	$	966,900
Water Supply	$	647,900
Assay Laboratory	$	614,900
Waste Water Treatment Plant	$	559,900
Change Facility	$	224,400
Security House	$	222,200
Total	**$**	**13,913,900**

21.5.3. Construction Indirects

Construction Indirects include project insurance, head office costs, project-related costs, pre-start-up costs, permitting and environmental costs, equipment and consumables, temporary accommodation and transportation for the owners team and other costs to manage construction activities at the site. Total construction indirect costs are estimated at US$17.6M, as detailed in Table 21-5.

Table 21-5 Construction Indirects

Construction Indirects	Total	
Indirects - Owner's	**$**	**10,471,679**
Owner's Fees & Insurance, Office	$	3,296,381
Owner's Management & Supervision	$	3,156,432
Owner's Travel and Accommodation	$	1,817,398
Owner's other indirects	$	2,201,468
Indirects - EPC's	**$**	**7,131,300**
EPC's Management & Supervision	$	2,739,000
EPC's Fuel consumption	$	1,075,800
EPC's Site support services & catering	$	1,008,700
EPC's other indirects	$	2,307,800
SITE ESTABLISHMENT - early works	$	7,686,083
DESIGN & ENGINEERING - EPC's	$	753,500
DESIGN & ENGINEERING - owner's	$	629,510
Total	**$**	**17,602,979**

21.5.4. Pre-production Costs

Includes first fills and consumables such as reagents to commence operations, site ancillary equipment, and engineering and consulting fees associated with establishment of the IWF. Pre-production costs are estimated at US$2.3 M.

21.5.5. Sustaining Capital

Sustaining capital is estimated at 1.5% of the initial capital costs for all process and non-process infrastructure, per annum commencing from Year 2 and tapering off into year 6, with only mine closure costs accounted in Year 7.

Table 21-6 Sustaining Capital

			2024	2025	2026	2027	2028	2029	2030	2031	2032	
	Capital assets	**Cost**	**Y0**	**Y1**	**Y2**	**Y3**	**Y4**	**Y5**	**Y6**	**Y7**	**Y8**	**Remarks**
1	**Processing Plant**	**$46,038,991**	**$0**	**$0**	**$175,125**	**$690,585**	**$690,585**	**$175,125**	**$175,125**	**$0**	**$0**	
	MECPK	$11,674,991			175,125	175,125	175,125	175,125	175,125			1.5% per year
	General building	$34,364,000				515,460	515,460					1.5% per year
2	**Non-processing Infrastructure**	**$14,063,900**	**$0**	**$0**	**$622,940**	**$248,990**	**$522,940**	**$198,990**	**$99,495**	**$0**	**$0**	
	Permanent Camp Construction	$4,202,000			63,030	63,030	63,030	63,030	31,515			1.5% per year
	Water Reticulation Construction	$966,900			14,504	14,504	14,504	14,504	7,252			1.5% per year
	Water Supply Construction (add wells and connect to pipeline)	$647,900			323,950	-	323,950	-	-			50% in Y2 and 50% in Y4
	Waste Water Treatment Plant Construction	$559,900			8,399	8,399	8,399	8,399	4,199			1.5% per year
	Administration Office Construction	$1,544,400			23,166	23,166	23,166	23,166	11,583			1.5% per year
	Change Facility (4.5x12x2)	$224,400			3,366	3,366	3,366	3,366	1,683			1.5% per year
	Security House Construction	$222,200			3,333	3,333	3,333	3,333	1,667			1.5% per year
	HV/LV Workshop Construction	$2,193,400			32,901	32,901	32,901	32,901	16,451			1.5% per year
	Warehouse Construction	$1,104,400			16,566	16,566	16,566	16,566	8,283			1.5% per year
	Chemical Storage Facility Construction	$1,633,500			24,503	24,503	24,503	24,503	12,251			1.5% per year
	Assay Laboratory Construction	$614,900			9,224	9,224	9,224	9,224	4,612			1.5% per year
	Core storage	$150,000			100,000	50,000						
3	**Replacements**		**$0**	**$0**	**$6,843**	**$6,843**	**$6,843**	**$0**	**$0**	**$0**	**$0**	
	Mill liner handler	$456,178			6,843	6,843	6,843					1.5% per year
4	**Mining & General**	**$1,072,332**	**$0**	**$0**	**$16,085**	**$16,085**	**$16,085**	**$16,085**	**$0**	**$0**	**$0**	
	Support Equipment	$1,072,332			16,085	16,085	16,085	16,085				1.5% per year
5	**Environment**	**$0**	**$0**	**$24,725**	**$24,725**	**$22,310**	**$76,590**	**$76,590**	**$76,590**	**$3,700,000**	**$0**	
	Reclamation and closure			24,725	24,725	22,310	76,590	76,590	76,590	3,700,000		BFS 2020 closure cost plus 20%

21.5.6. Reclamation and Mine Closure

Reclamation and closure costs include all progressive rehabilitation costs and final rehabilitation costs to remediate the site according to Mongolian national standards in line with the preliminary mine closure plan further detailed in Section 20.7 - Mine Closure and Rehabilitation Framework.

21.5.7. Salvage

Salvage value has been estimated considering the relatively short life of the project and the value of elements of the processing plant, mobile equipment and other infrastructure that could be recovered after completion of the mine life during the reclamation phase.

21.5.8. Integrated Waste Facility

All costs to establish the IWF to receive waste rock and dry cake tailings commencing from Year 1 of operations are included in the mine operational costs. Progressive costs for further construction of the IWF have also been included in the mine operational costs.

21.5.9. Contingency

When estimating the cost for a project, there is always uncertainty as to the precise content of all items in the estimate, how work will be performed, what work conditions will be like when the project is executed, and so on. These uncertainties are risks to the project. These risks are referred to as the “unknown-unknowns”. The estimated costs of these unknown unknowns are referred to by cost estimators as “cost contingency.” O2 mining has estimated a contingency for each activity or discipline based on the level of engineering effort as well as experience on past projects. The total value of the contingency for the Khundii Gold Project is estimated to be $10.4 million.

Contingency is based on the level of details submitted in the estimates, the expected level of accuracy of those estimates and O2 Mining’s experience. Based on these factors, a flat 12% contingency was applied to the total CAPEX. Given that some changes to the design/scope would be expected in the final design for construction and as-builts, based on site conditions and project requirements, there will be risk of increase and opportunity for reduction of EPC scope accordingly. A base contingency of 10% was considered reasonable, with an additional 2% contingency included for potential variance in the EPC estimate once locked under contract.

Contingency excludes:

- Major scope changes, such as changes in product specification, capacities, building sizes, or location of the asset or project;
- Extraordinary events, such as major strikes and natural disasters;
- Management reserves; and
- Escalation and currency effects.

21.6. Operating Costs

Operating costs are presented in this section excluding VAT unless otherwise noted. VAT has been built up separately in the financial model for all operating costs.

21.6.1. Mining

Open-pit mining costs were estimated from a first principles build-up of the costs to manage and operate the mine. Costing is based on the FS mine design, mining schedule, and IWF design which was used to develop budget pricing to at least ±15% for unit costing for the required labour, equipment, supply and services for the life of mine operations.

An annual schedule of mining costs is included in Table 21-7.

Table 21-7 Annual Mining Costs

Mining Cost Summary - Yearly											
EXPENSE ITEMS			Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Total
			365	365	365	365	365	365	365	365	
TOTAL MINED	**Tonnes**	**47,963,094**	0	12,187,141	12,600,000	12,600,002	5,850,000	2,760,000	1,965,951	0	**47,963,094**
WASTE MINED	**Tonnes**	**43,945,288**	0	11,715,045	11,719,475	12,057,776	5,040,505	1,983,616	1,428,871	0	**43,945,288**
ORE MINED	**Tonnes**	**4,017,806**	-	472,096	880,525	542,226	809,495	776,384	537,080	-	**4,017,806**
PERIOD COSTS	**000 US$**	**$ (165,050)**	**$ (4,362)**	**$ (29,289)**	**$ (34,342)**	**$ (34,976)**	**$ (24,741)**	**$ (19,342)**	**$ (15,171)**	**$ (2,828)**	**$ (165,050)**
Mining Drill and Blast	000 US$	**$ (27,591)**	$ -	$ (4,534)	$ (7,234)	$ (7,890)	$ (4,043)	$ (2,177)	$ (1,712)	$ -	**$ (27,591)**
Mining Load and Haul	000 US$	**$ (721)**	$ -	$ (183)	$ (189)	$ (189)	$ (88)	$ (41)	$ (30)	$ -	**$ (721)**
Mining / NPI Power	000 US$	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Mining Direct Labour	000 US$	**$ (8,201)**	$ (227)	$ (1,397)	$ (1,684)	$ (1,720)	$ (1,226)	$ (964)	$ (769)	$ (215)	**$ (8,201)**
Mining Ancillary Equipment	000 US$	**$ (15,004)**	$ (203)	$ (2,486)	$ (2,701)	$ (2,729)	$ (2,342)	$ (2,108)	$ (1,801)	$ (633)	**$ (15,004)**
Grade Control	000 US$	**$ (2,553)**	$ -	$ (444)	$ (444)	$ (444)	$ (444)	$ (444)	$ (333)	$ -	**$ (2,553)**
Mining Indirect Labour	000 US$	**$ (6,537)**	$ (124)	$ (1,106)	$ (1,117)	$ (1,117)	$ (1,117)	$ (1,117)	$ (838)	$ -	**$ (6,537)**
Mining Indirect Costs - Other	000 US$	**$ (3,211)**	$ (1,175)	$ (1,032)	$ (504)	$ (127)	$ (135)	$ (135)	$ (105)	$ -	**$ (3,211)**
Contract Mining Costs	000 US$	**$ -**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**$ -**
Mining Equipment Rent	000 US$	**$ (30,050)**	$ (888)	$ (5,422)	$ (6,314)	$ (6,403)	$ (4,421)	$ (3,211)	$ (2,576)	$ (817)	**$ (30,050)**
Diesel for Mining Equipment	000 US$	**$ (32,926)**	$ (882)	$ (5,859)	$ (7,072)	$ (7,218)	$ (4,780)	$ (3,580)	$ (2,793)	$ (742)	**$ (32,926)**
Allocation of G&A	000 US$	**$ (24,336)**	$ (500)	$ (4,391)	$ (4,215)	$ (4,218)	$ (4,108)	$ (3,995)	$ (2,910)	$ -	**$ (24,336)**
VAT on Mopex items	000 US$	**$ (13,920)**	$ (365)	$ (2,435)	$ (2,867)	$ (2,922)	$ (2,036)	$ (1,569)	$ (1,304)	$ (421)	**$ (13,920)**
Unit cost- Total Mining	$/tonne	$ (3.44)	$ -	$ (2.40)	$ (2.73)	$ (2.78)	$ (4.23)	$ (7.01)	$ (7.72)	$ -	**$ (3.44)**

**Unit cost for mining in table is inclusive of VAT*

21.6.2. Processing

The Processing OPEX is built up from the development of costs for labor, power, maintenance, reagents, and other associated expenses.

Table 21-8 - Process Operating Cost Base

Cost Center	Estimate Basis
Labor	• Based on typical team compositions adjusted for plant size; and • Shift configurations used were same as mining.
Transportation, messing and accommodation	• Budget quotations were obtained for messing and accommodation services; transportation costs are based on a combination of chartered flights between UB-site; bussing from UB-site; bussing from Bayankhongor-site; bussing from soum-site.
Power	• Budget quotation for price of power based on a Power Purchase Agreement; • Industry typical motor loads & efficiency factors used for all small to medium sized drives; and • Large power consumers such as the SAG & Ball Mills were calculated and checked from first principles.
Fuel	• Typical fuel consumptions (L/h) & utilizations were used for the expected fleet of mobile equipment; and • The fuel price was based on supply quotation.
Maintenance	• Estimated based on similar projects.
Reagents and Consumables	• Major Reagents: consumptions were based on first principles and test work. Prices were based on Chinese and Mongolian chemical supply quotations; • Minor Reagents (i.e. fluxes): consumptions were based on similar projects and reagent supply quotations; • Consumable prices were based off indicative vendor estimates and budget quotations; and • Consumable consumption rates were based on test work and empirical formulae.

Labor cost was provided by Erdene and was evaluated by O2 to be in line with industry standards.

As provided by ERD, the Labor cost was built up from a provisional organization and manning structure, ensuring coverage of all operational and maintenance tasks. Operational rosters are based on a 2:2 ratio during operations, provisionally as a 14/14-day roster with 14 days working (7 days, followed by 7 nights), with 1-day travel either side of a 14-day rostered break.

- Senior and administrative roles at 14/14 as dayshift only, with a call out provision. Coverage for senior roles is on an overlap basis with the production superintendent covered by 1 of the senior process engineers, who also covers the other senior process engineer on his designated break.
- Labor rates for operational, maintenance, administrative and senior roles are based on current Mongolian averages, with an additional allowance for remote site conditions.

Power consumption is based on the installed power from the process plant equipment list, adjusted based on assumed load profile, utilization and power factor. Cost per kW hour is based on the selected power supply proposal.

Maintenance costs were developed from review of maintenance schedules from similar scale operations, with component and consumable costs based on vendor quotation, or industry averages. Transport cost was factored into the supply of components based on an agglomeration of components, rather than individually shipped items.

Reagent consumption is based on the test work and factored for typical plant scale, and prices were based on quotations received during the FS.

General process operating expenses were developed as part of the overall General and Administrative costs, with process plant specific costs extracted into the process Plant General operating cost.

