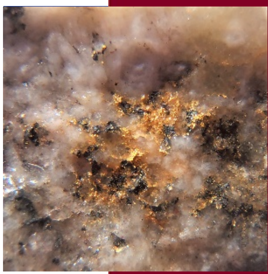
BAYAN KHUNDII GOLD PROJECT
FEASIBILITY STUDY
NI 43-101 TECHNICAL REPORT

BAYANKHONGOR PROVINCE, MONGOLIA






FOR

ERDENE RESOURCE DEVELOPMENT CORPORATION

PREPARED BY

ROMA OIL AND MINING ASSOCIATES LIMITED

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Exploring Beyond Resources
Realizing Your Full Potential

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1. SUMMARY

1.1. INTRODUCTION

Erdene Resource Development Corporation (“Erdene”, or the “Company”) commissioned Roma Oil and Mining Associates Limited (“ROMA”) 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”) located in Bayankhongor province, southwestern Mongolia. Technical works for this FS Report were provided by a group of independent engineering and consulting firms with experience in Mongolia and globally. The effective date of the FS is July 20, 2020 and is based on a Mineral Resource with an effective date of October 1, 2019 and includes an updated Mineral Reserve with an effective date of July 1, 2020.

The FS envisions a high-grade, open-pit mine, beginning at surface in the southern portion of the Bayan Khundii deposit (Striker and Gold Hill), and expanding northward into adjacent zones at Midfield and North Midfield to a maximum depth of 144 meters. The total mineable mineralized plant feed is 3.4 million tonnes at an average diluted head grade of 3.7 g/t gold and average strip ratio of 9.1:1 (waste tonne: plant feed tonne).

The development incorporates conventional crushing and grinding, leach and a Carbon in Pulp (“CIP”) plant with processing capacity of 1,800 tonnes per day and a projected gold recovery of 93%. Total recovered gold over the life of the Bayan Khundii deposit is 381,700 ounces. Gold 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 the current reserves the development will operate for eight years including a one-year pre-production period, six-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 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. 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 25.7 – Interpretation and Analysis - Risk.

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$144.8 million at the base gold price of US$1,400 per ounce. The Project’s post-tax $NPV^{5\%}$ at US$1,400 per ounce of gold is US$100.3 million. The Internal Rate of Return (“IRR”) is 55.0% pre-tax and 42.4% post-tax. The payback period is expected to be 1.6 years pre-tax and 1.9 years post-tax.

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

Cash Flow Summary (Based on US$1,400/oz Gold)			
Financial Results	**Units**	**Amount**	**US$/ounce [1]**
Processing Target	M Tonne	3.4	N/A
Actual Feed	g/tonne	3.7	N/A
Doré Production			
Gold Ounces Produced	Ounces	381,675	N/A
Payable Gold (99.85%)	Ounces	381,102	N/A
Revenue	US$ M	533.5	1,397.9
Doré Selling Costs	US$ M	(1.1)	(2.8)
Net Project Revenue	**US$ M**	**532.5**	**1,395.1**
Operating Costs	US$ M	(242.0)	(634.0)
Royalties	US$ M	(32.0)	(83.9)
Real Estate Tax	US$ M	(1.4)	(3.6)
Operating Earnings	**US$ M**	**257.1**	**673.7**
Initial Capital Expenditure	US$ M	(59.2)	(155.1)
Sustaining Capital Expenditure	US$ M	(3.7)	(9.6)
Environmental & Closure Costs	US$ M	(2.9)	(7.6)
Salvage Value	US$ M	2.0	5.2
Pre-Tax Cash Flows	**US$ M**	**193.4**	**506.7**
Corporate Income Tax	US$ M	(55.8)	(146.3)
Post-Tax Cash Flows	**US$ M**	**137.6**	**360.4**
Result Summary			
Financial Results	**Units**	**Amount**	**US$/ounce [1]**
Pre-Tax			
$NPV^{5\%}$	US$ M	144.8	N/A
IRR	%	55.0	N/A
Payback Period	Year	1.6	N/A
Post-Tax			
$NPV^{5\%}$	US$ M	100.3	N/A
IRR	%	42.4	N/A
Payback Period	Year	1.9	N/A

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

Notes:

1. *Amount per ounce is calculated based on gold ounces produced totaled to 381,675 ounces.*
2. *Initial capital expenditure consists of construction, pre-production, and contingency.*
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 Gold District ("KGD"), which includes the Bayan Khundii gold deposit, 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 includes the Khundii Exploration License (XV-015569; 2,205.71 ha) and the Khundii Mining License (MV-021444, 2,308.62 ha). Tenure of these minerals licenses has been confirmed as of the date of this FS Report. Permits have been obtained for ongoing exploration and technical field programs and remains ongoing for the planned construction and operation of mining activities, which include Water Permits, Land Use Permits and the payment of Environmental Bond.

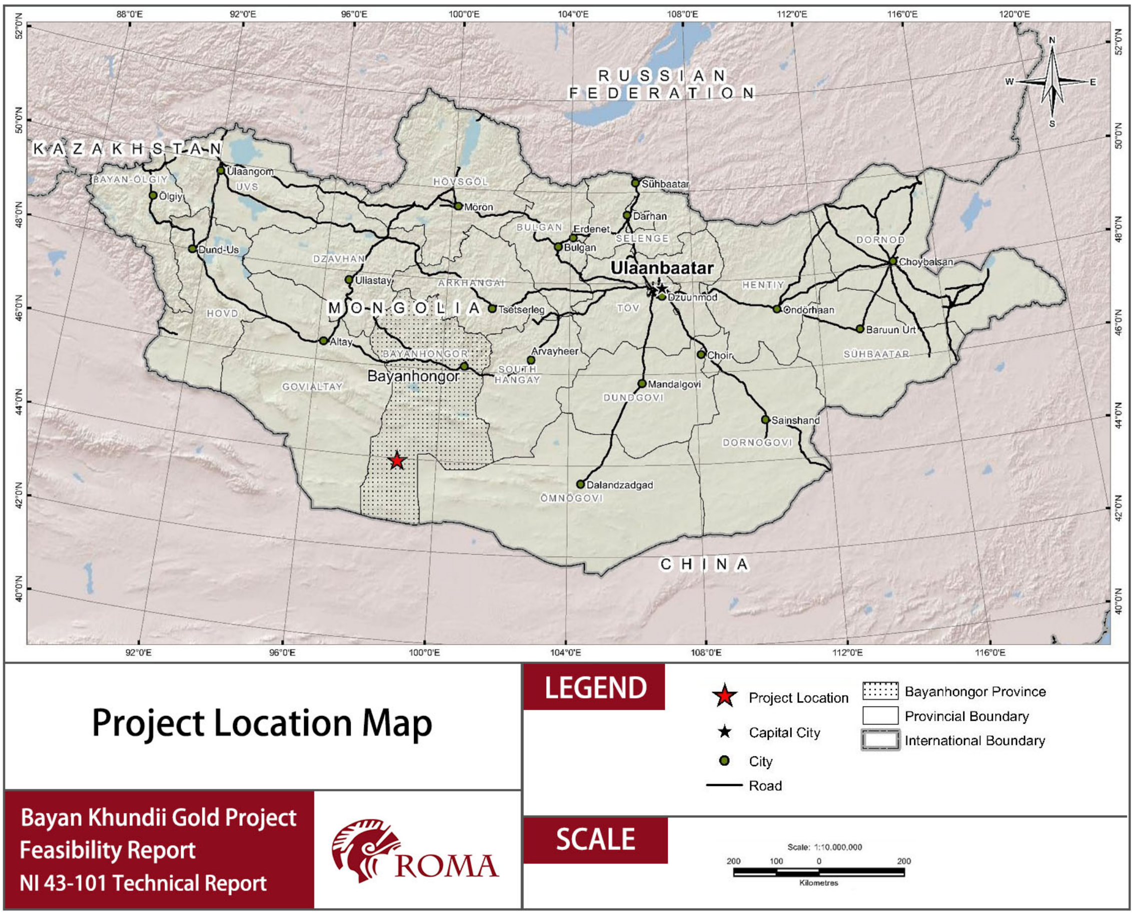


Figure 1-1 Location of the Project.

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 is planned to be submitted to the government for approval in 2020.

- **Local Cooperation Agreement**: The Company has executed a Local Cooperation Agreement with local government pursuant to Article 42 of the Law on Minerals of Mongolia through the end of 2020.

- **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 land use permits for the Project development. 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 in progress as of the date of this FS Report, with expected completion in late 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$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.

1.5. GEOLOGY SETTING AND MINERALIZATION

The Project is located within the Edren island arc terrane which is part of the larger composite Trans Altai Terrane ("TAT") (Figure 1-2). The TAT forms part of the western end of the large, composite, arcuate-shaped Paleozoic New Kazakh-Mongol Arc terrane ("NKMA") ") (Yakubchuk, 2002) which extends along the southern margin of Mongolia, including the border region with China, and is host to the Oyu Tolgoi copper-gold porphyry mine to the east. The TAT consists mostly of Middle Paleozoic volcanic, sedimentary and metasedimentary rocks that were intruded by Middle Paleozoic calc-alkaline and alkaline plutons.

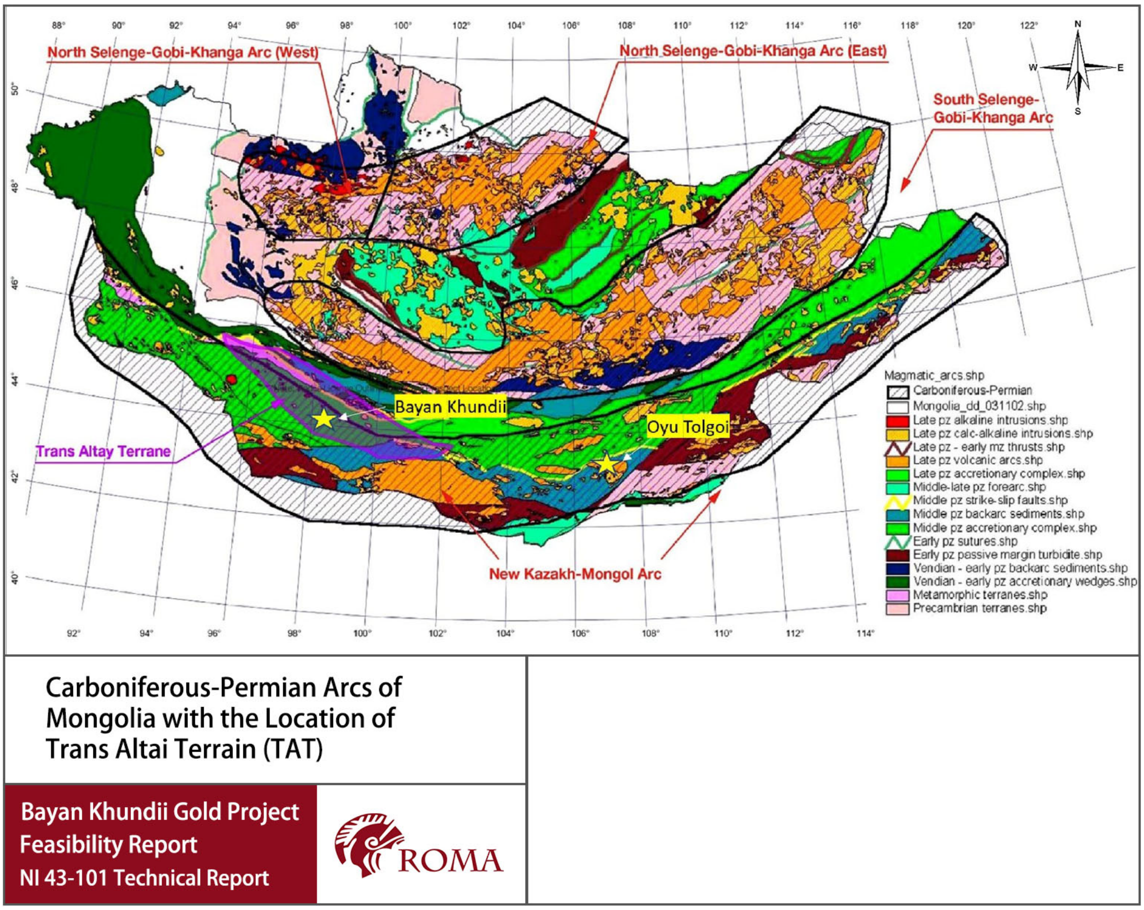


Figure 1-2 Carboniferous-Permian Arcs of Mongolia with location of Trans Altai Terrain.

The KGD is mainly composed of the Lower Carboniferous Ulziithar Formation. The Bayan Khundii gold deposit is hosted in the lower member of the Ulziithar Formation which is terrigenic tuffogenic and approximately 1,200 m thick. Other geological units in the KGD include Jurassic Ovoot Ulaan Formation and the Upper Carboniferous Bayan-Airag Intrusive Complex.

The bedrock geology of the Khundii license area is dominated by a sequence of the Lower 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 Upper Carboniferous Bayan-Airag Intrusive Complex, and together these rocks were unconformably overlain by Jurassic Ovoot Ulaan Formation volcanic and sedimentary units. All rocks in the region are overlain by unconsolidated sediments of Quaternary or Recent age.

The overall structural model consists of a series of tilted, extensional, domino-style fault blocks with NE-trending, SE-verging extensional faults. The main north-northeast trending mineralized zone, comprised of the Striker-Midfield-North Midfield zones, is interpreted as a 'relay ramp' whereby stress is transferred from the ends ('tip points') of adjacent northeast-trending, southeast-verging extensional faults via a series of northeast trending parallel structures.

Mineralization at Bayan Khundii 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 surface is present in three separate areas over a 1.7 km NE trend at the Bayan Khundii Deposit. These include the SW Prospect area (550 m x 300 m), the NE Prospect area (300 m x 300 m), located approximately 0.7 km to the northeast, and the NE Extension located an additional 500 m to the northeast. All of the Bayan Khundii mineral resource lies within the SW Prospect area which includes the Gold Hill, Striker, Midfield and North Midfield zones. The NE, and NE Extension Prospect areas have undergone limited exploration drilling with anomalous gold mineralization intersected in a number of drill holes.

1.6. EXPLORATION

Exploration in the Bayan Khundii area was initiated in 2010 including 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 central part of the license on a project referred to as Altan Arrow.

In early 2015, Erdene geologists identified, through rock chip sampling, high-grade gold mineralization associated with a zone of intensely altered (quartz-illite) pyroclastic lithologies located about 3.5 km south of Altan Arrow. This area, referred to as the Bayan Khundii (Rich Valley) Project, was the focus of a detailed exploration program carried out from 2015 to 2019 that culminated in the identification of the Bayan Khundii gold deposit, the focus of this report.

There are multiple areas with the potential to add further resources at Bayan Khundii, including, but not limited, to the following:

- The Bayan Khundii Resource includes an Inferred Resources of 103,000 ounces of gold at a grade of 3.68 g/t gold. All or a portion of this resources could potentially be added to open-pit reserves through both additional drilling and rising gold prices.

- Recent drilling at the Midfield SE and Striker SW zones of the Project area intersected exceptionally high-grade gold, including one meter of 582 g/t gold within an intersection of 5.5 meters grading 126 g/t at Midfield SE, in areas of the resource currently classified as waste or sub-grade material. The areas could potentially provide additional high-grade feed in the early phases of development.
- Additionally, very high gold grades observed in drilling in the Striker West portion of the deposit have the potential to provide additional high-grade resources should closer spaced drilling improve continuity.

The reported resource is pit constrained and based on multiple parameters (Table 1-2, note 4) including a US$1350 gold price. Multiple high-grade intersections outside the pit provide expansion targets requiring additional drilling in a rising gold price environment.

Exploration on other areas on the Khundii license, outside the Bayan Khundii deposit was carried out between 2010 and 2020, resulting in the identification of the South Bayan Khundii, Altan Arrow, Khundii North and Khar Mori (Dark Horse) prospects. Exploration techniques included the following:

- Detailed geological and structural mapping;
- Rock chip sampling;
- Progressively more detailed soil sampling with select areas now at 50 m 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 200 m spacing with 150 m spaced dipoles;
  - Ground gravity survey at 200 m station spacing;
  - Compilation and 3D modelling of all geophysical data; and
- Scout drilling (South Bayan Khundii, Altan Arrow and Khundii North prospects).

Further exploration is required at each of these prospects to determine the extent of mineralization on the license. Erdene intends to continue exploration in these areas with the goal of expanding resources on the Khundii Mining License.

1.7. MINERAL RESOURCE STATEMENT

The current Mineral Resource Estimate for the Bayan Khundii deposit was prepared by Mr. Cameron Norton of Tetra Tech as reported in the "Khundii Gold Project NI 43-101 Technical Report", December 4, 2019, authored by Ms. M Phifer, Messrs. C. Norton, J. Clark, A Kelly, H. Ghaffari, M. Horan and M. Fawcett. The effective date of the Bayan Khundii Mineral Resource Estimate is October 1, 2019.

The Tetra Tech Bayan Khundii Mineral Resource Estimate is based on data from 266 holes, totaling 44,859 meters of drilling, and structural interpretation study completed by Erdene on the Property. The results of the Mineral Resource Estimate for the Bayan Khundii deposit, presented in Table 1-2, have been constrained to a conceptual pit shell and are reported at a 0.55 g/t Au cut-off.

Cut-off Grade [(1)] (Au g/t)	Resource Classification	Tonnage	Grade Au (g/t)	Gold (oz)
0.55	Measured	1,410,000	3.77	171,000
	Indicated	3,710,000	2.93	349,700
	Measured & Indicated	**5,120,000**	**3.16**	**520,700**
	Inferred	868,000	3.68	102,800

Table 1-2 Mineral Resource Estimate for Bayan Khundii, effective October 1, 2019.

Notes:

1. *Cut-off grades have been calculated using a gold price of $1,350/ounce, mining costs of $3.0/tonne, milling and G&A costs of $16.0/tonne, and an assumed gold recovery of 95%.*
2. *Bulk density of 2.66 for mineralized domains.*
3. *All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add exactly due to rounding.*
4. *Conforms to NI 43-101, Companion Policy 43-101CP, and the CIM Definition Standards for Mineral Resources and Mineral Reserves.*
5. *Mineral resources which are not mineral reserves do not have demonstrated economic viability.*

1.8. MINERAL RESERVE STATEMENT

Mineral Reserves estimated for the Bayan Khundii deposit are based on Measured and Indicated Resources, as calculated by Tetra Tech, with an effective data of October 1, 2019, and use FS engineering designs for the pit and associated process plant operating parameters.

The cut-off grade for mineral reserve calculations is 0.7 g/t Au and is based on a gold price of $1,400/oz. The Resource as defined by the regularized block model contains modelled mineral losses of 1% and average internal dilution of 9% within the ultimate pit.

A summary of the Mineral Reserves estimated for the Bayan Khundii deposit with an effective date of July 1, 2020 can be found in Table 1-3.

Classification	Tonnage (Mt)	Grade (g/t Au)	Contained Au (Koz)
Proven	1.2	4.2	166
Probable	2.2	3.5	244
Grand Total	**3.4**	**3.7**	**409**

Table 1-3 Bayan Khundii Gold Deposit – Mineral Reserve Statement, July 1, 2020.

Notes:

1. *The effective date of the Mineral Reserve estimate is July 1, 2020. The Qualified Person for the estimate is Mr. Anthony Keers of Auralia Mining Consulting;*
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 methods;*
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. This equates to a deposit average of 0.7 g/t Au;*
5. *Reserves are based on a gold price of $1,400/oz; and*
6. *Mineral Reserves were calculated from a diluted "mining" block model which included average dilution of 9% and losses of 1%.*

1.9. MINING METHOD

Mining operations, designed as part of this FS, focus on the Bayan Khundii open-pit and surrounding infrastructure. The Bayan Khundii 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, three stages of pit design and development were planned based on the Whittle™ optimization output. The pit exit level is approximately 1,232 meters above sea level ("MASL") and reaches a maximum depth of 1,088 MASL at the North Midfield Pit.

Overall mining inventory within the ultimate pit design is 34.6 million tonnes ("Mt") of which 31.2 Mt is classified as waste and 3.4 Mt is classified as ore. The average grade for process plant feed is 3.7 g/t gold containing approximately 409 thousand ounces ("Koz") of gold in total.

The designed process plant throughput rate is 600 thousand tonnes per annum ("Ktpa") with 450 Ktpa for the first year of operations and 600 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 8.9 Mtpa of total ex-pit production is required from Year 1 to 3 and this progressively reduces down to 1 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 300 Kt, and total re-handle of stockpile material is approximately 300 Kt over the life of mine.

In total, 381 Koz of gold are expected to be recovered at an average gold recovery rate of 93%.

Schedule Items	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Total
Total Mining Inventory									
Total Ex-pit	Kt	808	8,072	8,880	8,880	5,473	1,504	1,057	34,674
Waste	Kt	808	7,528	8,107	8,407	4,923	904	571	31,246
Ore	Kt	0	544	773	473	550	600	487	3,427
Au Grade	g/t	0.00	3.66	3.53	4.37	3.39	4.39	2.96	3.71
Mined Gold	oz	0	64,081	87,838	66,488	59,913	84,675	46,329	409,323
Processing and Stockpile Balance									
Mill Feed	Kt	0	450	600	600	600	600	577	3,427
Feed Au Grade	g/t	0.00	4.25	4.31	3.63	3.18	4.39	2.63	3.71
Process Recovery	%	0	93%	93%	93%	93%	93%	92%	93%

Schedule Items	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Total
Gold Recovered	oz	0	57,428	77,702	65,162	56,999	79,108	45,270	381,668
Stockpile Balance									
In tonne	Kt	0	95	201	7	6	0	0	309
In Au grade	g/t	0.00	0.85	0.84	0.83	0.86	0.00	0.00	0.84
Out tonne	Kt	0	1	28	134	55	0	91	309
Out Au grade	g/t	0.00	0.86	0.84	0.84	0.84	0.00	0.84	0.84
Balance tonne	Kt	0	94	267	140	91	91	0	
Balance Au grade	g/t	0.00	0.85	0.84	0.84	0.84	0.84	0.00	

Table 1-4 LOM Schedule Summary in Year.

To satisfy the productivity and selectivity required over the life of mine, bulk waste excavation will be undertaken with two 75-tonne-class backhoe configuration excavators and selective waste excavation and ore excavation will be undertaken with a single 36-tonne-class backhoe configuration excavator. 55-tonne rigid frame dump trucks will be used to move ore and waste material, maximizing overall truck utilization, and unifying the truck spare parts stock. A single 40-tonne ADT 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.

Ancillary and support fleet were also selected based on the project scale and experience from similar projects.

Core Equipment	No. Required
Major Fleet	
75T HEX	2
36T HEX	1
55T Dump Truck	10
40T ADT Truck	1
Drill#1 – DTH	1
Drill#2 – TH	1
Ancillary	
Front End Loader (3cum bucket)	2
Dozer#1 – 475 hp	2
Dozer#2 – 365 hp	3
36T HEX with scaling attachment	1
Grader – Mine spec 14' blade	1
Water Carts – 50 kL	1
Service Truck – full lube and fuel	1
Compactor - 10T	1
Support Fleet (various light vehicle units, lighting, pumps, emergency equipment, etc.)	

Table 1-5 Fleet Summary.

1.10. PROJECT INFRASTRUCTURE

Project infrastructure for the Bayan Khundii mine is designed to support efficient day-to-day operations and includes the processing plant, integrated rock waste and tailings storage facility, maintenance and administration buildings, site services facilities such as water supply, power plant, fuel station and heating facilities, emergency facilities, site haul roads, surface water management infrastructure and accommodation camp.

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. Average load demand of approximately 4.8 MW is expected with distribution on site transmitted at 6.6 kV via substations at areas with major power requirements.

The site requires an average of approximately 0.6 ML/day (or 6.9 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, as groundwater is primarily hosted in localized fracture systems that are highly variable with limited connectivity, further investigation is required to quantify the aquifer storage and spatial extents. A below-ground pipeline is proposed to transport water from the borefield to a raw water tank adjacent to the processing plant for treatment. 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. 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. Design and engineering works were then advanced to a level of detail sufficient for securing budget pricing for this FS Report (AACE Class II). Simultaneously, technical drawings were developed in Mongolian for government approval and sign-off (also referred to as "expertising"). Detailed, approved design drawings are required prior to the application for a construction permit, the final step in the process.

For capital and operating cost estimation, engineering material take-offs were based on neat line quantities, or unless otherwise specified, derived from the project drawings and sketches. Allowances were included for each discipline as appropriate. Conceptual quantities were prepared where drawing information was not available.

1.10.2. Procurement Process

A Request for Proposal ("RFP") or Quotation ("RFQ") framework was prepared for the Project. Dependent upon the nature of the service, works, equipment, or materials required, costing packages were prepared for each facility and all services required by the Project. In total, 54 Process Plant RFPs and 66 Non-Process RFPs were sent to suppliers located in Mongolia, China, Europe, Asia, Australia and South Africa. RFPs were issued for process plant equipment, construction materials, mining equipment, all-in construction of site infrastructure, freight and logistic costs. Additionally, RFPs for power, fuel, and laboratory services were based on criteria to design, build, operate, and transfer.

The infrastructure of the Bayan Khundii Gold Project includes the engineering design, procurement, construction, and management for the following site 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), Mine Dry, 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.

The proposals and quotes received were assessed against criteria including completeness of the submission, methodology, commercial terms, presentation, previous experience and evidence of understanding.

1.11. INTEGRATED WASTE FACILITY

The 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 tailing, 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 LOM, the IWF will see the deposition of waste rock and tailings at an approximate ratio of 10:1, respectively, which will see the IWF grow vertically until it reaches its ultimate shell height of 76 m at RL 1302 m.

A 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 will support the overall water management of the IWF, and has been designed to minimize runoff migration into the IWF project areas, as well as minimizing 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 infrastructure for the IWF water management system entails:

- Diversion drain along the north-western flank of the IWF to divert clean water runoff away from the site;
- Engineered clay liner over the foundation sitting below the tailings cells within the IWF;
- Contaminant collection underdrain, along centerline of engineered clay liner;
- Contaminant Runoff Collection Pond (“CRCP”), south of the IWF; and
- 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.

1.12. MINERAL PROCESSING AND METALLURGICAL TESTING

1.12.1. 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.

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/tonne, however, there were some geographic trends noted in the hardness of the material. The average BWI from the Striker zone was 17.2 kWh/tonne, 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.

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.

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.

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.

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^2hr 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.

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 1-6.

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

Table 1-6 Bayan Khundii Gold Head Grade Recovery Relationship.

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%.

1.12.2. Mineral Processing and Recovery Methods

Mill feed from the Bayan Khundii pit to the processing plant is expected to average 3.7 g/t gold with similar silver content which does not generate any modelled revenue nor does it negatively impact the performance of the proposed processing plant. Test work conducted concludes that the ore is amenable to conventional cyanide leaching with life-of-mine recoveries averaging 93% 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 1.12.1, a gravity circuit has not been included in the design.

1.13. 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. This capital cost estimate is based on a contractor mining scenario for the Bayan Khundii Gold project. The total estimated initial capital costs for the Bayan Khundii operation is US$59.2 M, as summarized in Table 1-7:

Capital Cost	US$ (Million)
Process Plant	24.3
Non-Process Infrastructure	9.8
Permanent Accommodation	2.0
Construction Indirects	6.0
Engineering & Support	4.8
Construction Costs	**46.9**
Pre-Production Costs	7.5
Contingency	4.8
Subtotal Plant and Infrastructure	**59.2**
Sustaining Capital	3.7
Reclamation and Mine Closure	2.9
Salvage	(2.0)
Total (US$ millions)	**63.8**

Table 1-7 Capital Cost Estimate.

The life of mine average operating cost for the Bayan Khundii operations is estimated at US$70.60/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 1-8 below.

Operating Costs	Total Cost (LOM Millions)	Cost $/t Milled (LOM Average)
Mining Costs	146.1	42.63
Processing Costs	89.1	26.00
General and Administrative Costs	6.8	1.98
TOTAL OPERATING COST	**242.0**	70.61

Table 1-8 Operating Cost (US$ Million).

**General and Administrative costs include US$2.25M of offsite costs.*

1.14. ECONOMIC ANALYSIS

An economic evaluation of the Bayan Khundii operation was undertaken as at June 30, 2020, using a US$1,400 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$144.8 million pre-tax and US$100.3 million post-tax;
- The estimated pre-tax Internal Rate of Return (“IRR”) is 55.0% and the post-tax IRR is 42.4%; and
- Payback period of 1.6 years pre-tax and 1.9 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 22.10.

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

1.15. 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.

1.15.1. Geology and Mineral Resource

Mineralization at Bayan Khundii consists of gold ± silver in massive-saccharoidal, laminar and comb-textured quartz± hematite veins within parallel northwest-southeast trending, moderately-dipping (~45^{o}) zones that range in width from 4 to 149 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, including the outcropping Southwest and Northeast Prospects where virtually all primary minerals have been variably replaced by quartz and illite. Bayan Khundii is characterized as a low sulphidation epithermal gold deposit.

The 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.

The resource was estimated using three interpolation methods: nearest neighbor, inverse distance squared, and ordinary kriging. The results of the ordinary kriging method were used for the resource tabulation.

At a cut-off grade of 0.55 g/t Au, Bayan Khundii has been estimated with a Measured Resource of 1.41 Mt at an average grade 3.77 g/t Au, an Indicated Resource of 3.71 Mt at an average grade of 2.93 g/t Au, and an estimated Inferred Resource of 0.868 Mt at an average grade of 3.68 g/t Au.

1.15.2. Metallurgical Test Work

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

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 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.

1.15.3. 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 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 $1,400/oz.

Geotechnical investigations were conducted to assess the expected rock quality at Bayan Khundii. 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 $42.63/t Milled, processing costs of $26.00/tonne milled and $1.98/t Milled general and administrative costs have been used to estimate the reserves along with a gold price of US$1400/oz.

Proven and Probable Reserves total 3.4 Mt of ore, with estimated contained gold of 409 Koz.

1.15.4. 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 800 m by 380 m by 144 m.

A detailed production schedule has been developed incorporating two pushback phased mining stages and the ultimate design pit. The production schedule will take place over six 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 3.4 Mt of mineralized material and 31.2 Mt of waste rock. The LOM average gold grade is 3.7 g/t. The LOM stripping ratio is 9.1:1. The production schedule will provide process plant feed at a nominal rate of 600 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 10 m height based on 5 m benches stacked in a double bench configuration. Two-lane mine roads will be a minimum of 21 m and single roads at the bottom of the pit will be 10 m wide. All ore will be transported to a primary crusher in 55 t rear-dump haul trucks and waste will be transported using the same class haul trucks. Primary ore loading will be by 36 tonne weight class diesel hydraulic excavators in backhoe configuration, primary waste loading by two 75 tonne weight class diesel hydraulic excavators in backhoe configuration.

A total of 409 Koz is 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 600 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 ceramic disc filters in parallel. This is based on the more effective drying and water recovery from the ceramic disk filters and that it operates on a continuous basis, rather than the batch operation of the alternative of pressure filtration, resulting in smaller tanks and lower pressure pumps in this area.

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.

1.15.5. Environmental, Social and Mine Closure

At the time of this FS Report, the Project had in place all necessary environmental permits for its operations. Environmental permitting for the purposes of mine construction and operation remained ongoing.

The independent Environmental and Social Impact Assessment of the Project provides detailed baseline information, impact assessment for key domains, and management plan commitments. Management plans in the ESIA detail the Company’s commitment to build, operate, and close the Project in accordance with applicable regulation and Project standards. Considering the outcomes of the ESIA, the independent Mongolian statutory DEIA has been prepared for consultations and submission for approval to 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 void and the IWF landform. The remainder of the areas impacted by the operation will be returned to their pre-operation form and revegetated, where appropriate given the sparsely vegetated pre-operation landscape.

1.15.6. 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 contract mining and thus no capital cost was allocated for mining equipment and ancillary mining 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. 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$59.2M including contingency.

Sustaining capital cost estimates for the processing plant and associated facilities are calculated as 1.5% of the total initial capital costs from years two through five of the life of mine and 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$ 70.64/t milled at the processing rate of 600 Kt/year.

1.15.7. Opportunities

Additional Resources at Bayan Khundii

There are multiple areas with the potential to add further resources at Bayan Khundii, including, but not limited, to the following:

- The Bayan Khundii Resource includes Measured and Indicated Resources of 521,000 ounces at an average grade of 3.16 g/t gold, and Inferred Resources of 103,000 ounces of gold at a grade of 3.68 g/t gold inclusive of the reported Proven and Probable Reserves. The remaining resources could potentially be added to open-pit reserves through both additional drilling and rising gold prices.

- Recent drilling at the Midfield SE and Striker SW zones of the Project area intersected exceptionally high-grade gold, including one meter of 582 g/t gold within an intersection of 5.5 meters grading 126 g/t at Midfield SE, in areas of the resource currently classified as waste or sub-grade material. The areas have to potential to provide additional high-grade feed in the early phases of development.

- Additionally, very high gold grades observed in drilling in the Striker West portion of the deposit have the potential to provide additional high-grade resources should closer spaced drilling improve continuity.

- The reported resource is pit constrained and based on multiple parameters (Table 1-2, note 1) including a US$1,350 gold price. Multiple high-grade intersections outside the pit provide expansion targets requiring additional drilling in a rising gold price environment.

Exploration on the Khundii License

The Bayan Khundii deposit is situated in a highly prospective region that has received minimal historical exploration. On the Bayan Khundii property, multiple high-grade targets have been established through limited shallow drilling and surface sampling within 4 km of the deposit, including the Khar Mori (Dark Horse) prospect identified in late 2019.

Erdene recently trenched new gold zones at Dark Horse, with assays returning 6 meters grading 8.8 g/t gold, including 1 meter of 50.8 g/t gold, and 4 meters of 14 g/t gold, including 1 meter of 45.3 g/t gold. As a large untested prospect, Dark Horse provides significant discovery potential along strike with a well-defined and continuous gold-in-soil anomaly along a NE trending structure for 1.3 km. In addition, there are several isolated but intense gold-in-soil anomalies at or near NE-NW structural intersections. Drilling is planned for Q3 2020.

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.

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.

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.

Additional Resources at Alan 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.

1.15.8. 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 budget quotes. CAPEX has been shown to be less sensitive than other issues with respect to project economics.

- **Operating Expenditure** - Operating expenditure predictions are based on budget quotes. Although thoroughly pre-determined using up-to-date assessment techniques, sensitivities on OPEX indicate that the project economics will remain robust even with a 10 % change.

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. This FS 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.

Infrastructure

Infrastructure design for this FS report have been prepared in accordance with Mongolian requirements and applicable international standards. However, detailed designs remain subject to final Mongolian regulatory approval, 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.

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.

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 environmental permits, including for its statutory environmental assessment and hazardous material permit, and social license to operate remain a risk.

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 environmental permits, including for its statutory environmental assessment, hazardous material permit, and mine closure plan, social license to operate remain a risk.

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. However, like all mining projects of this nature, there are certain risks to construction schedule realisation further summarised 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 approval of the Detailed Environmental Impact Assessment, regulatory approval of detailed construction drawings, 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 the COVID-19 pandemic 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 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 realised once contracts are finalised with vendors and service providers.

- **Project financing** – The proposed project delivery schedule is based on the owners 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.

1.16. RECOMMENDATIONS

1.16.1. Geology and Mineral Resource

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, along with infill drilling at Striker, Midfield, and North Midfield 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.

As drilling continues, and the project continues to progress towards the mining phase, ongoing detailed studies can continue which will allow the monitoring of the variability of gold grades. The twinning of 3-5 holes should be considered to test the short-range variation in gold grades. This twinning will further test the confidence and continuity of the narrower high-grade gold zones which are currently modeled. Plotting of fire assay vs screen metallics gold assay results should be continuously conducted. This will help to determine not only the scale of variability in gold grades but also, if applicable, at what grades the variability effect is most prevalent.

It's further recommended that Erdene insert both a higher-grade gold standard and lower grade gold standard into their data QA/QC protocols in order to better reflect the gold grades encountered at Bayan Khundii. A more suitable low gold standard of approximately 0.5 g/t Au would be beneficial, along with the insertion of the occasional higher-grade standard of approximately 50 g/t Au should also be considered.

Upon the conclusion of drilling, the 3D geological and resource model should be updated in order to incorporate this data.

1.16.2. Geotechnical

While the overall pit slope design adopted for the mining plan is suitable for the purpose of the FS, due to a lack of data from certain sectors, and as a result of the kinematic and limit equilibrium analyses of the currently available data, certain areas require further geotechnical study:

- As mining progresses, from the south (Striker) to the north (Midfield to North Midfield), exposed rock cuts will provide structural information for a continuous and on-going geotechnical appraisal. The on-going assessment of the geotechnical characteristics of the rock cut faces will facilitate immediate operational design adjustments;
- Collection of additional geotechnical data in the near surface Basalt units in the Northeast, East and Southeast sectors and the Jurassic units in the East sector;
- Also, additional geotechnical investigations will need to precede mining operations at Midfield and North Midfield to improve the understanding of the ground conditions and fine-tune the pit design as mining progresses northwards;
- Review pit face rock discontinuity structures during initial pushback and mining operations;
- Rock scaling of potentially problematic Basalt areas at slope crest; and
- Ensure no undermining if toppling instability occurs.

1.16.3. Pit Hydrology

While it may be possible to manage pit dewatering with blasting alone, some fracture sets will contribute more than others. It is recommended during the drill and blasting process, water strikes are recorded and subsequently correlated with the geological structural mapping to provide insight for sump planning.

Stability of bench slopes may be sensitive and subsequently react to pore pressure. It is recommended that piezometers be installed to assess pit slope pore pressures as they will most likely be the most significant groundwater monitoring requirement. The piezometer location and type will be guided by slope design requirements and may not be required from the outset of mining i.e. piezometer can be installed later in the mine life when/if pore pressure is an issue.

1.16.4. 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.

1.16.5. 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.

1.16.6. 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.

1.16.7. Integrated Waste Facility

The current design was based on Erdene's and ATC Williams understanding of the disposal permitting process including:

- The final design should address any further Mongolian permitting requirements in the course of detailed design;
- Additional field investigations should be performed in the IWF footprint areas, including supplementary characterization of the foundation conditions, dry cake tailings material, and potential borrow areas (i.e. at a detailed engineering level);
- Based on the above, an updated risk assessment for the IWF should be completed to confirm the final design scope and design parameters;
- A monitoring program, including piezometers, survey monuments and groundwater monitoring wells should be established as part of detailed design. The program should also include annual reviews and independent audit plans to be developed as part of the final design;
- The closure design should be reviewed, and if necessary, updated during the detailed design, taking into consideration any regulatory requirements; and
- 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 should be developed that considers the contractor equipment, earthwork quantities (including wastage) and summer/winter seasons;
    - The use of an observational approach to provide an understanding of the actual performance of the facility should be implemented during operations. The periodic review of the performance of the facility should be accomplished considering field observations to provide guidance for future operations. Operations personnel should closely monitor any 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.

1.16.8. Bore Field Hydrology and Hydrogeology

Both production and monitoring wells should be commissioned prior to any long-term use. This entails the redevelopment of the well by airlifting or pumping, or a combination of both, that will increase the effective porosity and permeability improving flow between the bore casing and surrounding host material.

Four groundwater monitoring wells should be installed prior to any production pumping to enhance the groundwater monitoring network and better understand the aquifer.

During the construction phase, stress testing (pumping), followed by analyses of drawdown using diagnostic plots, is required to further understand the aquifer and the spatial interaction of the fracture hosted aquifer systems. Staging the well testing so that the higher yielding boreholes are tested first will provide early insight into the system and facilitate pragmatic modification of the testing plan while providing water for construction.

It is anticipated that ongoing replacement of wells will be required indicatively commencing in Year 2 of the operation and informed by the stress testing described above. A detailed structural analysis to understand the structural setting and determine water bearing structures is recommended. Erdene has already made significant progress regarding this methodology (refer Okhi-Us, 2019 and 2017). However, given that the primary aquifers are structurally controlled, additional analysis will be an ongoing requirement. A detailed structural mapping assessment should be carried out prior to locating any new wells.

Due to the nature of fracture rock aquifers, in addition to ongoing monitoring, contingency plans need to be considered for development of additional wellfields and bores to ensure longevity of the water supply. Detailed structural mapping combined with geophysical methods, such as resistivity mapping, should be undertaken prior to the development of any potential wellfield to enhance the groundwater strike rate. Four prospective wellfields have been recently identified through a combination of local knowledge and international experience, all within 5 km of the processing plant.

1.16.9. 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 Roma Oil and Mining Associates Limited ("ROMA") 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 July 20, 2020; and is based on a Mineral Resource with an effective date of October 1, 2019 and includes an updated Mineral Reserve with an effective date of July 1, 2020.

Erdene is a Canada-based resource company that has operated for 18 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 ROMA, with reliance on other expert consultants (the "Authors") with Mongolian experience for the Feasibility Study (the "FS") of the Bayan Khundii Gold Project:

- Roma Group Ltd. ("ROMA"), a leading regional provider of engineering, business and asset valuations, risk advisory, corporate and M&A advisory services managed preparation of the NI 43-101 FS Technical Report as well as the hydrology-hydrogeological and geotechnical studies, cost estimation and financial modelling workstreams. ROMA is listed on the Hong Kong Stock Exchange and has significant experience leading technical studies and valuation projects for major regional and Mongolian mining and financial firms.

- Several Mongolian companies provided in-country services and support for the FS, including: Soil Trade LLC ("Soil Trade"), a geotechnical engineering firm, LOBO Erdene LLC ("LOBO"), an engineering and construction firm, Project Mining LLC ("Project Mining"), a mining engineering consulting firm; and Eco Trade LLC ("Eco Trade"), an environmental consulting firm. Erdene worked closely with local specialists to ensure compliance with Mongolian regulations.

- O2 Mining Ltd. ("O2") assisted with the FS mine design and planning (including closure) and co-lead the Front End Engineering Design ("FEED") Study for non-process infrastructure and Mongolian construction permitting workstreams. O2 is a Hong Kong-based engineering firm with significant experience in mine development in Australasia, including the commissioning and operation of three gold and coal mines in Mongolia.

- Auralia Mining Consulting ("Auralia"), were engaged to confirm final mineral reserve modelling and mine design optimization. Auralia are a Perth, Australia-based consulting firm with expertise in mine engineering and resource modelling and extensive experience with international gold projects and companies.

- 360-Global Inc. ("360-Global") carried out process plant design and engineering for the FS. 360-Global is a consulting firm with offices in the Philippines and Australia, specialized in full cycle design services and experienced with gold processing infrastructure globally.

- ATC Williams Pty Ltd, ("ATCW") completed the waste rock and dry cake tailings facility design and management and mine closure planning. ATCW is based in Melbourne, Australia and has extensive experience in waste rock and tailings transport, storage, closure and water management, including at the Oyu Tolgoi project in Mongolia.

- Blue Coast Research Ltd ("BCR") provided metallurgical testing support for the Khundii Gold Project. BCR have extensive experience with gold deposits and have carried out all of the Bayan Khundii metallurgical test work to date.

- Sustainability East Asia, Ramboll, and Eco Trade LLC delivered the Environmental and Social Impact Assessment and drafted the Mongolian Detailed Environmental Impact Assessment for the Project.

2.2. THE STUDY TEAM

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.

Name of Qualified Person ("QP")	QP Organization	Sections
Benny Cha	ROMA	1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.15.5, 1.15.7, 1.15.8, 1.16.9, 2, 3, 4, 5, 6, 7, 8, 9, 10, 19, 20 (Excl 20.5 and 20.6), 23, 24, 25.6, 25.8, 25.9, 26.11, 27
Cam Norton	Tetra Tech Inc.	1.7, 1.15.1, 1.16.1, 11, 12, 14, 25.1, 26.1
Andrew Kelly	Blue Coast Research	1.12.1, 1.15.2, 13, 25.2, 26.5
Anthony Keers	Auralia Mining Consultants	1.8, 1.9, 1.15.3, 1.15.4, 1.16.4, 15 (Excl 15.3 and 15.4), 16 (Excl 16.7 to 16.9), 25.3, 25.4, 26.4
Kevin Styles	Fugro	1.16.1, 15.3, 15.7.1, 16.8, 26.2
Mark Dillon	ATC Williams	1.11, 1.16.7, 16.7, 18.9, 20.5, 26.9
Jeff Jardine	O2 Mining	1.12.2, 1.13, 1.15.6, 1.16.6, 17, 21, 25.5, 25.7, 25.8, 26.6, 26.7
Julien Lawrence	O2 Mining	1.10, 1.16.6, 18 (Excl 18.11), 20.6, 26.7
Kenny Li	ROMA	1.14, 22, 26.12
Stan Blanks	Pando Australia	1.10, 1.16.3, 1.16.8, 5.5, 15.4, 16.9, 18.11, 20.3, 26.3, 26.10

Table 2-1 Qualified Person Responsibilities.

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 ROMA for Erdene as a FS for Public Reporting. The information, conclusions, opinions, and estimates contained herein are based on:

- Information available to ROMA 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 ROMA has 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 June 3, 2020).

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.

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 Gold District which includes the Bayan Khundii gold deposit, the Altan Nar gold-polymetallic deposit and a collection of mineral occurrences. The Bayan Khundii deposit 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 87,243 people, and an overall population density of 0.75 people per km^2. The Project is located approximately 980 km southwest of the Mongolian capital Ulaanbaatar (population 1,372,000) and 300 km south of the provincial capital, Bayankhongor City (population 30,931), 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 activity being the main industry.

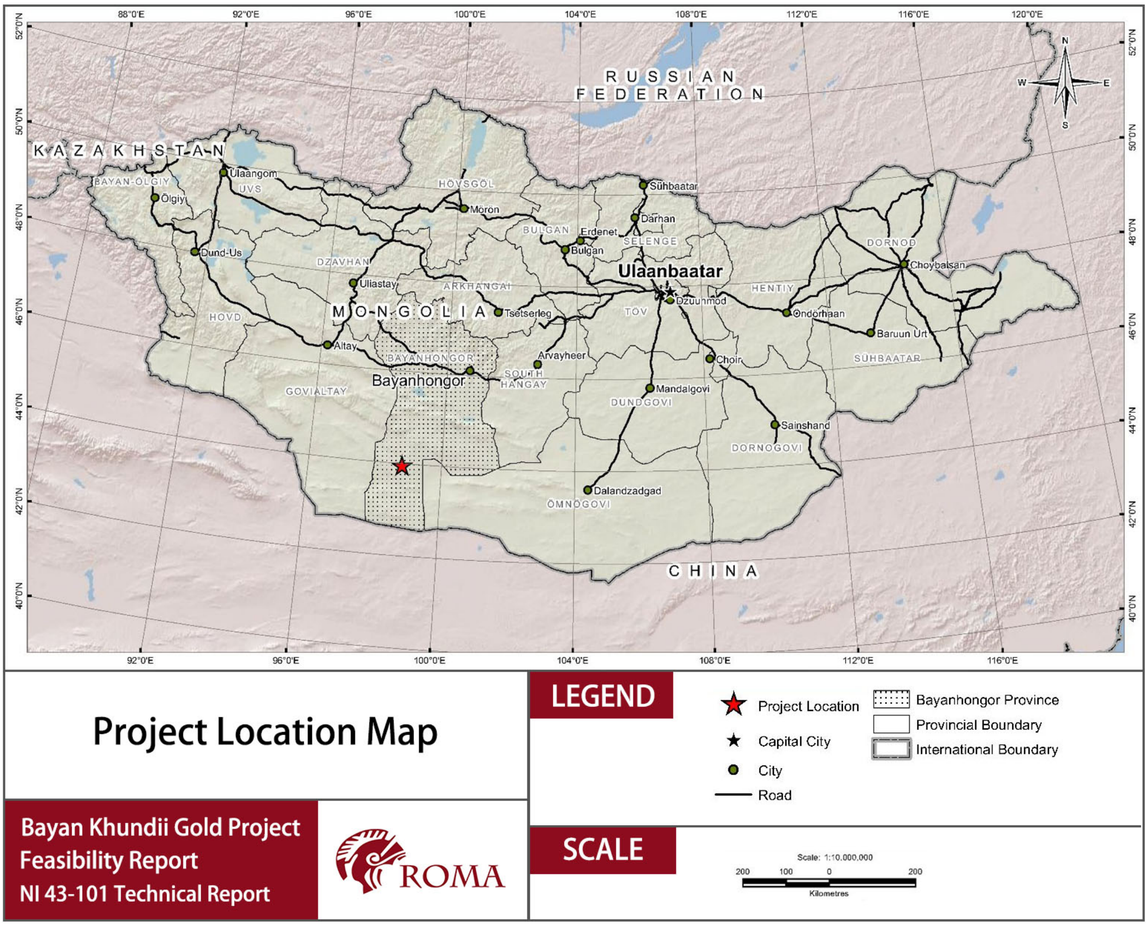


Figure 4-1 Location of the Project. (Tetra Tech, 2019a)

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 Project is a part of the Khundii Gold Project which is comprised of the Bayan Khundii gold deposit and the Altan Nar gold-polymetallic deposit. The Altan Nar deposit is not included in this Project therefore it will not be discussed in further detail in this Report. This Project, the Bayan Khundii Project, is comprised of the Khundii Exploration License (XV-015569; 2,205.71 ha) and 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 each of the two licenses along with the license particulars.

The Bayan Khundii deposit is 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 Bayan Khundii deposit, as well as the Altan Arrow, Khar Mori and Khundii North prospects. The license is valid for an initial term of 30 years, with the ability to extend to 70 years.

The original Khundii exploration license which was first acquired in April of 2010 had a maximum period of 12 years from the initial issuance. Following the conversion of a portion of the exploration license to a mining license, described above, 2,205 hectares remained as an exploration license. This Khundii exploration license continues to be owned by Erdene. The exploration license is currently in its eleventh year of issue and it can be converted into a mining license by meeting the requirements of the Minerals Law of Mongolia. The licenses are 100% held by Erdene Mongol LLC, a wholly owned subsidiary of Erdene.

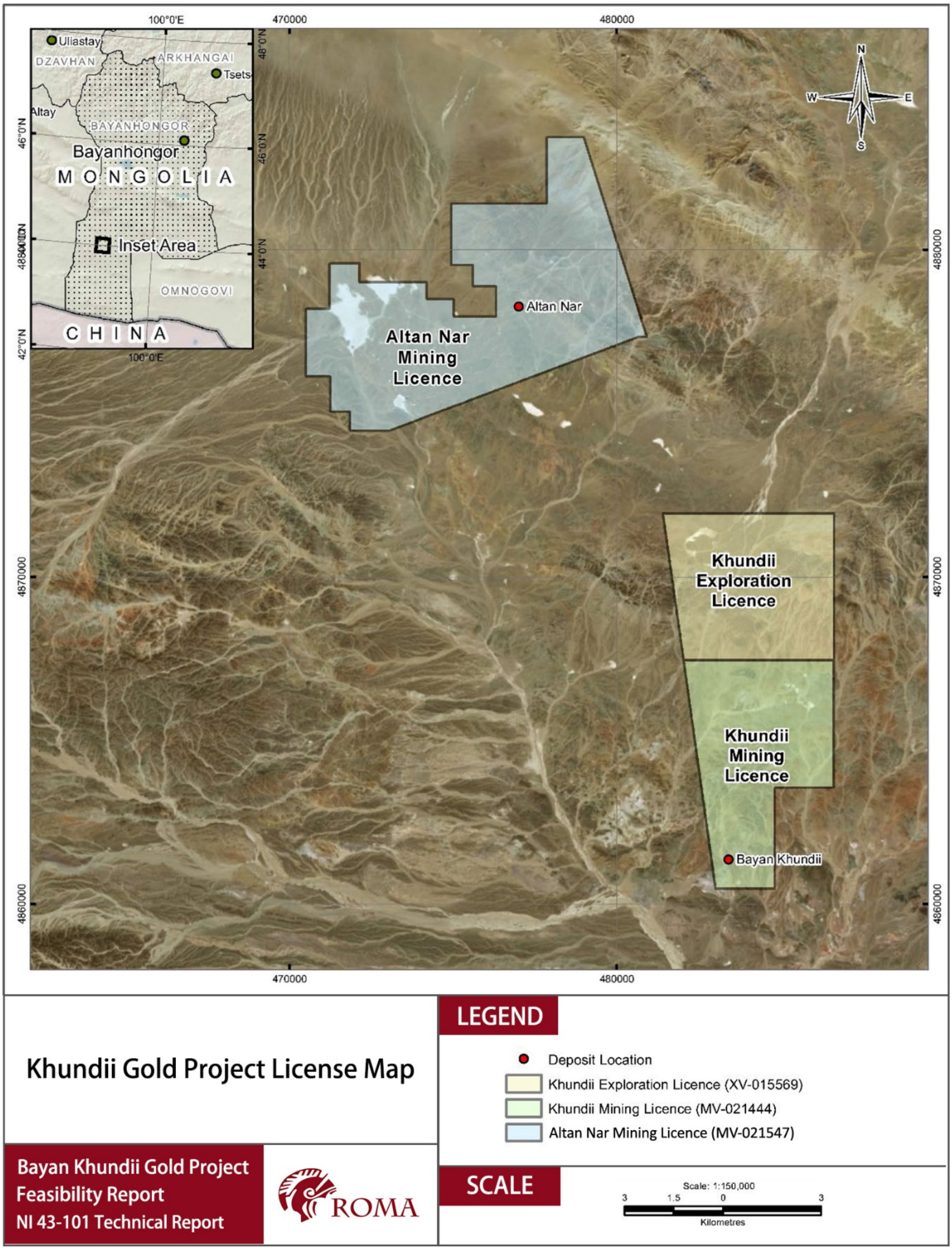


Figure 4-2 Khundii Gold Project License map

Property Name	License Number	Description	Province	Date of Issue	Easting (WGS84 Zone 47N)	Northing (WGS84 Zone 47N)	Elevation (m)	Hectares	2020 Renewal Fees	Minimum 2020 Work Requirement
Khundii	XV-015569	Exploration License	Bayankhongor	14/04/2010	484,177.6	4,869,759.8	1,295	2,205.71	US $ 3,309	US $ 45,143
Khundii	MV-021444	Mining License	Bayankhongor	05/08/2019	484,290.6	4,864,605.4	1,266	2,308.62	US $17,869	n/a

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

** Renewal fees for Mining License are in Mongolian Tugrik (“MNT”); F/X rate of 2810 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 deposit 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 and exploration license for the Year 2020 were paid on June 3, 2020.

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 1 year, renewable annually. The Water Use Permit was granted upon the Water Use Agreement by the Governor of Shinejinst Soum on May 26, 2020 with permit number A/59.

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 required for general mining production facilities and for specific uses like explosives storage and waste facility. A land use permit for mining production facilities in the mining license area was granted by the Shinejinst soum on January 8, 2020 with permit number A/18. The permit is valid for a period of 5 years and the contract is to be evaluated annually.

An area of 570,471 m^2 was granted to the integrated waste facility for a period of 5 years by the Shinejinst soum on March 30, 2020 with permit no. A/38.

The permit for permanent location of explosives and explosives equipment warehouse for the Project's operational area was granted by the Aimag Governor on February 13, 2020 with permit number A/92.

Permits associated with the environmental and social or community elements of the Project are discussed in Section 20.

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% Net Smelter Return 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 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, Shinjinst (5 hours), then another 2 hours on to site. The Project is located approximately 160 km from the Chinese-Mongolian border. The Project is located 20 km southeast of the Tsenkher Nomin exploration license and approximately 80 km southwest of Shinejinst.

In 2012-19, a temporary landing strip located 20 km to the northwest (on the Tsenkher Nomin exploration 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 Tsenkher Nomin license on a dry lakebed. A private flying service is available from Ulaanbaatar and a one-way trip to Tsenkher Nomin 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. (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 MASL. 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 MASL) 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 me much higher (exceeding 40°C). The winter season are 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 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 blizzard occurs and 28 to 30 days of dust storms per year with most of them occur in windy spring months of March to May. When wind speed reaches 6 m/s, dust and soil becomes mobile, and when it reaches 10 m/s, dust storm intensifies. 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 storm or strong wind activity which can result in sandstorms, only require 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. 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 deposit mine development, new sources of power have been considered include 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%. Wind speed is high, between 2.2 to 3 m/s (Okhi-Us, 2019), predominantly blowing from the south west (Tetra Tech, 2019a) and can invoke severe sandstorms.

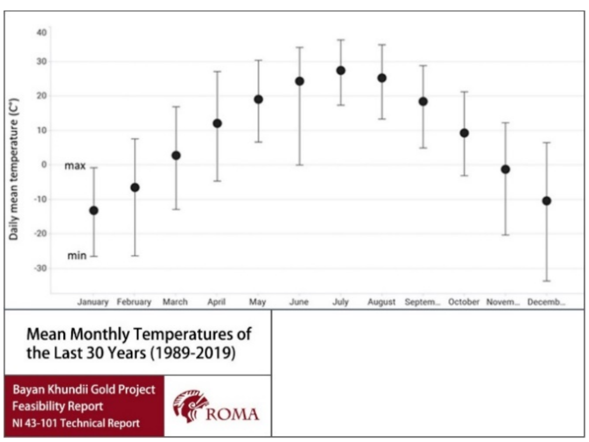


Figure 5-2 Mean Monthly Temperatures of the Last 30 Years (1989 to 2019).

