27 September 2022

Rio Tinto Kennecott Mineral Resources and Ore Reserves

Rio Tinto has today announced approval of a $55 million[1] investment in development capital to start underground mining and expand production at its Kennecott copper operations in Utah, United States, initially focusing on an area known as the Lower Commercial Skarn (LCS).

The LCS has a Mineral Resource of 7.5 Mt at 1.9% copper, 0.84 g/t gold, 11.26 g/t silver, and 0.015% molybdenum identified based on drilling and a Probable Ore Reserve of 1.7 Mt at 1.9% copper, 0.71 g/t gold, 10.07 g/t silver, and 0.044% molybdenum.

This initial Mineral Resource and Ore Reserve is reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 (JORC Code) and the ASX Listing Rules. Supporting information relating to the initial Mineral Resource and Ore Reserve is set out in this release and its appendix. Mineral Resources and Ore Reserves are quoted in this release on a 100 percent basis. Mineral Resources are reported in addition to Ore Reserves.

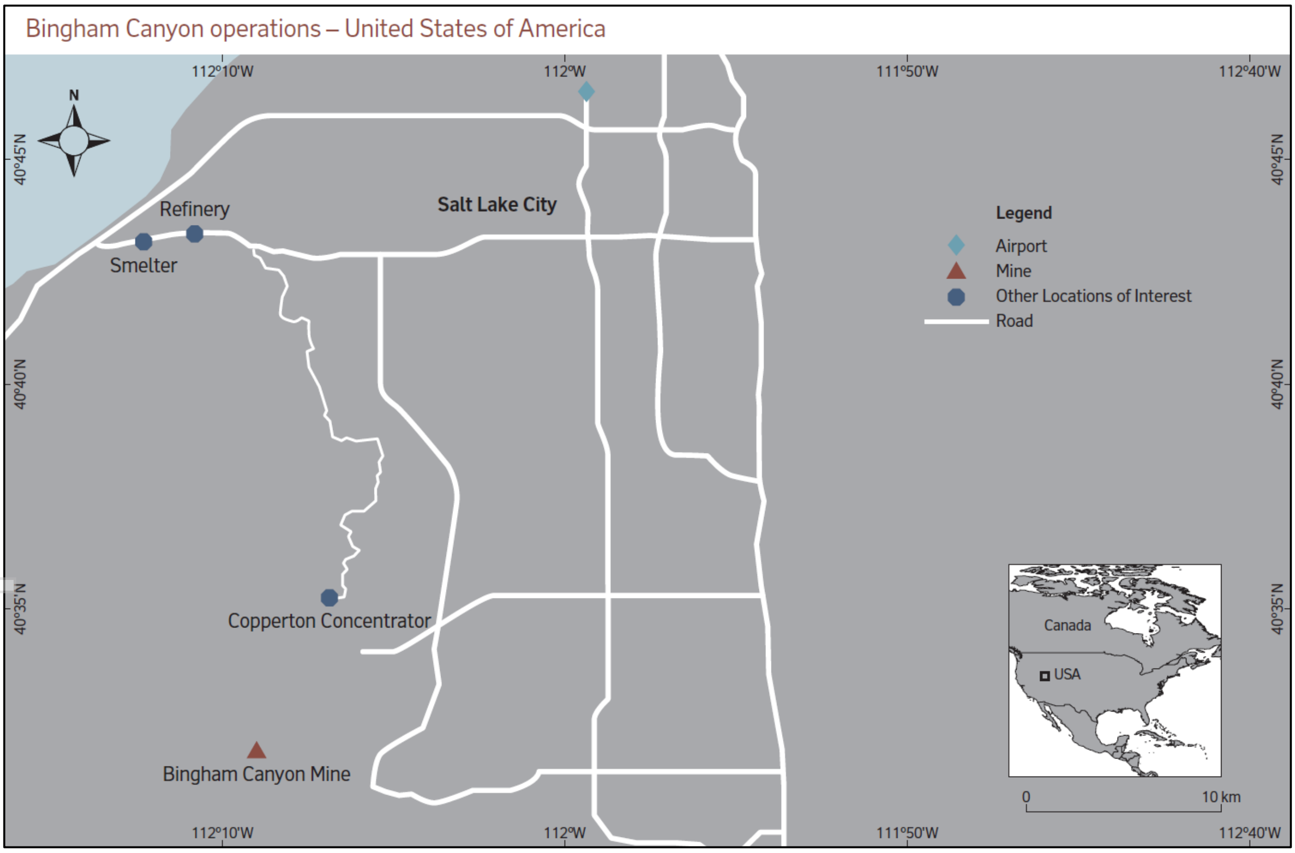

Figure 1 Property location map

[1] All dollar values are in USD

Mineral Resource declaration

A tabulation of the additions to the Mineral Resource at the Kennecott Copper operation due to the LCS is provided in Table A.

Table A Rio Tinto Kennecott Lower Commercial Skarn Mineral Resources as at 31 July 2022

	Likely mining method[a]	Measured resources as at July 2022					Indicated resources as at July 2022					Inferred resources as at July 2022					**Total mineral resources as at July 2022**					Rio Tinto Interest
		Tonnage	Grade				Tonnage	Grade				Tonnage	Grade				**Tonnage**	**Grade**				
Copper[b]		Mt	% Cu	g/t Au	g/t Ag	% Mo	Mt	% Cu	g/t Au	g/t Ag	% Mo	Mt	% Cu	g/t Au	g/t Ag	% Mo	**Mt**	**% Cu**	**g/t Au**	**g/t Ag**	**% Mo**	%
Bingham Canyon (US)																						
- Lower Commercial Skarn	U/G	0.2	2.52	1.27	10.56	0.056	1.1	2.08	0.72	9.43	0.029	6.2	1.84	0.86	11.62	0.011	**7.5**	**1.89**	**0.84**	**11.26**	**0.015**	100.0

(a) Likely mining method: O/P = open pit/surface; U/G = underground.
(b) Copper Resources are stated on a dry in situ weight basis.

Ore Reserve declaration

A tabulation of the additions to the Ore Reserve at the Kennecott Copper operation due to the LCS is provided in Table B.

Table B Rio Tinto Kennecott Lower Commercial Skarn Ore Reserves as at 31 July 2022

	Type of mine[a]	Probable ore reserves as at July 2022					**Total ore reserves as at July 2022**					Average mill recovery %				Rio Tinto Interest	**Rio Tinto share Recoverable Metal**			
		Tonnage	Grade				**Tonnage**	**Grade**												
Copper[b]		Mt	% Cu	g/t Au	g/t Ag	% Mo	**Mt**	**% Cu**	**g/t Au**	**g/t Ag**	**% Mo**	Cu	Au	Ag	Mo	%	**Mt Cu**	**Moz Au**	**Moz Ag**	**Mt Mo**
Bingham Canyon (US)																				
- Lower Commercial Skarn	U/G	1.7	1.90	0.71	10.07	0.044	**1.7**	**1.90**	**0.71**	**10.07**	**0.044**	90	71	76	71	100	**0.030**	**0.028**	**0.421**	**0.001**

(a) Type of mine: O/P = open pit/surface, U/G = underground.
(b) Copper Reserves are reported as dry mill feed tonnes.

Summary of information to support the Mineral Resource reporting

The Rio Tinto Kennecott Lower Commercial Skarn Mineral Resources are supported by the information set out in the Appendix to this release and located at riotinto.com/financial-news-performance/resources-and-reserves in accordance with the Table 1 checklist in the JORC Code. The following summary information is provided in accordance with rule 5.8 of the ASX Listing Rules.

This declaration of initial Mineral Resources follows completion of orebody knowledge drilling in the Lower Commercial Skarn (LCS) deposit and a feasibility study.