Table 21-9 - Process Plant Costs

Processing Costs	USD$/Tonne
Process Power Costs	$ 16.21
Process Direct Labour Costs	$ 1.81
Process Indirect Labour Costs	$ 1.63
Maintenance Costs	$ 0.52
Reagent Costs	$ 9.80
General Costs	$ 0.20
Allocation of G&A	$ 7.78
Unit cost- Total Processed	**$ 37.95**

Note: VAT excluded from this table

An annual schedule of processing costs is included in Table21-10 (US$ ’000).

Table 21-10 Annual Processing Costs (US$ ’000s)

Expense Items	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Total
	365	365	365	365	365	365	365	365	
Ore Mined	0	472,096	880,525	542,226	809,495	776,384	537,080	0	**4,017,806**
Processing Target	0	337,500	650,000	650,000	650,000	650,000	650,000	430,305	**4,017,805**
Period Costs	**721**	**19,697**	**24,736**	**25,262**	**25,264**	**23,293**	**20,614**	**12,870**	**152,458**
Process Power Costs	-	7,395	11,277	11,804	11,879	9,956	7,679	5,120	**65,109**
Process Direct Labour Costs	91	1,092	1,092	1,092	1,092	1,092	1,092	645	**7,288**
Process Indirect Labour Costs	187	988	988	988	988	988	928	498	**6,551**
Diesel Costs	-	-	-	-	-	-	-	-	**-**
Maintenance Costs	-	137	337	339	356	339	338	244	**2,089**
Reagent Costs	-	5,375	6,003	6,003	6,003	6,003	6,003	4,002	**39,393**
General Costs	-	118	118	118	118	118	118	78	**786**
Allocation Of G&A	444	4,593	4,921	4,919	4,829	4,798	4,456	2,283	**31,242**
Unit cost-Total Processed	-	58.36	38.06	38.86	38.87	35.84	31.71	29.91	**37.95**

Note: VAT excluded from this table

21.6.3. General and Administration Costs

General and administrative (G&A) costs include off site local and international labor, as well as transport, messing and accommodation for staffing the operations. These G&A costs have been allocated to either mining or processing costs as presented in Table 21-7 and Table 21-10 respectively. A portion of the G&A does not directly relate to mining or processing operations, and this remaining unallocated G&A cost is included in Table 21-11. The unit unallocated G&A costs amounts to $0.37/ton milled. Unallocated General and Administrative costs (US$ ’000):

Table 21-11 Unallocated General and Administration Costs (US$ ’000)

Expense Items	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Y7	Total
Period Costs	**640**	**2,765**	**2,935**	**2,929**	**2,893**	**2,795**	**2,583**	**1,092**	**18,631**
Supervision And Management	2	310	337	337	337	337	331	182	**2,171**
Airfares & Accommodation	32	93	98	98	95	88	60	12	**578**
Site Services (Utilities, Subcontractors & Consultants)	135	841	808	809	752	688	616	347	**4,996**
Small Tools	-	113	30	30	42	30	30	25	**300**
Health, Safety, Environment	6	36	25	24	22	20	19	11	**164**
Site Office Expenses	11	38	28	28	28	26	12	7	**178**
Freight	5	19	19	19	19	19	19	11	**131**
Mobilisation & Establishment	9	15	-	-	1	0	-	-	**25**
Demobilisation	-	-	-	-	6	1	5	1	**13**
Fees, Insurances, Community	415	1,020	1,305	1,299	1,312	1,307	1,235	384	**8,277**
Diesel	25	280	284	284	280	279	255	111	**1,797**
Unit cost- Other Opex	**-**	**0.23**	**0.23**	**0.23**	**0.49**	**1.01**	**1.31**	**-**	**0.39**

22. Economic Analysis

22.1. Introduction

O2 prepared an economic evaluation of the Bayan Khundii Gold Project as at August 15, 2023 (hereinafter referred to as the “Date of Valuation”). This section details the financial highlights, methodology, assumptions and parameters, gold price assumptions, mining schedule and doré selling costs, cost estimates, corporate income tax modelling and finally presents results and sensitivity analysis of the economic analysis.

22.2. Financial Highlights

Using a US$1,800 per ounce gold price and US$23.62 per ounce silver price:

- Base Case Net Present Value at a 5.0% discount rate of US$245.0 million pre-tax and US$170.1 million post-tax;
- Using base case parameters, the estimated pre-tax Internal Rate of Return (“IRR”) is 44.3% and the post-tax IRR is 35.3%; and
- Payback period of 2.0 years pre-tax and 2.4 years post-tax.

Table 22-1 Financial Highlights – Cash Flow Summary

Cash Flow Summary (Based on US$1,800/oz Gold; US$23.62/oz Silver)			
Financial Results	**Units**	**Amount**	**US$/ounce [1]**
Processing Target	M Tonne	4.0	N/A
Actual Feed / Au	g/ton	4.0	N/A
Actual Feed / Ag	g/ton	1.7	N/A
Doré Production			
Gold Ounces Produced	Ounces	476,001	N/A
Payable Gold (99.85%)	Ounces	475,287	N/A
Gold Revenue	US$ M	855.5	1,797.3
Silver Ounces Produced	Ounces	121,278	N/A
Payable Silver (99.85%)	Ounces	121,097	N/A
Silver Revenue	US$ M	2.9	23.61
Doré Selling Costs	US$ M	-1.6	-3.4
Net Project Revenue	**US$ M**	**856.8**	**1,800.0**
Operating Costs	US$ M	-351.6	-738.7
Royalties	US$ M	-51.5	-108.2
Real Estate Tax	US$ M	-2.9	-6.1
Operating Earnings	**US$ M**	**450.8**	**947.1**
Initial Capital Expenditure	US$ M	-100.4	-210.9
Sustaining Capital Expenditure	US$ M	-3.7	-7.8
Environmental & Closure Costs	US$ M	-6.8	-14.3
Salvage Value	US$ M	2.0	4.2
Pre-Tax Cash Flows	**US$ M**	**341.9**	**718.3**
Corporate Income Tax	US$ M	-97.7	-205.3
Post-Tax Cash Flows	**US$ M**	**244.2**	**513.0**

Notes:

1. *Amount per ounce is calculated based on gold ounces produced totaling 476,001 ounces.*
2. *Initial capital expenditure consists of construction indirect costs, construction direct costs, owners project costs, mobile equipment, and contingencies.*
3. *Totals may not add up due to rounding.*

Table 22-2 Financial Result Summary

Financial Results	Units	Amount	US$/ounce [1]
Pre-Tax			
NPV5%	US$ M	245.0	N/A
IRR	%	44.3	N/A
Payback Period	Year	2.0	N/A
Post-Tax			
NPV5%	US$ M	170.1	N/A
IRR	%	35.3	N/A
Payback Period	Year	2.4	N/A

Sensitivity analyses and additional metal price scenarios were investigated to assess the project economics, details of which can be found in Section 22.11.

22.3. Methodology

O2 utilized the discounted cash flow ("DCF") method in arriving at the estimated financial outputs, based on a simple reversal calculation to restate all future cash flows in present terms.

Forecasted monthly cash outflows such as mining and processing costs, indirect operating costs, royalties and taxes are subtracted from monthly cash inflows to compute the monthly net profit. Cash flows are taken to occur at the end of each month.

The monthly net cash flows are then discounted back to the Date of Valuation and summed up to determine the Net Present Value (hereinafter referred to as "NPV") at the selected discount rate. The formulae for the calculation is stated as follows:

$$\mathrm{NPV} = \mathrm{CF}_1/(1+\mathrm{r})^1 + \mathrm{CF}_2/(1+\mathrm{r})^2 + \cdots + \mathrm{CF}_n/(1+\mathrm{r})^n$$

In which

CF_T = Net cash flow at period T;

r = Discount rate; and

n = Number of years.

The IRR is calculated as the discount rate that yields a NPV of zero and the payback period is calculated as the time needed to recover the capital spent since the start of operating life of the Project.

The results of the economic analysis represent forward-looking information that are subject to a number of known and unknown risks, uncertainties and other factors that may cause actual results to differ materially from those presented.

22.4. Assumptions and Parameters

O2 have made certain assumptions in our analysis, including the following:

- The gold and silver prices utilized in the base case economic analysis is based on the 3-year trailing average up to June 30, 2023;
- This is a nine-year project:
    - Year -1 encompasses 2023 construction activities
    - Year 0 includes construction and start of mining activities
    - Year 1 encompasses process plant commissioning and start of full operations.

- Year 7 includes processing and mine closure activities with no mining operations.

- The mining schedule, capital and operating cost estimates are referenced from the corresponding sections from the Qualified Persons and the figures are assumed to be accurate and appropriate;
- Any operating costs, capital costs and corporate income tax estimated or calculated to be denominated in Mongolian Tugrik are converted at the MNT:USD Exchange Rate assumption when included in the valuation cash flows, that are denominated in United States Dollars;
- Unless otherwise stated, all monetary amounts in this section are in United States Dollars (US$); and
- Table 22-3 summarizes other key assumptions specifically used in the economic analysis other than those mentioned above.

Table 22-3 Key Assumptions Used in Economic Analysis.

Parameter	Unit	Value
Gold Price	**US$/oz**	**1,800**
Silver Price	**US$/oz**	**23.62**
MNT:US$ Exchange Rate	**MNT:US$**	**3,450:1**
Grams to Troy ounces	**g:oz**	**31.1:1.0**
Pre-Production Phase	**Year**	**Year -1 Month 4 – Year 1 Month 3**
Production Phase	**Year**	**Year 1, Month 4 – Year 7, Month 8**
Mine Closure Phase	**Year**	**Year 7, Month 9 – Year 7, Month 12**
NPV Discount Rate	**%**	**5.0**
Royalties		
Government of Mongolia	%	5.0
Sandstorm Gold Limited	%	1.0
Tax Depreciation Rates		
Machinery	%	10 – Straight Line
Buildings	%	2.5 – Straight Line
Computers	%	33.3 – Straight Line
Capitalized Exploration Expenditures	Au Ounces	Units of AU in Ore Produced
Real Estate Tax Rate	**%**	**1**
Value Added Tax Rate	**%**	**10.0**
Import Duty Rate	**%**	**5.5**
Corporate Income Tax Rate		
First 6 billion MNT	%	10.0
Balance	%	25.0

Notes:

- *The MNT:US$ exchange rate adopted is the approximate exchange rate at the time CAPEX was calculated. See Figure 22-1 for recent data.*
- *No inflation or escalation of revenue or costs has been incorporated in the economic analysis.*

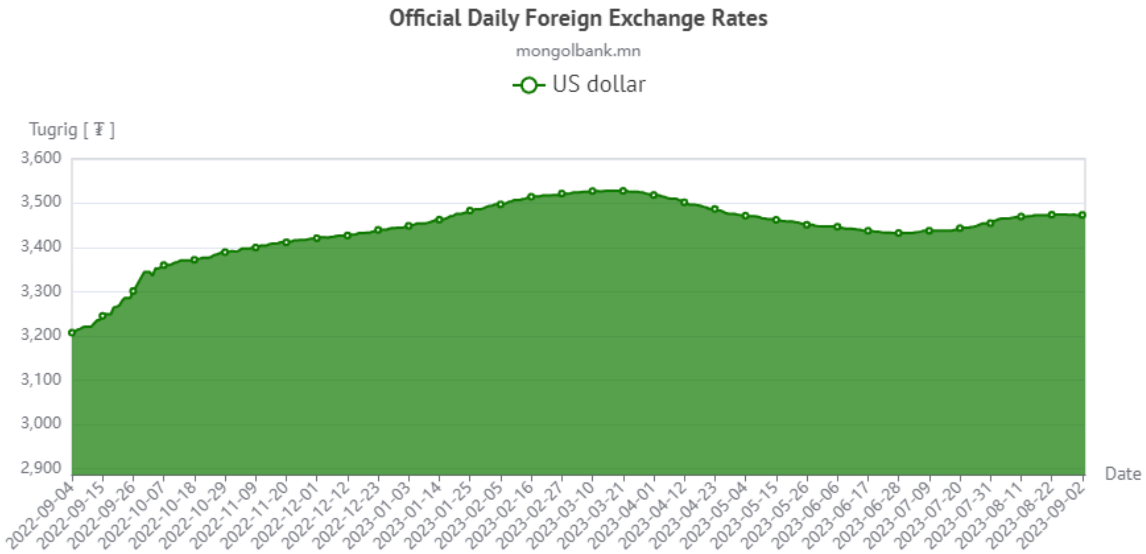


Figure 22-1 Preceding 12 Month MNT/USD Exchange Rates (Source: Mongol Bank 2023)

22.5. Gold Price Assumptions

Several bases of gold prices have been researched, with details shown in the table below:

Table 22-4 Different Gold Prices Researched

Basis of Gold Price	Gold Price (US$/oz)
3-year Trailing Average	1,837.91
2-year Trailing Average	1,831.85
12-Month Trailing Average	1,830.41
6-Month Trailing Average	1,933.30
3-Month Trailing Average	1,978.27
Gold Price Used in this Estimate	1,800.00

Gold price is based on an approximation of a 3-year average trailing price calculated on July 6th, 2023 from the World Bank Commodity Price Data (The Pink Sheet). World Bank data for gold is based on 99.5% fine, London afternoon fixing, average of daily rates

Pricing sources incorporates data from Bloomberg; Kitco.com; International Monetary Fund, International Financial Statistics; London Bullion Market; Metals Week; Platts Metals Week; Shearson Lehman Brothers, Metal Market Weekly Review; Thomson Reuters Datastream; World Bank.