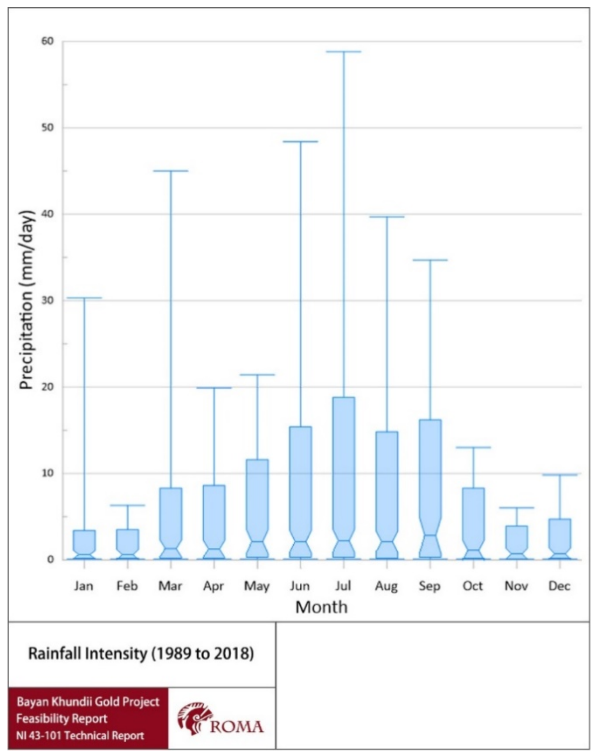


Figure 5-3 Rainfall Intensity (1989 to 2018).

The elevation of the proposed mine area is between 1220 to 1250 MASL. The Khuren Tsav and Bosgyn Sair ("KT-BS") wellfield, which will provide the necessary raw water to support the mine and processes, is located between 1 to 4 km to the south and outside the proposed mine boundary. It is within the lowest point of the Bosgot Gashuun floodplain, between 1190 to 1235 MASL. The north-eastern area of the well field comprises tributaries originating from the south of Bor Khairkhan (1729 MASL) 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 sparse and restricted to grasses, small bushes and shrubs.

Surface runoff is ephemeral and dependent on irregular rainfall. Surface runoff within the proposed pit area drains 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 Aimag has a population of approximately 84,000 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, 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 from Bayankhongor, including the sub-provinces of Shinejinst and Bayan-Undur, and Ulaanbaatar. Personnel will fly to Bayankhongor city, from which the Company will then bus in and out the workforce. Personnel from Bayankhongor and Shinejinst will access the Project by land. A modern on-site accommodation village is planned at Bayan Khundii to support the workforce, as described in Section 18.5 Accommodation Village.

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 central part of the license on a project referred to as Altan Arrow (refer 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 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 – 2018.

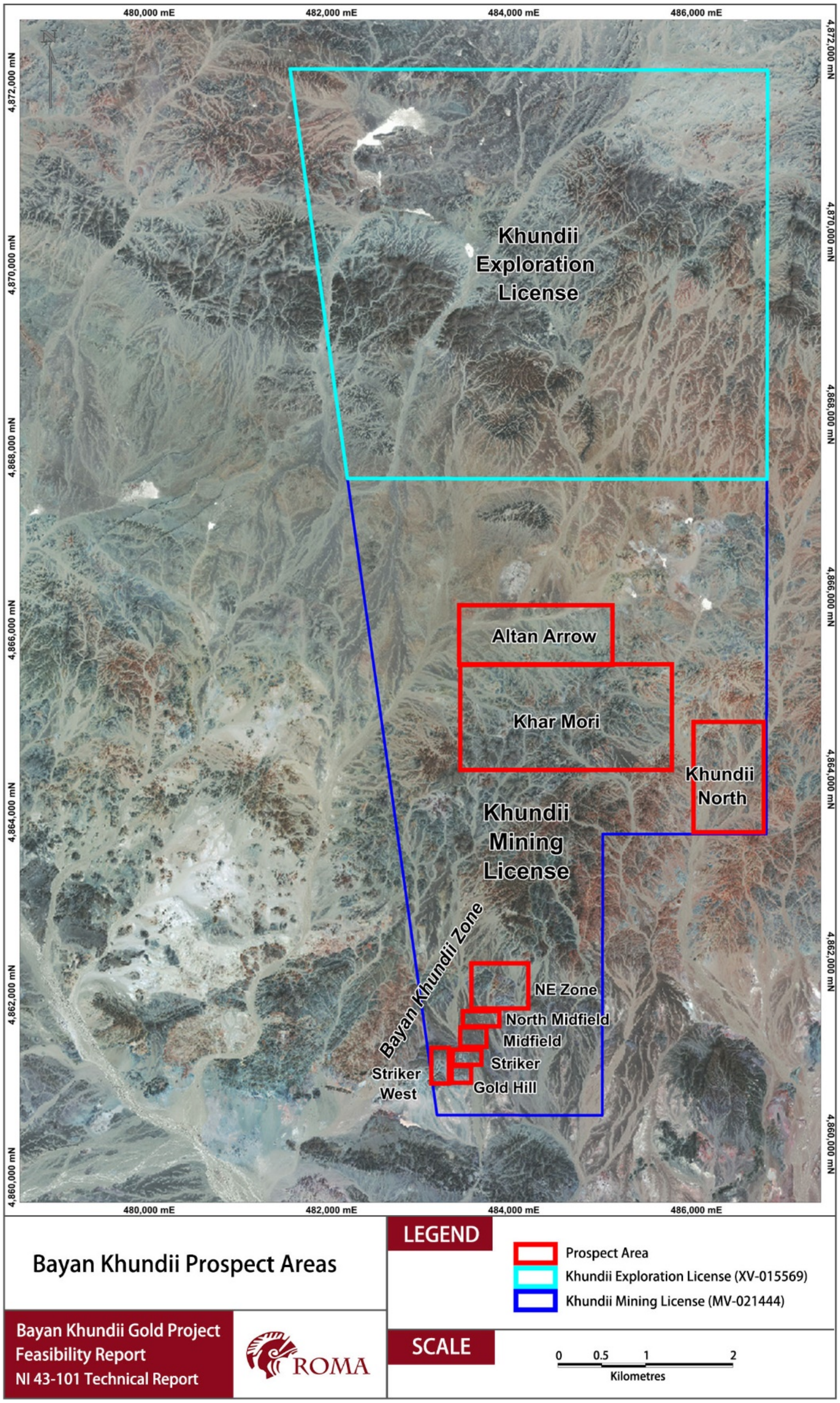


Figure 6-1 Bayan Khundii Prospect Areas.

6.2. PREVIOUS MINERAL RESOURCES

No previous Mineral Resource Estimates for Bayan Khundii have been published besides which reported by RPM for the Company dated September 2018.

6.3. HISTORICAL PRODUCTION

No historic mining has been completed on the Project area.

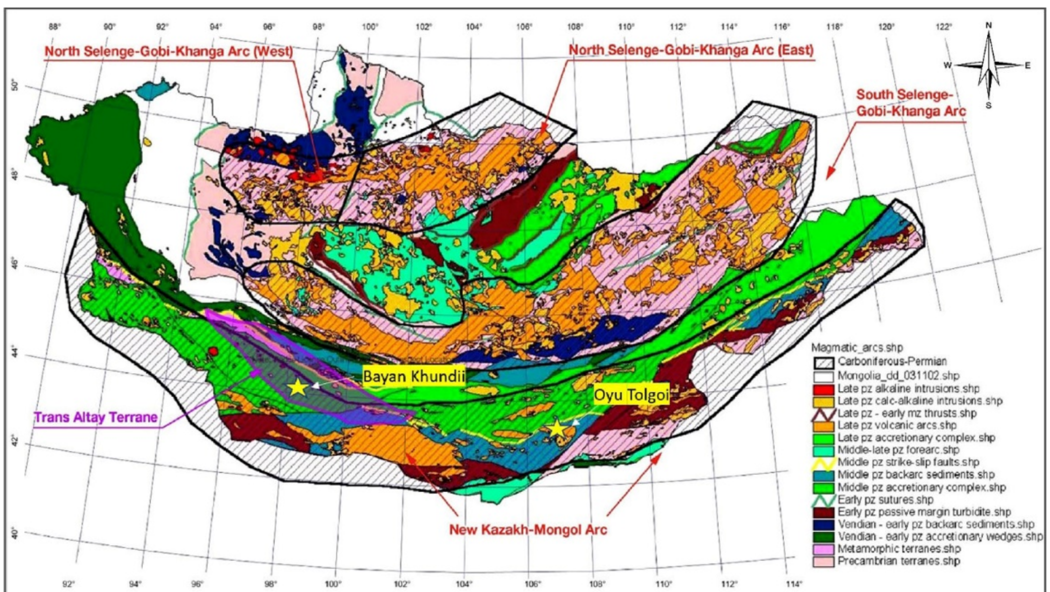
7. GEOLOGY SETTING AND MINERALIZATION

The majority of the regional geology information presented below has been summarized from Erdene's internal and disclosed technical reports on the Bayan Khundii gold project.

7.1. REGIONAL GEOLOGY

The Project is located within the Edren island arc terrane, as described by Badarch et al. (2002), which is part of the larger composite Trans Altai Terrane ("TAT") and is comprised by island arc terranes, back-arc and fore-arc basins, and ophiolite, accretionary wedges and metamorphic terranes. The TAT forms part of the western end of the large, composite, arcuate-shaped Paleozoic New Kazakh-Mongol Arc terrane ("NKMA") as described by Yakubchuk (2002). The NKMA is part of the Central Asian Orogenic Belt ("CAOB"; Windley et al., 2007) and extends along the southern margin of Mongolia, including the border region with China, and is host to the Oyu Tolgoi copper-gold porphyry mine to the east (Figure 7-1).

The TAT is located immediately south of the Main Mongolian Lineament (Badarch et al., 2002) that separates the dominantly Precambrian and Lower Paleozoic terranes to the north from the dominantly Upper Paleozoic terranes to the south.



Carboniferous-Permian Arcs of Mongolia with the Location of Trans Altai Terrain (TAT)

Bayan Khundii Gold Project
Feasibility Report
NI 43-101 Technical Report

ROMA

Figure 7-1 Carboniferous-Permian Arcs of Mongolia with location of Trans Altai Terrain.

7.1.1. Regional Tectonics and Structure

The TAT consists mostly of Middle Paleozoic volcanic, sedimentary and metasedimentary rocks that were intruded by Middle Paleozoic calc-alkaline and alkaline plutons. The TAT in the region near Erdene's license areas is comprised of three tectono-stratigraphic terranes (Figure 7-1) as defined by Badarch et al. (2002). These include:

- Zoolen Accretionary Wedge, consisting of a lowermost ophiolite sequence of mafic and ultramafic intrusive rocks that are overlain by a sequence of greenschist rocks, pillow lavas, intermediate volcanic and shallow marine sedimentary rocks. The middle stratigraphic portion of the Zoolen Wedge is dominated by intermediate volcanic rocks and rhyolite flows which are overlain by the uppermost sequence of non-marine sedimentary rocks.

- Baraan Back-arc/Fore-arc Terrane, is dominated by a lower sequence of intermediate volcanic and pyroclastic rocks with interbedded shallow marine sedimentary rocks. The upper portion of the Baraan terrane consists of non-marine sedimentary rocks.

- Edren Island Arc Terrane, which hosts the Project, consists of a lowermost minor sequence of mafic volcanic rocks that are overlain by an interbedded sequence of intermediate volcanic and pyroclastic rocks, shallow marine clastic deposits, and minor turbidite sedimentary rocks. This sequence is overlain by rhyolite and alkaline volcanic and pyroclastic rocks. The uppermost portion of the Edren terrane is dominated by non-marine sedimentary deposits.

All three tectono-stratigraphic terrains were intruded by Middle Paleozoic calc-alkaline and alkaline intrusions and were overlain by Late Paleozoic, Mesozoic and Cenozoic sedimentary rocks within a series of NW trending sedimentary basins. The geological setting of the TAT, especially the presence of Middle Paleozoic (Silurian-Devonian) island arc rocks intruded by calc-alkaline intrusions, is very similar to the geological setting for the Oyu Tolgoi mine, located approximately 670 km east of the Project and Erdene's Zuun Mod porphyry Mo-Cu deposit.

7.2. GENERAL GEOLOGY OF EASTERN TRANS ALTAI TERRAIN

The regional geology of the Project is outlined in a series of 1:200,000 scale geology maps available through the Mineral Resource and Petroleum Authority of Mongolia ("MRPAM"). The specific maps for the eastern TAT include L-47XXXII, L-47-XXXIII, L-47-XXXIV, K-47-II, K-47-III, and K-47-IV.

The oldest rocks in the eastern TAT include a series of Early Carboniferous intermediate volcanic and volcaniclastic rocks, minor felsic (rhyolite) volcanic and volcaniclastic rocks, and sedimentary units including sandstone, conglomerate and minor limestone. Bedding orientations in sedimentary and volcanic map units are predominantly northwest-trending throughout the eastern TAT, thus paralleling the overall regional scale faults and structural trends. Primary bedding orientations on MRPAM maps were interpreted from lineaments derived from air photograph interpretation, and from regional mapping.

The volcanic and sedimentary rocks were intruded by a series of Carboniferous calc-alkaline to alkaline, granitoid plutons that range in composition from granodiorite and granite, to plagiogranite and syenite, and range in texture from fine- to coarse-grained seriate to equigranular and minor pegmatite. A few small (<5 km^2) Carboniferous age gabbro intrusions in the study area and are thought to represent the most mafic endmembers of intrusive suites. Late-stage and mostly post-mineralization dykes cross-cut both granitic intrusions and volcanic-sedimentary country rocks and range in composition from microdiorite to granite, syenite and lamprophyre. Dyke orientations may be quite variable on a local scale, however, most dykes are oriented NE-SW, especially within and near larger granite intrusions, with some dykes also having north-south or east-west orientations.

There are several NW-SE trending sedimentary basins throughout the eastern TAT and elsewhere in the western NKMA. These basins were in-filled by Late Paleozoic, Mesozoic and Cenozoic aged sedimentary sequences, including Carboniferous, Permian and Jurassic aged coal bearing strata and overlying, unconsolidated, Quaternary age sediments. The origin of these sedimentary basins is generally thought to be associated with widespread extensional tectonics resulting in large graben structures during the Mesozoic Era. Basin margins cut across all Carboniferous rocks including both volcanic-sedimentary map units and granite intrusions. Previous work by Erdene in the Zarman Basin to the north of the Project, including limited drilling, geological mapping, magnetic and seismic surveys indicated the basin consists of an asymmetric wedge of Jurassic to Quaternary sedimentary rocks that thickens toward the northern basin margins, to at least 450 m depth, and interpreted as half-graben extensional structures. Based on observations elsewhere in the eastern TAT, basin thicknesses may range from 200 m to as much as 1,500 m.

7.3. GEOLOGY OF THE KHUNDII GOLD DISTRICT

In 2019, the Government of Mongolia published three reports for 1:50,000 scale mapping projects covering a portion of in the eastern TAT, including the area of the Khundii Gold District (“KGD”) (Lhundev et al, 2019). The following provides detail of the main geological units within the KGD.

Lower Carboniferous Ulziithar Formation

The KGD is mainly composed by newly distinguished Lower Carboniferous Ulziithar Formation. This formation is subdivided into 3 members: lower member - terrigenic tuffogenic (1,200 m thick), middle member – basalt-andesite (800 m thick) and upper member – andesite-dacite (1,150 m thick). The contact between members is conformable.

The Bayan Khundii gold deposit is hosted in the lower member of Ulziithar Formation; the Altan Arrow – Khar Mori prospect area is hosted in the middle member of Ulziithar Formation and in Lower Carboniferous Bayan-Airag intrusive complex: and the Altan Nar gold-base metal deposit is hosted in the upper member of Ulziithar Formation.

The Ulziithar Formation has been unconformably covered by the Lower Carboniferous Khatankhairkhan Formation, and intruded by Lower Carboniferous (344 Ma) Bayan-Airag intrusive complex. In the Huvt huren area (9.6 km to the east of the Khundii area) geochronological age of andesite from the middle member was dated as 337±7 Ma (U/Pb, Cha-Uul-50). Abundant fauna and flora have been found from the lower member of the Ulziithar Formation 39 km to the northwest of the Khundii area and have been confirmed the Lower Carbonifeous age of this member (Cha-Uul-50).

Jurassic Ovoot Ulaan Formation

Sediments of the Ovoot Ulaan Formation unconformably covered Lower Carboniferous Ulziithar Formation and granitoids of Lower Carboniferous Bayan-Airag intrusive complex. The Ovoot Ulaan Formation is 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 (306m thick) is composed by volcanogenic-tuffogenic sediments, upper member (259m thick) is composed by terrigenic-tuffogenic sediments. Due to a lack of conclusive data, the age of Ovoot Ulaan Formation remains questionable (Lower Permian or Jurassic) and for the purposes of this report the age has been assumed to be Jurassic.

Erdene drilling at Bayan Khundii shows that, in the area of the BK deposit, this formation is composed by lower terrigenic-tuffogenic sediments, including a basaltic sill, unconformably covered by flow basalt and upper terrigenic sediments.

The upper flow basalt unit has been age dated. The age of this basalt is 191.2±3 Ma (Lhundev et al., 2019). The age of the basaltic sills intruded the lower terrigenic-tuffogenic sediments is 176±28 Ma (Erdene, internal report 2019). Notably, it has been confirmed that the Ovoot Ulaan formation was formed later than BK gold mineralization, and unconformably covers the latter.

Upper Carboniferous Bayan-Airag Intrusive Complex

According to the 1:50,000 state mapping (Lhundev et al., 2019) the Upper Carboniferous Bayan-Airag Intrusive complex is composed of five different phases within the KGD:

- Phase I: medium grained biotite-hornblende monzonite, quartz monzonite, quartz monzodiorite (Ovoot Ulaan 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.

7.3.1. Age of Mineralization in the Khundii Gold District

Erdene undertook a geochronological study of lithologies and mineralization for the Khundii Gold District including samples from Bayan Khundii (tuff, syenite, adularia), Altan Nar (andesite and adularia), Altan Arrow (adularia), and Ulaan (adularia). The Ar/Ar dating was carried out at Curtin University in Australia. The flowing table summarizes the results of the study.

Sample	Method	Age (Ma)	Comment
Bayan Khundii			
BK Tuff	U/Pb	334.2±6.1	Fair result (range- 328-340 Ma)
BK Adularia	Ar/Ar	336.82±0.50	Very precise age
BK Syenite	U/Pb	310±27	Poor precision (range – 283-337 ma)
Altan Nar			
AN Andesite	U/Pb	330±10	Poor-fair result (range – 320-340 Ma)
AN Adularia	Ar/Ar	309.70±0.47	Vary precise age
Altan Arrow			
AA Adularia	Ar/Ar	325.44±0.34	Not reliable due to lack of age plateau
Ulaan			
UDH Adularia	Ar/Ar	332.6±0.52	Not reliable due to lack of age plateau
Regional Data			
Basalt	U/Pb	191.2±3	Early Jurassic – cover rocks at BK
Edren Granitoids*	U/Pb	273.8±4.2	Youngest age – most intrusions are Early Permian or Late Carboniferous
Edren Granitoids*	U/Pb	332.9±4.9 344.0±1.2	Oldest ages – only a couple samples from study plot in Early Carboniferous

Table 7-1 Khundii Gold District Geochronology.

**Data from report by Togtokh, 2013*

The Ar/Ar results for BK and AN adularia are extremely precise, with '±' values of <<1 Ma. These high quality data provide very accurate ages and relative timing for the Bayan Khundii (336.82±0.50 Ma) and Altan Nar (309.70±0.47 Ma) deposits respectively. The strongly fractured nature of the host rocks at Altan Arrow suggests protracted deformation and movement along the main Altan Arrow Fault. Argon age dating is notoriously susceptible to re-setting by structural deformation processes which may have contributed to the poor-quality analytical results.

The following are key points from the U/Pb and Ar/Ar geochronological studies:

Bayan Khundii

- Ar/Ar data for adularia provide very precise ages and the Ar/Ar age for the BK adularia (336.82±0.5 Ma) is presumed to reflect mineralization age at BK and overlaps the less precise magmatic age for the tuffs (334.2±6.1 Ma). Since it is impossible for the adularia age to predate the age of its host rocks, it is assumed that the adularia was deposited shortly after the deposition of the tuffs.
- One of the important questions regarding the geology of the Bayan Khundii deposit is whether the syenite intrusion, which intruded the host tuffs at depth, is pre- or post-mineral. As noted in Table 7-1 the adularia 'mineralizing' age (336.82±0.50 Ma) is older than the magmatic age of the syenite (310±27 Ma), therefore the syenite is considered post-mineral.

Altan Nar

- Recent geochronological data indicate a U/Pb magmatic age for the host andesites at Altan Nar of 330±10 Ma and an Ar/Ar mineralization age of 309.7±0.47 Ma for the intermediate sulphidation deposit. This circa 20 My gap indicates that mineralization at AN was not related to the magmatic event that deposited the andesites, as it is unreasonable to maintain a magmatic source for 20 My.
- Accordingly, it is likely that there is a circa 310 Ma intrusion at Altan Nar which was the source of the intermediate sulphidation mineralization. This postulated intrusion may be situated at depth, below the current level of erosion.

Regional

- Magmatic and mineralizing ages for the KGD are consistent with magmatic and mineralizing ages within the prolific Tien Shan belt to the west, and some deposits within the Gurvansaikhan island arc terrane to the east (e.g. Kharmagtai, 324±4 Ma);

7.4. GEOLOGY OF THE KHUNDII LICENSE

Generally, the bedrock geology of the Khundii license area (refer Figure 7-2) is dominated by a sequence of the Lower 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 Upper Carboniferous Bayan-Airag Intrusive Complex, and together these rocks were unconformably overlain by Jurassic Ovoot Ulaan Formation volcanic and sedimentary units. All rocks in the region are overlain by unconsolidated sediments of Quaternary or Recent age.

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. A unit of block and ash tuff is the dominant lithology in the west-central part of the license area. Pyroclastic rocks that are host to and restricted to the immediate area surrounding the Bayan Khundii mineralization are part of the lower member of the Ulziithar Formation.

Upper Carboniferous Bayan-Airag intrusive complex units intrude both the Carboniferous volcanic and pyroclastic units and have a wide range in composition from least-evolved medium and coarse-grained diorite, monzodiorite, monzonite and granodiorite, to the most evolved phases of fine-grained granite, granite porphyry, syenite and quartz syenite.

Jurassic volcanic and upper terrigenic sediments of the Ovoot Ulaan Formation, are present in the southern part of the license area and includes basalt (commonly amygdaloidal) units. In addition, the lower Ovoot Ulaan Formation terrigenic-tuffogenic sediments, consisting of a basal conglomerate and overlying red to red and white mottled sandstone and siltstone, has been mapped in the southern part of the license area. Jurassic lithologies unconformably overly the older Ulziithar and Bayan-Airag Carboniferous lithologies.

Unconsolidated Quaternary to Recent sediments is present throughout the license area with a large area of colluvial-dominated sediments in the central part of the license north of the Bayan Khundii area. Alluvial sediment-filled stream channels are present throughout the license area and overlie all aforementioned Carboniferous, Jurassic and Quaternary rocks and sediments. These 'stream' channels are mostly dry, however, flash flooding associated with episodic storm events have recently been observed to deposit additional alluvial sediments.

Several northeast-, northwest- and east-west trending faults were inferred in the license area and these cross-cut, or form contacts of, Carboniferous intrusive and volcanic map units. Faults do not appear to offset Quaternary or Recent sediment deposits; however, some inferred faults form the contacts with older Carboniferous or Jurassic lithologies. A detailed structural study at Bayan Khundii and surrounding areas puts these faults into a regional context and are interpreted to represent arc-parallel and arc-normal faults, including northeast-trending extensional faults interpreted as associated with the low sulphidation gold mineralization (see Section 8.2 Structure for additional details).

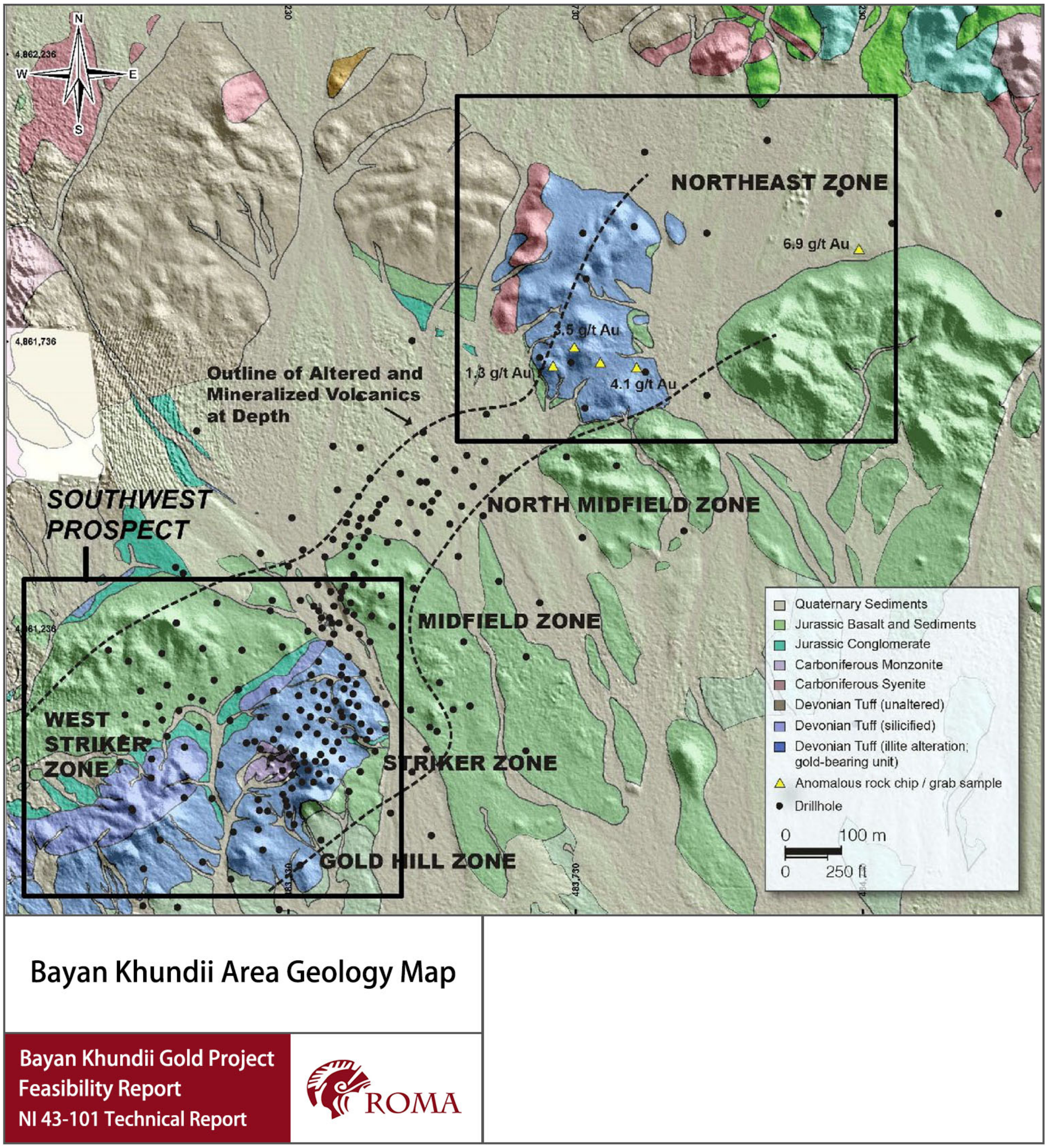


Figure 7-2 Bayan Khundii Area Geology Map. (Tetra Tech, 2019a)

7.4.1. 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. The geology map for the Bayan Khundii project area is shown in Figure 7-2. The following descriptions of the main geological units at Bayan Khundii are described in an interpreted sequence from oldest to youngest.

Lower Carboniferous Ulziithar Formation Altered Pyroclastic Rocks

The oldest rocks at Bayan Khundii, and the host rocks for gold mineralization, include a sequence of intensely silicified and illite-altered pyroclastic rocks of the lower Ulziithar Formation. 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 rocks are exposed over limited areas within the Southwest and Northeast prospect areas, however, geophysical data and drilling in 2016 and 2017 indicates these altered rocks extend beneath adjacent Jurassic cover over an approximately 1.5 x 0.4 km area, Figure 7-3.

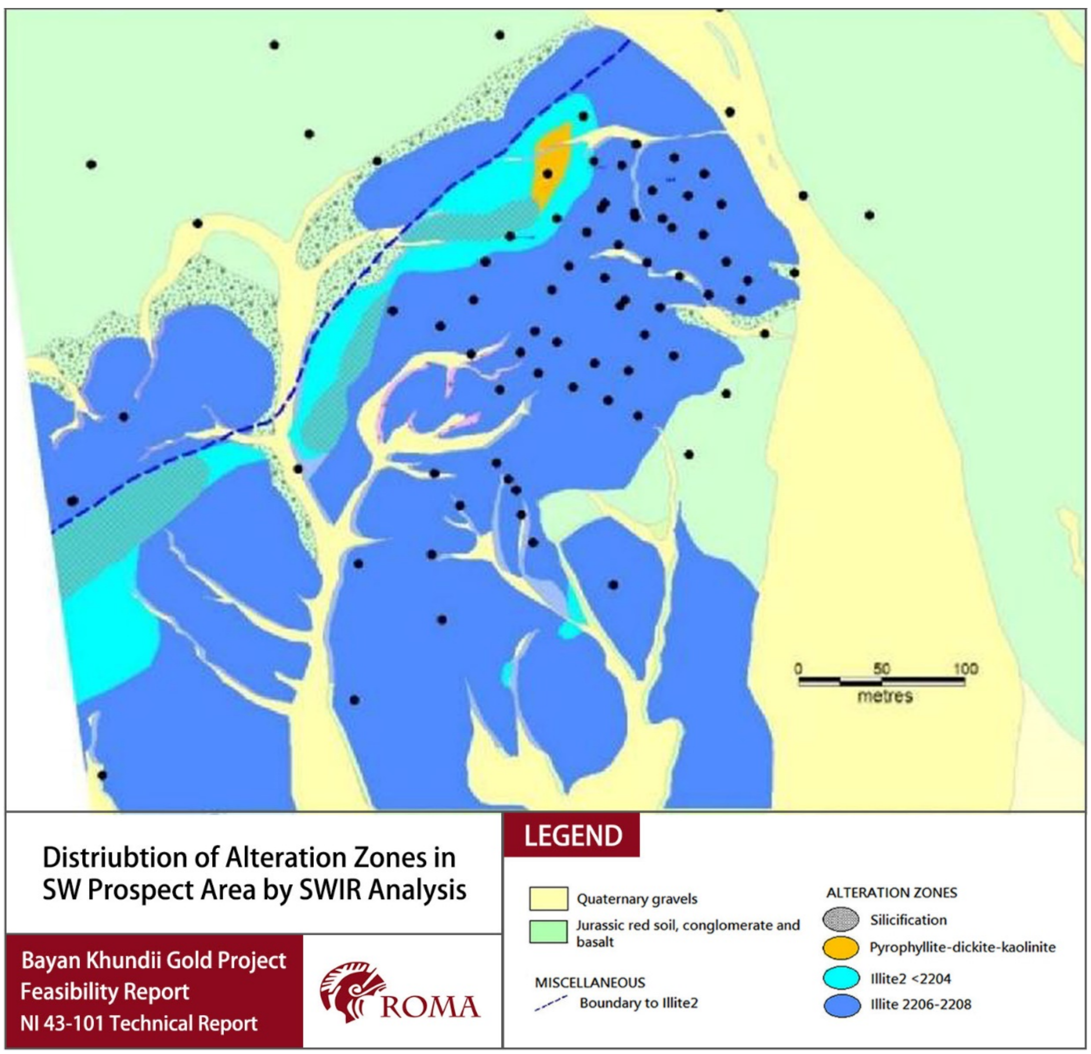


Figure 7-3 Distribution of alteration zones in SW prospect area by short-wave infrared ("SWIR") analysis. *Note: the gentle NW dip to the mineralized zones.*

The 1:50 K scale government geological map that covers the Khundii license (Lhundev et al., 2019) outlines a large area of Lower Carboniferous Ulziithar Formation units to the south and west of the Khundii license includes terrigenic tuffogenic units (lower member), basalt-andesite units (middle member) and andesite-dacite units (upper member). The Bayan Khundii deposit is hosted in the tuffaceous units of the lower member of the Ulziithar Formation.

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 Southwest Prospect 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.

The rocks underlying the Striker and Gold Hill Zones (Figure 7-3) 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 7-5). Lapilli tuffs have minor interbedded massive to finely-laminated ash tuff layers (Figure 7-2). 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).

Several siliceous zones were observed in Figure 7-2, including a zone at Gold Hill (approximately 75 m x 125 m), where they form prominent topographic high features (Figure 7-4). 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 (see discussion of alteration below in Section 8.2). 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.

Figure 7-4 Panorama of Bayan Khundii Project Area, Looking NE from West ridge. (Erdene, 2018)

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 7-4. 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.

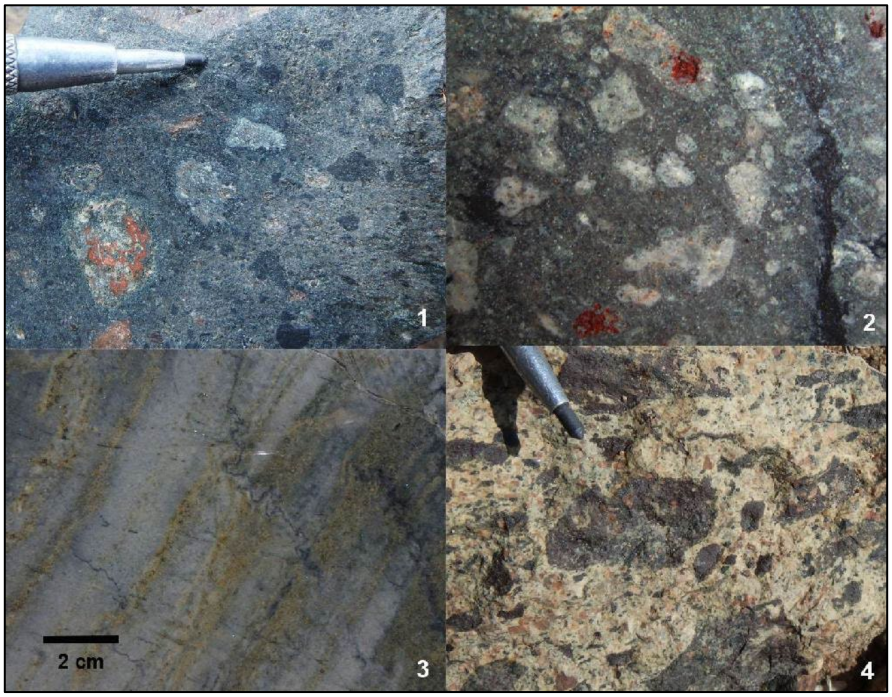


Figure 7-5 Photographs of pyroclastic rocks. (Erdene, 2018)

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.*

Intrusive Rocks

It is assumed that all intrusive units form part of the Upper 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 7-4). 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 7-6, which is interpreted as a widespread post-mineralization intrusion. The NE-trending syenite intrusion that cross-cuts the Northeast Zone (Figure 7-2) 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.

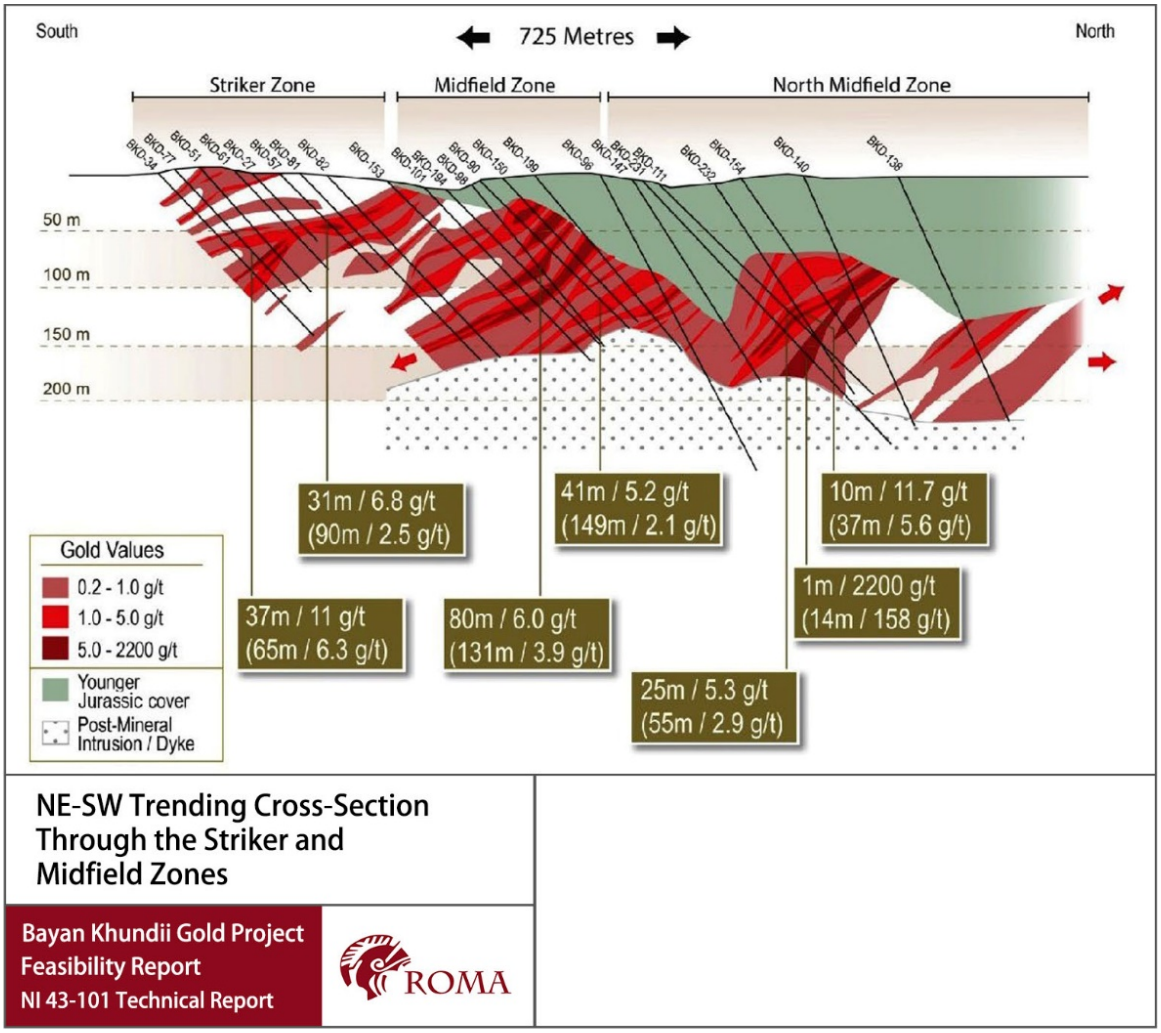


Figure 7-6 NE-SW trending cross-section through the Striker and Midfield zones. (RPM, 2018)

Notes: the consistent moderate SW dip to the parallel mineralized zones. Overlying Jurassic cover rocks are indicated in green color and post-mineralization syenite intrusion is indicated by stippled pattern.

Jurassic Rocks

Sediments of the Jurassic Ovoot Ulaan Formation unconformably covered Lower Carboniferous Ulziithar Formation and granitoids of Lower Carboniferous Bayan-Airag intrusive complex. The Ovoot Ulaan Formation is 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.

7.4.2. Mineralization Styles

Mineralization at Bayan Khundii 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, Figure 8-4.

No gold ±silver mineralized veins or breccias have been noted in the unconformably overlying Jurassic sedimentary rocks or basalt, indicating these rocks represent an unmineralized cover sequence. Some gold ±silver enrichment has been noted in basal conglomerate containing angular, altered, and possibly mineralized Lower Carboniferous Ulziithar Formation tuff clasts, near the unconformity.

Gold mineralization at surface is present in three separate areas over a 1.7 km NE trend. These include the SW Prospect area (550 m x 300 m), the NE Prospect area (300 m x 300 m), located approximately 0.7 km to the northeast, and the NE Extension located an additional 500 m to the northeast. Most of the exploration work to date, and all of the Bayan Khundii mineral resource, lies within the SW Prospect area which includes the Gold Hill, Striker, Midfield and North Midfield zones. The NE, and NE Extension Prospect areas have undergone limited exploration drilling with anomalous gold mineralization intersected in a number of drill holes. The remainder of observations in this section are based on mapping, trenching and drilling within the Gold Hill, Striker, Midfield and North Midfield zones.

Visible Gold

Visible gold ("VG") was noted in 31% of the holes drilled from 2015 to 2017 at Bayan Khundii (N=73), Figure 7-7. It should be noted that visible gold is not always a good indicator of gold grade as numerous samples have returned moderate to high gold values for samples where no visible gold was noted during logging. Visible gold was observed in several modes of occurrence, including:

- In quartz veins with a range of textures, Figure 7-8, including:
    - Whitish-grey comb-textured quartz veins (mostly <1-2 cm wide), commonly with hematite ±specularite and/or open space in vein centers. Within these veins gold is present: 1) along prismatic quartz grain boundaries; 2) within the vein centers ±hematite/specularite; and 3) along vein margins at contact with host tuffs;
    - Multi-stage composite quartz-chalcedony-adularia ±hematite veins, commonly with a mottled-texture (mostly <1-10 cm wide) with sub-round 'clasts' or fragments of milky light grey-buff quartz-adularia or dark-colored chalcedony, some having very abundant disseminated gold, commonly rimmed by euhedral adularia crystals;
    - Multi-stage quartz-adularia-chalcedony veins with bladed calcite, now pseudomorphed by quartz (i.e. boiling textures) and medium-dark grey gold-rich vein margins; and
    - Large composite veins (up to ≥1 m wide) composed of the three types of vein described above and commonly with evidence of brecciation with hematite matrix;

- In quartz-hematite breccias (from approximately 5 to 40 cm wide) that contain sub-angular to sub-rounded fragments of quartz or tuffaceous rocks in a hematite ±specularite matrix (Figure 7-8);
- Along late angular fractures, micro-fractures and joints, commonly associated with hypogene hematite and/or specularite; and
- As very fine grained disseminations in host tuffaceous rocks, frequently associated with hematite partially or totally replacing early-stage pyrite.

Figure 7-7 Visible gold in Bayan Khundii quartz veins, circled in red. (Tetra Tech, 2019a)

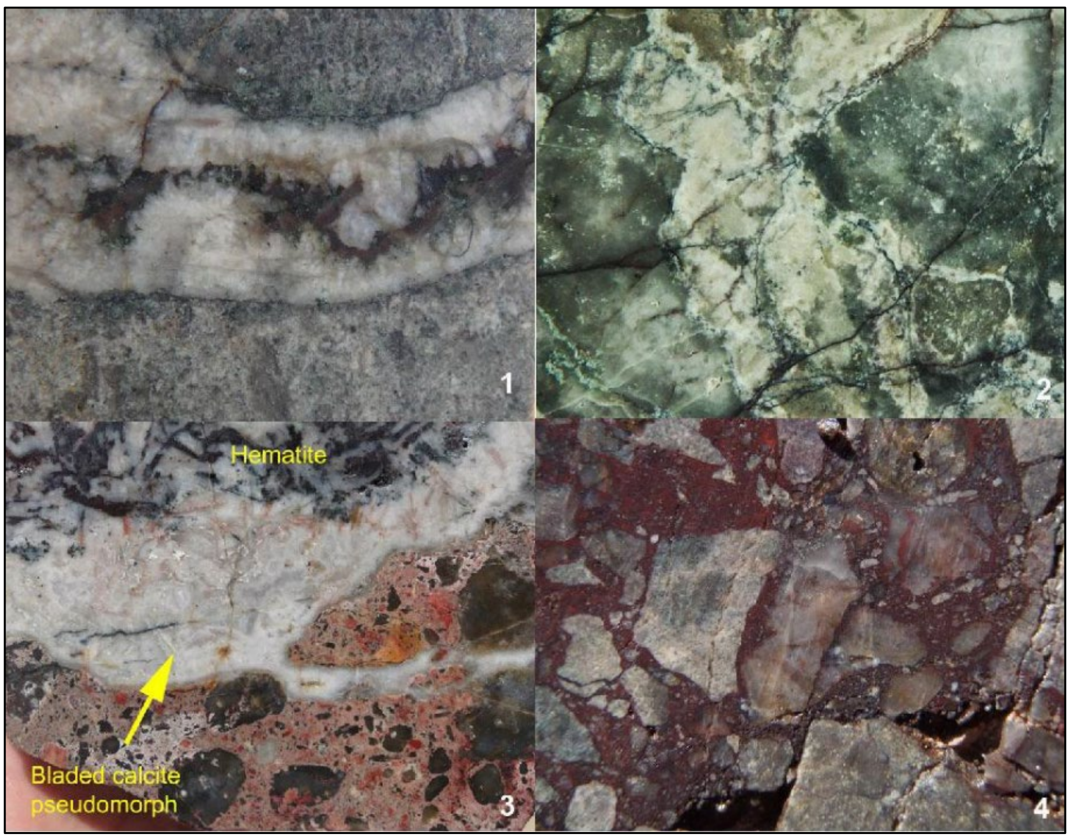


Figure 7-8 Photographs of gold-bearing veins and breccias. (Erdene, 2018)

Notes:

1. *Comb-textured quartz-hematite/specularite vein from BKD-02;*
2. *Composite multi-stage quartz-chalcedony-adularia vein from BKD-01;*
3. *Composite quartz-adularia-chalcedony vein from outcrop with bladed calcite (i.e. 'boiling') textures, now pseudomorphed by quartz; and*
4. *Hematite-specularite-quartz breccia from BKD-60.*

Quartz Veins and Breccia Zones

Quartz veins and hematite and/or quartz breccias were observed to have variable orientations and commonly form irregular networks of quartz and hematite veins and breccias within SE-NW and E-W trending, SW-dipping, structures. Individual quartz veins, commonly with comb-textures, were observed to vary in width from <1 mm to 2-3 cm over 10 to 30 cm along individual veins. Some quartz veins were noted to form bifurcating veins sets, whereas other veins were noted to form along parallel fractures with common 'jump over' structures. The vein orientations are thought to reflect the orientation of pre-existing fractures, with comb-textured veins possibly representing open-space infillings of structurally-controlled void spaces within a main relay ramp extensional structure as noted in Section 8.2 below. 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.

Several large composite quartz veins (≤2 m wide) were noted to include comb-textured quartz ±adularia, brecciated and mottled-textured massive quartz, and minor chalcedony with hematite ±specularite veins and veinlets and, in a few veins, hematite breccias. These large composite veins are interpreted as forming from multiple pulses of silica and Fe-oxide rich auriferous fluids. The two largest multi-stage auriferous quartz-adularia-chalcedony veins were intersected in drill holes BKD-98 and BKD-99 (2.0 m and 1.7 m wide respectively). These two drill holes were drilled near the intersection of a major NW-trending fault and the NE-trending faults interpreted as forming extensional structures within a relay ramp as described in Section 8 below.

An irregular-shaped, sinuous, SE-trending hydrothermal quartz breccia was mapped for approximately 125 m through the Striker Zone. Other quartz-breccia zones throughout the Southwest Prospect area, are interpreted to be linear-shaped, however, surface exposure is somewhat limited and these breccia zones may prove to be irregular-shaped as more mapping and drilling information is acquired.

Some tourmaline breccias and tourmaline alteration zones to the west of the Striker Zone contain brecciated fragments of quartz veins and also comb-textured quartz overgrowths on tourmalinized fragments, suggesting a complex inter-relationship between quartz veining and tourmaline alteration events. The relationship between gold mineralization and tourmaline is unclear, however, most tourmaline was observed to the west of the Striker Zone where limited gold mineralization has been encountered to date and there is only rare to trace tourmaline in the Striker and Midfield zones, suggesting these features may be from separate events.

7.4.3. Alteration

Perhaps one of the most striking features of Bayan Khundii is the intense alteration that overprints all Lower Carboniferous Ulziithar Formation tuffaceous rocks at Bayan Khundii, including the outcropping Southwest and Northeast Prospects that is evident on high resolution satellite images (e.g. GeoEye). This alteration is in sharp contrast to the relatively unaltered unconformably overlying Jurassic sedimentary rocks and basalt. In many locations at Bayan Khundii it is difficult to identify the protolith, as virtually all primary minerals have been variably replaced by quartz and illite.

Alteration at Bayan Khundii can be grouped into two main events, based on observed textures and mineralogical studies. These include:

- An early high-temperature alteration event that formed poorly-developed vuggy quartz lithocaps and underlying well-developed gusano (i.e. 'wormy') replacement textures and small isolated zones of advanced argillic alteration (pyrophyllite-dickite-kaolinite) in the vicinity of the Striker Zone. Widespread chlorite-pyrite-magnetite-K-feldspar-biotite alteration that is easily recognized outside the illite alteration zone is considered to have formed during this early alteration event. Fluid inclusion results have identified a hypersaline population of inclusions that may be associated with this early alteration event, possibly associated with a porphyry intrusion at depth.

- A later, lower temperature pervasive illite-quartz alteration event that is interpreted as part of the low-sulphidation epithermal mineralization at Bayan Khundii. There is a second population of lower temperature aqueous fluid inclusions that are interpreted as forming during this alteration/mineralizing event. There is no chlorite, pyrite, or magnetite, or obvious K-feldspar, within the illite alteration zone, although there is some 'retrograded' alkali feldspar that was identified in thin section.

The chlorite ±pyrite ±magnetite ±K-feldspar ±biotite alteration assemblage that surrounds the mineralized and illite altered zones at Bayan Khundii are thought to represent a widespread propylitic alteration that may have formed either during the early intrusion-related alteration, or perhaps as a distal alteration assemblage related to the deposition of the low-sulphidation gold mineralization and associated illite alteration.

7.4.4. Sulphide Minerals

The majority of the Southwest Prospect area at Bayan Khundii is either devoid or contains only trace modal amounts of sulphide minerals, including pyrite, sphalerite, galena and chalcopyrite. Most drill holes at Bayan Khundii, especially within the intensely illite-altered areas within the Gold Hill-Striker-Midfield-North Midfield zones, contain only trace to minor amounts of disseminated pyrite. Some zones were noted to contain 12% pyrite, however, pyrite-bearing zones have low gold concentrations and a general antithetic relationship between pyrite and gold concentration was noted in the holes drilled to date. This relationship is interpreted as reflecting the replacement of pyrite by hematite as part of the low-sulphidation gold mineralizing event.

Petrographic work has identified relict disseminated pyrite that has been mostly replaced by hypogene hematite/specularite and has associated visible gold. This relict pyrite may have been associated with the early high-temperature alteration or perhaps it may have formed during an early stage of the low-sulphidation gold event that was then overprinted and replaced by iron oxides during late stages of the low-sulphidation alteration/mineralization event.

As noted in Section 9.5 Induced Polarization (“IP”) Surveys, there are several IP chargeability anomalies at Bayan Khundii that may reflect the presence of disseminated specularite, as noted in some zones intersected in drilling to date, or conversely could be caused by sulphide rich rocks below the current erosional level at Bayan Khundii.

7.4.5. Iron Oxide Minerals

Hematite, often 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 fracture/vein infilling, commonly within very sharp-sided angular fractures or veins that may contain wallrock fragments;
- As central vein infilling and vein margins in comb-textured quartz veins;
- As matrix in quartz-hematite breccias, commonly with angular fragments of illite-quartz altered wallrock;
- As rare round disseminations that are interpreted as pseudomorphic replacement of early pyrite; and
- Alteration selvages along the margins of fine grained dark grey quartz or chalcedony veins.

In drill hole BKD-01 there are several narrow specularite veinlets (<1-2 mm wide) with wide medium grey alteration selvages (≤2 cm) consisting of intense silicification and 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 gold in some hematite veinlets establishes a genetic relationship between the gold and hematite-forming fluids. Accordingly, hematite is considered to be associated with the intense silica-illite alteration and deposition of low-sulphidation gold mineralization. The presence of hematite (and minor specularite) indicates oxidizing conditions and suggests the mineralizing fluids at Bayan Khundii may have interacted with oxygenated surface (i.e. meteoric) waters.

8. DEPOSIT TYPE

The Interpretation of Bayan Khundii favors a low-sulphidation epithermal deposit hosted within a corridor of en-echelon extensional faults.

8.1. 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.

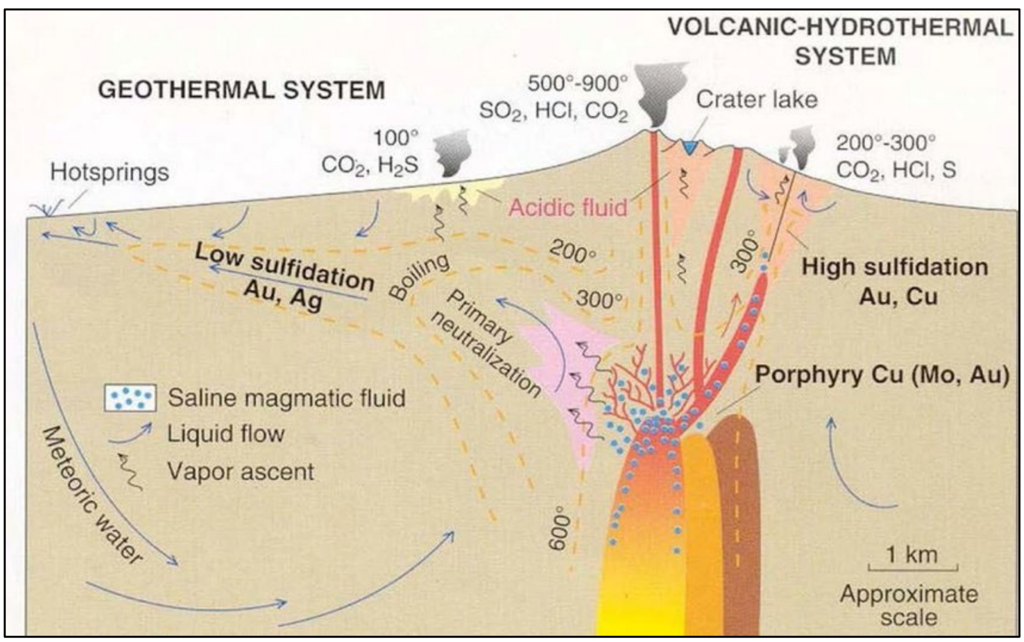


Figure 8-1 Low and High Sulphidation Epithermal Model.

In the case of a low sulphidation deposit, reduced, near neutral pH fluids are formed from the interaction of from 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. As a result, these textures can act as import vectors for optimizing exploration targets and locating the boiling zone of an epithermal system. Some primary textures associated with epithermal deposits are as follows:

- Chalcedonic texture: cryptocrystalline quartz with a waxy luster indicates a low temperature silica (1,200°C-2,000°C and suggests a depth of formation above the depth of mineralization;
- Saccharoidal texture: vitreous to milky massive granular aggregate the appearance of sugar in hand samples;
- Comb texture: group of euhedral to sub-euhedral crystals resembling the teeth of a comb;
- Colloform texture: rhythmic bands with kidney-like surface of chalcedonic silica grains with reniform habit; and
- Crustiform texture: successive bands oriented parallel to vein walls and defined by differences in mineralogy or color.

The textures described above are visually presented in Figure 8-2 below.

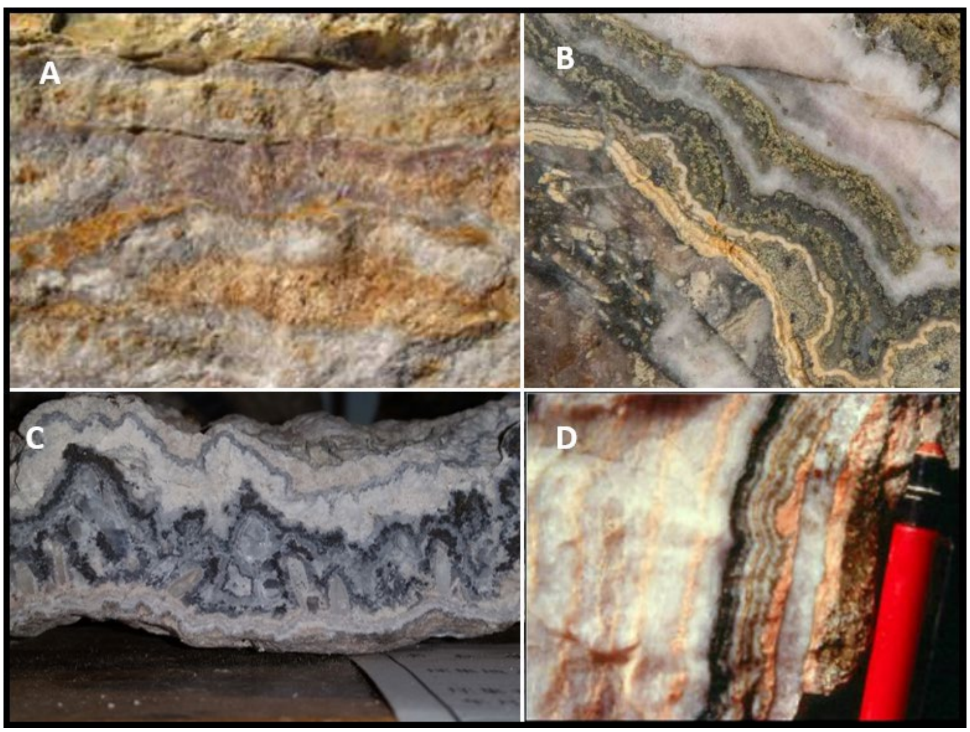


Figure 8-2 Typical epithermal textures.