Geology and geological interpretation

The LCS deposit is located in the Bingham mining district southwest of Salt Lake City, Utah (see Figure 1). The Bingham mining district is dominated by the Bingham Canyon copper-molybdenum-gold porphyry system, which consists of the Eocene monzonite-quartz monzonite Bingham Stock and deformed siliciclastic and carbonate country rock of the Paleozoic Bingham Mine Formation. The LCS deposit is hosted in mineralized skarn of the Lower Commercial Limestone (LCLS) unit of the Lower Bingham Mine Formation. This unit is proximal to the Bingham Canyon porphyry system and has been altered to copper-gold hosting calc-silicate skarn through prograde metasomatism with localized retrograde massive sulphide and clay. This unit has been variably folded and faulted prior to mineralization, resulting in fold thickening and repetition of the units across faults.

Drilling, sampling, sub-sampling method and sample analysis method

The LCS deposit is defined by 73 diamond drill holes, consisting of 37 pre-existing surface and underground holes, drilled between 1964 and 2012; 25 underground holes drilled during prefeasibility studies in 2015 and 2016; and 11 holes drilled in 2017 and 2018 to support feasibility studies (see Figure 2). The recent (2015 to 2017) prefeasibility through feasibility study drilling program totals 36 holes and 6,690 m of HQ coring, utilizing comprehensive geoscientific core logging, select downhole acoustic borehole imaging, geomechanical testing, hydrogeologic measurement, and geochemical assay to inform geologic interpretation, geotechnical characterization, and resource estimation. Final nominal drill hole spacing in the entire LCS deposit is less than 46 m for approximately half of the Mineral Resource (Indicated), with much of it drilled to less than 23 m (Measured), with the remaining resource at a nominal spacing of 91 m (Inferred).

Drill core is sampled on 3 m intervals for assay by default, unless notable geologic character defines a smaller or slightly larger interval. Typical sample intervals during the 2015 to 2017 prefeasibility through feasibility study drilling programs averaged 2.7 m. The prefeasibility through feasibility study drilling and sampling programs generated over 1,900 individual assay samples in the LCS deposit, with over 5,180 m of core assayed.

Core assayed prior to 1990 were assayed by Kennecott's internal laboratories, following this all assays were completed by outside laboratories with documented internal and external quality assurance and quality control (QA/QC) procedures maintained to present. Assays and their origin laboratory are stored in the Rio Tinto acQuire™ database. Original assay certificates are stored on Rio Tinto network servers.

Bingham Canyon assay sample QA/QC procedures established in 1990 apply to all holes following 1990 as follows:

- Duplicate samples are generated from the remaining half core every 40th sample.
- Duplicate samples are generated from the crushed duplicate material every 20th sample.
- Matrix matched pulp standards are inserted every 20th sample.
- Five percent of pulps are randomly selected for assay validation at a second lab.

Given the short hole lengths and focused targeting for the 2015 to 2017 drilling programs, the automatic footage-based creation and insertion of duplicates and standards was replaced with the following manual process:

- One to three core sample duplicates are manually selected from the target zone in each hole.
- One to three crushed sample duplicates are manually selected from the target zone in each hole.
- One to three matrix-matched pulp standards are inserted for manually selected sample intervals from the target zone in each hole.
- One sample blank is inserted in each hole.

Results for duplicates and standards are checked, flagged, retested, or resampled if deemed necessary, and stored via automated reporting from the acQuire™ database, providing confidence in the accuracy of the sampling and assaying procedures, with fit-for-purpose precision on the assay values.

Estimation methodology

The block model designed for grade interpolation has block dimensions of 4.5 m x 4.5 m x 3 m, to reflect the granularity and precision of the wireframe geologic model. Samples are composited at 3 m intervals, breaking on lithological boundaries. Composite length matches the granularity of the block model, the maximum assay size and the general observed grade and geological variation downhole.

Detailed statistical analysis, exploratory data analysis (EDA), is completed for all economic and deleterious variables. Box plot analyses are completed for all estimated variables with a breakdown by lithology. Contact plots are completed for silver (Ag), gold (Au), copper (Cu) and molybdenum (Mo), to determine boundary conditions and univariate statistics compiled and evaluated for similarities

Variography is completed for all domains by estimation variable. This process includes omni-directional variography to establish continuity exists and constrain short range continuity (i.e., nugget) followed by directional analysis.

Ordinary Kriging (OK) and inverse distance were compared as options for interpolation, with OK selected as the primary interpolation method for all variables (aside from density) for its statistically robust reflection of grade trends, especially in areas of dense data (e.g., near drill collars). Estimation is performed by nested searches (four progressively larger ellipses tied to percentages of each domain's variogram sill) for all variables. Density is estimated by Simple Kriging in a single pass for the skarn lithology domain; all other lithologies are assigned a single density value by script due to their low variance.

A series of models were completed to establish centrality of the estimate. This analysis is meant to quantify the changes to the resource estimate with each incremental change in the model (i.e., addition of new drilling and geological interpretation through to estimation). Sixteen (16) models were completed and compared in total, with seven (7) of these compared post-final estimation, to determine the variance and sensitivity of the final model.

Cut-off grades and modifying factors

Cut-off grade for Mineral Resources is determined on a Net Smelter Return basis for total contained metal and recoveries through the Rio Tinto Kennecott concentrator, smelter, and refinery, with associated processing and handling costs. Metal prices for Cu, Au, Ag, and Mo are provided by the Rio Tinto Economics team, using internal analyses and projections. Recovery values are developed from the established performance of the Rio Tinto Kennecott processing plants and targeted metallurgical testing completed during prefeasibility and feasibility studies. Processing and handling costs are developed from demonstrated internal cost performance. All material above cut-off is considered to have reasonable prospects for eventual economic extraction.

Criteria used for Mineral Resource classification

Resource classification in the LCS deposit is based on the geologic continuity of the stratigraphically and structurally controlled host unit and waste units, with nominal drill spacings as follows:
Inferred Resource

- Nominal 91 m spacing
- Manually wireframed to exclude isolated blocks and target potentially minable volumes

Indicated Resource

- Nominal 46 m spacing
- Manually wireframed to exclude lower confidence geologic domains
- Manually wireframed to exclude isolated blocks and target potentially mineable volumes

Measured Resource

- Nominal 23 m spacing
- Manually wireframed to exclude isolated blocks and target potentially mineable volumes

Summary of information to support the Ore Reserve reporting

The addition of the Ore Reserve estimate for the LCS is based on the Mineral Resource model for the deposit along with the feasibility study completed in 2018. A recent in-depth internal review of geotechnical, mine design and cost estimating parameters has been completed to refresh project conclusions. The economic cut-off methodology has been developed in order to maximise value within the deposit while reducing risk.

Ore Reserves are supported by the information set out in the Appendix to this release and located at riotinto.com/financial-news-performance/resources-and-reserves in accordance with the Table 1 checklist in the JORC Code. The following summary information is provided in accordance with rule 5.9 of the ASX Listing Rules.

Cut-off grades, mining method and modifying factors

The Ore Reserve cut-off is based on a Net Smelter Return (NSR) calculation which considers pricing, recoveries and costs. The $90 NSR cut-off value selected for use with the estimate was based on optimising the overall value of the deposit. The cut-off value was determined based on an iterative approach to determine the optimum value to the deposit. An additional selection criterion was applied to exclude high risk stopes in areas of the mineralization where rock quality is modelled as poor, or where they come too close to existing infrastructure.

The LCS estimate is based on a sub-level, long hole open stoping mining method, using a primary secondary sequence with cemented aggregate backfill. Detailed geotechnical analysis has informed the mining method and mining dimensions using information gained from resource drilling. Modifying factors have been applied to the estimate, the first being a stope shape factor (92.5%) to deduct areas of the stope which cannot be practically drilled such as the stope “shoulders”. External waste dilution (10% for secondaries, 2.5% for primaries) has been applied to the estimate at zero grade based on an evaluation of the geotechnical parameters with established industry empirical dilution guidelines. Finally, a mining recovery factor (90%) to account for drilled and blasted material or dilution which cannot be extracted from the stope. All these factors have been established as part of the feasibility study.