22.6. Silver Price Assumptions

Several bases of silver prices have been researched, with details shown in the table below:

Table 22-5 Different Silver Prices Researched

Basis of Silver Price	Silver Price (US$/oz)
3-year Trailing Average	23.62
2-year Trailing Average	22.70
12-Month Trailing Average	21.81
6-Month Trailing Average	23.27
3-Month Trailing Average	24.23
Silver Price Used in this Estimate	**23.62**

Silver price is based on the 3-year trailing average calculated on July 6, 2023 from the World Bank Commodity Price Data (The Pink Sheet). World Bank data for silver is based on 99.9% refined, London afternoon fixing; prior to July 1976 Handy & Harman. Grade prior to 1962 unrefined silver.

Pricing sources incorporates data from American Metal Market; Australian Mineral Economics Pty. Ltd.; Bloomberg; London Bullion Market; Metals Week; Metals Statistics; Platts Metals Week; The Silver Institute, Silver World Supply & Demand; Thomson Reuters Datastream; World Bank.

22.7. Mining Schedule and Doré Selling Costs

The mining schedule is presented in Section 16.4 of this report. For gold, total recovered metal is 476,001 ounces. After considering the smelting recovery rate of 99.85% disclosed in Section 15.5.8, total payable metal equals to 475,287 ounces.

For silver, total recovered metal is 121,278 ounces. After considering the smelting recovery rate of 99.85% as disclosed in Section 15.5.8 total payable metal equals to 121,097 ounces.

The doré selling costs is comprised of transport costs and assays. Transport costs are estimated to be US$2.7 per ounce and assays are estimated to cost US$7,200 per year of operation.

22.8. Cost Estimates

22.8.1. Capital and Operating Costs

Estimated capital costs are presented in Section 21.4 of this report. Initial capital is estimated at US$100.4 million, consisting of construction indirect costs, construction direct costs, owners project costs, mobile equipment, and contingencies. Sustaining capital, environment / mine closure capital and asset salvage recoverable values at mine closure are estimated at US$3.7 million, US$6.8 million and US$2.0 million respectively.

Estimated operating costs are presented in Section 21.6 in this report. The operating costs for mining, processing and general and administration costs are US$165.1 million, US$166.3 million and US$20.3 million respectively, inclusive of value added tax and corporate costs.

22.8.2. Adjustment of Working Capital

As advised by the Management of Erdene Resources Development Corporation (Erdene), working capital is negligible given the timely transportation and settlement arrangement of the produced gold bars and the cash basis of the operating cost projection. Therefore, no adjustments for working capital have been incorporated in the DCF model.

22.8.3. Royalties

Royalties for both Sandstorm Gold Royalties and the Mongolian Government have been included in the Bayan Khundii financial models. Both royalties are applicable to net revenue from gold and silver sales. A summary of the royalty terms is provided in the table below.

Table 22-6 Royalty Terms for Bayan Khundii Project

Royalty	Amount	Duration	Total Expected Royalty (US$ M)
Sandstorm Gold Royalties	1% of net revenue	Life-of-mine	8.6
Mongolian Government	5% of net revenue	Life-of-mine	42.9

22.8.4. Value Added Taxes and Duties

A 10.0% Value Added Tax ("VAT") is included in the estimate for all services and goods in the project capital and operating costs. In addition, a 5.5% import duty is included for all process equipment, materials and consumables sourced internationally.

22.8.5. Real Estate Tax

The construction value of all site buildings are subject to a 1.0% Real Estate Tax annually. A total of MNT9.9 billion (US$2.9 million) of real estate taxes were included in the Bayan Khundii financial model.

22.9. Corporate Income Tax Modelling

The corporate income tax model has been completed at the project level and does not consider international repatriation of any profits to the Project shareholders.

Pre-tax cash flows were converted to Mongolian Tugrik ("MNT") to enable taxation modelling. Corporate income tax is assessed at 10% for the first 6 billion MNT of net taxable income per year and at 25% on the balance of revenue.

The applicable taxation adjustments are discussed below.

Depreciation

For the purpose of estimating taxes for the Project, capital costs were allocated to asset classes to which various depreciation rates were applied. The asset classes, depreciation methods and useful lives are summarized in Table 22-7.

Table 22-7 Depreciation Classes

Asset Class	Balance as Close of Year 0 (US$ M)	Depreciation Method	Asset Useful Life (Years)
Buildings, facilities, and land improvements	58.8	Straight line	40
Vehicles, machinery, mechanisms, production equipment	39.6	Straight line	10
Computers, accessories and software	0.5	Straight line	2
Capitalized Exploration Expenditures	15	Units of Production	Life-of-Mine

Depreciation commences at the end of the year production starts (i.e. year 1) and the applicable depreciation deducted from years with positive cash flows.

The straight line depreciation useful lives for tax for Buildings and Plant and Equipment currently exceed the estimated mine life. This results in future tax depreciation deductions being available for any future mine life extensions.

Loss Carry Forward

Once the estimated allowable depreciation was deducted from positive cash flows, an assessment to carry forward losses was completed. Losses can be carried forward for a maximum of 4 years with a restriction on deduction of 50% of taxable profits in any tax year. Erdene estimated that US$280 thousand in current losses would be transferable to the project for deduction from future taxable earnings.

A total of MNT21.1 billion (US$6.1 million) of losses carried forward were applied to taxable income.

Taxable Income Assessment

The total taxable income for the Bayan Khundii project is estimated to be MNT1.4 trillion or US$403.0 million. Corporate Income Taxes were calculated as 10% of the first MNT6 billion and 25% on the taxable income in excess of MNT6 billion for each year with positive taxable income.

Net Corporate Income Taxes were estimated at MNT336.9 billion or US$97.7 million for the Project life resulting in after tax cash flow of US$244.1 million.

22.10. Economic Analysis Results

The results of the economic analysis using base case parameters are favorable for the Bayan Khundii Project. The Project's pre-tax $NPV^{5\%}$ is US$245.0 million at the base gold price of US$1,800 per ounce. The Project's post-tax $NPV^{5\%}$ at US$1,800 per ounce of gold is US$170.1 million. IRR are respectively 44.3% pre-tax and 35.3% post-tax.

The payback period at a gold price of US$1,800 per ounce is expected to be 2.0 years pre-tax and 2.4 years post-tax.

Monthly net cash flows have been used in the calculation of the financial outputs in our model, with Table 22-1 summarizing the results.

22.11. Sensitivity Analysis of Bayan Khundii Project

The $NPV^{5\%}$ and IRR sensitivity of the Project to changes in gold prices is displayed in Table 22-8 and Table 22-9 below. The base case price of US$1,800 per ounce provides a post-tax $NPV^{5\%}$ of US$170.1 million and a 35.3% IRR on a 100% Project basis.

If the gold price rises US$200 per ounce to US$2,000 per ounce, the post-tax $NPV^{5\%}$ would rise 30.8% to US$222.5 million and the post-tax IRR would increase to 42.4%. Conversely, a US$200 reduction in gold price to US$1,600 per ounce results in a 30.9% decrease in $NPV^{5\%}$ to US$117.6 million with the post-tax IRR at 27.4%.

Table 22-8 Project Economics Sensitivity to Gold Price and Discount Rate

	NPV (US$ Millions)			
	Gold Price (US$/oz)	Discount Rate		
		5.00%	7.50%	10.00%
Pre-Tax	1,400	106.0	84.1	65.5
	1,600	175.5	145.7	120.5
	1,800	245.0	207.4	175.5
	2,000	314.4	269.1	230.4
	2,200	383.9	330.7	285.4
Post-Tax	Gold Price (US$/oz)	Discount Rate		
		5.00%	7.50%	10.00%
	1,400	64.6	47.7	33.5
	1,600	117.6	94.8	75.5
	1,800	170.1	141.4	117.0
	2,000	222.5	187.9	158.5
	2,200	274.9	234.5	200.0

Table 22-9 Project Pre-Tax and Post-Tax NPV and IRR Sensitivity to Gold Price

Pre-Tax					
Gold Price (US$/oz)	1,400	1,600	1,800	2,000	2,200
$NPV^{5\%}$ (US$ M)	106.0	175.5	245.0	314.4	383.9
IRR (%)	24.8%	35.1%	44.3%	52.6%	60.3%
Payback (Years)	3.1	2.4	2.0	1.8	1.6
Post-Tax					
Gold Price (US$/oz)	1,400	1,600	1,800	2,000	2,200
$NPV^{5\%}$ (US$ M)	64.6	117.6	170.1	222.5	274.9
IRR (%)	18.3%	27.4%	35.3%	42.4%	49.0%
Payback (Years)	3.5	2.8	2.4	2.0	1.8

Further sensitivity analysis was performed, the results of which are presented in the following table. Figure 22-2 and Figure 22-3 visualize the sensitivities corresponding to the datasets in Table 22-10.

Table 22-10 Project Post-Tax NPV and IRR Sensitivities

Variables		Range	Post-Tax NPV (US$ M)	Post-Tax IRR
Gold Price		-30%	26.5	10.9%
		-20%	75.4	20.3%
		-10%	122.8	28.2%
		0%	**170.1**	**35.3%**
		10%	217.3	41.8%
		20%	264.5	47.8%
		30%	311.7	53.4%
Capital Expenditures		-30%	198.3	48.5%
		-20%	188.9	43.4%
		-10%	179.5	39.0%
		0%	**170.1**	**35.3%**
		10%	160.7	32.0%
		20%	151.3	29.2%
		30%	141.9	26.6%
Operating Costs		-30%	233.4	44.9%
		-20%	212.3	41.7%
		-10%	191.2	38.6%
		0%	**170.1**	**35.3%**
		10%	148.9	32.0%
		20%	127.8	28.5%
		30%	106.4	24.9%
MNT: USD Exchange Rate		-30%	170.6	35.4%
		-20%	170.4	35.3%
		-10%	170.2	35.3%
		0%	**170.1**	**35.3%**
		10%	169.9	35.3%
		20%	169.9	35.3%
		30%	169.8	35.3%
Limits	**Max Worse Case**		**26.5**	**10.9%**
	Max Best Case		**311.7**	**53.4%**

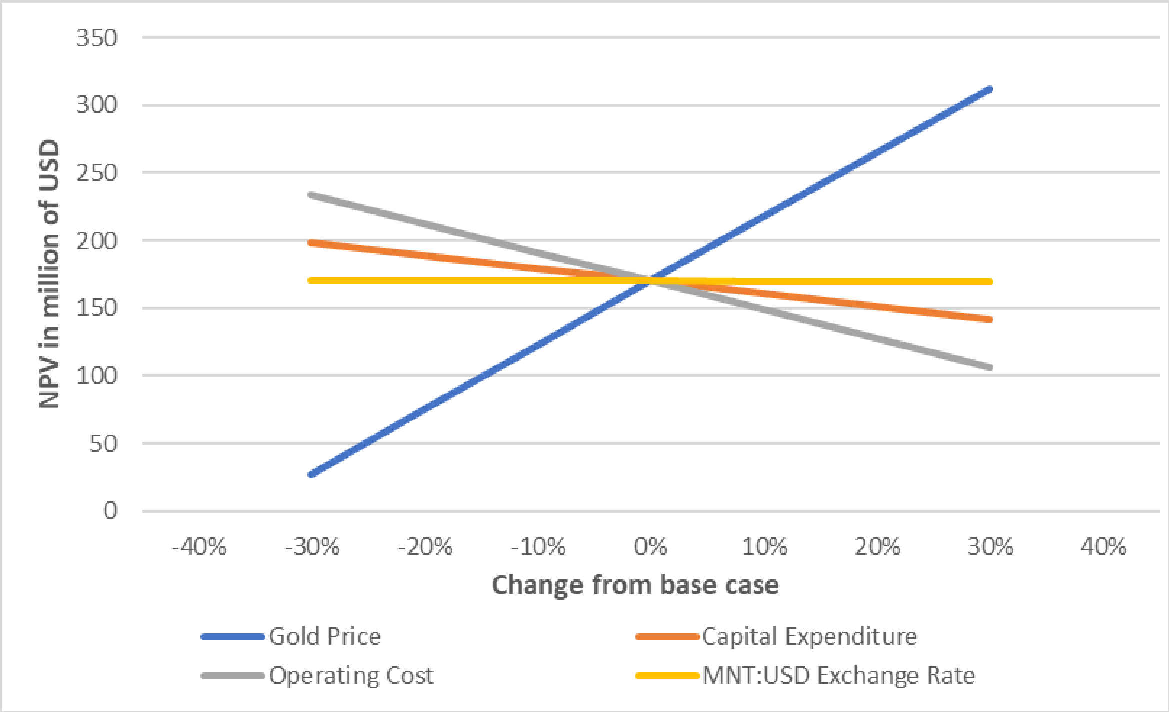


Figure 22-2 Bayan Khundii Project Post-Tax NPV$^{5\%}$ Sensitivities (Source O2, 2023)