Notes:

A. Crustiform and Colloform banded saccharoidal quartz.
B. Colloform texture showing bands of quartz, sphalerite, galena, ankerite and chalcopyrite.
C. Comb Texture.
D. Chalcedony with bands of Adularia (pink)

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.

Pre-epithermal alteration is present, including chlorite, potassium feldspar, biotite and granular quartz with hypersaline inclusions. This alteration assemblage was followed by tourmaline and magnetite along with a muscovite alteration overprint and structurally-controlled advanced argillic alteration and residual quartz alteration. This high-temperature alteration, characteristic of intrusion-centered systems at depths >1 km, was uplifted, eroded and potentially tilted prior to initiation of the subsequent low-sulphidation epithermal system, including the formation of low-temperature illite-quartz alteration and deposition of quartz cement in brecciated structures along with adularia and gold (electrum). The general absence of smectite at Bayan Khundii suggests erosion to at least 150 m depth below the paleo-groundwater table.

8.2. STRUCTURAL RELATIONSHIP

The shape of the final orebody is largely dictated by the structural regime present in the vicinity of the geothermal system. The structures present provide a pathway and traps for the fluids, mineralization and gangue minerals. In Q3-Q4 2017 Dr. Armelle Kloppenberg, 4DGeo, was engaged to complete a comprehensive structural analysis of Bayan Khundii and the surrounding region including the area around Erdene's Altan Nar deposit. The following are highlights from this structural analysis:

- **Overall Structural Model**: Consists of a series of tilted, extensional, domino-style fault blocks with NE-trending, SE-verging extensional faults:
  - The main NNE-trending mineralized Striker-Midfield-North Midfield zone is interpreted as a 'relay ramp' (Fossen and Rotevatn, 2016) whereby stress is transferred from the ends ('tip points') of adjacent NE-trending, SE-verging extensional faults via a series of parallel structures (Figure 8-4);
  - The formation of the parallel structures within the relay ramp is thought to explain the SSE-trending, SW dipping 'stacked vein zones' at Bayan Khundii;
  - The limited post-Jurassic tilting observed in the volcanic and sedimentary units (approximately 10-25° SW) also modified the dip of the epithermal veins, currently approximately 45°; and
  - The proposed model of NE-trending /SE-dipping extensional faults and 'domino-style' fault blocks at the Project can be used to explain the abrupt changes in alteration and geochemistry observed between Striker West and Striker-Midfield zones (e.g. white mica/illite alteration intensity, K_2O concentration), with successive blocks to the southeast representing down-faulted blocks.

- **NW-trending Structure between Striker and Midfield zones**: A major NW-trending fault through the NE end of the Striker Zone is interpreted to have formed over a basement structure with individual N-trending en-echelon faults at surface that are interpreted to coalesce at depth. The en-echelon style structure (Figure 8-3) which form perpendicular to the major stress orientation hosted the mineralization and fluids. The structural report proposes that the Midfield block was down-faulted with respect to the Striker Zone along this fault.

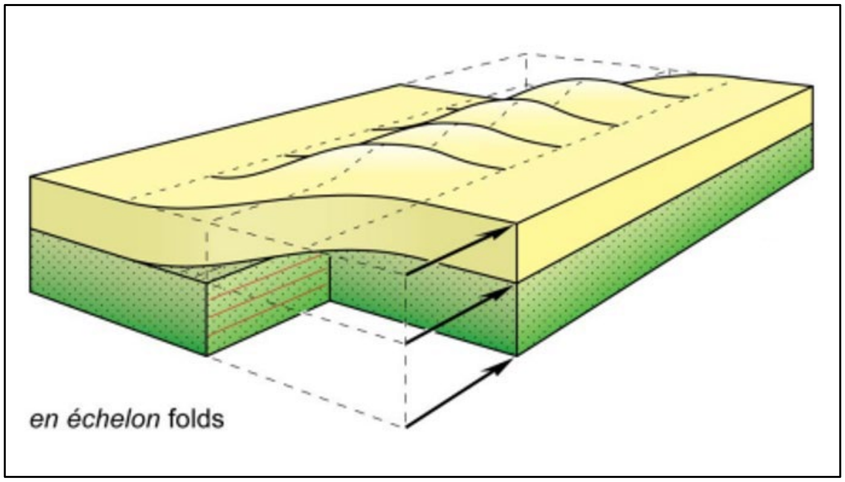


Figure 8-3 En-echelon Style Folds Typical of the Bayan Khundii Deposit.

- **Fault Timing**: Many of the faults at the Project are thought to have been active in Lower Carboniferous and were reactivated such that they displaced Jurassic sedimentary and volcanic units. The report suggests that the NE-trending faults were the earliest faults and NW-trending faults are younger and have off-set the earlier NE faults. The report also suggests that Jurassic units may have in-filled fault-bounded paleo-valleys.

- **Under-represented Veins**: The report notes that there is a NE-trending/SE-dipping vein set (dip= Az. 120°/50°; strike=030°) that is sub-parallel to the predominant azimuth of Erdene's drilling to date and is therefore an under-represented vein set. Erdene drilled several holes in the 2018 drill program to test the abundance of these veins. Results from this work indicated only a few NE-trending veins, thus indicating that these veins orientations were not under-represented in previous drilling.

- **NE Extensional Faults**: The report suggested that the NE-trending, SE-verging extensional faults that bound the Striker-Midfield zones may have been active during the mineralizing event and may host auriferous veins. A hole was drilled during the Q4 2017 program to test this hypothesis, although no evidence for mineralized veins in NE faults were observed.

- **Meter-scale Veins in Midfield**: The multiple meter-scale veins in Midfield (e.g. in drill holes BKD-98, BKD-99) are interpreted as forming at the intersection of the NE-trending / SE-verging and NW-trending / NE-verging extensional faults and are thought to represent zones of dilatancy, possibly representing 'feeder zones'. As noted above, drilling in Q2 2018 was successful in testing of the feeder zone concept at the intersection of a deep-seated northwest-trending fault and the interpreted relay ramp structure in the Midfield Zone, and returned an average of 34.4 g/t Au over 7 m (BKD-244) from the widest zone of gold bearing quartz-adularia veins intersected to date at Bayan Khundii.

- **Bedding Orientation**: Data from outcrop and oriented core measurements indicate that bedding in Striker and peripheral areas of the Project have NE strike and NW dips whereas the lithologies in the NE and Midfield zones have NW-trending / SW-dipping orientations. The report suggests that these SW dips may reflect deposition in active (re-activated) half grabens and do not represent a widespread (i.e. terrane-wide) tilting event.

- **Jurassic**: Flood basalt flows were interpreted as being deposited in fault-bounded paleo-valleys. The NW-trending valley fill shows tilting of the basalts, indicating reactivation of extensional faults (i.e. to form half-grabens). These Jurassic faults have offset the Bayan Khundii mineralized system.

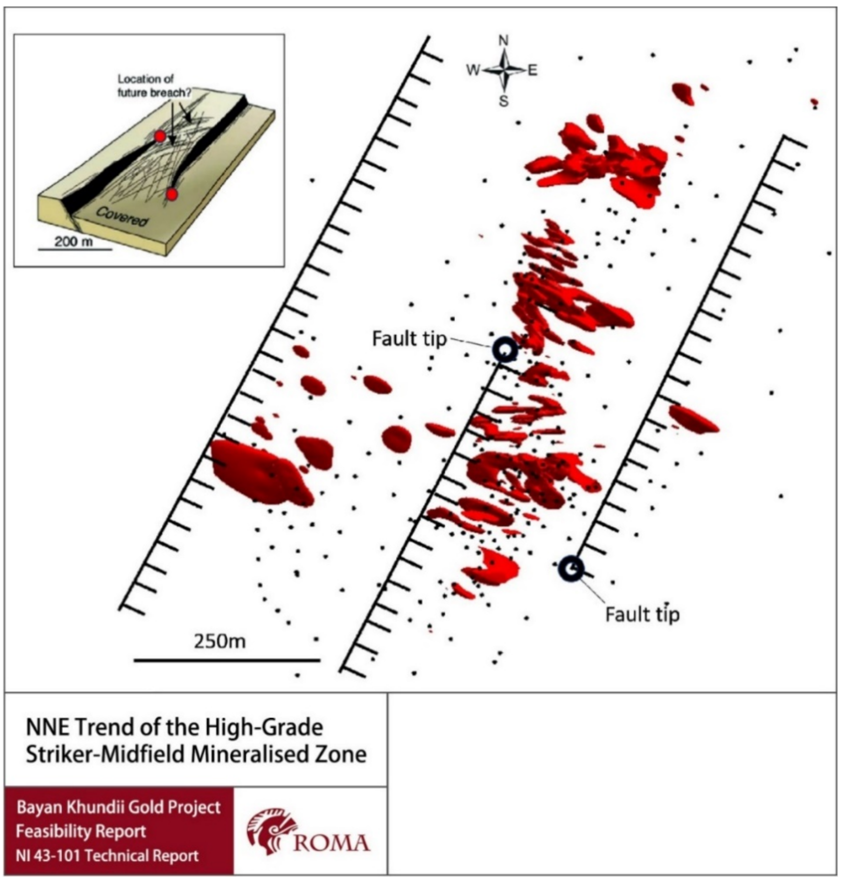


Figure 8-4 NNE trend of the high-grade Striker-Midfield mineralized zone. (Tetra Tech, 2019a)

Notes: Image in upper left is from Fossen and Rotevatn (2016). The model consists of a 'relay ramp' where stress is transferred between the fault tips on 2 adjoining extensional faults. Extensional faults are not likely to be straight, and probably consist of a series of structures within a fault zone, rather than one single discrete fault plane. This proposed model explains the limited lateral extent of SSE-trending, SW-dipping mineralized zones.

9. EXPLORATION

This section summarizes the exploration programs carried out by Erdene after their acquisition of the Khundii exploration license in 2010. For additional details of the exploration work, please refer to “Khundii Gold Project NI 43-101 Technical Report”, December 4, 2019, authored by Ms. M. Phifer, Messrs. C. Norton, J. Clark, A Kelly, H. Ghaffari, M. Horan and M. Fawcett that is available on SEDAR under the Company’s profile.

9.1. INITIAL EXPLORATION

Erdene acquired the Khundii exploration license in 2010 and initial exploration 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 central part of the license on a project referred to as Altan Arrow (Figure 6-1).

In early 2015, Erdene geologists identified, through rock chip sampling, new high-grade gold mineralization associated with a zone of intensely altered (quartz-illite) pyroclastic lithologies located about 3.5 km south of Altan Arrow. This area, referred to as the Bayan Khundii (Rich Valley) Project, Figure 6-1, was the focus of a detailed exploration program carried out in 2015-2019 that culminated in the identification of the Bayan Khundii gold deposit, the focus of this report.

9.1.1. Recent License-Wide Exploration

With the identification and delineation of the Bayan Khundii gold deposit, additional exploration on the remainder of the license area was carried out between 2017 and 2020. This work has included:

- Detailed geological and structural mapping;
- Rock chip sampling;
- Progressively more detailed soil sampling with select areas now at 50 m 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 200 m spacing with 150 m spaced dipoles;
  - Ground gravity survey at 200 m station spacing;
  - Compilation and 3D modelling of all geophysical data; and
- Scout drilling (Altan Arrow and Khundii North prospects).

The following prospects have been identified and explored on the Khundii mining license, outside the immediate area of the Bayan Khundii gold deposit.

Altan Arrow

Exploration carried out at Altan Arrow between 2017 and 2018 included:

- Structural mapping; and
- Drilling of 12 holes intersected multiple gold zones down to the depth of 100 m.

Khundii North

Khundii North, which is located 4 km northeast of the Bayan Khundii gold deposit was initially drill tested in 2018. Exploration works at Khundii North included:

- Surface exploration of quartz vein material sampling; and
- Drilling of 6 holes totaling 970 m and averaging 93 m vertical depth.

Khar Mori (Dark Horse)

The Khar Mori (or Dark Horse) prospect is located 3.5 km northeast of the Bayan Khundii gold deposit on the Khundii Mining License. Exploration works carried out in Dark Horse included:

- Surface sampling of quartz veins;
- Geophysical 3D modelling and compilation and interpretation of geophysical datasets;
- Detailed soil and rock-chip geochemical surveys; and
- Mapping and trenching programs.

9.1.2. Bayan Khundii Resource Expansion

There are multiple areas with the potential to add further resources at Bayan Khundii, including, but not limited, to the following:

- The Bayan Khundii Resource includes Measured and Indicated Resources of 521,000 ounces at an average grade of 3.16 g/t gold, and Inferred Resources of 103,000 ounces of gold at a grade of 3.68 g/t gold inclusive of the reported Proven and Probable Reserves. The remaining resources could potentially be added to open-pit reserves through both additional drilling and rising gold prices.

- Recent drilling at the Midfield SE and Striker SW zones of the Project area intersected exceptionally high-grade gold, including one meter of 582 g/t gold within an intersection of 5.5 meters grading 126 g/t at Midfield SE, in areas of the resource currently classified as waste or sub-grade material. The areas could potentially provide additional high-grade feed in the early phases of development.

- Additionally, very high gold grades observed in drilling in the Striker West portion of the deposit have the potential to provide additional high-grade resources should closer spaced drilling improve continuity.

The reported resource is pit constrained and based on multiple parameters (Table 1-2, note 4) including a US$1350 gold price. Multiple high-grade intersections outside the pit provide expansion targets requiring additional drilling in a rising gold price environment.

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.

9.3. ROCK GEOCHEMICAL SURVEYS

During the initial phases of exploration at Bayan Khundii, a series of rock chip and grab samples from surface outcrop and sub-crop, and channel samples were collected, principally from quartz veins within multiple mineralized areas. All samples were analysed for gold (fire assay) along with a 32-element suite (ICP). The majority returning highly anomalous values, and over 20% of the samples returning values in excess of 3.0 g/t Au and up to 4,380 g/t Au. The highest-grade gold mineralization identified to date is located within the Southwest Prospect, however, an area located approximately 700 m to the northeast, and aptly named the Northeast Prospect (300 m x 300 m), returned numerous anomalous gold assays (>200 ppb) from mineralized rock chip samples (up to 4.1 g/t Au).

9.4. SOIL GEOCHEMICAL SAMPLING

A grid-based soil sampling program was carried out in the entire area on the Khundii license in April and May 2016. A total of 1,088 samples were collected. All samples were assayed for gold (fire assay) and a 32-element suite (ICP). 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 mainly focused in and around the two areas of exposed, altered, Lower Carboniferous Ulziithar Formation pyroclastic rocks at the Southwest and Northeast prospects.

9.5. GEOPHYSICAL SURVEYS

Following the initial discovery of the gold mineralization in rock samples from Bayan Khundii, Erdene undertook a series of phased geophysical surveys between 2015 and 2017, including:

- Ground Magnetic survey – 20 m spaced lines over an area of 2.05 km by 1.8 km;
- IP gradient array survey over a 2 km by 2 km area; and
- IP dipole-dipole survey (50 m spaced dipoles, 100 m spaced lines) along 17 survey lines totaled 31 line-km.

The geophysical data proved to be very helpful in helping to determine the extent of the intensely altered (silica-illite) Carboniferous pyroclastic lithologies which host the gold mineralization at Bayan Khundii, particularly where this unit is overlain by Jurassic lithologies. The intensely altered (silica-illite) Carboniferous 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 dipole-dipole profiles, 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.

9.6. TRENCHING PROGRAM

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. 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, high-grade veins, as well as demonstrating continuity over a wide area that typifies the Bayan Khundii gold deposit.

10. DRILLING

The following is a summary of the drilling campaigns carried out at Bayan Khundii that have culminated in the discovery of the Bayan Khundii gold deposit and resource estimate. For additional details of the drilling programs, please refer to "Khundii Gold Project NI 43-101 Technical Report", December 4, 2019, authored by Ms. M. Phifer, Messrs. C. Norton, J. Clark, A. Kelly, H. Ghaffari, M. Horan and M. Fawcett that is available on SEDAR under the Company's profile.

Under the direction of Erdene's senior technical staff, drilling campaigns have been carried out yearly between 2015 and 2019 on the Bayan Khundii deposit. A total of 266 drill holes (44,859 m) were used to determine the Bayan Khundii resource estimate with an effective date of October 1, 2019, as reported in Section 14 - Mineral Resource Estimate.

Subsequent to the finalization of the resource estimate, Erdene carried out additional drilling at Bayan Khundii, including four holes totaling 661 m. These included one PQ sized hole to supply material for comminution testing (BKD-267), one hole in Khundii South (BKD-268) and two holes between Striker and Midfield (BKD-269 and BKD-270).

A new phase of drilling was announced for June 2020 but results were not published prior to the cut-off date for this report. Approximately 1,000 m of drilling is planned for two areas; one area southeast of the main Midfield orebody and another area at the southern perimeter of Striker. This close-spaced, shallow drilling program, will further define these two areas to determine whether extensions of ore zones are present and factor into future mine plans prior to initial development.

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

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
Drilling Total		**270**	**45,520**

Table 10-1 Bayan Khundii Diamond Drilling Summary.

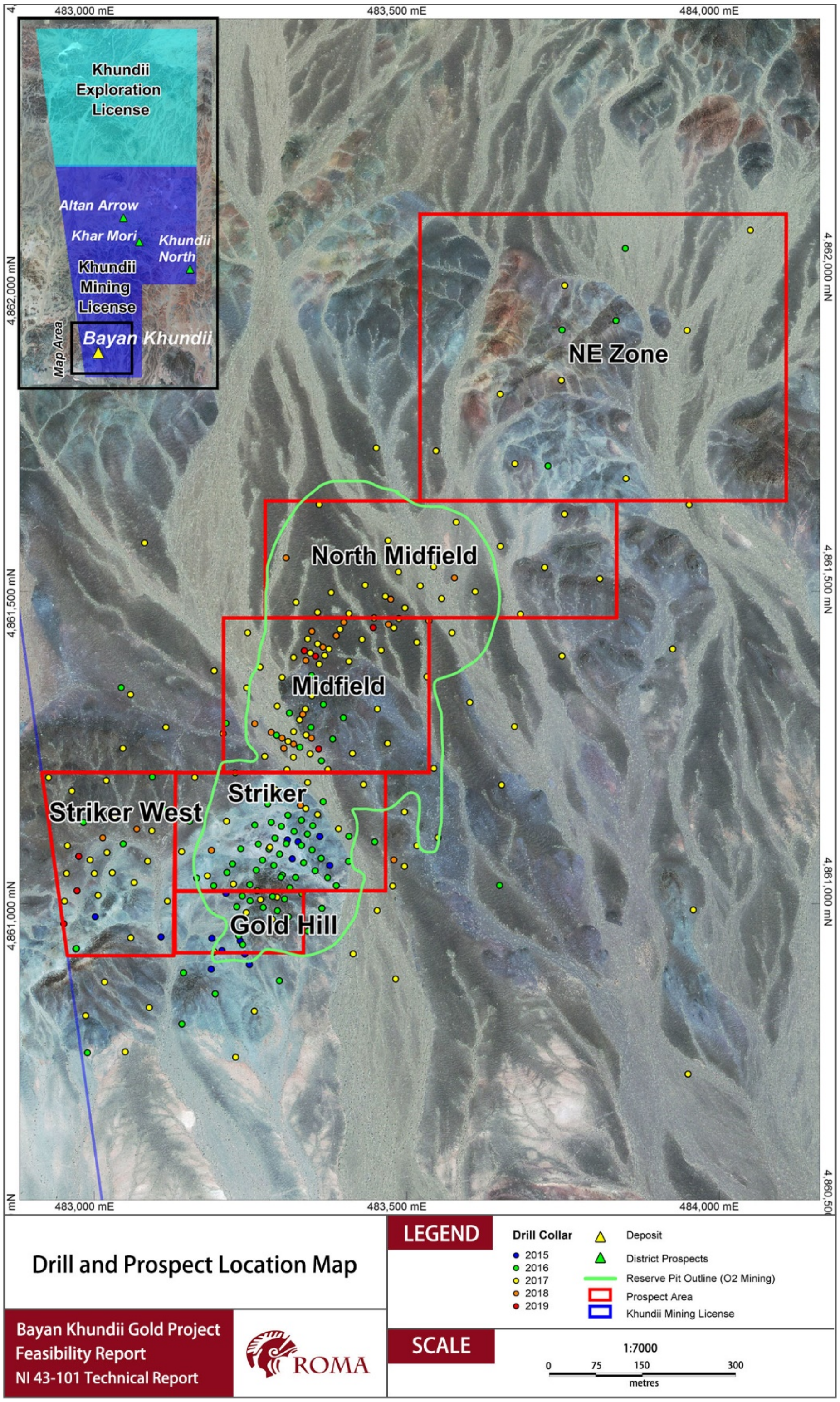


Figure 10-1 Bayan Khundii Drill and Prospect Location Map.

10.1. BAYAN KHUNDII DEPOSIT

A series of drill holes have been completed over the Bayan Khundii deposit between 2015 and 2019 that have resulted in the definition of the Bayan Khundii mineral resource. 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.

The resource estimate reported in Section 14 – Mineral Resource Estimate was based on data from the first 266 drill holes, some of which are outside of the defined limits of the resource. As noted above, subsequent to the finalization of the resource estimate, results for two additional holes, BKD-269 and BKD-270, drilled between Striker and Midfield, were reported by Erdene. These holes were drilled to increase confidence in the inferred resources in this area. Results included several high-grade intersections, including 6.6 g/t gold over 6.3 m within 32 m of 2.4 g/t gold in BKD-269 and 4.7 g/t gold over 7 m within 37 m of 1.7 g/t gold in BKD-270. These results are not considered to be material to the mineral resource estimate and therefore no update has been completed at this time.

10.2. PERIPHERAL ZONES

In addition to the currently defined mineral resource at Bayan Khundii, several area peripheral to the deposit has 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.

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.

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.

11. SAMPLE PREPARATION, ANALYSES AND SECURITY

This section summarized 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. For additional details please refer to "Khundii Gold Project NI 43-101 Technical Report", December 4, 2019, authored by Ms. M. Phifer, Messrs. C. Norton, J. Clark, A. Kelly, H. Ghaffari, M. Horan and M. Fawcett that is available on SEDAR under the Company's profile.

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.

11.2. SAMPLE SECURITY

All rock, trench and 2015-2016 drill core samples were organized into batches of 20, while all soil sample and 2017 drill core samples were organized into batches of 30. Each batch was stored in the field camp in sealed bags. Sample batches were periodically shipped directly to SGS in Ulaanbaatar via Erdene's logistical contractor, Monrud Co. Ltd.

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 analysed 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 (Table 11-1). All drill core sample rejects are saved and stored at a secure facility and are available for check analyses, as necessary.

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 FAG303	Fire Assay, AAS[1] finish, 30 g sample Fire Assay, gravimetric, 30 g sample	Au Au	0.01 ppm 0.03 ppm	1,000 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%		

Table 11-1 SGS Analytical Methods and Detection Limits.

Notes:

1. *AAS: Atomic Absorption Spectrophotometer.*
2. *4-Acid Digest: Perchloric ($HClO_4$), Hydrochloric (HCl), Nitric (HNO_3) 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

A QA/QC program was completed by Erdene for the Project. All sample batches included two commercially-prepared certified reference material standards (standards), including a gold standard (generally alternating between a high-level gold-bearing standard and low-level gold bearing standard) and a ‘blank’ consisting of either ‘basalt blank chip’ (2015) with very low gold concentration (<1 ppb Au) or coarse silica sand (OREAS 24p, 2016-17). Both of these samples were used as an analytical blank for gold. Batches with 30 samples (all soil and 2107 drill core) included duplicate samples. For soil samples, this included duplicate samples taken from the same location.

For drill core batches in 2017, duplicate samples alternated between a field duplicate, consisting of two ¼ core samples from the same interval, and a laboratory duplicate, consisting of duplicate pulps created from the same coarse grind material. Reject duplicates were also analyzed, as well as umpire testing at a third-party laboratory. A random selection of assay values provided from the Erdene database were compared to digital pdf laboratory certificates from SGS and results were found to be consistent.

Table 11-2 shows the QA/QC sample summary with QA/QC sample insertion rates. 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 request the lab increase the number of samples in each batch.

	Number of Samples	Insertion Rate
Half Core Samples	23,853	
Quarter Core Duplicates	304	1.3%
Reject Duplicates	114	0.5%
Standards	1,074	4.5%
Pulp Blanks	159	0.7%
Coarse Silica Blanks	814	3.4%
Total	**26,318**	
Umpire Lab Samples	500	2.1%

Table 11-2 QA/QC Sample Insertion Summary.

11.5.1. Certified Reference Materials

11.5.1.1. Standards

Standard analyses were monitored by Erdene and if SGS analysis varied from the determined assay value by more than 15% for one or more elements then Erdene's protocol is to request that the entire batch be re-analyzed. The average difference between gold assay values and gold certificate values for the Bayan Khundii drilling program was -2.9 %. No re-analysis has been required to date.

Five different gold-certified reference standards were used in the Bayan Khundii zone program (Table 11-3) which contained standardized gold values ranging from 1.24 g/t Au to 9.13 g/t Au.

Standard ID	Number of Samples	Au value (ppm)
OREAS 60c	271	2.47
OREAS 62c	90	8.79
OREAS 62e	516	9.13
OREAS 66a	94	1.24
OREAS 67a	103	2.24
Total	**1,074**	

Table 11-3 Standard Summary.

11.5.1.2. Blank Analysis

Two certified pulp blanks (OREAS24P and OREAS26a) were used for drill holes BKD-01 to BKD-42 (a total of 159 samples). Certified pulp blanks are used to test the calibration of the analytical procedure and for sample contamination resulting during the sample preparation phase. All results returned below detection limit values.

Coarse silica blanks (ASL ½" Mesh Silica Blank) are used to monitor potential contamination at the lab due to insufficient cleaning during the sample preparation process. Coarse silica blanks were used in the program for holes BKD-43 to BKD-255 (814 samples). All results returned below detection limit values.

11.5.2. Field Duplicates

A total of 304 quarter core duplicate samples were collected, representing an insertion rate of 1.2%. The majority of the duplicate samples fell within the accepted ±30% threshold, 93 of the 304 samples fell outside of this accepted relative difference suggesting the presence of a small potential nugget effect.

11.5.3. Reject Duplicates

A total of 114 samples were collected from lab reject material (0.4% insertion rate) and analyzed using the same technique as the original assays. A threshold of ±20% is considered an acceptable pass/fail rate for reject samples. While 15 samples, or 13%, fall outside these thresholds, only 1 failed above a gold grade of 0.5 g/t. Samples which failed below 0.5 g/t are considered non-material failures given that analytical equipment for these lower grades is less accurate.

Moving forward, it is recommended that Erdene request that SGS run duplicates on a broader range of sample grades in order to better test higher grade mineralization.

11.5.4. External Laboratory Assay Verification

A total of 500 pulps were selected to be sent to ALS Chemex for umpire sampling, representing 1.9% of the samples collected. No sample bias is observed between ALS and SGS.

11.6. QP OPINION ON SAMPLE PREPARATION, SECURITY AND ANALYTICAL PROCEDURES

Overall the Mineral Resource Estimate QP, Cameron Norton, holds the opinion that the data from drilling on the Bayan Khundii deposit has been obtained in accordance with contemporary industry standards, and that the data is adequate for the calculation of Measured, Indicated, and Inferred mineral resource categories, in compliance with National Instrument 43-101.

Given that the grade of gold mineralization encountered at Bayan Khundii has a significantly greater range, it's recommended that future programs conducted by Erdene utilize standard grades which are more reflective of the grade ranges present at the deposit. A more suitable low gold standard of approximately 0.5 g/t Au would be beneficial, along with the insertion of the occasional higher-grade standard of approximately 50 g/t Au should also be considered.

12. DATA VERIFICATION

12.1. SITE VISITS

Mr. Cameron Norton, QP for the Bayan Khundii Mineral Resource Estimate (effective date October 1, 2019) visited the Bayan Khundii project site on May 9 to 11, 2019. Drill core intersections were reviewed, collar locations visited, the physical site was toured, and meetings with technical site personnel were conducted. Independent verification samples were also collected during this visit. Conversations with on-site Erdene technical personnel included Mr. Michael Gillis, Vice President Operations, Mr. Jon Lyons, Vice President Regulatory Affairs and Strategy, and Mr. Bat-Erdene Gendenjamts, Senior Geologist were completed.

The QP responsible for the mine design and mineral reserve estimate is Julien Lawrence who is a Director of O2 Mining Limited visited the Project property on November 7 to 10, 2019 for inspections of infrastructure, relevant technical data and discussions with the technical team.

12.2. DATA VALIDATION

12.2.1. Resource Estimate QP Site Inspection

Mr. Norton, the Mineral Resource Estimate QP, visited the Property from May 9 to 11, 2019, and was accompanied by Erdene personnel. Mr. Norton examined several core holes, drill logs, and assay certificates, along with inspecting the core logging facilities, sampling procedures, and core security. Assays were examined against drill core mineralized zones. Mr. Norton also examined the collar and trenching locations, along with surface mineralization during a tour of the property. Given that no active drilling was underway at the time of the site visit, the QP was not able to observe the real-time procedures relating to the collection of drill core, logging, sampling, and cutting of core.

12.2.1.1. Drill Collar Verification

During the site visit, Mr. Norton visually observed the diamond drill setups on surface. Manual GPS verification was completed using a Garmin GPSMAP® 62CS handheld device. This handheld device has a lower accuracy than professional survey device which was used to survey Erdene's holes, and as such, minor collar differences are expected for each hole location surveyed (Table 12-1). Coordinates were collected using WGS84 coordinate system. No issues were identified during the drill collar verification.

BHID	Erdene Co-Ordinates (WGS 84)			Tetra Tech Co-Ordinates (WGS 84)			Difference (m)		
	Easting	Northing	Elevation	Easting	Northing	Elevation	Easting	Northing	Elevation
BKD-61	483259	4861055	1240	483260	4861054	1236	1	1	4
BKD-76	483296	4861081	1237	483299	4861081	1233	3	0	4
BKD-227	483266	4861008	1246	483268	4861008	1245	2	0	1
BKD-234	483293	4861012	1245	483290	4861014	1241	3	2	4

Table 12-1 Drill Collar Verification Results. (Tetra Tech, 2019a)

12.2.1.2. Tetra Tech Verification Samples

Verification samples were identified in order to test a range of gold grades and provide insight into grade variability in samples which returned initial assay results of less than 1 g/t Au up to the 100 g/t Au range.

All of Mr. Norton's independent samples collected from the Bayan Khundii site were security tagged and photographed by Mr. Norton and delivered via courier to the ALS Chemex preparation facility in Ulaanbaatar, Mongolia. To be consistent with current Erdene analytical procedures, the same procedures were requested for the verification samples. The standard analytical procedures are as follows:

- All samples were received, registered, and dried.
- All samples were crushed to 80% less than 3.35 mm, then split with a riffle splitter.
- A 750 g split from all samples were then pulverized to 90% less than 75 µm.
- All pulverized splits were submitted for 50 g gold fire assay with AA finish (Au-AA23).
- Samples returning grades above the upper detection limit of Au-AA23 (10 ppm) were submitted for 50 g ore grade fire assay with AA finish (Au-AA26) and screen metallics (Au-SCR22AA).

12.2.1.3. Independent Check Assay Results

Mr. Norton conducted a field duplicate program using 5 samples collected from drill core at Bayan Khundii to evaluate variability in analytical test results. Results are shown in Table 12-2.

The results of the independent coarse reject verification sampling confirm the presence of mineralization. As would be expected in a low sulphidation epithermal system, the grades display high variability even at a short range of a distribution of quartered core (Table 12-2). The observed grade variability is primarily attributed to the verification sample size of ¼ NQ core, which is being compared against a more representative original sample size of ½ of the NQ core.

BHID	From (m)	To (m)	Original Sample Number	Au Results (g/t)			
				Au (orig)	Au (dup)	Au (met)	R.P.D. %
BKD-230	97	98	121228	42.58	48.6	45.2	13%
BKD-230	98	99	121230	0.96	0.685		-33%
BKD-242	114	115	122735	22.08	51.6	51.1	80%
BKD-242	115	116	122736	4.03	2.43		-50%
BKD-242	121	122	122743	98.57	84.4	83.6	-15%

Table 12-2 Independent Check Assay Quarter Core Duplicate Results. (Tetra, Tech, 2019a)

Notes: "orig" is the original ½ core sample, "dup" is a duplicate of the original using ¼ core sample (combined AA23 and AA26 values), and "met" is screen metallics performed on the duplicate core sample. R.P.D. is relative percent difference between original and duplicate sample.

Screen metallic duplicates were completed on 3 core duplicate samples for gold, as shown in Table 12-3.

BHID	Sample Number	Au (g/t) Original	Screen Metallic Au (g/t)	R.P.D.%	% Au >75 µm
BA18-123	445240	42.58	45.2	6%	17%
BA18-123	445241	22.08	51.1	79%	7%
BA18-123	445242	98.57	83.6	-16%	6%
Overall Average		54.4	60	23%	10%

Table 12-3 Independent Check Assay Screen Metallic Duplicate Results. (Tetra Tech, 2019a)

The screen metallic results indicate that approximately 10% of total gold grade by mass is contained in the coarse +75 µm fraction. These results confirm the presence of coarse-grained gold in the system. Overall comparison of gold grades between the screen metallics fire assay and the 50 g fire assay with an AA finish indicates an average RPD value of -3%. This result indicates that variability exists in the relative percent difference for grades reported by each method, however, no significant positive nor negative bias was observed overall between the two analytical methods.

Mr. Norton has conducted a review of the project database, has compared analytical certificates with reported assay results for drill core and trench samples, has visited the Property, and collected mineralized drill core samples from the Property. It is Mr. Norton's opinion that the data reported for the Project can be verified and is acceptable for mineral resource estimation.

12.2.2. 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 site for the open pit, process plant and all non-process infrastructure sites and integrated waste facility and observed the surrounding topography and site conditions. Mr. Lawrence also observed site access conditions during the site visit.

13. MINERAL PROCESSING AND METALLURGICAL TESTING

Metallurgical characterization of the Bayan Khundii ore 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. A detailed summary may be found in the individual testwork reports by Blue Coast Research (2016; 2017; 2019; 2020).

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.

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**

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

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 60 µm 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.

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

Table 13-2 Summary of Recoveries compared to Sample Locations.

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 personal. 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 North Midfield 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 analyser. 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 analyzed 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.

Composite ID	Deposit Location	Description	Au (g/t)	Ag (g/t)	Stot (%)	S2- (%)	Ctot (%)	Corg (%)
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

Composite ID	Deposit Location	Description	Au (g/t)	Ag (g/t)	Stot (%)	S2- (%)	Ctot (%)	Corg (%)
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	North Midfield	Oxide; ~1.5 g/t	1.19	2.42	0.01	0.02	0.08	0.01
18-12	North Midfield	Oxide; ~3.5 g/t	4.21	5.64	0.01	0.01	0.11	0.01
18-13	North Midfield	Fresh; ~3.5 g/t	3.31	2.87	0.03	0.04	0.07	0.02
18-14	North Midfield	Oxide; ~5.0 g/t	5.59	6.32	0.00	0.01	0.07	0.02
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	North Midfield	Upper 50 m	4.26	2.8	0.01	0.14	0.01	0.01
19-07	North Midfield	Lower 50 m	4.86	3.1	0.02	0.26	0.02	0.02

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

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/tonne respectively. The closing screen size for the Bond Ball Mill Work Index test was 150 µm. Since this produced a coarser product size than the current design basis (80% passing 60 µm) 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/tonne, however, there were some geographic trends noted in the hardness of the material. The average BWI from the Striker zone was 17.2 kWh/tonne, 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.

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

Composite	Sample Location	Bond Ball Mill Work Index	Crusher Work Index	Abrasion Index
		kWh/tonne	kWh/tonne	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 m	-	-	-
BK-19-09	Striker; Hole BKD-267 From 60.4 to 61.67 m	-	10.3	-
Average		**18.2**		**0.401**
Max		19.3		0.572
Min		17.0		0.261

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

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 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.

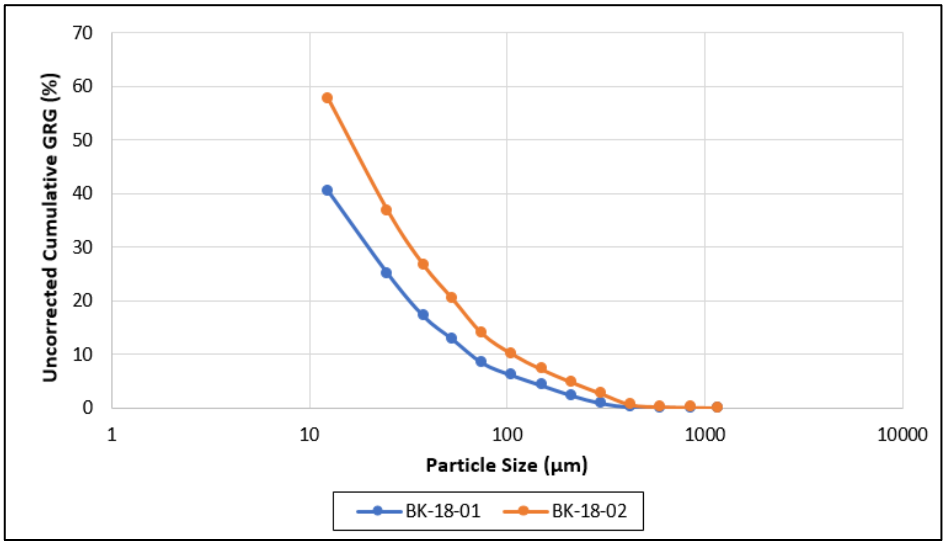


Figure 13-1 Uncorrected Cumulative GRG Recovery.

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 Figure 13-2.

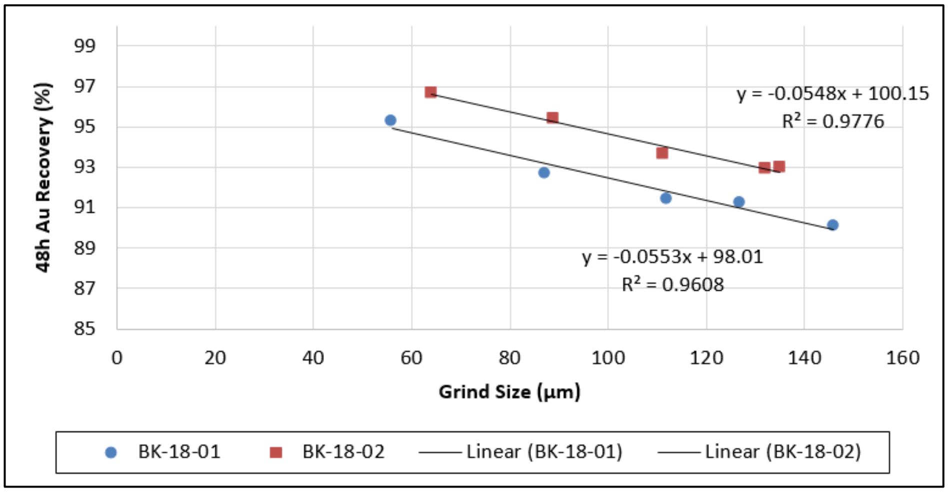


Figure 13-2 Relationship between Grind Size and Gold Recovery (BK-MET-COMP_18-01 and BK-MET-COMP_18-02).

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 60 µm 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 70 µm. 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 recommend as the design basis. In addition to reducing costs for sodium cyanide, it will also reduce the requirements for cyanide destruction reagents.

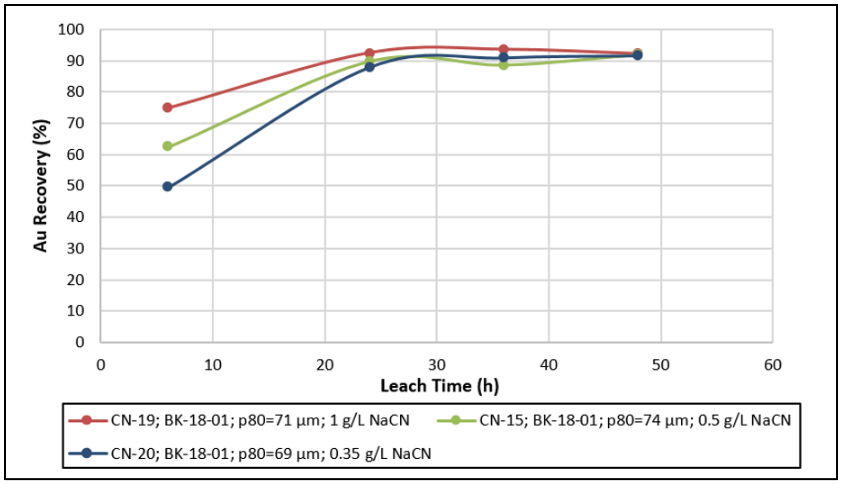


Figure 13-3 Effect of Cyanide Concentration on Bayan Khundii Leach Kinetics.

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 90 µm 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.

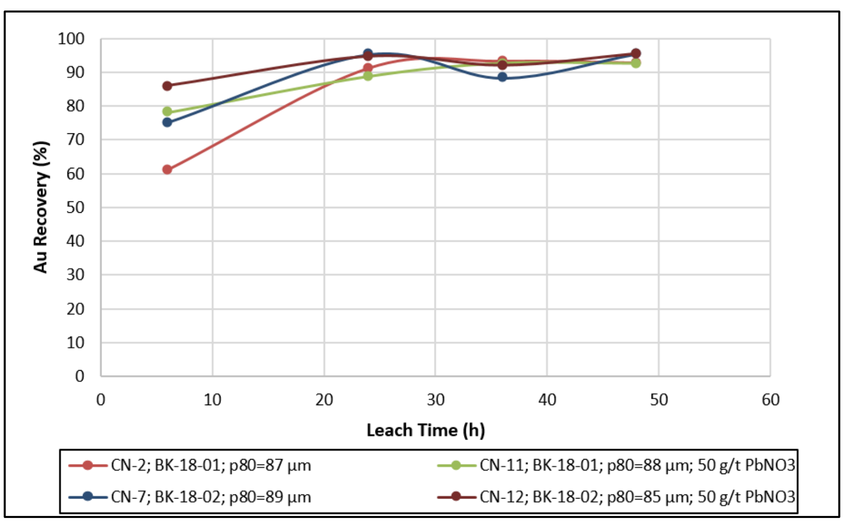


Figure 13-4 Leach Kinetics of Bayan Khundii material with and without Lead Nitrate addition.

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 90 µm, 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. Figure 13-5 highlighted the leach kinetics with and without oxygen addition.

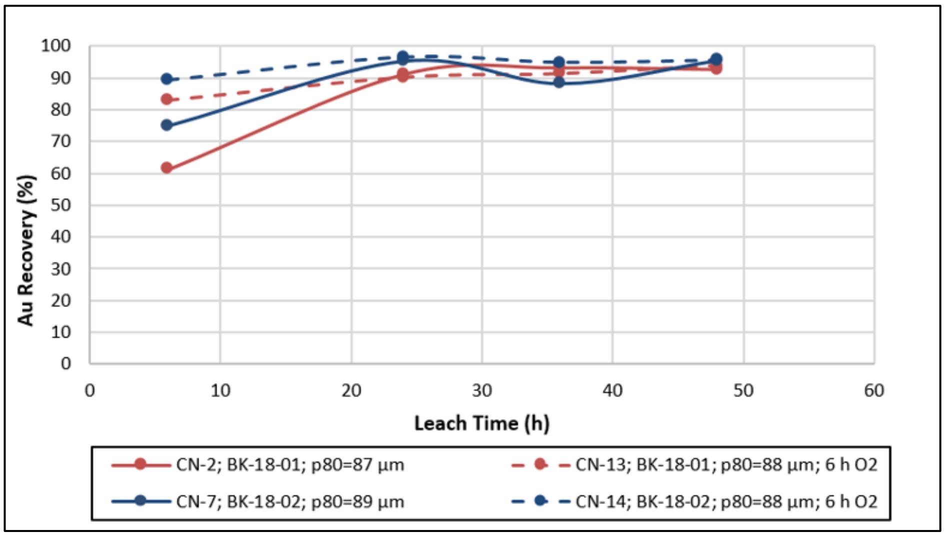


Figure 13-5 Impact of Oxygen Addition on Bayan Khundii Gold Extraction Kinetics.

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

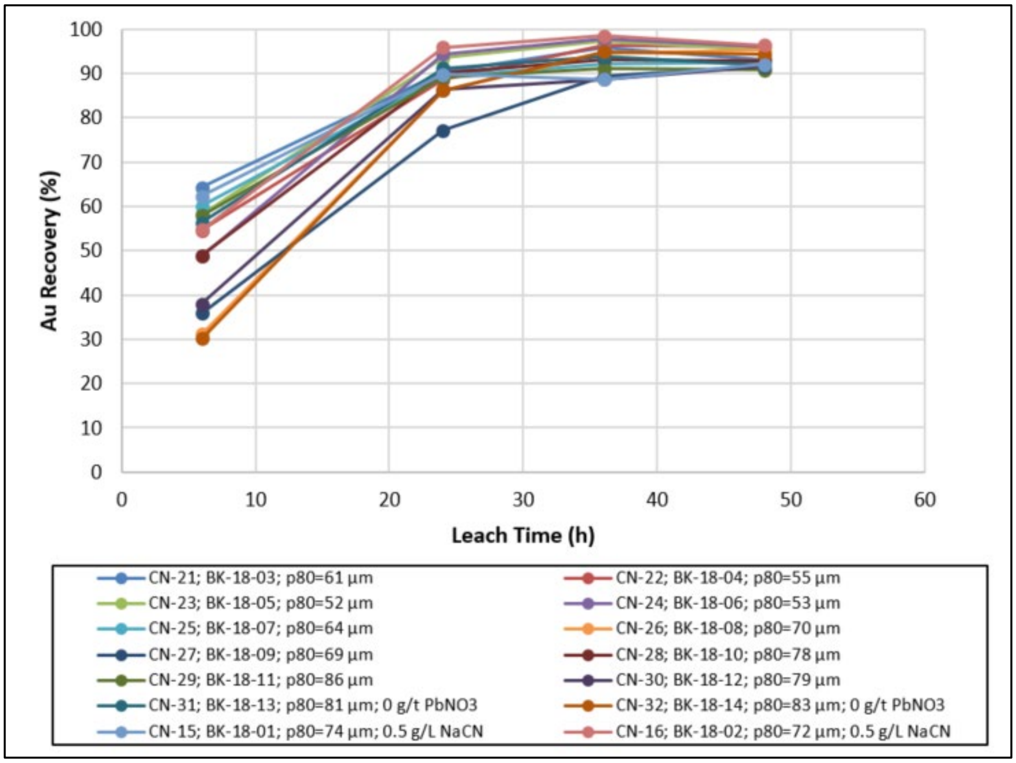


Figure 13-6 Leach Kinetic Curves from Bayan Khundii Master and Variability Composites.

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 North Midfield;
- North Midfield consistently results in material with the lowest recovery; and
- 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.

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	North Midfield	Oxide; ~1.5 g/t	0.50	0.07	0.93	90.8	0.13	86
CN-30	BK-18-12	North Midfield	Oxide; ~3.5 g/t	0.50	0.18	0.98	91.6	0.33	79
CN-31	BK-18-13	North Midfield	Fresh; ~3.5 g/t	0.50	0.08	0.95	91.8	0.29	81
CN-32	BK-18-14	North Midfield	Oxide; ~5.0 g/t	0.50	0.15	0.97	94.4	0.33	83

Table 13-6 Summary of Variability Composite Test Results.

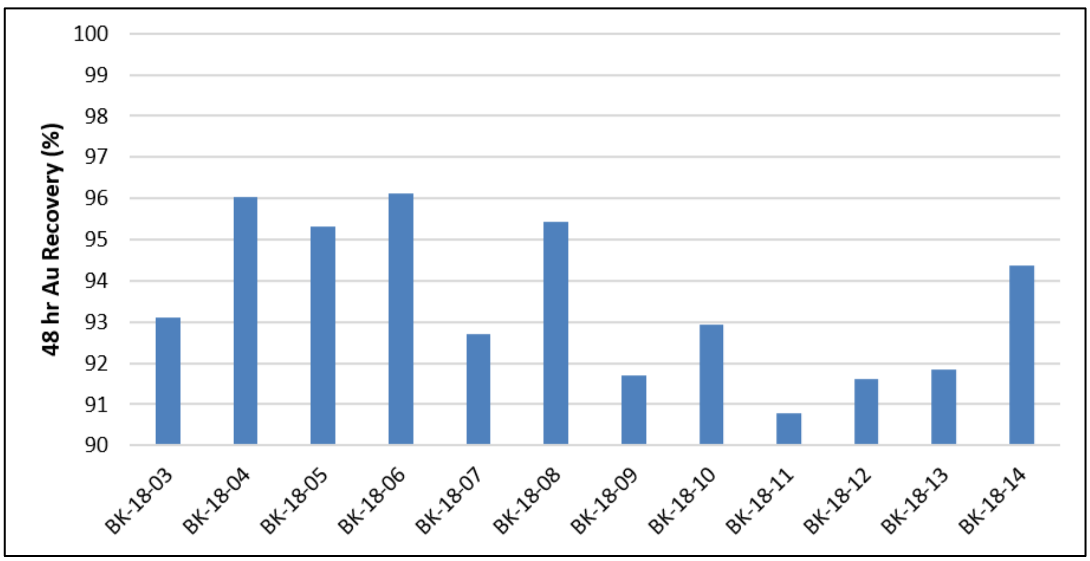


Figure 13-7 Erdene Variability Composite Gold Recovery.

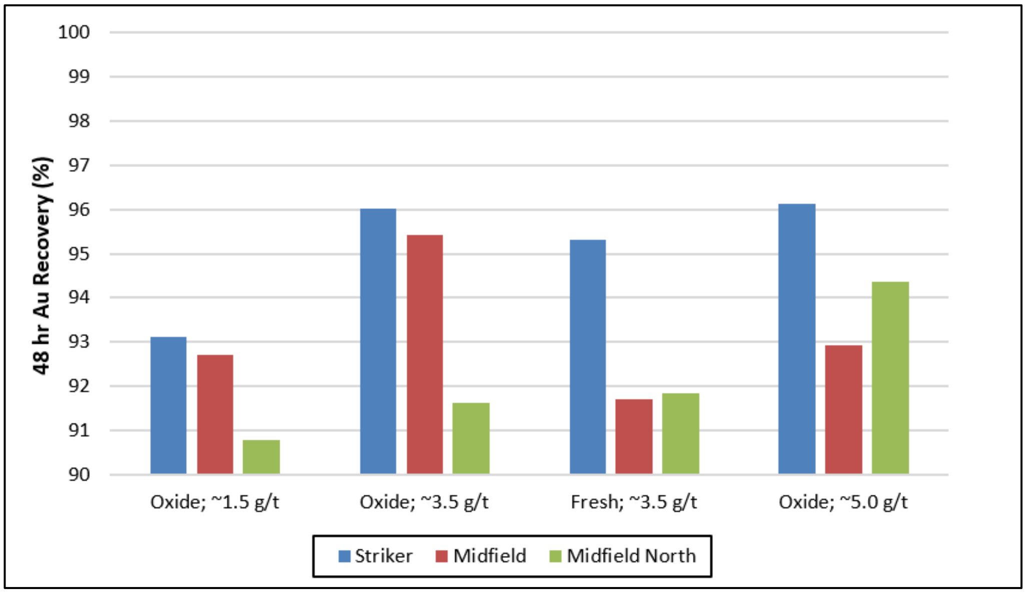


Figure 13-8 Variability Recovery Sorted by Geography, Rock Type and Grade Range.

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.

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

Table 13-7 Composites used during the 2020 Cyanidation Program.

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 60 µm. Results are summarized in Table 13-8.

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

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

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 42% solids is maintained to ensure sufficient extraction kinetics when processing higher grade material.

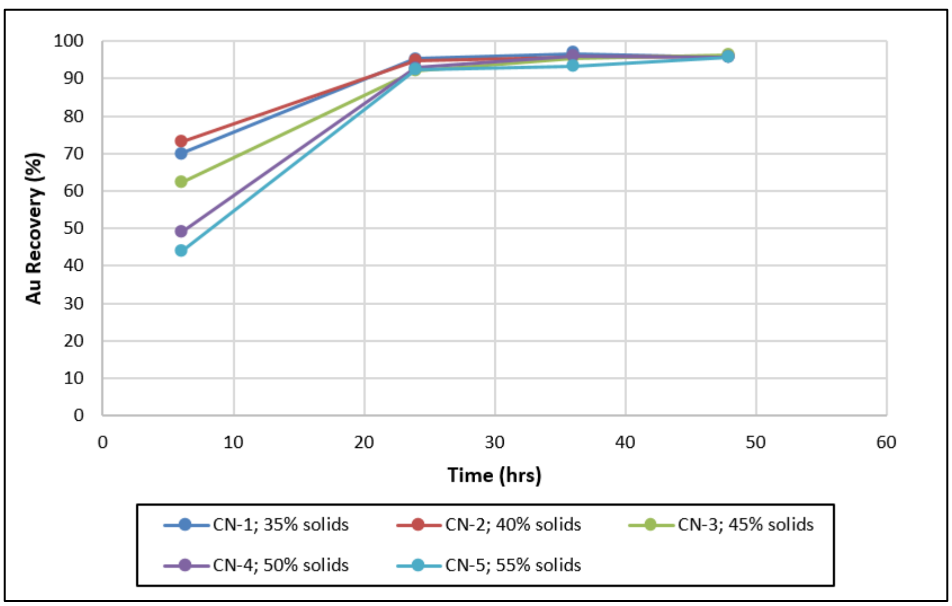


Figure 13-9 Bayan Khundii Leach Kinetics at Various % Solids (1.0 g/L NaCN, p80=60 µm).

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 60 µm. 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 60 µm and 75 µm. Results of these tests are summarized in Table 13-9.

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

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

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

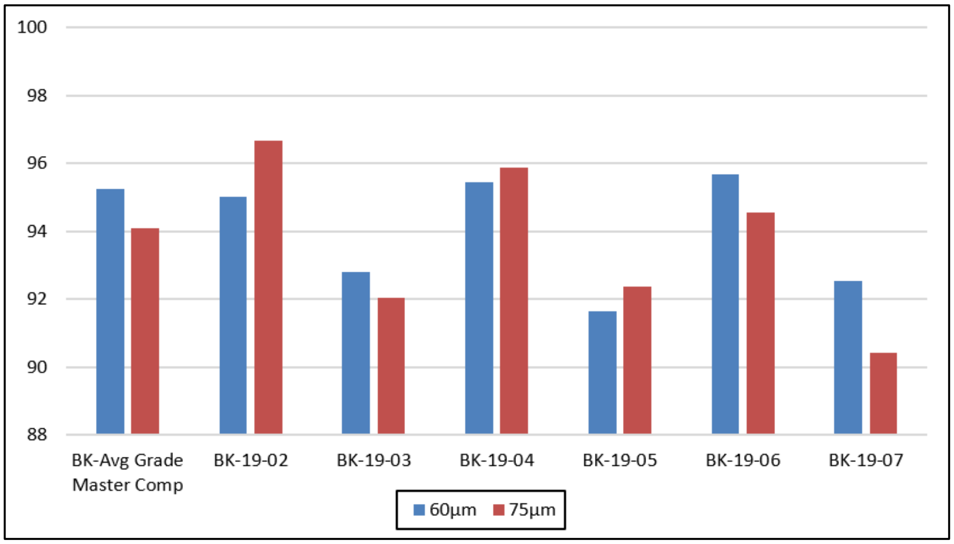


Figure 13-10 Effect of Primary Grind Size on Gold Recovery from Bayan Khundii Composites.

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 North Midfield. During this round of testing, composite from Midfield (19-04 and 19-05) and North Midfield (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 North Midfield 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 analysed 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.