There are no material impacts from other Ore Reserve modifying factors, such as: governmental, tenure, environmental, cultural heritage, social or community. Appropriate agreements and approvals are in place to enable operation of the assets.

Processing methods and assumptions

Underground ore from the LCS will be processed through the existing Kennecott facilities established as part of the open pit operation. Expected metal recovery and quality from downstream processing has been assessed through laboratory scale test work of samples generated from resource drilling, and the response of this material when blended with open pit ore.

Economic assumptions and study outcomes

Incremental cash flow is generated due to the addition of LCS ore to the open pit feed. This includes consideration of revenue generated from low-grade ore from underground which is above the open pit cut-off, deductions for material rehandling, pit ore deferral, and deleterious elements.

Rio Tinto applies a common process to the generation of commodity price assumptions across the group. This involves generation of long-term price forecasts based on current sales contracts, industry capacity analysis, global commodity consumption and economic growth trends (this includes the bonus / penalty adjustments for quality). Exchange rates are also based on internal Rio Tinto modelling of expected future country exchange rates.

Due to the commercial sensitivity of these assumptions, an explanation of the methodology used to determine these assumptions has been provided, rather than the actual figures.

Criteria used for Ore Reserve classification

Given the lack of recently demonstrated stope performance, established stope costs, or underground operation in a production environment, all Measured and Indicated Resources within the Ore Reserve boundaries were converted to Probable Ore Reserves. Any Inferred Mineral Resources within the Ore Reserve boundaries have been included within the Probable Ore Reserve tonnage as dilution with zero grade.

Competent Person's statements

The information in this report that relates to Mineral Resources is based on information compiled under the supervision of Mr Ryan Hayes, who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr Hayes has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity to which he is undertaking to qualify as a Competent Person as defined in the JORC Code. Mr Hayes is a full-time employee of Rio Tinto and consents to the inclusion in this report of Rio Tinto Kennecott Mineral Resources based on the information that he has prepared in the form and context in which it appears.

The information in this report that relates to Ore Reserves is based on information compiled under the supervision of Mr Stephen McInerney who is a Member of the Australasian Institute of Mining and Metallurgy (MAusIMM). Mr McInerney has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity to which he is undertaking to qualify as a Competent Person as defined in the JORC Code. Mr McInerney is a full-time employee of Rio Tinto and consents to the inclusion in this report of RT Kennecott Operations Copper Ore Reserve based on the information that he has prepared in the form and context in which it appears.

