

#### CASTILE RESOURCES ROVER 1 PROJECT PFS OUTCOMES

Castile Resources Limited ('Castile' or 'the Company') is pleased to advise the outcomes of the Rover 1 Project Preliminary Feasibility Study ('PFS'). The study has concluded with a robust, polymetallic project applying modern technology and downstream processing to meet future facing metals demand for Australia.

#### **HIGHLIGHTS:**

- The Rover 1 PFS models an underground mine build with a modern 500,000tpa processing plant focussed on the production of gold, copper, cobalt and magnetite downstream products delivering strong economic outcomes with an initial project life of 8 years.
- Financial modelling outcomes of the Rover 1 Project PFS estimate<sup>1</sup>:
  - A pre-tax NPV<sub>6.5</sub> of \$451.7 million with an IRR of 46%.
  - Total revenues of A\$1.94 billion.
  - Pre-tax cash flow of A\$1.02 billion.
  - An undiscounted pre-tax net cash flow of A\$686 million.
  - Capital cost estimate of A\$279.5 million (Processing Plant A\$160.7M)
  - A simple payback (post tax) after 2 years and 7 months of production.
- Total production over the life of the Rover 1 Project is anticipated to be 252,300oz of gold, 58,600t of 99% copper plate, 2,560t of 99% cobalt metal and 652,300t of 96.4% magnetite (Fe<sub>3</sub>O<sub>4</sub>).
- For benchmarking purposes, at the nominated PFS prices<sup>1</sup>, the average annual equivalent production in gold and alternatively in copper:
  - In terms of gold 85,400ozpa of AuEq ounces<sup>2</sup> at an AISC of A\$1,330/oz.
  - In terms of copper 16,100tpa of CuEq tonnes<sup>3</sup> at an AISC of A\$7,030/t.
- The Mineral Resource Estimate (MRE) for Rover 1 stands at:
  - 5.58Mt @ 1.76g/t Au, 1.49% Cu, 0.07% Co and 23.20% Fe<sub>3</sub>O<sub>4</sub>.
- Total material considered<sup>4</sup> in the PFS for extraction and processing is:
  - 4.32Mt @ 1.94g/t Au, 1.42% Cu, 0.07% Co and 22.33% Fe<sub>3</sub>O<sub>4</sub>.
- Total Ore Reserve resulting from the PFS is:
  - 3.11Mt @ 2.02g/t Au, 1.52% Cu, 0.07% Co and 22.92% Fe<sub>3</sub>O<sub>4</sub>.
- Inferred Mineral Resource included in the PFS of:
  - 1.20Mt @ 1.75g/t Au, 1.17% Cu, 0.07% Co and 20.78% Fe<sub>3</sub>O<sub>4</sub>.

<sup>&</sup>lt;sup>4</sup> This material consists of Ore Reserves of 3.11Mt tonnes at 2.02g/t Au, 1.52% Cu, 0.07% Co and 22.92% Fe<sub>3</sub>O<sub>4</sub> and Inferred Mineral Resources of 1.20Mt @ 1.75g/t Au, 1.17% Cu, 0.07% Co and 20.79% Fe<sub>3</sub>O<sub>4</sub>. Both the Ore Reserve and part of the Inferred Mineral Resource have had appropriate modifying factors applied as described below. Inferred Mineral Resource has a lower level of confidence than an Indicated Mineral Resource and there is no certainty that any further exploration work will result in the conversion of Inferred to Indicated Mineral Resources.





<sup>1</sup> At a copper price of \$US4.25/lb, gold price of \$US1,770/oz, cobalt price of \$US60,000/t and magnetite price of \$US234.50/t and an exchange rate of \$US:\$AUD of \$0.67.

<sup>&</sup>lt;sup>2</sup> Gold Equivalent ounces = Total Revenue / Gold Price (refer to Section 6 Metal Equivalent for further details)

<sup>&</sup>lt;sup>3</sup> Copper Equivalent tonnes = Total Revenue / Copper Price (refer to Section 6 Metal Equivalent for further



# **KEY OUTCOMES**

The Directors of Castile Resources Limited ("Castile" or "the Company") are pleased to present the outcomes of the Preliminary Feasibility Study ("PFS") undertaken on its 100% owned Rover 1 Project near Tennent Creek in the Northern Territory of Australia ("Rover 1").

The Mineral Resource Estimate evaluated by the PFS was:

Table A: Rover 1 Mineral Resource Estimate

Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Co (%)	Fe₃O₄ (%)	Au (oz)	Cu (t)	Co (t)	Fe₃O₄ (t)
Measured									
Indicated	3.97	1.83	1.59	0.07	23.64	233,800	63,100	2,900	938,000
Inferred	1.61	1.57	1.25	0.07	22.13	81,400	20,100	1,100	357,000
Total	5.58	1.76	1.49	0.07	23.20	315,200	83,200	4,000	1,295,000

From the Mineral Resource Estimate, the following Ore Reserve was evaluated:

Table B: Rover 1 Ore Reserve<sup>5</sup>

Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Co (%)	Fe₃O₄ (%)	Au (oz)	Cu (t)	Co (t)	Fe₃O₄ (t)
Proven									
Probable	3.11	2.02	1.52	0.07	22.92	201,800	47,400	2,200	713,300
Total	3.11	2.02	1.52	0.07	22.92	201,800	47,400	2,200	713,300

The total material evaluated for the PFS consisted of both Ore Reserve and Inferred Mineral Resource, both diluted to the required minimum mining width and a 95% mining recovery rate applied. Section 13.5 of the PFS contains a sensitivity analysis with respect to the ore tonnes mined at the Project. Access to the ore body will be via a decline from a box cut opening. Ore will be won via conventional up-hole open stoping methods, with paste fill to selected stopes.

Table C: Rover 1 Total Material Extracted and Processed for PFS

Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Co (%)	Fe <sub>3</sub> O <sub>4</sub> (%)	Au (oz)	Cu (t)	Co (t)	Fe₃O₄ (t)
Probable Ore Reserve	3.11	2.02	1.52	0.07	22.92	201,800	47,400	2,200	713,300
Inferred Mineral Resource	1.20	1.75	1.17	0.07	20.78	67,800	14,000	800	250,000
Total	4.31	1.94	1.42	0.07	22.33	269,600	61,400	3,100	963,400

Once the ore is delivered to the surface ROM pad, it will then be crushed and ground. The magnetite product will be separated, and the sulphides floated and oxidised with the solids

<sup>&</sup>lt;sup>5</sup> Refer to Section 8 Ore Reserve for a breakdown of the metals (Au, Cu, Co and Fe<sub>3</sub>O<sub>4</sub>) of the combined Probable Ore Reserve reported in the headline and the tonnages and grades on which the contained metal references are based.



treated using conventional Carbon-in-Leach. The liquor will be passed first through copper Solvent Extraction and Electrowinning (SXEW) then cobalt SXEW processes. All downstream processing operations will be carried out onsite. The resultant production profile is:

Table D: Rover 1 Annual Production Profile and LOM Production

Production Summary	Units	Average Annual Production	Initial Life of Project
Total Ore Mined	t Ore	500,000t	4,315,000t
Gold	(oz Au)	28,700oz Au	252,300oz Au
Copper	(t Cu)	6,900t Cu	58,600t Cu
Cobalt	(t Co)	300t Co	2,600t Co
Magnetite	(t Fe <sub>3</sub> O <sub>4</sub> )	75,300t Fe <sub>3</sub> O <sub>4</sub>	652,000t Fe <sub>3</sub> O <sub>4</sub>

In addition to the processing plant and underground infrastructure, an accommodation village, bore field, tails dam and waste rock landform will need to be constructed onsite. The project requires initial CAPEX of \$279.5M which is repaid after 2 years and 7 months. The total revenue of the project is \$1.94B.

Table E: Rover 1 Base Case Results vs Copper Upside Results

Pre-tax	Units	Current Spot Prices <sup>6</sup>	Cu Price (PFS) US\$4.25/lb <sup>7</sup>	Cu Price (Upside Case) US\$5.00/lb8
Cash Flow	A\$M	\$588.4M	\$668.4M	\$817.6M
NPV <sub>6.5%</sub>	A\$M	\$382.1M	\$451.4M	\$544.5M
IRR	%	40.8%	45.9%	52.4%
Post-tax	Units			
Cash Flow	A\$M	\$425.0M	\$493.6M	\$585.4M
NPV <sub>6.5%</sub>	A\$M	\$247.6M	\$293.2M	\$354.5M
IRR	%	30.5%	34.2%	39.0%

Castile's Managing Director, Mark Hepburn commented:

"We are extremely pleased with the outcomes of the Rover 1 Preliminary Feasibility Study and look forward to the task of bringing a major new Iron Oxide Copper Gold (IOCG) underground mine into production in the Northern Territory (NT). The key metals for the Rover 1 Project are copper and gold with cobalt and magnetite as by-products providing diversity in the revenue streams. Castile will mine and beneficiate all these metals to produce finished, end user products on site with our downstream processing facilities.

Pure copper and critical mineral cobalt are vital components in the manufacture of Electric Vehicles (EV's), and the batteries required to power them. The production of pure cobalt

<sup>&</sup>lt;sup>6</sup> At a copper price of \$US3.60/lb, gold price of \$US1,750/oz, cobalt price of \$US55,000/t and magnetite price of \$US227.50/t and an exchange rate of \$US:\$AUD of \$0.65.

<sup>&</sup>lt;sup>7</sup> At a copper price of \$US4.25/lb, gold price of \$US1,770/oz, cobalt price of \$US60,000/t and magnetite price of \$US234.50/t and an exchange rate of \$US:\$AUD of \$0.67.

<sup>&</sup>lt;sup>8</sup> At a copper price of \$US5.00/lb, gold price of \$US1,770/oz, cobalt price of \$US60,000/t and magnetite price of \$US234.50/t and an exchange rate of \$US:\$AUD of \$0.67.



metal aligns Castile Resources with the Federal Governments' push to encourage domestic, downstream production of critical minerals<sup>9</sup>.

Rover 1 will be an important part of the economic landscape in Tennant Creek and the surrounding Barkly Region. We take our obligations to the traditional landowners, to our environment and to the local communities and stakeholders as an integral part of the development pathway to a sustainable mining operation.

Castile will develop an underground mine, minimising the surface disturbance and the effect on our surrounding environment. The processing plant will be modular in design and the processing method will ensure our waste will be benign material that can be safely stored in our tailings storage facility.

The Board of Castile Resources is of the opinion that the Preliminary Feasibility Study has been fully optimised to allow Castile to choose a path that enables the best outcomes for all our stakeholders now and into the future."

# Rover 1 Pre-Feasibility Study Results – Key Project Metrics

The PFS has applied the latest innovations in mine development and ore processing technologies to build an ultra-modern mine with a processing plant that includes refining to extract the maximum revenue and metal from mined product. If the PFS is implemented, the Rover Project will generate finished downstream products that can be sold directly to end users in Australia or to overseas end users. Table F below, shows the key project metrics of Rover 1 resulting from the PFS<sup>10</sup>.

Table F: Rover 1 Project Economics

Project Economics	Units	PFS Outcome
Gold Revenue	A\$M	\$666.6M
Copper Revenue	A\$M	\$819.7M
Cobalt Revenue	A\$M	\$229.0M
Magnetite Revenue	A\$M	\$228.3M
Total Revenue	A\$M	\$1,943.6M
Project Operating Costs	A\$M	\$827.7M
Project Cash Flow	A\$M	\$1,115.9M
NT Govt & Other Royalties	A\$M	\$93.0M
Pre-Production CAPEX	A\$M	\$279.5M
Sustaining CAPEX	A\$M	\$57.1M
Underlying Mine Profit	A\$M	\$686.4M
NPV <sub>6.5% (Pre-tax)</sub>	A\$M	\$451.5M
IRR <sub>(Pre-tax)</sub>	%	45.9%
NPV <sub>6.5% (Post-tax)</sub>	A\$M	\$293.2M
Pay-back Period (Post-tax)	Years	2 years, 7 months

<sup>&</sup>lt;sup>9</sup>https://ministers.treasury.gov.au/ministers/jim-chalmers-2022/speeches/address-australian-critical-minerals-summit-sydney

<sup>&</sup>lt;sup>10</sup> At a copper price of \$US4.25/lb, gold price of \$US1,770/oz, cobalt price of \$US60,000/t and magnetite price of \$US234.50/t and an exchange rate of \$US:\$AUD of \$0.67.



# Metal Products and Pricing

The Rover 1 Mining and Processing Plan Rover 1 has been optimised to produce four final products on site for direct sale to "end users". Technical and financial modelling in the PFS demonstrates that downstream processing provides superior economic and environmental results for the project. Please refer below and to Section 12 of this PFS announcement for further comment on pricing and metal product markets.

The final products processed on site will be:

- 99% Copper Plate
- Gold Doré
- 99% Cobalt Metal
- 96.4% Magnetite concentrate

#### Copper

The Rover 1 Project will produce 58,600t or 129,187,000lb of copper over the life of the project. Independent specialist data analysts Wood Mackenzie<sup>11</sup>, see a growing market deficit in copper metal exacerbated by the sharp increase in refined demand growth. This will underpin a copper price rally to more than US\$11,000/t (approximately US\$5.00/lb) within five years. Consequently, Castile has modelled an upside case using AUD\$7.46/lb (US\$5.00/lb) as the copper price.

#### Gold

Rover 1 will produce over 252,300oz of gold doré over the life of the project. Over the last five years (Nov 2017 – Nov 2022) the gold price has fluctuated between A\$1,617/oz and A\$2,844/ oz<sup>12</sup>. The price has traded in a narrower range between A\$2,190 and A\$2,800 in the last two years. Gold demand remains high both as an intrinsic storage of value and for use in jewelry. A gold price of A\$2,642 has been used for this Pre-Feasibility Study. It represents the price of spot gold price around the time of publication of this PFS in November 2022 of US\$1,770 using a \$A foreign exchange rate of a US\$0.67/A\$1.00.

#### Cobalt

The project will produce a total of 2,560t cobalt as a by-product for the life of the project. The Australian Federal Government has classified cobalt as a Critical Mineral in the Net-Zero Carbon Target policies and accordingly has announced strategies to assist companies<sup>13</sup> like Castile developing critical mineral production capability within Australia. The beginning of January 2021 through to the beginning of November 2022 has been approximately US\$60,000/t<sup>14</sup> which has been used in the Pre-Feasibility Study.

#### Magnetite

Rover 1 will also produce 652,300t of a high grade 96.5% magnetite concentrate ( $Fe_3O_4$ ). This is classified as Maxfine Grade<sup>15</sup> as per Australian<sup>16</sup> standards and is highly regarded for

<sup>&</sup>lt;sup>11</sup> https://www.woodmac.com/horizons/red-metal-green-demand-coppers-critical-role-in-achieving-net-zero/ 12 www.goldprice.org

 $<sup>13</sup> https://www.minister.industry.gov.au/ministers/king/media-releases/budget-boost-northern-australia-and-critical-minerals\#: \sim: text=Our\%20 reserves\%20 of\%20 critical\%20 minerals, Minerals\%20 Research\%20 and\%20 Development\%20 Hub.$ 

<sup>14</sup> https://tradingeconomics.com/commodity/cobalt

<sup>15</sup> https://www.martinandrobson.com/products-services/products/



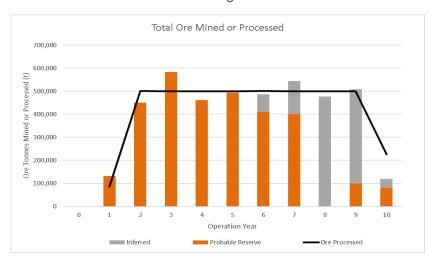
use in the coal washing process and production of plastics<sup>17</sup>. Castile has consulted with industrial mineral analysis specialist Stratum Resources<sup>18</sup> to provide pricing guidance for offshore markets and potential customer analysis. Castile also consulted with an Australian coal producer on a confidential basis, who is an end user/consumer of a similar high grade magnetite coal washing product. Based on those consultations Castile has assumed a price received of A\$350/tonne for the PFS.