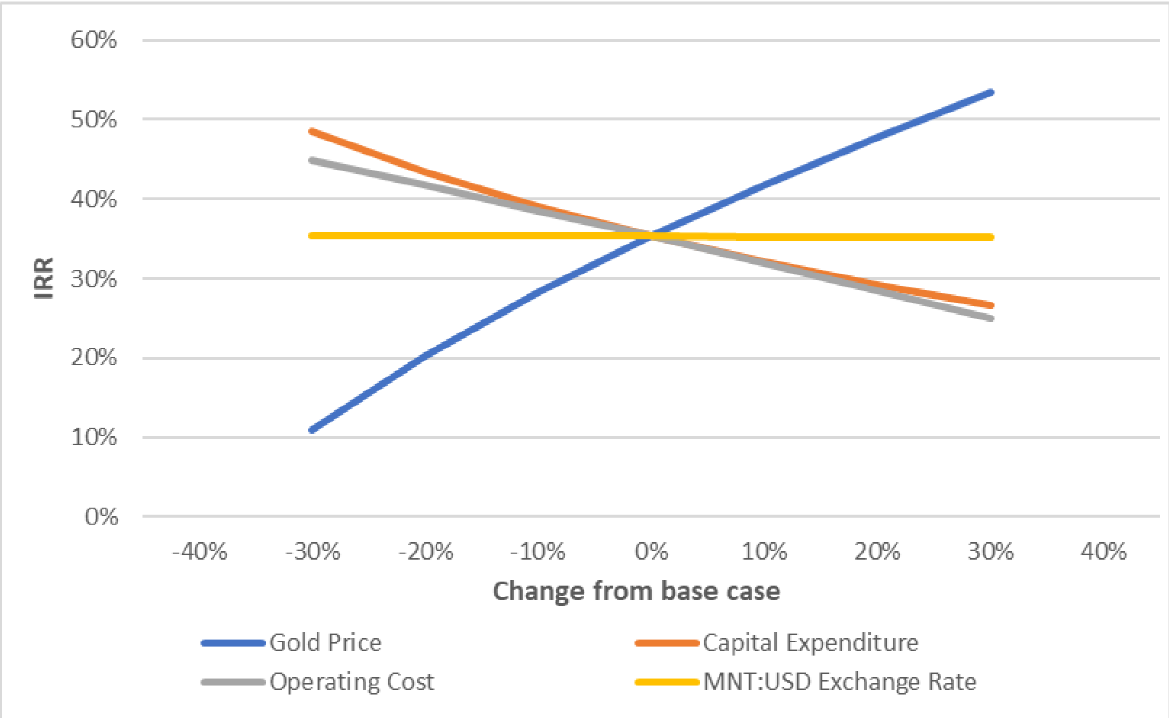


Figure 22-3 Bayan Khundii Project Post-Tax IRR Sensitivities (Source O2, 2023)

Data demonstrated above show that the NPV$^{5\%}$ and IRR of the Project are most sensitive to changes in gold price. Both the NPV$^{5\%}$ and IRR are more sensitive to changes in operating costs than capital expenditures and MNT:USD exchange rate. This is attributed to the fact that operating costs are the major cost in the Project.

23. Adjacent Properties

Erdene continues to evaluate opportunities throughout the Trans Altai Terrane, within our licenses and elsewhere in the mineralized belt. This has led to the identification of prospects that are being explored through surface surveys on the Company's four licenses, drilling of selected targets and evaluation of acquisition targets on private and government held ground.

In addition to the Bayan Khundii deposit, the Company has identified mineral resources on two properties within 40 km; the Altan Nar gold-polymetallic intermediate sulphidation deposit, 16 km to the northwest, and the Zuun Mod molybdenum-copper porphyry deposit, 40 km to the east.

Also, on the adjoining Ulaan exploration license, Erdene has carried out a significant drilling campaign and has identified gold mineralization that is interpreted to be an extension to the BK Gold Deposit, to the southwest. This prospect, Ulaan SE, was first discovered in 2021.

The following is a brief description of these two nearby deposits and the Ulaan SE prospect.

23.1. Altan Nar

The 100%-owned Altan Nar ("Golden Sun") deposits are located on the Company's 4,669 hectare Altan Nar ("AN") mining license, located 16 kilometers northwest of Bayan Khundii. The AN mining license was received on March 5, 2020 and is valid for an initial 30-year term with provision to renew the license for two additional 20-year terms. The license hosts 18 mineralized (gold, silver, lead, zinc) target areas within a 5.6 by 1.5 km mineralized corridor. Two of the early discoveries, Discovery Zone ("DZ") and Union North ("UN"), host wide zones of high-grade, near-surface mineralization, and are the focus of a Resource Estimate released in Q2 2018.

RPMGlobal calculated the Mineral Resource estimate for Altan Nar with an effective date of May 7, 2018. RPM has reported the Mineral Resources using a 0.7 g/t AuEq (see note 3) above pit and 1.4 g/t AuEq below the pit shell as a reporting cut-off based on a mining / process and cost parameters for the Project. For further details on the Mineral Resource estimate please see "Altan Nar Gold Project, National Instrument 43-101 Technical Report", authored by Mr. J Clark, Dr. A. Newell and Mr. T. Cameron, dated June 21, 2018 and available on the Company's SEDAR profile.

Table 23-1 Mineral Resource Estimate for Altan Nar, effective May 7, 2018

Resource Category	Mineral Resource Estimate						Contained Metal				
	Quantity	Au	Ag	Zn	Pb	AuEq (3)	Au	Ag	Zn	Pb	AuEq(3)
	Mt	g/t	g/t	%	%	g/t	Koz	Koz	Kt	Kt	Koz
Indicated	5.0	2.0	14.8	0.6	0.6	2.8	317.7	2,350	31.6	29.0	453.0
Inferred	3.4	1.7	7.9	0.7	0.7	2.5	185.7	866	23.7	22.3	277.1

Notes:

1. *The Statement of Estimates of Mineral Resources has been compiled under the supervision of Mr. Jeremy Clark who is a full-time employee of RPM and a Member of the Australian Institute of Geoscientists. Mr. Clark has sufficient experience that is relevant to the style of mineralization and type of deposit under consideration and to the activity that he has undertaken to qualify as a Qualified Person as defined in the CIM Standards of Disclosure.*

2. *All Mineral Resources figures reported in the table above represent estimates based on drilling completed up to 7th May 2018. Mineral Resource estimates are not precise calculations, being dependent on the interpretation of limited information on the location, shape and continuity of the occurrence and on the available sampling results. The totals contained in the above table have been rounded to reflect the relative uncertainty of the estimate. Rounding may cause some computational discrepancies.*
3. **Au Equivalent (AuEq) calculated using– long term 2023 - 2027 "Energy & Metals Consensus Forecasts" March 19, 2018 average of US$1,310/oz for Au, US$17.91/oz for Ag, US$1.07/pound for Pb and US$1.42/pound for Zn. Adjustment has been made for metallurgical recovery and is based company's preliminary testwork results which used flotation to separate concentrates including a pyrite concentrate with credits only for Au and Ag. Based on grades and contained metal for Au, Ag, Pb and Zn, it is assumed that all commodities have reasonable potential to be economically extractable.*
    a. *The formula used for Au equivalent grade is: AuEq g/t = Au g/t + Ag g/t * 0.0124 + Pb% * 0.509 + Zn% * 0.578 with metallurgical recovery of 88.8% Au, 80.6% Ag, 80.4% Pb and 69.1% Zn.*
    b. *Au equivalent ounces are calculated by multiplying Mineral Resource tonnage by Au equivalent grade and converting for ounces. The formula used for Au equivalent ounces is: AuEq Oz = [Tonnage x AuEq grade (g/t)]/31.1035.*
4. *Mineral Resources are reported on a dry in-situ basis.*
5. *Reported at a 0.7 g/t AuEq cut-off above pit shelland 1.4g/t AuEq below the pit shell. Cut-off parameters were selected based on an RPM internal cut-off calculator, which indicated that a break-even cut-off grade of 0.7g/t Au Equivalent above pit and 1.4g/t AuEq below pit, assuming a gold price of US$1310 per ounce, an open mining cost of US$6 per ton and a processing cost of US$20 per ton milled and processing recovery of 88.8% Au, 80.6% Ag, 80.4% Pb and 69.1% Zn.*
6. *Mineral Resources referred to above, have not been subject to detailed economic analysis and therefore, have not been demonstrated to have actual economic viability.*

Altan Nar is an intermediate sulphidation, carbonate-base metal gold ("CBMG") deposit, with similarities to prolific gold deposits such as Barrick Gold's Porgera mine (Papua New Guinea), Rio Tinto's formerly producing Kelian mine (Indonesia), Lundin Gold's Fruta Del Norte deposit (Ecuador), and Continental Gold's Buritica project (Colombia). CBMG deposits generally occur above porphyry intrusions in arc settings and may extend for more than 500 meters vertically.

Altan Nar received limited exploration over the past few years as the Company's resources were focused on the Bayan Khundii discovery. In late Q4 2019, the Company drilled five holes totaling 667 meters in DZ. Four holes tested the high-grade core area of the Discovery Zone, over a 130-meter strike length, 70 meters of which remains untested by drilling ("Gap Zone"). The fifth hole tested the southern extension of the deposit.

Results from the 2019 program, including the intersection of 45.7 g/t gold, 93.4 g/t silver, 1.54% lead and 3.40% zinc over 7 meters beginning at approximately 70 meters vertical depth, within 23 meters grading 17 g/t gold, are amongst the strongest to date. Many of the 2019 high-grade intersections are locally outside or in areas of previously low-grade resource blocks and therefore expand the DZ high-grade core indicating consistency in high-grade mineralization within the identified ore horizon. These results are expected to positively impact the resource at Altan Nar and open the way for further expansion along strike and elsewhere in the district. The program also demonstrated continuity of anomalous gold and base metals along the structural corridor to the south of the DZ, which will be tested further in upcoming programs.

To date, Indicated Mineral Resources have been established for the Discovery Zone and Union North prospects. The remaining 16 targets at Altan Nar appear very prospective and the Company intends to complete further drilling on the license to increase its understanding of the system.

23.2. Zuun Mod

Located 40 km to the east of the Property is Erdene's Zuun Mod porphyry molybdenum copper deposit, held by Anian Resources, a wholly owned subsidiary of Erdene. A technical report has previously been reported on this property by Minarco Mine Consult titled "Zuun Mod Porphyry Molybdenum Copper Project, Southwest Mongolia, NI 43-101 Independent Technical Report" dated June 30, 2011, authored by Mr P. Baudry and available on the Company's SEDAR profile.

At a cut-of grade of 0.04% Mo the results of the Technical Report state a Mineral Resource Estimate for Zuun Mod with a Measured Resource of 40 Mt at 0.056% Mo and 0.064% Cu, an Indicated Resource of 178 Mt at 0.057% Mo and 0.07% Cu, and an Inferred Resource of 168 Mt at 0.052% Mo and 0.065% Cu, with an effective date of June 11, 2011.

23.3. Ulaan SE

In June 2021, the Company completed the maiden gold exploration program in the southern portion of the Ulaan license, reporting a significant new gold discovery just 300 meters west of the Bayan Khundii Deposit. Results to date, including follow-up drilling in Q2 2022, have confirmed a significant gold discovery at Ulaan SE. Multiple drill holes have returned hundreds of meters (up to 354 meters) of gold mineralization, often ending in mineralization, over an area 200 meters by 250 meters. Gold mineralization begins approximately 80 meters from surface with anomalous gold intersected as shallow as 4 meters depth (UDH-18) and remains open along strike to the west/northwest and at depth. Gold grades up to 156 g/t are related to intense quartz ± hematite veins and stockwork zones enveloped by the same gold bearing silicified, white mica altered lapilli tuff sequence which hosts Erdene's Bayan Khundii epithermal gold deposit, located just east on the Khundii mining license. Structural controls are also similar with northwest striking, southwest dipping veins hosting the gold and intensifying adjacent to bounding structures and/or feeder conduits typically oriented northeast or north. Gold mineralization, particularly the low-grade envelope, also appears to be partially controlled by lithology with low permeability silicified ash tuffs focusing fluid flow and coarser lapilli tuffs acting as a preferred host to mineralization, stratigraphically dipping to the northwest.

Highlight interceptions at Ulaan SE since the initial discovery include:

- UDH-14: 217 meters of 1.1 g/t gold beginning 188 meters downhole, including 3.5 g/t gold over 53 meters
- UDH-21: 335 meters of 1.1 g/t gold beginning 115 meters downhole, including 8.7 g/t gold over 27 meters within 77 meters of 3.2 g/t gold
- UDH-22: 152 meters of 1.7 g/t gold beginning 85 meters downhole, including 3.1 g/t gold over 65 meters
- UDH-35: 23 meters of 13.7 g/t gold within 41 meters of 8.1 g/t gold, beginning 187 meters downhole
- UDH-36: 179 meters of 1.2 g/t gold, beginning 72 meters downhole, including several one-metre intervals, ranging from 10 to 33 g/t gold, and ending in mineralization at 350 meters
- UDH-53: 2 meters of 24.9 g/t gold within 27 meters of 3.5 g/t gold, beginning 248 meters downhole

Together with the Bayan Khundii deposit and Dark Horse deposit, results from drilling at Ulaan Southeast demonstrate the potential scale of mineralization within the nearly 4,000-hectare Khundii-Ulaan Hydrothermal system, which extends from Ulaan over 10 kilometres to the northeast onto the Khundii license.

The QP has not visited either Altan Nar, Zuun Mod or Ulaan SE and has not verified the information in the referenced Technical Reports, and the information contained is not necessarily indicative of the mineralization at Bayan Khundii. The location of Altan Nar, Zuun Mod and Ulaan properties is shown below in Figure 23-1.

No other adjacent properties exist with similar mineralization to provide comparative mineralization characteristics to the Bayan Khundii deposit.