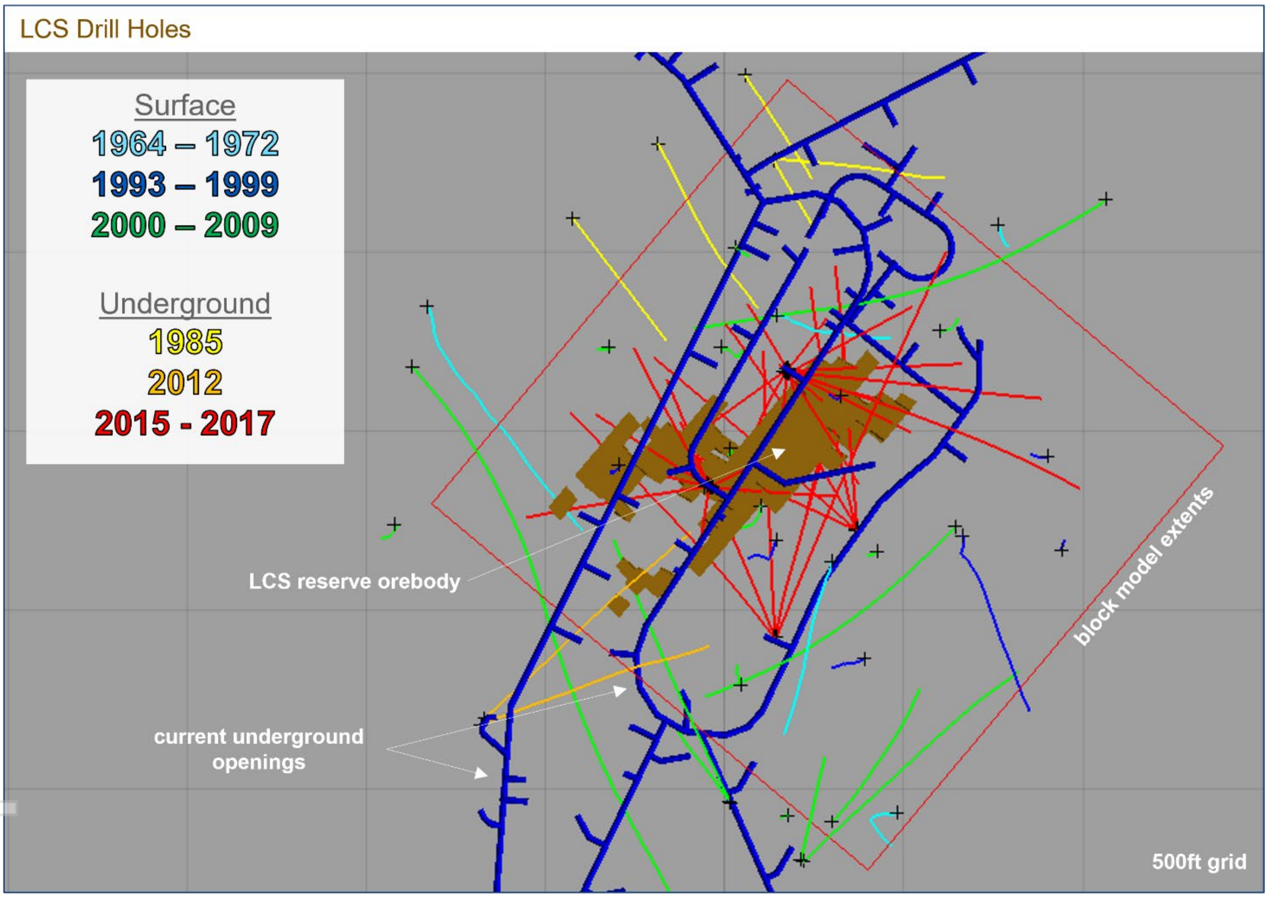

Figure 2 LCS drill hole map

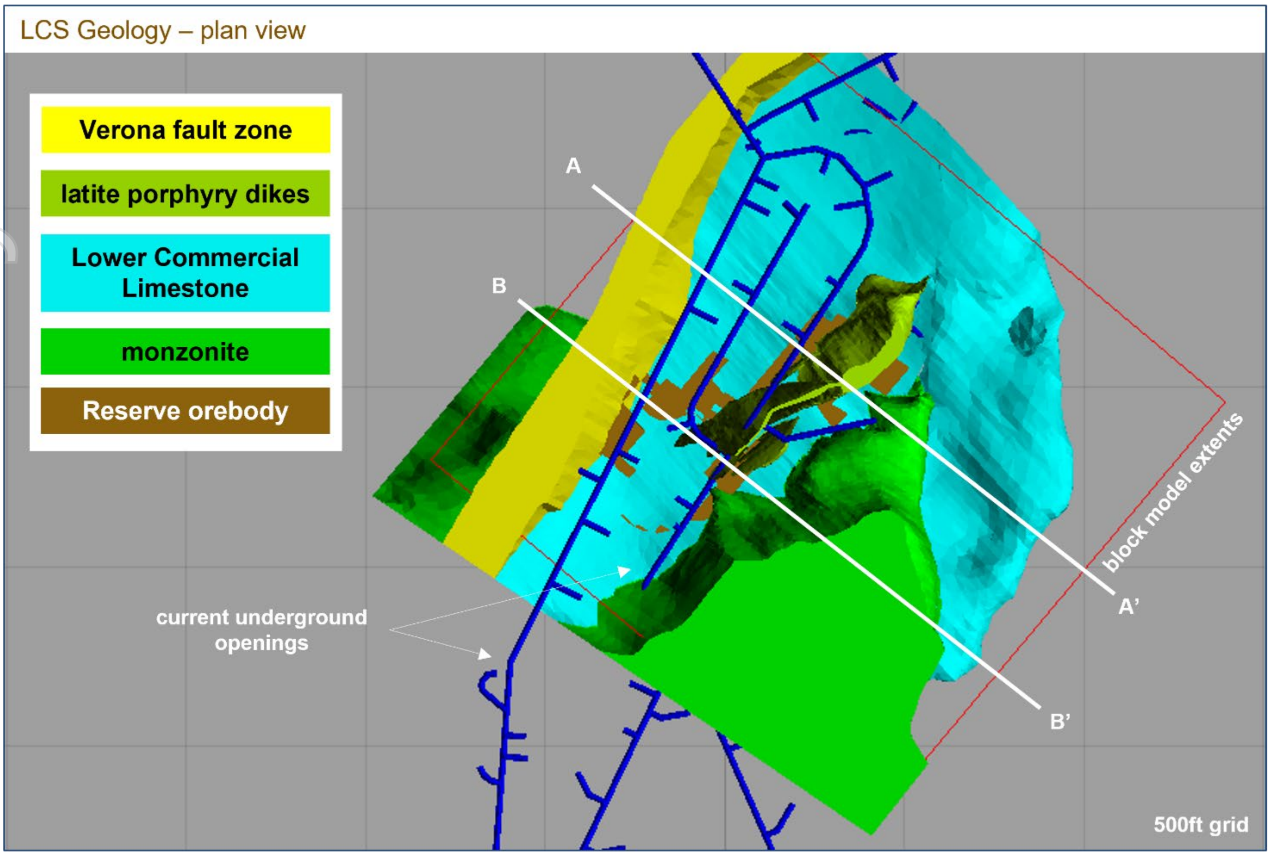

Figure 3 LCS Geology

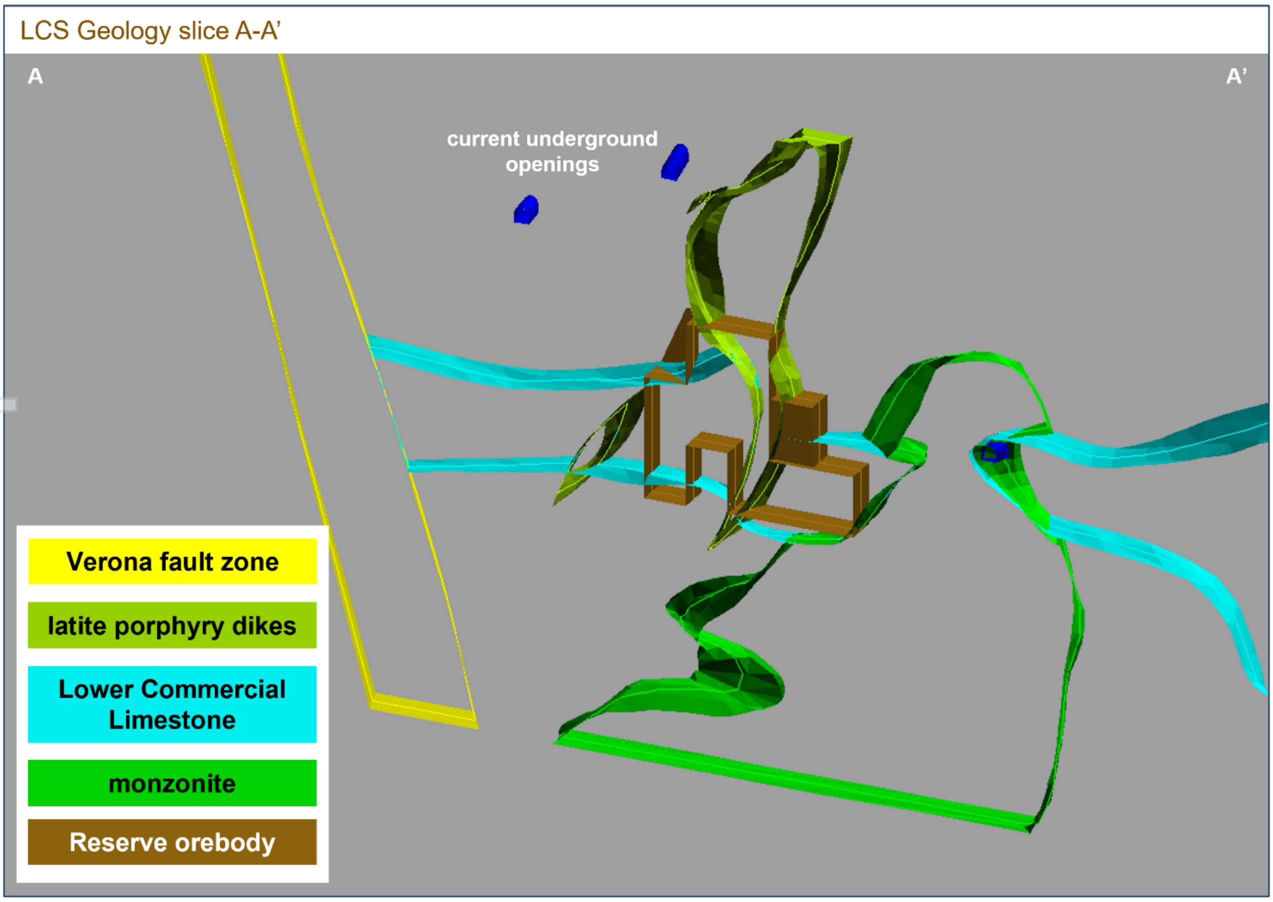

Figure 4 Slice A

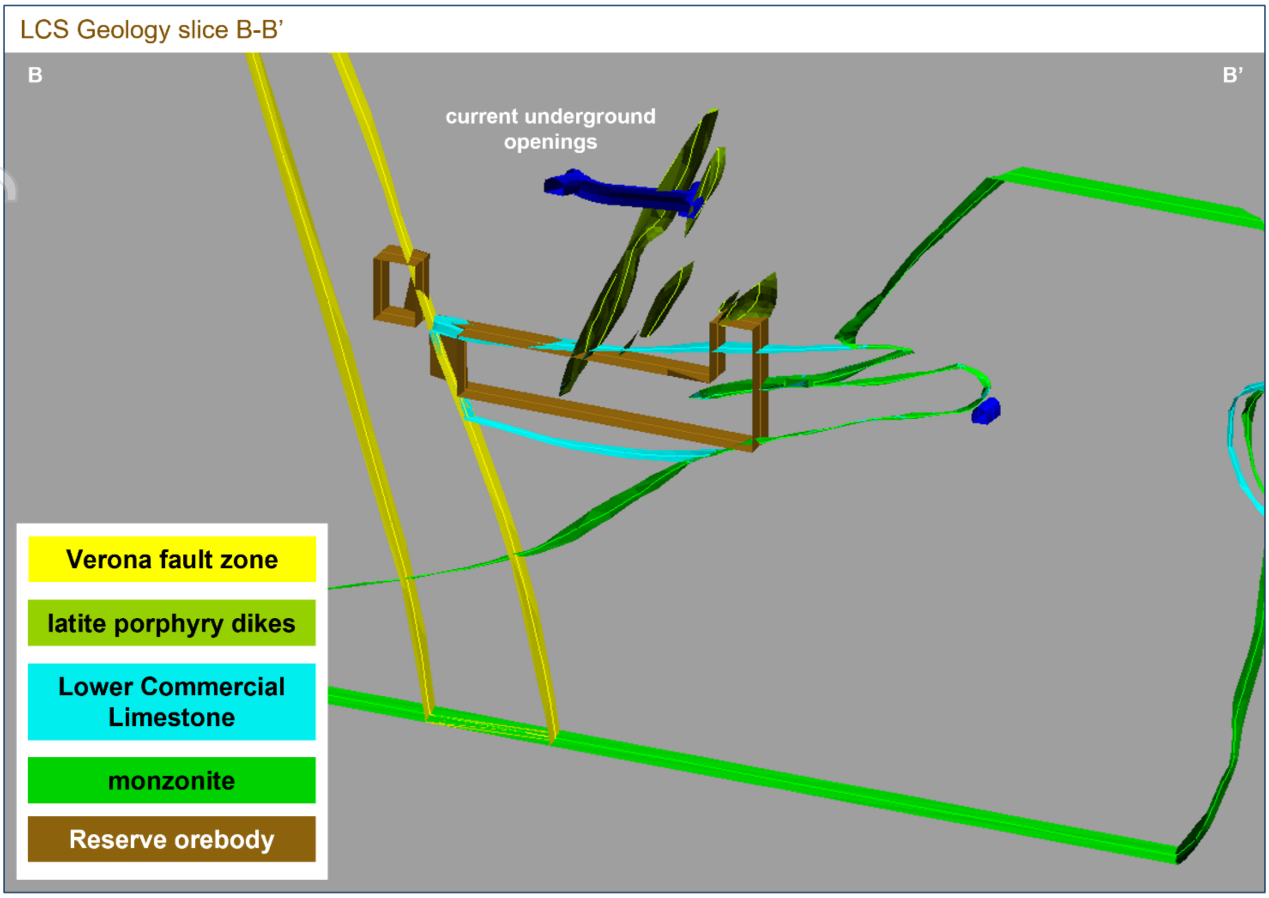

Figure 5 Slice B

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This announcement is authorised for release to the market by Steve Allen, Rio Tinto's Group Company Secretary.

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Lower Commercial Skarn JORC Table 1

The following table provides a summary of important assessment and reporting criteria used at Lower Commercial Skarn for the reporting of Mineral Resources and Ore Reserves in accordance with the Table 1 checklist in *The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition)*. Criteria in each section apply to all preceding and succeeding sections.

Section 1: Sampling Techniques and Data

Criteria	Commentary
Sampling techniques	• Samples supporting resource estimation are taken from split diamond drill core of HQ and NQ diameters. • Samples are split from whole core on 3 m standard intervals, with smaller intervals as dictated by the logging geologist. • Half-core samples are sent for assay, with the other half remaining on site.
Drilling techniques	• Drilling techniques are standard diamond drill coring and wireline retrieval with standard NQ and HQ tubes from surface and underground. • All holes drilled since 2015 are cored using triple-tube techniques.
Drill sample recovery	• Core recovery is recorded as part of standard logging procedures. • Triple tube drilling techniques are used in contemporary drilling to preserve in-situ conditions. • Core recovery is typically greater than 80%.
Logging	• All core intersecting the deposit is logged for geologic character, including lithology, alteration, mineralogy, veining, and structure. • Geotechnical logging is completed for RQD and Q.
Sub-sampling techniques and sample preparation	• Core is manually sawn into halves according to intervals selected by the logging geologist, with care taken to split mineralization equally. • Core duplicate samples are created using the remaining half-core, at intervals specified by the logging geologist, with one to three core duplicate samples per orebody intercept. • Samples are prepared and assayed by an external laboratory, where they are crushed, then split and pulverized into four pulps. The crushed sample reject material is returned to Rio Tinto Kennecott. • Pulps are assayed for Au, Cu, Mo, Ag, and a suite of other elements. • Sampling procedures have been reviewed and audited by external sample experts, most recently in 2010 (AMEC), with no material findings.
Quality of assay data and laboratory tests	• Cu, Mo and Ag are assayed by HNO_3-$HClO_4$-HF-HCl digestion and ICP-AES analysis. Au is assayed by fire assay fusion with an AAS finish for one assay-ton. • Duplicate samples are generated from the crushed reject material and assayed at intervals specified by the logging geologist, with one to three duplicates per orebody intercept. • Matrix matched pulp standards are inserted at intervals specified by the logging geologist, with one to three standards per orebody intercept. • Blank sample material is inserted at intervals specified by the logging geologist, with one to three blanks per orebody intercept. • Current QA/QC procedures have been in place since 1990. The acQuire™ data management database system has been used since 2000. • Historic assays that have been tested by more than one lab are ranked, and the most appropriate assay stored as the primary assay. • QA/QC procedures provide confidence in the accuracy of the sampling and assaying procedures, with fit-for-purpose precision on the assay values.
Verification of sampling and assaying	• Results are evaluated for overall grade, performance of standards, blanks, core duplicates, and laboratory duplicates, and re-tested when out of specification. • Mineral Resource and Ore Reserves standard operating procedures (SOPs) document data handling, processing, storage, and validation. • There is no adjustment to drillhole assays. There is a laboratory ranking for samples assayed by more than one laboratory and the most appropriate assay is stored as the primary assay.