# Results of the Pre-Feasibility Study

Table G: Production Profile

Production Profile	Pre- Production	Year 2, 3 & 4	Year 5, 6 & 7	Years 8, 9 & 10	TOTAL
Ore Processed (kt)	86kt	1,500kt	1,500kt	1,227kt	4,315kt
Au Grade (g/t)	2.50g/t	2.63g/t	1.48g/t	1.63g/t	1.94g/t
Cu Grade (%)	2.02%	1.27%	1.65%	1.29%	1.42%
Co Grade (%)	0.12%	0.09%	0.06%	0.06%	0.07%
Fe <sub>3</sub> O <sub>4</sub> Grade (%)	19.85%	22.47%	27.3%	18.4%	22.33%
Au Recovered (oz)	6,500oz	119,000oz	66,800oz	60,000oz	252,300oz
Cu Recovered (t)	1,670t	18,100t	23,700t	15,100t	58,600t
Co Recovered (t)	90t	800t	900t	750t	2,560t
Fe <sub>3</sub> O <sub>4</sub> Recovered (t)	11,600t	228,400t	216,300t	196,100t	652,300
Mine Development (m)	5,500m	11,500m	7,200m	0m	24,200
Inferred Mined (kt)	0kt	0kt	220kt	925kt	1,145kt

Figure A: Annual Ore Production and Processing



<sup>&</sup>lt;sup>16</sup> Australian Standard 4156.3-2008 (Coal Preparation, Part 3 L Magnetite for coal preparation plant use – Test Methods).

<sup>&</sup>lt;sup>17</sup> https://globalenergymonitor.org/report/boom-and-bust-coal-2022/

<sup>18</sup> https://stratumresources.com.au/



Table H: Cost Profile

The following costs are in Australian dollars and include the production of all four products

			Cost Bend	chmarking <sup>20</sup>
Unit Cost Summary	Units	Unit Cost <sup>19</sup>	Gold Equivalent <sup>21</sup>	Copper Equivalent <sup>22</sup>
Capital Costs				
Pre-production Mine Capital	A\$M	\$25.8M	\$40/AuEq oz	\$190/CuEq t
Process Plant Capital	A\$M	\$160.7M	\$220/AuEq oz	\$1,160/CuEq t
Other Infrastructure Capital	A\$M	\$29.7M	\$40/AuEq oz	\$210/CuEq t
Contingency 10%	A\$M	\$21.6M	\$30/AuEq oz	\$160/CuEq t
Sub-total Capital Costs	A\$M	\$237.8M	\$320/AuEq oz	\$1,710/CuEq t
Pre-production OPEX Costs	A\$M	\$41.7M	\$60/AuEq oz	\$300/CuEq t
<b>Operating Costs</b>				
Mine Operating Cost	A\$/t	\$65/t	\$380/AuEq oz	\$2,000/CuEq t
Ore Processing Cost	A\$/t	\$120/t	\$690/AuEq oz	\$3,680/CuEq t
General & Admin	A\$/t	\$10/t	\$50/AuEq oz	\$280/CuEq t
Total Operating Costs	A\$/t	\$195/t	\$1,130/AuEq oz	\$5,960/CuEq t
Royalties	A\$/t	\$20/t	\$130/AuEq oz	\$670/CuEq t
Total Cash Costs	A\$/t	\$215/t	\$1,250/AuEq oz	\$6,620/CuEq t
<b>Sustaining Capex</b>				
Mine Development	A\$M	\$43.5M	\$60/AuEq oz	\$310/CuEq t
Other Sustaining CAPEX	A\$M	\$13.5M	\$20/AuEq oz	\$100/CuEq t
Est. All in Sustaining Cost	A\$M	\$57.1M	\$1,330/AuEq oz	\$7,030/CuEq t

The Rover 1 deposit is not closed at depth and recent drilling demonstrates that the ore body continues at depth. It is expected that the Rover 1 project will continue to grow over time with additional drilling. There is also the potential for repeat iron stones, particularly to the east of the current ore system that would allow for a continuation of the operation.

In addition to the Rover 1 ore body, the Rover 4 ore body is adjacent to the current Rover 1 decline design. Rover 4 represents a significant option play on the price of copper over the life of the Rover 1 project. The Explorer 142 prospect is located to the west of the Rover 1

<sup>&</sup>lt;sup>19</sup> Costs per tonne have been rounded to the nearest \$5.

<sup>&</sup>lt;sup>20</sup> Costs per AuEq ounce or per CuEq tonne have been rounded to the nearest \$10.

<sup>&</sup>lt;sup>21</sup> Gold Equivalent ounces = Total Revenue / Gold Price (refer to Section 6 Metal Equivalent for further details)

<sup>&</sup>lt;sup>22</sup> Copper Equivalent tonnes = Total Revenue / Copper Price (refer to Section 6 Metal Equivalent for further details)



project. It is currently a small IOCG ore body with only a fraction of the ironstone found to date.

Finally, the Explorer 108 is a large lead-zinc deposit again to the west of Rover 1. There is potential to high grade the current resource and therefore extend the project life from the Rover mineral field at the completion of Rover 1.

#### Study Team

The study team, consisting of Castile employees and external consultants and contractors, assessed to a PFS level the technical requirements, costs, impacts and robustness of the Rover 1 Project.

The study team consisted of:

Study Compilation Castile

Geology and Resource Estimation
 Castile and Cube Consulting

Geotechnical Mining One
 Mining Engineering Design and Scheduling Castile

Mine Costing
 Castile

Metallurgical Testwork
 METS Engineering and ALS Laboratories

Process EngineeringProcess EngineeringMACA InterquipSedgman Pty Ltd

Tailing Storage Design
Castile
Power Supply
Environment
EcOz
Heritage and Native Title
Castile
Health and Safety
Financial Modelling
Waste Rock Characterisation
Castile
EGi

Hydrology Groundwater Enterprises
 Industrial Magnetite Analysis Stratum Resources

#### Disclaimer and Cautionary Statements

#### **Competent Persons Statements**

The information in this report that relates to Exploration Results, Mineral Resources and Exploration Data is based on, and fairly and accurately represents, information and supporting documentation compiled by Mr. Jake Russell B.Sc. (Hons) MAIG and Mr Mark Savage who each have sufficient experience which is relevant to the styles of mineralisation, the types of deposit under consideration and to the activities being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC 2012)". Mr Russell is a Member of the Australian Institute of Geoscientists and is a Director of Castile Resources Limited and is eligible to and may participate in any short-term and long-term incentive plans of the Company as disclosed in its annual reports and disclosure documents. Mr Savage is a Member of The Australasian Institute of Mining and Metallurgy and a full-time employee of Castile. Mr Russell and Mr Savage each consent to the inclusion in this report of the matters based on this information in the form and context in which it appears.



The information in this report that relates to Ore Reserves is based on, and fairly and accurately represents, information and supporting documentation prepared by Michael Poepjes. Mr Poepjes is a full-time employee of Castile Resources, and a Member of The Australasian Institute of Mining and Metallurgy. Mr Poepjes has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Poepjes consents to the inclusion in the report of the matters based on the results in the form and context in which they appear

The information contained in this report that relates to Metallurgical Results is based on, and fairly and accurately represents, information and supporting documentation prepared by Damian Connelly. Mr Connelly is a full-time employee of METS Engineering, a Contractor to Castile, and is a Fellow of The Australasian Institute of Mining and Metallurgy. Mr Connelly has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Exploration Targets, Mineral Resources and Ore Reserves. Mr Connelly consents to the inclusion in the report of the matters based on the results in the form and context in which they appear.

#### Disclaimer

This announcement has been prepared by Castile Resources Limited based on information from its own and third-party sources and is not a disclosure document. This announcement does not purport to be all inclusive or to contain all information which investors may require in order to make an informed assessment of the Company's prospects. Investors should conduct their own investigation and perform their own analysis in order to satisfy themselves as to the accuracy and completeness of the information, statements and opinions contained in this announcement before making any investment decision. The information in this announcement is general in nature and does not purport to be complete.

No party other than the Company has authorised or caused the issue, lodgement, submission, dispatch or provision of this report, or takes any responsibility for, or makes or purports to make any statements, representations or undertakings in this announcement. Except for any liability that cannot be excluded by law, the Company and its related bodies corporate, directors, employees, servants, advisers and agents disclaim and accept no responsibility or liability for any expenses, losses, damages or costs incurred by you relating in any way to this announcement including, without limitation, the information contained in or provided in connection with it, any errors or omissions from it however caused, lack of accuracy, completeness, currency or reliability or you or any other person placing any reliance on this announcement, its accuracy, completeness, currency or reliability. This announcement is not a prospectus, disclosure document or other offering document under Australian law or under any other law. It is provided for information purposes and is not an invitation nor offer of shares or recommendation for subscription, purchase or sale in any jurisdiction. This announcement does not purport to contain all the information that a prospective investor may require in connection with any potential investment in the Company. Each recipient must make its own independent assessment of the Company before acquiring any shares in the Company.



#### Forward Looking Statements

This announcement contains forward-looking statements. Wherever possible, words such as "intends", "expects", "scheduled", "estimates", "anticipates", "believes", and similar expressions or statements that certain actions, events or results "may", "could", "would", "might" or "will" be taken, occur or be achieved, have been used to identify these forwardlooking statements. Although the forward-looking statements contained in this announcement reflect management's current beliefs based upon information currently available and based upon what management believes to be reasonable assumptions, the Company cannot be certain that actual results will be consistent with these forward-looking statements. A number of factors could cause events and achievements to differ materially from the results expressed or implied in the forward-looking statements. These factors should be considered carefully, and prospective investors should not place undue reliance on the forward-looking statements. Forward-looking statements necessarily involve significant known and unknown risks, assumptions and uncertainties that may cause the Company's actual results, events, prospects and opportunities to differ materially from those expressed or implied by such forward-looking statements. Although the Company has attempted to identify important risks and factors that could cause actual actions, events or results to differ materially from those described in forward-looking statements, there may be other factors and risks that cause actions, events or results not to be anticipated, estimated or intended, including those risk factors discussed in the Company's public filings. There can be no assurance that the forward-looking statements will prove to be accurate, as actual results and future events could differ materially from those anticipated in such statements. Accordingly, prospective investors should not place undue reliance on forward-looking statements. Any forward-looking statements are made as of the date of this announcement, and the Company assumes no obligation to update or revise them to reflect new events or circumstances, unless otherwise required by law.

This announcement may contain certain forward-looking statements and projections regarding:

- Mineral Resources Estimate and Ore Reserves;
- planned production and operating costs profiles;
- planned capital requirements: and
- planned strategies and corporate objectives.

Such forward-looking statements/projections are estimates for discussion purposes only and should not be relied upon. They are not guarantees of future performance and involve known and unknown risks, uncertainties and other factors many of which are beyond the control of the Company. The forward-looking statements/projections are inherently uncertain and may therefore differ materially from results ultimately achieved. The Company does not make any representations and provides no warranties concerning the accuracy of the projections and disclaims any obligation to update or revise any forward-looking statements/projects based on new information, future events or otherwise except to the extent required by applicable laws.

The PFS referred to in this announcement is based on technical and economic assessments to support the estimation of Ore Reserves. The Company believes it has reasonable grounds to support the results of the PFS, however there is no assurance that the intended development referred to will proceed as described. The production targets and forward-



looking statements referred to are based on information available to the Company at the time of release and should not be solely relied upon by investors when making investment decisions. Material assumptions and other important information are contained in this release. The Company cautions that mining and exploration are high risk, and subject to change based on new information or interpretation, commodity prices or foreign exchange rates. Actual results may differ materially from the results or production targets contained in this release. Further evaluation is required prior to a decision to conduct mining being made.

#### Previous Disclosures

Information contained in this report is based on previous announcements made by the Company, which can be viewed at <a href="www.castile.com.au">www.castile.com.au</a> or the ASX website at <a href="www.asx.com.au">www.asx.com.au</a>, including:

ASX:CST 16 September 2022 "New Discovery Adds 51,000oz Of Gold To Rover 1 Resource

ASX:CST 20 April 2022 "Another By-Product And Revenue Stream For Rover 1"

ASX:CST 8 March 2022 "Large Increases In Gold, Copper And Cobalt At Rover 1"

ASX:CST 4 March 2022 "Outstanding Recoveries in Gold, Copper and Cobalt at Rover 1"

ASX:CST 19 November 2021 "Additional Environmentally Sustainable Product At Rover 1"

ASX:CST 20 September 2021 "Outstanding Metallurgical Results from Rover 1"

ASX:CST 12 February 2019 "Prospectus"

The Company confirms that, other than as contained in this announcement, it is not aware of any new information or data that materially affects the information included in the original market announcements or this announcement, and that all material assumptions and technical parameters underpinning the information, including previously reported Mineral Resource Estimates, continue to apply and have not materially changed.

#### Inferred Resources

The mine plan contains approximately 27% Inferred Mineral Resources. An Inferred Mineral Resource has a lower level of confidence than an Indicated Mineral Resource and there is no certainty than any further exploration work will result in the conversion.

The mine plan assumes that no Inferred Mineral Resources are mined within the first 5 years of the Project, which extends beyond the simple repayment period demonstrated by the PFS. Thereafter, a small proportion of Inferred Mineral Resources are intended to be mined in years 6 and 7 with the majority of Inferred Mineral Resources being mined during years 8 to 10.

The Company is satisfied that the respective proportions of Inferred Mineral Resources are not the determining factors in viability of the Rover 1 Project.



#### Financial Amounts, Commodity Prices and Figures

Refer to Section 1.7 of the PFS for a clear Explanation of Au & Cu for Resource/Reserve calculations and Au, Cu, Co & Fe<sub>3</sub>O<sub>4</sub> for financial modelling and equivalencies.

Unless otherwise indicated, all financial values are presented in constant Q2 2022 A\$, with no inflation or escalation factors considered. Where applicable, an exchange rate of US\$0.67 per A\$ was used to convert US\$ market price projections into Australian currency. Financial values in this announcement exclude goods and services tax (GST) and may not add up due to rounding.

All related payments and disbursements incurred prior to commencement of construction are considered as sunk costs

The following prices were used to determine the project economics and to form the basis of the gold equivalent ounces and copper equivalent pounds used within the benchmarking comparisons:

Table I: Commodity Prices used for Project Evaluation

Metal Price	Value	Input	Value
Gold Price (AUD\$/oz)	\$2,642	Cobalt Price (AUD\$/t)	\$89,552.24
Copper Price (AUD\$/t)	\$13,984.72	Magnetite Price (AUD\$/t)	\$350

The Company has applied a discount rate of 6.5% to the net present value and associated study outcomes in this announcement. The Company considers this to be an appropriate discount rate based upon the Australian risk-free interest rate, low risk profile of the Northern Territory as reported by Fraser Institute and the Project's proximity to major infrastructure.



# PRE-FEASIBILITY STUDY OUTCOMES



**NOVEMBER 2022** 



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#### 1 Introduction

The mine footprint includes a 500m long, 260m wide box cut into competent material and then a 1:7 decline developed to the top of the ore system approximately 300m vertically below the surface. This box cut will have an Armco tunnel installed prior to immediate backfilling. From there mining will continue progressively with corkscrew continuity to access a gently plunging ore system at depth. Even the waste from the box cut will be strategically placed to create flood diversion bunds and be utilised as a base for civil infrastructure on the roads, plant and other infrastructure.

The processing plant has been designed as a modular plant, capable of being easily dismantled and removed at the completion of the project. The magnetite component of the ore, that would typically be stored long-term in a tailings dam will be separated and refined for sale. More tailings will also be diverted from storage within this dam as they will be utilised underground as stope backfill, improving the extraction of the ore body.

The process plant concept is conventional with added downstream capability to recover and refine copper and cobalt to a downstream product for use in the domestic market in Australian and forward looking to provide in-country supply of key metals for the advancing battery technology and energy markets. Gold doré is intended to be refined at an Australian mint, a planned pressure oxidation process followed by SXEW is expected to enable pure copper plate production and cobalt metal with a further fine grind for the magnetite.