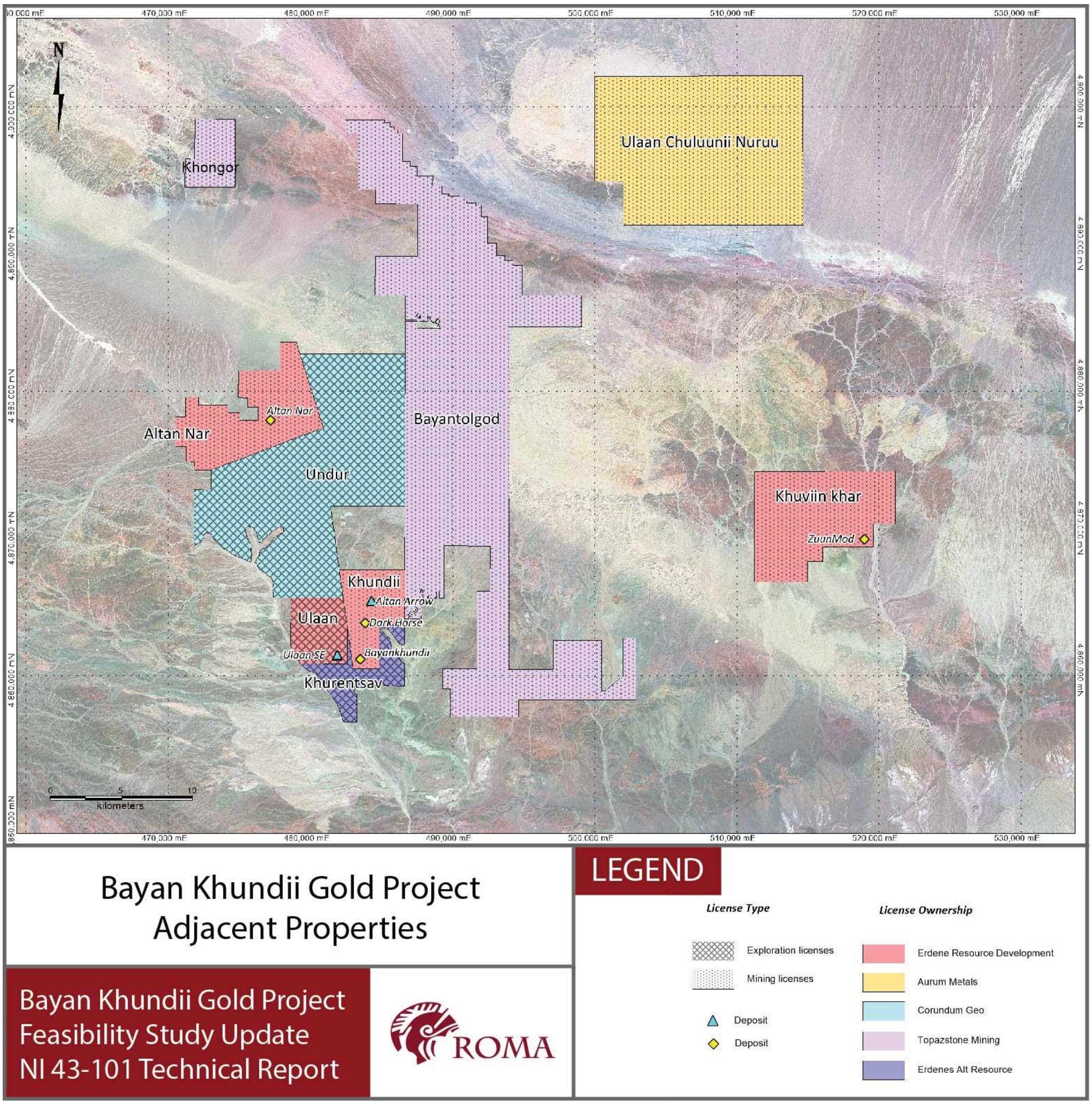


Figure 23-1 Adjacent Properties (Source - ROMA 2023)

24. Other Relevant Data

In the opinion of the Authors, all relevant and material information is provided in this NI 43-101 FS Report.

25. Interpretations and Conclusions

25.1. Geology and Mineral Resource

Mineralization at Bayan Khundii is exposed at surface in the southern portions of the deposit (Striker Zone) but constrained stratigraphically to the north (Midfield and North Midfield) by a package of Jurassic sediments (primarily conglomerates and sandstones) which unconformably overlay the mineralized tuff and contain localized intercalated basalt flows. At depth, mineralization is further constrained, locally, by a granitoid body. Mineralization consists of gold ± silver in massive-saccharoidal, laminar and comb-textured quartz± hematite veins within parallel northwest-southeast trending, moderately-dipping (~45o) zones that range in width from 5 to 150 m. These zones typically consist of narrower higher-grade mineralization surrounded by broader lower grade mineralization. Intense alteration overprints all Carboniferous tuffaceous rocks at Bayan Khundii where virtually all primary minerals have been variably replaced by quartz and illite. Bayan Khundii is characterized as a low sulphidation epithermal gold deposit.

Gold mineralization at the Dark Horse Mane deposit is hosted within strongly altered tuffaceous and volcanoclastic rocks, crosscut by quartz and quartz-hematite veins and stockwork zones within N-S trending structural corridor. Several vein types are present, including comb-textured quartz-adularia veins, sugary crustiform-textured quartz veins, and multi-stage quartz-chalcedony veins. Mineralization is associated with a shallow (<60 m depth) oxide zone with high-grade Au mineralization at Dark Horse including well-developed structurally controlled supergene oxide zones which lies above a deeper sulphide-rich zone (of pyrite, arsenopyrite and arsenian pyrite).

The resource was estimated using ordinary kriging. At a 0.4 g/t Au cut-off grade the updated Mineral Resources for the BK gold deposit are: Measured Resources of 4.0 Mt at 3.03 g/t Au and 1.44 g/t Ag; Indicated Resources of 3.3 Mt at 2.04 g/t Au and 1.22 g/t Ag; and Inferred Resources of 0.2 Mt at 1.08 g/t Au and 1.32 g/t Ag. The effective date of the BK Mineral Resources is 20 April 2023.

For the Dark Horse Mane deposit ordinary kriging was chosen as the preferred methodology for interpolating/estimating grades into the block model. The Statement of Mineral Resources for the Dark Horse Mane deposit is reported above a gold cut-off grade of 0.35 g/t Au for oxide and transition mineralization and 1.02 g/t Au for fresh mineralization. Total Indicated Resources are 682Kt at 2.8 g/t Au and Inferred Resources are 184Kt at 1.2 g/t Au. The effective data of the Dark Horse Mane Mineral Resources is November 1, 2022.

25.2. Metallurgical Test Work

The following conclusions may be drawn based on the metallurgical testwork to date:

25.2.1. Bayan Khundii

A relationship between head grade and gold recovery has been developed for the Bayan Khundii material. Life-of-mine gold recovery is expected to be 93%. Silver recovery is expected to average 55%. Gold recovery is strongly correlated to primary grind size. Finer primary grind sizes produce higher overall gold recovery. A primary grind of 80% passing 60µm was selected as the design basis of the plant.

Comminution testwork suggests that Bayan Khundii material is moderately hard to hard. Bond Ball Work Index tests ranged from 17.0 kWh/tonne to 19.3 kWh/tonne. SMC tests produced Axb parameters ranging from 32.0 to 41.1. Comminution tests show that material gets moderately harder when transitioning from Striker through Midfield and North Midfield.

Moderate cyanide addition rates are able to achieve high gold extraction. A sodium cyanide concentration of 0.5 g/L to 0.7 g/L is appropriate in the leach circuit. Most composites achieved maximum gold extraction after 36 hours of leaching. A retention time of 36 hours was selected as the design basis for the plant. The addition of lead nitrate and oxygen did not add value to the cyanidation circuit.

Gold recovery and leach kinetics were insensitive to the solids content during cyanidation. 42% solids was selected as the design basis for the leach plant.

Since Bayan Khundii ore is relatively clean material, without many metal cyanide complexes, most of the residual cyanide in the CIP tailings is present as free cyanide and requires the addition of copper sulphate to catalyze the SO2/Air cyanide detox reaction. Reducing the residual free cyanide in the CIP tailings (by reducing the sodium cyanide concentration from 1.0 g/L to 0.5) reduces the amount of copper sulphate required during cyanide destruction.

A retention time of 40 minutes, 100 ppm Cu2+, 5.7 g SO2 / g CNWAD resulted in CNWAD concentrations at the discharge of the cyanide destruction reactor of less than 10 ppm.

Dewatering tests highlight that CIP tails may be thickened to 50% solids with moderate floc dosage rates of 60-80 g/t. Feedwell dilution to 5% solids improved settling characteristics of the material. Filtration of CIP tailings using ceramic disc filters or pressure filters could achieve a final moisture content of 15%. Overall filtration capacity between pressure and ceramic disc filtration was similar at cake moistures of 15% at approximately 170 to 200 kg/m2 hr. Disc filtration was selected as the design basis for the BFS.

25.2.2. Dark Horse

Life of Mine gold recovery is expected to be 89%. Dark horse material was insensitive to primary grind sizes between 60µm and 150µm. Low sodium cyanide concentrations (0.35 g/L) are sufficient to achieve the stated gold recovery.

The Bond Ball Mill Work Index results are classified as moderately hard (Average of 15.6 kWh/t), while the SMC parameters ranged from 58.7 to 68.8, which is moderately soft. Abrasion index results indicate that the sample is moderately abrasive. Overall Dark Horse material is slightly softer than that from Bayan Khundii.

A retention time of 40 minutes, 125 ppm Cu2+, 6.5 g SO2 / g CNWAD resulted in CNWAD concentrations at the discharge of the cyanide destruction reactor of 5 ppm.

Settling tests suggest that Dark Horse has similar settling characteristics to that of Bayan Khundii.

25.3. Mineral Reserve Estimate

Estimations of Mineral Reserves for the BK deposit are based on Measured and Indicated Resources and meet the definitions of Proven and Probable Mineral Reserves and Estimations of Mineral Reserves for the DH deposit are based on Indicated Resources and meet the definitions of Probable Mineral Reserves as stated by NI 43-101 and defined by the CIM standards on Mineral Resources and Reserves Definitions and Guidelines (2014). The Mineral Reserve estimates are based on a mine plan and open pit design developed using modifying parameters including metal price, metal recovery based on performance of the processing plant, and operating cost estimates. The Proven and Probable Reserves are inclusive of the Mineral Resource and based on a three-year moving average gold price of $1816/oz.

Geotechnical investigations were conducted to assess the expected rock quality at Bayan Khundii and Dark Horse. Characterization of structural domains was completed for slope stability and pit design considerations. Overall slope angles and bench parameters were provided from the geotechnical analysis as inputs to the pit optimization study.

Mining costs of $41.08/ton milled, milling costs of $41.40/ton and general and administrative costs of $5.05/ton have been used to estimate the reserves along with the gold price stated above.

Proven and Probable Reserves for Bayan Khundii Deposit total 3.8 Mt of ore, with estimated contained gold of 465Koz and contained silver of 220.5Koz.

Probable Reserves for Dark Horse Deposit total 0.2 Mt of ore, with estimated contained gold of 49Koz.

25.4. Mining Methods

Following completion of the open pit optimization study and in order to maximize recovery of ore and minimize waste stripping and haulage costs, a pit has been designed to extract the reserves contained in the the ultimate pit shell from the optimization that has dimensions of approximately 850x390m for BK, and 340x128m for DH.

For the detailed production schedule, BK has been developed incorporating one pushback phased mining stage and ultimate design and for DH, staging has been a single stage to ultimate pit design. Focusing on BK deposit prior to DH deposit development which should be started from year 3 or onwards.

The production schedule will take place over seven years inclusive of a one-year commissioning ramp up for the processing plant until nameplate capacity is achieved. Over the LOM, the pit will produce 4.02 Mt of mineralized material and 43.9 Mt of waste rock. The LOM average gold grade is 3.98 g/t, silver grade is 1.71 g/t. The LOM stripping ratio is 10.9:1. The production schedule will provide process plant feed at a nominal rate of 650 Kt/year.

Mining will be undertaken using conventional open pit drill/blast and load/haul using trucks and excavators in backhoe configuration. Bench height for the ultimate pit has been set to a 15 m height based on 5 m benches stacked in a triple bench configuration. Dual-lane mine roads will be a minimum of 21 m and single roads at the bottom of the pit will be 13 m wide, and the switch back radius is 11m. All ore will be transported to a primary crusher in 60 t rear-dump haul trucks and waste will be transported using the same class haul trucks. Primary ore loading will be by 36 ton weight class diesel hydraulic excavators in backhoe configuration, primary waste loading by two 75 ton weight class diesel hydraulic excavators in backhoe configuration.

The mine equipment selected is appropriate for the Mineral Reserves defined. Mining equipment was selected for detailed ore mining and bulk waste mining.

Mining (waste rock) from Bayan Khundii deposit and processing waste (tailings) will be contained within an Integrated Waste Facility ("IWF") as a single above ground structure. The IWF will consist of cells of dry cake tailings and waste rock encapsulated with an environmentally benign and durable erosion-resistant cover system.

Mining (waste rock) from Dark Horse Deposit will be placed in a storage facility adjacent to the Dark Horse Pit.

25.5. Recovery Methods

The processing plant has been designed based on the results of the metallurgical test work.

The grind size versus recovery was investigated and determined that the final grind size should be 60 micron. This necessitated the use of a crusher / SAG / Ball mill configuration. Two crushers in a duty / standby configuration were shown to result in a lower CAPEX and higher availability than a single crusher plus stockpile and recovery system. The final circuit has an expected utilization of 92% and will provide a constant feed size to the leach circuit.

The leach circuit has been designed for a 36-hour residence time, with four tanks in series to optimize between enough tanks to minimize short circuiting and a manageable operational height for the building.

A conventional CIP circuit was chosen.

A conventional pressure Zadra circuit is designed in the elution area.

The processing plant has been designed within buildings to provide year-round accessibility by maintenance and operational personnel.

The tailings requirement of co-disposal has been implemented using plate and frame pressure filters.

25.6. Environmental, Social, and Mine Closure

At the time of this FS Update Report, the Project had in place all necessary environmental permits for its operations, including for the purposes of mine construction. Final commissioning and operating approvals remain to be secured upon completion of the construction phase.