Location of data points	• Surface and underground drill hole collars are located using traditional survey instruments and techniques, or GPS survey. • With the exceptions of UD0004 and UD0005, all surface and underground downhole surveys since 2006 have been completed gyroscopically (47 holes). All others were surveyed magnetically (26 holes). Magnetic survey intervals (pre-2006) vary from 3 to 60 m typically. Gyroscopic survey intervals in surface holes (2006 to 2009) are typically 3 to 6 m. Gyroscopic survey intervals in targeted underground drilling since 2015 are 7.5 m.

	• Deviation in the current underground drill holes has been very minimal due to typically short hole lengths of 250 m or less, with very good geologic coherence between holes. Where rare disagreement between longer surface or historic holes and the current drilling is found, geologic interpretation and wireframes are controlled by the current drillholes. • Collar surveys for all holes are documented and are checked against pit geographic and underground as-built surveys. In the absence of misalignment between a collar and surface topography or underground as-built, all collars are assumed to be accurate. • All locations are referenced to the local Bingham Mine grid.
Data spacing and distribution	• Data spacing within the LCS orebody varies depending on location. • Underground drill holes occur at a variety of angles from flat to vertical. Surface drill holes are vertical. • Nominal drill hole spacing in the entire LCS deposit is less than 46 m for approximately half of the Mineral Resource (Indicated), with much of it drilled to less than 23 m (Measured), with the remaining resource at a nominal spacing of 91 m (Inferred). • Data spacing and grade continuity are directly assessed in the LCS Mineral Resource estimate and resulting Mineral Resource classification. • All assay data in the Mineral Resource estimate are composited to 3 m intervals.
Orientation of data in relation to geological structure	• Hole orientations vary between vertical, horizontal, and angled. • All drill holes pierce the full width of the tabular sub-horizontal orebody. • Angled and sub-horizontal drill holes provide good control of sub-vertical geologic structures such as the Verona fault and latite porphyry dikes. • Hole orientation introduces no material bias to the final Mineral Resource estimate.
Sample security	• Current sample security procedures include bolt seal chain of custody documentation tracking samples from the site to the lab. • Sample weights are cross checked between the site and the lab. • Half core and assay pulps are retained in a secure warehouse on site.
Audits or reviews	• A comprehensive external review of the LCS resource model was completed in 2017 by Amec Foster Wheeler, concluding that it is suitable for development of a sublevel open stope mine. Additional conclusions from this review include: o Drilling, sampling, and assaying procedures meet industry standards. o The database contains information on lithology, alteration, structure, and assays. This should be sufficient to support mine planning. o There is sufficient drilling to support feasibility-level mine designs, with spacings typical of those in use at other skarn-hosted deposits. o The geological interpretation honours the logging well. o Exploratory data analysis is carefully done and consisted of univariate statistics for metals by rock type, variography, contact analysis, and high-yield restriction on outliers. o The multi-pass estimation approach used is appropriate to a deposit with uneven drill spacing. The kriging plan chosen for the base case (BM 8) gives a slightly conservative result with contained copper reduction (approximately 3%) related to high-yield restriction of high-grades. Inspections of the model show slight over projection of +4% Cu zones. o The resource models for Cu, Au, Ag and Mo were validated using a nearest neighbour model. Global statistics and swath (drift) plots compare well. o The distribution of copper grade above cut-off is not highly skewed. Locally some stopes show an increase in grade with increased distance to the closest sample; elsewhere stopes can show no trend or a decrease in grade with increased distance to the closest sample.