There are multiple options for power supply with the Amadeus Natural Gas Pipeline close to the site, the Sun Cable mega-solar development just to the north and options via the Tennant Creek power station. However, no power supply contracts are currently in place and the study assumes power supply from the Amadeus Natural Gas Pipeline and gas power provided onsite. Good quality water is abundance and access to the project is excellent with the Adelaide- Darwin railway line and central Australian highway just to the east.

Castile is part of both NT government, local government and CLC initiatives to try and employ many workers and skills within the regional community with the project providing substantial economic output for region and vast long-term income.

The intention is to construct a village in the appropriate location to provide commute accommodation for the workforce in a form that is able enough to attract workers in a competitive environment. The Barkly region and the township of Tennant Creek will benefit from direct employment opportunities and services and supply agreements with local industry participants.

#### 1.1 Location

Castile's Rover 1 Project is located approximately 75km west-southwest of the town of Tennant Creek, within the Rover Mineral Field. The Rover 1 Project is comprised of seven granted tenements within Aboriginal freehold lands of the Karlantijpa South Land Trust and the Karlantijpa North Land Trust. The project area is considered prospective for copper, gold and base metals mineralisation associated with Iron Oxide Copper Gold (IOCG) mineralising systems. Tenements ELR29957 and ELR29958 contain the high-grade iron oxide-copper-gold resource – Rover 1.



EL27372

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Figure 1 Map showing the Rover Mineral Field containing the Rover 1 Project

#### 1.2 Climate, Topography and Landforms

The Rover Project area has an arid, temperate climate with long hot summers and short, mild winters. At Tennant Creek the average maximum temperatures range from 24°C to 38°C, with an average of 22 days per year exceeding 40°C. Minimum temperatures range from 12° to 25°C (Figure 2). There are 9–10 hours of sunshine per day with an average of 155 clear days per year. Prevailing winds are from the east to southeast. Most rain falls during the summer months, with occasional storms occur at other times of the year. Average annual rainfall is just over 450 mm. The dry season (May to October) in Tennant Creek is relatively sunny with cool nights and mornings. The wet season (November to April) is hot and humid with occasional rainfall. Topography in the Rover Project area is subdued, with little in the way of relief.



Tennant Creek Annual Temperatures & Rainfall TENNANT CREEK AIRPORT °C 45 140 mm 40 120 35 100 30 80 25 20 60 15 40 10 20 5 Mar Apr May Jun Jul Aug Sep Oct Nov Dec Feb Mean daily minimum temp. Mean daily maximum temp. weather zone Mean monthly rainfall Highest/lowest on record Highest/lowest on record

Figure 2 Tennant Creek Weather and Rainfall<sup>23</sup>

#### 1.3 Mineral Rights and Ownership

All tenements shown in Figure 1 are located on Aboriginal Freehold Lands administered by the Central Land Council (CLC) on behalf of the Traditional Owners for the Karlantijpa North and Karlantijpa South Land Trust.

Castile Resources Limited is the 100% owner the tenements ELR29957 and ELR29958 containing the Rover 1 Project. Castile also retains 100% ownership of the five other tenements surrounding the Rover 1 Project that make up the Rover Mineral Field.

#### 1.3.1 Tenement Ownership History

The Rover Project area has had an extensive ownership history, with multiple owners and joint ventures. Exploration in the Rover Mineral Field was carried out between 1971 and 1982, predominantly by Geopeko, but was halted in 1982 when land ownership reverted to the Traditional Owners.

<sup>&</sup>lt;sup>23</sup> Source https://www.farmonlineweather.com.au/climate/station.jsp?lt=site&lc=15135



It was not until December 2007 that Westgold Resources Limited (Westgold) successfully negotiated access to continue exploration at Rover 1 and surrounding tenement areas. From 1982 to 2005, the project was owned by Normandy Mining Limited (acquired by Newmont Mining Corporation in 2002) and Acacia Limited (acquired by AngloGold Ashanti Limited). No groundwork was undertaken during this 23-year period, but some airborne photography and magnetic surveys were carried out. AngloGold Ashanti acquired 100% interest in the project in 2005 but sold it to Navarre Resources Limited (Navarre) in the same year. Later in 2005, Westgold agreed to fund Navarre, with an option to acquire 100% of the project.

Metals X completed a 100% takeover of Westgold in 2011 and in 2017 the two companies de-merged with Westgold retaining ownership of the Rover Mineral Field tenements. In 2019, Westgold purchased the adjacent tenement EL27372 to the north of the Rover 1 Project tenements.

Castile Resources Limited, containing the Rover Mineral Field tenements, was listed on the Australian Stock Exchange in February 2020 following a de-merger from Westgold.

#### 1.4 Geological Setting

The Rover 1 ore system is classified as an Iron-oxide-copper-gold ("IOCG") style of deposit making it polymetallic in nature with the main minerals of copper and gold existing within a magnetite rich alteration halo. Other by-products of cobalt, silver and bismuth occur with the deposit.

The ore system is a virgin discovery hosted within Paleo-proterozoic meta-sedimentary rocks of the Warramunga Province (Orradidgiee Group). At the Rover 1 site, the host rocks are overlain by a 120-140M sequence of the younger and un-conforming younger sequence of Cambrian-age sedimentary rocks of the West Wiso Basin.

#### 1.5 Exploration History

Rover 1 was initially detected as a strong, coincident magnetic and gravity anomaly after BMR aerial surveys in 1967. The first hole was drilled in October 1972 by Geopeko to test the magnetic anomaly. Subsequent drilling continuing through to 1978, totalling 36 holes for 12,569.15m.

Modern exploration on the Rover Mineral Field re-commenced in 2008 through to 2015. Westgold and Adelaide Resources drilled a combined 173 holes for 63,710.57m resulting in an initial resource estimated in 2011.

The most recent resource definition drilling by Castile Resources between 2020 and 2022 (35 holes/ 14,797.25m) has culminated in a Mineral Resource Estimate update and Ore Reserve and metallurgical studies.

#### 1.6 Preamble to Feasibility Study

The aim of Preliminary Feasibility Study was to assess the Rover 1 deposit to determine the best possible operating, extraction and beneficiation methods to achieve the optimal outcome for shareholders and company stakeholders. Castile completed robust drilling programs, mining studies, environmental studies and metallurgical test work to achieve the



outcomes for the study. As Rover 1 is a polymetallic orebody, our strategy was to extract "every dollar of revenue from every tonne that we mine" to maximise economic benefit.

#### 1.7 Gold Equivalency for Mineral Resource Estimate and Ore Reserve

For the purposes of resource and reserve calculations, only the gold and copper grades were considered when calculating the Mineral Resource Estimate and the Probable Ore Reserve.

The following gold equivalent calculation was utilised to determine cut off grades:

Gold Equivalent Grade = Au (g/t) + 0.00016 \*Cu (ppm)

Table 1: Commodity Prices used for the Gold Equivalent Calculation for Mineral Resource Estimate

Metal Price Value		Input	Value	
Gold Price (AUD\$/oz)	\$2,620	Copper Price (AUD\$/t)	\$13,880	

These metal prices were selected for use as being near the spot price in March 2022. In order to maintain consistency between the resource calculations, the same cut-off grade calculation was utilised in the updated Mineral Resource Estimate in September 2022.

The value of the cobalt and magnetite were not included within the calculation for the resource and reserve to ensure robustness of the mined material as they are considered by-products under the JORC 2012 Code. As stated in our JORC 2012 Table 1 Checklist of Assessment and Reporting Criteria, no assumptions have been made for the recovery of the by products for inclusion as a Mineral Resource.

In addition, care was taken to ensure material containing low grades of gold and copper were not included within the design of the operation based on their cobalt or magnetite grades.

It is important to note that all mining costs are associated with the extraction of gold and copper. Cobalt and magnetite included in the economic model are considered free on surface as they are by-products of the mining of copper and gold.

The overall project has included the costs associated with the processing and extraction of the cobalt and the magnetite. The expected revenues from the cobalt and magnetite are included in the project economics and gold equivalent ounces for production and benchmarking purposes.

#### 1.8 Mineral Resource Estimate

As announced by Castile Resources "New Discovery adds 51,000oz of gold to Rover 1 Resource" (ASX:CST 16 September 2022) the following Mineral Resource Estimate was utilised for the PFS.



Table 2: Rover 1 Mineral Resource Estimate

Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Co (%)	Fe <sub>3</sub> O <sub>4</sub> (%)	Au (oz)	Cu (t)	Co (t)	Fe₃O₄ (t)
Measured									
Indicated	3.97	1.83	1.59	0.07	23.6	233,800	63,100	2,900	938,000
Inferred	1.61	1.57	1.25	0.07	22.1	81,400	20,100	1,100	357,000
Total	5.58	1.76	1.49	0.07	23.2	315,200	83,200	4,000	1,295,000

The Mineral Resource Estimate as shown above utilises a 2.0g/t AuEq cut-off grade for inclusion within the resource.

#### 1.9 Ore Reserve

Castile Resources is pleased to announce the Ore Reserve for the Rover 1 project.

Table 3 Rover 1 Ore Reserve

Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Co (%)	Fe₃O₄ (%)	Au (oz)	Cu (t)	Co (t)	Fe₃O₄ (t)
Proven									
Probable	3.11	2.02	1.52	0.07	22.92	201,800	47,400	2,200	713,300
Total	3.11	2.02	1.52	0.07	22.92	201,800	47,400	2,200	713,300

The above Ore Reserve is a subset of the Mineral Resource Estimate.

#### 1.9.1 Key Reserve Calculation Inputs and Assumptions

The following key assumptions were used in the determination of the Ore Reserve.

Table 4: Key Reserve Calculation Inputs and Assumptions

Metal Price	Value	Input	Value
Gold Price (AUD\$/oz)	\$2,620	Diesel Cost (\$AUD/L)	\$1.00
Copper Price (AUD\$/t)	\$13,880	Milling Rate (t/annum)	500,000
Cobalt Price (AUD\$/t)	\$99,295	Discount Rate (%)	6.5%
Magnetite Price (AUD\$/t)	\$350	Power Price (\$/kWhr)	\$0.17

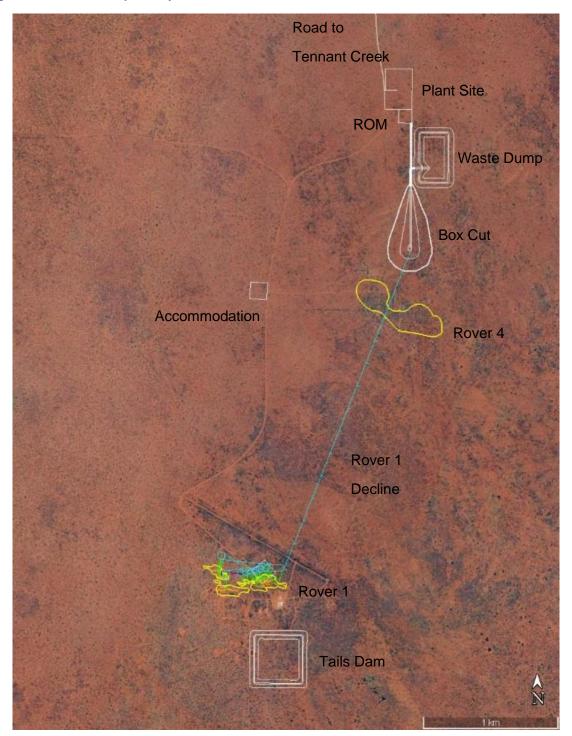
The above prices were selected as being representative of the spot prices during the latter parts of 2021 and early 2022, when the Rover 1 Mineral Resource was finalised.

#### 1.10 Rover 1 Planned Project Layout

Figure 3 shows the planned layout for the project, including the location of the Processing Plant, Tailings Storage Facility, Waste Dump and On-site Accommodation Village compared to the Rover 1 ore body.



Figure 3: Rover 1 Project Layout



# 1.11 Metallurgy

Metallurgical test work carried out by Castile showed that the utilisation of Pressure Oxidisation (POX) to dissolve the copper and cobalt and completely oxidise the sulphides associated with the gold was clearly the optimal processing method. This allows high



extraction of gold into doré, pure copper and cobalt metal to be produced. This pathway provides far higher returns both financially and holistically for the entire Castile Resources stakeholder group.

The Ore will be ground and then the magnetic portion extracted. The heavy non-magnetic material is then subject to a gold concentrator to remove free gold contained within the material. The remaining mass is then floated, with the sulphide rich material (containing the gold, copper and cobalt) being concentrated. This concentrate is then subjected to the POX process to allow subsequent extraction of gold, copper and cobalt into pure saleable products.

#### 1.12 Results from PFS

Rover 1 will be a significant producer of the four final products.

Work will now commence on a Feasibility Study for the Rover 1 project, further refining the Metallurgical Inputs and cost estimates for the project.

For the benchmarking process carried out in the summary the following formula was used to calculate the equivalent gold ounces:

Gold Equivalent Ounces = Total Revenue (\$) / Gold Price (\$/oz)

Copper Equivalent Pounds = Total Revenue (\$)/ Copper Price (\$/lb)

The following prices were used to determine these equivalencies:

Table 5: Commodity Prices used for the determination of the Equivalent Gold Ounces or Copper Tonnes

Metal Price	Value	Input	Value
Gold Price (AUD\$/oz)	\$2,641.79	Cobalt Price (AUD\$/lb)	\$40.62
Copper Price (AUD\$/lb)	\$6.34	Magnetite Price (AUD\$/t)	\$350.00

Copper is the dominant revenue source, producing 42% of the total revenue of the project, with gold contributing 34% of the total revenue.

Castile has provided both a gold equivalent to allow comparisons with the many gold operations located within Australia, especially Western Australia and a copper equivalent to allow comparisons with copper producers (as the dominant revenue source).

# 2 Geology and Exploration

#### 2.1 Regional Geology

The Rover Mineral Field is interpreted to be a westerly extension of the Tennant Creek Mineral Field. The Tennant Creek region contains three different geological provinces, the Warramunga Province, the unconformably overlying Paleo- to Mesoproterozoic Davenport Province to the south and Tomkinson Creek Province to the north. To the east and west, the younger Palaeozoic Georgina and Wiso basins overlie the Proterozoic rocks of the Tennant Creek region. The Proterozoic Aileron Province of the Arunta region occurs to the south of



the area, the contact between it and the Tennant Creek region being obscured by a Palaeozoic basin cover sequences. Known outcrop of the 1860-1850 Ma Warramunga Province is approximately centred on the township of Tennant Creek and contains the Warramunga Formation. This is a weakly metamorphosed turbiditic succession of partly tuffaceous sandstones and siltstones that includes argillaceous banded ironstones locally referred to as "haematite shale". Rocks of the Warramunga Formation show open to closed folding about approximately east-west oriented upright axes, and exhibit a well-developed, axial-planar, slaty cleavage. An 1850–1845 Ma deformation, the Tennant Event (part of the Barramundi Orogeny) is contemporaneous with predominantly felsic magmatism of the Tennant Creek Supersuite. Two overprinting cleavages and associated kink bands are also present, which are attributed to the superimposition of the ≈1700 Ma Davenport Event deformation. Volcano-sedimentary rocks of the Warramunga Province are intruded by granite and porphyry of the Tennant Creek Supersuite (≈1850 Ma), the Treasure Suite (≈1810 Ma) and the Devils Suite (≈1710 Ma). The Tennant Creek Supersuite includes the Tennant Creek, Cabbage Gum, Channingum, and Hill of Leeders granites, and the Mumbilla Granodiorite. In the Warramunga Province, the Treasure Suite includes felsic and mafic volcanic rocks, porphyry granophyre, monzodiorite, diorite and dolerite. However, granite is not represented in outcrop. The Devils Suite is represented by the Warrego Granite and Gosse River East Syenite. Lamprophyre intrusions are penecontemporaneous with the Devils Suite. The whole area is largely covered by a veneer of unconsolidated Cenozoic cover.