Coefficients	Au	Ag
n	0.4371	0.5068
b	3131	1117

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

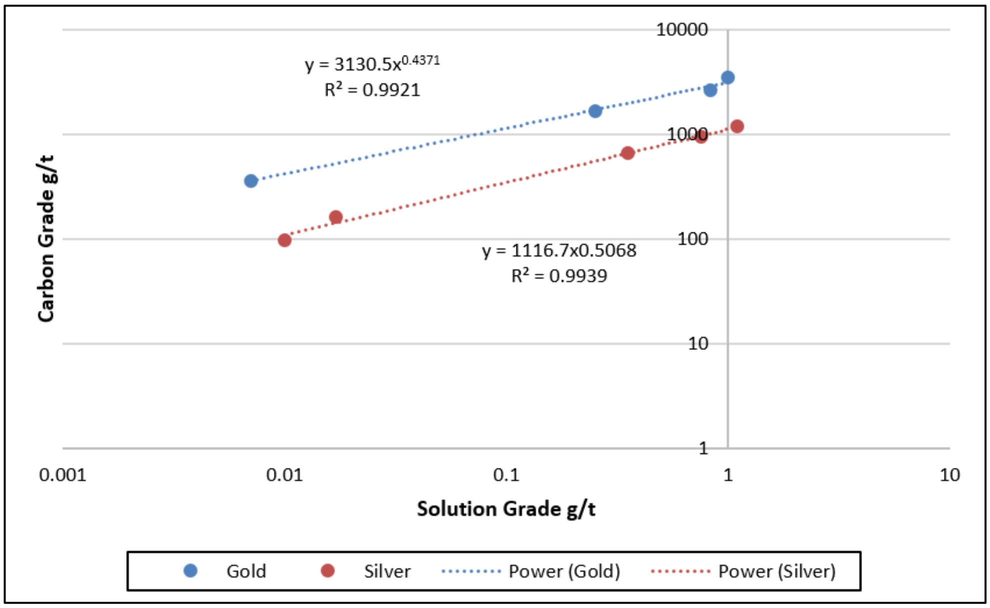


Figure 13-11 Gold and Silver Adsorption Isotherms for Bayan Khundii material (Calgon Goldplus 6x12 Activated Carbon).

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

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

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

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 50 ppm 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.

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

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

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 Cu^{2+}, 8 g SO_2/g CN_{WAD} and 1-hour retention time (Test D-12); and
- 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^2hr 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.

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^2hr	0.2-0.5

Table 13-13 Summary of Bayan Khundii Dynamic Thickening Results.

Run	Flux Rate (t/m^2hr)	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

Table 13-14 Bayan Khundii Dynamic Thickening Test Results.

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.

Test	Cycle Time (sec)	Filtration Capacity (Kg/m^2 hr)	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

Table 13-15 Summary of Bayan Khundii Filtration Results.

13.5. PROJECTED GOLD RECOVERY

The gold recovery equation previously developed for the PEA[1] and updated during the PFS study[2] 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 Table 13-16.

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

Table 13-16 Bayan Khundii Head Grade Recovery Relationship.

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.

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

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

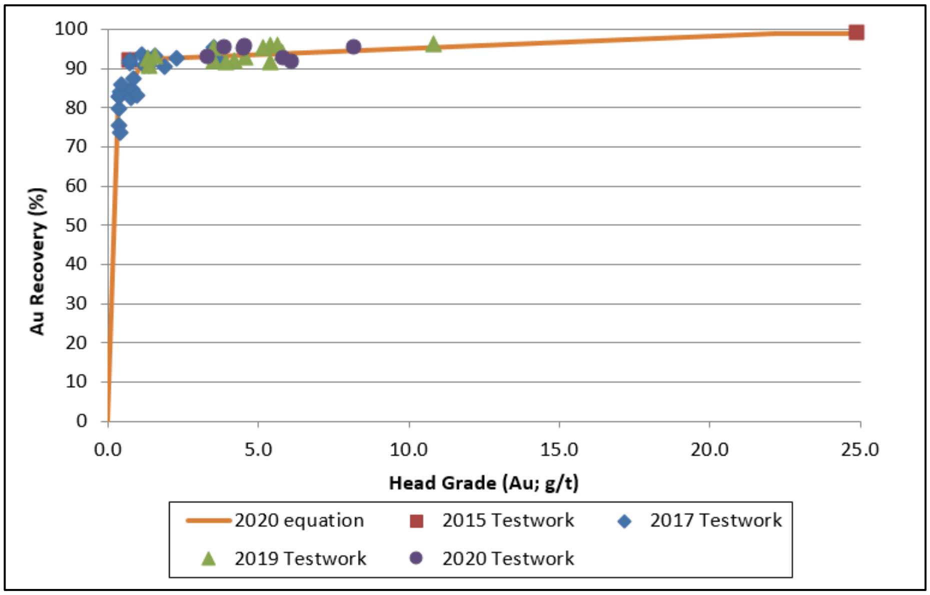


Figure 13-12 Overall Bayan Khundii Head Grade - Recovery Relationship.

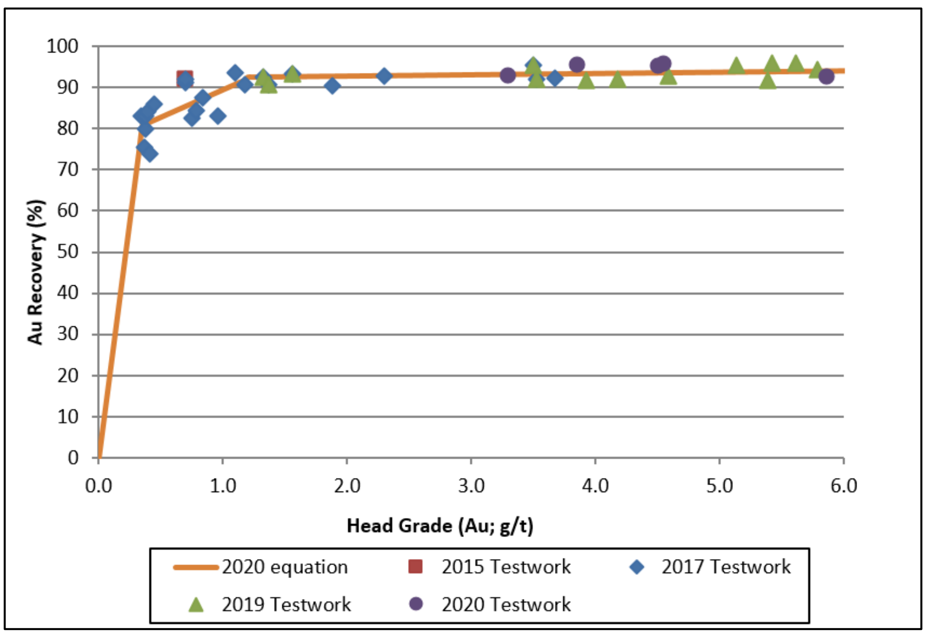


Figure 13-13 Bayan Khundii Head Grade - Recovery Relationship (0-6 g/t Au).

13.5.1. Silver Recovery

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%.

14. MINERAL RESOURCE ESTIMATE

The current Mineral Resource Estimate for the Bayan Khundii deposit was carried out by Cam Norton of Tetra Tech as reported in the "Khundii Gold Project NI 43-101 Technical Report", December 4, 2019, authored by Ms. M Phifer, Messrs. C. Norton, J. Clark, A Kelly, H. Ghaffari, M. Horan and M. Fawcett. The effective date of the Bayan Khundii Mineral Resource Estimate is October 1, 2019.

The mineral resource estimate in the Tetra Tech December 2019 Technical Report was prepared and disclosed in compliance with all disclosure requirements for mineral resources set out in the NI 43-101 Standards of Disclosure for Mineral Projects (2011). The classification of the mineral resource is consistent with CIM Definition Standards - For Mineral Resources and Mineral Reserves (2014), including the critical requirement that all mineral resources "have reasonable prospects for eventual economic extraction".

For additional details of the Bayan Khundii Mineral Resource Estimate please refer to "Khundii Gold Project NI 43-101 Technical Report", December 4, 2019, authored by Ms. M Phifer, Messrs. C. Norton, J. Clark, A Kelly, H. Ghaffari, M. Horan and M. Fawcett that is available on SEDAR under the Company's profile.

The Tetra Tech Bayan Khundii Mineral Resource Estimate is based on data from 266 holes, totaling 44,859 meters of drilling and structural interpretation study completed by Erdene on the Property. The results of the Mineral Resource Estimate for the Bayan Khundii deposit, presented in Table 14-1, have been constrained to a conceptual pit shell and are reported at a 0.55 g/t Au cut-off. The mineral resource estimate is based on the combination of geological modelling, geostatistics, and conventional block modelling using the Ordinary Kriging method of grade interpolation. The mineral resources were estimated using a block model with parent blocks of 5 m x 5 m x 5 m with 5 sub-cells allowed in each direction. Estimation of the blocks was completed on the parent blocks and the grades assigned to the sub-cell blocks. The QA/QC protocols and corresponding sample preparation and shipment procedures have been reviewed by Cam Norton of Tetra Tech, QP for the Mineral Resource Estimate.

The reportable cut-off grade of 0.55 g/t Au (highlighted in Table 14-1 below) assumes an open pit mining scenario with a gold price of $1,350/ounce, a mining cost of $3.0/tonne, milling and G&A costs of $16.0/tonne, and a gold recovery of 95%. Other cut-off grades are provided for comparison purposes only. The resource reported as of October 1, 2019, has been tabulated in terms of a gold cut-off grade and has been rounded to the nearest thousand tonnes due to the nature of the precision of the block model.

Mineral reserves can only be estimated on the basis of economic evaluation that is used in a preliminary feasibility study or a feasibility study of a mineral project. The Indicated and Measured Mineral Resources are inclusive of the Mineral Reserves presented in Section 15. As per NI 43-101, mineral resources, which are not mineral reserves, do not have to demonstrate economic viability.

Cut-off Grade [1] (Au g/t)	Resource Classification	Tonnage	Grade Au(g/t)	Gold (oz)
0.4	Measured	1,737,000	3.15	176,000
	Indicated	4,616,000	2.45	363,700
	Measured & Indicated	6,353,000	2.64	539,700
	Inferred	1,062,000	3.10	105,800
0.55	Measured	1,410,000	3.77	171,000
	Indicated	3,710,000	2.93	349,700
	Measured & Indicated	**5,120,000**	**3.16**	**520,700**
	Inferred	868,000	3.68	102,800
1	Measured	652,000	7.31	153,300
	Indicated	1,696,000	5.56	303,500
	Measured & Indicated	2,348,000	6.05	456,700
	Inferred	421,000	6.83	92,500
1.4	Measured	506,000	9.09	147,800
	Indicated	1,427,000	6.40	293,600
	Measured & Indicated	1,933,000	7.10	441,400
	Inferred	371,000	7.61	90,800

Table 14-1 Mineral Resource Estimate for Bayan Khundii, effective October 1, 2019.

Notes:

1. *Cut-off grades have been calculated using a gold price of $1,350/ounce, mining costs of $3.0/tonne, milling and G&A costs of $16.0/tonne, and an assumed gold recovery of 95%.*
2. *Bulk density of 2.66 for mineralized domains.*
3. *All figures are rounded to reflect the relative accuracy of the estimate. Numbers may not add exactly due to rounding.*
4. *Conforms to NI 43-101, Companion Policy 43-101CP, and the CIM Definition Standards for Mineral Resources and Mineral Reserves.*
5. *Mineral resources which are not mineral reserves do not have demonstrated economic viability.*

15. MINERAL RESERVE ESTIMATE

15.1. INTRODUCTION

Mineral Reserves for the BK 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 during the preparation of the FS.

The study has confirmed the mine plan and accompanying financial model indicate there are no periods of negative 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$1,400/oz.

The mineral reserve estimate is based on a number of input parameters including the multi-dimensional geological resource model provided by Tetra Tech and reported in the "Khundii Gold Project NI 43-101 Technical Report", December 4, 2019, authored by Ms. M Phifer, Messrs. C. Norton, J. Clark, A Kelly, H. Ghaffari, M. Horan and M. Fawcett that is available on SEDAR under the Company's profile.

A re-blocking and regularization exercise was undertaken to produce a 2.5 x 2.5 x 2.5 m regularized resource model, applying a cut-off grade of 0.3 g/t Au, Measured and Indicated Resources only. The average resource loss and dilution is 1.4% and 6.6%, respectively, considering only Measured and Indicated Resources without any pit limit constraints applied. Ore dilution and loss is discussed in more detail in Section 15.2.

Classification	Tonnage (Mt)	Grade (g/t Au)	Contained Au (Koz)
Measured	1.9	2.9	178
Indicated	5.3	2.1	359
Grand Total	**7.2**	**2.3**	**537**

Table 15-1 Re-blocked Resource Estimate Summary using a COG of 0.3 g/t Au.

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

Internal and external ore loss and dilution is anticipated in any open pit project when converting in-situ resources to mineable reserves. To minimize the impact of ore dilution and loss, simulation and understanding of its potential impact is key to developing an appropriate grade control methodology as well as the mining fleet selection and scheduled mining rates.

Block model regularization methodology is commonly used in the industry to simulate expected dilution and loss considering the smallest mining unit ("SMU").

Below illustrates the internal dilution and mineral loss percentage for each regularized resource model of different block size. The block size used here are also determined as the SMU. Consistently and efficiently achieving the required production rate is another consideration when selecting the SMU. Considering the production rate requirement, an excavator with a bucket size of 1.8 to 2.2 m^3 has been proposed. Theoretically, in perfect operating conditions, this excavator has the ability to achieve a selectivity of 1 x 1 x 0.5 m. However, after further considering the potential variability in model reconciliation, the specific application of the excavator, typical ore boundary geometries and operator capability, it is estimated a 2.5 x 2.5 x 2.5 m block size should be selected as the SMU.

Model Size	Reserve (Kt)	Metal (Au Kg)	Grade (Au g/t)	Ore Tonnes Dilution	Metal Loss	Au Dilution
Resource Model	6,803	16,947	2.49	0.0%	0.0%	0.0%
5 x 5 x 5 m	7,440	16,543	2.22	9.4%	-2.4%	-10.7%
5 x 5 x 2.5 m	7,334	16,603	2.26	7.8%	-2.0%	-9.1%
5 x 5 x 1 m	7,217	16,630	2.30	6.1%	-1.9%	-7.5%
5 x 5 x 0.5 m	7,210	16,635	2.31	6.0%	-1.8%	-7.4%
2.5 x 2.5 x 5 m	7,308	16,633	2.28	7.4%	-1.8%	-8.6%
2.5 x 2.5 x 2.5 m	7,186	16,716	2.33	5.6%	-1.4%	-6.6%
2.5 x 2.5 x 1 m	7,069	16,763	2.37	3.9%	-1.1%	-4.8%
2.5 x 2.5 x 0.5 m	7,059	16,772	2.38	3.8%	-1.0%	-4.6%
1 x 1 x 5 m	7,068	16,697	2.36	3.9%	-1.5%	-5.2%
1 x 1 x 2.5 m	6,953	16,813	2.42	2.2%	-0.8%	-2.9%

Table 15-2 Dilution and Loss Comparison based on Block Size for full Resource Model.

When considering only Measured and Indicated Resources and without any pit limit constraints on the resource, an internal ore dilution and mineral loss of 6.6% and 1.4%, respectively, represents a credible representation of ore dilution and loss for this style of ore deposit, 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

Prior to the commencement of operations, ROMA geotechnical team provided O2 Mining with an interpretation of the geotechnical domains and slope profile parameters to adopt as part of the pit design. These domains are presented graphically in Figure 15-1.

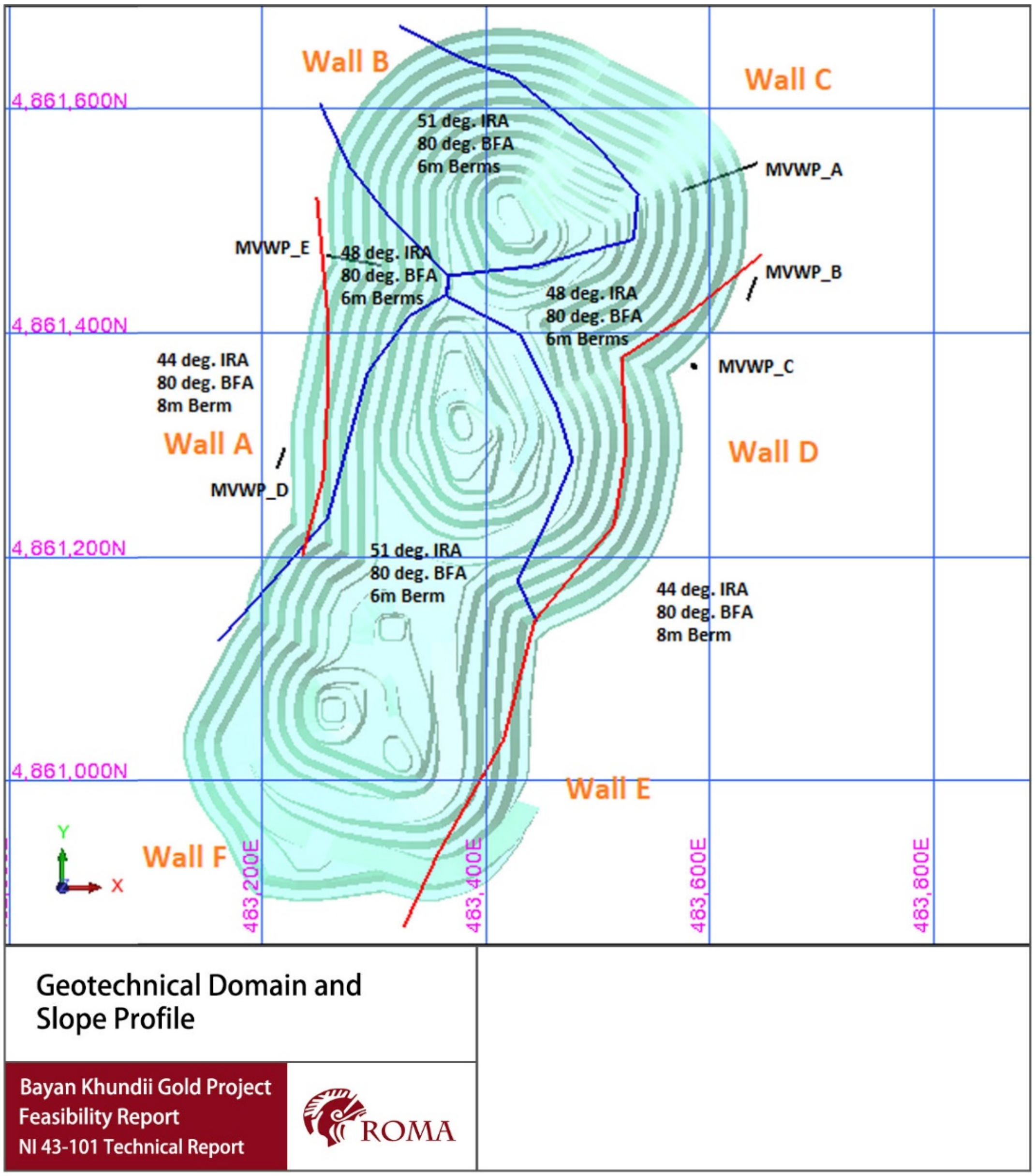


Figure 15-1 Geotechnical Domain and Slope Profile.

Notes:

- *IRA = Inter-ramp angle;*
- *BFA = Bench Face Angle.*

In consideration of accepted pit design practices, the domains provided were further simplified and presented in zones (A through F) set out in Table 15-3.

Domain	MASL from	MASL to	Inter Ramp Slope Angle Degree ("IRA")	Batter Face Angle Degree ("BFA")	Berm Width	Overall Slope Angle
A	1235	1215	44	80	8	49.1
	1215	1185	48	80	6	
	1185	1105	51	80	6	
B	1235	1085	51	80	6	51
C	1235	1185	48	80	6	50
	1185	1085	51	80	6	
D	1235	1185	44	80	8	47.5
	1185	1155	48	80	6	
	1155	1105	51	80	6	
E	1235	1215	44	80	8	49.1
	1215	1155	51	80	6	
F	1235	1155	51	80	6	51

Table 15-3 Geotechnical Slope Profile Recommendation.

During the pit optimization study, an overall slope angle of 48° was adopted for the pit limit determination purpose with an average of 2° slope reduction in steepness as an allowance for the inclusion of pit ramps.

15.4. MINE HYDROLOGICAL PARAMETERS

Initial geotechnical work related to pit design assumed that the groundwater conditions at the Bayan Khundii site have the potential to maintain saturated conditions during development. The generally flat topography and absence of surface water bodies implies the open pit may well have a large radius of influence (Tetra Tech, 2019c). Envisaged inflow into the pit is anticipated to be relatively low and estimated between 0 to 6 L/s for low K values (0.01 m/day) to a maximum of 3 to 20 L/s for higher K values (0.1 m/day), however the latter is unlikely.

The likely dewatering requirements indicate a net dewatering effort without advance dewatering. In the mining context, the net dewatering effort required may be in the order of 2-5 L/s early in the mine with the potential to increase to ~10 L/s later in the life, as the hydraulic gradient increases with depth. This would practically manifest as localized dewatering with small scale pumps and pipework where fractures are more open or concentrated. Volumes and rates are likely to be small/minor and may present as nuisance water during the development of each new bench level. Groundwater removal can be practically managed with small and localized sumps rather than bores.

Dewatering could equally be managed with blasting alone, considering that the effective porosity of the rock mass pre-blasting is likely <0.1% and post blasting >20%, with most of the water vaporized or as moisture retained in the fines of the blasted rock. However, some fracture sets may contribute useful water yields which may contribute to the overall site water supply e.g. dust suppression.

Stability of mine slopes may be sensitive to pore pressure. It is recommended to install piezometers to assess pit slope pore pressures as they are likely be the most significant groundwater monitoring requirement. The piezometer location and type will be guided by slope design requirements and may not be required from the outset of mining i.e. piezometer can be installed later in the mine life when/if pore pressure is an issue.

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 0.3 and are increased in increments of 0.02 up to a revenue factor above 1.0. 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 in Surpac™ software 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 in Figure 15-2;
- 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 PFS study completed by Tetra Tech for the Bayan Khundii deposit, with the update of gold price and slope profile recommended by ROMA. There is no mining capacity limitation applied during the optimization process, but the ore processing capacity is limited to 450 Ktpa for Year 1 and 600 Ktpa from Year 2 and onwards.

15.5.3. Geological Model

The original geological model was provided by Erdene, representing a resource model produced by Tetra Tech of 5 x 5 x 5 m parent cell size and 1 x 1 x 0.5 m sub-cell size, which also contains 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.

To better reflect the effects of dilution and loss, re-blocking of the original 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.

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 Report.

15.5.5. Physical Constraints

The current mining license provides sufficient space in and around the ore deposit in order 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 IWF 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 and extract the ore and deliver ore to the process plant feed. The activities included:

- 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 on a whole of machine life basis;
- 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 15-4.

Description	Unit	Value
Avg. Mining Cost	US$/t mined	3.17
Variable Base Mining Cost	US$/t mined	2.2
Fixed Base Mining Cost	US$/t mined	0.78
Total Base Mining Cost	US$/t mined	2.98
Incremental Mining Cost per bench	US$/t mined per 5 m bench	0.021

Table 15-4 Optimization Parameters - Mining.

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 associate water recovery and recycling. Processing costs used for the optimization are summarized in Table 15-5.

Description	Unit	Value
Ave. Processing Cost	US$/t plant feed	19.49
Recovery _ Au 0 - 0.36	%	230.61*Au
Recovery _ Au 0.36 - 1.19	%	13.32* Au + 76.052
Recovery _ Au 1.19 -21.9	%	0.324* Au + 91.856
Recovery _ Au>21.9	%	99
Throughput Year 1	Plant feed t/year	450,000
Throughput Year 2 onwards	Plant feed t/year	600,000

Table 15-5 Optimization Parameters – Processing.

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 15-6.

Description	Unit	Value
Gold Price	US$/oz	1,307
Discount rate (optimization)	%	10
Smelting recovery	%	99.85
Smelting cost	US$/oz	4.71
Processing Overhead	US$/oz	115.88
Site General and Administration	US$/oz	40.47
Royalties	US$/oz	78.15

Table 15-6 Optimization Parameters – Selling and Analysis.

15.5.9. Pit Limit Optimization

Revenue factor ranges from 20% to 120% 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 15-2 and the quantity of ore and its associated grade in each pit is included in Figure 15-3.

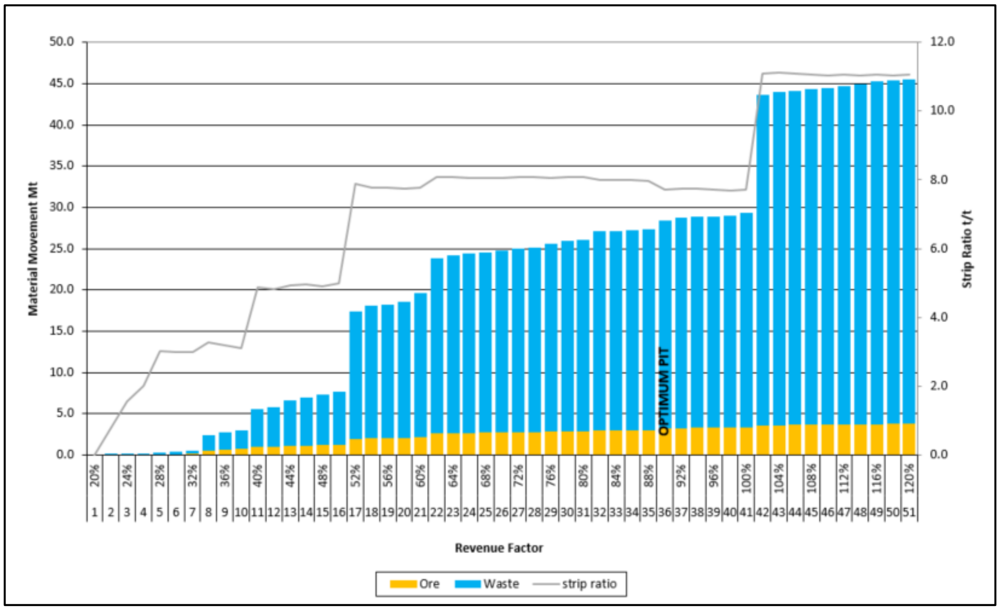


Figure 15-2 Pit-by-pit graph – Waste, Plant Feed and Strip Ratio.

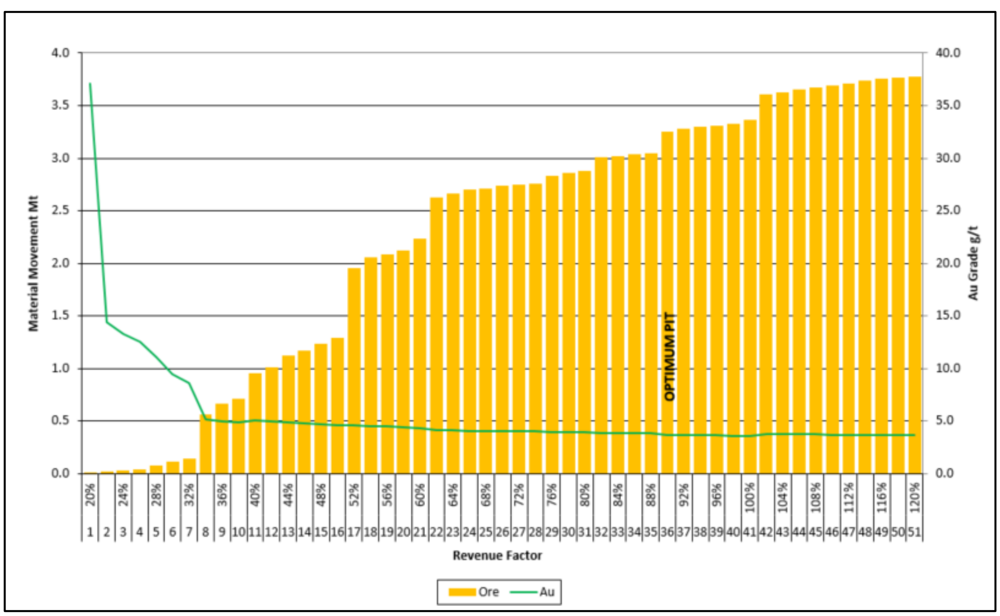


Figure 15-3 Pit-by-pit graph – Plant Feed and Average Feed Au Grade.

The estimated discounted cash flow for each pit and indication of the optimum pit is depicted in Figure 15-4.

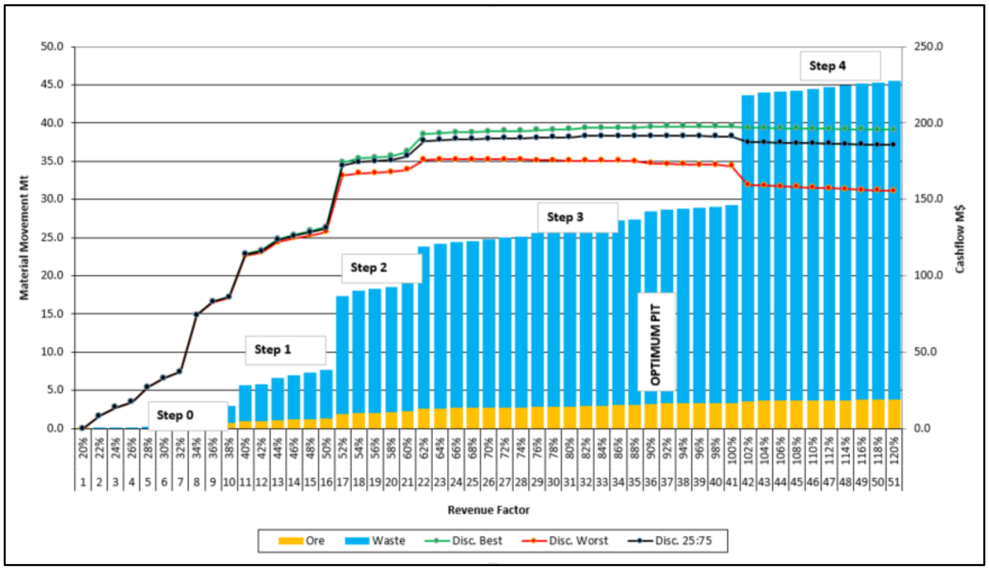


Figure 15-4 Pit-by-pit graph – Cashflow Analysis.

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 90% 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 reserve within the optimal shell can be defined as approximately 1/3 classified as Measured Resource and 2/3 is classified as Indicated Resource further summarized in Table 15-7.

Pit shell	Revenue Factor	Total (Mt)	Waste (Mt)	Ore (Mt)	Strip Ratio (t/t)	Grade Au (g/t)	Measured Ore (Mt)	Indicated Ore (Mt)
36	90%	28.4	25.1	3.25	7.7	3.9	1.19	2.06

Pit shell	Revenue Factor	Au Qty Feed (Koz)	Au Qty Rec (Koz)	Disc. NPV Best ($M)	Disc. NPV Worst ($M)	Disc. NPV Specific ($M)
36	90%	407	383	197.5	173.6	191.6

Table 15-7 Whittle™ Optimal Shell Summary.

It is important to note these NPV's are not representative of what could be considered a final NPV result for several reasons including:

- No capital cost has been considered for the optimization; 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, the three pit-by-pit graphs 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 96%, and then a step reduction in NPV as a result of higher strip ratio from revenue factor 100% and beyond. This rapid expansion on pit size also matches with the resource structure and location. The optimization presents five distinct groups of shells where material increases in strip ratio occurs when moving between each step.

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 15-5. Theoretically, the whole resource could be developed in 5 stages as shown clearly in the figure above (step 0 through 4). However, Step 4 is not considered for this study as it falls out of the optimal/economic shell limits. While Step 0 is also not considered as a standalone push back due to its total small volume. Step 1 (RF40), Step 2 (RF52) and Step 3 (optimal pit) are selected as the 3 stages pit shells to guide pit staging design and sequential ore extraction scheduling.

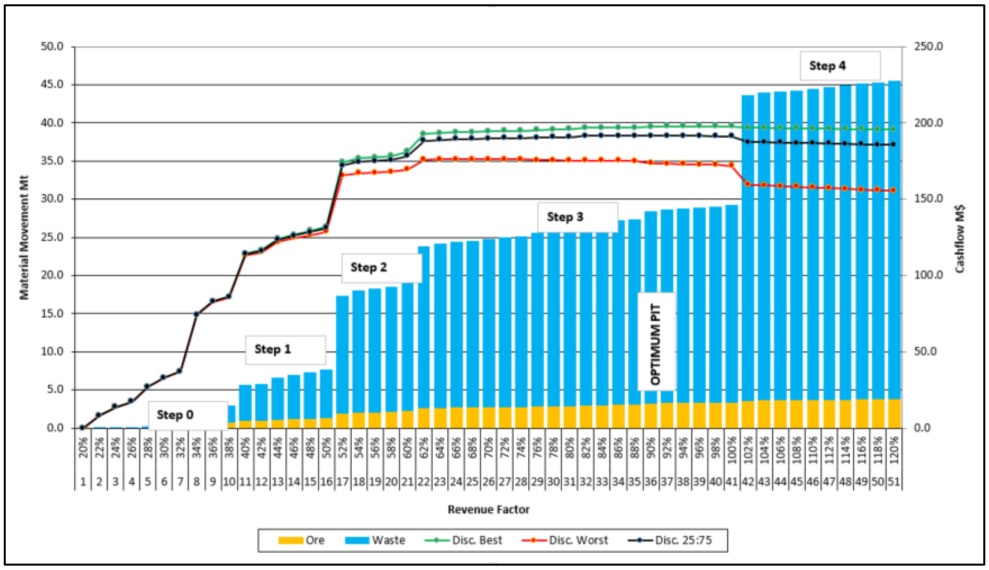


Figure 15-5 Pit-by-pit graph – Interim Pit Selection.

The three pushbacks are as shown in plan view in Figure 15-6. Further recommendations on pit selection are:

- **Striker Pit**: The optimization output has an initial large cut and then two narrow cuts to final depth – it is recommended to utilize final pit limit in the Striker area as Stage 1 pit (pit shell 36).

- **Midfield Pit**: Develop Midfield pit up to the end of step 2 and include the final pit limit along the west wall as Stage 2 pushing this pit to as deep as allowable, smoothing the boundaries between Stage 1 and 2.

- **North Midfield Pit**: Incorporates the balance of material contained in the Optimum pit (Shell 36) as a final Stage 3.

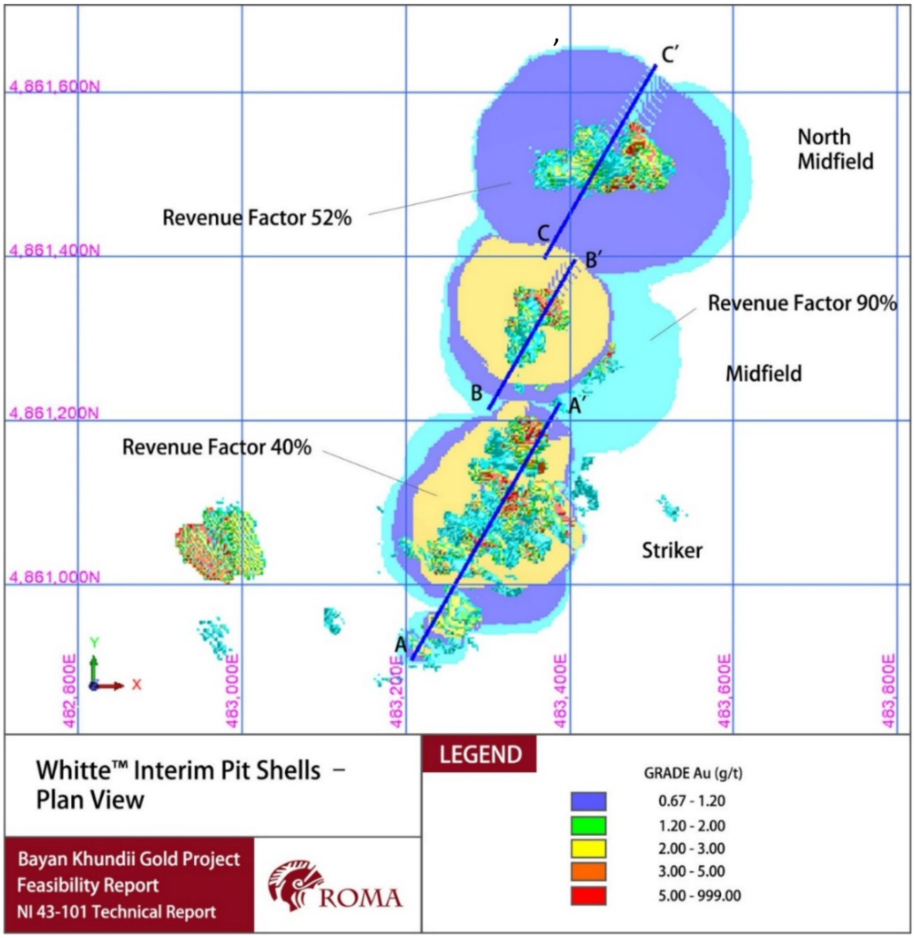


Figure 15-6 Whitte™ Interim Pit Shells – Plan View.

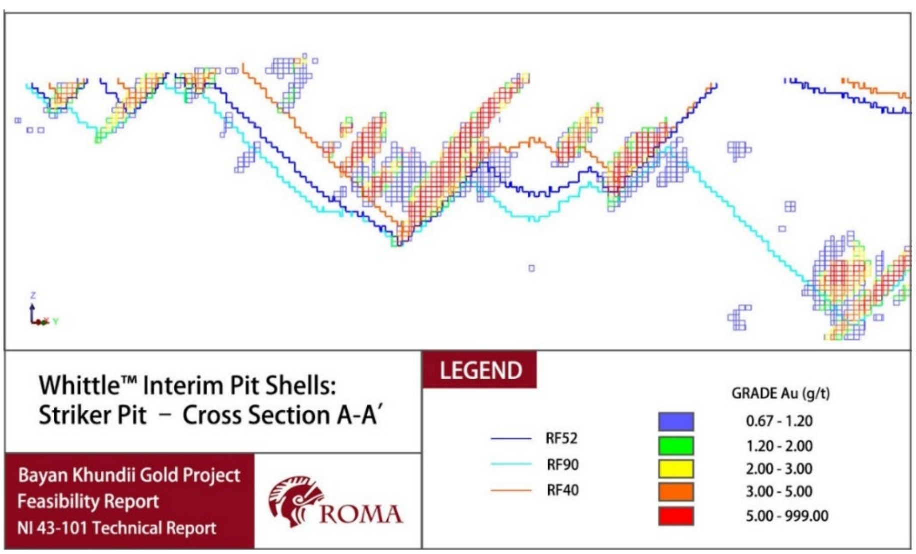


Figure 15-7 Whittle™ Interim Pit Shells: Striker Pit – Cross Section A-A'.

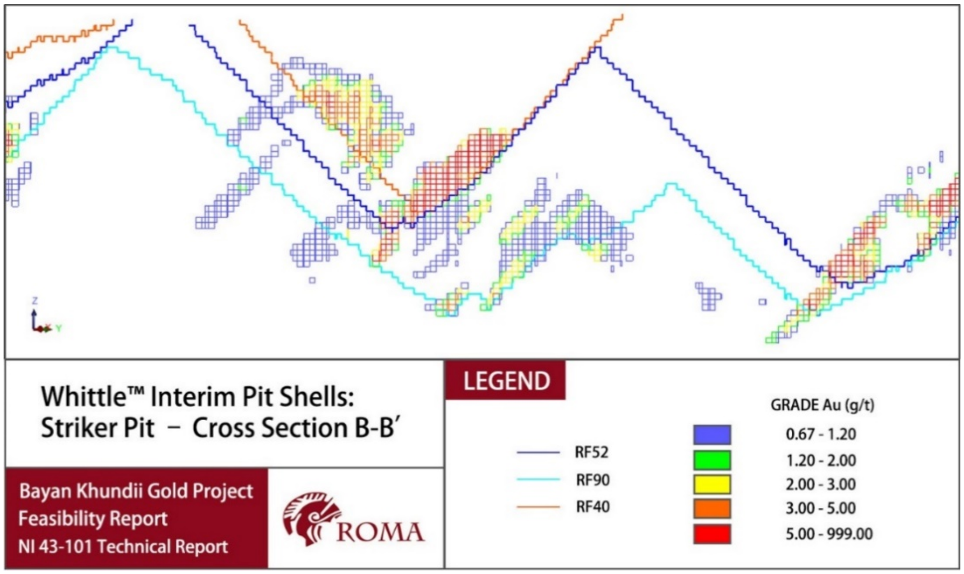


Figure 15-8 Whittle™ Interim Pit Shells: Midfield Pit – Cross Section B-B'.

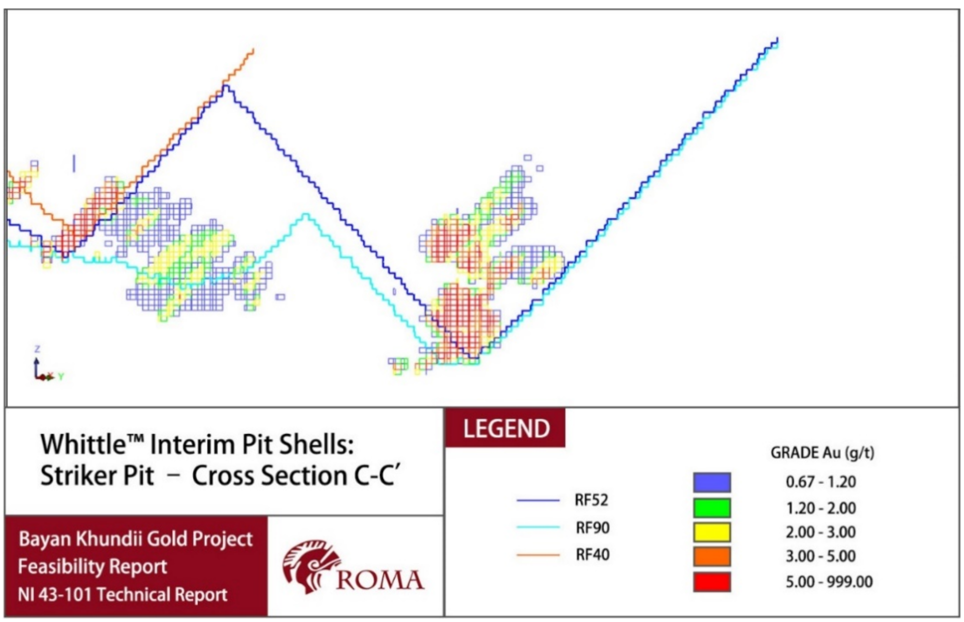


Figure 15-9 Whittle™ Interim Pit Shells: North Midfield – Cross Section C-C'.

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 15-8. The cut-off grade is selected based on when the processing cost of a tonne of ore equals to the return of gold sales recovered from this tonne 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 were deemed to have no material impact on the original optimizations following a validation process.

Factor	Value	Units
Gold Price	1,400	$/oz
Gold Price	45	$/g
Sell Cost (Royalty)	2.25	$/g
Sell Cost (Smelting)	0.15	$/g
Processing Recovery at COG (1)	86	%
Processing Cost	26.00	$/t
G&A Cost	1.13*	$/t
Calculated COG (2)	0.7	g/t

Table 15-8 Au Cut-off Grade Factors and Calculation.

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 Costs + G&A Costs)/Processing Recovery x (Sell Price - Sell Costs).*

15.7. PIT DESIGN

15.7.1. Ultimate Pit design

The ultimate design parameters proposed honors the findings from pit optimization, the various operational constraints associated with mining activities, and the final geotechnical recommendation from ROMA.

Parameter	Value	Unit
Bench Height	10	m
Batter Angle	80	degree
Berm Width (above 1125 MASL)	8	m
Berm Width	6	m
Ramp width - Dual Lane	20	m
Ramp width - Single Lane	13	m

Table 15-9 Pit Design Parameters.

As Figure 15-10 shows, two independent permanent ramps are introduced to reach the bottom of the pit on Striker pit at 1142.5 MASL, 1100 MASL at Midfield pit and North Midfield pit at 1087.5 MASL.

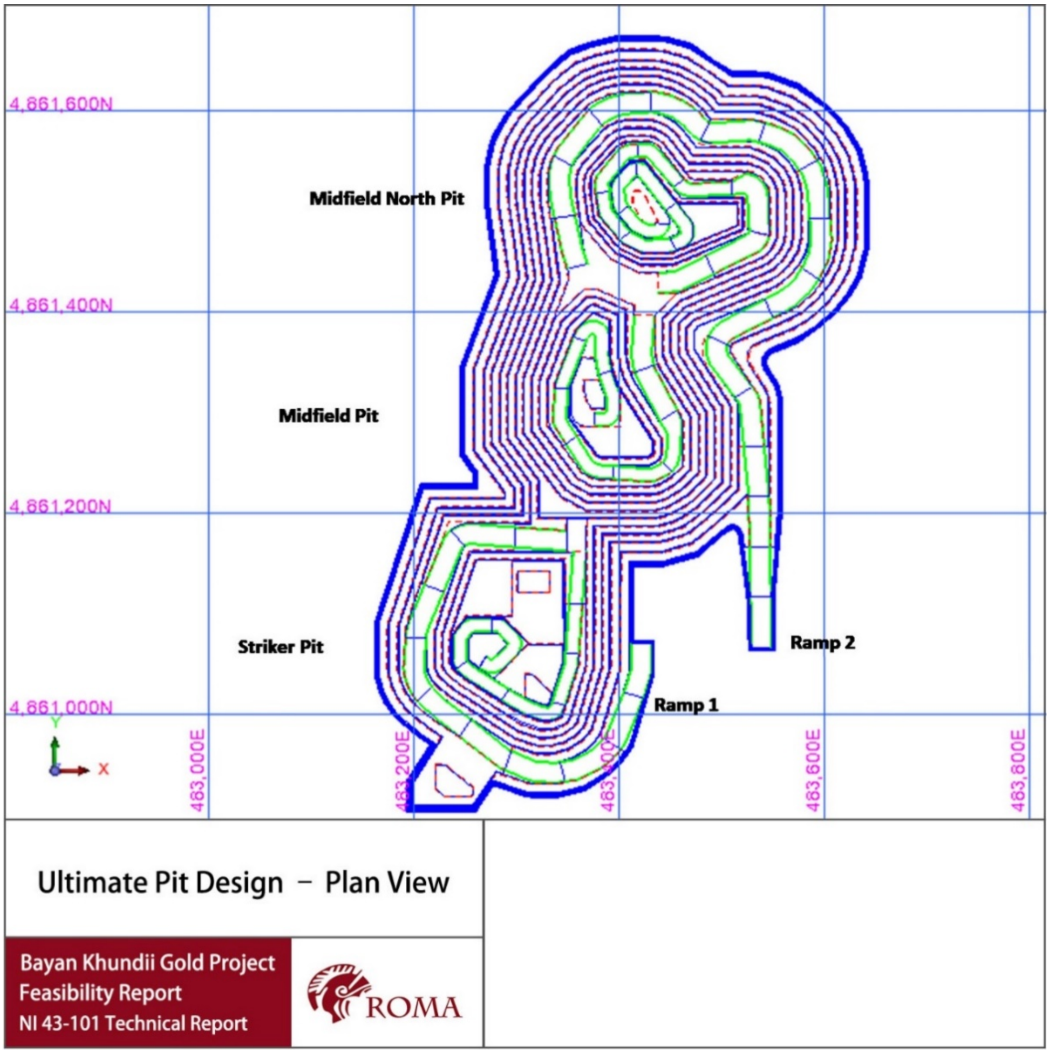


Figure 15-10 Ultimate Pit Design – Plan View.

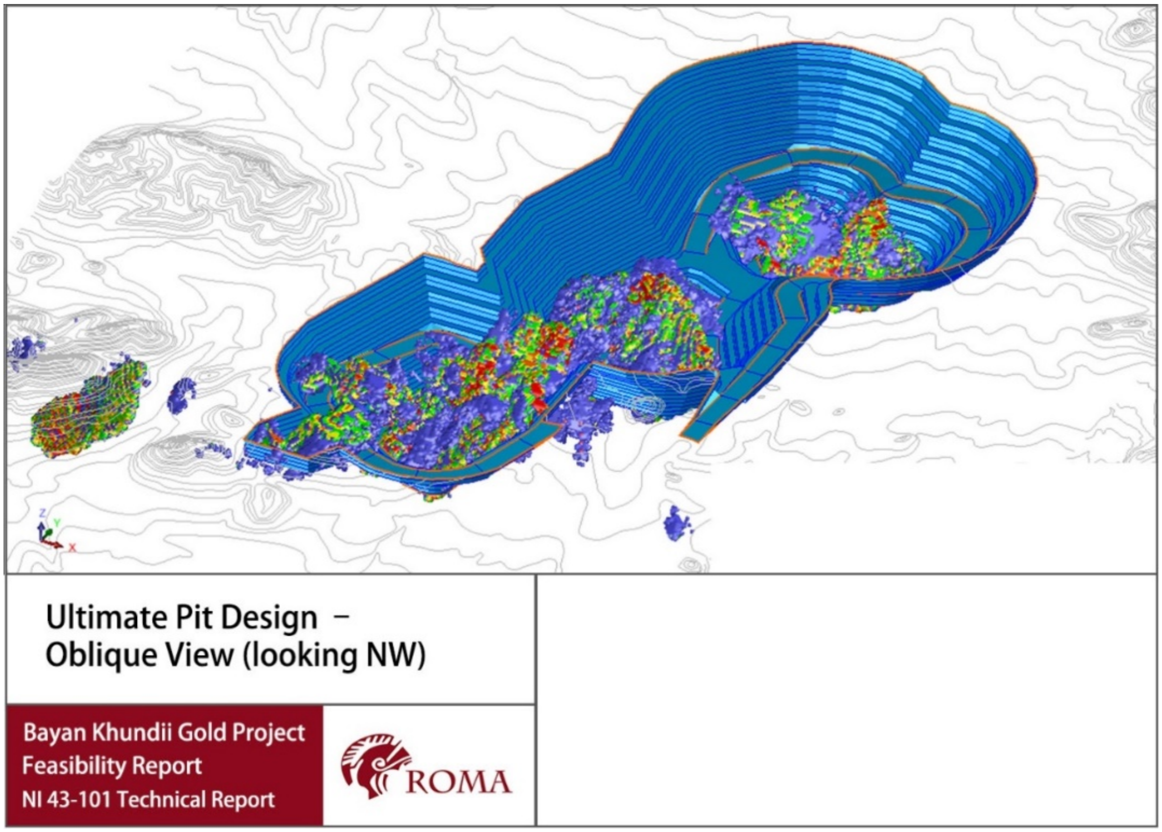


Figure 15-11 Ultimate Pit Design – Oblique View (looking NW).

15.7.2. Stage Design

The Project adopted a staged pit development approach. The objective of conducting pit staging are to:

- Identify a feasible overall mine development strategy, securing favorable economics during the payback period;
- Maintain consistent utilization of the process plant by maintaining a consistent process plant feed rate across the mine life with a coherent approach to mine development;
- Maintain stable overall annual mining productivity to efficiently use mobile mining fleet capital invested; and
- Maintain stable fleet performance to deliver the scheduled material movement more reliably.

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.

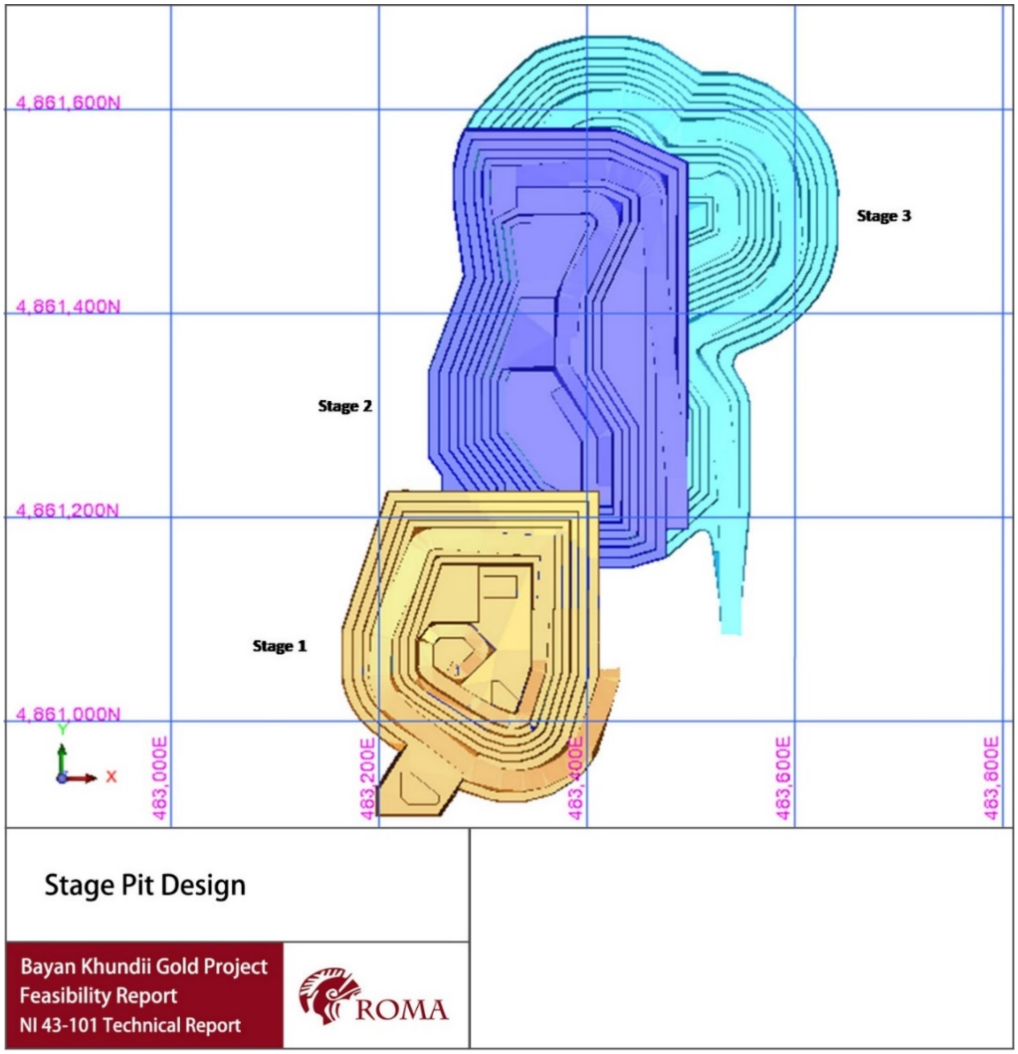


Figure 15-12 Stage Pit Design.

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 how the rock will perform in future pit development and allow the operator to adjust the pit design where necessary based on those findings progressively throughout the mine development.

15.8. MINEABLE QUANTITIES

Mineable quantities have been classified as outlined in Table 15-10.

Material Type	Description
Bulk Waste	<0.1 g/t Au
Mineralized Waste	0.1g/t< Au < 0.3 g/t
Subgrade Waste	0.1 g/t < Au < COG (0.7 g/t)
Ore type 0	0.7 g/t < Au < 1.2 g/t
Ore type 1	1.2 g/t < Au < 2 g/t
Ore type 2	2 g/t< Au < 3 g/t
Ore type 3	Au > 3 g/t

Table 15-10 Material Classification.

Stage no.	Total (Kt)	Waste (Kt)	Ore (Kt)	Au (g/t)	Au Feed (Koz)	Strip Ratio (t/t)
Stage 1	7,875	6,547	1,328	3.93	168	4.9
Stage 2	11,435	10,872	564	3.70	67	19.3
Stage 3	14,165	13,167	997	4.05	130	13.2
Stage 3s	1,199	660	539	2.56	44	1.2
Total	**34,674**	**31,246**	**3,427**	**3.71**	**409**	**9.1**

Table 15-11 Ex-pit Mineable Quantity Total Summary.

Note: stage 3s is an area of stage 3 located in the Midfield pit below bench 1150 MASL, where low grade is expected.

Stage no.	WST_BULK (Kt)	WST_MIN (Kt)	WST_SUB (Kt)
Stage 1	5,263	398	886
Stage 2	10,282	154	436
Stage 3	12,601	173	393
Stage 3s	347	70	244
Total	**28,493**	**795**	**1,959**

Table 15-12 Ex-pit Minable Quantity Waste Summary.

Stage no.	ORE0 (Kt)	ORE0 Au (g/t)	ORE1 (Kt)	ORE1 Au (g/t)	ORE2 (Kt)	ORE2 Au (g/t)	ORE3 (Kt)	ORE3 Au (g/t)
Stage 1	531	0.84	142	1.57	136	2.50	520	8.11
Stage 2	254	0.83	59	1.55	64	2.49	187	8.70
Stage 3	299	0.87	109	1.56	138	2.51	451	7.24
Stage 3s	256	0.85	72	1.55	64	2.43	146	6.13
Total	**1,340**	**0.85**	**382**	**1.56**	**402**	**2.49**	**1,303**	**7.67**

Table 15-13 Ex-pit Mineable Quantity Ore Summary.

Sub-grade material is currently treated as waste, but it is designed to be stockpiled separately from other waste within the IWF nearby the process plant (south west corner of the IWF). This material is potentially economically viable to re-handle and process in the future in the event modifying factors improve.

15.9. MINERAL RESERVE STATEMENT

Mineral Reserves estimated for the Bayan Khundii deposit are based on Measured and Indicated Resources, with an effective data of October 1, 2019 and calculated by Tetra Tech, and use FS level engineering designs for the pit and associated process plant operating parameters.

The cut-off grade for mineral reserve calculations is 0.7 g/t Au and was based on gold price of $1,400/oz. The Resource as defined by the regularized block model contain modelled mineral losses of 1% and average internal dilution of 9% within the ultimate pit.

A summary of the Mineral Reserves estimated for the Bayan Khundii deposit with an effective date of July 1, 2020 can be found in Table 15-14.