Section 2: Reporting of Exploration Results

Criteria	Commentary
Mineral tenement and land tenure status	• The LCS deposit is within the current operations of the Bingham Canyon Mine, owned and licenced to Rio Tinto Kennecott Copper (RTK's legal name is Kennecott Utah Copper LLC). Kennecott Utah Copper LLC, is an indirect wholly owned subsidiary of Rio Tinto plc.
Exploration done by other parties	• Various companies since 1870 have worked around the core of the RTK holdings. As properties were acquired, exploration information was obtained and incorporated into the current database. • Since 2009, Rio Tinto Exploration has performed brownfield exploration in and near the deposit.
Geology	• The LCS deposit is located in the Bingham mining district southwest of Salt Lake City, Utah. The Bingham mining district is dominated by the Bingham Canyon copper-molybdenum-gold porphyry system, which consists of the Eocene monzonite-quartz monzonite Bingham Stock and deformed siliciclastic and carbonate country rock of the Palaeozoic Bingham Mine Formation. The LCS deposit is hosted in mineralized skarn of the Lower Commercial Limestone (LCLS) unit

of the Lower Bingham Mine Formation. This unit is proximal to the Bingham Canyon porphyry system and has been altered to copper-gold hosting calc-silicate skarn through prograde metasomatism with localized retrograde massive sulphide and siderite. This unit has been variably folded and faulted prior to mineralization, resulting in fold thickening and repetition of the units across faults.

- The LCS deposit lies in the footwall of the southwest dipping Midas thrust fault, between the older northeast striking and steeply dipping oblique transverse Verona and Smelter faults. This structural block between the Verona and Smelter faults, and below the Midas, is referred to as the Middle Block. The Middle Block is bounded to the south by the Bingham Canyon porphyry monzonite, open to the north, and cut by late latite porphyry dikes on a northeast trend. Palaeozoic country rock within the Middle Block is folded in an asymmetric anticline, slightly overturned to the east, with a gentle plunge to the north. The LCS deposit is hosted in the gently dipping upper limb of the LCLS.

Drill hole Information

- The LCS deposit is defined by 73 diamond drill holes, consisting of 37 pre-existing surface and underground holes, drilled between 1964 and 2012; 25 underground holes drilled during prefeasibility studies in 2015 and 2016; and 11 holes drilled in 2017 to support the feasibility study. The current (2015 to 2017) prefeasibility through feasibility study drilling program totals 36 holes and 6,690 m of HQ coring.

Campaign (years)	# of holes	meters drilled	location
1964 - 1972	5	6,129	surface
1985	5	1,032	underground
1993 – 1999	7	5,902	surface
2000 - 2009	18	14,807	surface
2012	2	565	underground
2015 - 2017	36	6,690	underground
TOTAL	**73**	**35,125**	

Data aggregation methods

- Exploration results have not been reported separately; therefore, this criteria category is not applicable.

Relationship between mineralisation widths and intercept lengths

- Hole orientations vary between vertical, horizontal, and angled.
- Orebody and mineralisation geometry are well defined.
- Drill holes pierce the full width of the orebody and mineralised structures.
- Hole orientation introduces no material bias to the final Mineral Resource estimate.

Diagrams

- Diagrams are included in the release as below:
- Figure 1 Property location map, Figure 2 LCS drill hole map, Figure 3 LCS geologic interpretation, Figure 4 Section A, and Figure 5 Section B

Balanced reporting

- Exploration results have not been reported separately; therefore, this criteria category is not applicable.

Other substantive exploration data

- No additional exploration data to report.

Further work

- Studies continue to evaluate the potential to mine the extensive skarn mineralisation beyond these currently reported LCS Mineral Resources and Ore Reserves.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	Commentary
Database integrity	• All drilling data are securely stored in an acQuire™ geoscientific information management system managed by a dedicated team within RTK. The system is backed up daily. • All collar, survey, assay and geology data loaded to the database are manually verified against original documents.
Site visits	• The Mineral Resource Competent Person is located on site.
Geological interpretation	• There is high confidence in the geological interpretation of the primary controls on mineralisation and the ore/waste boundaries of the LCS deposit. • The mineralised host is stratigraphically controlled, and fault-bounded, with clearly distinguishable gangue mineralogy. Cross-cutting intrusive dikes and the deposit bounding monzonite porphyry are easily distinguishable and predictable at the deposit scale. • For the primary mineralized host, the 2015 Rio Tinto Exploration (RTX) 3D wireframe for the LCLS in the Middle Block is considered the baseline and is edited against the new intercepts from the 2015 to 2017 prefeasibility through feasibility study coring programs. • A local northern component of the monzonite intrusive body is wireframed utilizing the historic and contemporary drill hole intercepts and the existing Bingham Mine monzonite wireframe as a guide. • Local latite porphyry intrusions are wireframed using historic and contemporary drilling and mapping in the Common Access Decline, with the existing Bingham Mine latite porphyry wireframe used a guide for overall trend and alignment. • Existing Bingham Mine and RTX Verona fault models are reinterpreted and updated local to the LCS deposit, and the existing fault wireframe for the Smelter fault is carried forward unchanged. • Targeted drilling at multiple orientations provides the primary control of the geologic interpretation. • The geologic interpretation honours the drill hole data and is stratigraphically and structurally coherent. • Wireframes representing geologic domains provide the primary control of Mineral Resource estimation domains.
Dimensions	• The LCS Mineral Resource is contained within a roughly tabular zone dipping gently north, approximately 40 to 100 m thick, extending 275 m along strike, and 450 m down dip. • The LCS Mineral Resource is located beneath the Bingham Canyon Mine open pit, at approximately the 3700 level (~1,128 m AMSL), immediately adjacent to the active underground drainage gallery workings.
Estimation and modelling techniques	• The block model designed for grade interpolation has block dimensions of 4.5 m x 4.5 m x 3 m, chosen to reflect the granularity and precision of the geologic model wireframes, mining unit dimensions, and sample support. • Samples are composited on 3 m intervals, breaking on lithological boundaries. Composite length is chosen to match the granularity of the block mode, the maximum assay size and the general observed grade and geological variation downhole. • Detailed statistical analyses, exploratory data analysis (EDA), are completed for all economic and deleterious variables. Box plot analyses are completed for all estimated variables with a breakdown by lithology. Contact plots are completed for Ag, Au, Cu, Mo, to determine boundary conditions and univariate statistics compiled and evaluated for similarities. • Variography is completed for all domains by estimation variable, first by omni-directional variography to establish continuity exists and constrain short range continuity (i.e., the nugget) and then completing directional analyses. • Ordinary Kriging and inverse distance are compared as options for interpolation; Ordinary Kriging was selected as the primary interpolation method for all variables (aside from density) as it is statistically a more robust method that more realistically reflects grade trends, especially in areas of dense data. • Estimation is performed by nested searches of four progressively larger ellipses tied to percentages of each domain's variogram sill. • A series of 16 sensitivity models are completed and compared in order to establish centrality of the final estimate, controlling for various inputs including number of samples, high yield restrictions, capping, density assignments, variography, and geologic models. • 7 of the 16 sensitivity models are used post-final estimation to determine the variance and sensitivity of the final model. • Resource model validation is completed for all elements against a nearest-neighbour grade estimates representing a declustered population, using swath plots, histograms, quantile-quantile plots, and cumulative distribution comparison, with visual checks in cross-section.