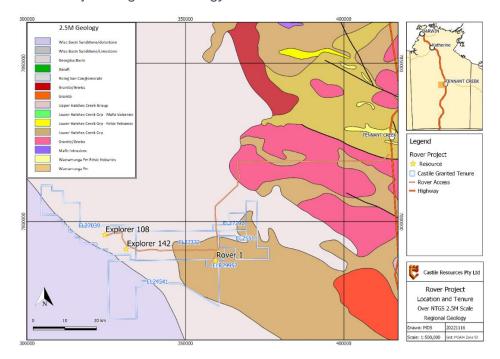


Figure 4: Rover Project Regional Geology

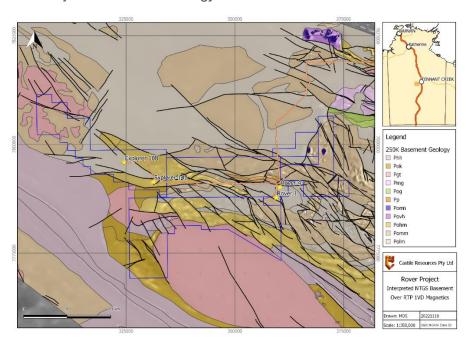
The Rover 1 mineral deposit is classed as an Iron Oxide Copper-Gold (IOCG). This deposit type is known to host large scale economic copper and gold mineralisation such as the world class Olympic Dam in South Australia and Candelaria in Chile. Rover 1 is situated in the Rover Mineral Field, interpreted as a southern repeat or extension of the Tennant Creek



Mineral Field to the north. Tennant Creek IOCG's have historically produced approximately 157t of gold, 345,000t of copper, 14,000t of bismuth, 220t of selenium and 56t of silver from 130 mines, with the majority of production derived from twelve deposits.

The Rover 1 deposit occurs in a low relief area covered by extensive transported cover lying over approximately 110 metres of flat-lying Cambrian sediments of the Wiso Basin. The basin stratigraphy unconformably overlies Proterozoic basement which hosts the deposit. Recent dating by the Northern Territory Geological Survey indicates the host rocks are part of the Ooradidgee Group of the Warramunga Provence, metamorphosed to lower greenschist facies.

Figure 5: Rover Project Basement Geology



Rover 1 is situated within a sequence of metamorphosed and variably altered volcanosedimentary rocks consisting of interbedded shales and siltstones, tuffaceous sandstones, greywacke and crystal tuff. The deposit consists of three ironstone areas: Jupiter, Jupiter West and Jupiter Deeps. Alteration grades from distal silica and silica-hematite, mainly confined to the fine-grained metasediments historically known as haematitic shales, to proximal Jasper, quartz-magnetite and magnetite ironstone. Strong chlorite alteration is associated with ironstone margins and chlorite stockwork 'root zone' beneath the ironstone.

Structural observations indicate the ironstone bodies were deposited within antiformal fold hinges acting as structural traps with associated with steep axial planar shear zones. These ironstone bodies predate mineralisation based on textural evidence. Economic copper-gold (+/-cobalt, bismuth, silver) mineralisation is the result of fluids infiltrating brecciated ironstone during a late brittle deformation event. Copper mineralisation is characterised by chalcopyrite crack seal and mineral replacement in magnetite ironstone, while high tenor gold is mainly associated with the chloritic stockwork zone in hematite dusted quartz veins.



### 3 Metal Equivalent

Rover 1 will generate four key final products. In order to simplify and allow for a comparison of costs between Rover 1 and other projects, gold and copper equivalent grades are stated.

#### 3.1 Gold Equivalent

For the benchmarking process carried out in the summary the following formula was used to calculate the equivalent gold ounces:

Gold Equivalent Ounces = Total Revenue (\$) / Gold Price (\$/oz)

The following prices were used to determine this gold equivalent:

Table 6: Commodity Prices used for the determination of the Equivalent Gold Ounces

Metal Price	Value	Input	Value
Gold Price (AUD\$/oz)	\$2,641.79	Cobalt Price (AUD\$/t)	\$89,552.24
Copper Price (AUD\$/t)	\$13,984.72	Magnetite Price (AUD\$/t)	\$350.00

Although copper is the dominant revenue source, producing 42% of the total revenue of the project, Castile has decided to provide a gold equivalent to allow comparisons with the many gold operations located within Australia, especially Western Australia. Additionally, gold and copper can be considered co-products as gold contributes 34% to the total revenue of the project.

A gold equivalent calculation was chosen to be utilised rather than crediting the value of the other products against the costs of the project due to the high value of credits that would be applied in this scenario.

By utilising the total revenue (either on an annual basis or whole of project) the recoveries of the individual products are incorporated. Although no recovery assumptions have been made for the recovery of the by-products (cobalt and magnetite) for the Mineral Resource Estimate and Ore Reserve, metallurgical work carried out by METS Engineering demonstrates that both products can be extracted with an economic return. When considering the economic return, both by-products are considered 'free on surface'.

For the resource and reserve calculations, the following gold equivalent calculation was utilised to determine cut off grades:

Gold Equivalent Grade = Au (g/t) + 0.00016 \*Cu (ppm)

Table 7: Commodity Prices used for the Gold Equivalent Calculation for Mineral Resource Estimate

Metal Price	Value	Metal Price	Value
Gold Price (AUD\$/oz)	\$2,620	Copper Price (AUD\$/t)	\$13,880

These metal prices were selected for use as being near the spot price in March 2022. In order to maintain consistency between the resource calculations, the same cut off grade



calculation was utilised in the updated Mineral Resource Estimate in September 2022. Given the relatively high recovery for both gold and copper (both above 90%) it was not considered essential to introduce a recovery factor into the selection criteria for the design blocks.

The value of the cobalt and magnetite were not included within the calculation for the resource and reserve to ensure robustness of the mined material. Both products are considered by-products under the JORC 2012 Code and as stated in our Table 1, no assumptions have been made for the recovery of the by products for inclusion as a Mineral Resource.

In addition, care was taken to ensure material containing low grades of gold and copper were not extracted for the operation on the basis of their magnetite grade. The sample grades of the magnetite within the resource varies between 0% and 90%.

#### 3.2 Copper Equivalent

For the benchmarking process carried out in the summary the following formula was used to calculate the equivalent copper tonnes:

Copper Equivalent Tonnes = Total Revenue (\$) / Copper Price (\$/t)

The following prices were used to determine this copper equivalent:

Table 8: Commodity Prices used for the determination of the Equivalent Gold Ounces

Metal Price	Value	Input	Value
Gold Price (AUD\$/oz)	\$2,641.79	Cobalt Price (AUD\$/t)	\$89,552.24
Copper Price (AUD\$/t)	\$13,984.72	Magnetite Price (AUD\$/t)	\$350.00

Copper is the dominant revenue source, producing 42% of the total revenue of the project. Castile has provided a copper equivalent to allow comparisons with the copper producers located within Australia. It is considered that copper and gold are co-products, with cobalt and magnetite considered by-products.

These prices were selected as being near current spot prices for the metals. The magnetite was priced after consultation with industrial mineral analysist specialist Stratum Resources and an Australian Coal Producer using a similar high grade magnetite product for coal washing onsite.

A copper equivalent calculation was chosen to be utilised rather than crediting the value of the other products against the costs of the project due to the high value of credits that would be applied in this scenario.

By utilising the total revenue (either on an annual basis or whole of project) the recoveries of the individual products are incorporated. Although no recovery assumptions have been made for the recovery of the by-products (cobalt and magnetite) for the Mineral Resource Estimate and Ore Reserve, metallurgical work carried out by METS Engineering demonstrates that both products can be extracted with an economic return. When considering the economic return, both by-products are considered 'free on surface'.



#### 4 Mineral Resource Estimate

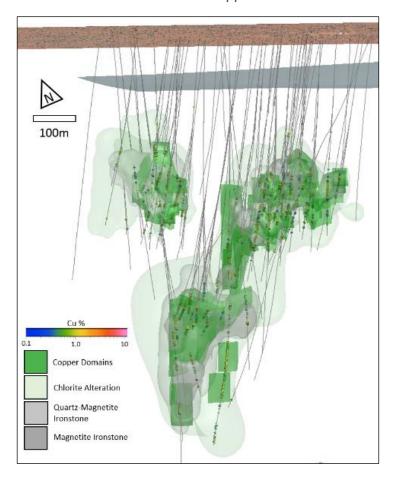
The global Mineral Resource Estimate reported in September 2022 totals 5.58Mt at 1.8g/t gold, 1.5% copper, 0.07% cobalt and 23.2% magnetite.

Table 9: Rover 1 Mineral Resource September 2022

Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Co (%)	Fe₃O₄ (%)	Au (oz)	Cu (t)	Co (t)	Fe₃O₄ (t)
Measured									
Indicated	3.97	1.83	1.59	0.07	23.6	233,800	63,100	2,900	938,000
Inferred	1.61	1.57	1.25	0.07	22.1	81,400	20,100	1,100	357,000
Total	5.58	1.76	1.49	0.07	23.2	315,200	83,200	4,000	1,295,000

The resource includes all modern drilling. Drilling during April – June 2022 successfully extended the Jupiter Deeps ironstone, identified new gold and copper mineralised zones and provided geological confidence to verify the Ganymede mineralised zone, all of which were incorporated into the September 2022 resource update.

Figure 6: Oblique view of Rover 1 ironstone and copper domains.





Due to the multi-element nature of the Rover 1 mineralisation, the interpretation and construction of the estimation domains was informed by lithological and structural interpretations in conjunction with geochemical statistical analysis to determine metal associations. This methodology resulted in the generation of two sets of mineral domains; copper-cobalt (Figure 6) and gold-bismuth-silver (Figure 7). Magnetite was constrained by lithological domains, magnetite content derived from regression analysis of mineral scanning, magnetic susceptibility readings and density measurements.

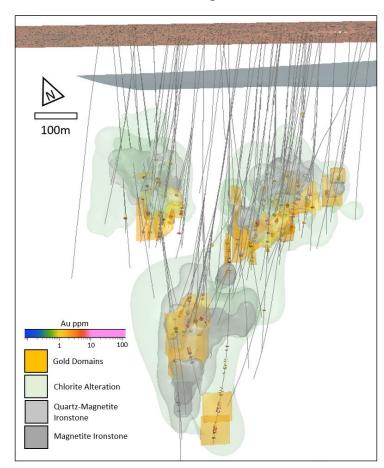


Figure 7: Oblique view of Rover 1 ironstone and gold domains.

The Mineral Resources at Rover 1 are classified as a combination of Indicated and Inferred, based on confidence in the geological model, continuity of mineralised zones, drilling density, confidence in the underlying database and available bulk density information.

#### 5 Ore Reserve

Rover 1 has a Probable Ore Reserve of 3.1Mt @ 1.5% Cu and 2.0g/t Au for 47.4kt Cu and 201.8koz Au. The Ore Reserve for Rover 1 is reported according to the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves, JORC Code 2012.



Table 10: Rover 1 Reserves

Class	Tonnes (Mt)	Au (g/t)	Cu (%)	Co (%)	Fe₃O₄ (%)	Au (oz)	Cu (t)	Co (t)	Fe₃O₄ (t)
Proven									
Probable	3.11	2.02	1.52	0.07	22.92	201,800	47,400	2,200	713,300
Total	3.11	2.02	1.52	0.07	22.92	201,800	47,400	2,200	713,300

The mine planning component of this study involved cost estimation, stope design with subsequent access design, mine design including associated infrastructure requirement and scheduling. Of the material included within the Pre-Feasibility Study, 72% is contained within the Ore Reserve with the remaining 27% of the material being defined from within the Inferred material. All material mined within the study was classified as either Indicated or Inferred resource. No Inferred material is within the Ore Reserve numbers. Stope blocks containing Inferred material had the grade of this material reset to 0 (for copper and gold) prior to evaluation for meeting the cut-off grade requirement of 2.25g/t AuEq. Only the value of copper and gold was considered for the determination of the gold equivalent, which is the same gold equivalent formula utilised in the Mineral Resource Estimate.

The project was evaluated considering only revenue from gold and copper and from all four products (gold, copper, cobalt and magnetite), with both evaluations demonstrating a positive result. The cobalt and magnetite that is produced from the project is mined as a consequence of extracting the gold and copper. Table 11 shows the key assumptions which were used to evaluate the project for an Ore Reserve:

Table 11: Key Reserve Calculation Inputs and Assumptions

Metal Price	Value	Input	Value
Gold Price (AUD\$/oz)	\$2,620	Diesel Cost (\$AUD/L)	\$1.00
Copper Price (AUD\$/t)	\$13,880	Milling Rate (t/annum)	500,000
Cobalt Price (AUD\$/t)	\$99,295	Discount Rate (%)	6.5%
Magnetite Price (AUD\$/t)	\$350	Power Price (\$/kWhr)	\$0.17

Ore drives were designed at 4.5mW x 4.5mH for ore extraction using a 7.2m³ loader. The main decline haulage was designed at 5.5mW x 5.5mH for a fleet of 50t trucks. It was assumed that all haulage items (loaders and trucks) will be powered by battery power, significantly reducing the ventilation requirements of the operation and enhancing the working environment for all personnel.

Cut-off grade analysis was performed considering all costs (including pre-production capital costs). Mine recovery factors were 95% but no additional dilution (outside of either the development size or minimum stope skin thickness) were considered. Cut-off grade calculations, for both the inclusion of material and the determination of the appropriate cut-off grade only include the value of gold and copper. No value is attributed to the inclusion of either cobalt or magnetite. These elements are considered free-carry to surface with minor costs of extraction.

Geotechnical considerations for stope design, including appropriate ground support standards and hydraulic radii of stable stopes was provided by Mining One. Processing costs were provided by MACA Interquip, while mining costs and metal prices were determined internally by Castile Resources. The stopes were designed at a minimum width



of 3.0m, including 0.5m of footwall and 0.5m of hangingwall dilution over a stope strike length of 10.0m and a height of 25.0m (floor to floor). No sub-height stopes were considered.

It should be noted that Inferred resources have a lower level of geological confidence and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or subsequently Ore Reserves.

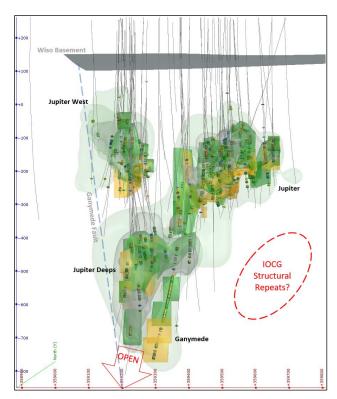
#### 6 Growth Potential

There is further scope to discover additional mineralisation related to the Jupiter trend. The 2022 extensional drilling below Jupiter Deeps has not closed off either ironstone alteration or copper-gold mineralisation. The Ganymede zone is also unconstrained down-plunge and up and down dip (The costs for the PFS include additional drilling and sampling costs for ongoing grade control and resource definition work).

Further repeats, occurring as structural fluid traps such as antiformal folds, either primary or parasitic, in favourable lithological sequences are a growth opportunity. The potential outside the established trends is currently unknown. Further detailed modelling of the stratigraphic sequence combined with additional geophysical surveys, and ultimately additional drilling, is required.

The costs for the PFS include additional drilling and sampling costs for ongoing grade control and resource definition work.

Figure 8: Rover 1 long projection showing gold and copper mineralisation trends and exploration potential.





In addition to the growth potential of the Rover 1 asset, Castile intends to continue exploration to develop a hub and spoke style mineralisation camp. Currently three other deposits within the Rover mineral field have JORC 2012 resources – Explorer 108, Explorer 142 and Rover 4 (Figure 9 and Tables 12 - 14 below).