Classification	Tonnage (Mt)	Grade (g/t Au)	Contained Au (Koz)
Proven	1.2	4.2	166
Probable	2.2	3.5	244
Total	3.4	3.7	409

Table 15-14 Bayan Khundii Gold Deposit – Mineral Reserve Statement, July 1, 2020.

Notes:

1. *The effective date of the Mineral Reserve estimate is July 1, 2020. The QP for the estimate is Mr. Anthony Keers of Auralia Mining Consulting;*
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 $1,400/oz; and*
6. *Mineral Reserves were calculated from a diluted "mining" block model which included average dilution of 9% and losses of 1%.*

16. MINING METHODS

The FS has included only Measured and Indicated mineral resources as defined and presented in the Pre-feasibility Study prepared by Tetra Tech in 2019 and summarized in Section 14 – Mineral Resource Estimates.

16.1. MINE CHARACTERISTICS

Evaluation of the resource geometry and grade found 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 defined zones of the orebody.

All study work completed to date, including this FS has grouped the orebody into three zones, Striker, Midfield and North Midfield.

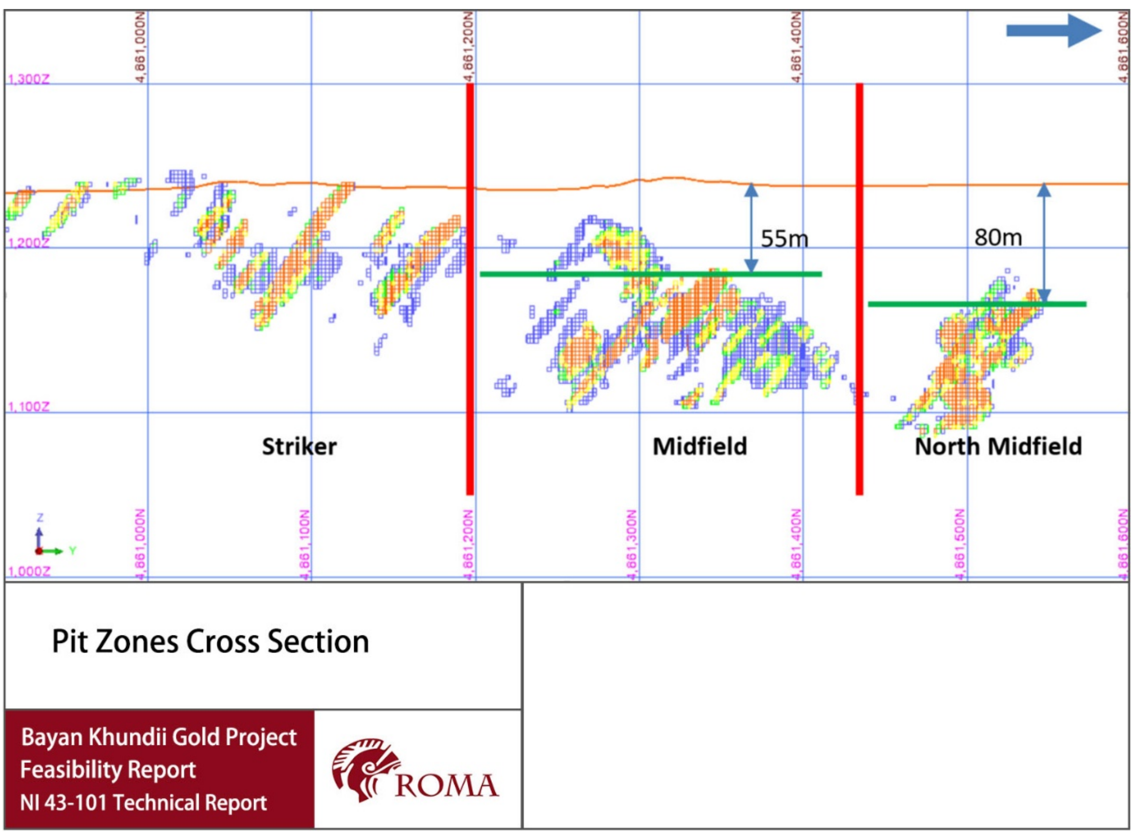


Figure 16-1 Pit Zones Cross Section.

16.1.1. Striker

Striker 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. Midfield

Midfield is in the central portion of the deposit. The orebody begins near surface however the average Au grade is relatively low until approximately 55m below the surface. Given proximity to surface and the associated stripping ratio, the pit optimization has demonstrated this section of the deposit is also amenable to open pit mining.

16.1.3. 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 also amenable to open pit methods.

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 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.

16.2. SELECTION OF MINING METHOD

An open pit mining method has been selected for the Bayan Khundii deposit as the basis for this FS. 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:

- 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 pit and the IWF;
- 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 – removal of overburden and stockpile it to designated waste stockpile (IWF); followed by selective excavation of ore and either direct feed it to the crusher feed bin where

no blending is required, or stockpile it on the ROM for future re-handle and blending as feed for the processing plant; and
- When ore blending is required, a blending plan would be developed to achieve the desired feed grade to the processing plant, and ore would be loaded and trammed to the crusher feed bin accordingly.

Considering the variable grade nature of the orebody, a selective mining method for grade control is necessary to prevent unnecessary ore dilution and loss. To achieve this primary goal on ore mining:
- Drill and blasting of ore should focus on rock breakage using higher energy explosives which produce less gas energy which in turn helps to minimize block movement; and
- Ore excavation should be selective by clearly delineating the ore into grade zones, applying proper geological grade control procedures, and ensuring the bucket size of the excavator matches the selectivity requirements of mining.

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 mine plan, the Project considered a number of factors including:
- Stable ore supply to meet the process plant operating requirements;
- Maximising early feed grade where possible to improve return on capital investment;
- Location and capacity of stockpiles available to assist in optimizing process plant feed as above;
- Maximum fleet capacity for mining ore and waste over the life of the project – multiple fleet options were considered; and
- Ensuring the scheduled vertical rate of advance can be achieved in practice.

16.3.1. Process Plant Feed Strategy

The primary target during scheduling of material movement is process plant utilization, given the importance of maximizing utilization of invested capital. To optimize the utilization, O2 Mining has run a theoretical exercise to identify the optimal gold grade distribution pattern across the life of mine on a planned feed rate. To prevent substantial process plant feed grade fluctuation, Figure 16-2 illustrates the fundamental feed grade pattern that delivers the optimum project outcome. In summary:
- There is an initial period of 3 months of waste only production, which is used for the ROM pad and IWF construction, there is no ore feed during these periods and only minimal ore mined and stockpiled.

- The schedule allows for 3-month process plant operations ramp up period in the beginning of Year 1, starting with a lower feed grade of 3 g/t Au and ramping up to a capped grade of 4.5 g/t Au. The feed rate for months 1 to 9 is also scheduled lower than nameplate, leaving opportunity for additional ore to be processed in Year 1. Ramp up to nameplate occurs at the end of Year 1 period.

- The schedule then achieves approximately 2.5 years of capped feed grade of 4.5 g/t Au and lasts until Year 2 month 9. Grade is capped at 4.5 g/t Au to ensure no loss of gold recovery through the elution and gold recovery circuit as a result of capacity constraints.

- Feed grade then ramps down from 4.5 g/t to 3.75 g/t and then 3.5 g/t because of lower average mined grades during this period, which lasts a further 1.5 years.

- Smooth and more consistent Au grade could be achieved in Year 6 however this would be at the expense of feed grade in prior years, utilizing some of the stockpile material earlier. An alternative future consideration would be to provide feed from other surrounding deposits (once developed) to improve the feed grade during this period and continue to operate the processing plant after Year 6.

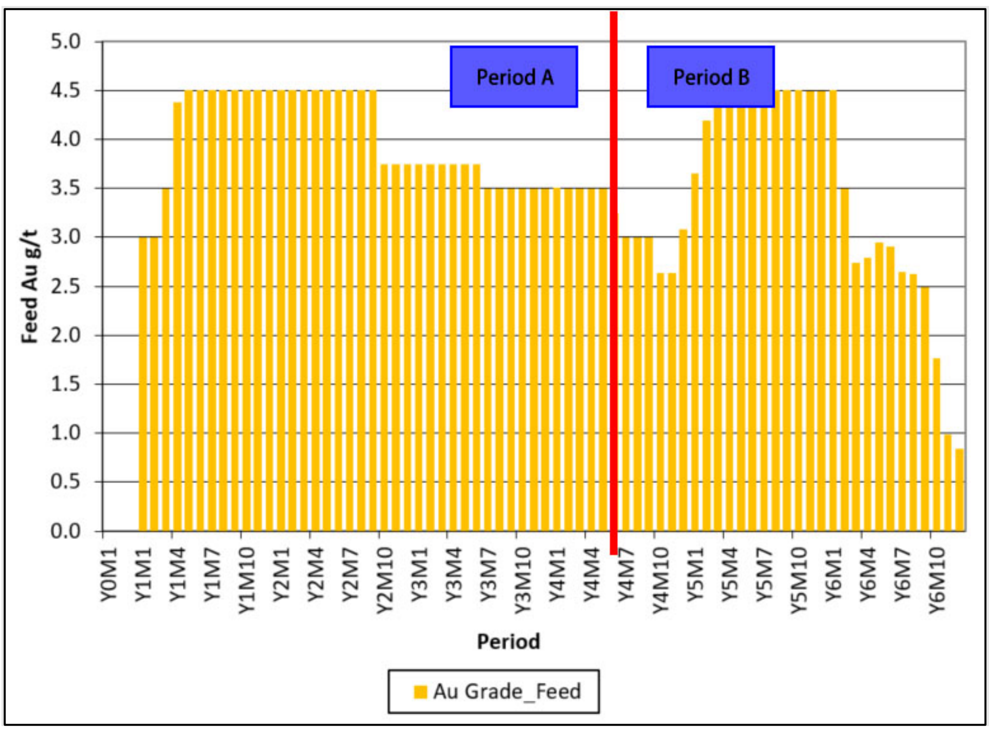


Figure 16-2 Process Plant Feed Au Grade Distribution.

16.3.2. Mine Ramp-Up Strategy

In order to target the feed grade pattern presented in Figure 16-2, four main mine schedule scenarios were prepared on a month by month basis and compared before making a final selection of the schedule. These scenarios can be described as follows:

- **Scenario 1**– Flat mining capacity from the beginning of the schedule at 740 thousand tonnes per month ("Ktpm") for 3 years and 4 months to Y4M4, and then slowly tail off material movement when ore in stage 3 is sufficiently exposed to provide sufficient process plant feed.

- **Scenario 2** – Some deferral of waste movement in the first 2 years, and maintain a lower total material movement of 604 Ktpm for 2 years and 5 months, and then ramp up to 1,100 Ktpm for 11 months to Y4M4, and then slowly tail off when ore at stage 3 is sufficiently exposed to provide sufficient process plant feed.

- **Scenario 3** – Heightened deferral of waste movement with total material movement capped at 500 Ktpm for 2 years, and then ramp up to 1,074 Ktpm for 1 year and 4 months to Y4M4, and then slowly tail off when ore at stage 3 is sufficiently exposed to provide sufficient process plant feed.

- **Scenario 4** – Maximum deferral of waste movement with total material movement capped initially at 375 Ktpm for 1 year and 9 months, and ramp up to 1,123 Ktpm for 1 year and 6 months to Y4M3, and then slowly tail off when ore at stage 3 is sufficiently exposed to provide sufficient process plant feed.

The potential cashflow performance for all of the 4 scenarios was compared based on the financial unit cost completed at PFS stage and using a three-year trailing average (at the time of optimization study) gold price of US$1,307/oz. The $NPV^{10\%}$ (excluding capital considerations) value for each scenario is displayed in Table 16-1.

Scenario	NPV (US$ '000)
1	170,115
2	171,654
3	171,864
4	169,967

Table 16-1 LOM Schedule Scenario NPV Comparison.

Note, these scenarios do not consider the effect of fixed and variable costs on unit costs when varying the production rates – the NPV is calculated considering fixed mining costs per block of material in the resource model. Given the relatively limited difference in NPV's for each scenario, it was not considered reasonable to undertake a more thorough cash flow analysis in order to help select the optimum schedule.

Scenario 1 has been selected as the preferable mine schedule due to:

- Project economic performance is not sufficiently sensitive to mining costs, as the cashflow performance varies by less than 1%. The higher upfront stripping costs are offset by the improvement in feed grade and recovered ounces during that period;

- Consistent mining capacity allows for better mining productivity and performance and a potentially more certain outcome as a result of greater repetition and predictability of the mining methods;
- It offers the lowest possible unit mining cost per tonne of material moved as all equipment has a longer period of time to recover the capital investment for the equipment to the project;
- Consistent supportive infrastructure, such as workshop, warehouse, camp, office and logistics facilities with a reasonably stable utilization rate across the mine life. If the deferred waste scenarios were chosen, infrastructure would have to be designed to match the maximum mining capacity, which can only be utilized for a limited period of time – resulting in an increase in the project capital cost, and a lower return on this additional capital; and
- Scenario 1 has a vertical rate of advance (max) of 9 benches per annum, which allows further capacity to increase total production capacity if the process plant would allow. Scenarios 2 through 4 have vertical rates of advance (max) of 14 benches, which is considered aggressive given the tight spacing in the bottom of the pits.

To further optimize schedule Scenario 1, the portion of the Midfield Pit in Stage 3 (below 1150 MASL) has been flagged separately as Stage 3s as the grade in this area is lower than the rest of Stage 3. Therefore, it makes economic sense to develop Stage 3 first.

16.4. PRODUCTION SCHEDULE

The following key objectives have been pursued during the mine scheduling exercise:
- Fully utilize the process plant – 450 Ktpa in Year 1, and 600 Ktpa in all other years;
- Retain sufficient stockpile capacity to supplement ore feed from the pit and stabilize the ore feed grade throughout the mining life;
- Maintain consistent process plant feed grade with no monthly ore feed period exceeding 4.5 g/t Au; and
- Direct feed ore where possible to achieve the expected grade outcomes.

The annual production schedule is presented in Table 16-2.

Schedule Items	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Total
Total Mining Inventory									
Total Ex-pit	Kt	808	8,072	8,880	8,880	5,473	1,504	1,057	34,674
Waste	Kt	808	7,528	8,107	8,407	4,923	904	571	31,246
Ore	Kt	0	544	773	473	550	600	487	3,427
Au Grade	g/t	0.00	3.66	3.53	4.37	3.39	4.39	2.96	3.71
Mined Gold	oz	0	64,081	87,838	66,488	59,913	84,675	46,329	409,323
Processing and Stockpile Balance									
Mill Feed	Kt	0	450	600	600	600	600	577	3,427
Feed Au Grade	g/t	0.00	4.25	4.31	3.63	3.18	4.39	2.63	3.71
Process Recovery	%	0	93%	93%	93%	93%	93%	92%	93%

Schedule Items	Unit	Y0	Y1	Y2	Y3	Y4	Y5	Y6	Total
Gold Recovered	oz	0	57,428	77,702	65,162	56,999	79,108	45,270	381,668
Stockpile Balance									
In tonne	Kt	0	95	201	7	6	0	0	309
In Au grade	g/t	0.00	0.85	0.84	0.83	0.86	0.00	0.00	0.84
Out tonne	Kt	0	1	28	134	55	0	91	309
Out Au grade	g/t	0.00	0.86	0.84	0.84	0.84	0.00	0.84	0.84
Balance tonne	Kt	0	94	267	140	91	91	0	
Balance Au grade	g/t	0.00	0.85	0.84	0.84	0.84	0.84	0.00	

Table 16-2 LOM Schedule Summary in Year.

The life of mine material movement schedule by pit stage is presented in Figure 16-3.

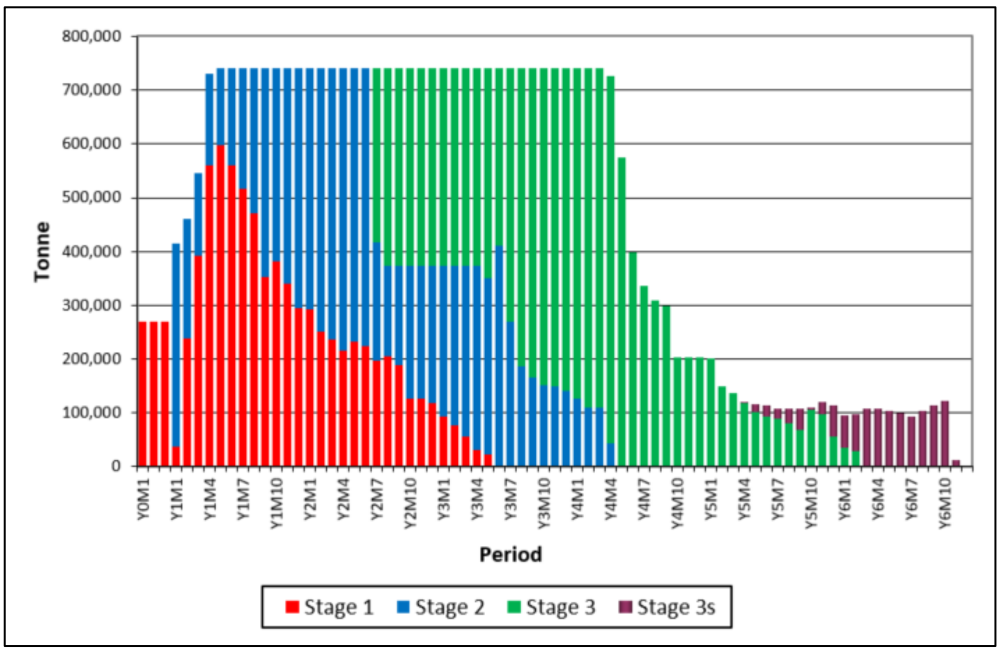


Figure 16-3 LOM Ex-pit Mining Schedule.

The life of mine ore schedule by ore type is presented in Figure 16-4.

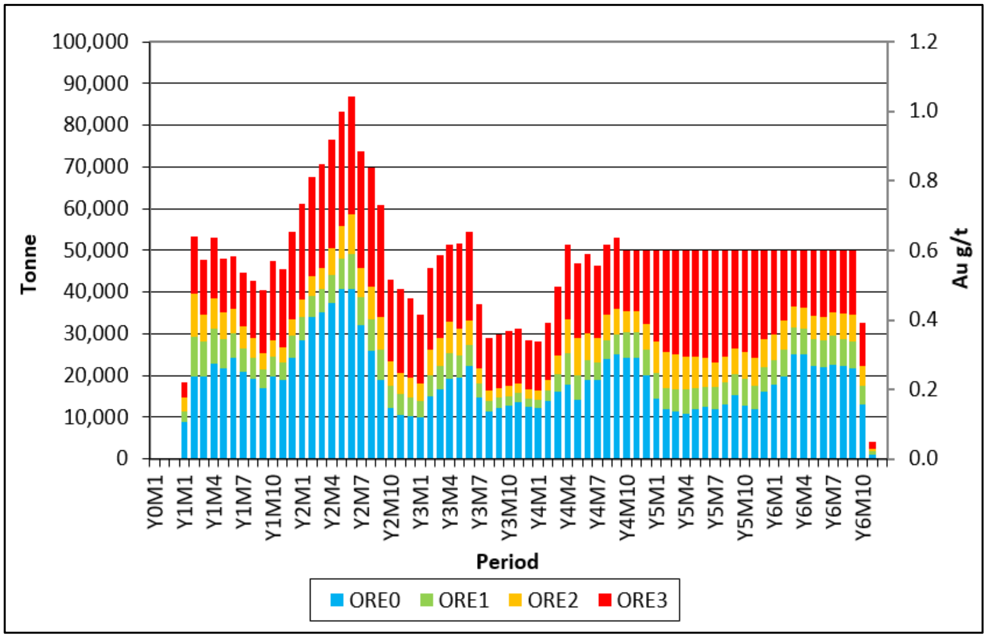


Figure 16-4 LOM Ore Mining Schedule.

The life of mine stockpile balance and grade by month is shown in Figure 16-5.

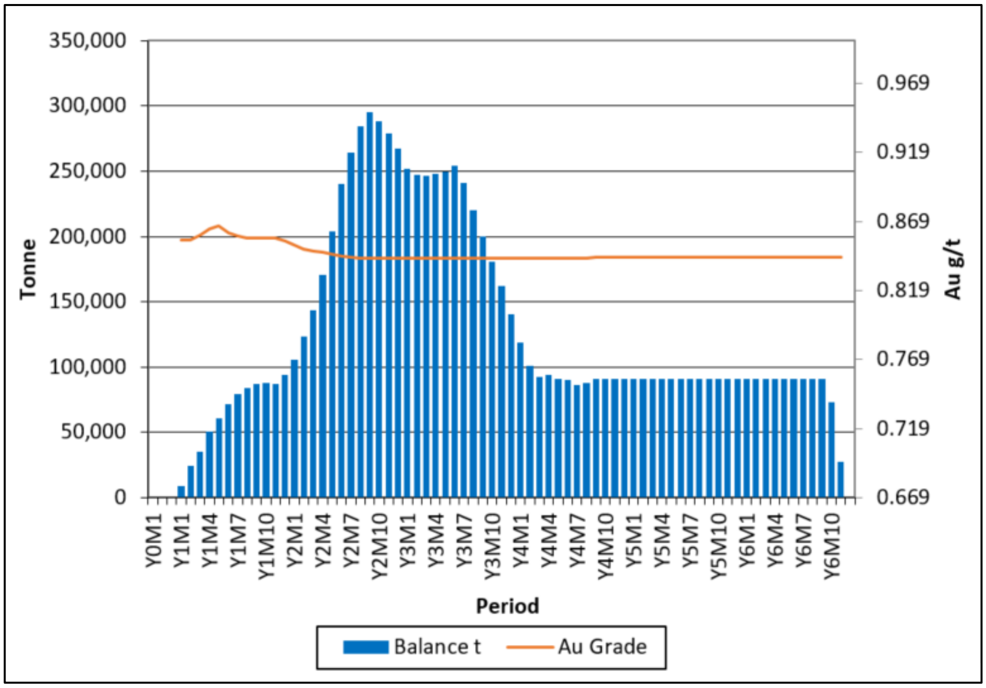


Figure 16-5 LOM Stockpile Balance.

16.5. MINING EQUIPMENT

16.5.1. Fleet Selection

Generally, 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 costing effectiveness, local maintenance capacity and operating flexibility.

- 75T Hydraulic Excavator ("HEX") & 55T Dump Truck ("DT")– Waste loading only, no ore digging; and
- 36T HEX & 55T DT – Ore, and selective/clean up waste.

The 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:

- Down the Hole ("DTH") boom style rig: for waste and trim blast pattern at drill hole diameter 140 mm and 115 mm; and
- Top hammer boom style rig: for ore and pre-split blast pattern at drill hole diameter 89 mm.

16.5.2. Fleet Operation Hours

In consideration of the application for Bayan Khundii, and from the experience of the contractors providing proposals, 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

Excavators

The productivity of excavators varies due to differing material properties and also due to 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 high excavation selectivity required. Table 16-3 illustrates the productivity build-up for each fleet and material type.

Description	Unit	Prod. 1	Prod. 2	Prod. 3	Prod. 4	Prod. 5
Material Type		Ore	Selective Waste	Bulk Waste	Selective Waste	Bulk Waste
Excavator/Shovel/Loader Type		36T HEX	36T HEX	36T HEX	75T HEX	75T HEX
Truck Type		55T DT	55T DT	55T DT	55T DT	55T DT
Annual Production Capability	tonnes	2,129,926	1,860,824	2,621,166	2,862,908	4,037,864
Productivity per engine hour (PEH)	t/PEH	333	291	410	448	632

Table 16-3 Productivity Build-up – Excavation.

Drills

Six types of drill patterns will be used, and they are classified based on level of energy and energy distribution required. The drill numbers are calculated based on the drill pattern assigned, drill penetration rate and available equipment production hours per period.

Parameter	Unit	Roc L8				DP1500	
		Waste Weathered	Waste Fresh	Trim Weathered	Trim Fresh	Ore	Presplit
Hole Diameter	mm	140	140	115	115	89	89
Explosive Type		ANFO	Heavy ANFO	Emulsion	Heavy ANFO	Heavy HANFO	Package Emulsion
Est. PF	Kg/bcm	0.54	0.71	0.48	0.61	0.74	0.00

Table 16-4 Productivity Build-up – Drilling.

Trucks

The truck productivity is calculated based on simulations run using Runge Talpac™ software using haulage routes developed according to the production schedule. The haulage routes vary by pit stage, material destination and period of mining. The CAT 773 dump truck and its rimpull curve was used for the truck cycle time and productivity calculation. Throughout the evaluation, multiple truck types were evaluated and simulated with similar travel times, the differences in travel times was considered insignificant for this study. Once final truck selection is made, it is recommended to re-run the simulation to ensure sufficient haulage coverage is planned throughout the mine life.

A 40T articulated dump truck or side tipper truck was selected for dry cake tailings, which is loaded at the process plant and hauls tailings to the tailings cell located in the IWF. This fleet will not be used for ex-pit production purposes. Conversely, the ex-pit trucks can be used for tailings haulage in the case when the tailings truck is down for maintenance.

16.5.4. Total Fleet Summary

Schedule Items	Y0	Y1	Y2	Y2	Y3	Y4	Y5	Y6
Major Fleet								
75T HEX	0	2	2	2	2	2	1	0
36T HEX	2	1	1	1	1	1	1	1
55T Dump Truck	10	10	10	10	10	10	4	3
40T ADT Truck	0	1	1	1	1	1	1	1
Drill#1 – DTH	1	1	2	2	2	2	1	1
Drill#2 – TH	0	1	1	1	1	1	1	1
Ancillary								
Front End Loader (3 cum bucket)	0	2	2	2	2	2	2	2
Dozer#1 – 475hp	2	2	2	2	2	2	0	0
Dozer#2 – 365 hp	3	3	3	3	3	3	2	2
36T HEX with scaling attachment	0	1	1	1	1	1	1	1
Grader – Mine spec 14' blade	1	1	1	1	1	1	1	1
Water Carts – 50kL	1	1	1	1	1	1	1	1
Service Truck – full lube and fuel	1	1	1	1	1	1	1	1
Compactor - 10T	1	1	1	1	1	1	1	1
Support Fleet								
Skid Steer	0	1	1	1	1	1	1	1
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	4
6 kVA Lighting Plant	7	10	10	10	10	10	10	10
6 inch pump	1	2	2	2	2	2	2	2
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	2
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	6
Single Cab LV	1	2	2	2	2	2	2	2
20 Seater Bus	1	2	2	2	2	2	2	2
30T Rough terrain crane	0	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)	0	1	1	1	1	1	1	1

Table 16-5 Fleet Number Summary.

16.6. WORKFORCE

The work force for the life of mine was planned considering the team required by the owner to manage a contractor to run the operations, and also considering the personnel proposed by the contractor to operate the project. The grand total of site-based personnel during operations peaks at 390 before dropping back to 330 in Year 4 in line with a reduction in total material movement. Total site employment falls to 300 personnel in Year 6 (final productive year), as a result in 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 the Bayankhongor province.

16.7. INTEGRATED WASTE FACILITY

The Bayan Khundii site is comprised of the open pit mine, processing plant and support facilities, and Integrated Waste Facility ('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 six-year Life of Mine ("LOM") for the BK project. The schedule assumes that the plant will run at 75% capacity during the first year of opeartions, with production ramping up to 0.6 Mtpa of tailings for the next 4 years before slightly decreasing production in Year 6. An approximate 7.6 Mt of waste rock will be generated during the first 4 years of operations, with the tonnages decreasing to 0.8Mt and 0.4 Mt for Years 5 and 6 respectively, hence the IWF has been designed to store a total of 35.2 Mt of material during the LOM.

Various iterations of the ultimate LOM IWF shell were undertaken during the development of the basis for design, with the ultimate shell being chosen in order to maximize the use of the available land within the approved mine lease boundaries.

The IWF shell will have a total height of 76 m in its highest section which is located along the southern flank of the structure and have a crest elevation of RL 1302 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 2.8:1 (H: V) 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 tailings to be placed within the IWF are 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.

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 analyses.

A 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 will support the overall water management of the IWF, and has been designed to minimize runoff migration into the IWF project areas, as well as minimizing 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 infrastructure for the IWF water management system entails:

- Diversion drain along the north-western flank of the IWF to divert clean water runoff away from the site;
- Engineered clay liner over the foundation sitting below the tailings cells within the IWF;
- Contaminant Collection Underdrain, along centerline of engineered clay liner;
- Contaminant Runoff Collection Pond (“CRCP”), south of the IWF; and
- 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 we recognize that 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.

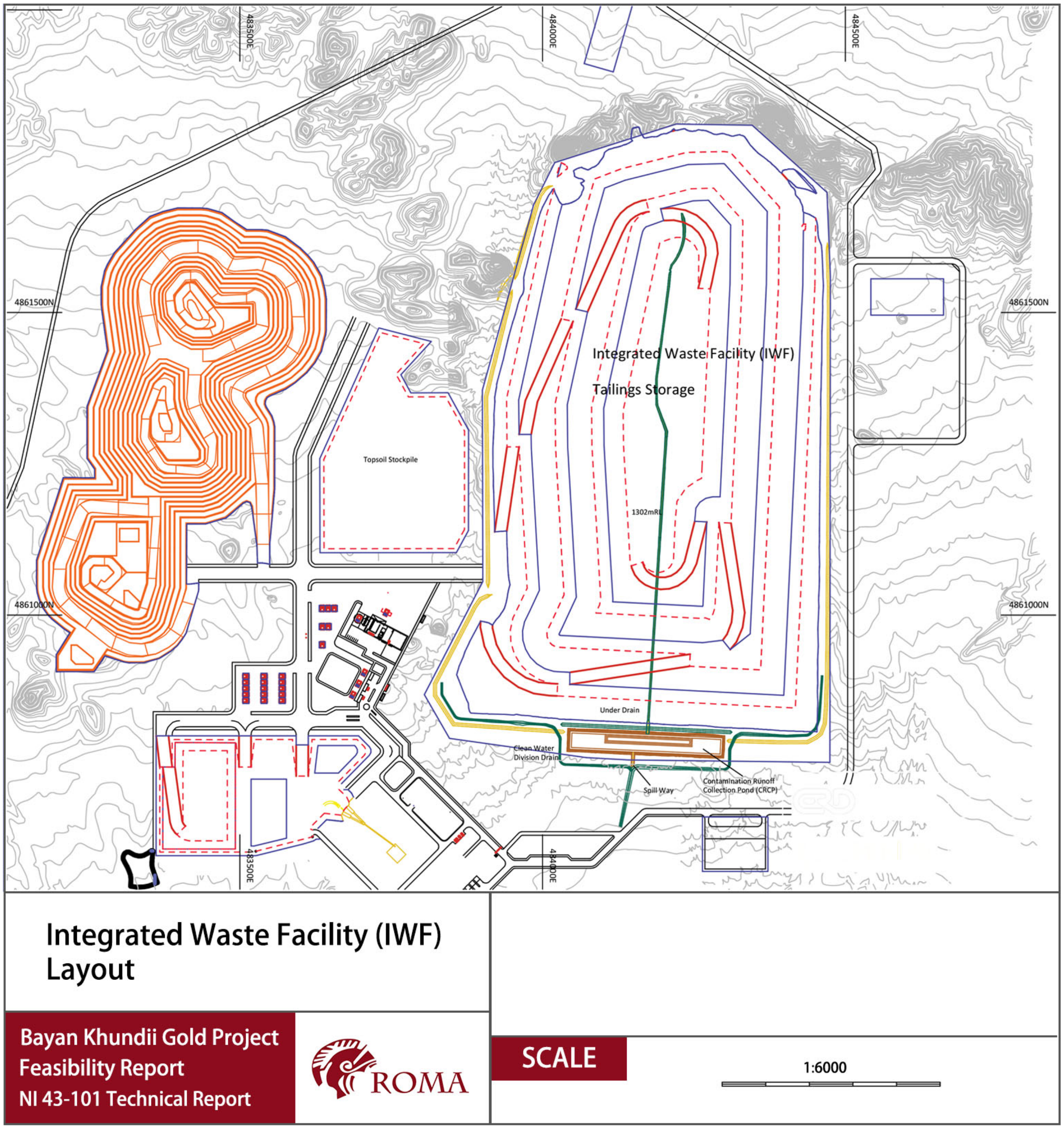


Figure 16-6 Integrated Waste Facility ("IWF") Layout.

16.8. GEOTECHNICAL REVIEW

16.8.1. Background

The Geotechnical Review focuses on:

1. The six recently completed geotechnical drill holes (BKHGD04-09; Figure 16-7; Table 16-6) at the Bayan Khundii ("BK") gold deposit by Erdene under the supervision of ROMA; and
2. The latest proposed mine pit design by O2 Mining Limited (O2, 2020).

Figure 16-7 Location of Geotechnical Drill Holes Completed in November 2019.

A desktop review of existing data provided by Erdene included:

- Geological and geotechnical data for 266 drill holes completed between 2015 and 2019;
- 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); and
- Hydrogeology report by Pando Australia (Pando, 2020).

Hole ID	Easting (UTM 47N)	Northing (UTM 47N)	Elevation (MASL)	Azimuth (°)	Dip (°)	Depth (m)	Core Recovery (%)	Rock Quality Designation (RQD) (%)	No. of Joints Measured
BKHGD-04	483308.2	4861248.5	1235.7	245.9	-69.9	100	98.5	66	352
BKHGD-05	483412.9	4861048.1	1232.9	222.3	-61.3	80	99.1	68	281
BKHGD-06	483437.1	4861248.8	1235.8	131.0	-70.3	110	99.0	78	350
BKHGD-07	483463.6	4861478.3	1238.2	80.7	-64.9	165	97.7	61	472
BKHGD-08	483343.6	4861511.3	1239.3	325.2	-65.7	135	98.3	76	269
BKHGD-09	483356.6	4861569.8	1240.0	75.3	-56.7	155	99.0	79	323

Table 16-6 Geotechnical Drill Holes Completed in 2019.

16.8.2. Previous Studies

In the previous studies, 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 (Table 16-7).

Source	Bench Face Angle (°)	Bench Height (m)	Berm Width (m)	Inter Ramp Angle (°)
RPM/Sardonyx (2018 & 2019)	65	15	6	46
Tetra Tech (2019)	65 (60 for near surface)	15 (10 for near surface)	8-10	36-45

Table 16-7 Summary of Previous Mine Pit Designs.

16.8.3. Rock Properties

Geotechnical parameters have been reviewed based on the available laboratory testing data from both the recent 6 drill holes (BKHGD-series) and the previous investigations (BKD-series; Sardonyx, 2018). A total of 72 density, 24 unconfined compressive strengths ("UCS") and 148 point load ("PL") test results conducted by Soil Trade LLC (Soil Trade) from the recent 6-hole (BKHGD-04 to -09) dataset were reviewed.

Apart from some outliers, the density test results appear to correlate with previous results. However, for UCS test results, the rock strengths are highly variable ranging from 5.5-132.4 MPa, which could be the result of sample bias, inherent weakness planes within the samples and anisotropic elements. Additionally, the recent 6-holes are generally lower than those derived from previous testing (BKD-series), with the exception of the Jurassic Sequence (Table 16-8).

Material	Unconfined Compressive Strength ("UCS") (MPa)					Global UCS (MPa)	Sector – UCS Variation (MPa)
	Min.	Max.	Average BKHGD	Average BKD	Average ALL		
Basalts	11.8	58.6	30.1	32.4	31.6	28	-
Jurassic Sequence	12.9	57.5	29.0	30.8	30.3	30	NE – 22
Carboniferous Volcanics	5.5	132.4	28.0	54.5	41.2	36	NE – 45 W – 25
Intrusives	12.8	111.8	34.2	68.7	60.7	50	NE & E – 45

Table 16-8 Summary of Derived UCS Strengths.

Anisotropic elements within the rock will have significant impact on rock strength. The plane of loading in the UCS tests in relation to the orientation of any anisotropic features in the sample may account for some of the wider rock strength variations, although this cannot be concluded based on the provided data alone. Also, anisotropic elements cannot alone account for the overall lower strengths of the BKHGD-series when compared with previous test results. Therefore, additional laboratory testing may be required to better determine the overall rock strength characteristics.

16.8.4. Stereoplots and Kinematic Stability Assessment

Kinematic stability assessment concentrates on the typical rock failure types (planar, wedge & toppling) in relation to cut face angles and joint sets within the rock mass. The stereographic analyses have been used to identify the critical modes of failures governing the configuration of BFA design.

The review of the 6 geotechnical drill holes completed in 2019 followed the 6 geographic sectors and 4 lithological domains as assigned by Tetra Tech (2019) with kinematic assessment for additional slope orientations (Figure 16-8) to better reflect the proposed mine design (O2, 2020). The kinematic assessments were cross-referenced with available analyses by Tetra Tech (2019).

The structural data recorded in the 6 recent drill holes (BKHGD-04 to 09) were collected using conventional methodology ("bottom-line") for inclined drill holes to measure the alpha and beta angles. Conversely, the previous structural data by the Erdene geologists were collected using an alternative method ("top-line") to measure the angles so that they could utilize the Planes from

Oriented and Navigated Drill Core ("POND") calculation (Stanley & Hooper, 2003) to convert alpha and beta angles into in-situ plane orientations.

Figure 16-8 Slope Orientation Selected for Kinematic Assessment.

Some 2,000 individual structural records were characterized into the four lithological domains, converted into in-situ plane orientations using conventional methods and projected onto stereoplots for assessment. These were compared with previous results by Tetra Tech (2019) to determine the consistency of the recently acquired data. Significant differences were noted in all four lithological domains (example of Jurassic Sequence comparison in Figure 16-9), which cannot be explained by localized structures or sample size bias alone.

Review of the Tetra Tech data showed that a conventional ("bottom-line") conversion was used on the Erdene structural data which were collected using alternative methodology ("top-line"). When the top-line conversion was applied to the same Tetra Tech data, the results were, in general, consistent with those in the 6 drill holes.

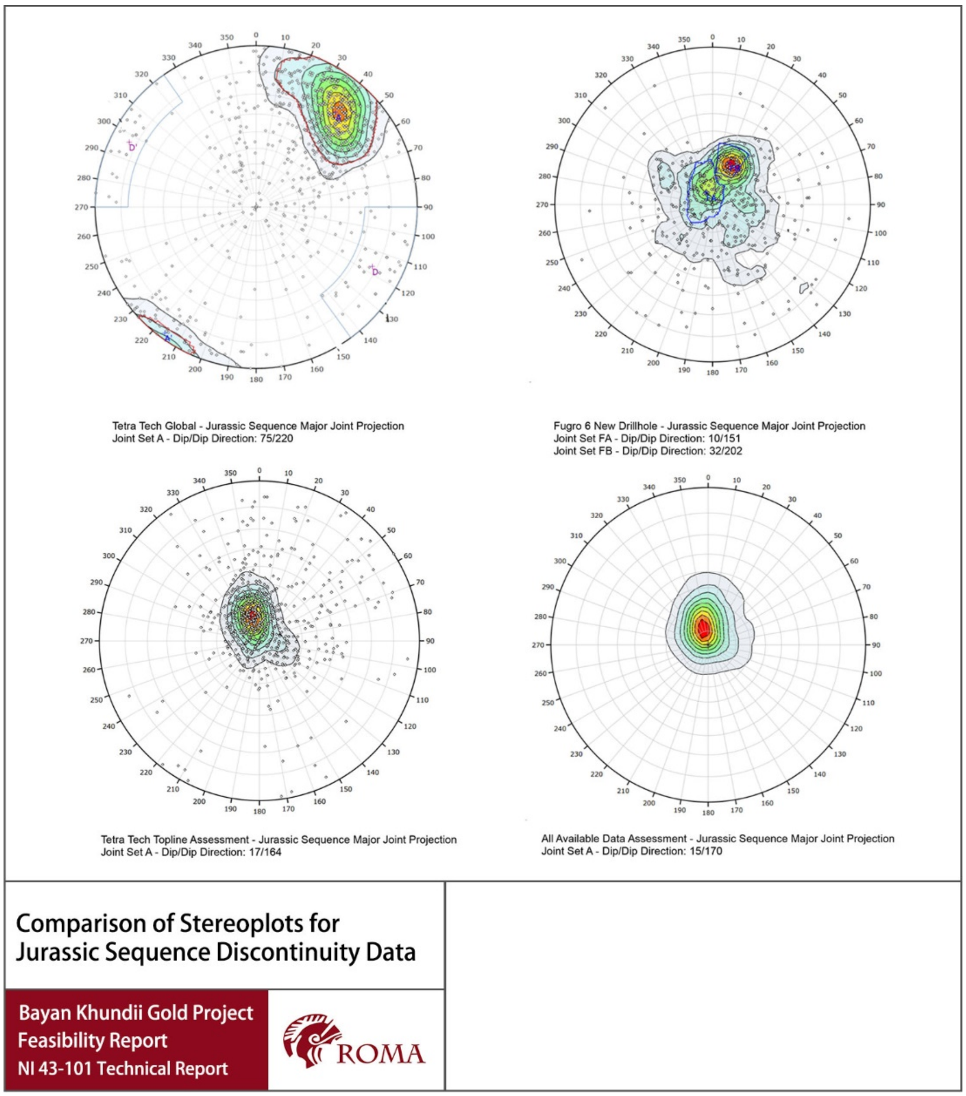


Figure 16-9 Comparison of Stereoplots for Jurassic Sequence Discontinuity Data.

Additionally, all Jurassic Sequence data, some 6,000 pole vectors, from the BKD-series within 50 m footprint of the mine were projected for a true global comparison. The major joints could then be compared and assessed representatively (Table 16-9).

Joint Set	Dip (°)	Dip Direction (°)
Tetra Tech "original" Joint A	75	220
Fugro Joint FA	10	151
Fugro Joint FB	32	202
Tetra Tech "correct" Joint A	17	164
All Erdene Data Joint A	15	170

Table 16-9 Joint Set Comparison for the Jurassic Sequence.

A total of 11 slope orientations of the proposed mine design (O2, 2020) were selected for kinematic assessment (Figure 16-8). Of the 4 lithological domains, the Intrusives – Granitoids were not kinematically assessed as the intrusive bodies were not considered extensive enough for analyses. For the remaining 3 lithological domains, a BFA of 80° from the proposed mine design (O2, 2020) and a friction angle of 30°, consistent with Hoek-Brown formulas using rock mass parameters (Li et al, 2008), were adopted for the kinematic assessments. A summary of the potential kinematic instability is in Table 16-10:

Slope Orientatio	Planar Failure			Toppling Failure			Wedge Failure		
	Basalt	Jurassic	Carb. Volc.	Basalt	Jurassic	Carb. Volc.	Basalt	Jurassic	Carb. Volc.
035	-	-	Minor - Moderate	-	Minor	-	Minor	-	-
100	-	-	Moderate	Minor - Moderate	-		-	-	-
115	-	-	-	Moderate	-		Minor	-	-
120	-	-	-	Moderate	-		Minor	-	-
170	Minor	Minor	-	Major	-		Minor	-	-
210	-	Moderate - Major	-	-	-	Minor	Minor	Minor	-
235	Moderate	-	-	-	-	Moderate	Minor	-	-
270	Major	-	-	-	-	Moderate	Minor	-	-
295	Major	-	Minor	-	-		Minor	-	-
320	Major	-	Minor	-	-		Minor	-	Minor
335*	Major	-	Minor	-	-		Major	-	Minor

Table 16-10 Summary of Potential Kinematic Instability for the BK Mine Pit Design.
*Notes: *Only applicable to the NE sector-specific assessment.*

The majority of the kinematic instability concerns the Basalt Domain which is situated near-surface, with the thickest intersection in the central portion of the proposed mine pit and thinning towards the north and south. Toppling failures are unlikely to be prevented by reducing the slope angle alone but by avoidance of undermining of the pit slopes during operations. The slope orientations with major instability tend to be located in the NE and E sectors of the proposed mine pit, while others contain minor to moderate areas of instability.

Some generalized recommendations to improve the overall slope conditions are:

- Potential for instability is typically associated with less significant joint sets. Use of a greater data population in conjunction with sector/ face-specific kinematic assessments will better refine the classification and analysis of anticipated major joint sets;
- For some slope orientations (such as 235), a reduction in slope angle to 65-75° could be considered to reduce any potential for wedge and toppling instability. However, due to the low angle planar surfaces associated with planar failure, reduction in slope angle will not reduce this hazard;
- The joint sets are determined by the pole vector density within the limited data population of the 6 recent drill holes. The inclusion of additional structural data could change the pole vector density, and therefore affect the kinematic assessment. It is recommended to review all available geotechnical data, on a geological and domain sector basis, to increase the robustness of the kinematic assessment;
- Potential major instability in the northern to eastern sectors may warrant a reduced BFA to 65°;
- Testing of a range of rock samples, particularly within the Jurassic sequence in the NE sector, to assess whether the friction angle of the rock mass can be increased. This would ultimately reduce the susceptibility to planar failure and improve confidence in slope design and stability; and
- Monitor/ assess slope stability during works and provide on-going engineering solutions as necessary.

16.8.5. Limit Equilibrium Stability Assessment

Limit equilibrium analyses for the rock bench and pit slope stability have been undertaken assuming the proposed 80° BFA and the mine pit design by O2 (2020). The analyses adopted dry conditions on the assumption that groundwater will be drawn down away from the immediate rock face as excavation proceeds.

The rock bench stability assessments use global parameters, as determined from the Generalized Hoek-Brown (Hoek, 2007) material properties for each key rock materials. A sensitivity check has also been carried out for the weakest rock type, the Jurassic Sequence in the NE sector. The minimum Factor of Safety ("FoS") are summarized in Table 16-11.

Failure Size	Basalts	Jurassic Sequence		Carboniferous Volcanics	Intrusives
		Global	NE Sector		
Single 80° bench	1.89	1.39	1.03	1.66	2.72
Double 80° bench	2.21	1.97	1.78	2.45	3.30
Single 80° bench (upper ~5 m)	-	-	0.72	-	-
Single 75° bench	-	-	1.38	-	-
Single 75° bench (upper ~5 m)	-	-	0.91	-	-
Single 70° bench	-	-	1.70	-	-
Single 70° bench (upper ~5 m)	-	-	1.13	-	-
Single 65° bench	-	-	2.00	-	-
Single 65° bench (upper ~5 m)	-	-	1.39	-	-

Table 16-11 Summary of Minimum FoS for Bench Stability.

Subject to further confirmation of the geographic variation in material properties and strengths, a lower BFA may be required for the upper 100 m depth over the NE sector encountering the Jurassic Sequence. Preliminary assessment indicates that a 75° rock bench generally provides a more reasonable FoS, however, a lower 65° BFA may be required in the upper materials. The lower 65° BFA is also consistent with the recommendation in terms of kinematic stability of the NE sector.

The pit slope stability assessments have been undertaken for eight pit profiles: N; NW; NE; W; E; SW; SE and S (Figure 16-10). A sensitivity check considered variations in UCS strength over the NE, E and W sectors as summarized in Table 16-8 and the results of the pit slope stability assessments are in Table 16-12.

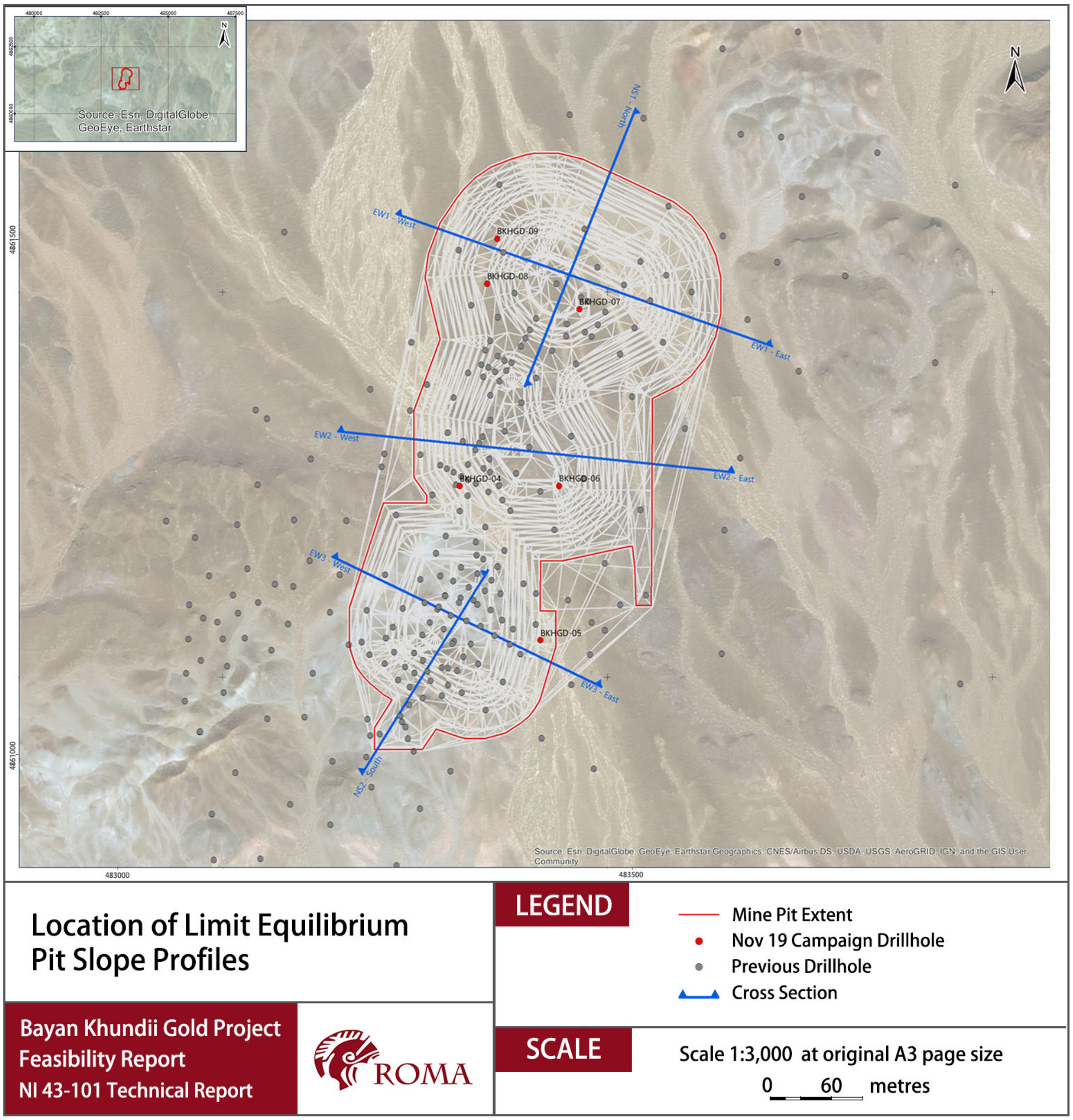


Figure 16-10 Location of Limit Equilibrium Pit Slope Profiles.

The overall mine pit slope analyses demonstrate that the overall pit slope angles of the current mine pit model are satisfactory for the FS with FoS greater than 1.3 (Table 16-12) including in the sectors where variations in rock strength were identified. This is subject to the maintenance of groundwater drawdown away from the slope faces, and the degree of drawdown will be appraised. 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.

Parameters	Minimum FoS by Sector							
	N	NW	NE	W	E	SW	SE	S
Global	1.50	1.34	1.50	1.48	1.49	2.03	1.96	1.78
Sector Specific	-	-	1.38	1.39	1.48	-	-	-

Table 16-12 Minimum FoS for Mine Pit Slopes by Sector.

16.8.6. Mine Design

Prior to the commencement of the mine design, ROMA geotechnical team provided O2 with an interpretation of the geotechnical domains as shown in Table 16-13 and Figure 16-11 (left), which have been further refined into 6 zones (Walls A-F) in Figure 16-11 (right) and slope profile parameters recommended for the pit design in Table 16-14.

Sector	Bench Face Angle (°)	Inter Ramp Angle (°)	Berm Width (m)
Northeast	80	48	6
East & Southeast (Upper)	80	44	8
Southeast-Central	80	51	6
West (Upper)	80	44	8
West (Lower)	80	48	6
Northwest	80	51	6

Table 16-13 Summary of Pit Slope Design Parameters by ROMA.

The inter ramp angles ("IRA") by domain, as recommended by ROMA, vary from 44-51° (Table 16-13) which aligns to the IRA's of the mine design for Walls A-F in Table 16-14.

Domain	Location	From (MASL)	To (MASL)	Batter Face Angle (°)	Inter Ramp Angle (°)	Berm Width (m)
A	West	1235	1215	80	44	8
		1215	1185	80	48	6
		1185	1105	80	51	6
B	Northwest	1235	1085	80	51	6
C	Northeast	1235	1185	80	48	6
		1185	1085	80	51	6
D	East	1235	1185	80	44	8
		1185	1155	80	48	6
		1155	1105	80	51	6
E	Southeast	1235	1215	80	44	8
		1215	1155	80	51	6
F	Southwest	1235	1155	80	51	6

Table 16-14 Geotechnical Slope Profile Recommendation.

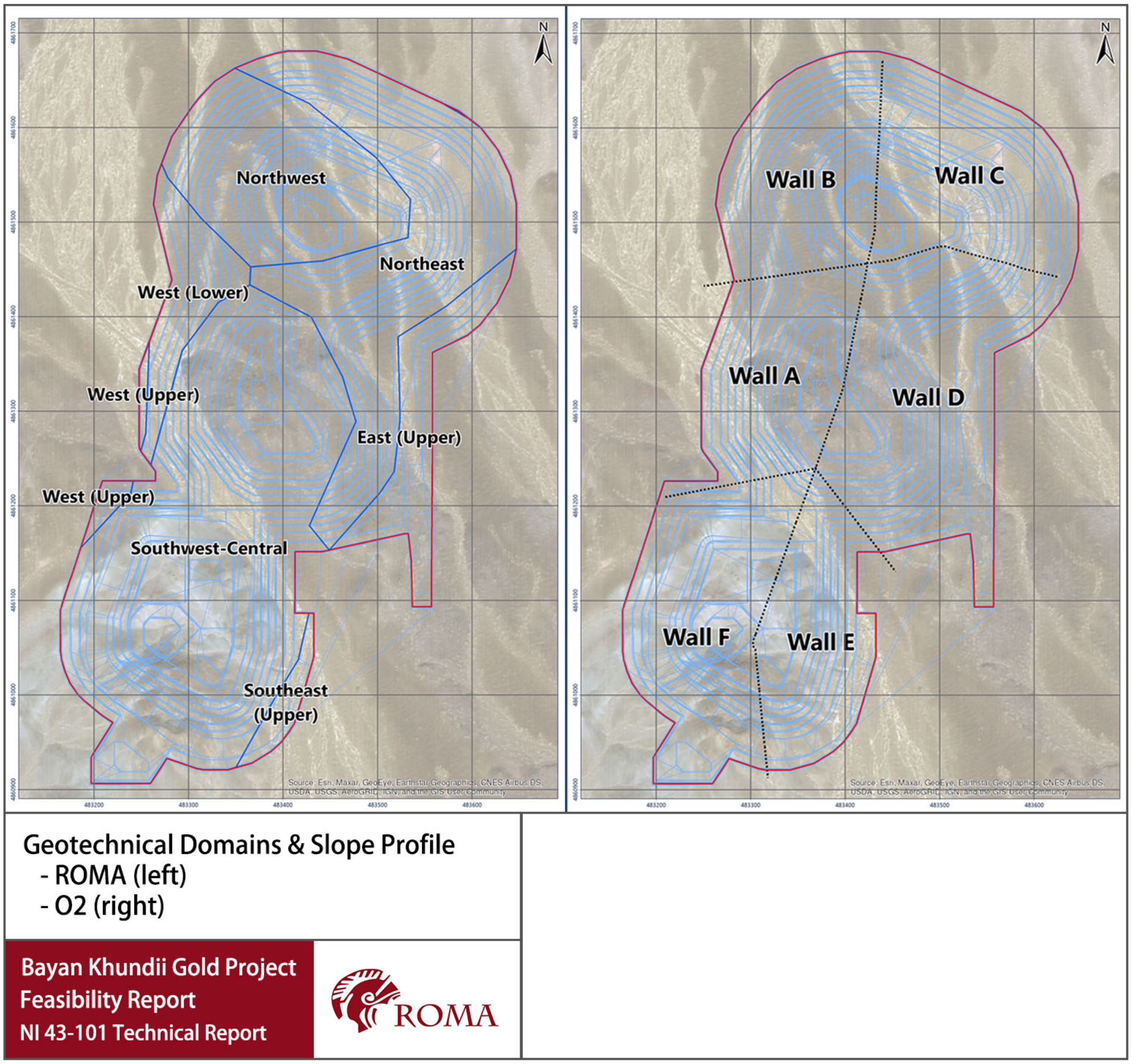


Figure 16-11 Geotechnical Domains & Slope Profile – ROMA (left) and O2 (right).

16.9. HYDROGEOLOGY/GROUND WATER

Initial geotechnical work related to pit design assumed that the groundwater conditions at the Bayan Khundii site have the potential to maintain saturated conditions during development. The generally flat topography and absence of surface water bodies implies the open pit may well have a large radius of influence (Tetra Tech 2019c). Envisaged inflow into the pit is anticipated to be relatively low and estimated between 0 to 6 L/s for low K values (0.01 m/day) to a maximum of 3 to 20 L/s for higher K values (0.1 m/day), however the latter is unlikely.