The independent Environmental and Social Impact Assessment ("ESIA") and statutory Detailed Environmental Impact Assessment (DEIA) of the Project provide detailed baseline information, impact assessment for key domains, and management plan commitments. Management plans in the ESIA and DEIA detail the Company's commitment to build, operate, and close the Project in accordance with applicable regulations, laws, and Project standards. Considering the outcomes of the ESIA, the independent Mongolian statutory DEIA has been completed and approved by the relevant Mongolian government authority.

Based on the geochemical properties of BK, DH and its surrounding environment as well as industry best practices, Erdene selected its preferred approach of integrated mineral waste management – whereby detoxified, filtered tailings are placed as a dry cake within waste rock in a single landform, referred to as the Integrated Waste Facility ("IWF").

The IWF represents application of Best Available Technology to the management and long-term containment of tailings and waste rock. Constructing an IWF to contain the tailings and waste rock from BK provides the following benefits:

- Less alienation of land through not needing to construct separate tailings and waste rock storages;
- Reduced environmental impact risk through placing dewatered and filtered tailings and waste rock in a single structure compared with constructing a dedicated tailings impoundment using conventional slurry deposition;
- Reduced demand for water for the process plant as greater recovery of process liquor during the filtration process reduces water consumption requirements; and
- Reduced time to complete closure of the site at the completion of operations due to the construction method used for the IWF facilitating progressive rehabilitation. Constructing the IWF in this manner means that at the completion of mining and processing only a small portion of the final layer will require completion, with all the external slopes having been completed progressively over the operating period.

The objectives of this approach are to minimize the potential for adverse environmental impacts (during operations and post-closure), optimize the footprint occupied by these waste streams, reduce operational costs, enable progressive rehabilitation, and reduce post-closure maintenance and monitoring requirements and long-term risk.

The overall vision of closure for the Project is to have all evidence of the operation removed, except for the final pit voids and the IWF and DH waste rock landforms. The remainder of the areas impacted by the operation will be returned to their pre-operation form and partially revegetated, where appropriate given the sparsely vegetated pre-operation landscape.

25.7. Capital and Operating Costs

The capital and operating cost estimates for the Bayan Khundii project are considered Class 2 estimates with an expected accuracy range of ±10%-15%. The base currency of the estimates is US dollars (US$).

The capital cost estimate for mining is based on usage of rented equipment, thus no capital cost was allocated for mining equipment and ancillary mining equipment. Capital costs have been included for support equipment. Power is proposed to be provided by an Independent Power Provider (IPP) and therefore no capital allowance has been included in the capital estimate. Likewise explosives magazine and fuel depot are not included in the capital estimate as they will be provided through purchase and/or service agreements. The capital cost includes the cost for essential mining infrastructure, balance of utilities including, water and heating, and haul roads. The total estimated initial capital costs for BK are US$100.4M including contingency.

Sustaining capital is estimated at 1.5% of the initial capital costs for all process and non-process infrastructure per annum commencing from Year 2 and tapering off into year 6, with only mine closure costs accounted in Year 7. Sustaining capital includes provision for replacement or repair of major processing equipment components, site service and utility repair and replacement and process-related mobile equipment repair and replacement.

The LOM average operating cost for Bayan Khundii is estimated at US$ 82.5/t milled at the processing rate of 650 Kt/year.

25.8. Opportunities

25.8.1. Additional Resources at Bayan Khundii

A large portion of the Khundii mining license remains underexplored and work to date has identified multiple area with significantly anomalous gold mineralization associated with structures and zones of alteration, similar to the BK and Dark Horse Mane deposit areas. The northern portion of the license area is referred to as the greater Dark Horse area and includes the Altan Arrow prospect. Erdene continues to carry out exploration activities on the Khundii license, including a recently completed IP Gradient Array survey at Dark Horse, covering 9km^2, that shows the major NE trending structures, as well as a strong north-south trends that host mineralization identified at Dark Horse Mane. A number of parallel zones with similar geophysical signatures to known mineralization at Dark Horse Mane have been identified. These areas are under tested or untested by drilling. These new geophysical anomalies represent strong new exploration targets. Together with other geological and geochemical data, all zones of gradient array IP anomalism will be assessed and prioritized for future drilling.

25.8.2. Exploration on the Ulaan License

In June 2021, the Company initiated a gold exploration program in the southern portion of the Ulaan exploration license, located just west of, and contiguous to, the Khundii mining license. A drilling program identified a significant new gold discovery just 300 metres west of the BK Gold Deposit. Results to date, including follow-up drilling in Q2 2022, have confirmed a significant gold discovery at Ulaan SE. Multiple drill holes have returned hundreds of metres (up to 354 metres) of gold mineralization, often ending in mineralization, over an area 200 metres by 250 metres. Gold mineralization begins approximately 80 metres from surface with anomalous gold intersected as shallow as 4 metres depth (UDH-18) and remains open along strike to the west/northwest and at depth. Gold grades up to 156 g/t are related to intense quartz ± hematite veins and stockwork zones enveloped by the same gold bearing silicified, white mica altered lapilli tuff sequence which hosts Erdene's Bayan Khundii epithermal gold deposit. Structural controls include northwest striking, southwest dipping veins hosting the gold and intensifying adjacent to bounding structures and/or feeder conduits typically oriented northeast or north.

Together with the BK deposit and Dark Horse deposit, results from drilling at Ulaan Southeast demonstrate the potential scale of mineralization within the nearly 4,000-hectare Khundii-Ulaan Hydrothermal system, which extends from Ulaan over 10 kilometres to the northeast onto the Khundii license.

25.8.3. Underground Mining Potential

Further underground mining potential has been identified in conceptual studies for North Midfield and Striker West which, if proven economical through further studies, could lead to a further increase in the economic reserve of the Bayan Khundii Project.

25.8.4. Processing Plant Expansion Potential

With the existing plant, there is a capacity to increase throughput by up to 20%, without compromise on the recovery, although this would likely compromise recovery during maintenance periods on tanks, due to the reduced residence time in these circumstances. If this was the case the throughput would be best reduced to the nameplate capacity during these times. Constraints on capacity increase beyond this point related to the grinding circuit, leach feed thickening, leach capacity, elution capacity, tail thickening and filtration capacity.

To increase throughput capacity beyond an additional 20%, the plant could be modified to include an additional ball mill, addressing the grinding area, and an additional leach tank for the leach capacity. At a higher throughput, the thickener density control would become critical to ensure sufficient residence time. Replacing the 20 m diameter leach feed thickener, with a 24 m diameter thickener would resolve this. The elution circuit could be upgraded by the replacement of the columns with larger units, and increases to the electrowinning capacity. For the tails thickening and disposal, it would be difficult to include a larger tails thickener within the current layout, and the easier path to increasing the capacity would be to increase the detoxification circuit capacity to retain sufficient residence time at a lower percent solids. The filtration area would require one additional filtration unit, and structural modifications to incorporate this into the design.

In the scenario where additional mineral reserves are identified and proven, a modular gravity plant could be suitable as a processing solution, particularly for certain high grade resources. Under such conditions, a gravity plant could increase the project's economic value.

25.8.5. Additional Resources at Altan Nar

Erdene's Altan Nar deposit, located approximately 16km north of Bayan Khundii, has an established Indicated Resource of 5.0 Mt grading 2.0 g/t gold (318,000 ounces of contained gold) and an Inferred Resource of 3.4 Mt grading 1.7 g/t gold (186,000 ounces of contained gold). Approximately 250,000 ounces of the current Altan Nar resource could potentially be processed by the Bayan Khundii Project processing facility, however, a number of development options for Altan Nar are under consideration.

25.8.6. Mineral Resource Estimate

Structural controls on grade distribution in the quartz veins and breccia zones are not well understood, varying throughout the different veins and breccia, with high grade mineralization tending to occur as localized zones in various places. Variogram analysis by RPM indicates that, even though a variogram range up to 125 m is interpreted, the majority of the sill (75%) occurs at 30 m ranges in major direction.

This indicates that high grade zones have short range variability, however, risk is mitigated by 20-30 m x 20 m drill spacing.

The extents of the high-grade zones are not fully understood. No trenching work has been completed on high grade mineralization at the surface. In many places, the mineralization is overlain by overburden material up to 4 meters thick which masks much of outcrop position of the mineralization. The semi-major direction HG domain variogram for Dark Horse shows a full range of 23 m, suggesting short grade continuity in the down-dip direction.

The logging information for weathering throughout the deposit was not comprehensive, however, the ERD team re-logged all drill holes to define the weathering profiles visually. Weathering information in combination with metallurgical parameters (Fe:S and magnetic susceptibility) resulted in some inconsistency in weathering profiles. Although the revised interpretations based on visual re-logging information better reflect the weathering profile, there may remain some inconsistency in the definition of oxide and transition from a mining and processing perspective as various element combinations seem to show some correlation in grade recovery.

A total of 167 density data was received and only 62 samples fall within mineralization domains with density values ranging between 2.34 to 3.01 t/m^3 and RPM assigned overall average density values into the block model. Therefore, potential tonnage variation likely exists in the model.

Topography data was obtained from Airbus SPOT image in 2021. Some difference (±3.5 m) in elevation was noted between total station surveyed drill holes and topography. The difference is local and does not have a material impact on the overall Mineral Resource.

25.9. Risks

General

The mining assets are subject to certain inherent risks, which applies to some degree to all participants of the international mining industry. These risks are summarized as follows:

- **Fluctuations in gold price** – Risk of pricing regression of gold and/or US$ will increase the potential impact on the project profitability. Sensitivity analyses conducted during the economic analysis of the project confirmed that the NPV and IRR of the project are both most sensitive to changes in the gold price.
- **Logistics** – The Project is remotely located, and the control of the logistics and their cost implications will be fundamental in maintaining reasonable operating costs. Especially the import of essential commodities such as project equipment, diesel fuel, explosives materials, plant reagents and consumables.
- **Capital Expenditure** – Capital expenditure predictions are based on substantially complete quotes and some contracted components, however further adjustments to project design and associated construction costs may occur during the construction phase resulting in variations in the capital expenditure. Direct equipment procurement costs are still subject to flucturations in key commodity pricing such as labor, diesel, steel, logistics and related costs. The indirect costs of construction are still subject to fluctuations in key commodity pricing such as labor, diesel, logistics costs. In the financial modelling, capital costs has been shown to be less sensitive than other modifying factors with respect to project economics.
- **Operating Expenditure** – Operating expenditure predictions are based on budget quotations. Although thoroughly pre-determined using up-to-date assessment techniques, sensitivities on OPEX changes indicate that the project economics will remain robust under limited upward cost pressure.

25.9.1. Mining

Mineral Reserve figures are estimates and there can be no assurance that they will be recovered or that they can be brought to profitable production. The volume and grade of Reserves mined and processed, and the recovery rates may not be the same as currently anticipated, and a decline in the market price of gold may render Mineral Reserves containing relatively lower grades of mineralization uneconomic and may in certain circumstances ultimately lead to a restatement of reserves.

Definition of the final excavated slope angles has been assessed with consideration of in-situ groundwater conditions. The current FS update has been developed under the design that all the working faces within the operating pit can be de-watered prior to mining, thus enabling the slope angles presented in this FS Update Report. Greater moisture content or the inability to adequately de-water selected pit faces to the target level may result in an adverse change to the final excavated pit slope angles.

25.9.2. Infrastructure

Infrastructure design for this FS Update Report have been prepared in accordance with Mongolian requirements and applicable international standards and detailed designs for most facilities, including the process plant, have received the required Mongolian regulatory approval. Some of the infrastructure may be subject to client- or site conditions-driven design changes which may lead to changes that could impact cost and/or schedule.

The development of infrastructure for the Project as envisioned in this FS Report will require the import of certain equipment and materials to Mongolia. To date, Project operations have not been materially affected by COVID-19. However, the timely flow of goods and services internationally may be impacted by COVID-19 or other border and logistics restrictions.

25.9.3. Processing

The process plant has been designed based on the results of the test work performed to date. Cyanide leach is the predominant method of gold recovery for non-refractive ores for ore bodies all over the world. The outstanding processing risks are therefore:

- **Variability** – If the final ore body varies significantly from the current test work, the plant's ability to process the ore and recover the gold is expected to change. Some variability testing has been performed. The ore is also expected to be blended on the ROM to minimize short term fluctuations.
- **Grind size** – The accuracy of the mill parameters will significantly affect the risk of the comminution circuits ability to deliver the required grind size. The spare capacity of the mills will reduce this risk significantly.

25.9.4. Environmental, Social and Mine Closure

Environmental and social studies have been carried out in accordance with Mongolian legislation as well as leading industry practices. The statutory Detailed Environmental Impact Assessment for the Project has been approved by the relevant government authority. However, the ability of the Project to secure the necessary environmental permits, including for its hazardous material permit and mine closure plan, remains a risk.

25.9.5. Project Delivery Schedule

The Project Delivery Schedule provided in Section 18 is based on all available information and reasonable estimates for completion of all financing, engineering, permitting, procurement, construction and commissioning activities foreseen and further detailed in this FS Update. However, like all mining projects of this nature, there are certain risks to construction schedule realisation further summarized below:

- **Permitting** – the project still requires a number of permits to be issued by Mongolian regulatory bodies before the project can be commissioned for operations. The most critical of these is the permission to store and use chemicals and reagents. Delays in achieving these permits according to the schedule may result in delays in the expected timeline for commissioning the project.
- **Delivery of equipment and materials required for construction and commissioning** - Given the remote location and seasonal weather patterns in Mongolia, there are timeframe risks around importation of key project items. Delays in the delivery of key items to the site may result in extensions of the time required to build and commission the project.
- **Availability of sufficient construction resources** – Mongolia is a relatively small country with limited resources dedicated to the construction and development sector, particularly with mining project experience. Whilst the outcomes of the study have identified suitable quantities of resources to deliver the project schedule as presented, firm commitments of suitable quantities of these resources will only be realised once contracts are finalised with vendors and service providers. This risk is mitigated through the selection of an EPC contractor to shoulder the bulk of this risk.
- **Project financing** – The proposed project delivery schedule is based on the owner's expected program and timeline to secure project financing. Any delays in the availability of project financing sufficient to meet required cash outflows may result in extensions in time to deliver certain elements of the project.