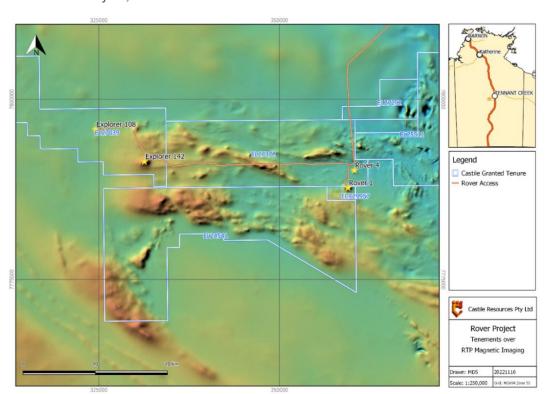


Figure 9: Rover Project, Location of Mineral Resources.

Table 12: Rover Project Resource Inventory - Explorer 10824

2.5% Pb + Zn COG		Grade			Metal Content			
Class	Tonnes (Mt)	Ag (g/t)	Pb (%)	Zn (%)	Ag (koz)	Pb (t)	Zn (t)	
Measured								
Indicated	8.44	14.32	2.05	3.41	3,886	172,800	288,100	
Inferred	3.43	3.32	1.88	2.81	365.6	64,400	96,500	
Total	11.87	11.14	2.00	3.24	4,251.6	237,200	384,600	

0.1% Cu (	COG	Grade	Metal Content	
Class	Tonnes (Mt)	Cu (%)	Cu (t)	
Measured				
Indicated	5.69	0.36	20,300	
Inferred				
Total	5.69	0.36	20,300	

<sup>&</sup>lt;sup>24</sup> Castile Prospectus dated 3 December 2019



Table 13: Rover Project Resource Inventory - Explorer 142<sup>25</sup>

2.5% Cu COG		Gra	de	Metal Content		
Class	Tonnes (kt)	Au (g/t)	Cu (%)	Au (oz)	Cu (t)	
Measured						
Indicated						
Inferred	175.6	0.21	5.21	1,200	9,150	
Total	175.6	0.21	5.21	1,200	9,150	

Table 14: Rover Project Resource Inventory - Rover 426

2.0g/t AuEq COG		Grade				Metal Content			
Class	Tonnes (kt)	Au (g/t)	Cu (%)	Co (%)	Fe <sub>3</sub> O <sub>4</sub> (%)	Au (oz)	Cu (t)	Co (t)	Fe₃O₄ (t)
Measured									
Indicated	50.6	0.38	1.90	0.03		600	1,000	10	
Inferred	307.6	0.60	1.81	0.01		5,900	5,600	50	
Total	358.2	0.56	1.82	0.01		6,500	6,500	60	

Explorer 108 is a large lead-zinc-silver deposit approximately 40km west of Rover 1. The ore body represents significant project upside for Castile, with the potential to high grade the upper zone of lead/zinc and extend the life of the project by processing the material at the Rover 1 plant and producing a lead/zinc concentrate for sale at the completion of Rover 1.

Rover 4 is an IOCG style deposit, located adjacent to the proposed path of the decline, 2km north of Rover 1. Although currently a small, Inferred resource, this represents a significant option play if the price of copper increases during the extraction of the Rover 1 deposit. Rover 4 has only had 49 holes drilled compared to 244 drilled at Rover 1.

Explorer 142 is an IOCG style, high-grade copper ore body which has yet to have significant gold discovered. The magnetic and gravity signatures of Explorer 142 are of a similar size and intensity as Rover 1, however only a fraction of the ironstone (and mineralisation) has been found to date. A DHEM survey in 2022 identified two untested EM anomalies worthy of follow up.

# 7 Mining

Mining studies for the PFS have been undertaken by Castile Engineers who have designed and scheduled the operation along with the development of the associated cost models for the project. Mining will occur under an owner operator model due to the life of the project and the opportunity to utilise a modern battery powered haulage fleet, reducing the pollution from the operation, the ventilation requirements and improving the working environment for the underground work force.

<sup>&</sup>lt;sup>25</sup> Castile Prospectus dated 3 December 2019

<sup>&</sup>lt;sup>26</sup> Rover 4 Maiden Resource Added to Rover 1 November 2022



The mining method will utilise long hole open stoping with paste fill for two thirds of the stopes. Stope panels have been blocked into three level groups with the lower two levels being completely filled, while the upper level is left open. Further optimisation is expected for the stope filling with the aim of improving costs while maintaining a high extraction rate. Opportunistic waste filling will occur where applicable. Mine access will be via a decline haulage route with 7.2m³ loaders utilised for both development and stope loading. Modern 50t trucks have been sized to cart the material to surface.

Waste accesses was then designed around these stoping blocks, minimising the volume of waste which will need to be extracted. Ventilation and escapeway rises were located on the decline, while ore levels incorporated stockpiles, sumps and other associated development.

Stoping blocks have been designed with a dilution skin of 0.5m on both the footwall and hangingwall. Ore drives have been designed at a standard size of 4.5mW x 4.5mH regardless of ore width. No additional ore dilution factors were considered as part of the study, however a mining recovery factor of 95% was applied to all ore.

Mining One was engaged by Castile to provide geotechnical parameters for the PFS. Mining One recommended the surface ground support for all mine development, including the upper section of the decline located within the Wiso Sediments. Mining One recommended a maximum stope strike span of 45m within the ironstone material and 35m within the metasedimentary material.

#### 7.1 Stope Optimisation and Mine Design

Stope design was carried out utilising the Stope Optimiser function within Surpac 2022 software, with all stopes designed at a minimum width of 3.0m wide, including a minimum of 0.5m of footwall and 0.5m of hangingwall dilution. All stopes were designed at 10.0m in strike span over a level interval of 25.0m (floor to floor). Stopes were then merged to allow a maximum of 40m stope strike length.

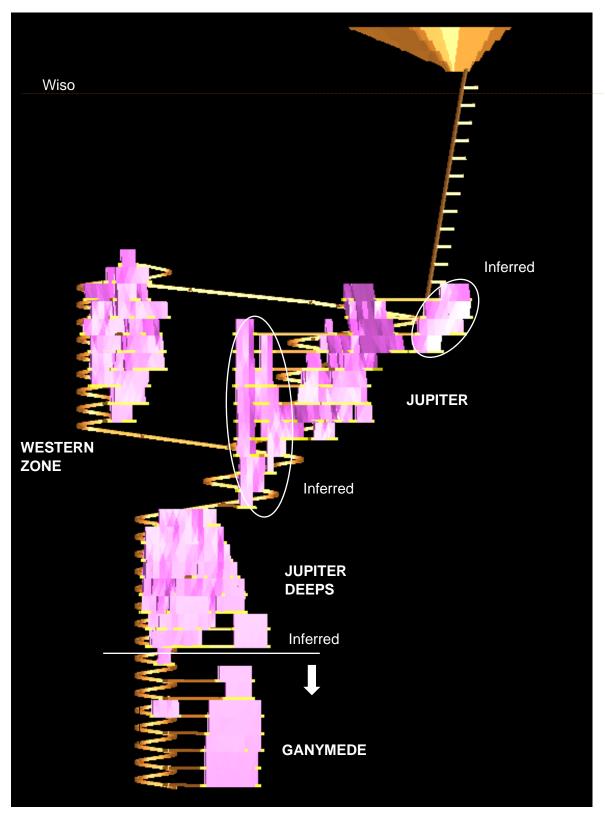
Stopes were designed to be vertical and along strike, with a maximum wall angle of 30° (to the vertical) allowed to reduce dilution on both footwall and hanging wall. Stopes were allowed to veer off a 0° strike orientation to a maximum of 30° in either direction. Stopes not restricted in their width, however a 5m pillar was required between stopes. Stopes were then smoothed in both a vertical and horizontal sense to their neighbour prior to being merged to a maximum of 40m in strike length.

Postprocessing of the stopes were then outersected with their ore development (located on the base of the stope in the centre of the proposed block). Stopes were then evaluated against the minimum cut-off grade. All ore drives were designed at 4.5mW x 4.5mH and some stopes had multiple ore drives outersected representing take-off to other locations.

Stope design allowed up to a maximum strike length of 40m in the ironstone material and 30m within the meta-sedimentary material. For scheduling and costing purposes, each stope contained a slot rise(s) and a barricade (when paste fill was to occur). Each stope was drilled, and a slot rise excavated prior to stope bogging/blasting occurring. Paste fill occurred (in the designated stopes) at the completion of the bogging process and a cure time was factored prior to the commencement of the next stoping panel.



Figure 10: Rover 1 Mine Design including Box Cut.





#### 7.2 Mine Schedule

Mining commences at Rover 1 six months earlier than the development plan. The initial six months is to allow the excavation of a boxcut. Castile is intending to install an Armco style tunnel into the boxcut and then backfill the boxcut, reducing potential risk to Mining Personnel in the boxcut and reduce the potential for a significant water inflow to the underground operation from a rainfall event.

Mine development rates through the Wiso Sediments have been reduced representing the additional ground support activities that are scheduled to occur for long term stability. Development rates in the underlying basin average 310m per month based on a single jumbo operation, with a maximum of 325m/month. Figure 11 shows the total development carried out in each year, with the vertical development shown by the orange line. Given the length of the vertical development legs, it has been assumed that all vertical development will be carried out utilising mechanical methods.

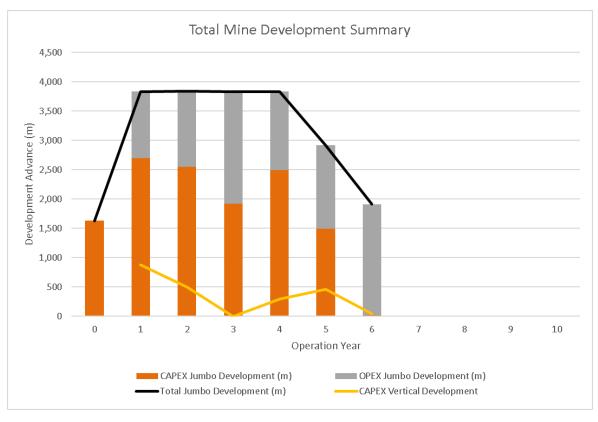


Figure 11: Annual Mine Development.

Stoping activities commence in Month 22. Stoping activities were scheduled based on long-hole drilling followed by mechanical rise excavation. Blasting and bogging activities occur until the stope is fully extracted. Post extraction of each stope, a barricade will be constructed by the mining personnel prior to stope filling occurring utilising paste fill.

Mining occurs in the Jupiter Zone first, followed by the Jupiter Deeps Zone. The Western Zone decline commences once the 800 Level has been fully developed. Castile have the



ability to bring production forward from the Western Zone if desired.

Figure 12 below shows the annual production that is planned to be extracted at Rover 1 and subsequent ore processing. It can be seen that a small stockpile of material will be built up to act as a buffer for mining/processing activities.

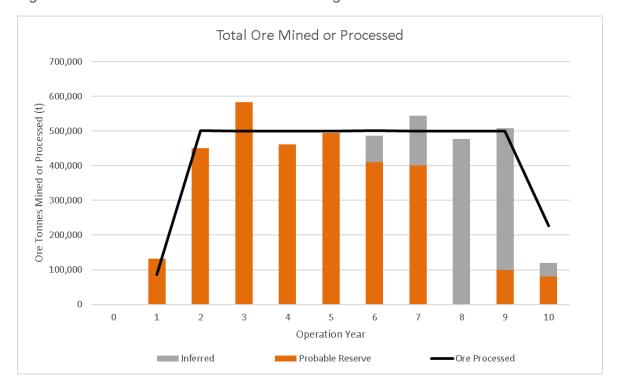


Figure 12: Annual Ore Production and Processing

Rover 1 will require a single twin boom jumbo, two 7.2m³ loaders, three 50t trucks, one long hole rig along with ancillary equipment such as Integrated Tool Carriers, a Shotcrete rig and a charge up rig. It has been assumed that a life of three years will be achieved by each fleet item.

#### 7.3 Trade Off Studies

Two primary options were considered for the mining operation at Rover 1. The first option considered Contract Mining compared to an Owner Operator scenario. The second study considered the haulage method, including the power basis of the haulage fleet.

#### 7.3.1 Contractor Mining vs Owner Operator

The main trade off study that was completed for the PFS was a Contract Mining compared to an Owner Operator style mining crew. A full cost model was constructed for both options for comparison. Contractor mining has the potential benefit of delivering ore to the surface at a



more defined and understood price, with underperformance having a smaller cost impact on the overall cost of the project.

Ultimately, given the expected life of the Rover 1 project it was decided that benefits of directly engaging a mining crew outweighed the potential costs. The added benefit is the ability to dictate the haulage fleet (diesel powered versus battery powered) which has a significant impact on the ventilation demands of the operation and the total cost expected over the life of the project.

#### 7.3.2 Haulage Options

Multiple options were considered for haulage from the underground workings to the surface. Given the depth of the orebody, shaft and conveyor options were considered appropriate methods that should be investigated during the PFS.

A shaft option, with the base of the shaft being the base of the Jupiter Ore Body was considered to reduce the time taken to get to the higher grade core of the Jupiter Ore Body. A normal decline would then be constructed from the base of the shaft to access the Jupiter Deeps and Western Zone. This option was ultimately discounted due to the lack of experienced personnel operating shaft only mines in Australia.

The other alternative haulage method that was considered was the installation of a conveyor to transport the ore from an underground crusher to the surface. This had the benefit of reducing the number of trucks required for the operation and reducing the surface footprint of the operation as the crusher would be located underground. Ultimately this option was discarded due to the minimal cost benefits when compared to standard truck cartage.

The other option that was considered was the use of a diesel haulage fleet compared to an electric (or battery powered) haulage fleet. Diesel trucks have been the mainstay of underground mining in Australia since the 1990's, however with the technology advances made, battery powered vehicles have had significant uptake in recent years. The key advantage of the electric fleet is the reduction in ventilation requirements of the mine, while providing a cleaner work environment for the underground workforce.

### 8 Metallurgy and Mineral Processing

Metallurgical test work has continued with Rover 1 ore, with samples assessed through ALS Laboratories under the supervision of METS Engineering. Further work is planned to be conducted including the construction of a pilot test plant once the final specifications have been established.

The results of the metallurgical test work were announced by Castile in September 2021 (Outstanding Metallurgical Results from Rover 1), April 2022 (Another By-Product and Revenue Stream for Rover 1) and in March 2022 (Outstanding Recoveries of Gold, Copper and Cobalt at Rover 1). A cost benefit analysis was conducted by MACA Interquip which concluded that the costs associated with an increased temperature and pressure during the pressure oxidisation, are more than surpassed by the additional recovery of copper, gold and cobalt. These results were announced in March 2022 and have been utilised in this Study.



Ore feed to the processing plant is being ramped up over a four-month period. Month 1 sees a feed of 50% to the plant, while Month 2 sees 70%, Month 3 is ramped to 80% with Month 4 onwards allowing full processing capacity.

A representative layout of the Rover 1 plant is shown below:

Figure 13: Representative layout of the Rover 1 Processing Plant



Figure 14: Large LIMS Unit



Figure 15: Bulk Concentrate by Flotation





Rover ore will follow the flowsheet shown below in Figure 16 Rover 1 Simplified Flowsheet below. Ore will be crushed to 13mm and then then ground to  $105\mu m$  prior to magnetic separation. MACA Interquip recommends magnetic separation, utilising a Low Intensity Magnetic Separator (LIMS shown in Figure 14) to occur early, reducing the workload on the flotation stage and this is supported by Castile Geologists who believe the sulphide portion will separate from the magnetic portion (especially once ground). The magnetically separated ore will then be ground to  $53\mu m$  prior to being cleaned (utilising a second magnetic separation). The recovery of the magnetite portion of the ore into a high-grade magnetite meeting industrial specification is 67.7%.

The non-magnetic material will pass through a gold gravity concentrator, where 21.4% of the gold will be extracted. The ore is then floated to separate the sulphide rich material which contains the copper, cobalt and gold. The ore is then reground to  $45\mu m$  prior to oxidisation occurring.

The ore will be oxidised at 220°C and 3,018kPa for two hours, destroying the sulphide minerals. The copper and cobalt are dissolved into the liquor while the gold remains within the solid material.