The likely dewatering requirements indicate a net dewatering effort without advance dewatering. In the mining context, the net dewatering effort required may be in the order of 2-5L/s early in the mine with the potential to increase to ~10L/s later in the life, as the hydraulic gradient increases with depth. This would practically manifest as localized dewatering with small scale pumps and pipework where more fractures are more open or concentrated. Volumes and rates are likely to be small/minor and may present as nuisance water during the development of each new bench level. Groundwater removal can be practically managed with small and localized sumps rather than bores.

Dewatering could equally be managed with blasting alone, considering that the effective porosity of the rockmass preblasting is likely <0.1% and post blasting >20%, with most of the water vaporized or as moisture retained in the fines of the blasted rock. However, some fracture sets may contribute useful water yields which may contribute to the overall site water supply e.g. dust suppression.

Stability of mine slopes may be sensitive to pore pressure. It is recommended to install piezometers to assess pit slope pore pressures as they will most likely be the most significant groundwater monitoring requirement. The piezometer location and type will be guided by slope design requirements and may not be required from the outset of mining i.e. piezometer can be installed later in the mine life when/if pore pressure is an issue.

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 3.7 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 vacuum 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 600,000 tpa throughput and is expected to produce an average 63,500 oz of gold within a doré, over the planned mine life, at an average 93.1% recovery.

17.2. PROCESS DESIGN CRITERIA

The process design criteria for the plant is included in Table 17-1. These criteria were used to size and cost the processing plant for this phase of the project.

Description	Value	Units
ROM Ore		
Throughput	600	Ktpa
F100	350	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	3.73	g Au/t ore
Average Silver head grade	2.19	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/m^2/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/m^2/h
Cake Solid Content (to IWF)	82.5 (17.5% 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

Table 17-1 Headline Process Design Criteria.

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. A gravity recovery circuit was initially considered but excluded on the basis that it did not improve the overall plant recovery sufficiently to justify the additional capital required.

During the FS, all of these 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 developed by the increase in the length of both mills to accommodate a wider variability in the ore hardness, and the classification on the SAG mill was changed from hydrocyclone to screen, and the transfer size increased from 850 micron to 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 was introduced to the leach circuit to control the leach feed density, and the number of tanks was reduced from 5 to 4 while still retaining 36 hours leach time at leach densities above 38% solids by mass.

The CIP circuit was increased in residence time from 2 hours to 6 hours and the tank configuration matched to 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 kenetics from the completed leaching prior to carbon contact, and higher carbon concentration, lead to higher gold concentrations on loaded carbon

The elution circuit was changed to a Pressure Zadra circuit due to considerations for water quality, and the relative simplicity of the minerology.

The tails thickener flow was changed to maximize cyanide recovery by a feed dilution system, replacing some of the cyanide containing fluids in the underflow with raw water.

The filtration was changed from plate and frame pressure filtration to ceramic disk vacuum filtration to minimize the water and residual cyanide content to the dry cake tailings.

Figure 17-1 shows a simplified Process Flow.

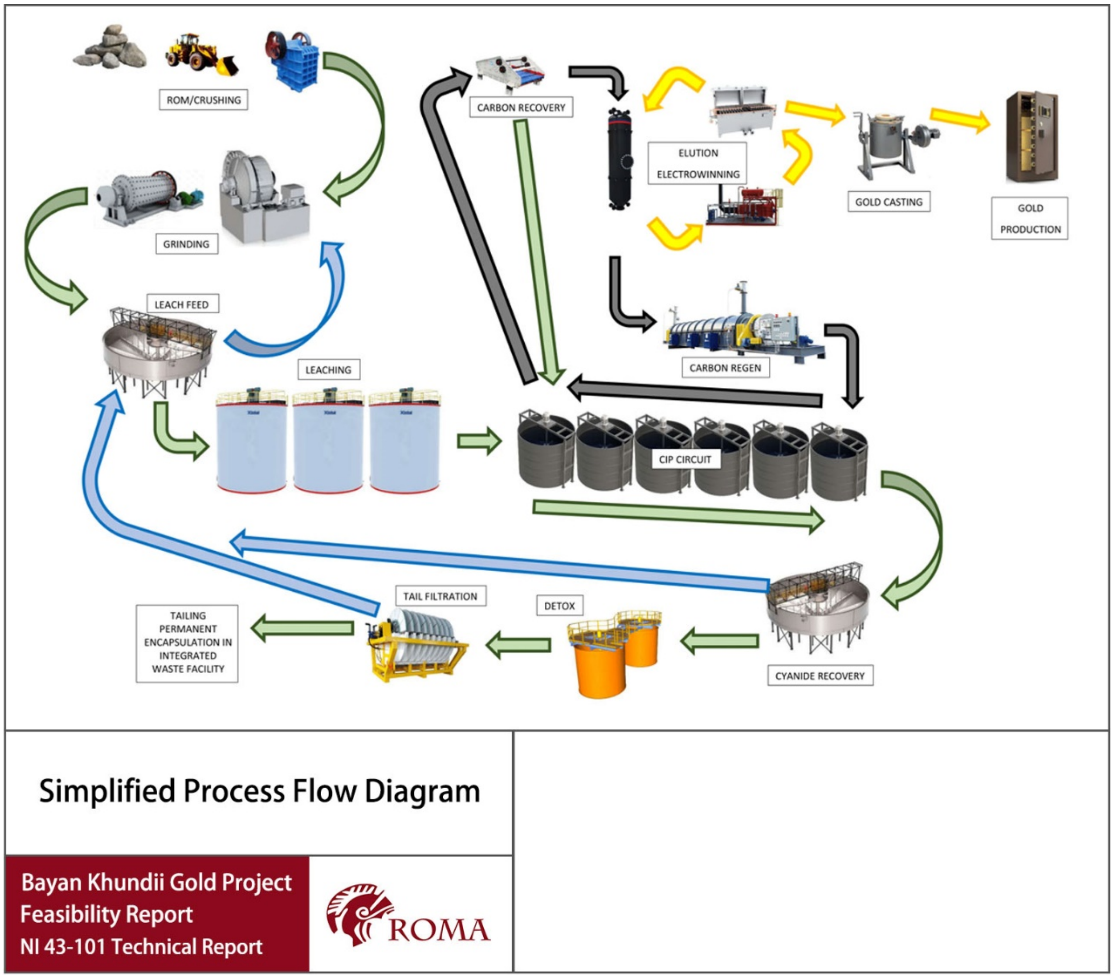


Figure 17-1 Simplified Process Flow Diagram.

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 79.0 Koz/a gold as doré bar (Yr 5), but averages approximately 63.5 Koz over the life of mine.

Key criteria selected for the process plant design are:

- Ore throughput of 600,000 tpa, or 1,800 tonnes per day;
- Nominal feed Size of 300 mm, based on the small block size, and close pattern drill and blast;
- Grinding product of nominal P80 of 60 µm;
- Plant operating time of 92%;

- Average ore head grade of 3.71 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 93%.

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 minimise 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.

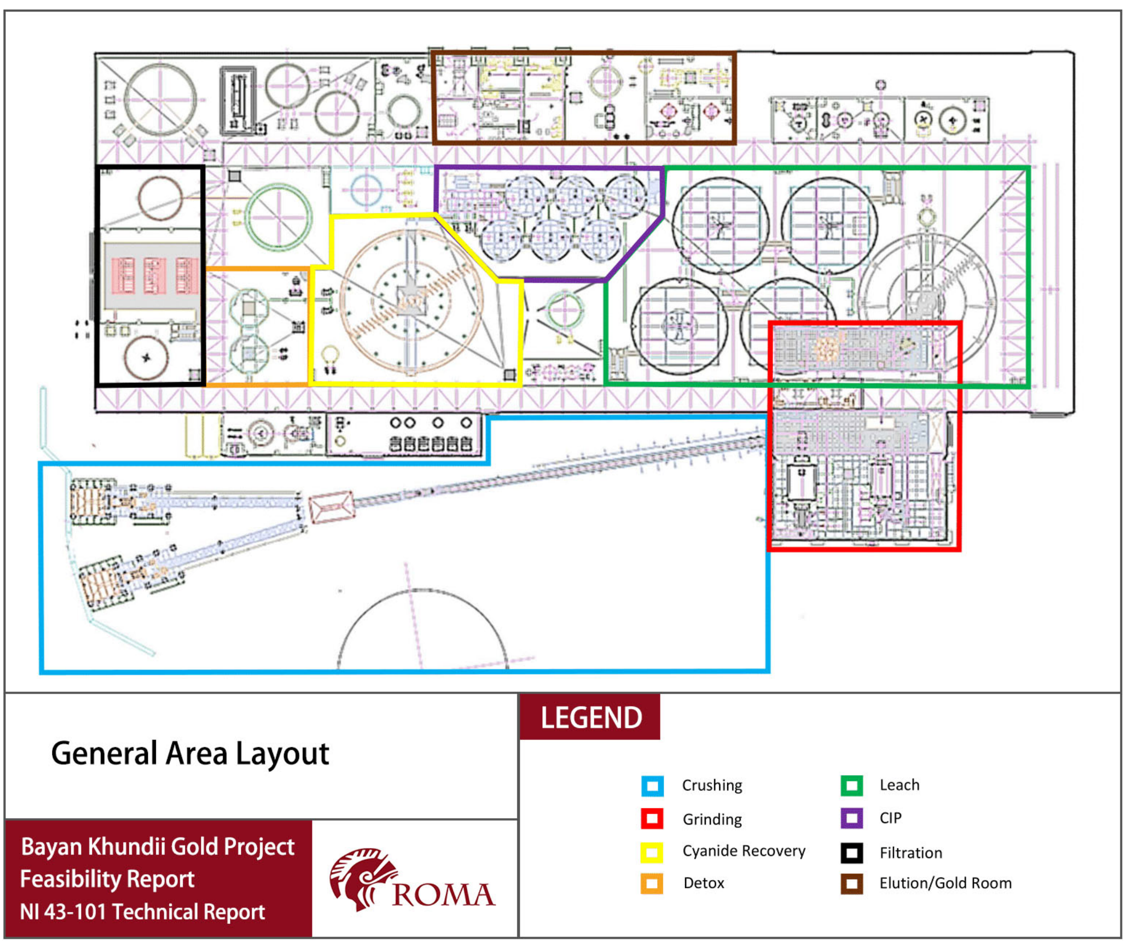


Figure 17-2 General Area Layout.

17.5. PROCESS DESCRIPTION

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 a 773 size truck, as proposed for the 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.

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.

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 has been changed from a cyclone pack to 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.

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 operate.

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.

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.

Elution and Gold Room

The Elution circuit has been changed from an Anglo American Research Laboratories ("AARL") carbon stripping system circuit to 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.

Tails Dewatering

The diameter of the tails thickener, based on the settling tests, is 20 m. This was substantially larger than the assumptions within the PFS, and the building has been adjusted to incorporate this.

The circuit has also been changed to allow 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.

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.

Tails Filtration

The tails disposal circuit uses ceramic vacuum filtration, which can produce a discharge cake with as little as 15% moisture. This has the lowest risk of refluidization and transport of any residual cyanide from the tails storage. The filter cake discharges to hoppers, which can be direct dumped into mine trucks and taken directly to the IWF without rehandling.

The filter cake will be stored in cells within the IWF.

The continuously operating ceramic vacuum disk filters also require less tank storage than a batch operated plate and frame filter, and do not require high pressure pumps.

Three disk filters have been included as 2 Duty/1 Standby, to ensure this does not impact on the plant operations during maintenance. The ceramic disks do require regular acid cleaning of the pores, and this can be done as part of a routine maintenance cycle.

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.

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 on the crushing side of the process plant adjacent to the detox circuit, which is the largest air consumer. Air accumulation tanks are used to maintain a steady air pressure within the cycle operation of the compressors.

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.

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.

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), Mine Dry, 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.

Render of the site looking west

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Figure 18-1 Render of the site looking west.

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. Geotechnical investigations were conducted on a total of 44 boreholes to depths of between 7 and 22 meters.

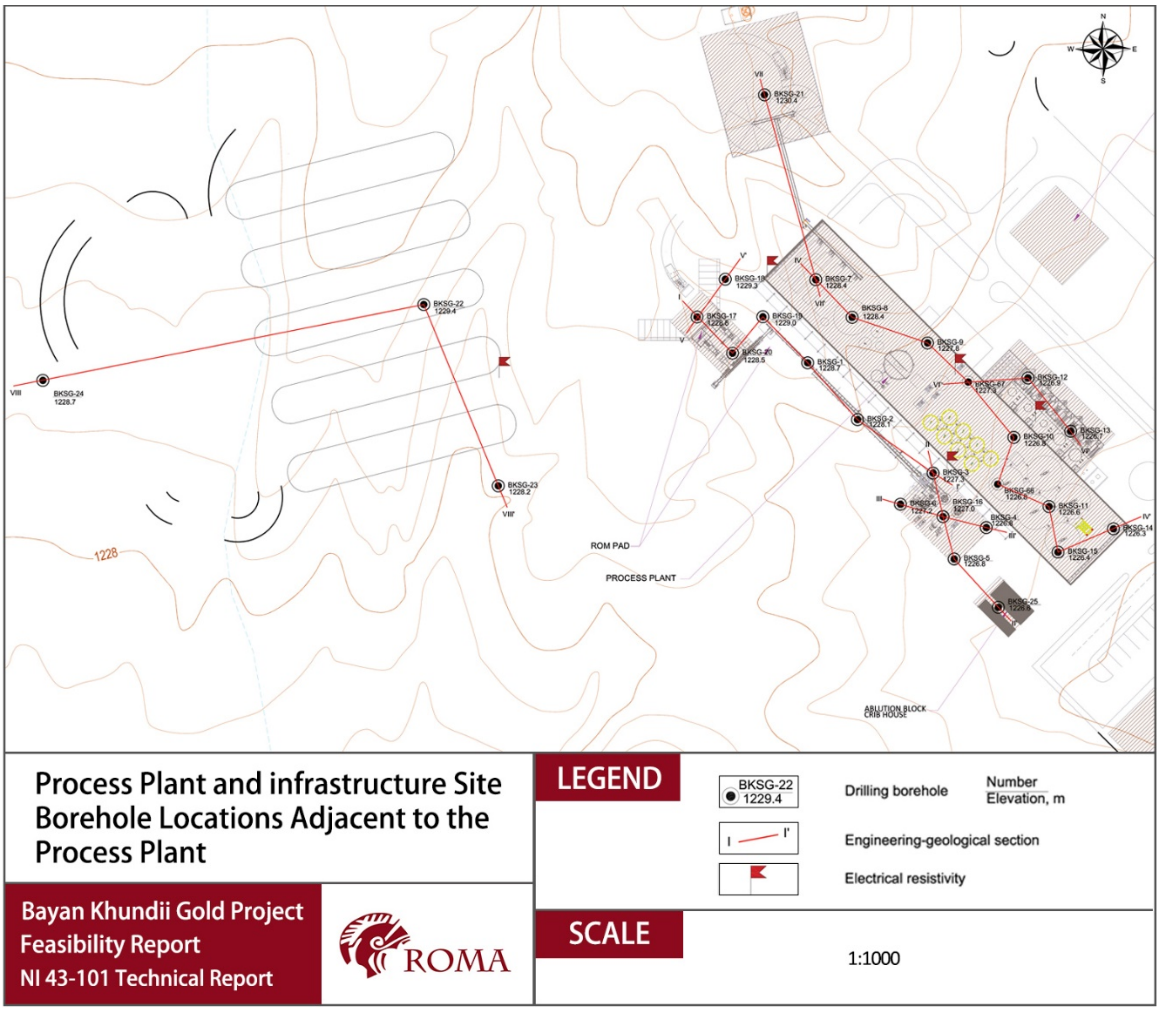


Figure 18-2 Process Plant and infrastructure Site Borehole Locations Adjacent to the Process Plant.

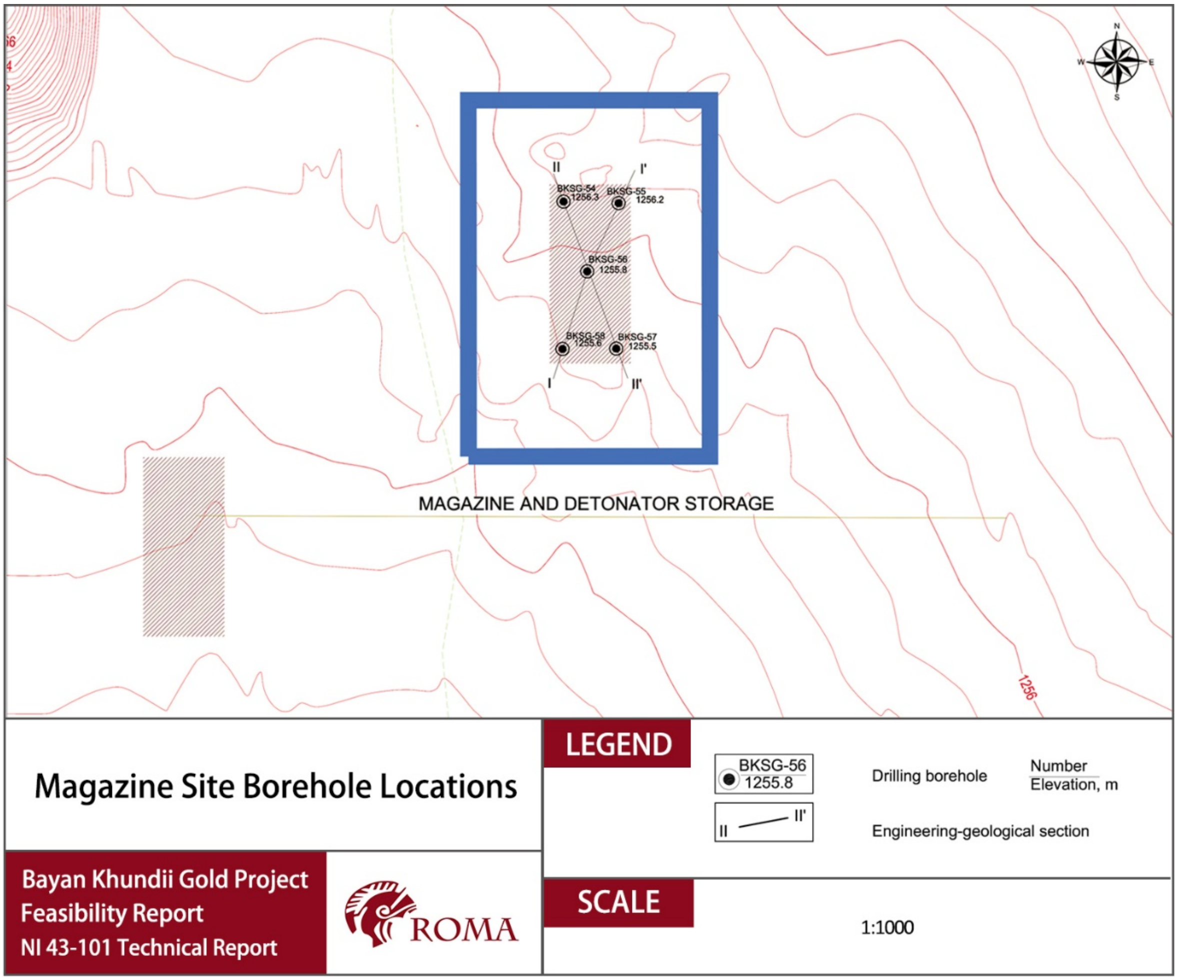


Figure 18-3 Magazine Site Borehole Locations.

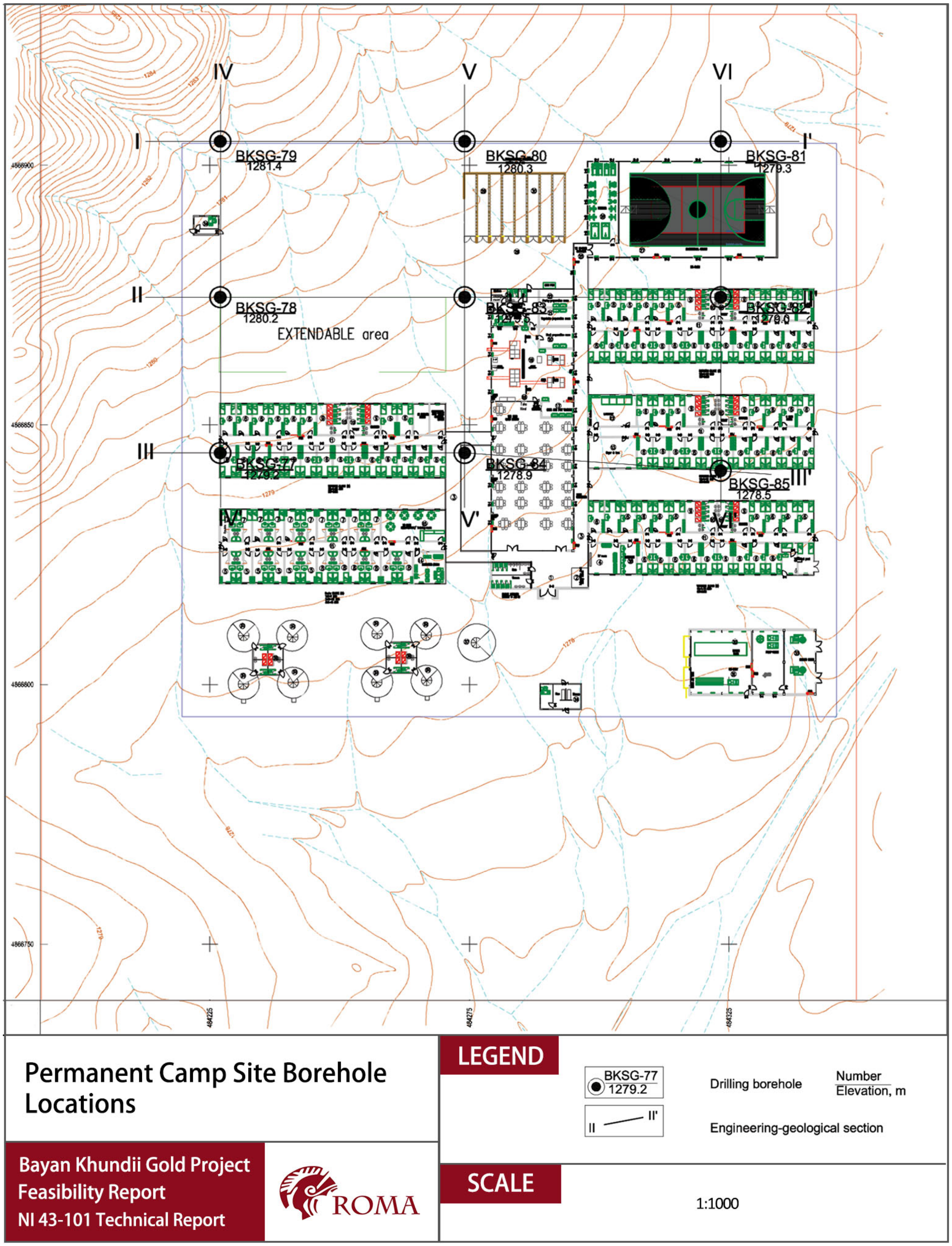


Figure 18-4 Permanent Camp Site Borehole Locations.

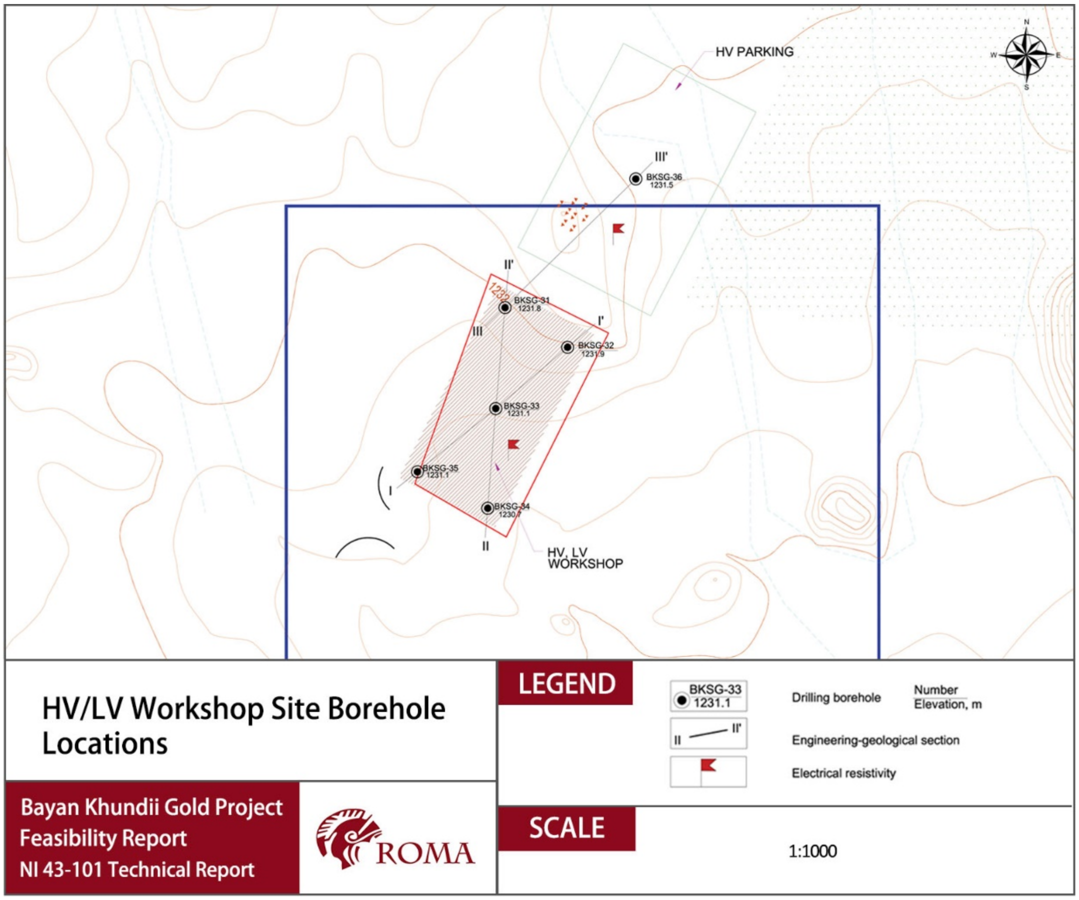


Figure 18-5 HV/LV Workshop Site Borehole Locations.

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 Lower 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. To mitigate this, the use of precast foundation bases should be considered, with starter bars for the footing column.

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 includes early works to be undertaken on site. Early works are intended to provide the necessary infrastructure to enable bulk earthworks are delivered in line with the agreed construction schedule. Key construction site establishment activities are expected to include:

- Upgrade of temporary camp to an approximately 100 bed capacity;
- Construction of a perimeter fence;
- Confirmation of aggregate sources;
- Installation of crusher for aggregate;
- Installation of mobile fuel storage and dispensing;
- Installation of Construction Communications; and
- Installation of a temporary Construction Office.

Security Access Control Point

A gatehouse is to be built at the site entrance for access control. This building will house security guards and a visitor waiting room. A lifting gate controlled by the security guards will give access to vehicular traffic.

Fencing

A safety perimeter consisting of 5,500 meters of chain link fencing is to be 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.

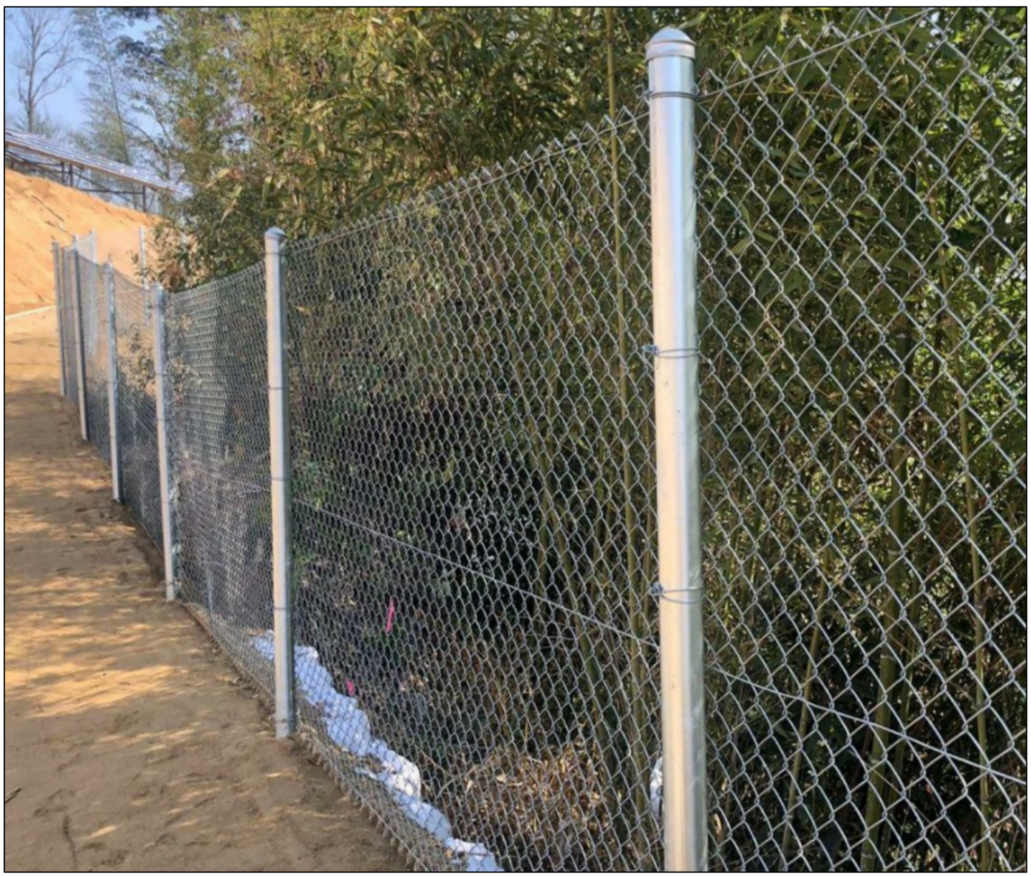


Figure 18-6 Indicative Perimeter Fence.

Early Bulk Earthworks

Early bulk earthworks include the following key work activities:
- Site preparation;
- Limited improvements to temporary camp; establish construction office;
- Selected detailed excavation, prioritizing footings and plinths for the comminution circuit;
- Fill and compaction of the priority areas;
- Concrete preparations, including source confirmation and preparation of aggregate;
- Site roads; and
- Stockpiling of construction materials through the winter and autumn season for use during infrastructure construction.

Balance of Bulk Earthworks

During the main construction phase, the following bulk earthworks will be required:
- **Site Infrastructure:**
  - Process Plant;
  - Warehouse;
  - Chemical Storage;
  - Mine Administration Building;
  - Laboratory;
  - Magazine;
  - Workshop;
  - Heavy Vehicle ("HV") Parking;
  - Security Guard Hut; and
  - Water Treatment Plant.
- **Other:**
  - Rain Water Surface Drainage;
  - Flood Water Surface Drainage;
  - Water Supply;
  - Central heating plant and heated and return water reticulation;
  - Power Plant and Line;
  - Land Fill Area;
  - IWF;
  - Pit 1 & 2 Topsoil Clearance;
  - Contamination Runoff Collection Pond; and
  - ROM Land Clearance.

18.4. MINE BUILDINGS

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.

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;
- Multi-purpose meeting and Operational Briefing Rooms;
- 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.

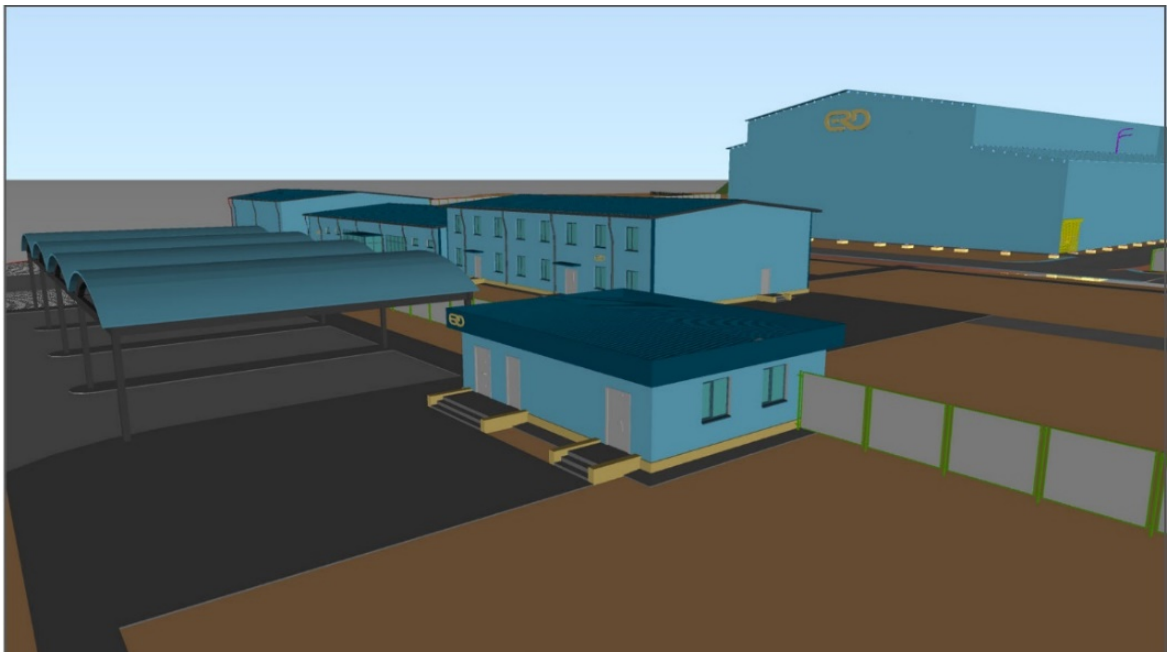
Bus Shelter

The bus shelter consists of a single story in-situ building of carport kit structure on concrete floor slab and comprises steel structure with roof and walls for weather protection. The shelter includes bench seating, located next to Mine Office building, outside the security fence.

Security Guard House

The security guard house ("SGH") is a single-story steel framed building, 9 x 12 m with insulated walls and roof on a concrete pad for use by security staff in the following manner:

- Access control;
- Security search and physical checks;
- Alcohol and drug testing;
- Staff, contractor and visitor registration/waiting/meeting room;
- Structure includes full height turnstiles, bio-metric access control, boom gate, security control room (CCTV, Access Control, Fire and Emergency), control work stations, CCTV equipment, kitchenette;
- Surveillance cameras are to be installed at different strategic locations on site and will be linked to the security monitors in the SGH. The main fire alarm panel will also be located inside the gatehouse; and
- Employees access the mine site from the parking lot by passing through access controlled turnstiles in the SGH.



Security Guardhouse / Bus Stop / Office Render

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Figure 18-7 Security Guardhouse / Bus Stop / Office Render.

Mine Dry

An ablution and change room for mine staff and contractors with an area of 24 x 38 m is planned adjacent to the Mine Office building, within the site perimeter fence. The main components are as follows:

- Separate male / female ablution, shower, and laundry facilities. Access is control by a biometric access control system to be installed on main ingress / egress points;
- Employees will be able to shower, get changed, store clothes and other personal belongings, and have bathroom and laundry facilities;
- Technical Rooms for both Electrical and Mechanical;
- Cleaners Storage and Preparation Room;
- Double entrance door design to prevent heat loss and allow area for shoe cleaning;
- Access to the building should cater for wheelchair access;
- Main power supply of Office and Mine Dry will be located in Mine Dry technical room;
- Showering and toilet area floor finishing will be non-slip ceramic tiles. Ceiling will be suspended. Rest of area floor finishing will be epoxy; ceiling will be exposed;
- Steel structure with fireproof paint; and
- Flame retardant Rock wool insulated panels.

Figure 18-8 Mine Dry Render.

Warehouse

The warehouse is a single story in-situ steel frame building with insulated walls and roof on a concrete pad with an area of 24 x 24 m. This structure comprises:

- Office, small kitchenette, meals room, reception and stock / material issue desk at front entrance to the facility;
- Material unloading area, warehouse floor with storage shelves, racks;
- Access Control (Biometric) for delivery access and stock / material issue desk. Access Control will be linked to stock / material issue to enable accurate stock keeping;
- CCTV – Internal;
- Security Fencing;
- Forklift Access Door;
- Reverse cycle heating, air conditioning and warehouse floor heating and cooling; and
- Firefighting system will be fire extinguishers.

Figure 18-9 Warehouse Render.

Chemical Storage

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.

LV/HV Workshop

The light vehicle ("LV") and heavy vehicle ("HV") workshop is a steel framed structure, with insulated walls and is designed with four maintenance bays for large mobile equipment with an area of 66.5 x 24 m^2. These are sized to accommodate the largest working vehicle on site, a CAT 773 waste haul trucks or equivalent. 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 18-10 Heavy Equipment Workshop / Warehouse Render.

Laboratory

A Request for Proposal was developed and distributed to determine the most economic option for the provision Laboratory services, including, design, construct, manage and operate the on-site mine and plant support laboratory to process approx. 16,000 samples per month (of which 7,600 samples will be for mine grade control), taking into consideration the relevant Mongolian and industry standards for HSE, Quality and Production.

The design includes the following:

- Fully equipped laboratory for sample prep and testing;
- Ablution facilities fit for a laboratory – compliant with Mongolian OHS Standards;
- The contractors must allow for their own safety equipment in its site establishment. All free issue equipment will be the responsibility of the contractor. If any loss occurs the contractors will be required to replace it, at its own cost;
- Fume extractors and ventilation in accordance with Mongolian Standards;

- Adequate flooring materials – for the drying facilities and areas of sample prep (suggest metal plate);
- Heating – details of the site HVAC can be provided for consideration;
- All laboratory equipment to service the contract;
- All computers and supporting IT; and
- Routine cleaning equipment and supplies.

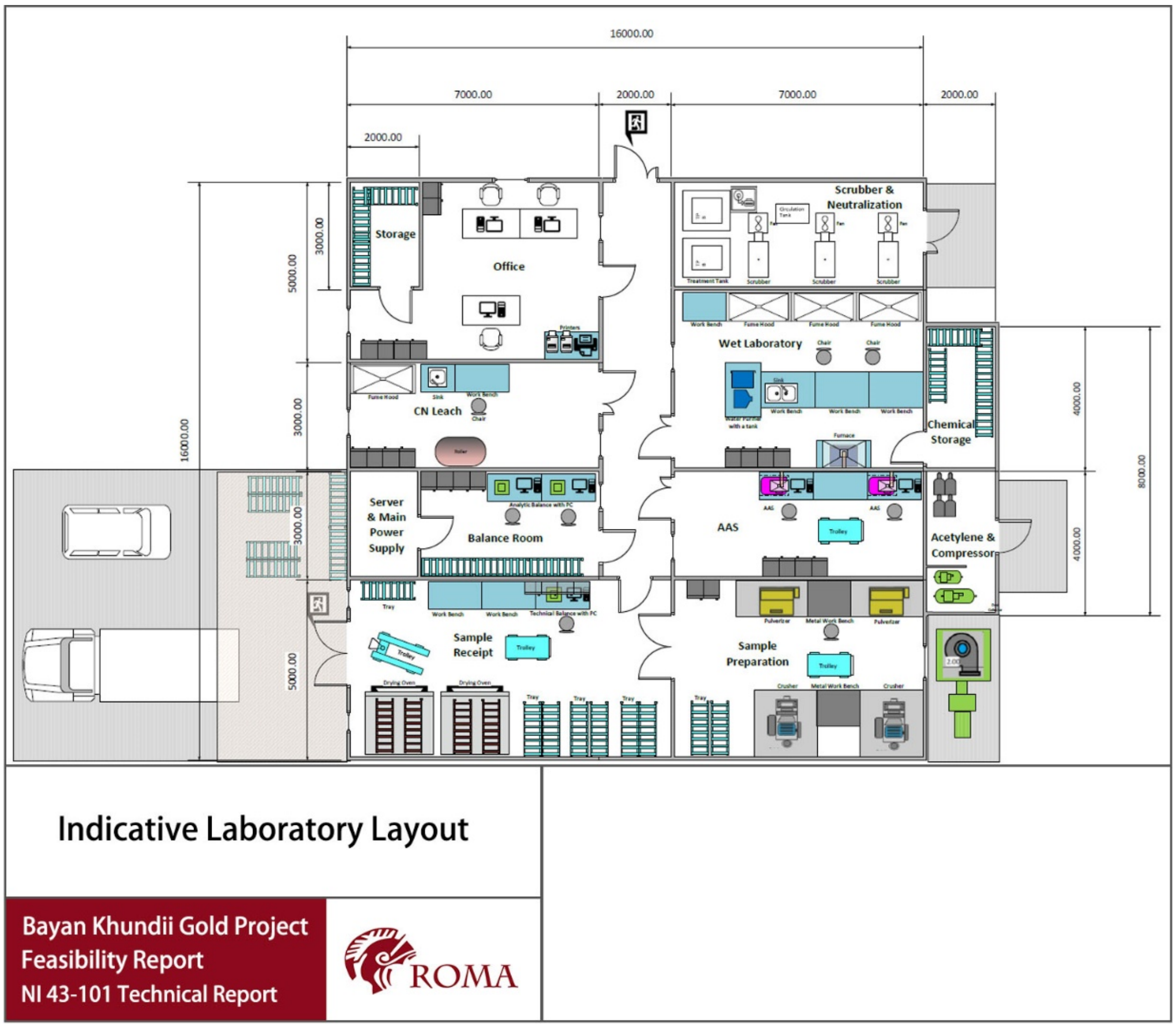

Figure 18-11 Indicative Laboratory Layout.

ERD will provide the following:

- Concrete slab for the facilities (contractor to confirm size & specifications required);
- Water, electricity, compressed air gas and gas lines to point of use;
- Waste materials and old samples will be removed to the IWF by on-site waste management; and
- Cleaning services can be provided but will be back charged to the Contractor.

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 18-12 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.

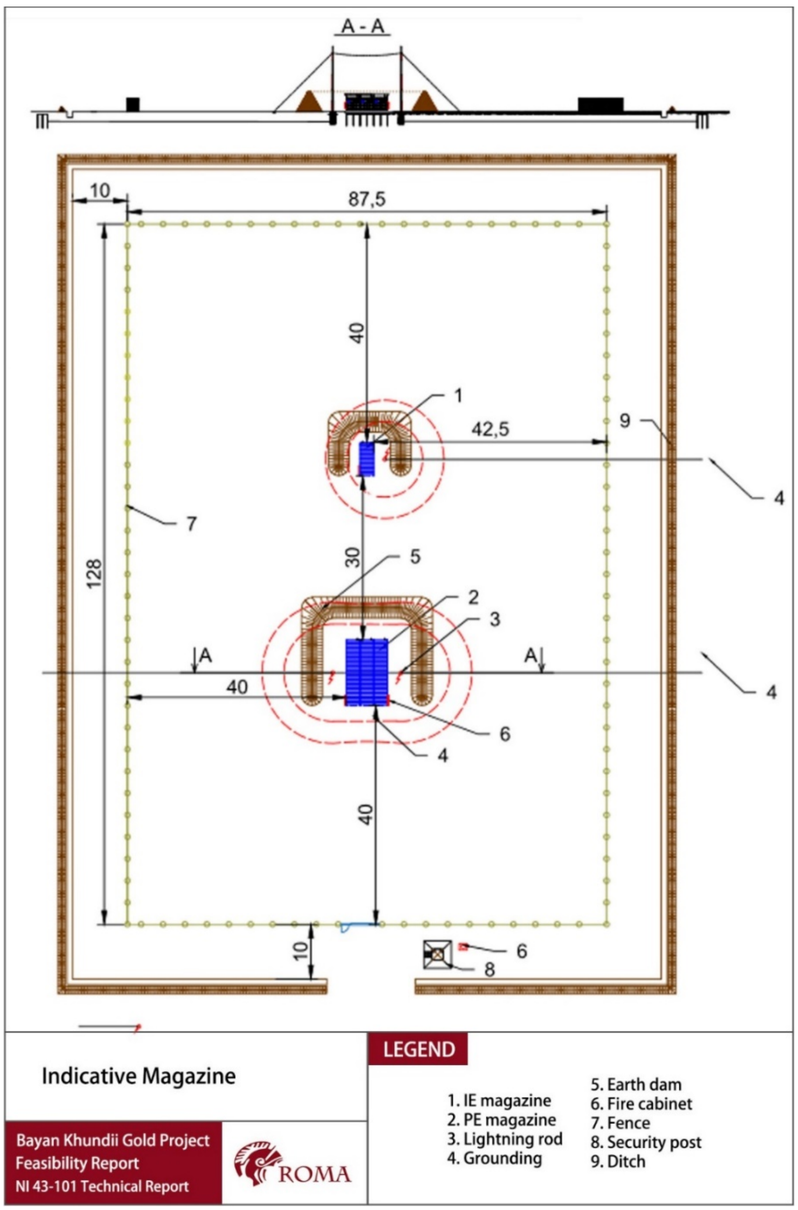

Figure 18-12 Indicative Layout of Explosives Magazine.

18.5. 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 372 personnel. Camp design specifications consist of the Supply and Installation of Modular Sandwich Panel Structures including but not limited to:

- Dining and kitchen facilities;
- Accommodation rooms;
- Laundry and ablution facilities;
- Offices;
- Recreation room;
- Indoor multi gym;
- Stairs and corridor;
- Service facility building;
- Dry, reefer and chiller storages;
- Guest gers;
- Heating, water, and electricity reticulation; and
- Waste water treatment.

The accommodation camp will include all services, equipment and reticulation for mobile phone and data, TV and video entertainment. A temporary satellite link will be provided for the communications until the site-wide communications system have been installed.

Figure 18-13 Accommodation Village Render.

18.6. SITE SERVICES

Water Supply

Site water supply will be sourced from aquifer borefields located 1 to 4 km south-southwest of the processing plant. A separate production bore has 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 water requirement being 15 m^3/hr or 4.2 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 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 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.

Bulk Fuel Storage

The site-based diesel fuel storage requirement is projected to be approximately 650 tons. Diesel will be stored primarily at a fuel farm, with an additional 3-day 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. There is always enough provision 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 time;
- 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

- 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.

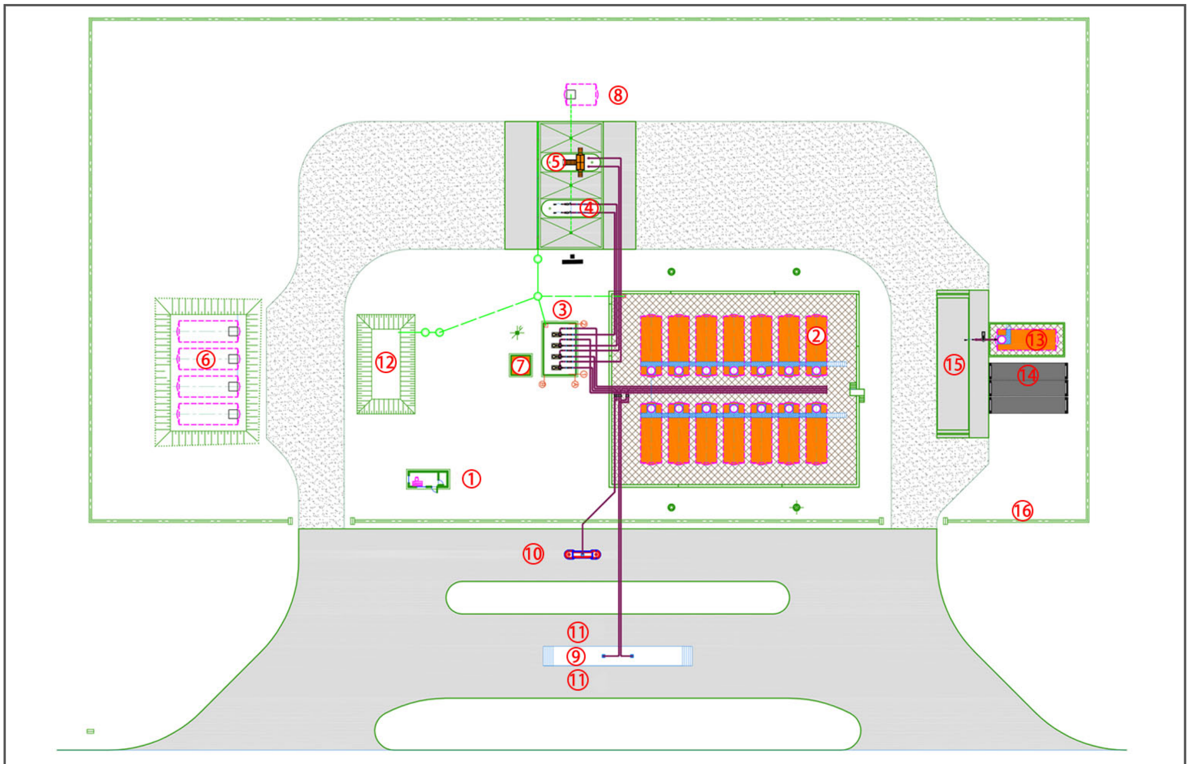

Figure 18-14 Fuel Storage General Arrangement.

Notes to name of constructions:

1. *Operator building;*
2. *Horizontal aboveground tank 50 m³, 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.*

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. Preliminary requests were required to be within ±10% accuracy and a nominal seven-year contract term was specified in the RFP. Potential independent power providers provided separate proposals for the off-grid station consisting of a combination of solar, diesel generation, and battery energy storage. Electricity to the project is proposed to be delivered under a Power Purchase Agreement (“PPA”).

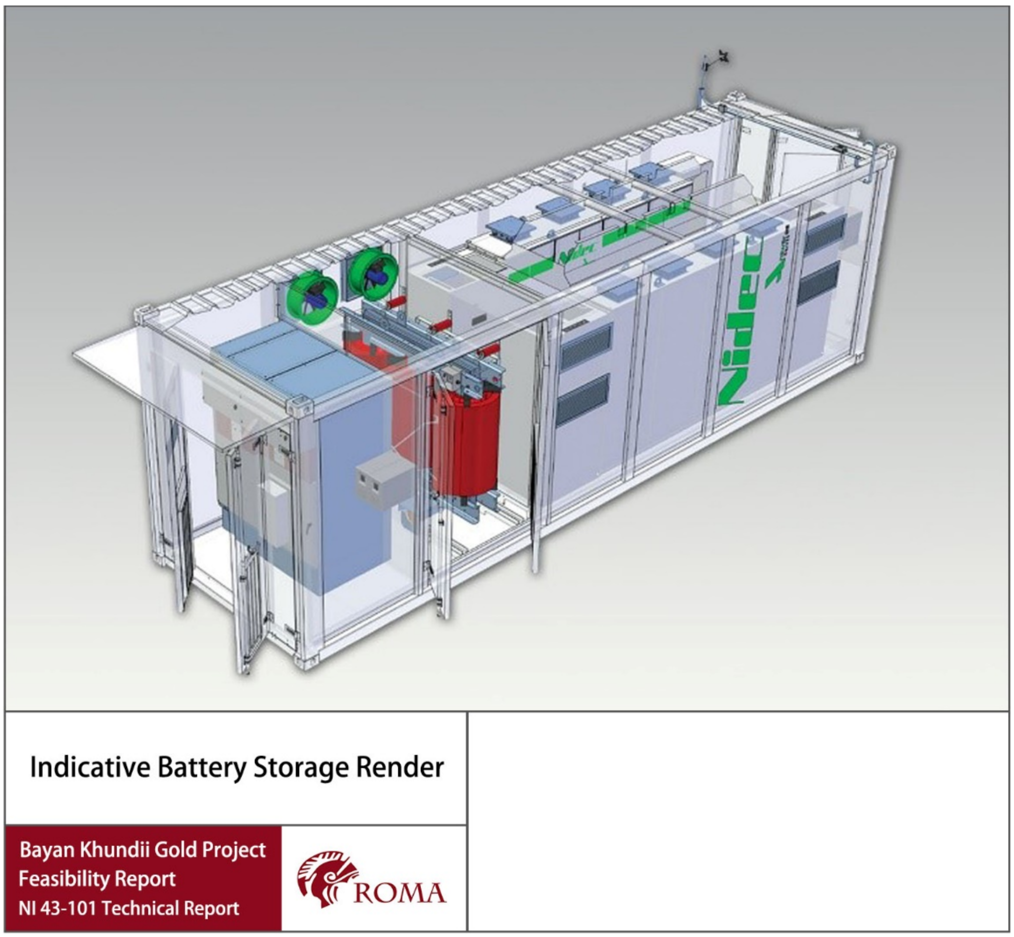

Figure 18-15 Indicative Battery Storage Render.

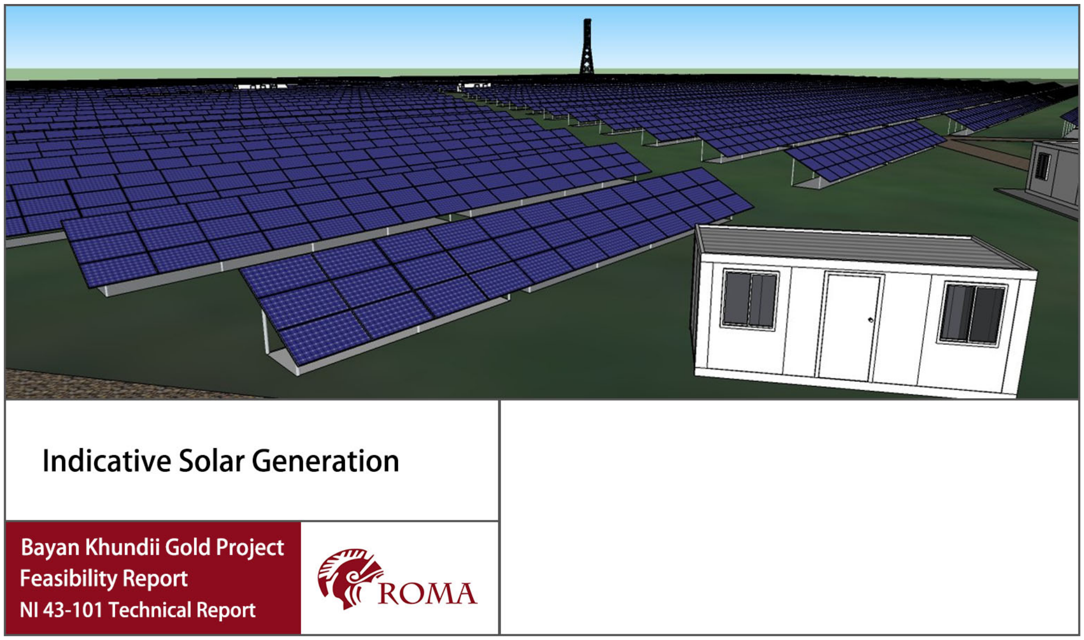

Figure 18-16 Indicative Solar Generation.

The selected solar-diesel-battery power station has been designed to provide 6.29 MW of total installed load with a maximum contracted electricity demand of 7.2 MW and an estimated average demand of 6 MW. The main substation will be comprised of one 11 kV transformer which will feed the 11 kV distribution network. Primary switchgear will also be included in this installation. Average operating electrical loads for the Process plant, Non-Process infrastructure and Accommodation Camp have been calculated to be 3878 kW. The main substation allows for complete capacity redundancy, in case one of the transformers is offline or incurs a failure. A secondary transformer will be located at the process plant which will provide 11 kV to the mills and 400V to other equipment as well as non-process infrastructure, as this is the primary user. While the total hybrid power system will be the principle power generation source for baseload, the diesel element will provide emergency generation.

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. The heating plant is a fully automated Russian KVR system:

- 1 x coal fired 2.5 MW boiler for use in the winter – which will operate at full load;
- 1 x 1.0 MW boiler to be used for hot water in the summer months and back-up during the winter; and
- Coal is planned to be sourced from a coal deposit in Shinejinst, approximately 80 km from BK.