25.9.6. Mineral Resource Estimate

A northerly plunge direction is interpreted in the variogram model, especially in South zone, and test drilling is required to confirm this and the continuity of the zones at depth. However, this may not necessarily enhance the project's economics.

There is potential to define additional mineralization at the NE extent of the North Dark Horse area, which has some encouraging drilling results, with some holes returning some erratic grades (e.g. up to 70 g/t Au in AAD-12 in 2 m intervals).

There is an opportunity to increase the level of confidence in the Inferred Mineral Resource with closer spaced extensional and infill drilling of the main mineralized zones.

26. Recommendations

Based on the current identified Mineral Resources and Mineral Reserves and the assumed prices and parameters, the authors of this FS Update Report have concluded that profitable operations can be sustained for six and a half years on the Bayan Khundii site. It is likely that mine life could be extended beyond six and a half years by implementing the following recommendations.

The key recommendations that would improve the operations at Bayan Khundii and likely extend the mine life are:

26.1. Geology and Mineral Resources

26.1.1. Bayan Khundii

To potentially expand the current resource base at Bayan Khundii, additional drilling can be undertaken with a specific focus on expanding and infilling the mineralization at Striker West in order to gain further confidence in the high-grade mineralization present. Further exploration style drilling could also be undertaken in the north-east and south-west of the currently modeled gold mineralization, along with step out style extensional drilling to the east of Bayan Khundii. As infill drilling is conducted, drill hole assay and lithology results should be compared against the geological and resource model in order to quantify any variation in expected and realized geology and gold grades which were intersected.

Additional exploration in the greater Dark Horse area is currently underway with multiple exploration targets identified based on geochemical anomalism, geophysics, and structural interpretation. It is recommended that this work continue to fully evaluate the potential of identifying additional mineral resources within the Project area.

26.1.2. Dark Horse Mane

- To further refine the Project characteristics and economic viability, RPM recommends completing an integrated conceptual mining study, including likely operational and capital expenditure profiles, to confirm the viability of the Project.
- Define robust weathering definitions relevant to mining and metallurgical considerations, then update interpretations to reflect those definitions;
- More density data needs to be collected on-site using the water immersion technique. The current database contains a total of 167 density measurements. Only 62 of these measurements were derived from the core within the wireframes. This number of mineralized density measurements is barely a statistically significant number of the samples to determine density variation at the deposit. This is not adequate for reliable tonnage estimates in the Mineral Resource, and substantially more determinations should be obtained from the current or planned drilling program;
- A detailed topographic survey needs to be carried out for the entire Dark Horse area prior to any future resource update work.

26.2. Geotechnical

26.2.1. Bayan Khundii

Following the 2020 geotechnical review using all the available structural data (Fugro 2021), the assessments are generally considered to be robust for the purpose of kinematic stability evaluation of mine pit parameters. However, in pit areas where data is comparatively low, further information is needed to better inform the representativeness of the current assessment. In particular, in the northern to eastern pit areas (Sectors B, C & D) which have lower drill hole density.

Additional geotechnical drill holes should be conducted to reduce uncertainties due to bias in drill orientation and resource validation, with a particular focus on where additional geotechnical testing is warranted and lesser data is available. The distribution of geo-mechanical data over the mine area is relatively limited, including Sectors where lower UCS strengths have been identified. Therefore, additional investigation is recommended to address some of the data gaps and variations in geotechnical parameters used in the bench and mine pit stability analyses, as well as for the assumed parameters adopted in the kinematic assessments. Further validation of the geotechnical parameters aims to reinforce the recommendations of this review and may enable some of the recommendations for reduced BFA to be further relaxed.

In proposing additional investigations, some vertical drill holes should also be considered to provide drill core samples for testing along the principal stress alignments, and also to vary the inclination of any potential anisotropic features with respect to the axis of test loading.

Given the degree of variance in the rock strength materials, additional strength testing of core samples is recommended to better determine characteristic rock strength parameters for each lithological domain over the geographic mine sectors. If during the course of excavation, point load (PL) tests are used for quick on-going assessments of rock strength and as part of the ongoing monitoring, then UCS and point load tests should be undertaken on adjacent parts of core samples for evaluation of UCS-PL correlation.

Direct shear test results were not available and a typical friction angle of 30° was assumed for the kinematic assessment and a sensitivity analysis completed for a 40° friction angle. Carefully selected direct shear tests will provide more informed parameters for assessment and a more detailed review of the prevalence of any discontinuity coatings or infills. This process should be ongoing prior to and during excavation operations. However, following the discontinuity shear tests for Dark Horse, the test method and sample set-up arrangements need to be addressed before any further testing. Alternatively, the conservative assumption for friction angle may be maintained.

26.2.2. Dark Horse

The 2023 geotechnical review is considered to be sufficient for the purposes of kinematic stability evaluation and determining the suitable parameters for mine pit design. However, similar to the Bayan Khundii area, data in some sectors is comparatively low due to the preferential directional drilling during the exploration campaigns. Specific geotechnical investigation was carried out in 2023 to obtain additional geotechnical data for the current assessment.

While the current available data is considered sufficient, and the geotechnical assessment considered robust, additional investigations and laboratory testing are recommended prior to and during mine construction and operation to fortify the design assumptions, mine pit parameters and provide necessary engineering designs to mitigate specific hazards.

Given the degree of variance in the engineering parameters of the rock materials, additional data acquisition would facilitate design review and improve the robustness of the design assumptions and associated pit parameter recommendations. In particular, if further investigation drilling is conducted, it is recommended that GSI logging by experienced geologists and UCS testing of cores be carried out.

For any future UCS tests, it is recommended that testing be carried out in accordance with Method C of ASTM 7012. The measurement of strain with the use of strain gauges for testing in accordance with Method D was found to be too erratic. Any additional UCS tests may also be used for density evaluation by direct measurement (i.e. in accordance with Method B of ASTM D7263). Testing for Dark Horse Mane showed that density measurements by water displacement and direct measurement were well correlated and so there is no further need for testing by water displacement method.

Generally, additional data acquisition in all geological domains and sectors will further validate or refine the current pit parameter recommendations. However, it is particularly advisable to consider further data acquisition in the domains, sectors and depths that are currently assessed to be of marginal stability under a 70 / 15m height arrangement i.e. the tuffaceous materials in the upper 20 m of sectors C, E/F.

26.3. Mining and Reserves

While sufficient definition is provided to define waste and ore quantities by type and volume in the mine plan included in the FS, a higher resolution of grade/sub-grade/waste boundaries is required before the commencement of waste stripping and ore production.

Preliminary grade control drilling is recommended in order to more confidently define the grade zones within the orebody and the ore/sub-grade/waste boundaries.

Pre-stripping is planned in the pre-production schedule to generate sufficient waste material to build the ROM and the IWF initial structures. Appropriate grade control definition will be required in advance of the pre-stripping activities to ensure no ore loss occurs.

Grade control drilling is planned and costed in the mining operating cost throughout the mine life to ensure sufficient definition of ore and waste is available for mine planning to achieve consistent ore delivery to the process plant. By undertaking additional infill drilling and grade control during operations, inferred material, which for the purposes of this FS is classified as waste, may be re-classified as ore, resulting in an increase in the reserve and an extension of the mine life.

Additional drilling outside the current pit limits may identify additional ore which could be included in the mineable reserves. If this additional ore with sufficient grade is defined within close proximity to the resource currently excluded from the mineable reserve, a further optimization study could be undertaken resulting in an increase in the mineable reserve resulting in an extension to the mine life.

The equipment selected for the mining operation is adequate to achieve the planned production as set out in the FS and was selected based on reasonable commercial principles and processes. However, given the competitive market for mobile equipment suitable for mining operations, further investigation of excavator and truck configurations as well as ancillary and support equipment performance may result in further optimization of fleet performance and cost efficiency. A reduction in the mine operating cost may result in an opportunity to re-define the final pit limits and extend the economic reserve.

26.4. Mineral Processing and Metallurgical Testing

Based on the work conducted to date the following additional testwork is not required prior to finalizing the process plant design but may be useful in fine tuning controls in the plant during operations; recommendations include:

- Evaluate additional variability samples throughout the deposit to gain additional understanding of variability in gold recoveries and reagent consumptions.
- Conduct additional testwork to further optimize leach conditions including cyanide addition rates and primary grind size.

26.5. Recovery Methods

There are no recommended work programs required prior to a decision to construct the Project.

26.6. Plant and Facilities Design

Additional field investigations may enhance final plant foundation design. The existing process plant and facilities design is based on pedestal footings for the enclosed structure and standard foundations and ring beams for the equipment within the enclosure. Drilling complemented by Standard Penetration Tests ("SPT") and cone penetration tests ("CPT") is recommended to confirm foundation conditions for final design. The additional field work should consist of 20 to 30 holes with SPT logging and, where appropriate, CPT probes located within the foundation footprint. Each process plant enclosure footing should be assessed by a competent geotechnical professional to verify the bearing capacity, and to determine the actions for identified soft spots within the foundation bearing zone.

26.7. Project Infrastructure

Due to the remoteness of the site there is little reliance on local infrastructure other than the logistical requirements to move material through local areas and on regional roads. All other infrastructure including water supply, accommodation, offices and workshops and waste disposal facilities will be provided by the Project.

In general footing designs for facilities are conservatively designed for most geotechnical conditions. For facilities (i.e. camp) where detailed engineering drawings have not been completed, there is an opportunity to more carefully assess the structural requirements and potentially reduce the size of concrete footings.

Geotechnical investigation should be conducted prior to construction at all facility locations.

26.8. Integrated Waste Facility

The current design is based on ATCW bankable feasibility study and will require the following:

- Additional field investigations should be performed in the IWF footprint areas at the detailed design level, including supplementary characterisation of foundation conditions, tailings material and potential borrow areas. This work could be carried out during the foundation preparation works of the IWF.
- Two trial pads for the following HDPE lining conditions:
  - Trial pad for waste rock placement on the protected HDPE lining system, and
  - Trial pad for tailings placement on the exposed HDPE liner.
- A monitoring program including piezometers, survey monuments and groundwater monitoring wells should be established as part of the detailed design. The program should also include annual reviews and independent audits as part of the final design.
- The closure design should be reviewed, and if necessary, updated during the detailed design, taking into consideration regulatory requirements.
- An Operations, Maintenance and Surveillance ('OMS') Manual, which guides the operation of the IWF, should be developed as part of detailed design, and include such items as:
  - A detailed project construction schedule that considers the contractor equipment, earthwork quantities and seasonality,
  - The use of an observational approach to provide an understanding of the actual performance of the facility. The periodic review of the performance of the facility should be conducted considering field observations to provide guidance for future operations. Operations personnel should closely monitor the observed seepage, pore pressures and phreatic surface, and
  - Refinements and modifications to the design and operational procedures should be made based on observed conditions and monitoring data, as appropriate.

26.9. Dark Horse Waste Dump

The current DH WRD design is based on ATCW bankable feasibility study and will require the following:

- Field investigations should be performed in the DH WRD footprint area at the detailed design level, including characterisation of foundation conditions since this has yet to be undertaken. The feasibility design assumes similar foundation conditions to that of the BK IWF.
- The closure design should be reviewed, and if necessary, updated during the detailed design, taking into consideration regulatory requirements.
- A monitoring program including groundwater monitoring wells should be established as part of the detailed design.

26.10. Environment, Social and Mine Closure

Ongoing monitoring of key environmental parameters at the Project site, including but not limited to ambient dust levels, water quantity, and flora/fauna, are recommended in the course of the Project's development in order to enable robust comparison with baseline conditions and ensure that the Project's management plans and procedures are fit-for-purpose.

Modelling of the hydrological conditions of the final void post-mining based on monitoring data collected during operations are recommended to be undertaken to determine whether a pit lake may form, and if so, the likely water quality.

26.11. Economic Analysis

There are no specific recommendations with respect to the economic analysis at this stage.

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Appendix 1 - Certificates of Qualified Persons

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023 (the "**Technical Report**").