The gold is extracted from this solid material is achieved using standard carbon in leach (CIL) technology with a residence time of forty-eight hours. Total gold recovery (including the gravity gold portion) is 93.6%. The liquor from the Oxidisation process will be clarified prior to solvent extraction and electrowinning (SXEW) for both the copper and cobalt. Copper will be separated first, followed by the cobalt. Both copper and cobalt production is planned to utilise EMEW technology. Total copper production is 95.5%, while total cobalt production is 83.3%.

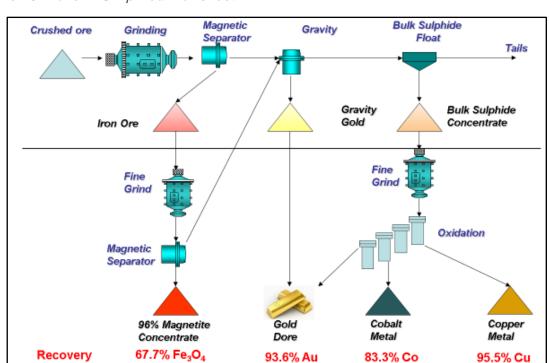


Figure 16: Rover 1 Simplified Flowsheet



#### 8.1 Trade Off Studies

During the cost estimation process, three key trade off studies were conducted. The first reviewed the costs of a higher oxidisation temperature and pressure versus recovery, the second considered the oxidisation process and the third reviewed the comminution steps prior to the ore being floated.

#### 8.1.1 Oxidisation Temperature and Pressure

Metallurgical test work for the pressure oxidisation process was carried out at three different temperatures and pressures. The results of the three tests are shown below:

Table 15: Results of Pressure Oxidisation Recovery at different temperatures and pressures

				Recovery	
Commodity	Temperature ( <sup>o</sup> C)	Pressure (kPa)	Gold	Copper	Cobalt
Test 1	180	1,702	98.0%	99.4%	99.1%
Test 2	200	2,254	97.1%	99.5%	98.9%
Test 3	220	3,018	99.7%	99.6%	99.6%

When the results were first received, it was considered the additional costs required to heat the material to the higher temperature and the additional oxygen consumption would not be outweighed by the additional revenue from the higher recovery. During the cost estimation process this hypothesis was tested and it was found that the additional revenue from the three products was substantially greater than the additional costs.

#### 8.1.2 Oxidisation Process

Alternative oxidisation process paths were considered. The two primary technologies considered were the Pressure Oxidisation Process (POX) and the Albion Process. Other technologies were considered but discarded due to their lack of current commercial applications.

The benefit of the Albion process is the substantially lower pressure and temperature at which oxidisation occurs, allowing for a cheaper capital cost and but higher ongoing operating costs. This was expected to deliver a cost saving to the project with similar recoveries. The final result however showed that there was a savings on the capital cost, but this cost was removed by the higher operating costs. Therefore, given this result, the decision was made to remain with Pressure Oxidisation.

Current POX Operations around the world include:



Table 16: List of current POX Plants

Plant	Company	Location	Feed	Capacity (t/d)	Temp °C
Pueblo	New Barrick / Goldcorp	Dominican Republic	Ore	24,000	230
Lihir	Newcrest	Pupa New Guinea	Ore, Con	8,100	205
Twin Creeks	Newmont	United States	Ore	7,260	225
Çöpler	Alacer	Turkey	Ore	6,000	220
Goldstrike	New Barrick	United States	Ore	4,700	225
Pokrovskiy	Petropavlovsk	Russia	Con	1,600	225
Porgera	New Barrick / Zijin	Pupa New Guinea	Con	1,215	197
Kittila	Agnico Eagle	Finland	Con	870	207
Macraes	Oceana	New Zealand	Con	650	225
Amursk	Polymetal	Russia	Con	637	200
Córrego do Sitio	Anglo Gold Ashanti	Brazil	Con	220	225

#### 8.1.3 Comminution

Three options were considered for the crushing and subsequent grinding of the material for feed into the processing plant:

- Option 1 considered two stage crush followed by a single stage grind
- Option 2 considered a single stage crush followed by a two stage grind
- Option 3 considered a single stage crush followed by a single stage grind.

Although there may have been a power savings by choosing a twin stage crush and single stage grid, Castile determined that the optimal result (when considering all costs) would be the installation of a single crusher and SAG Mill operating a single stage grind (Option 3).

#### 9 Infrastructure and Services

Although Rover 1 is located close to the town of Tennant Creek, it was considered the distance to travel to and from site each day was too far for a safe and efficient operation. All infrastructure and services required for use will be located close to the Rover 1 site. Castile has sufficient tenement allowance for this to occur with the current package.

#### 9.1 Workforce

The Northern Territory Government has committed \$85 million to growing a strong Territory workforce. This work is delivered alongside industry, as well as partner training organisations and educational institutions. The focus is on Place Based, targeted and responsive investment.



Figure 17: NT Demographics

## **NT Demographics**



Castile has interacted with the NT Government departments on future planning and cooperation for the work force requirements at the proposed Rover 1 development. There are a number of programs available in the wider Barkly region where Castile can integrate with state and local government to promote Castile as a safe, inclusive workplace. The NT Department of Industry Tourism and Trade has released numbers from a Melbourne University study (Table 17) show that jobseekers are predicted to increase over the coming decade.

Table 17: Northern Territory Workforce with Growth Predictions<sup>27</sup>



<sup>&</sup>lt;sup>27</sup> NT Dept of Industry, Tourism and Trade



#### 9.2 Transport and Logistics

Due to the production of final products on site, the transportation of these goods will be significantly reduced when compared to the production of concentrates for sale. This resulted in a simple trucking requirement between Tennant Creek and Rover 1 site. The town of Tennant Creek is serviced by the Adelaide/Darwin train line, with services available for the transportation of goods to Tennant Creek by rail. During the 2022 NT Resources Week, the government proposed the creation of a transport hub at Tennant Creek serviced by rail.

#### 9.3 Power

Multiple power options were considered by Castile, with the base option being a standard diesel power plant located at Rover 1. The SunCable solar farm is currently proposed to be constructed north of the project. This project will deliver high voltage direct current to Singapore, with potential to service Katherine and Darwin. Ultimately, Castile elected to consider power provided by the Amadeus Gas Pipeline and gas power provided onsite.

Castile does not yet have an agreement in place for the provision of power to site.

#### 9.4 Water

Desktop hydrology studies have been completed. These studies show there is sufficient water within the Castile tenements surrounding Rover 1 for the expected water draw. Follow up work is expected to be carried out next drilling season to prove these sources up. The water ingress into the Rover 1 mine was also considered by Castile. It was not considered practical to seal the decline at the base of the Wiso sediments where water ingress is expected. An underground pump station has been designed for installation just below this level, with the backs and wall of the decline sealed as best as possible and the decline road formed such that water will run into the pump station. This water will then be available for use underground and excess pumped to the surface for use within the processing plant. The proposed project will consume 3,500m³/day of water.

Approvals for the extraction and supply of water to site will be covered as part of the Environmental Impact Statement, which is approved by the NT Environmental Protection Agency.

#### 9.5 Tailings and Waste Dump

A tailings dam has been designed south of the Rover 1 ore body with the site chosen in relation to a paste fill plant to be located above the ore body. The PFS considered 2/3 of the stopes will be backfilled with paste fill to enhance the extraction of the ore from the system. This will also reduce the volume of material that is required to be stored within the tails dam. The tails dam has been designed on the basis that all tails material could be stored but will be constructed in a piecemeal fashion as required.

A waste dump was designed for the underground mine and box cut. As outlined above, the box cut is planned to be backfilled, but the material from here will be utilised for the creation



of PAF cells. The majority of the waste material that will be extracted from Rover 1 will be NAF, however, as was expected, EGi found that the ironstone material, mined as waste is expected to become acid generating if left exposed on the waste dump. Castile intends to construct PAF cells to contain this material that must be brought to surface, with a majority of this PAF material intended to remain underground within abandoned stopes, not paste filled. The waste dump has been designed between the processing plant and the box cut.

#### 9.6 Accommodation

Rover 1 is located at a distance too great for regular travel to and from the township of Tennant Creek. A self-contained accommodation village is proposed for construction at the Rover 1 site for servicing the project's needs.

It is planned to utilise the commercial airport located in Tennant Creek for regular FIFO travel by Castile employees.

### 10 Approvals and Sustainability

#### 10.1 Environmental Approvals

Castile intends to submit an Environmental Impact Statement (EIS) in early 2023. Data collection for the environmental studies began in 2020 with desktop studies having been completed for hydrology. First pass waste rock characterisation studies have been completed and EcOz have conducted a flora/fauna study over the proposed disturbance areas at Rover 1 for the PFS. Informal discussions have begun with the appropriate departments of the NT government to initiate engagement for the approval proceedings. It is expected that the EIS will take between 18 – 24 months for approval from the NT Environmental Protection Agency.

#### 10.2 Central Land Council Native Title Agreement

Castile has a confidential agreement in place with the CLC which is the Rover 1 Deed of Exploration. The deed covers the rights and responsibilities of both parties regarding the project and clearly outlines the actions required for Castile to convert to a Mining Agreement. The process to convert to a Mining Agreement can commence with the conclusion of this study.

#### 10.3 Northern Territory Government

Castile will need to convert the current tenements to Mineral Extraction Leases with the Northern Territory Government. This process includes:

- Completion of a technical work program.
- A mining agreement with the CLC.
- Public comment.
- A sacred site survey (of which preliminary surveys have been conducted).



This process could take several months if there are any objections/submissions received during the public consultation process. Given Castile's interaction with the local community and the location of Rover 1, no objections are expected.

At the release of this study Castile will be eligible to apply for Major Project Status with the Northern Territory Government. Whilst there is no guarantee Castile will achieve major project status, the benefits include:

- whole of government support
- coordination and facilitation
- assistance in identifying and mapping regulatory approvals
- a dedicated project case manager and facilitation of engagement with the Australian Federal Government through a central and single point of contact. <a href="https://cmc.nt.gov.au/advancing-industry/about-major-projects">https://cmc.nt.gov.au/advancing-industry/about-major-projects</a>

#### 10.4 Federal Government

Rover 1 is located in Northern Australia and will produce cobalt which is considered a critical mineral by the Australian Federal Government.

The recent Federal Budget on 21 October 2022 highlighted support for critical minerals projects and projects located in Northern Australia via the Critical Minerals Development Program and the further investment in the Federal lending agency that has a focus on Northern Australia.

https://www.minister.industry.gov.au/ ("Budget Boost For Northern Australia and Critical Minerals").

These initiatives include:

- an additional \$2 billion for the Government's lending agency to support the Government's regional and Northern Australia agendas.
- \$50.5 million over four years to establish the Australian Critical Minerals Research and Development Hub.
- \$50.1 million over three years to the Critical Minerals Development Program for competitive grants to support early and mid-stage critical minerals projects.

It is anticipated that Castile will be eligible to apply for Federal government grants and loans at the completion of this study. However, there is no certainty that Castile will be the recipient of any loans or grants.

## 11 Stakeholders and Local Community

#### 11.1 Tennant Creek Community

The Company maintains a register of Tennant Creek local goods and service providers to ensure that local business is given priority to tender or price compete for Castile's requirements. If the goods and services required by Castile are not available in Tennant Creek, Company policy is to source supply within the wider Northern. Examples of larger



goods and services that Castile were able to purchase in the NT include three light vehicles and all drill core assays were completed by an NT laboratory.

Castile has provided employment for Tennant Creek locals on a full time and casual basis as activity requires and have begun engaging with the NT Government on employment opportunities for Rover 1 through local government and CLC endorsed programs.

Castile has been engaging with the local Tennant Creek Community since 2020 when Castile commenced activities. Castile has been a supporter of local events such as the Barkly Rodeo and Tennant Creek RSL Dawn Services. In addition to these events, Castile provided sporting goods directly to children in schools throughout the Barkly region.

#### 11.2 Rover 1 Safety

Creating a safe workplace for all employees is a key consideration of the Castile Board and Executive Team. The project has been considered in such a fashion to eliminate (where possible) or reduce potential safety risks to our staff.

The underground haulage fleet will be electrified and potentially automated in the future. The stope loader and long hole drill will be controlled by a remote operator and only mechanised, non-entry methods have been considered for vertical development. In addition to the underground refuge chambers, a fresh air intake is designed from the surface to the base of the mine.

The processing plant has been designed to reduce the risks our workforce will be exposed to. Ongoing work is continuing with MACA Interquip on the design of the plant. The plant will utilise automation and process design to further enhance the safety of the workforce.

Castile experiences a distinct wet season approximately from November to March which requires Castile have a safe all access road to and from site.

#### 12 Rover 1 Metal Products

Rover 1 has been designed to produce four final products for downstream users: Copper Plate, Gold doré, Cobalt metal and a high-grade Magnetite concentrate. It is expected that all four of these products will continue to be in high demand over the life of the project.

#### 12.1 Copper

The primary use of copper is as a conductor of electricity used in many different applications including Electric Vehicles (EV's). Global research and data analytics specialists Wood Mackenzie expect demand from the EV sector to significantly increase in the coming years if the 2050 Net Zero Carbon Target is to be met. At current rates of copper production Wood Mackenzie suggest there will be a significant supply deficit in copper in the coming years that requires an increase in pricing to incentivise the required production.

Copper will be produced to London Metal Exchange (LME) specifications and has been considered free-on-board at Darwin Port for transportation around Australia or globally.



The Rover 1 Project will produce 58,600t or 129,187,000lb of copper over the life of the project. According to independent specialist data analysts Wood Mackenzie<sup>28</sup> the primary use (80%) of copper is as an electrical conductor and that future growth in global electricity demand as economies develop will drive growth in copper consumption. Wood MacKenzie also predicts that Electric Vehicles (EV's) will be by far the largest single sector contributing to the rise in demand for copper over the next two decades, accounting for 55% of copper metal demand. Copper is used in EV's as a conductor in the foil in batteries and wiring required for electric motors. EV's can use more than three times the copper of a conventional, internal combustion engine car. The difference is even greater for commercial vehicles.

Wood Mackenzie's base-case assessment of the energy transition on its current trajectory foresees average global warming of between 2.2°C and 2.4°C by mid-century (2050). Under an accelerated energy transition scenario of 1.5°C (AET-1.5), Wood Mackenzie assumes the world will decarbonise over that period to achieve global net zero emissions and limit the rise in temperature to 1.5°C.

Under AET-1.5, the copper price needed to induce the additional marginal projects required to meet the expected demand rises to US\$4.25/lb in constant 2022 US dollar terms. As a result, Castile has used US\$4.25/lb copper for the base case in this Pre-Feasibility Study using a \$A foreign exchange rate of a US\$0.67/A\$1.00.

Furthermore, Wood MacKenzie see a growing market deficit in copper metal exacerbated by the sharp increase in refined demand growth. This will underpin a copper price rally to more than US\$11,000/t (approximately US\$5.00/lb) within five years. Consequently, Castile has modelled an upside case using AUD\$7.46/lb (US\$5.00/lb) as the copper price.

This pathway would result in:

- The need for 9.7 Mt of mine supply over the next decade from projects that have yet to be sanctioned. To date, a shortfall of this magnitude has never been overcome within a decade. This supply gap contrasts with 6.5 Mt under our base-case climate trajectory.
- More than US\$23 billion of investment a year in new projects, 64% higher than the average annual investment over the last 30 years.
- A growing market deficit exacerbated by the sharp increase in refined demand growth. This will underpin a copper price rally to more than US\$11,000/t (about US\$5.00/lb) within five years.