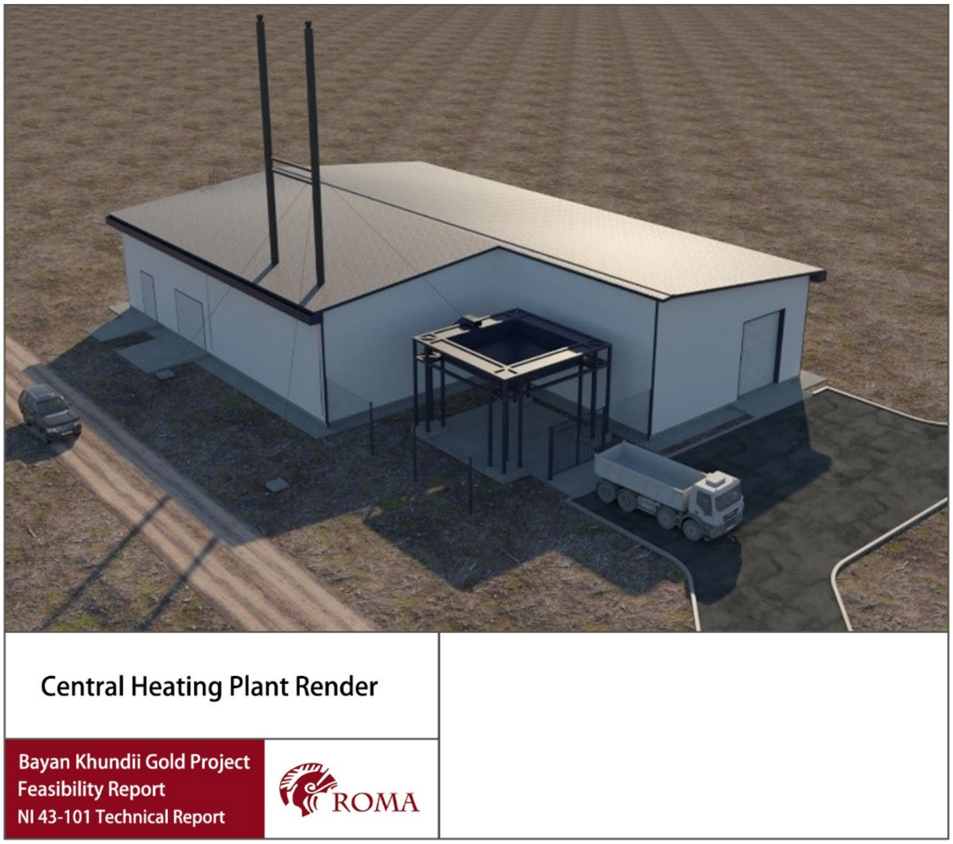

Figure 18-17 Central Heating Plant Render.

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).

18.7. 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. No improved road currently exists from Shinejinst to site, and road conditions are fair to poor.

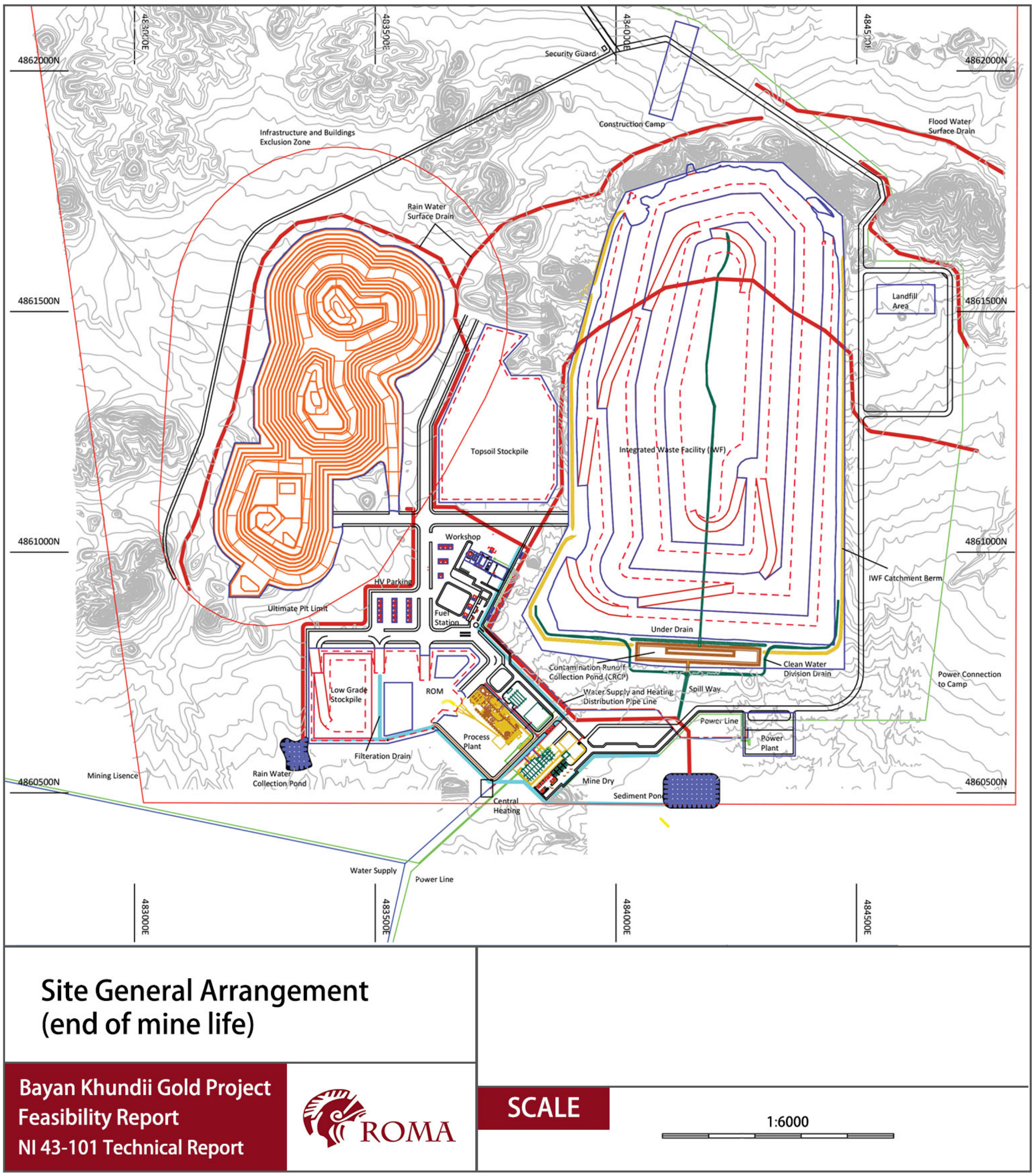

Figure 18-18 Site General Arrangement (end of mine life)

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.

18.8. 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 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.

18.9. INTEGRATED WASTE FACILITY

Mining (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 associated with the co-disposal of waste rock and dry cake tailings at the IWF as well as the detailed design of the IWF stack, while outlining a general overview of each element and its purpose and role within the system. All elements of the system have been designed as to ensure a structurally and environmentally safe waste storage is achieved and maintained at the BK Gold Project.

The IWF is to be used as a storage location for dry cake tailings and the waste rock generated during mining activities at the BK Open pit. Dry cake tailings and waste rock will be transported to the IWF via a fleet of haul trucks due to their low moisture content nature. Throughout the LOM, the IWF will see the deposition of waste rock and tailings at an approximate ratio of 10:1 respectively, which will see the IWF grow vertically until it reaches its ultimate shell height of 76 m at RL 1302 m.

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. Geochemical testing of the waste rock as well as the tailings indicate that both have a non-acid forming ("NAF") nature and hence the contaminant collection requirement imbedded within the design is not driven by the materials geochemistry (acid, salt, metals) but rather by their potential cyanide content. Hence it 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 contaminant from the tailings is safely routed, stored and managed as to protect the wider environment from contamination.

The geometry of the IWF over the 6-year life of mine has been defined to accommodate annual tonnage production for waste rock and dry cake tailings disposal. The following table summarizes the LOM IWF geometry.

IWF LOM Shell Element	Dimensions	Units
Final Crest Elevation	RL 1302	meters above sea level
Ultimate IWF Shell Height	76	meters (at the critical section)
IWF Footprint Area	49.3	Hectares
IWF Crest Area	8.3	Hectares
Intermediate Bench Elevations	RL 1246, RL 1266 and RL 1286 (every 20m elevation gain)	meters above sea level
Intermediate Bench Crest Width	20	meters
inter-bench Outer Slope	2:1	meters (H:V)
Overall IWF Shell Outer Slope	2.8:1	meters (H:V)
Total Storage Volume	17.7	Mm^3

Table 18-1 Final LOM IWF Shell Geometry.

In order to achieve the design intent of the IWF, several other infrastructure elements have been considered and designed such as:

- Contaminant Runoff Collection System, including:
  - Underdrainage System;
  - Contaminant Runoff Collection Pond ("CRCP");
  - CRCP Emergency Spillway; and
  - CRCP Silt/sediment Trap
- Clean Water Diversion Drains ("CWDD"), including:
  - Northern CWDD; and
  - Southern CWDD.

The Contaminant Runoff Collection System

System has been designed with the purpose of safely routing, storing and facilitating the handling of potentially contaminated runoff water generated after a heavy rainfall event. Its purpose is to minimize the likelihood of contaminant transport into the wider environment. Elements of this system include:

Underdrainage System

Given a rainfall event, potentially contaminated water can be generated due to cyanide leachate from the tailings. An underdrain system has been designed as an integral element of the engineered clay liner, which is to sit underneath the tailings cells. The purpose of the underdrainage system is to capture any potential tailings seepage water and redirect it towards the Contaminant Runoff Collection Pond ("CRCP").

Contaminant Runoff Collection Pond

The CRCP is designed to collect, store and facilitate the handling of contaminant runoff and is located directly downstream from the IWF. 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 the capacity to store 14,400 m^3 of runoff water, which translates to the capacity to store an extreme storm event with an average exceedance probability of one in 100 years.

Once collected within the CRCP, the contaminant runoff will be let 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.

CRCP Sediment Trap

The CRCP design integrates a sediment trap. It is expected for some fine particles within the tailings to be mobilized 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.

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. As a result and in the event that the CRCP storage capacity is exceeded (additional rainfall event after an event with an average exceedance probability of one in 100 years), an emergency spillway will safely route the excess water away from the pond and into the mine wide 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.

Clean Water Diversion Drains ("CWDD")

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.

<u>Northern CWDD</u>
The northern CWDD is to be constructed on the North-West corner of the IWF. 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 directly east of it 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.

<u>Southern CWDDs</u>
The southern diversion drains run along the South-East and South-West 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.

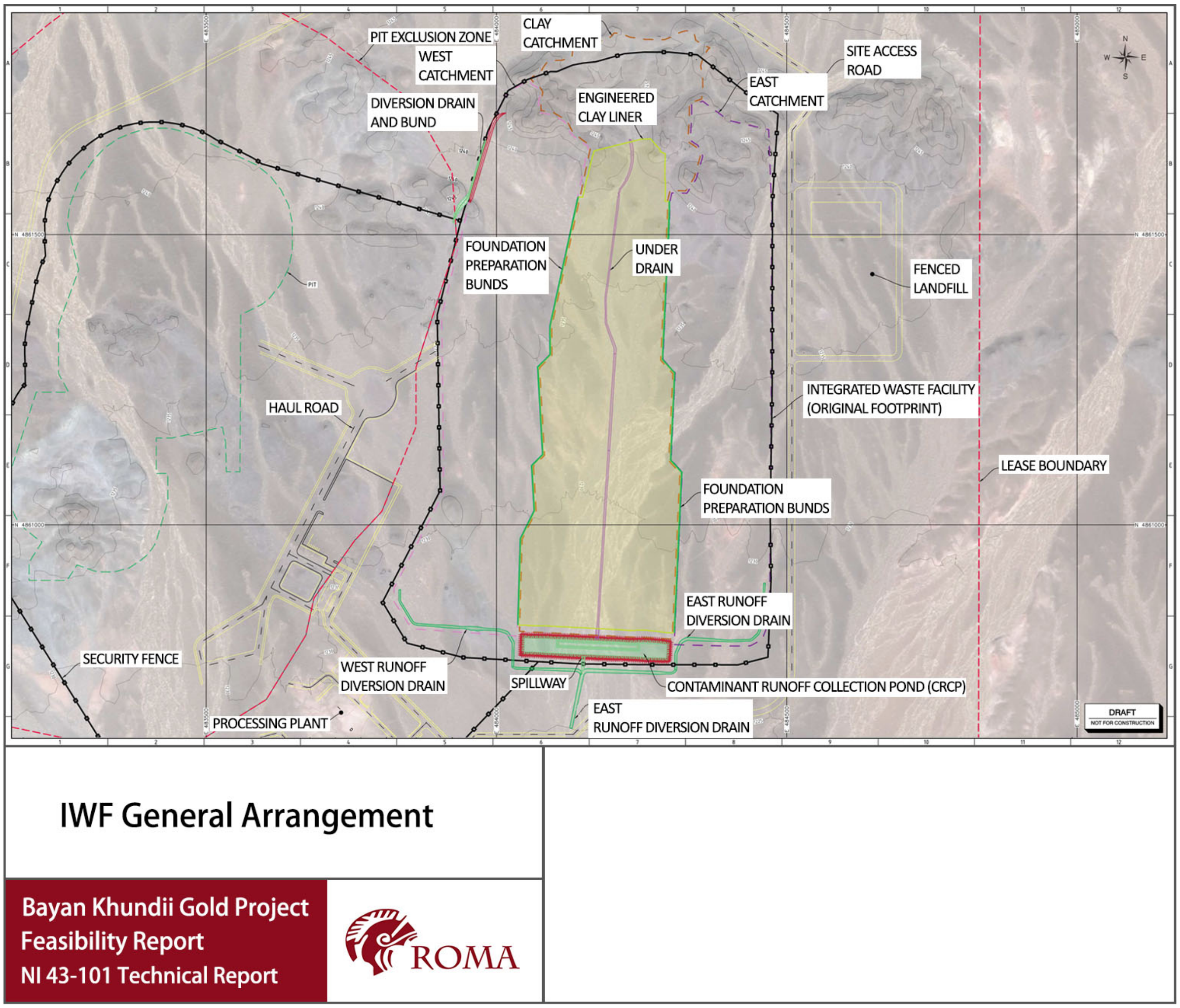

Figure 18-19 IWF General Arrangement.

18.10. CONSTRUCTION DELIVERY MODEL

An Integrated Project Delivery ("IPD") approach is being considered to implement the management of the Project during the Construction Phase of the Project. This approach has been designed to best leverage the organizational strengths and Mongolian experience of the Project owners, with an IPD Company ("IPDC") that has proven Project delivery capabilities for similar projects in the Mongolian mining environment.

Erdene plans to engage the selected IPDC to provide a range of management services and systems required for coordination and management of final engineering, design and construction works, erection, supervision, commissioning and other services necessary for the delivery of a fully operational mine, aligned with the owners requirements and Project design specifications and plans.

Detailed Engineering

Construction permitting will be undertaken by the Integrated Project Management Team ("IPMT") immediately following the expertising of the construction drawings for each element of the infrastructure required within the Project. Some facilities will be progressed to construction permitting on a single facility basis (such as the accommodation camp), whereas the process plant and its associated buildings and services are expected to be packaged and permitted at the same time.

Construction Permitting

Construction permitting will be undertaken by the IPMT immediately following the expertising of the construction drawings for each element of the infrastructure required within the Project. Some facilities will be progressed to construction permitting on a single facility basis (such as the camp) whereas the process plant and its associated buildings and services is an example of infrastructure which would be packaged and permitted at the same time.

Construction Readiness

The IPMT will be tasked with undertaking comprehensive construction readiness planning. Construction readiness is one of the elements of planning necessary to ensure impacts during the construction phase are minimized.

During the construction readiness phase a detailed level of planning is undertaken on construction activities with the view to highlight the following:

- Correct sequence of tasks to be undertaken by work area
- Resources required to complete each task
- Timeline for completion
- Interactions and reliance between different activities within the project master schedule
- Identify alternative ways to complete activities to increase "float" in the master schedule and minimize critical path reliance.
- Undertake a detailed construction risk review which covers:
    - Safety
    - Schedule
    - Constructability
    - Cost benefit analysis (value engineering)

Post the Constructability review, the team will enhance the Construction Methodology and plan. Each Work Package in the Project must have Construction Method Statements prepared and documented. The construction methodology and plan document will cover:

- Access to site
- Ground conditions
- Sequence of work
- Craneage and crane studies
- Working at height – minimize
- Prefabrication and preassembly
- Transport logistics
- Material tracking and handling
- Protection of painting
- Pre-cast components
- Inspection at source
- Goods receipt, laydown and storage
- Temporary facilities
- Temporary works
- Scaffolding
- Power source
- Interface with operations
- Physical interfaces
- Lift study
- Clean up and demobilize
- Risk mitigation plans
- Construction procedures

Finalizing the Construction Schedule

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.

Indicative Construction Schedule

The following are key milestones in the preliminary construction schedule that has formed the basis for cost estimation in this FS Report:

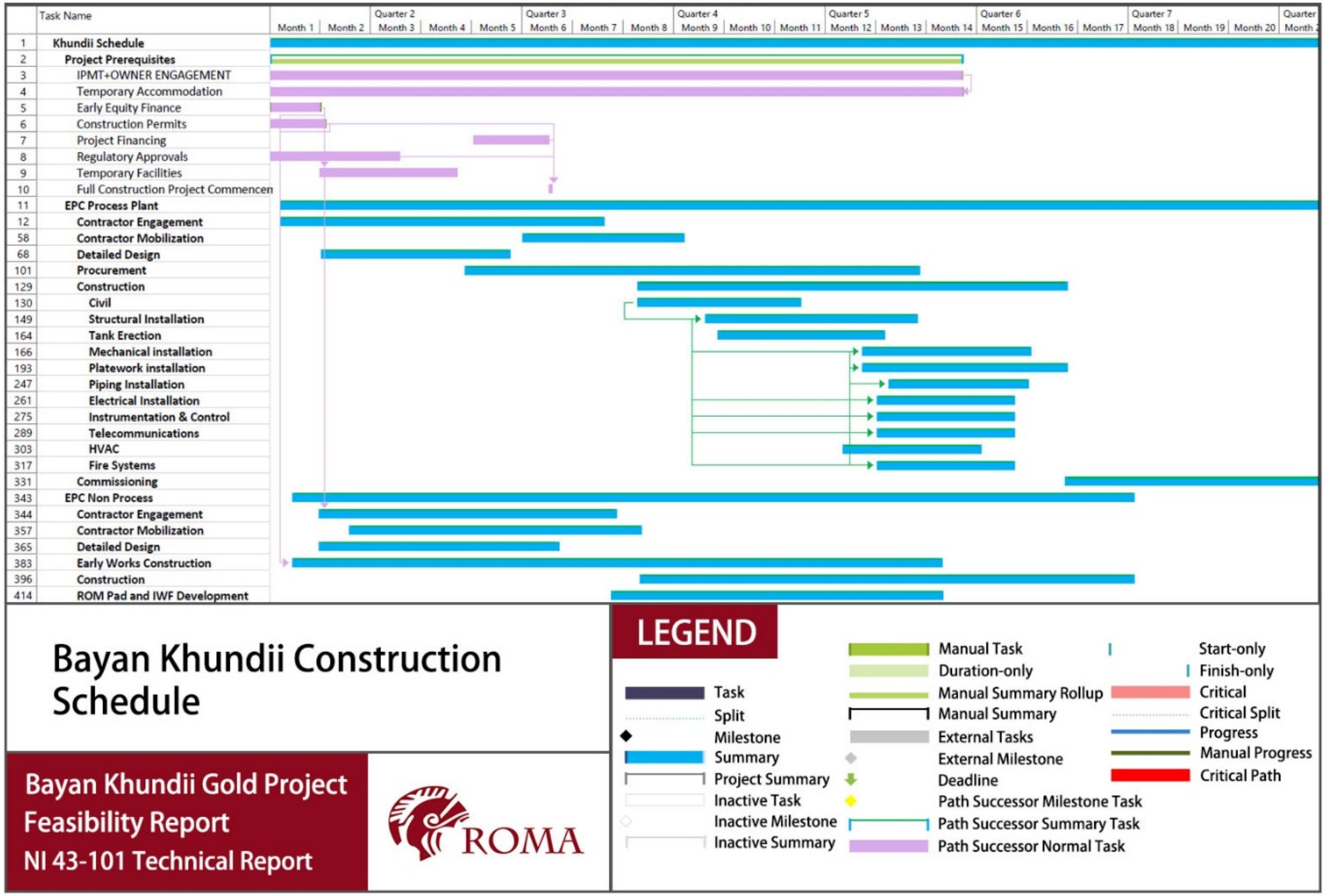

Figure 18-20 Bayan Khundii Project Preliminary Construction Schedule.

Task Name	Start	Finish
Project Prerequisites		
IPMT+OWNER ENGAGEMENT	Month 0	Month 8
Temporary Accommodation	Month 1	Month 8
Construction Permits	Month 1	Month 2
Project Financing	Month 6	Month 7
Regulatory Approvals	Month 1	Month 2
Temporary Facilities	Month 0	Month 3
Full Construction Project Commencement	Month 8	Month 8
EPC Process Plant		
Contractor Engagement	Month 0	Month 9
Contractor Mobilization	Month 7	Month 11
Detailed Design	Month 0	Month 5
Procurement	Month 5	Month 13
Construction	Month 8	Month 17
Civil	Month 8	Month 12
Structural Installation	Month 11	Month 15
Tank Erection	Month 11	Month 14
Mechanical installation	Month 12	Month 16
Platework installation	Month 12	Month 16
Piping Installation	Month 14	Month 17
Electrical Installation	Month 13	Month 15
Instrumentation & Control	Month 13	Month 15
Telecommunications	Month 13	Month 15
HVAC	Month 13	Month 16
Fire Systems	Month 13	Month 15
Commissioning	Month 17	Month 21

Table 18-2 Indicative Process Plant Construction Schedule.

Task Name	Start	Finish
EPC Non-Process		
Contractor Engagement	Month 0	Month 9
Contractor Mobilization	Month 1	Month 9
Detailed Design	Month 0	Month 6
Early Works Construction	Month 1	Month 14
Site Establishment	Month 1	Month 5
Earthworks	Month 2	Month 14
Fencing	Month 2	Month 6
Powerhouse Phase 1	Month 6	Month 7
Electrical Site Services Phase 1	Month 6	Month 8
Camp Construction	Month 2	Month 10
Early Works Civil	Month 8	Month 9
Warehouse	Month 9	Month 11
Bus Shelter	Month 5	Month 5
Ablutions	Month 3	Month 6
Reagent Storage	Month 9	Month 11
Bore field Phase 1 + temp storage	Month 2	Month 5
Construction	Month 9	Month 16
Core Shed	Month 9	Month 11
Fuel Station	Month 9	Month 12
Security Building	Month 9	Month 12
Office Admin	Month 10	Month 14
Security System Installation	Month 15	Month 16
Mine dry	Month 11	Month 15
Wastewater Treatment Plant	Month 13	Month 15
Emergency Services	Month 10	Month 12
HV & LV Workshop and Warehouse	Month 11	Month 15
Sample Prep and Lab	Month 15	Month 16
Powerhouse Phase 2	Month 10	Month 15
Electrical Site Services Phase 2	Month 14	Month 16
Central Heating Plant	Month 10	Month 13
HVAC + other Services	Month 10	Month 14
Magazine	Month 14	Month 15
Bore field Phase 2	Month 12	Month 13
Water storage and reticulation	Month 10	Month 13
ROM Pad and IWF Development	Month 10	Month 20

Table 18-3 Indicative Construction Schedule – Non-Process Infrastructure.

18.11. HYDROGEOLOGY AND HYDROLOGY

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.

The nearby KT-BS wellfield indicatively has capacity to meet the annualized demand rate for the BK processing plant. 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. Therefore, further investigation is required and it is recommended that additional draw-down testing be carried out during the construction phase to quantify the aquifers storage and spatial extents.

The site requires an average of approximately 0.6 ML/day (equating to 6.9 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.

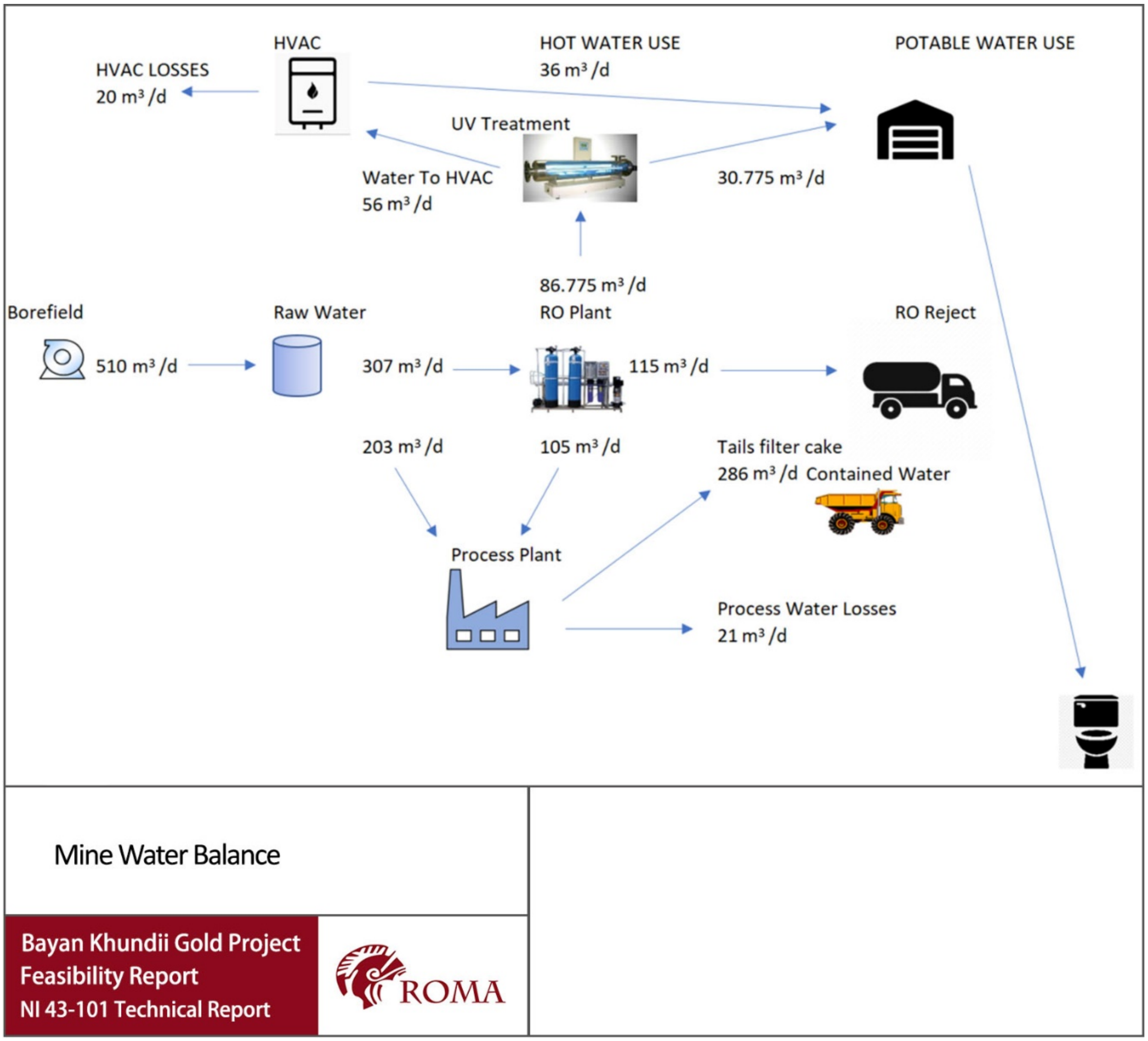

Figure 18-21 Mine Water Balance.

An aboveground 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 is a commodity that is freely traded on the world market and for which there is a steady demand from numerous buyers. It is also possible to sell gold 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 doré through Mongolbank, the central bank. Sales of gold to the Mongolbank have a fixed, discounted royalty, currently set at 5 percent under the Gold-2 Program. Mongolbank gold purchases are transacted according to the daily spot price on the London Metals Exchange. Exports of gold from Mongolia are subject to a graduated royalty scheme, ranging between 5 and 10 percent.

As a freely-traded commodity with 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$1,400/oz for gold.

The gold and silver selling prices are based on the three-year trailing average prices for each metal, for the period ending July 1, 2020. Given the variability and uncertainty surrounding future gold price, gold prices from $1,300 to $1,700 were considered in the sensitivity analysis.

ROMA 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 the following two steps:

- General Environmental Impact Assessment ("GEIA"); and
- Detailed Environmental Impact Assessment ("DEIA"), included Baseline Research 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. Ordinarily, the GEIA is conducted to determine whether a Detailed Environmental Impact Assessment is required for the Project.

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 research 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 and EMP cover environmental and community or social impacts. A DEIA is obligatory for all mining projects in Mongolia and must be carried out by a 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 mining license. As prescribed by the government, the DEIA methodology examines the potential impacts of a given project relative to the baseline conditions and proposes management measures. During the DEIA, consultation with the local government at the soum (sub-province) level is required, covering potential impacts and proposed management plans.

20.2. ENVIRONMENTAL PERMITTING

Detailed Environmental Impact Assessment

The DEIA approved by the Ministry of Environment and Tourism of Mongolia acts as the Project's statutory environmental assessment and the basis for issuing operating permissions for the Project. An independent DEIA for the Project has been prepared and is planned to be submitted to the government for approval in 2020.

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 the end of 2020.

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 land use permits for the Project development, including the open pit, processing plant, mineral waste facility, and 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 consumption. The Company has registered with the government a water reserve for the purposes of mining and mineral processing at Bayan Khundii. Application for water use permits must be submitted upon commissioning of the water supply system.

Annual Environmental Management Plan and Report

License holders are required to earn approval of 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 FS Report.

Hazardous Materials

Additional permitting is required for chemicals and/or explosives transport, handling, use, and storage, prior to the commissioning of the Project's mineral processing facility. The Company has prepared its 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 its facilities.

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 FS 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 June 2020. In parallel, Eco Trade LLC prepared the statutory Mongolian DEIA for the Project, which is planned to be submitted to the government for approval in late 2020.

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 potential impacts.

Climate and Air Quality

The Project is in the northern part of the Altai Southern Gobi Desert region. The regional landscape is characterized d 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 existing between low hills. The central part of the Project area is flat in terms of land surface. The southern part of the license area where mineral exploration work 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. Erdene has undertaken periodic air quality monitoring within the Project area in 2016 and 2019, which have 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 dry 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 potential herder winter camp sites to the south-west of the processing plant were considered. The identified camp sites are inhabited only temporarily, for weeks or months of the year under favorable (i.e. lower impact) prevailing wind conditions (i.e. located upwind of the mine). Should herder winter camps be occupied, it is considered that herders may experience some 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.

Noise and Vibration

The Project area 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 levels 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 levels standards, but they are unlikely to exceed the thresholds due to the very short nature of the event. Thus, no significant impacts are expected from the blasting activities, provided all other safety 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 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.

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 and thaw conditions. The baseline data collected for the site have shown that in certain locations there are high natural levels of heavy metals occurring, 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 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. This is a natural process whereby sulphuric acid is produced when sulphides in rocks are exposed to air and water. However, the risks of potential acid generation appear very low for the Bayan Khundii deposit.

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 kits, protective equipment, and other necessary equipment will be available onsite; and
- Rehabilitation of all excavations will be conducted prior to closing the site.

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).

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 would be undertaken regularly, follow any additional legislative or permit requirements, where dataloggers would 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 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.

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 Lists. 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.

Waste

There is limited domestic waste currently generated within the Project Area by the Project's seasonal exploration and technical field program activities. Both non-hazardous and hazardous waste will be generated during the Project's construction and operations phases.

The Project plans to develop an engineered landfill for the disposal of domestic, non-hazardous wastes. 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 deposit and to also determine the geochemical suitability of materials for use as construction material. The sampling program focused on the Basalt, Jurassic Sediments and Lapilli Tuff lithologies. The results of the geochemical characterization program indicate that the three waste lithologies are non-acid forming. (Tetra Tech, 2019a).

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 and filtered tailings into a single, engineered IWF. This process of co-disposal encapsulates tailings within clean mine waste and creates a landform with maximum possible strength. Consequently, the IWF is considered the most safe and effective waste management method for the Project.

The following mitigation and management measures are proposed:

- Use of on-site landfill for non-hazardous waste generated at site; and
- A wastewater treatment plant will be installed and commissioned for use.

Population and Demography

At the end of 2018, the population of Bayankhongor aimag was 88,359 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 (e.g. healthcare 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 requirements.

Economy and Employment

At the soum level, Shinejinst soum has 1,381 economically active people. In both soums, the majority of working-age people work in the agriculture sector, almost entirely in livestock herding. Herding 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.

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 Mineral 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, specifically noise, dust, and 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 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.

Cultural Heritage

Within the mine 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 soums 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 also 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 also be enforced; and
- The Project will continue to collaborate with local communities on strengthening and supporting local cultural heritage through the Local Cooperation Agreement.

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 care and maternal care as needed. Mortality data indicates 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, STIs 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 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.

Transport

The Project area is characterized d by little safety and traffic management, 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 in place to mitigate any transport through community centers include 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.

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 a manner which is accessible for the residents of the soum (sub-province) within which the Project is located. Certification of local consultation is supplied by the local government. As of the date of this report, the Company's statutory DEIA consultations were in progress, with expected completion in late 2020.

The Local Cooperation Agreement also commits the Project to ongoing consultation with local stakeholders over the course of the Project life cycle.

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 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 its field sites and Ulaanbaatar office, and provides training for company personnel on how to implement the mechanism. Additionally, Erdene shares the results of its local environmental monitoring programs during fieldwork periods.

20.5. MINERAL WASTE MANAGEMENT

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.

The geometry of the IWF over the 6-year life of mine has been defined to accommodate annual tonnage production for waste rock and dry cake tailings disposal. The following table summarizes the LOM IWF geometry.

IWF LOM Shell Element	Dimensions	Units
Final Crest Elevation	RL 1302	meters above sea level
Ultimate IWF Shell Height	76	meters (at the critical section)
IWF Footprint Area	49.3	Hectares
IWF Crest Area	8.3	Hectares
Intermediate Bench Elevations	RL 1246, RL 1266 and RL 1286 (every 20 m elevation gain)	meters above sea level
Intermediate Bench Crest Width	20	meters
inter-bench Outer Slope	2: 1	meters (H: V)
Overall IWF Shell Outer Slope	2.8: 1	meters (H: V)
Total Storage Volume	17.7	Mm^3

Table 20-1 Final LOM IWF Shell Geometry.

Placed dry cake tailings within the IWF are considered to contain hazardous substances which present a threat to the environment if not properly managed. Any moisture which comes in contact with the tailings must be contained and treated. As a result of this, and as mentioned within Section 18: Project Infrastructure, it is scheduled that several types of infrastructure must be constructed prior to any tailings placement, as to ensure that any potential contaminant is managed and not allowed to migrate into the wider environment. These infrastructures include:

- Contaminant Runoff Collection System, including:
  - Underdrainage System;
  - Contaminant Runoff Collection Pond (“CRCP”);
  - CRCP Emergency Spillway; and
  - CRCP Silt/sediment Trap

- Clean Water Diversion Drains (“CWDD”), including:
  - Northern CWDD; and
  - Southern CWDD.

In order to mitigate the threat of environmental damage, engineering measures have been incorporated into the IWF design. These include the construction of a low permeability engineered clay liner 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 low-permeability clay liner 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) traveling through the tailings and re-direct it towards the constructed underdrainage system, which discharges into the CRCP. The liner will be formed by reworking the top 0.5 m of the in-situ clays within the foundation to lower their permeability. Where the thickness of the in-situ clay is deficient, i.e. less than 0.5 m in thickness, clay soils will be borrowed from other areas with the footprint of the IWF to ensure a minimum engineered thickness of 0.5 m is achieved.

Construction of the engineered clay liner is to be undertaken prior to any deposition of waste material and has been designed to be staged during the first 3 years (Year 0 – 2). The initial construction of the southern area of the clay liner is to be completed prior to any dry cake tailings placement in Year 1, continuing during the first two years of the IWF operations. Reducing the time between construction of the liner and placement of dry cake tailings ensures that the integrity of the liner is not compromised due to desiccation of the clay soils. Additionally, the prepared liner is to be covered with an erosion protection layer of 300mm thickness made up of gravelly materials as to protect its integrity.

The waste rock is to fully encapsulate the tailings within the IWF. It is considered that the waste rock material placed within the IWF does not pose an immediate threat to the environment and moisture traveling through this material is hence considered clean. In order to ensure that the tailings material does not migrate into the waste rock, strategic placement of the waste rock material is suggested. Fresh waste rock from the operating pits will be placed at the toe of the IWF, with more weathered material to be placed adjacent to the tailings. The weathered materials will generally have a smaller particle size and higher silt content than the fresher rock and will therefore act as a crude filter between the coarse fresh rock and the fine grained tailings.

The IWF will also see the placement of sub-grade ore on the southern flank of the structure as it becomes available. As per Mongolian Requirements, a sub-grade ore stockpile is to be formed within the IWF for future processing if found to be viable. To manage its potential future removal, the sub-grade ore will be placed away from the tailings cells.

In order to support the stable construction of the IWF, dry cake tailings will be required to be compacted to a relative density of 95% of the standard maximum dry density ("SMDD") based on MNS ASTM D1557. The design envisions that in some areas, the waste rock will be place directly above previously placed tailings cells. Additionally, waste rock placement should be done in a controlled manner, of maximum 5 m loose lifts and compacted with track rolling as to achieve safe working platforms during construction.

Continuous site monitoring is required to ensure that placed tailings have not contaminated the surrounding waste rock material or the environment and to assess the overall performance of the IWF in terms of expected movement and settlement. The following monitoring infrastructure is proposed to be installed within and surrounding the IWF:

- Groundwater Monitoring Boreholes ; and
- Settlement and Movement Monuments

The function of the monitoring boreholes is to identify any contaminate traveling through the groundwater downstream of the IWF. It is suggested that two monitoring boreholes be installed. The first borehole is to be positioned directly downstream of the CRCP. If potential contaminants are found to be present above acceptable limits, it would indicate that there is a loss of containment within the CRCP which needs to be rectified (i.e. Abstraction bores or other suitable strategy would be formulated if this is the case). The second borehole is to be installed downstream of the south-east corner of the IWF. If the presence of contaminant above specified limits are identified, this would indicate that the migration of contaminants has occurred from tailings areas towards clean waste rock areas. Furthermore, runoff from these areas would now be considered contaminated and would require for a new configuration to be implements in order to provide containment for them. Construction alterations to the proposed Southern CWDD would have to be completed where instead of diverting water away from the CRCP, it would be diverted into the CRCP as to contain contaminated runoff and baseflow from the waste rock.

Movement monuments are to be installed within the constructed waste rock benches of the IWF. In order to provide reliable and useful information, it is suggested that the prisms are installed in 200 m intervals around the perimeter of each bench. These prisms provide information regarding displacement and rates of movement of the IWF material. This data is to be evaluated as it becomes available.

Blasting activities have the potential, although highly unlikely, to affect the integrity of the IWF. It is suggested that a seismometer is available on site to record seismic activity caused by blasting. The recorded data from the seismometer is to be compared to the design earthquakes used to evaluate the stability of the IWF. However, it is noted that it is unlikely that the seismic recordings from blasting will exceed the design earthquake values.

The final recommendations are made in order to facilitate rehabilitation of the IWF post closure. A progressive rehabilitation approach is to be undertaken at the conclusion of the stage of construction for the IWF. The closure concept sees the placement of a 2 m thick low permeability layer at the crest of each intermediate bench. After the low-permeability layer is placed, topsoil is to be transported from previously approved stockpile areas and placed along the flat surface of the benches. The placement of topsoil in these surfaces should promote the growth of vegetation. Vegetation trials have been commenced by Erdene and should continue during Operations. If after the first years of operation, vegetation growth has not been successful on the lower benches, alternative approaches should be trialed and implemented. It is also expected for no topsoil to be placed upon the batter slopes of the IWF, as due to the batter slope inclinations, it is not expected for topsoil to remain as the soil is prone to environmental erosion, hence not ideal for re-vegetation purposes.

20.6. 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.

O2 Mining managed the oversight of the design and cost estimation process for:

- Process Engineering Studies; FEED draft 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.

A Request for Proposal/Quotation framework, dependent upon the nature of the service/work/materials required was prepared for each work/costing package. This 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.

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

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 and based on exchange rates on June 1, 2020.

Project Currency	Exchange rate to US$1
MNT	2,810
AUD	1.47
CNY	7.136
EUR	0.889
ZAR	17.39

Table 21-1 Currency Exchange.

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.

Measurement System

Unless otherwise stated, the metric system of measurements was used in this estimate.

21.3. COST ESTIMATING METHODOLOGY

This estimate has been developed based largely on first principles. The work to complete the estimate is broken down into four categories:

- Estimate based on supporting documents;
- Cost basis – direct costs;
- Cost basis – direct field costs; and
- Cost basis – indirect costs.

Estimate Supporting Documents:

The capital cost estimate was based on the following:

- Project scope of facilities;
- Design criteria;
- Pre-production development;
- Process flow diagrams;

- Process equipment list;
- General arrangement drawings;
- Layout drawings;
- Major equipment quotations from vendors;
- Project work breakdown structure ("WBS");
- Supplemented sketches where required;
- O2 Mining in-house data; and
- Local cost information and quotations provided by ERD (e.g. provision of permanent camp construction and operations).

Cost Basis – Direct Costs

Engineering material take-offs were based on neat line quantities, unless specified otherwise, derived from project drawings and sketches. Allowances were included for each discipline as appropriate. Conceptual quantities were prepared where drawing information was not available.

Mining Infrastructure

The following items were used to complete the mining portion of the estimate:

- **Pre-Production development:** Open-pit mining infrastructure costs were based on designs developed from specifications through to Mongolian expertising in most instances, with some minor infrastructure based on preliminary designs. All costing is based on quotations from construction companies responding to requests for proposals inclusive of the design drawings and BOM developed to date.

- **Civil (Bulk Earthworks and Site Preparation):** Bulk earthwork and site preparation costs were based on material take-off from general arrangement and layout drawings, and costing was built up from first principles using local contractor quoted rates and appropriate considerations for contractor indirect costs. Given the disparity between quotes, it was necessary to review current market prices both within Mongolia and internationally to arrive at commercially realistic prices. Some vendors quoted on a Supply and Deliver basis, others quoted on a unit price basis with separate transportation costs, and others quoted on an all-in basis. The decision was made to adopt the unit price and separate transportation.

- **Concrete and Structural Steel:** Concrete foundations and structural steel were estimated based on detailed drawings developed to international and Mongolian norms and standards, considering the geotechnical sections and conditions defined by the geotechnical study undertaken by Soil Trade LLC. Concrete and rebar supply costs were based on quotations provided by the contractors who provided proposals for the construction. The cost of concrete includes the supply of concrete to the forms, supply of cement, and aggregates. The concrete mixer, boom truck and pump, loader and other equipment is priced separately for the Non-Process infrastructure. The Process Plant CIV/STR is priced on an all-in basis – less cranage which is individually priced.

- **Architectural:** Architectural quantities were taken off the general arrangement and detailed drawings where available. Some vendors used the BOM, others quoted based upon the technical drawings. Costs for pre-engineered or prefabricated modular buildings were based on local cost information provided by vendors for design, supply and installation. The costs were estimated on a dollar per tonne (structural steel) or dollar per square meter (sandwich panel) basis and are supported by budget pricing given by local construction contractors.

- **Mechanical:** The mechanical equipment quantities, sizing, and power consumption were derived from the process flow sheets and equipment list. Electric or hydraulic motors were itemized and priced with the equipment. Costs for mechanical bulks such as pump boxes and chute work are calculated based on designs given by 360 Global and budget pricing from local fabricators. Man-hours were determined based on submissions from the construction contractors and estimates prepared.

- **Piping:** Piping cost was developed from the BOM developed by 360 Global from take offs from their preliminary drawings and factoring where no BOMs were available. Where factoring has been used, factors are based on a review of each pipe without a BOM, the start, and end points, and the likely number of bends and fittings required based on the pipe rack layout. The piping estimate includes pipes, valves, fittings, hangers/supports, testing, and installation labor.

- **Electrical:** Substation and electrical distribution cost were estimated based on budget quotations from vendors on a supply and install basis. In the absence of direct quotations, pricing was used from similar projects. Electrical BOMs were developed by 360 Global from the line diagrams produced by them and costing was built up from vendor quotations for supply and install and factoring where no BOMs were available. Where factoring was used, the factors are based on information from other projects with similar processing circuits. The electrical cost estimate includes cables, control wires, bus work, hangers/supports, testing, and installation labor.

- **Instrumentation:** Plant control and communication systems were based on the process control philosophy developed in line with an operational site's requirements and priced based on specification information and costing from similar previous projects. Instrumentation costs were determined based on piping & instrumentation diagrams and priced for each WBS Area. Factoring is based on information from other projects with similar size and scope.

Cost Basis – Direct Field Costs

- **Labor rates:** The construction schedule (and hence labor cost) has been based on shifts of 12 hours/day for 7 days/week. The work rotation has been assumed to be 3-weeks-on/1-week-off. It is the experience of O2 Mining that this assumption will produce the most productive work force during the construction phase. A blended labor rate of $7.80/hr is used throughout the estimate based on market evaluation of construction direct and indirect labor costs (average). The rate is based on a typical crew consisting of a lead hand, certified tradesman, uncertified tradesman, skilled labor and helper with indirect supervision from engineering and superintendent level personnel spread across rates in each of the disciplines. The blended labor rate includes:

- Base rate;
- Vacation and statutory holiday pay;
- Fringe benefits and payroll burdens;
- Overtime and shift premiums;
- Small tools;
- Consumables;
- Personal protective equipment;
- Non-productive time (such as toolbox briefing, breaks, etc.);
- Supervision; and
- Contractor's overhead and profit.

- **Productivity Factor:** The standard base unit man-hours are estimates provided by construction contractors in their proposals for construction. Where necessary, productivity factors were incorporated into the estimate as multipliers to the provided/base man-hours. These factors consider project-specific conditions such as weather, crew skills and availability, living arrangements, craft / laborer rotation, shift work, plant type, working height, temperature, and work site conditions. Labor productivity is based on an effective working time of 8 hours per 12-hour shift, and additionally factored to cover supervision costs for tasks based on man hours.

  Task productivity is based on supplied vendor quotations and metered with real world experience from similar projects. Taken in account was the plan to preassemble platforms and platework as much as possible. The blended productivity rate was based upon the following:

  - 10 manhours per m^3 all in for concrete, based on a 40 m^3/hr batch plant;
  - 12 manhours per Tonne for Structural Steel erection, noting the focus on preassembly;
  - 4 manhours per m^2 for Grid mesh;
  - 18 manhours per Tonne for handrail erection;
  - 2-manhours per stair tread;
  - 10-manhours per tonne for platework;
  - 0.25 manhours per m^2 for sandwich panel;
  - 6 manhours per door; and
  - 2 manhours per m^2 of window.

  For mechanical equipment installed into the process plant, such as the Mills and Pumps, the man hours are determined on an individual item basis.

Cost Basis – Indirect Costs

The following costs were built up from vendor estimate, 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:
  - 2% of equipment cost for capital spares; and
  - 2% of equipment cost for commissioning spares.

- **Stores & Inventories (Initial Fills):** An allowance of $889 K was included for the stores and inventories, including reagents, liners and grinding media for the first-month's supply.

- **Commissioning & Start-up:** The estimate included an allowance for commissioning & start-up based on 0.25% of total direct cost.

- **Vendors' Assistance during Construction:** The estimate included an allowance for vendor assistance based on 1% of total mechanical equipment cost.

- **Freight & Logistics:** Freight and logistics were estimated based on equipment data sheets and BOM developed during the design phase for each of the construction packages. Freight includes:
  - Land transportation, includes rail and truck;
  - Loading and offloading, including craneage; and
  - Bonds and insurance.

- **Contingency:** Contingency is calculated based on the level of details submitted in the estimates, the expected level of accuracy of those estimates and O2 Mining's experience on projects of this type, size and location. Varying contingency amounts were applied to reflect the varying degrees of risk of different project components. For each section of work, risks have been categorized as follows:
  - 5% for low risk, including well defined BOM and vendor quotations; and
  - 10% for medium risk, including BOM based on estimates, or lacking vendor quotations.

- **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.

- **Escalation:** No allowance for escalation beyond Q2 2020.

- **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 2020 and does not include any escalation beyond this date.

- **Validity:** The quotations obtained for this study estimate were obtained in Q2 2020 and have an average validity period of 90 days.

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 by the mine contractor;
  - The labor rate used in the estimate is based on statutory law governing benefits to workers in effect at the time of the estimate;
  - 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; and
  - Contracts awarded for construction, equipment and engineering will be based on competitive bid.

- **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;
  - Any 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 600 Ktpa ore feed was estimated to be US$54.4 million, or US$59.2 million inclusive of contingency.

Capital Cost	US$ (Million)
Process Plant	24.3
Non-Process Infrastructure	9.8
Permanent Accommodation	2.0

Capital Cost	US$ (Million)
Construction Indirects	6.0
Engineering & Support	4.8
Construction Costs	46.9
Pre-Production Costs	7.5
Contingency	4.8
Subtotal Plant and Infrastructure	59.2
Sustaining Capital	3.7
Reclamation and Mine Closure	2.9
Salvage	(2.0)
Total (US$ millions)	**63.8**

Table 21-2 Capital Cost Estimate.

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).

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.

Main Area	Capital Cost (US$ '000)
General	8,195
Crushing	1,614
Grinding	4,135
Leach	2,158
CIP	741
Tails Thickener	630
Detox	282
Tails Filtration	1,942
Elution and Gold Room	2,276
Water Services	674
Air Services	503
Reagents	520
Power Distribution	652
Total (US$ '000)	**$ 24,321**

Table 21-3 Processing Plant Cost Estimate.

Non-Process Infrastructure

Project infrastructure includes all earthworks for the site, administration building including emergency and crib facilities, mine dry, process plant warehouse, chemical storage, laboratory, workshop and warehouse, remote ablution facilities, security guardhouse, explosives magazine, site utilities supply (electrical, water, heating), integrated waste facility, initial topsoil stripping in the pit area, surface drainage and sediment control and fuel storage and distribution.

Main Area	Capital Cost (US$ ’000)
Earthworks	3,101
Water Supply	356
Office, Mine Dry, Security, Warehouse and Workshops	4,581
Site Services + minor facilities	1,085
Central Heating Plant	677
Total (US$ ’000)	**9,800**

Table 21-4 Non-Process Infrastructure Cost Estimate.

Permanent Accommodation Camp

This area includes the cost for the build-up of permanent accommodation camp by a turnkey contractor. The contractor has offered a proposal whereby a proportion of the camp construction is paid as a deposit during the construction phase, and the balance is paid through a Build Operate Transfer arrangement over a 36-month period. The initial payment is proposed at US$2.0 M.

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 non-labor based costs necessary for the owners team to manage the construction activities at the site. Total construction indirect costs are estimated at US$6.0M.

Engineering and Support

Includes the management and supervision labor costs and associated on costs to manage the construction activities proposed. Total engineering and support costs are estimated at US$4.8 M.

Pre-production Costs

Includes the initial pre-strip of the mining operations whereby material is excavated for use in the construction of the ROM pad and also the IWF, as well as construction readiness type costs, all first fills and consumables such as reagents to commence operations. Pre-production costs are estimated at US$7.5 M.

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 1 for the 6 years of operations.

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 20.6 - Mine Closure and Rehabilitation Framework.

Salvage

Salvage value has been estimated conceptually 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.

Integrated Waste Facility

The capital costs associated with the IWF include all costs to establish the IWF sufficiently to receive waste rock and dry cake tailings commencing from Year 1 of operations. Progressive costs for further construction of the IWF have been included in the contractor mining costs. Capital costs for this purpose are estimated at US$0.9 M.

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 $4.8 million.

Contingency is calculated based on the level of details submitted in the estimates, the expected level of accuracy of those estimates and O2 Mining’s experience. Varying contingency amounts were applied to reflect the varying degrees of risk of different project components. For each section of work, risks have been categorized as follows:

- 5% for low risk items with well-defined BOM and vendor quotations;
- 10% for medium risk items with BOM based on estimates, or lacking vendor quotations; and

- 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

All operating costs are presented in this section excluding VAT. VAT has been built up separately in the financial model on all operating costs.

Mining

Open-pit mining costs were estimated from a combination of proposals received from competent contract miners located within Mongolia to undertake the mining operations and a first principles build-up of the owner incurred costs to manage the mining contractor and balance of operations. The RFP to selected mining contractors used the FS mine design, mining schedule and IWF design to develop budget pricing to at least ±15% for a schedule of rates for the life of mine operations. The Company undertook a technical and commercial evaluation of proposals to establish the basis for selection of pricing for the FS. This evaluation aimed to ensure that the selected pricing adequately reflected the scope of work and responsibilities assigned to the contract miner over the life of mine.

An annual schedule of mining costs combining the owners' costs and the contractors cost is included below:

FS Summary		Y0	Y1	Y2	Y3	Y4	Y5	Y6	Total
Overburden in Advance	K tonne	808	7,528	8,107	8,407	4,923	904	571	31,246
ROM Production	K tonne		544	773	473	550	600	487	3,427
Total Mined	**K tonne**	**808**	**8,072**	**8,880**	**8,880**	**5,473**	**1,504**	**1,057**	**34,674**
Contract Mining Costs	K US$	2,762	21,714	21,134	20,957	16,200	7,534	6,736	97,036
NPI Power Costs	K US$		605	806	806	806	806	776	4,607
Grade Control	K US$	103	411	411	411	411	411	411	2,569
Mining Indirect Labor	K US$	200	921	931	931	925	918	918	5,744
Mining Indirect Costs - Other	K US$	101	127	127	127	127	127	127	860
Allocation of G&A – Mining	K US$	1,242	4,128	4,405	4,318	3,940	3,587	3,244	24,864
Total Mining Costs	**M US$**	**4.4**	**27.9**	**27.8**	**27.5**	**22.4**	**13.4**	**12.2**	**135.7**
Unit Mining Costs	**US$/ tonne**	**6.14**	**3.46**	**3.13**	**3.10**	**4.09**	**8.90**	**11.55**	**3.91**

Table 21-5 Annual Mining Costs.

**Year 0 Contract Mining Costs also included in the pre-production capital costs*
*** VAT exclusive on all operating costs – covered under Section 22.*

Processing

The Processing OPEX is built up from the development of costs for Labor, Transportation, Messing/Accommodation, Power, Reagents, Maintenance and other general expenses.

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 transport, messing, and accommodation.
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 similar operations.
Maintenance	• Factored off equipment supplied costs
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; • Consumable prices were based off indicative vendor estimates and budget quotations; and • Consumable consumption rates were based on test work and empirical formulae.

Table 21-6 Process Operating Cost Base.

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 2:1 ratio, provisionally as an 18/9-day roster with 18 days working (9 days, followed by 9 nights), with 1-day unpaid travel either side of a 7-day rostered break.

- Senior and administrative roles at 18/9 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 engineer, 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 provision for remote localities.

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 from the power plant 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 real world scale up, 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.

Cost Center	US$/tonne
Process Power Costs	9.65
Process Direct Labor Costs	1.03
Process Indirect Labor Costs	1.21
Maintenance Costs	0.72
Reagent Costs	8.02
Allocation of General and Admin Costs	3.22
Total	**24.13**

Table 21-7 Process Plant Costs

An annual schedule of processing costs is included in the table below (US$ ’000):

Year No.	1	2	3	4	5	6	Total
Ore Processed (Kt)	450	600	600	600	600	577	3,427
Process Power Costs		4,341	5,788	5,788	5,788	5,570	33,062
Process Direct Labor Costs	578	578	578	578	578	578	3,527
Process Indirect Labor Costs	783	648	648	648	648	648	4,145
Maintenance Costs	324	432	432	432	432	416	2,468
Reagent Costs	3,609	4,812	4,812	4,812	4,812	4,631	27,488
General Costs	126	168	168	168	168	162	960
Allocation of G&A - Processing	1,828	1,831	1,800	1,709	1,713	1,681	11,046
Bkh Process Operating Costs	11,589	14,257	14,225	14,135	14,138	13,686	82,696

Table 21-8 Annual Processing Costs (US$ ’000s).

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 21-5 and Table 21-8 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 21-9. The unit unallocated G&A costs amounts to $1.07/tonne milled.

Year No.	0	1	2	3	4	5	6	Total
Supervision and Management	20.0	96.4	97.4	97.4	94.3	91.2	91.2	587.7
Airfares & Accommodation	9.3	41.3	40.3	40.3	37.2	34.3	34.2	236.9
Support Plant & Equipment	2.9	30.3	30.3	30.3	30.3	21.4	20.7	166.3
Site Services (Utilities, Subcontractors & Consultants)	40.6	151.4	150.5	145.1	120.1	115.5	116.2	839.4
Health, Safety, Environment	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Site Office Expenses	5.7	10.7	10.1	9.8	9.7	10.4	10.6	67.2
Freight	28.5	17.0	15.7	15.7	15.9	17.2	17.5	127.7
Mobilization & Establishment	3.8	15.0	15.0	15.0	15.0	15.0	15.0	93.8
Demobilization	0.9	2.6	0.0	0.0	0.0	0.0	0.0	3.5
Fees, Insurances, Community	0.0	0.0	0.0	0.0	0.0	7.5	0.0	7.5
Diesel	38.1	74.3	106.4	102.0	99.2	106.9	70.1	597.1
Direct Labor - G&A	2.4	31.5	31.5	31.5	31.5	22.0	21.2	171.8
Total (US$)	**166.7**	**595.0**	**621.5**	**611.4**	**577.6**	**565.7**	**521.1**	**3,659.0**

Table 21-9 Unallocated General and Administration Costs (US$ ’000).

22. ECONOMIC ANALYSIS

22.1. INTRODUCTION

ROMA prepared an economic evaluation of the Bayan Khundii Gold Project as at June 30, 2020 (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$1,400 per ounce gold price:

- Base Case Net Present Value at a 5.0% discount rate of US$144.8 million pre-tax and US$100.3 million post-tax;
- Using base case parameters, the estimated pre-tax Internal Rate of Return ("IRR") is 55.0% and the post-tax IRR is 42.4%; and
- Payback period of 1.6 years pre-tax and 1.9 years post-tax.