Stage	Model	Description	Samples Min	Samples Max	Samples Per DH
PRE-final estimation	BM0	2016 estimation	4	12	3
	BM1	2016 estimation in new model; 2016 database	4	12	3
	BM2a	BM1 + 2017 database	4	12	3
	BM2b	BM2a + Verona and Mixed zone as probablistic geology	4	12	3
	BM3	BM2 + new variography & search ellipses	4	12	3
	BM4	BM3 + new HYR	4	12	3
	BM5	BM3 + Capping	4	12	3
	BM6	BM4 + NO HYR or Capping	4	12	3
	BM7	BM4 + 2 samples per DH; down from 3	4	12	2
	BM8	BM7 + change support through pass (force 3 holes in later passes)	3-4-5-5	6-7-10-10	2
POST-final estimation	BM8B	BM8 using density_sg (updated values using old method)	3-4-5-5	6-7-10-10	2
	BM8C	BM8 using scripted SG	3-4-5-5	6-7-10-10	2
	BM9	BM8 + parent cell of 30x30x20	6-8-10-10	12-14-20-20	4
	BM10	BM8 + 95% CDF threshold for HYR	3-4-5-5	6-7-10-10	2
	BM11	bm7 + increased min support	6	12	2
	BM12	bm4 increased all support	9	16	4
	BM13	BM8 w/o HYR	3-4-5-5	6-7-10-10	2
	NN	Nearest Neighbor Model (proxy for a declustered distribution)	1	1	1

Summary of models completed during sensitivity analysis (BM8 is the final model)

Moisture

- All Mineral Resource tonnages are estimated and reported on a dry basis.

Cut-off parameters

- The cut-off grade for the estimate has been based on a Net Smelter Return (NSR) calculation which uses the best understanding of metal prices, recoveries, and mine operating costs.
- A $90 NSR cut-off grade was selected based on an evaluation of the optimized Life of Mine production schedule with a series of NSR cut-off values to determine that which generated the highest relative net present value (NPV).
- Metal prices used are provided by Rio Tinto Economics and are generated based on industry capacity analysis, global commodity consumption, and economic growth trends. A single long term price point is used in the definition of ore and waste and in the financial evaluations underpinning the Mineral Resource and Ore Reserve statement. The detail of this process and of the price points selected are commercially sensitive and are not disclosed.
- Detailed metallurgical testing has been done in conjunction with historic understanding of RTK's milling, smelting, and refining facilities.
- Mine operating costs are informed either from current operations or from a first principal cost build-up using recently tendered market rates.

Mining factors or assumptions

- The selected mining method is bottom up, sub-level, long hole open stoping, using a primary secondary sequence with cemented backfill. This is a well-known and proven mining method and can be applied effectively within this deposit given the recommended geotechnical limitations.
- Geotechnical parameters have been established using detailed, and validated core logging results in combination with geophysical surveys. These have been evaluated against established industry empirical stoping guidelines to generate recommended stable dimensions. Detailed numerical modelling has also been completed to confirm global mine stability and validate the mining sequence.
- The most recent resource model has been used for stope generation and optimisation with an effort to maximize NPV and minimize high risk material. In some cases, stopes have dimensions have been reduced, or stopes have been removed where geotechnical recommendations have shown that variable ground conditions could negatively impact the ability to mine these areas.
- Stope dimensions are set a 22.9 m high, 15.2 m wide, and a variable length between 15.2 to 9.1 m. Permanent development needed to access the deposit will be 5.9 m high by 5.5 m wide, reducing to 4.9 m high by 5.5 m wide. Stope ground support has been accounted for to aid in stability, this is planned for the backs and sides of the upper drift, as well as the brow from which mucking will occur.
- Minimum mining widths have been established and applied to the mine design which underpins the estimate. These are based on the dimensions of the existing mechanized mining fleet, and the expected additional equipment needed to operate the mine (Including allowance for BEV equipment size).

Metallurgical factors or assumptions

- The metallurgical processes have been developed and optimized based on both the long operating history of the existing onsite concentrator, along with a targeted, in-depth metallurgical testing campaign assessed through laboratory scale test work of samples generated from the resource drilling process. The results of this work informed the performance of the plant when LCS ore is added to the open pit feed, and the ultimate metal recovery of the underground ore component.
- All process performance parameters used in the estimate (recoveries, concentrate grades including deleterious elements) are based on the results of both this testing campaign, and historical performance. (Processing recoveries are as follows, 89.9% Cu, 70.5% Au, 75.8% Ag, and 71.3% Mo)

Environmental factors or assumptions	• The Mineral Resource estimate assumes a small footprint established in the bottom of the existing open pit, with all other major development to occur underground. • All waste rock and tails will be handled with the open pit waste rock and tails. • All tails from the LCS will be contained within the existing Tailings Storage Facility. • All approvals and permits necessary to mine the Ore Reserves have been obtained.
Bulk density	• Density samples are taken from 0.1 to 0.2 m of whole core at 9 m intervals. • Specific gravity is determined by using an immersion method using sealed core and using volumetric calculations of dry core samples. • Density is estimated by Simple Kriging in a single pass for the skarn lithology domain, all other lithologies are assigned a single density value by script due to their low variance.
Classification	• Resource classification criteria are based on the geologic continuity of the stratigraphically and structurally controlled host unit and waste units. Classification by nominal drill hole spacing is as follows: Measured: 23 m Indicated: 46 m Inferred: 91 m • Blocks are coded with nominal drill hole spacing using the average distance of three holes. • Classification volumes are created around contiguous blocks at the stated spacing categories, with consideration for the stated mining method and scale, excluding isolated discontinuous regions. • The classification criteria are deemed fit-for-purpose and are typical of those in use at other skarn-hosted deposits. • Technical review in 2017 deemed the nominal spacing categories adequate for declaring Mineral Resources.
Audits or reviews	• A comprehensive external review of the LCS resource model was completed in 2017 by Amec Foster Wheeler, concluding that it is suitable for development of a sublevel open stope mine. Additional conclusions were noted in Section 1.
Discussion of relative accuracy/ confidence	• Mine-wide and individual stope evaluations indicate that the distribution of block grades is not highly skewed, but that there is some marginal material incorporated into stopes. • Evaluations of stope grades and sample spacing indicate that average stope grade is not dependent on distance to nearest sample, with a median sample spacing of 26 m. • Confidence in geological boundaries has not been quantified. The Competent Person has taken into consideration the maturity of the geological model in determining that the continuity of geological features associated with mineralisation is sufficient to support the classification of the Mineral Resource.

Section 4: Estimation and Reporting of Ore Reserves

Criteria	Commentary
Mineral Resource estimate for conversion to Ore Reserves	• The LCS Ore Reserve estimate was based on the 2017 Mineral Resource model. No material changes have been made (or are available) to the resource model since this date, with the exception of updates to metal prices and mining costs. • Mineral Resources are reported exclusive of Ore Reserves.
Site visits	• The Ore Reserve Competent Person is located near the mine site and periodically visits the mine and plant sites.
Study status	• The 2022 Ore Reserve estimate is based on a 2018 feasibility study, as well as a recent review of geotechnical & mining parameters, along with metal prices, and costs.
Cut-off parameters	• The cut-off grade for the estimate has been based on a Net Smelter Return (NSR) calculation which uses the best understanding of metal prices, recoveries, and mine operating costs. • A $90 NSR cut-off grade was selected based on an evaluation of the optimized Life of Mine production schedule with a series of NSR cut-off values to determine that which generated the highest relative net present value (NPV). • Metal prices used are provided by Rio Tinto Economics and are generated based on industry capacity analysis, global commodity consumption, and economic growth trends. A single long term price point is used in the definition of ore and waste and in the financial evaluations underpinning the Mineral Resource and Ore Reserve statement. The detail of this process and of the price points selected are commercially sensitive and are not disclosed. • Detailed metallurgical testing has been done in conjunction with historic understanding of RTK's milling, smelting, and refining facilities. • Mine operating costs are informed either from current operations or from a first principal cost build-up using recently tendered market rates.