I, [Julien Lawrence, FAusIMM membership number 209746, do hereby certify that:

1) I am the Principal Mining Consultant, O2 Mining Limited, 5/f, NSCB Building, Narnii Zam-87,1st Khoroo, SBD, Ulaanbaatar.
2) I possess a Bachelor of Engineering (Mining Hons I) and a Masters in Engineering Science (Project Management).
3) I am a Fellow of The Australasian Institute of Mining and Metallurgy (FAusIMM).
4) I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
5) I am responsible for the preparation of sections 1.1, 1.2, 1.8, 1.9, 1.10, 1.14, 1.16.3, mining portions of 1.16.4, 1.16.6, 1.17.3, 2.1, 2.2, 5, 15, 16, 18 (exl IWF), 21, 25.3, 25.4, 25.7, 25.8.3, 25.9.1, 25.9.2, 25.9.3, 25.9.4, 25.9.5, 26.3, and 26.7 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023.
6) I visited the Khundii Gold Project, Mongolia site on November 7 to 10, 2019.
7) I have had prior involvement with the property that is the subject of the Technical Report. The nature of my involvement has been overseeing the preparation of certain sections of the Technical reports for the Preliminary Economic Assessment and the Pre-feasibility study and providing general mining and construction input to the project team since July 2018.
8) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
10) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September 2023

Julien Lawrence, F.AusIMM (209746)

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project - Feasibility Study Update, NI 43-101 Technical Report" signed on September 25, 2023 (the "Technical Report") and effective August 15, 2023:

I, Benny Pou Chun Cha, FAusIMM do hereby certify that:

1) I am the Director, Natural Resources and Principal Geologist of Roma Oil and Mining Associates Limited of address; Room 1101-4, 11/F, Harcourt House, 39 Gloucester Road, Wan Chai, Hong Kong.
2) I possess a Master of Business Administration (MBA) and a Bachelor of Science with Honours in Geology/Geomorphology (B.Sc. Hons) from The University of Western Australia.
3) I have over 20 years' experience as a geologist in exploration, resource development, operations and management.
4) I am a Fellow of The Australasian Institute of Mining and Metallurgy (FAusIMM), member no. 306733.
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 fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
6) I am responsible for the preparation of sections 1.3, 1.4, 1.5, 1.6, 1.16.5, 1.16.7.1, 1.16.7.2, 1.16.7.5, 1.17.1, 1.17.8, 2.3, 3, 4, 6, 7, 8, 9, 10, 11, 12, 20, 23, 24, 25.6, 25.8.1, 25.8.2, 25.8.5, 25.9.6 and 26.10 of the Technical Report with an effective date of August 15, 2023 and dated September 25, 2023.
7) I have not visited the Khundii Gold Project, Mongolia site.
8) I have not had prior involvement with the property that is the subject of the Technical Report.
9) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
10) I am independent of the issuer, as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
11) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September, 2023.

Benny Pou Chun Cha, FAusIMM

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023 (the "**Technical Report**").

I, Jesse Tam (M.AIG, CGeol FGS), do hereby certify that:

1) I am a Principal Geologist of Fugro (Hong Kong) Limited, with business address at 10/F, Fugro House – KCC2, 1 Kwai On Road, Kwai Chung, Hong Kong SAR.
2) I obtained a Master of Geology from the University of Southampton, UK.
3) I am a Member of the Australian Institute of Geoscientists #5868; Chartered Geologist and Fellow of the Geological Society of London #1024811.
4) I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
5) I am responsible for the preparation of Sections 1.17.2, 16.9 and 26.2 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023.
6) I have not visited the Khundii Gold Project, Mongolia site.
7) I have had prior involvement with the property that is the subject of the Technical Report. The nature of my involvement has been contribution to the "Bayan Khundii Gold Project Feasibility Study NI 43-101 Technical Report" prepared by ROMA Oil and Mining Associated Limited dated 20 July 2020 and the "Geotechnical Assessment of the Bayan Khundii Open Pit Gold Mine" prepared by Fugro (Hong Kong) Limited dated 23 November 2020.
8) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
10) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September 2023

THE GEOLOGICAL SOCIETY
CGeol
CHARTERED GEOLOGIST
Fellow No. 1024811

Jesse Tam

M.AIG, CGeol FGS

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023 (the "**Technical Report**").

I, Andrew Kelly, P.Eng., do hereby certify that:

1) I am employed as President and Senior Metallurgist with Blue Coast Research Ltd., 2-1020 Herring Gull Way, Parksville, BC. V9P 1R2.
2) I am a graduate of the University of New Brunswick and obtained a Bachelor of Science in Engineering (Chemical) degree in 2003.
3) I am a licensed Professional Engineer with the Association of Engineers and Geoscientists of British Columbia (License No. 39900) and with the Association of Professional Engineers of Ontario (License No. 100073664).
4) I have worked as a metallurgist for a total of 20 years. My experience includes both plant operations and laboratory settings and covers base and precious metals.
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 fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
6) I am responsible for the preparation of sections 1.13, 1.16.2, 1.17.4, 13, 25.2 and 26.4 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023.
7) I have not visited the Khundii Gold Project, Mongolia site.
8) I have had prior involvement with the property that is the subject of the Technical Report. I have been involved in the management and supervision of various metallurgical testwork programs for Bayan Khundii and Dark Horse between 2016 and the date of this report.
9) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
10) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
11) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September 2023

Andrew Kelly, P.Eng.

PROFESSIONAL PROVINCE OF BRITISH COLUMBIA A. C. KELLY # 39900 ENGINEER

Sept 25, 2023

EGBC Permit 1003329

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023 (the "**Technical Report**").

I, Mark Dillon, CPEng. (Civil), NER, RPEQ, APEC Engineer IntPE (Aus), MIEAust, Senior Principal with ATC Williams Pty. Ltd., Mordialloc, Australia, do hereby certify that:

1) 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 fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
2) I am responsible for the preparation of sections 1.11, 1.12, 1.17.6, 1.17.7, 16.7, 16.8, 18.18, 18.19, 18.20, 18.21, 20.5, 20.6, 26.8, 26.9 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023.
3) I have not visited the Khundii Gold Project, Mongolia site.
4) I have had prior involvement with the property that is the subject of the Technical Report. The nature of my involvement has been preparation of prefeasibility and update of the feasibility study.
5) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
6) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
7) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September 2023

Mark Dillon, CPEng. (Civil), NER, RPEQ, APEC Engineer IntPE (Aus), MIEAust

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023 (the "**Technical Report**").

I, Jeffrey Jardine F.AusIMM, do hereby certify that:

1) I am the Principal Process Engineer for O2 Mining Limited, operating from 5F, NSCB Building, Narnii Zam-87, 1st Khoroo, Sukbataar District, Ulaanbaatar, Mongolia.
2) I obtained a Degree in Minerals Process Engineering (B.Eng (Minerals Processing) (Hons) in 2001.
3) I have been a Fellow of the AusIMM Metallurgical Society since 2018.
4) I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
5) I am responsible for the preparation of sections 1.13.3, processing portions of 1.16.4, 1.16.7.4, 1.17.4, 1.17.5, 17, 25.5, 25.8.4, 25.9.3, 26.5, and 26.6 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023.
6) I have not visited the Khundii Gold Project, Mongolia site.
7) I have had prior involvement with the property that is the subject of the Technical Report. The nature of my involvement has been in preparation of the previous Technical report, and developing the equipment selection and construction readiness planning
8) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
10) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September 2023

Jeffrey Jardine

F.AusIMM

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023 (the "**Technical Report**").

I, Mark Reynolds CPA do hereby certify that:

1) I am Executive Director of Kubik Holdings Pty Ltd trading as Kubik Rube, which shares an office at 336 Sandgate Road, Albion, Brisbane, Queensland, Australia, 4010.
2) I am a graduate of Queensland University of Technology with a Bachelor of Business in 1990.
3) I am a member of good standing of the Australian Society of Certified Practising Accountants (Membership number: 1788138).
4) I have practiced my profession in the mining industry for over 22 years since my graduation. My relevant experience includes professional senior finance roles for mining projects and operations located in Australia, Argentina, Canada, Chile, Mongolia, the Philippines and Papua New Guinea
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 fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
6) I am responsible for the preparation of sections 1.15, 19, 22, and 26.11 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023.
7) I have not visited the Khundii Gold Project, Mongolia site.
8) I have not had prior involvement with the property that is the subject of the Technical Report.
9) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
10) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
11) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September 2023

Mark Reynolds

Signature of Qualified Person
Mark Reynolds, CPA

RAMBOLL

WATER

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023 (the "**Technical Report**").

I, Antony Gibson, MIEAust CPEng NER APEC Engineer IntPE(Aus), do hereby certify that:

1) I am employed by Ramboll Australia Pty Ltd, Level 3, 100 Pacific Highway. North Sydney,. Sydney, NSW 2060 in the position of Senior Project Director.

2) I graduated from the University of Queensland with a Bachelor of Chemical Engineering with honours (2000) and hold an MBA from the University of Melbourne (2011).

3) I am a member of the Engineers Australia. I have been a Chartered Professional Engineer in the Chemical Area of Practice for more than 15 years, and am currently listed on the National Engineering Register.

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

5) I am responsible for the preparation of sections 15.4, 18.24.1, 18.24.2, 18.24.3, and 18.24.4 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023. Section 1.10 also contains conclusions relating to the supply of water from the borefield based on work in the sections prepared by Ramboll.

6) I have not visited the Khundii Gold Project, Mongolia site.

7) I have had no prior involvement with the property that is the subject of the Technical Report.

8) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.

9) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.

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

Dated this 25th day of September 2023

Antony Gibson
MIEAust CPEng NER APEC Engineer IntPE(Aus)
Ramboll Australia Pty Ltd

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023 (the "**Technical Report**").

I, Oyunbat Batochir, am working as a Senior Resource Geologist for RPMGlobal, Level 13, Central Park Office, Chinggis Avenue, 1st khoroo, Sukhbaatar district, Ulaanbaatar 14240, Mongolia. This certificate applies to the Technical Report on Dark Horse Gold Project, Bayankhongor Aimag, Southwest Mongolia, prepared for Erdene Resource Development Corporation, dated November 2022, do hereby certify that:

1) I am a registered member of the Australian Institute of Geoscientists ("AIG").
2) I am a graduate of the Faculty of Earth Science of National University of Mongolia and hold a B App Sc in Geology which was awarded in 2010.
3) I have been continuously and actively engaged in the assessment, development, and operation of mineral Projects since my graduation from university in 2010.
4) I have read the definition of "qualified person" set out in National Instrument 43-101 (NI 43-101) and certify that, by reason of my education, affiliation with a professional association (as defined in NI 43-101) and past relevant work experience, I fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
5) I am responsible for the preparation of section 1.7.2, 11.5.2, 11.5.3, 11.6.2, 12.2 and 14.2 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023 and dated September 25, 2023.
6) I visited the Dark Horse Project between the 25th and 27th October 2022.
7) I have had no prior involvement with the properties that are the subject of the Technical Report.
8) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
9) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
10) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September 2023

"Oyunbat Bat-Ochir, AIG #7333" (QP)

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023, and dated September 25, 2023 (the "**Technical Report**").

I, Paul Daigle, P.Geo., do hereby certify that:

1) I am a Principal Resource Geologist with AGP Mining Consultants Inc. with a business address: #246 - 132K Commerce Park Drive, Barrie ON L4N 0Z7, Canada.
2) I am a graduate of Concordia University, Montreal, Canada (B.Sc. Geology) in 1989
3) I am a member in good standing of the Professional Geoscientists of Ontario (No. 1592)
4) I have practiced my profession in the mining industry continuously since graduation. My relevant experience includes over 33 years in the mining sector in the exploration and diamond drill programs, managing data, and estimating resources. I have been involved in numerous precious metal projects in similar precious metal deposits. My most recent experience includes the Dixie Gold Project, Miller Gold deposit and the Troilus Gold Copper Project, Canada.
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 fulfil the requirements to be an independent qualified person for the purpose of NI 43-101.
6) I am responsible for the preparation of sections 1.7.1, 11.5.1, 11.6.1, 12.1, 14.1 and 15.1 of the report "Bayan Khundii Gold Project Feasibility Study Update, NI 43-101 Technical Report" with an effective date of August 15, 2023, and dated September 25, 2023.
7) I visited the Khundii Gold Project site, Mongolia, between 2 April to 4 April 2023.
8) I have not had prior involvement with the property that is the subject of the Technical Report.
9) As of the date of this Certificate, to my knowledge, information and belief, the sections of this Technical Report for which I am responsible contain all scientific and technical information that is required to be disclosed to make the technical report not misleading. I am not aware of any material fact or material change with respect to the subject matter of the Technical Report that is not reflected in the Technical Report, the omission to disclose which makes the Technical Report misleading.
10) I am independent of the issuer as independence is described in Section 1.5 of NI 43-101. I have read National Instrument 43-101 and Form 43-101F1 and the Technical Report has been prepared in compliance with that instrument and form.
11) I consent to the filing of the Technical Report with any stock exchange and other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their websites accessible by the public, of the Technical Report.

Dated this 25th day of September 2023

PROFESSIONAL GEOSCIENTISTS
PAUL J. DAIGLE
PRACTISING MEMBER
1592
ONTARIO

Paul Daigle, P.Geo., PGO No. 1592

O2 MINING

MINING & ENGINEERING SERVICES

O2 Mining Limited

O2 Mining is a Hong Kong Registered Company with an established team of professionals delivering high quality studies and project management services to the Australasia region. We are a group of professionals committed to the highest standards in Health, Safety and Environmental Management emanating a culture of respect for our business partners, colleagues and the community in which we work.

Our mission is to deliver supreme shareholder value by cultivating unique partnerships and diligently applying our expertise in mine project development, operations and closure to attain maximum returns for all stakeholders safely and sustainably. We consistently uphold the highest standards by fostering a culture dedicated to delivering exceptional performance.

Our Services

- Resource modelling, resource/reserve estimation
- Exploration planning, management and execution
- Mine planning and scheduling
- Mining and Infrastructure studies and design
- Environmental planning, approvals, mine closure planning, execution and management
- Project financial modelling and evaluation
- Strategic project reviews and value optimisation services
- Independent engineer/due diligence management and operational reviews
- Owner's engineer and/or project management and site services before, during and after construction/commissioning
- Business improvement analysis – operational reviews
- Mining contracting strategy, negotiation and support
- Contract mining services / mine operator services and partnerships
- Metallurgical study development, analysis and management
- Process engineering and design services
  Process and non process infrastructure design, procurement, construction and construction management services
- Risk reviews and Fatal Flaw Analysis

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