Cash Flow Summary (Based on US$1,400/oz Gold)			
Financial Results	**Units**	**Amount**	**US$/ounce [1]**
Processing Target	M Tonne	3.4	N/A
Actual Feed	g/tonne	3.7	N/A
Doré Production			
Gold Ounces Produced	Ounces	381,668	N/A
Payable Gold (99.85%)	Ounces	381,096	N/A
Revenue	US$ M	533.5	1,397.9
Doré Selling Costs	US$ M	(1.1)	(2.8)
Net Project Revenue	**US$ M**	**532.5**	**1,395.1**
Operating Costs	US$ M	(242.0)	(634.0)
Royalties	US$ M	(32.0)	(83.8)
Real Estate Tax	US$ M	(1.4)	(3.6)
Operating Earnings	**US$ M**	**257.1**	**673.7**
Initial Capital Expenditure	US$ M	(59.2)	(155.1)
Sustaining Capital Expenditure	US$ M	(3.7)	(9.6)
Environmental & Closure Costs	US$ M	(2.9)	(7.6)
Salvage Value	US$ M	2.0	5.2
Pre-Tax Cash Flows	**US$ M**	**193.4**	**506.7**
Corporate Income Tax	US$ M	(55.8)	(146.3)
Post-Tax Cash Flows	**US$ M**	**137.6**	**360.4**

Table 22-1 Financial Highlights – Cash Flow Summary.

Notes:
1. *Amount per ounce is calculated based on gold ounces produced totaled to 381,668 ounces.*
2. *Initial capital expenditure consists of construction, pre-production, and contingency.*
3. *Totals may not add up due to rounding.*

Financial Results	Units	Amount	US$/ounce [1]
Pre-Tax			
NPV5%	US$ M	144.8	N/A
IRR	%	55.0	N/A
Payback Period	Year	1.6	N/A
Post-Tax			
NPV5%	US$ M	100.3	N/A
IRR	%	42.4	N/A
Payback Period	Year	1.9	N/A

Table 22-2 Financial Result Summary.

Sensitivity analyses and additional metal price scenarios were investigated to assess the project economics, details of which can be found in Sections 22.9 and 22.10 below.

22.3. METHODOLOGY

ROMA 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

ROMA have made certain assumptions in our analysis, including the following:

- The gold price utilized in the base case economic analysis is based on the 3-year trailing average as at the Date of Valuation;
- This is an eight-year project, comprising of a one-year construction and commissioning phase prior to production, six-year operating life and a one-year closure period following production;
- 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;
- Except for 30% of operating costs (mostly the labor costs in nature) and the corporate income tax are assumed to be denominated in Mongolian Turgrik, the forecasted cash flows are assumed to be 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.

Parameter	Unit	Value
Gold Price	**US$/oz**	**1,400**
MNT:US$ Exchange Rate	**MNT:US$**	**2,810:1**
Grams to Troy ounces	**g:oz**	**31.1:1.0**
Pre-Production Phase	**Year**	**Year 0, Month 1 – Year 0, Month 12**
Production Phase	**Year**	**Year 1, Month 1 – Year 6, Month 12**
Mine Closure Phase	**Year**	**Year 7, Month 1 – 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
Buildings	%	2.5
Computers	%	50
Real Estate Tax Rate	**%**	**0.6**
Value Added Tax Rate	**%**	**10.0**
Import Duty Rate	**%**	**5.5**
Corporate Income Tax Rate		
First 6 billion MNT	%	10.0
Balance	%	25.0

Table 22-3 Key Assumptions Used in Economic Analysis.

Notes:

- *The MNT:US$ exchange rate adopted is the exchange rate as at the Date of Valuation; and*
- *No inflation or escalation of revenue or costs has been incorporated in the economic analysis.*

22.5. GOLD PRICE ASSUMPTIONS

Several bases of gold prices have been researched, with details shown in the table below:

Bases of Gold Price	Gold Price (US$/oz)
3-year Average Trailing Price as at the Date of Valuation	1,380
Price forecast as extracted from Bloomberg at the Date of Valuation	Varying prices averaging 1,650
Spot price as at the Date of Valuation	1,781

Table 22-4 Different Gold Prices Researched.

We have adopted gold price of US$1,400 per ounce, approximating the 3-year average trailing price, which is the lowest gold price among the three bases.

22.6. MINING SCHEDULE AND DORÉ SELLING COSTS

The mining schedule is presented in Section 16.4 of this report. Total recovered metal is 381,668 ounces. After considering the smelting recovery rate of 99.85% as disclosed in Section 15.5.8, total payable metal equals to 381,096 ounces.

The doré selling costs is comprised of transport costs and assays. As discussed in Section 21.6 of this report, transport costs are estimated to be US$2.7 per ounce and assays are estimated to cost US$7,200 per year of operation.

22.7. COST ESTIMATES

22.7.1. Capital and Operating Costs

Capital and operating cost estimates are presented in Section 21.4 of this report. Initial capital is estimated at US$59.2 million, including contingencies, and sustaining capital is estimated at US$3.7 million.

Estimated operating costs are discussed in Section 21.6 in this report. The operating costs for mining, processing and general and administration costs are US$135.7 million, US$82.7 million and US$3.7 million respectively, where the value-added taxes and corporate costs are not included.

22.7.2. 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.

22.7.3. 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 sales. A summary of the royalty terms is provided in the table below.

Royalty	Amount	Duration	Total Expected Royalty (US$ M)
Sandstorm Gold Royalties	1% of net revenue	Life-of-mine	5.3
Mongolian Government	5% of net revenue	Life-of-mine	26.7

Table 22-5 Royalty Terms for Bayan Khundii Project.

22.7.4. Value Added Taxes and Duties

A 10.0% 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.

22.7.5. Real Estate Tax

The construction value of all site buildings are subject to a 0.6% Real Estate Tax annually. A total of MNT4.6 billion (US$1.6 million) of real estate taxes were included in the Bayan Khundii financial model.

22.8. CORPORATE INCOME TAX MODELLING

ROMA assisted Erdene with tax modelling for the detailed feasibility study. The tax model was based on the "Mongolia Reforms its Key Tax Legislation" White paper (2019) by Ernst and Young and reviewed by Sevillia Audit LLC, a Mongolian professional services consultancy, whose details have been included in Section 3 of this report. Tax modelling has been completed at the project level and does not consider the repatriation of any profits to the Erdene parent company in Canada.

Pre-tax cash flows were converted to Mongolian Tugrik ("MNT") to enable taxation modelling at the rate noted in Table 22-3.

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 22-6.

Asset Class	Balance as at Year 0 (US$ M)	Depreciation Method	Asset Useful Life (Years)
Buildings	30.3	Straight line	40
Machinery	21.7	Straight line	10
Computers	0.7	Straight line	2
Capitalized Exploration Expenditures	8.0	Units of Production	Life-of-Mine

Table 22-6 Depreciation Classes.

Depreciation commences at the date production starts (i.e. 2022) and the applicable depreciation deducted from years with positive cash flows.

Loss Carry Forward

Once the estimated allowable depreciation was deducted from positive cash flows, an assessment to carry forward losses was completed. As per Ernst and Young, 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 MNT17.2 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 MNT649.2 billion or US$231.0 million. In accordance with Ernst and Young (2020), 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 MNT156.9 billion or US$55.8 million for the Project life resulting in after tax cash flow of US$137.6 million.

22.9. 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$144.8 million at the base gold price of US$1,400 per ounce. The Project's post-tax $NPV^{5\%}$ at US$1,400 per ounce of gold is US$100.3 million. IRR are respectively 55.0% pre-tax and 42.4% post-tax.

The payback period at a gold price of US$1,400 per ounce is expected to be 1.6 years pre-tax and 1.9 years post-tax.

Monthly net cash flows have been used in the calculation of the financial outputs in our model, with Table 22-1 and Table 22-2 summarizing the results.

22.10. SENSITIVITY ANALYSIS OF BAYAN KHUNDII PROJECT

The NPV$^{5\%}$ and IRR sensitivity of the Project to changes in gold prices is displayed in Table 22-7 and Table 22-8 below. The base case price of US$1,400 per ounce provides a post-tax NPV$^{5\%}$ of US$100 million and a 42.4% IRR on a 100% Project basis.

If the gold price rises US$200 per ounce to US$1,600 per ounce, the post-tax NPV$^{5\%}$ would rise 57.6% to US$158.2 million and the post-tax IRR would increase to 60.4%. Conversely, a US$200 reduction in gold price to US$1,200 per ounce results in a 57.6% decrease in NPV$^{5\%}$ to US$42.5 million with the post-tax IRR at 22.3%.

	NPV (US$ Millions)			
	Gold Price (US$/oz)	**Discount Rate**		
		5.00%	**7.50%**	**10.00%**
Pre-Tax	1,000	29.1	21.0	14.1
	1,200	87.0	73.3	61.5
	1,400	144.8	125.6	108.9
	1,600	202.7	177.8	156.4
	1,800	260.5	230.1	203.8
	Gold Price (US$/oz)	**Discount Rate**		
		5.00%	**7.50%**	**10.00%**
Post-Tax	1,000	(15.3)	(18.9)	(22.0)
	1,200	42.5	33.3	25.5
	1,400	100.3	85.6	72.9
	1,600	158.2	137.9	120.4
	1,800	216.0	190.2	167.8

Table 22-7 Project Economics Sensitivity to Gold Price and Discount Rate.

Pre-Tax					
Gold Price (US$/oz)	1,000	1,200	1,400	1,600	1,800
NPV$^{5\%}$ (US$ M)	29.1	87.0	144.8	202.7	260.5
IRR (%)	16.7%	36.9%	55.0%	71.8%	87.7%
Payback (Years)	1.7	1.7	1.6	1.3	1.2
Post-Tax					
Gold Price (US$/oz)	1,000	1,200	1,400	1,600	1,800
NPV$^{5\%}$ (US$ M)	(15.3)	42.5	100.3	158.2	216.0
IRR (%)	0.0%	22.3%	42.4%	60.4%	77.1%
Payback (Years)	1.9	1.9	1.9	1.5	1.2

Table 22-8 Project Pre-Tax and Post-Tax NPV and IRR Sensitivity to Gold Price.

Further sensitivity analysis was performed, the results of which are presented in the following table. Figure 22-1 and Figure 22-2 immediately following the table visualize the sensitivities corresponding to the datasets in Table 22-9.

Variables		Range	Post-Tax NPV (US$ M)	Post-Tax IRR
Base Case Post-Tax NPV and IRR at 5% Discount Rate:			**100**	**42.4%**
Gold Price		-30%	(21.1)	0.0%
		-20%	19.4	13.3%
		-10%	59.9	28.7%
		0%	**100.3**	**42.4%**
		10%	140.8	55.2%
		20%	181.3	67.2%
		30%	221.8	78.8%
Capital Expenditures		-30%	118.4	61.1%
		-20%	112.4	53.7%
		-10%	106.4	47.6%
		0%	**100.3**	**42.4%**
		10%	94.3	38.0%
		20%	88.3	34.1%
		30%	82.3	30.7%
Operating Costs		-30%	159.7	63.1%
		-20%	139.9	56.2%
		-10%	120.1	49.4%
		0%	**100.3**	**42.4%**
		10%	80.6	35.4%
		20%	60.8	28.2%
		30%	41.0	20.9%
MNT: USD Exchange Rate		-30%	75.6	33.6%
		-20%	85.9	37.3%
		-10%	93.9	40.1%
		0%	**100.3**	**42.4%**
		10%	105.6	44.3%
		20%	110.0	45.8%
		30%	113.7	47.1%
Limits	**Max Worse Case**		**(21.1)**	**0.0%**
	Max Best Case		**221.8**	**78.7%**

Table 22-9 Project Post-Tax NPV and IRR Sensitivities.

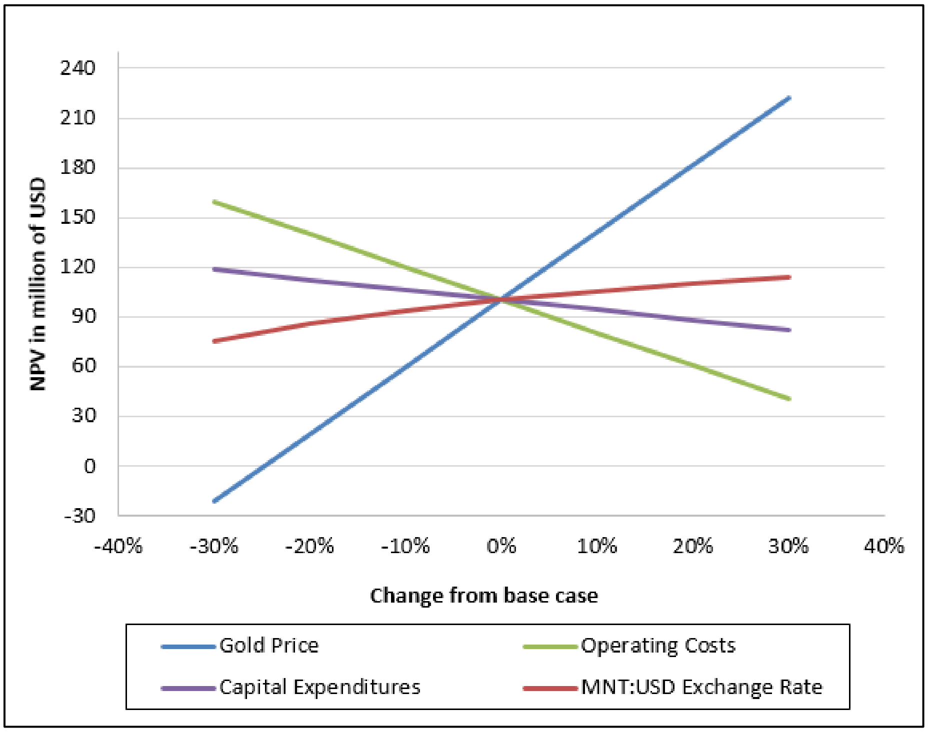

Figure 22-1 Bayan sKhundii Project Post-Tax NPV$^{5\%}$ Sensitivities.

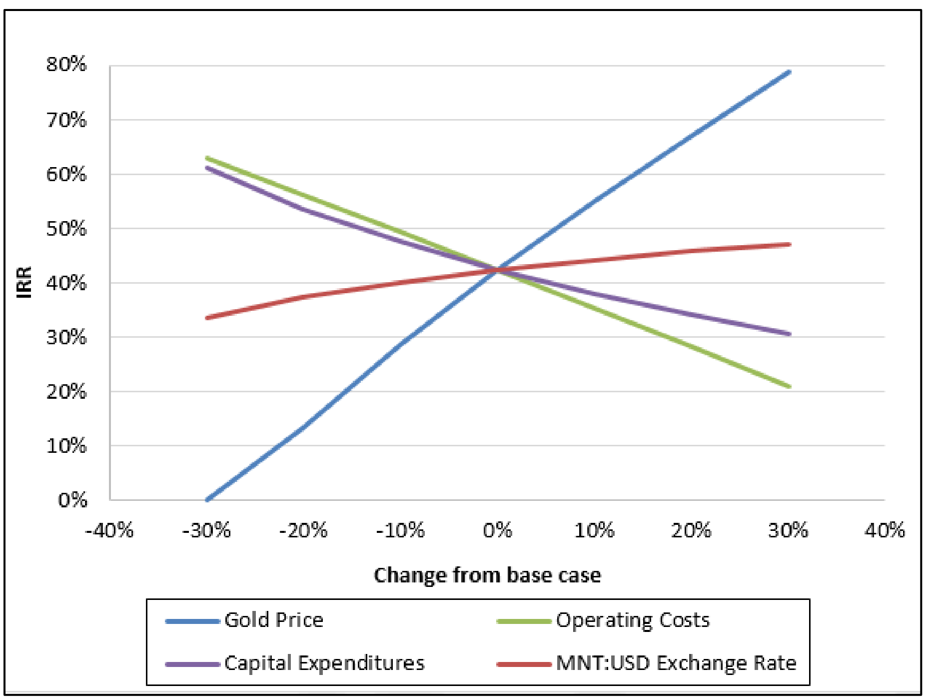

Figure 22-2 Bayan Khundii Project Post-Tax IRR Sensitivities.

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.

22.11. GOLD PRICE SCENARIOS

Various gold prices are applied to the DCF model in order to better understand the potential economics at current and forecast gold prices. Table 22-10 shows the post-tax NPV$^{5\%}$ at different gold prices.

Price Bases	NPV$^{5\%}$ (US$ M)	IRR
Base case prices (US$1,400 per ounce)	100.3	42.4%
Price forecast as extracted from Bloomberg – June 30, 2020 (Varying prices averaging from US$1,650 per ounce)	167.8	62.6%
Spot prices (US$1,781 per ounce as at June 30, 2020)	210.5	75.6%

Table 22-10 Post-Tax Scenario Analysis with Different Gold Price Scenarios.

23. ADJACENT PROPERTIES

Erdene continues to evaluate opportunities throughout the Edren 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 five 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 with 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. The following is a brief description of these two nearby deposits.

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.

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	2,349.7	31.6	29.0	453.0
Inferred	3.4	1.7	7.9	0.7	0.7	2.5	185.7	865.8	23.7	22.3	277.1

Table 23-1 Mineral Resource Estimate for Altan Nar, effective May 7, 2018.

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 tonne and a processing cost of US$20 per tonne 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 two 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.

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.

The QP has not visited the either Altan Nar or Zuun Mod 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 and Zuun Mod 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.

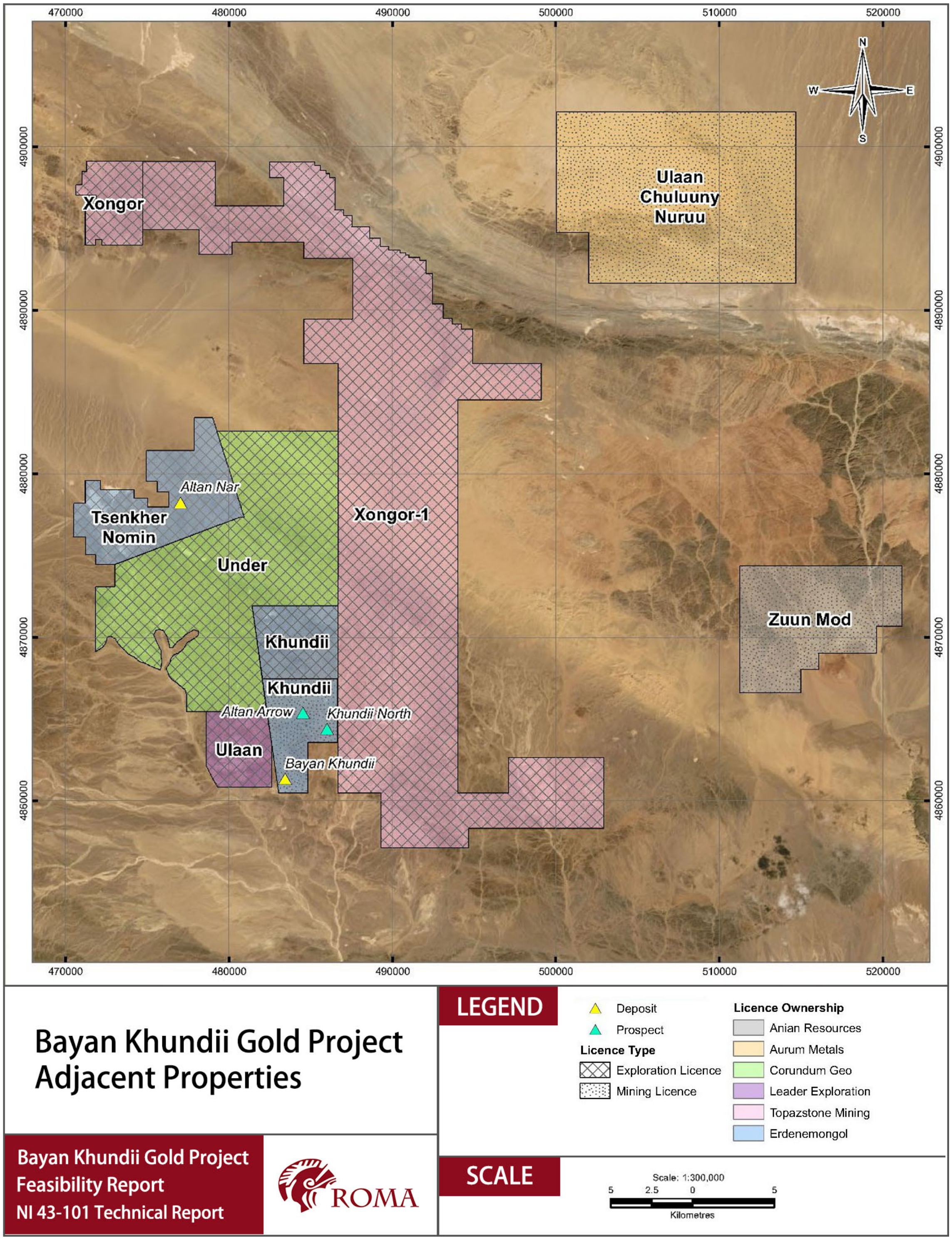

Figure 23-1 Adjacent Properties. (Tetra Tech, 2019a)

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 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 4 to 149 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, including the outcropping Southwest and Northeast Prospects where virtually all primary minerals have been variably replaced by quartz and illite. Bayan Khundii is characterized as a low sulphidation epithermal gold deposit.

The 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.

The resource was estimated using three interpolation methods: nearest neighbor, inverse distance squared, and ordinary kriging. The results of the ordinary kriging method were used for the resource tabulation.

At a cut-off grade of 0.55 g/t Au, Bayan Khundii has been estimated with a Measured Resource of 1.41 Mt at an average grade 3.77 g/t Au, an Indicated Resource of 3.71 Mt at an average grade of 2.93 g/t Au, and an estimated Inferred Resource of 0.868 Mt at an average grade of 3.68 g/t Au.

25.2. METALLURGICAL TEST WORK

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

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 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.

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 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 $1400/oz.

Geotechnical investigations were conducted to assess the expected rock quality at Bayan Khundii. 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 $42.63/tonne milled, milling costs of $26.00/tonne and general and administrative costs of $1.98/tonne have been used to estimate the reserves along with the gold price stated above.

Proven and Probable Reserves total 3.4 Mt of ore, with estimated contained gold of 409 Koz.

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 ultimate pit shell from the optimization that has dimensions of approximately 800 m x 380 m.

A detailed production schedule has been developed incorporating two pushback phased mining stages and the ultimate design pit. The production schedule will take place over six 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 3.4 Mt of mineralized material and 31.2 Mt of waste rock. The LOM average gold grade is 3.7 g/t. The LOM stripping ratio is 9.1:1. The production schedule will provide process plant feed at a nominal rate of 600 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 10 m height based on 5 m benches stacked in a double bench configuration. Two-lane mine roads will be a minimum of 21 m and single roads at the bottom of the pit will be 10 m wide. All ore will be transported to a primary crusher in 55 t rear-dump haul trucks and waste will be transported using the same class haul trucks. Primary ore loading will be by 36 t weight class diesel hydraulic excavators in backhoe configuration, primary waste loading by two 75t 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) 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.

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 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 six 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 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 ceramic disc filters in parallel. This is based on the cycle times of the filters to decouple their batch operation from the continuous operation of the rest of the plant.

25.6. ENVIRONMENTAL, SOCIAL AND MINE CLOSURE

At the time of this FS Report, the Project has in place all necessary environmental permits for its operations. Environmental permitting for the purposes of mine construction and operation remained ongoing.

The independent Environmental and Social Impact Assessment ("ESIA") of the Project provides detailed baseline information, impact assessment for key domains, and management plan commitments. Management plans in the ESIA detail the Company's commitment to build, operate, and close the Project in accordance with applicable regulation and Project standards. Considering the outcomes of the ESIA, the independent Mongolian statutory DEIA has been prepared for consultations and submission for approval to 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 waste management – whereby detoxified, filtered tailings are placed as a dry cake tailings within layers of waste rock in a single landform (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 significantly reduce post-closure maintenance and monitoring requirements and long-term risk.

The overall vision of closure for the BK site is to have all evidence of the operation removed, except for the final void and the IWF landform. The remainder of the areas impacted by the operation will be returned to their pre-operation form and 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 contract mining and thus no capital cost was allocated for mining equipment and ancillary mining equipment. The capital cost includes the cost for essential mining infrastructure, utilities and haul roads. The total estimated initial capital costs for BK is US$59.2M including contingency.

Sustaining capital cost estimates for the processing plant and associated facilities is calculated as 1.5% of the total initial capital costs from years two through five of the life of mine and 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$70.60/t milled at the processing rate of 600 Kt/year.

25.8. OPPORTUNITIES

Additional Resources at Bayan Khundii

There are multiple areas with the potential to add further resources at Bayan Khundii, including, but not limited, to the following:

- The Bayan Khundii Resource includes Measured and Indicated Resources of 521,000 ounces at an average grade of 3.16 g/t gold, and Inferred Resources of 103,000 ounces of gold at a grade of 3.68 g/t gold inclusive of the reported Proven and Probable Reserves. The remaining resources could potentially be added to open-pit reserves through both additional drilling and rising gold prices.

- Recent drilling at the Midfield SE and Striker SW zones of the Project area intersected exceptionally high-grade gold, including one meter of 582 g/t gold within an intersection of 5.5 meters grading 126 g/t at Midfield SE, in areas of the resource currently classified as waste or sub-grade material. The areas are expected to provide additional high-grade feed in the early phases of development.

- Additionally, very high gold grades observed in drilling in the Striker West portion of the deposit have the potential to provide additional high-grade resources should closer spaced drilling improve continuity.

- The reported resource is pit constrained and based on multiple parameters (Table 14-1, note 1) including a US$1,350 gold price. Multiple high-grade intersections outside the pit provide expansion targets requiring additional drilling in a rising gold price environment.

Exploration on the Khundii License

The Bayan Khundii deposit is situated in a highly prospective region that has received minimal historical exploration. On the Bayan Khundii property, multiple high-grade targets have been established through limited shallow drilling and surface sampling within 4 km of the deposit, including the Khar Mori (Dark Horse) prospect identified in late 2019.

Erdene recently trenched new gold zones at Dark Horse, with assays returning 6 meters grading 8.8 g/t gold, including 1 meter of 50.8 g/t gold, and 4 meters of 14 g/t gold, including 1 meter of 45.3 g/t gold. As a large untested prospect, Dark Horse provides significant discovery potential along strike with a well-defined and continuous gold-in-soil anomaly along a NE trending structure for 1.3 km. In addition, there are several isolated but intense gold-in-soil anomalies at or near NE-NW structural intersections. Drilling is planned for Q3 2020.

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.

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.

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.

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.

25.9. 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 budget quotes. CAPEX has been shown to be less sensitive than other issues with respect to project economics.

- **Operating Expenditure** - Operating expenditure predictions are based on budget quotes. Although thoroughly pre-determined using up-to-date assessment techniques, sensitivities on OPEX indicate that the project economics will remain robust even with a 10 % change.

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.

Final definition of the final excavated slope angles and has been assessed with consideration of in-situ groundwater conditions. The current FS 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 Report.

Infrastructure

Infrastructure design for this FS report have been prepared in accordance with Mongolian requirements and applicable international standards. However, detailed designs remain subject to final Mongolian regulatory approval, 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.

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.

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 environmental permits, including for its statutory environmental assessment, hazardous material permit, and mine closure plan, and social license to operate remain a risk.

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. 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 including approval of the Detailed Environmental Impact Assessment, regulatory approval of detailed construction drawings, 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 the COVID-19 pandemic 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 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 realised once contracts are finalised with vendors and service providers.

- **Project financing** – The proposed project delivery schedule is based on the owners 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.

26. RECOMMENDATIONS

Based on the current 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 until 2026 on the Bayan Khundii site. It is likely that mine life could be extended beyond six 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

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, along with infill drilling at Striker, Midfield, and North Midfield 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.

As drilling continues, and the project continues to progress towards the mining phase, ongoing detailed studies can continue which will allow the monitoring of the variability of gold grades. The twinning of 3-5 holes should be considered to test the short-range variation in gold grades. This twinning will further test the confidence and continuity of the narrower high-grade gold zones which are currently modeled. Plotting of fire assay vs screen metallics gold assay results should be continuously conducted. This will help to determine not only the scale of variability in gold grades but also, if applicable, at what grades the variability effect is most prevalent.

It's further recommended that Erdene insert both a higher-grade gold standard and lower grade gold standard into their data QA/QC protocols in order to better reflect the gold grades encountered at Bayan Khundii. A more suitable low gold standard of approximately 0.5 g/t Au would be beneficial, along with the insertion of the occasional higher-grade standard of approximately 50 g/t Au should also be considered.

Upon the conclusion of drilling, the 3D geological and resource model should be updated in order to incorporate this data.

26.2. GEOTECHNICAL

While the overall pit slope design adopted for the mining plan is suitable for the purpose of the FS, due to a lack of data within certain sectors, and from the results of the kinematic and limit equilibrium analyses of the currently available data, several areas were noted to require follow-up geotechnical study. The following recommendations are based on the understanding that the proposed mining operations will commence in the south, at the Striker zone (Figure 26-1), where the ore body is closer to surface and geotechnical characteristics are more favorable for the recommended pit profile (O2, 2020).

It is recommended that the following items should be considered to further evaluate the geotechnical parameters within the proposed pit:

- Analysis of all currently available structural data with any new geotechnical data;
- Collection of additional geotechnical data in mine sectors where the available information is relatively lacking, particularly for near surface Basalt units in the Northeast, East and Southeast sectors and the Jurassic units in the Northeast and East sectors;
- Progressive mine development from the south (Striker) to the north (Midfield to North Midfield);
- Review pit face rock discontinuity structures during initial pushback and mining operations;
- Rock scaling of potentially problematic Basalt areas and other locally identified kinematic instability at slope crest; and
- Ensure no undermining, particularly if toppling instability occurs.

As mining progresses, exposed rock cuts will provide additional structural information for a continuous and on-going geotechnical appraisal during mining operations. This will enable on-going assessment of the geotechnical characteristics of the rock cut faces to facilitate immediate operational design adjustments. Also, some additional geotechnical investigations will need to precede mining operations at Midfield and North Midfield to improve the understanding of the ground conditions and fine-tune the pit design as mining progresses northwards.

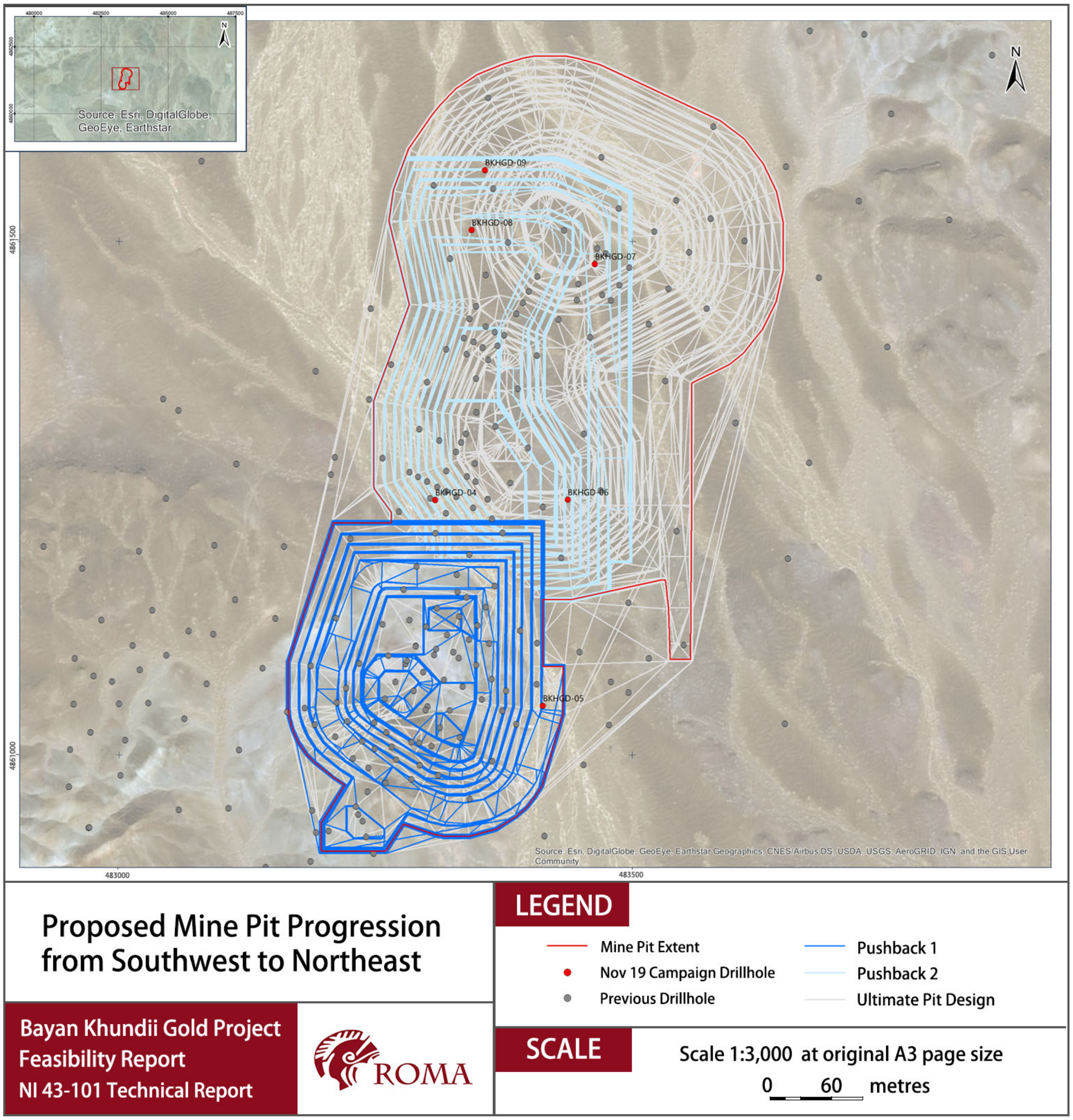

Figure 26-1 Proposed Mine Pit Progression from Southwest to Northeast.

26.3. PIT HYDROLOGY

It is anticipated that groundwater removal can be practically managed with small and localised sumps rather than bores and it may be possible to manage pit dewatering with blasting alone, however, some fracture sets will contribute more than others. It is recommended during the drill and blasting process, water strikes are recorded and subsequently correlated with the geological structural mapping to provide insight for sump planning.

Stability of bench slopes may be sensitive and subsequently reaction to pore pressure. It is recommended to install piezometers to assess pit slope pore pressures as they will most likely be the most significant groundwater monitoring requirement. The piezometer location and type will be guided by slope design requirements and may not be required from the outset of mining i.e. piezometer can be installed later in the mine life when/if pore pressure is an issue.

26.4. 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.

26.5. MINERAL PROCESSING AND METALLURGICAL TESTING

Based on the work conducted to date the following additional testwork, while not required prior to finalizing the process plant design, 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; and
- Conduct additional testwork to further optimize leach conditions including cyanide addition rates and primary grind size.

26.6. RECOVERY METHODS

There are no recommended work programs required prior to a decision to construct the Project.

26.7. 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.

26.8. 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.

26.9. INTEGRATED WASTE FACILITY

The current design was based on Erdene and ATC Williams understanding of disposal permitting:

- The final design should address permitting requirements once permitting approvals have been issued;

- Additional field investigations should be performed in the IWF footprint areas, including supplementary characterization of the foundation conditions, tailings material, and potential borrow areas (i.e. at a detailed engineering level);
- A risk assessment for the IWF should be completed to confirm the final design scope and design parameters;
- A monitoring program, including piezometers, survey monuments and groundwater monitoring wells should be established as part of detailed design. The program should also include annual reviews and independent audits to be developed 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; and
- 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 should be developed that considers the contractor equipment, earthwork quantities (including wastage) and summer/winter seasons;
    - The use of an observational approach to provide an understanding of the actual performance of the facility should be implemented during operations. The periodic review of the performance of the facility should be accomplished 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.

26.10. BORE FIELD HYDROGEOLOGY AND HYDROLOGY

Both production and monitoring wells should be commissioned prior to any long-term use. This entails the redevelopment of the well by airlifting or pumping, or a combination of both, that will increase the effective porosity and permeability improving flow between the bore casing and surrounding host material.

Four groundwater monitoring wells should be installed prior to any production pumping to enhance the groundwater monitoring network and better understand the aquifer.

During the construction phase, stress testing (pumping), followed by analyses of drawdown using diagnostic plots, is required to further understand the aquifer and the spatial interaction of the fracture hosted aquifer systems. Staging the well testing so that the higher yielding boreholes are tested first will provide early insight into the system and facilitate pragmatic modification of the testing plan while providing water for construction.

It is anticipated that ongoing replacement of wells will be required indicatively commencing in Year 2 of the operation and informed by the stress testing described above. A detailed structural analysis to understand the structural setting and determine water bearing structures is recommended. Erdene has already made significant progress regarding this methodology (refer Okhi-Us, 2019 and

2017). However, given that the primary aquifers are structurally controlled, additional analysis will be an ongoing requirement. A detailed structural mapping assessment should be carried out prior to locating any new wells.

Due to the nature of fracture rock aquifers, in addition to ongoing monitoring, contingency plans need to be considered for development of additional wellfields and bores to ensure longevity of the water supply. Detailed structural mapping combined with geophysical methods, such as resistivity mapping, should be undertaken prior to the development of any potential wellfield to enhance the groundwater strike rate. Four prospective wellfields have been recently identified through a combination of local knowledge and international experience, all within 5 km of the processing plant.

26.11. 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.

26.12. ECONOMIC ANALYSIS

There are no specific recommendations with respect to the economic analysis at this stage.

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APPENDIX 1
GLOSSARY OF TECHNICAL TERMS AND ABBREVIATIONS

A list of abbreviations and definitions used in this Report is shown below.

Abbreviation/ Acronym	Definition	Abbreviation/ Acronym	Definition
µm	Micron; Micrometer	kWh	Kilowatt-Hour
%	Percent	L	Litre
3D	3 Dimension	L/s	Litres Per Second
A	Ampere	LAN	Local Area Network
a	Annum	LBMA	London Bullion Market Association
AACE	Association for The Advancement of Cost Engineers	LG	Lerchs-Grossmann
AARL	Anglo American Research Laboratories	LOM	Life Of Mine
AAS	Atomic Absorption Spectrophotometer	LV	Light Vehicle
ADT	Articulated Dump Truck	m	Meter
Ag	Silver	M	Mega (Million)
AN	Altan Nar	m^2	Square Meter
Ar/Ar	Argon-Argon Dating	m^3	Cubic Meter
ATCW	Atc Williams Pty Ltd	m^3/h	Cubic Meters Per Hour
Au	Gold	Ma	Mega-Annum (A Million Years)
AUD	Australian Dollar	MASL	Meters Above Sea Level
AuEq	Gold Equivalent	MBR	Membrane Bioreactor
Az	Azimuth	MCAF	Mining Cost Adjustment Factors
BCR	Blue Coast Research Ltd	ML	Million Litre
BFA	Batter Face Angle	mm	Millimeter
BK	Bayan Khundii	MNT	Mongolian Tugrik
BOM	Bill of Materials	Mo	Molybdenum
BWI	Bond Ball Mill Work Indices	MRPAM	Mineral Resource and Petroleum Authority Of Mongolia
CAOB	Central Asian Orogenic Belt	MSDS	Material Safety Data Sheets
CAPEX	Capital Expenditure	Mt	Million Tonne
CBMG	Carbonate-Base Metal Gold	Mtpa	Million Tonnes Per Annum
CH	Sandy Lean Clay	MW	Megawatt
CIM	Canadian Institute Of Mining, Metallurgy, And Petroleum	My	Million Year
CIP	Carbon In Pulp	NaCN	Sodium Cyanide
cm	Centimeter	NAF	Non-acid Forming
CMCP	Conceptual Mine Closure Plan	NE	North East
CN	Cyanide	NI 43-101	National Instrument 43-101
CN_{WAD}	Weak Acid Dissociable Cyanide	NKMA	New Kazakh-Mongol Arc Terrane
COG	Cut-off Grade	NO_2	Nitrogen Dioxide

Abbreviation/ Acronym	Definition	Abbreviation/ Acronym	Definition
COS	Coarse Ore Stockpile	NPV	Net Present Value
CPT	Cone Penetration Tests	NSR	Net Smelter Return
CRCP	Contaminant Runoff Collection Pond	NW	North West
Cu	Copper	o	Degree
CWDD	Clean Water Diversion Drains	°C	Degree Celsius
CWi	Crusher Work Index	O2	O2 Mining
d	Day	OMC	Orway Mineral Consultants- Perth, Au
DCF	Discounted Cash Flow	OMS	Operations, Maintenance And Surveillance
DEIA	Detailed Environmental Impact Assessment	OPEX	Operating Expenditure
DTH	Down The Hole	oz	Troy Ounce (31.1035 g)
DZ	Discovery Zone	P.Eng	Professional Engineer
E&S	Environmental and Social	P.Geo	Professional Geoscientist
EMP	Environmental Impact Assessment	PCAF	Processing Cost Adjustment Factor
EPCM	Engineering, Procurement, Construction Management	PEH	Productivity Per Engine Hour
ESIA	Environmental And Social Impact Assessment	PLC	Process Logic Controller
EUR	European Euro	PPA	Power Purchase Agreement
FA	Fire Assay	ppb	Part Per Billion
FEED	Front End Engineering Design	ppm	Part Per Million
FIFO	Fly In Fly Out	QA/QC	Quality Assurance-Quality Control
FoS	Factor Of Safety	QP	Qualified Person
FS	Feasibility Study	RFP	Request For Proposal
g	Gram	RFQ	Request For Quotation
G&A	General And Administrative	RL	Relative Level
g/L	Gram Per Litre	RMS	Responsible Mining Solutions Corp.
g/t	Gram Per Tonne	RO	Reverse Osmosis
GA	General Arrangement	ROM	Run Of Mine
GC	Clayey Gravel with Sand	ROMA	Roma Group Ltd
GEIA	General Environmental Impact Assessment	RPM	Rpm Global Asia Limited.
GPS	Global Positioning Satellite	RQD	Rock Quality Designation
GRG	Gravity Recoverable Gold	RWI	Bond Rod Mill Work Index
ha	Hectare	s	Second
HCl	Hydrochloric Acid	S	Sulphur

Abbreviation/ Acronym	Definition	Abbreviation/ Acronym	Definition
$HClO_4$	Perchloric Acid	SAB	Semi-Autogenous Followed By Ball Grinding
HEX	Hydraulic Excavator	SAG	Semi Autogenous Grinding
HF	Hydrofluoric Acid	SE	South East
HLSP	Herder Livelihood Support Program	SGH	Security Guard House
HNO_3	Nitric Acid	SGS	Ulaanbaatar Laboratory of SGS Mongolia LLC
hp	Horsepower	SMC Tests®	SAG Mill Comminution testing
hr	Hour	SMBS	Sodium Metabisulphite
HV	Heavy Vehicle	SMDD	Standard Maximum Dry Density
HVAC	Heating, Ventilation, And Air Conditioning	SM	Silty Sand
ICP	Inductively Coupled Plasma (Mass Spectrometry)	SMU	Smallest Mining Unit
ICP OES	Inductively Coupled Plasma Optical Emission Spectrometry	SO_2	Sulphur Dioxide
IP	Induced Polarization	SPT	Standard Penetration Tests
IPD	Integrated Project Delivery	SW	South West
IPDC	Integrated Project Delivery Company	SWIR	Short-Wave Infrared
IPMT	Integrated Project Management Team	t	Metric Tonne
IRA	Inter Ramp Slope	TAT	Trans Altai Terrane
IRR	Internal Rate Of Return	tpa	Metric Tonne Per Year
IUCN	International Union For Conservation of Nature	TSX	Toronto Stock Exchange
IWF	Integrated Waste Facility	U/Pb	Uranium–Lead Dating
K	Kilo (Thousand)	UCS	Unconfined Compressive Strength
Kg	Kilogram	UN	Union North
KGD	Khundii Gold District	US$	United States Dollar
kL	Thousand Litre	V	Volt
km	Kilometer	VAT	Value Added Tax
km^2	Square Kilometer	W	Watt
Koz	Thousand Ounce	WAD	Weak Acid Dissociable
Kt	Thousand Tonne	WBS	Work Breakdown Structure
KT-BS	Khuren Tsav – Bosgyn Sair	WGS	World Geodetic System
Ktpa	Thousand Tonnes Per Annum	WMP	Water Monitoring Plan
Ktpm	Thousand Tonnes Per Month	WRMP	Water Resources Management Plan

Abbreviation/ Acronym	Definition	Abbreviation/ Acronym	Definition
kV	Thousand Volt	Yr	Year
kVA	Kilovolt-Amperes	Zn	Zinc
kW	Kilowatt		

APPENDIX 2
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, NI 43-101 Technical Report" (the "Technical Report") with an effective date of July 20, 2020 and dated August 31,2020:

I, Benny Pou Chun Cha, FAusIMM do hereby certify that:

1) I am the Director, Natural Resources/Principal Geologist, Roma Group Limited, 22/F China Overseas Building, 139 Hennessy Road, Wan Chai, Hong Kong SAR.
2) I possess a Master of Business Administration (MBA); Bachelor of Science with Honours (Geology/Geomorphology).
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 1.1, 1.2, 1.3, 1.4, 1.5, 1.6, 1.15.5, 1.15.7, 1.15.8, 1.16.9, 2, 3, 4, 5, 6, 7, 8, 9, 10, 19, 20 (Excl. 20.5 and 20.6), 23, 24, 25.6, 25.8, 25.9, 26.11 and 27 of the Technical Report with an effective date of July 20, 2020 and dated August 31, 2020.
6) I have not visited the Khundii Gold Project, Mongolia site.
7) I have not had 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 31st day of August 2020.

Roma Group Limited

Benny Pou Chun Cha, FAusIMM

Cameron R. Norton, P.Geo.

I, Cameron Norton, P.Geo., of North Vancouver, British Columbia, do hereby certify:

- I am a Resource Geologist with Tetra Tech Canada Inc. with a business address at Suite 1000, 10th Fl., 885 Dunsmuir St., Vancouver, BC, V6B 1N5.
- This certificate applies to the technical report entitled Bayan Khundii Gold Project Feasibility Study, NI 43-101 Technical Report" (the "Technical Report") with an effective date of July 20, 2020.
- I graduated from the University of Victoria in 2010 with a B.Sc. in Earth and Ocean Science.
- I am a registered Professional Geoscientist with Engineers and Geoscientists of British Columbia (#178541)
- Since 2010 I have worked as an exploration and resource geologist for numerous precious metal, base metal, and industrial mineral projects in Canada, Argentina, and Mongolia.
- I am a "Qualified Person" for purposes of National Instrument 43-101 (the "Instrument").
- I have visited the Property that is the subject of the Technical Report on May 6-May 12, 2019.
- I am responsible for Sections 1.15.1, 1.16.1, 11,12,14, 25.1, and 26.1 of the Technical Report.
- I am independent of Erdene Resource Development Corp. as defined by Section 1.5 of the Instrument.
- I have no prior involvement with the Property that is the subject of this Technical Report.
- I confirm that I have read the Instrument and the sections of the Technical Report that I am responsible for have been prepared in compliance with the Instrument.
- As of the date of this certificate, to the best of my knowledge, information, and belief, the sections of the Technical Report that I am responsible for contain all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

Signed and dated this 31st day of August 2020, at Vancouver, British Columbia.

Cameron R. Norton, P.Geo.
Intermediate Resource Geologist
Tetra Tech Canada Inc.

Certificate of Qualified Person

I, Andrew Kelly, P.Eng., am employed as the General Manager and Senior Metallurgist with Blue Coast Research Ltd., 2-1020 Herring Gull Way, Parksville, BC, Canada, V9P 1R2. This certificate applies to the Bayan Khundii Gold Project Feasibility Study, NI 43-101 Technical Report (the "Technical Report") dated August 31, 2020, with an effective date of July 20, 2020. I do hereby certify that:

1. I am a licensed Professional Engineer with the Association of Professional Engineers and Geoscientists of British Columbia (License No. 39900) and with the Association of Professional Engineers of Ontario (License No. 100073664)

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 have worked as metallurgist for a total of 17 years. My experience includes both plant operations and laboratory settings and covers base and precious metals.

5. I am a Qualified Person for the purposes of the National Instrument 43-101 of the Canadian Securities Administrators ("NI 43-101").

6. I am responsible for the preparation and the supervision and final editing of Sections 1.12.1, 1.15.2, 1.16.5, 13, 25.2, 26.5, of the Technical Report

7. I have not visited the property.

8. I have had prior involvement in 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 between 2016 and the date of the report.

9. To the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading as of the effective date of the report.

10. I am independent of Erdene Resource Development Company in accordance with the application of Section 1.5 of NI 43-101.

11. I have read NI 43-101 and Form 43-101F1 and Sections 1.12.1, 1.15.2, 1.16.5, 13, 25.2, 26.5 of the Technical Report have been prepared in compliance with that instrument and form.

12. I consent to the filing of the Technical Report with any stock exchange or any other regulatory authority and any publication by them for regulatory purposes, including electronic publication in the public company files on their website and accessible by the public, of the Technical Report.

Signed and Dated at Parksville, British Columbia, August 31, 2020.

Signature of Qualified Person

Andrew Kelly, P.Eng.

Print Name of Qualified Person

PROFESSIONAL ENGINEER
PROVINCE OF BRITISH COLUMBIA
A. C. KELLY
39900

August 31, 2020

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, NI 43-101 Technical Report" (the "Technical Report") with an effective date of July 20, 2020 and dated August 31,2020:

I, Anthony Keers, MAusIMM (CP Mining) do hereby certify that:

1) I am Principal Mining Engineer and Director of Auralia Mining Consulting Pty Ltd of Level 1, 43 Ventnor Avenue, West Perth, WA Australia 6005
2) I am a graduate of the University of Queensland in 2001 with a Bachelor of Engineering (Mining).
3) I am a member and Chartered Professional (CP Mining) of the Australian Institute of Mining and Metallurgy (AusIMM), registration number 209571.
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 1.8, 1.9, 1.15.3, 1.15.4, 1.16.4, 15 (Excl 15.3 and 15.4), 16 (Excl 16.7 to 16.9), 25.3, 25.4, 26.4 of the Technical Report with an effective date of July 20, 2020 and dated August 31,2020.
6) I have not visited the Khundii Gold Project, Mongolia site.
7) I have not had 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 31st day of August 2020.

Anthony Keers, MAusIMM (CP Mining)

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "National Instrument 43-101 Bayan Khundii Gold Project in Bayankhongor Province Mongolia Definitive Feasibility Study" signed on 31 August 2020 (the "Technical Report") and effective 20 July 2020:

I, Kevin A. Styles (FIMMM, CGeol FGS, CEng, FHKIE, RPE (Geotechnical)), do hereby certify that:

1) I am an Associate Director of Fugro (Hong Kong) Limited, with business address at 7/F Guardian House, 32 Oi Kwan Road, Wanchai, Hong Kong SAR.
2) I possess a Bachelor of Science (Geology).
3) I am a Fellow of the Institute of Materials, Minerals & Mining (UK); Chartered Geologist and Fellow of the Geological Society of London, a Chartered Engineer of the Engineering Council (UK), a Fellow of the Hong Kong Institution of Engineers and a Registered Professional Engineer (Geotechnical) in Hong Kong.
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 1.16.2, 15.3, 15.7.1, 16.8 & 26.2 of the report "National Instrument 43-101 Bayan Khundii Gold Project in Bayankhongor Province Mongolia Definitive Feasibility Study" and dated 20 July 2020.
6) I have not visited the site of the Bayan Khundii Gold Project in Mongolia.
7) I have not had any 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 31 August 2020

K. A. Styles

FIMMM (UK), CEng (UK), CGeol.FGS, FHKIE, RPE (Geotechnical) HK

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, NI 43-101 Technical Report" (the "Technical Report") with an effective date of July 20, 2020 and dated August 31,2020:

I, Mark Dillon, Civil Engineer do hereby certify that:

1) I am a Director, Senior Principal, ATC Williams Pty Ltd, 222-225 Beach Road, Mordialloc, Victoria, Australia.
2) I possess a Master of Engineering (MEng) and a Bachelor of Engineering with Honours (civil).
3) I am a Member of the Australian Institute of Engineers (MIEAust). I hold NER, APEC Engineer, IntPE(Aus) and CPEng certifications.
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 1.11, 1.16.7, 16.7, 18.9, 20.5 and 26.9 of the Technical Report with an effective date of July 20, 2020 and dated August 31,2020.
6) I have not visited the Khundii Gold Project, Mongolia site.
7) I have not had 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 31st day of August 2020.

Mark Dillon

MIEAust 825803

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, NI 43-101 Technical Report" (the "Technical Report") with an effective date of July 20, 2020 and dated August 31,2020:

I, Jeff Jardine, F.AusIMM do hereby certify that:

1) I am the Principal Processing Consultant to O2 Mining, 5/f, NSCB Building, Narnii Zam-87, 1st Khoroo, SBD, Ulaanbaatar.
2) I possess a Bachelor of Engineering with Honours (Minerals Processing).
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 1.12.2, 1.13, 1.15.6, 1.16.6, 17, 21, 25.5, 25.7, 25.8, 26.6, 26.7 of the Technical Report with an effective date of July 20, 2020 and dated August 31, 2020.
6) I have not visited the Khundii Gold Project, Mongolia site.
7) I have not had 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 31st day of August 2020.

Jeff 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, NI 43-101 Technical Report" (the "Technical Report") with an effective date of July 20, 2020 and dated August 31,2020:

I, Julien Lawrence, F.AusIMM (membership no. 209246) 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 1.10, 1.13, 1.15.6, 1.15.7, 1.15.8, 1.16.6, 18 excluding section 18.9, 21, 25.7, 25.8, 25.9 and 26.8 of the Technical Report with an effective date of July 20, 2020 and dated August 31,2020.
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 31st day of August 2020.

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, NI 43-101 Technical Report" (the "Technical Report") with an effective date of July 20, 2020 and dated August 31,2020:

I, Kenny Li, CFA, CPA, ICVS, do hereby certify that:

1) I am the Director (Business Valuation) of Roma Appraisals Limited, 22/F China Overseas Building, 139 Hennessy Road, Wan Chai, Hong Kong SAR.
2) I possess the double Bachelor of Accounting and Law.
3) I am a charterholder of Chartered Financial Analyst (CFA).
4) I am a member of the Hong Kong Institute of Certified Public Accountant (CPA).
5) I am an international certified valuation specialist of International Association of Certified Valuation Specialists (ICVS).
6) 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.
7) I am responsible for the preparation of Section 1.14, 22 and 26.12 of the Technical Report with an effective date of July 20, 2020 and dated August 31,2020.
8) I have not visited the Khundii Gold Project, Mongolia site.
9) I have not had prior involvement with the property that is the subject of the Technical Report.
10) 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.
11) 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.
12) 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 31st day of August 2020.

Kenny Li, CFA, CPA, ICVS

CERTIFICATE OF QUALIFIED PERSON

This certificate applies to the technical report prepared for Erdene Resources Development Corp. ("Erdene") entitled: "National Instrument 43-101 Khundii Gold Project in Bayankhongor Province Mongolia Definitive Feasibility Study" signed on 16 July 2020 (the "Technical Report") and effective [*date]:

I, Stanislaus Blanks, do hereby certify that:

1) I am the Director, Pando (Australia) Pty Ltd, Earth Scientist, 105 King St, Bendigo, 3550, Victoria Australia.
2) I possess a Bachelor of Science, 1992 University of Melbourne (Geology/Geomechanics).
3) I am a Member of The International Association of Hydrogeologists IAH.
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 1.10, 1.16.3, 5.5, 15.4, 16.9, 18.11, 20.3, 26.3 and 26.10 of the report "National Instrument 43-101 Khundii Gold Project in Bayankhongor Province Mongolia Definitive Feasibility Study" and dated 31 August 2020.
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 a desktop review of existing data and reanalysis of test pumping data compiled by others and supplied by Erdene.
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 20 July 2020

Stanislaus Blanks
IAH

Roma Group (ROMA), a listed company in Hong Kong (Stock Code: 8072), is a well-established independent firm engaged in the provision of valuation and technical advisory services.

We provide a broad range of services from business & intangible assets valuation to oil & mining valuation & technical advisory and from credit & risk evaluation to surveyors & property agency services.

Our dynamic & experienced professional team is committed to deliver credible, professional and the highest quality services to our clients. ROMA has performed numerous sizable valuation and advisory assignments worldwide. Our customized solutions comply with standards and regulations of major countries in a fair and accurate manner. Our extensive networks and connections with professional groups and financial institutions enable us to add value to your business. ROMA is your strategic partner of choice. We help you make the most reliable, informed and insightful corporate decisions.

Our Services:

- Business valuation
- Intangible Assets Valuation
- Financial Instruments Valuation
- Property Valuation
- Property Agency
- Land Advisory Services
- ESG Reporting Services
- Risk Management and Internal Control Review Services
- Credit and Risk Evaluation
- Corporate Advisory
- Purchase Price Allocation
- Work of Art Valuation
- Natural Resources Valuation and Technical Advisory
- Machinery & Equipment Valuation
- Biological Assets Valuation

We Value Assets | We Value Our Clients

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We Value Assets | We Value Our Clients