<sup>&</sup>lt;sup>28</sup> Source: <a href="https://www.woodmac.com/horizons/red-metal-green-demand-coppers-critical-role-in-achieving-net-zero/">https://www.woodmac.com/horizons/red-metal-green-demand-coppers-critical-role-in-achieving-net-zero/</a>



50 (eaddoo yw) deb Alddins 20 28% 30% 2032 2040 2050 75% 62% 60% Supply gap as \$\frac{40}{45\%}\$ as \$\frac{62\%}{45\%}\$ of consumption 15% 0%

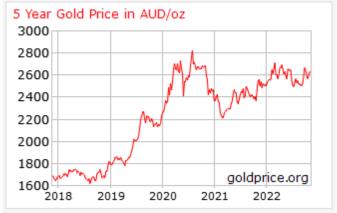
Supply gap as % of refined consumption

Figure 18: Wood Mackenzie - Refined Copper Consumption, Supply and Deficit to 2050

#### 12.2 Gold

Gold doré will be produced and sold to an Australian refinery. Over the past five years the gold price has fluctuated between A\$1,617/oz and A\$2,844/oz d in a narrower range between A\$2,190 and A\$2,800<sup>29</sup> in the last two years. Whilst the gold price in US dollar terms has fluctuated in recent times the Australian dollar price has remained less volatile. Castile assumes that gold demand will remain high, both as an intrinsic storage of value and for use in jewellery over the course of the project and has applied an Australian dollar value of \$2,620.





<sup>&</sup>lt;sup>29</sup> https://goldprice.org/



#### 12.3 Cobalt

Cobalt will be produced in accordance with LME specifications for downstream users and priced free-onboard at Darwin port available for transport around Australia and globally. Cobalt is used in lithium-ion batteries that form an integral part of electric automobiles, mobile phones and laptop computers and as a result demand for cobalt is expected to rise significantly over the coming years. The Australian Federal Government has classified cobalt as a Critical Mineral as part of the 2050 Net-Zero Carbon Target Policy in order to promote domestic supply chains in Australia<sup>30</sup>. The Democratic Republic of the Congo (DRC) is the world's largest producer of cobalt and holds more than 50 percent of the global cobalt reserves. Cobalt is extracted in mechanised and artisanal mining operations. Multiple reports have highlighted concerns over social and environmental impacts of cobalt extraction, including child labour and unsafe working conditions in artisanal cobalt mining.

Figure 20: United States Cobalt price over the past five years.



<sup>31</sup>Cobalt Price in USD November 2017 – November 2022

### 12.4 High Grade Magnetite

Rover 1 will also produce 652,300t of a high grade 96.5% magnetite concentrate. At  $53\mu m$  in size this is classified as Maxfine Grade<sup>32</sup> as per Australian standards and is highly regarded for use in the washing of coal and production of plastics. Testing of the Rover 1 magnetite was supervised by METS Metallurgy and performed by ALS Laboratories according to Australian Standard 4156.3-2008 (Coal Preparation, Part 3 L Magnetite for coal preparation plant use – Test Methods).

The main use of this product is for the dense media separation of coal (coal washing). Other applications include pigments, ferric sulphate production and micronutrient fertilizers. Despite nearly 200 countries pledging to phase down use of coal fired power at the COP26 climate summit last year in 2021 the world still has more than 2,400 coal-fired power plants operating in 79 countries, for a total of nearly 2,100 GW of capacity. An additional 176 GW of

<sup>&</sup>lt;sup>30</sup> https://www.responsiblemineralsinitiative.org/minerals-due-diligence/cobalt/

<sup>31</sup> https://tradingeconomics.com/commodity/cobalt

<sup>32</sup> https://www.martinandrobson.com/products-services/products/



coal capacity is under construction at more than 189 plants, and 280 GW is in preconstruction at 296 plants. In 2021, the operating coal fleet grew by a net 18.2 GW<sup>33</sup>. Castile anticipates this will support the price of the magnetite produced at Rover 1 as demand for coal washing magnetite will be sustained.

There is no spot market for this product due to the tailoring of specifications in contracts for individual end users. Stratum Resources who specialise in industrial mineral analysis were used as consultants to provide pricing guidance for offshore markets and potential customer analysis. Castile also consulted on a confidential basis with a current Australian coal producer who is an end user/consumer of a similar high grade magnetite coal washing product. Based on those discussions the Castile has assumed a price received of A\$350/tonne for the PFS.



Figure 21: Map tracking 13,490 Coal Fired Power Stations Worldwide with Anticipated Builds

#### 13 Financials

#### 13.1 Financials

Financial modelling for the Rover 1 Project demonstrates a strong, robust project that once constructed allows for an extended life from Rover 1 ore body extensions, or additions from the other local resources and further Mineral Resources and Ore Reserves identified on the tenements held by Castile Resources following completion of further exploration.

Base modelling utilised a flat price for all commodities with a gold price of \$2,642/oz, a copper price of \$6.34/lb, a cobalt price of \$40.62/lb and a magnetite price of \$350/t. Copper and gold represent 76% of the revenue combined, copper representing 42% and gold 34%, with cobalt and magnetite representing 12% each. Net revenue for the project is \$1,944M and pre-tax cash flow from the project is \$663.6M. The design of the underground operation

<sup>33</sup> https://globalenergymonitor.org/report/boom-and-bust-coal-2022/



was designed around the economics of extracting only the copper and gold, with the cobalt and magnetite, free carried to surface.

Initial capital required to construct the project, including construction of the processing plant and the development of the underground operation is \$279.5M, including a 10% contingency. Using a 6.5% discount rate, Rover generates a pre-tax discounted cash flow of \$451.7M with an internal rate of return of 45.7%. Capital payback occurs after 2 years and 7 months of production commencing.

#### 13.2 Capital Costs

Upfront capital costs for Rover 1 were estimated at \$279.5M (including a 10% contingency) on the basis of accuracy of  $\pm 15\%$ . The breakdown of these costs are:

Table 18: Rover 1 Capital Costs

Project Development Capital			
Mine Infrastructure	A\$M	\$25.8M	
Process Plant	A\$M	\$160.7M	
Surface Infrastructure	A\$M	\$29.7M	
Contingency	%	10%	
Sub-total	A\$M	\$237.8M	
Pre-production mining costs	A\$M	\$41.7M	

Capital costs for the processing plant were provided to Castile by MACA Interquip. Castile estimated the Mine Infrastructure costs from a first-principals basis, which includes an allowance for the supply of an underground mining fleet. It is expected that the underground mining fleet will be financed by the Original Equipment Manufacturer (OEM). Prices were received from the OEM for the provision of these items.

Minimal sustaining capital costs are expected for Rover. These are summarised below:

Table 19: Rover 1 Sustaining Capital Costs

Sustaining Capital Costs			
Mine Development	A\$M	\$43.5M	
Process Plant	A\$M	\$13.6M	

The sustaining capital costs for the underground operation relate to the development of the full mine design as shown in Figure 10. The sustaining capital costs for the processing plant relate to the ongoing construction of the tailing dam. The dam has been designed for five upstream lifts to be developed over the mine life.

#### 13.3 Operating Costs

The operating costs for the project are dominated by the mining and processing costs.



#### These are summarised below:

Table 20: Rover 1 Operating Costs

Operating Costs				
Mine Operating Cost	A\$M	\$277.5M	\$/t	\$65/t
Ore Processing Cost (all products)	A\$M	\$511.2M	\$/t	\$120/t
General & Admin	A\$M	\$39.1M	\$/t	\$10/t
Total Operating Costs	A\$M	\$827.7M	\$/t	\$195/t
Royalties	A\$M	\$93.0M	\$/t	\$20/t
Total Cash Costs	A\$M	\$920.7M	\$/t	\$215/t

#### 13.4 Financial Analysis

A summary of the project economics is below:

Table 21: Rover 1 Project Economics

Project Economics			
Gold Revenue	A\$M	\$666.6M	
Copper Revenue	A\$M	\$819.6M	
Cobalt Revenue	A\$M	\$229.0M	
Magnetite Revenue	A\$M	\$228.3M	
Total Revenue	A\$M	\$1,943.6M	
Project Operating Costs	A\$M	\$827.7M	
Project Cash Flow	A\$M	\$1,115.9M	
Royalties	A\$M	\$93.0M	
Initial Project Capital Cost	A\$M	\$279.5M	
Sustaining Project Capital Cost	A\$M	\$57.1M	
Underlying Mine Cash Flow	A\$M	\$686.8M	
NPV 6.5% (Pre-tax)	A\$M	\$451.5M	
IRR (Pre-tax)	%	45.9%	
NPV 6.5% (Post-tax)	A\$M	\$293.2M	

The key assumptions supporting these results were:

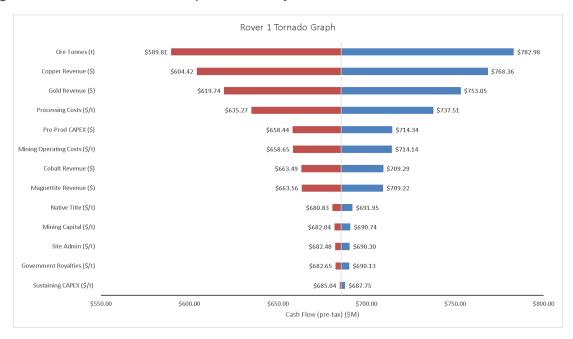
- All metal prices are Australian dollars. All costs have been estimated in Australian dollars.
- The discount rate of 6.5% is considered applicable, representing the Bank Swap Rate plus a margin of 3.5%.
- No escalation or inflation has been considered for either costs or metal prices received.



#### 13.5 Sensitivity Analysis

The following figures shows the sensitivities of the Rover 1 project.

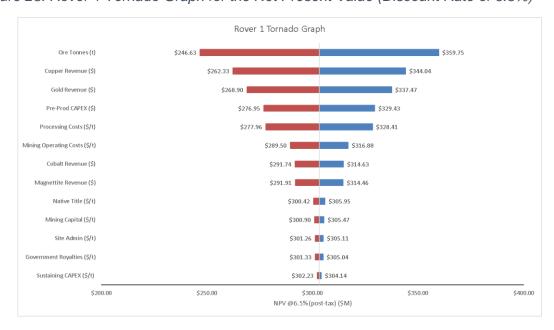
Figure 22: Rover 1 Tornado Graph for the Project Cash Flow



For the metal prices (i.e. Copper Revenue) it was noted during the calculation phase that the revenue was indifferent to a similar percentage increase for metal price, grade or recovery. The recovery for both gold and copper were capped at 98%.

With respect to the discounted cash flow of the project, when a discount rate of 6.5% is considered, the following tornado graph is produced:

Figure 23: Rover 1 Tornado Graph for the Net Present Value (Discount Rate of 6.5%)





Given the higher reliance on the copper, Rover 1 is most susceptible to fluctuations in received value for this product. Gold and copper, have however, been historically a stabilising factor (i.e. one rises when the other falls). Given the similarities in the expected revenue for the two products, this bodes well for the future.

Figure 22 (Tornado graph using NPV @ 6.5%) above shows a similar result when compared to Figure 23 (Tornado graph using cash flow). When considering the net present value of the project, the capital cost of the processing plant (which represents \$161M of the \$210M) has a greater impact on the overall economics of the project than the processing operating cost (calculated on a \$/t basis). This result is not unexpected given the time nature of the calculation.

### 14 Conclusions and Next Steps

The PFS shows that the Rover 1 Project is commercially viable, and the Board of Castile will now progress the Rover 1 project into a Bankable Feasibility Study (BFS)

The BFS will commence with further test work in December 2022 and aim for completion in late 2023.

Work to be undertaken includes:

- Finalisation of data required for the EIS and submission.
- Commencement of discussions with financial institutions for funding for the project.
- Final metallurgical testwork stage, including the construction and operation of a pilot test plant.
- Government engagement and licensing.
- CLC engagement to determine the mining agreement for Rover 1.

## 15 Development Schedule

The following is an indicative timetable for the Rover 1 development:

• Definitive Feasibility Study 2023

Permitting and Approvals
 Construction Phase
 2023 – 2024
 2024 - 2025

## 16 Reasonable Basis for Funding Assumption

The Rover 1 Preliminary Feasibility Study has provided a strong set of outcomes that Castile assumes will provide the opportunity to source funding through a number of alternatives. The traditional financing pathways of debt and equity will be pursued. The production profile of the PFS shows four metal products will be produced at site which may be sold directly to end users. This may allow Castile to pursue additional financing strategies of metal prepayments or metal streams for one or more of the metals produced in order to provide the optimal outcome for shareholders. Castile will also consider a joint venture agreement for external



funding if that option is available and advantageous to shareholder outcomes.

Castile has not entered into formal discussions regarding the funding of the Rover 1 Project. However, Castile has undertaken informal, preliminary discussions with a number of different financial institutions that provide funding for resource projects through debt, equity, metal prepayments, offtake agreements and metal streaming. Several of these financial institutions have expressed interest in being involved in the development funding of the Rover 1 Project. However, there is no certainty that Castile will be able to obtain funding for the project as or when it is required.

The PFS indicates that \$250M of pre-production funding may be required to execute the development of the project to deliver the range of outcomes proposed in the study. This level of funding for a polymetallic (gold and copper) project would typically rely upon a majority of debt and equity. Indications from informal discussions with financial institutions imply that the possibility of additional funding through metal streaming, offtake agreements or metal prepayments would also be available. Castile is of the view that there is a reasonable basis to assume that the funds required to develop the Rover 1 Project will be available when required.

Castile has formed the basis for this assumption as a result of the following grounds:

- The Board and management of Castile of Castile has extensive experience in mine financing, mine development and underground mining operations.
- The release of the Rover 1 Project PFS provides a strong platform for Castile to begin discussions with potential financiers
- Copper and Cobalt are metal products required in the 2050 Net-Zero Carbon Target strategy and financial markets remain buoyant for these minerals



## 17 JORC 2012 Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul> <li>Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of</li> </ul>	<ul> <li>All data used in the following sections at Rover 1 has been gathered from diamond core. Multiple sizes have been used historically; HQ, NQ and BQ.</li> <li>Samples are selected to lie on geological boundaries, with intervals selected of lengths between 0.1 to</li> </ul>
Drilling techniques	<ul> <li>sampling.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of</li> </ul>	1.1m. Historic samples selected on 1m intervals. Samples are halved using an automatic core saw then individual samples collected in prenumbered calico sample bags.
Drill sample recovery	mineralisation that are Material to the Public Report.  In cases where 'industry standard' work has been done this would be relatively simple (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge	<ul> <li>The sample of between 0.5kg to 3kg is whole crushed then pulverised to produce a 40g charge for fire assay with AAS finish for Au and a further sample for mixed acid digest with an ICP-MS finish for Ag, As, Bi, Co, Cu, Pb and Zn.</li> </ul>
	for fire assay). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types	To ensure representivity of samples, field blanks and certified reference material are inserted at a nominal ratio of 1:20 samples.
	<ul> <li>(e.g. submarine nodules) may warrant disclosure of detailed information.</li> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc.).</li> </ul>	<ul> <li>Sample recovery is recorded on retrieval of the core tube, measuring recovered core against drill string advance. No apparent relationship has been observed between sample recovery and grade. No has sample bias due to preferential loss or gain of fine or coarse material been noted.</li> </ul>
	<ul> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample</li> </ul>	
	recovery and ensure representative nature of the samples.  • Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	



Criteria	JORC Code explanation	Commentary
Logging	<ul> <li>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul> <li>All geological data has been visually logged and validated by the relevant area geologists, recording lithology, alteration, mineralisation, structure, veining, magnetic susceptibility and geotechnical data.</li> <li>Logging is quantitative in nature.</li> <li>All holes are logged completely.</li> </ul>



Criteria	1
Sub-	

sampling

techniques

and sample

preparation

#### **JORC Code explanation**

- If core, whether cut or sawn and whether quarter, half or all core taken.
- If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.
- For all sample types, the nature, quality and appropriateness of the sample preparation technique.
- Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.
- Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.
- Whether sample sizes are appropriate to the grain size of the material being sampled.