Mining factors or assumptions	• The conversion of the Mineral Resource to an Ore Reserve has been done using a detailed mine design, based on an in-depth evaluation of geotechnical, and operational parameters. • The selected mining method is bottom up, sub-level, long hole open stoping, using a primary secondary sequence with cemented backfill. This is a well-known and proven mining method and can be applied effectively within this deposit given the recommended geotechnical limitations. • Geotechnical parameters have been established using detailed, and validated core logging results in combination with geophysical surveys. These have been evaluated against established industry empirical stoping guidelines to generate recommended stable dimensions. Detailed numerical modelling has also been completed to confirm global mine stability and validate the mining sequence. • The most recent resource model has been used for stope generation and optimisation with an effort to maximize NPV and minimize high risk material. In some cases, stopes have dimensions have been reduced, or stopes have been removed where geotechnical recommendations have shown that variable ground conditions could negatively impact the ability to mine these areas. • Stope dimensions are set a 22.9 m high, 15.2 m wide, and a variable length between 15.2 to 9.1 m. Permanent development needed to access the deposit will be 5.9 m high by 5.5 m wide, reducing to 4.9 m high by 5.5 m wide. Stope ground support has been accounted for to aid in stability, this is planned for the backs and sides of the upper drift, as well as the brow from which mucking will occur. • External dilution (10% for secondaries, 2.5% for primaries) has been applied to the estimate at zero grade based on an evaluation of the geotechnical parameters with established industry empirical dilution guidelines. Given the arrangement of the mine, the majority of waste dilution is estimated to take place within secondary stopes from the adjacent backfilled primaries with a small amount within primaries from the stope infront. • Ore dilution is expected to occur within primary stopes from the adjacent secondaries with an overall net zero change in ore tonnes. This material has not been addressed within the Ore Reserve, but has been accounted for within material movements. • Two distinct recovery factors have been applied to the estimate, the first being a stope shape factor (92.5%) to deduct areas of the stope which cannot be practically drilled such as the stope “shoulders”. The second being a mining recovery factor (90%) to account for drilled and blasted material or dilution which cannot be mucked out from the stope. Both of these factors have been established based on the experience of the personnel on site with these mining methods and have been validated via internal and external reviews. • Minimum mining widths have been established and applied to the mine design which underpins the estimate. These are based on the dimensions of the existing mechanized mining fleet, and the expected additional equipment needed to operate the mine (Including allowance for BEV equipment size). • The mine production schedule for the feasibility study was derived using Inferred Mineral Resources (<1% of Total). The deduction of these resource volumes has proven to make no material impact to the outcome of the overall economic evaluation. • The mining method relies on the establishment of a Cemented Aggregate Fill (CAF) plant. This plant is currently planned for construction during 2022/23.
Metallurgical factors or assumptions	• The metallurgical processes have been developed and optimized based on both the long operating history of the existing onsite concentrator, along with a targeted, in-depth metallurgical testing campaign assessed through laboratory scale test work of samples generated from the resource drilling process. The results of this work informed the performance of the plant when LCS ore is added to the open pit feed, and the ultimate metal recovery of the underground ore component. • All process performance parameters used in the estimate (recoveries, concentrate grades including deleterious elements) are based on the results of both this testing campaign, and historical performance. (Processing recoveries are as follows, 89.9% Cu, 70.5% Au, 75.8% Ag, and 71.3% Mo)
Environmental	• The estimate assumes a small footprint established in the bottom of the existing open pit, with all other major development to occur underground. • All by-products from the material processed can be contained within the existing Tailings Storage Facility with no changes needed to accommodate the LCS. • All approvals and permits necessary to mine the Ore Reserves have been obtained.
Infrastructure	• Much of the required infrastructure for the estimate is already available via existing site facilities. This includes mechanical and electrical infrastructure operating within an established drainage gallery tunnel which is currently used to dewater the existing open pit. • Decline development will be extended from the existing drainage gallery tunnel to access the LCS and establish ventilation connections. • An additional CAF Plant will be constructed adjacent to the portal, and an upgraded underground ventilation facility will be established to achieve required airflows. • All personnel and materials will access the operation via the open pit and operations will be

	integrated with the existing drainage gallery maintenance. • Ore material will be rehandled at the drainage gallery portal using open pit equipment and hauled to the open pit crusher to be comingled with open pit material. • All downstream processing will be done with the existing on-site infrastructure.
Costs	• Development capital costs are based on recent feasibility level estimates. • Operating costs are based on a first principle estimate derived for each additional underground activity. Both estimates utilize historical cost data where available. • Estimates of prices for consumables are based on historical pricing and global commodity consumption and economic growth trends. • Transportation and treatment charges for existing facilities are based on historical and projected estimates. • There are no royalty obligations. The estimate includes an allowance for Utah state severance tax. • Due to the commercial sensitivity of these assumptions, an explanation of the methodology used to determine these assumptions has been provided, rather than the actual figures.
Revenue factors	• Revenue projections are based on combined open pit and underground projected mill head grades, process recovery losses and product prices. • The revenue analysis includes other factors within the calculation such as the processing development ore, or low-grade ore from underground which is above the open pit cut-off. • The LCS project uses metal prices provided by Rio Tinto Economics and are generated based on industry capacity analysis, global commodity consumption, and economic growth trends. A single long term price point is used in the definition of ore and waste and in the financial evaluations underpinning the Mineral Resource and Ore Reserve. The detail of this process and of the price points selected are commercially sensitive and are not disclosed.
Market assessment	• All Ore Reserve products, other than molybdenum, are sold on open markets with no long-term contract commitments. Molybdenum is sold through contracts with roaster facilities.
Economic	• The economic analysis for the LCS is based on the incremental cash flow that is generated through the existing ore processing facilities as a result of the additional mineralized material from the LCS which is added to the open pit mine feed. • This economic calculation includes other factors such as the cost of material rehandling, the cost of pit ore deferral, and the impact of deleterious elements. • Economic inputs such as carbon pricing, inflation and discount rates are also generated internally at Rio Tinto. The detail of this process is commercially sensitive and not disclosed. • Economic evaluation using Rio Tinto long-term prices demonstrates a positive net present value for the LCS Ore Reserves. • When viewed in isolation, the resulting economics for LCS are sensitive to metal pricing due to the size and duration of the project. The LCS does however provide a benefit as the first phase of modern underground mining at Bingham Canyon from which larger projects can leverage.
Social	• The mining tenure is wholly owned, and all permits necessary to mine the Ore Reserve have been obtained.
Other	• Ongoing project risk assessments have been conducted throughout the duration of the feasibility study, and project development. • The estimate leverages the existing established licence to operate for the open pit mine operating area.
Classification	• The basis for the Ore Reserve classification is the established Mineral Resource confidence categories for the deposit along with the consideration of all modifying factors. • Measured and Indicated Mineral Resources within the Ore Reserve boundaries are classified as Probable Ore Reserves. • Proved Ore Reserves have not been included due to the lack of recently demonstrated stope performance with respect to stope dimensions, productivity and costs. • Any Inferred Mineral Resources within the Ore Reserve boundaries (<1% of Total) have been included within the Probable Ore Reserve volume at zero grade; constituting internal dilution. The deduction of these resource volumes has proven to make no material impact to the outcome of the overall economic evaluation.
Audits or reviews	• A comprehensive formal external review of the LCS was completed in 2017 by Amec Foster Wheeler, concluding that it is suitable for development of a sublevel open stope mine.
Discussion of relative accuracy/ confidence	• The accuracy of the Ore Reserve estimate is based on the results of the Feasibility study and an assessment of economic factors. • The build-up of the geotechnical assumptions which underpin the stope sizes, mining methods and dilution is based on sound data which has been validated and peer reviewed, but no operational data is available to corroborate these assumptions. • Similarly, production rates and costs for the LCS to operate within the open pit are also developed using sound basis but are yet to be demonstrated.

	• It is expected that as stoping operations continue, modifying factors such as stope dimensions, dilution, mining recovery, productivity and cost assumptions will be better understood and refined based on actual observed / measured data.