#### Commentary

- Diamond Drilling Half-core niche samples, sub-set via geological features as appropriate. Historic core samples on 1m intervals independent of geological features.
- Half core undergoes total preparation.
- Castile sample preparation process consists of:
- Crushing using a Boyd Crusher to achieve a maximum sample size of 2mm.
- The crushed sample is split down to a 3kg sample via a rotating sample divider attached directly to the Boyd Crusher.
- The crushed sample is then pulverised in a Labtech LM5 Ring Mill such that 90% passes 75um. 200g is split and placed in a packet for analytical work.
- For every 20th sample, an approximately 25g sample is wet screened to check grind effectiveness.
- From the analysis sample, a 25 40g is taken for fire assay (dependant on vintage), while a 0.2g potion is taken for acid digestion. These samples are extracted from the packet with a spatula and weighed out.
- QA/QC is ensured during sampling via the use of sample ledgers, blanks, standards and repeats.
- QA/QC is ensured during the assays process via the use of blanks, standards and repeats at a NATA / ISO accredited laboratory.
- In the case of Historic sampling, preparation consisted of the following:
- Crushing using a vibrating jaw crusher to achieve a maximum sample size of 4 mm.
- The sample is then weighed, and if the sample weight is greater than 3.2 kg, the sample is split into two using a Jones-type riffle splitter.
- The crushed sample is then pulverised in a Labtech LM5 Ring Mill such that 90% passed 75um.
- For samples weighing greater than 3.2 kg, the first portion is removed and second portion is homogenised in the same machine. Once complete, the first portion is put back in the LM5 and both portions are homogenised.
- From the pulverised sample, approximately 200 g is collected via a scoop as a master sample for assaying.
- For every 20th sample, an approximately 25 g sample is screened to 75 microns to check that homogenising has achieved 90%



Criteria	JORC Code explanation	Commentary
		passing 75 microns.  From the analysis sample, 30g is taken for fire assay, while a 0.2g potion is taken for acid digestion. These samples are extracted from the packet with a spatula and weighed out.  The sample sizes are considered appropriate to the grainsize of the material being sampled.  The un-sampled half of diamond core
		is retained for check sampling if required.



#### Criteria

#### **JORC Code explanation**

partial or total.

#### Quality of assay data and laboratory tests

#### The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered

- For geophysical tools, spectrometers, handheld XRF instruments, etc., the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.
- Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.

#### Commentary

- Analysis of Castile drill core for Au, Ag, Bi, Co, Cu, Pb and Zn is as follows:
  - Gold (Au-AAS scheme lower detection limit = 0.01ppm, upper detection limit = 100ppm). A 40g charge of prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents and then cupelled to yield a precious metal bead.
- The bead is then dissolved in acid and analysed by atomic absorption spectroscopy against matrix-matched standards.
- Samples returning assay values in excess of 10g/t Au were repeated.
- Silver, bismuth, cobalt, copper, lead and zinc samples are digested using a 4 acid digest.
- The subsequent solution is analysed by inductively coupled plasma - atomic emission spectroscopy or by atomic absorption spectrometry.
- Analysis of Historic drill core for Au, Ag, Bi, Co, Cu, Pb and Zn is as follows:
- Gold (Au-AAS scheme lower detection limit = 0.01ppm, upper detection limit = 100ppm). A 30-40g charge of prepared sample is fused with a mixture of lead oxide, sodium carbonate, borax, silica and other reagents and then cupelled to yield a precious metal bead.
- The bead is then dissolved in acid and analysed by atomic absorption spectroscopy against matrix-matched standards.
- Samples returning assay values in excess of 100g/t Au were repeated using the screen-fire method.
- Silver, bismuth, cobalt, copper, lead and zinc samples are digested using a 4 acid digest.
- The subsequent solution is analysed by inductively coupled plasma - atomic emission spectroscopy or by atomic absorption spectrometry.
- No significant QA/QC issues have arisen in recent drilling results.
- These assay methodologies are appropriate for the style of mineral deposit under consideration.



Criteria	JORC Code explanation	Commentary
Verification of sampling and assaying	<ul> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul> <li>Anomalous intervals as well as random intervals are routinely checked assayed as part of the internal QA/QC process.</li> <li>Several twinned holes have been drilled with no significant issues highlighted.</li> <li>Primary data is collected on a ruggedised computer, on predefined and self-validating worksheets. This data is imported into a relational database (DataShed) and is backed up regularly.</li> <li>All data used in the calculation of resources is compiled in databases which are overseen and validated by senior geologists.</li> <li>No primary assays data is modified in any way.</li> </ul>
Location of data points	<ul> <li>Accuracy and quality of surveys used to locate drill holes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul> <li>All data is spatially oriented by survey controls via direct pickups by DGPS. Drillholes are all surveyed downhole. Modern holes are surveyed by north seeking gyro tools.</li> <li>All drilling is undertaken in MGA grid.</li> <li>Topographic control is generated from a combination of aerial photogrammetry and ground-based surveys. This methodology is considered adequate for the resource in question.</li> </ul>
Data spacing and distribution	<ul> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul> <li>Drilling has been undertaken on a nominal 40x40m spacing, infilled to a nominal 20x20m spacing where significant mineralisation has been identified.</li> <li>No compositing of primary samples is undertaken prior to analysis</li> </ul>
Orientation of data in relation to geological structure	<ul> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</li> </ul>	<ul> <li>Drilling intersections are nominally designed to be normal to the orebody under consideration as far topography and economics allows.</li> <li>It is not considered that drilling orientation has introduced an appreciable sampling bias.</li> </ul>



Criteria	JORC Code explanation	Commentary
Sample security	The measures taken to ensure sample security.	<ul> <li>Individual samples in calico samples are collected in groups of 5 and placed into poly weave bags and secured with a zip-tie. All poly weave bags of a submission are then placed within a bulka bag, which is then sealed before delivery to a third party transport service who provides a tracking number. The transport contractor then relays the samples to the independent laboratory contractor.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul> <li>Site generated data is routinely reviewed by the Castile corporate technical team.</li> </ul>

## Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul> <li>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</li> <li>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</li> </ul>	<ul> <li>The Rover Project comprises 5 granted exploration leases.</li> <li>Native title interests are recorded against the Rover Project tenements.</li> <li>The Rover Project tenements are held by Castile Resources exclusively.</li> <li>Third party royalties exist across various tenements at the Rover Project, over and above the Northern Territory government royalty.</li> <li>Castile operates in accordance with all environmental conditions set down as conditions for grant of the leases or Authorisations to conduct Mining Activities.</li> <li>There are no known issues regarding security of tenure.</li> <li>There are no known impediments to continued operation.</li> </ul>
Exploration done by other parties	<ul> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul> <li>The Tennant Creek area has an exploration and production history in excess of 100 years.</li> <li>The Rover area specifically has exploration history dating back to the 1970's, firstly undertaken by Geo Peko.</li> </ul>



Criteria	JORC Code explanation	Commentary
Geology	Deposit type, geological setting and style of mineralisation.	The Rover Project is presently considered to be associated with a southern repeat of the 1860-1850Ma Warramunga Province. Recent dating by the NTGS indicates the host rock date equivalent to the Ooradidgee. This is a weakly metamorphosed succession of partly tuffaceous sandstones, siltstones and turbidite shales. Locally the turbidite metasediments are variably altered by hematite and silica flooding.  Mineralisation is mainly of the Iron Ore Copper-Gold (IOCG) type, particularly the Tennant Creek subtype. Massive ironstone comprised of magnetite or hematite +/-quartz is interpreted to be alteration of metasediments within a structural trap.  Copper manifests as chalcopyrite, associated with breccia fill within magnetite-quartz ironstones and Jasper/BIF that often form an alteration transition to a chlorite alteration envelope. Pervasive subeconomic copper levels can persist throughout the zone. Economic levels of copper are dominantly contained in the lower massive magnetite zone of the ironstone bodies, particularly where intense chlorite alteration replaces magnetite laterally and at depth, grading into magnetite chlorite stringer zones. Gold content is related to an increase in haematite dusted quartz veins, with bonanza grades associated with massive pyrite with subordinate bismuthite. Cobalt appears to have a direct relationship with copper
		mineralisation.



Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</li></ul>	<ul> <li>All drillhole information reported has been incorporated into the Mineral Resource.</li> <li>No new exploration results are being presented in this release.</li> </ul>
aggregation methods	weighting averaging techniques, maximum and/or minimum grade truncations (e.g. cutting of high grades) and cut-off grades are usually Material and should be stated.  • Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail.  • The assumptions used for any reporting of metal equivalent values should be clearly stated.	<ul> <li>All difficults in the Mineral Resource.</li> <li>Assay results are reported on a length weighted average basis.</li> <li>Assay results are reported above a 0.5g/t Au / 0.5% Cu or 0.5% Pb + Zn cut offs.</li> <li>Results reported may include up to two metres of internal dilution below a 0.5g/t Au / 0.5% Pb + Zn / 0.5%m Cu.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').</li> </ul>	<ul> <li>All drillhole information reported has been incorporated into the Mineral Resource.</li> <li>Interval widths are reported as both downhole width and true width.</li> </ul>
Diagrams	<ul> <li>Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.</li> </ul>	<ul> <li>All drillhole information reported has been incorporated into the Mineral Resource.</li> <li>Schematic plans and sections presented.</li> <li>No new exploration results are being presented in this release.</li> </ul>



Criteria	JORC Code explanation	Commentary
Balanced reporting	<ul> <li>Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced avoiding misleading reporting of Exploration Results.</li> </ul>	<ul> <li>All drillhole information reported has been incorporated into the Mineral Resource.</li> <li>No new exploration results are being presented in this release.</li> </ul>
Other substantive exploration data	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.	<ul> <li>All drillhole information reported has been incorporated into the Mineral Resource.</li> <li>No new exploration results are being presented in this release.</li> </ul>
Further work	<ul> <li>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul> <li>Ongoing exploration and mine feasibility assessments continue to take place at the Rover Project.</li> </ul>



### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Database integrity	<ul> <li>Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.</li> <li>Data validation procedures used.</li> </ul>	<ul> <li>Drillhole data is stored in a Maxwell's DataShed based on the Sequel Server platform which is currently considered "industry standard".</li> <li>As new data is acquired it passes through a validation approval system designed to pick up any significant errors before the information is loaded into the master database. The information is uploaded by a series of Sequel routines and is performed as required. The database contains diamond drilling (including geotechnical and specific gravity data), face chip and sludge drilling data and some associated metadata. By its nature this database is very large, and therefore exports from the main database are undertaken (with or without the application of spatial and various other filters) to create a database of workable size, preserve a snapshot of the database at the time of orebody modelling and interpretation and preserve the integrity of the master database.</li> <li>In addition to data upload validation, data is visually checked within a 3D work space (Surpac and Leapfrog) to ensure spatial data is correct and consistent with previous validated drilling (drill hole azimuths, dips, sampling, geology).</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>Mr Savage has been routinely on- site from 2019, reviewing historic core and data, supervising drill programs relating to recent exploration results and the resource under consideration.</li> </ul>



## Geological interpretation

- Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.
- Nature of the data used and of any assumptions made.
- The effect, if any, of alternative interpretations on Mineral Resource estimation.
- The use of geology in guiding and controlling Mineral Resource estimation.
- The factors affecting continuity both of grade and geology.
- Geological interpretation of the deposit was carried out using a systematic approach to ensure that the resultant estimated Mineral Resource was both sufficiently constrained, and representative of the expected sub-surface conditions. In all aspects of resource estimation, the factual and interpreted geology was used to guide the development of the interpretation of mineralisation zones.
- Mineralisation is primarily controlled by subvertical structures interacting with contrasting geology rheology to generate brittle fracturing. These brecciated zones have focused mineralising fluids, resulting in deposition of sulphide phases.
- Mining of similar deposits in the Tennant Creek region provides confidence in the current geological interpretation.

#### **Dimensions**

 The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.

- The Rover 1 deposit is mineralised over a strike length of over 540m, a lateral extent of +70m and a depth of 800m
- Ironstone bodies are oriented eastwest, steeply dipping north with a moderate westerly plunge.



## Estimation and modelling techniques

- The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.
- The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.
- The assumptions made regarding recovery of by-products.
- Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).
- In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.
- Any assumptions behind modelling of selective mining units.
- Any assumptions about correlation between variables.
- Description of how the geological interpretation was used to control the resource estimates.
- Discussion of basis for using or not using grade cutting or capping.
- The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available

- All geological and mineralisation domain interpretation was undertaken by Castile Resources, carried out in three dimensions using Surpac (mineral domains) and Leapfrog (geological domains).
- Resource estimation was undertaken by Cube Consulting, under the direction of Castile Resources.
- After validating the drillhole data to be used in the estimation, interpretation of the orebody is undertaken in sectional and / or plan view to create the outline strings which form the basis of the orebody wireframe. Wireframing is then carried out using a combination of automated stitching algorithms and manual triangulation to create a three-dimensional representation of the sub-surface mineralised body. Copper and gold domains were modelled separately.
- Drillhole intersections within the 3D mineralised body are used to flag the appropriate sample records within the drillhole database tables for compositing purposes. Drillholes are subsequently composited to allow for grade estimation.
- Once sample data has been composited, statistical analysis is undertaken on mineral domains to assist with determining estimation parameters, top-cuts Variographic analysis of individual domains is undertaken in Snowdens 'Supervisor' and Geovariances 'Isatis' software and incorporated observed geological and geometrical features to determine the appropriate search parameters. Given the strongly skewed sample populations of all elements, 'normalscore' transformation was used to generate meaningful variograms. Domains with limited samples were grouped together where they were close proximity and shared orientation to model variograms.
- An empty block model is created for the area of interest. The model contains attributes set at background values for the various elements of interest as well as density, and estimation parameters that are subsequently used to assist in resource categorisation.
- The block sizes used in the model vary depending on orebody geometry, minimum mining units,



- estimation parameters and levels of informing data available.
- The interpolation of Au, Cu, Co, Ag, Bi, SG and Magnetite was based on a number of different approaches depending on the characteristics of the estimation domain. The assigned estimation domains included:
- Au, Ag and Bi based on the interpreted gold estimation domains;
- Cu, Co based on the interpreted copper estimation domains;
- Density and magnetite based on interpreted ironstone lithologies and alteration.
- Two approaches were used for the estimation of Rover1: an Indicator Kriging for domains which displayed a bi-modal distribution, and an Ordinary Kriged (OK) estimate for all domains. In the case where domains were estimated with an Indicator, the indicator was estimated first, then each population (High-Grade HG and Low-Grade LG), as defined by the threshold used for the indicator, was kriged in the domain. The estimated indicator (I\*), which values are bounded between 0 and 1, plays the role of a proportional weighting (%) field, and the final grade was computed such Final grade =  $(I^* \times HG) + (I^* \times LG)$ .
- When the number of composites was not sufficient for a variogram to be interpreted, an artificial one was created based on the strike length and width of the domains with reasonable nugget effects and sills for this type of deposit.
- Due to the shape of the domains, some have been estimated using dynamic kriging. The reference surface was created in Geovariances 'Isatis' software package to guide the variogram algorithm and search volume.
- The ordinary kriging estimation method is considered appropriate for the style of mineral deposit under consideration. Estimation was undertaken in Geovariances 'Isatis' software and the results transferred to a Surpac block model.
- In some circumstances where sample populations are small, and geostatistical trends unable to be interpreted, the domain was assigned the declustered mean composite grade.
- A distance limiting top-cut approach was implemented for some gold



		domains to limit the spatial influence of outlier values, which have limited continuity.  Both by-product and deleterious elements are estimated at the time of primary grade estimation if required. Multivariate statistical analysis has identified a relationship between gold- silver- bismuth and a separate copper-cobalt relationship. There are no assumptions made about the recovery of by-products.  The resource model is then depleted for topography and mining voids where applicable and subsequently classified in line with JORC guidelines utilising a combination of estimation derived parameters and geological knowledge. This approach has proven to be applicable to similar deposits.  Estimation results are validated against primary input data.  In all aspects of resource estimation, the factual and interpreted geology was used to guide the development of the estimation.
Moisture	<ul> <li>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</li> </ul>	Tonnage estimates are dry tonnes.
Cut-off parameters	The basis of the adopted cut-off grade(s) or quality parameters applied.	<ul> <li>The Rover 1 mineral resource inventory comprises material at 2.0g/t Au equivalent.</li> <li>The 2.0g/t Au equivalent cut-off grade represents the economic cut-off of mining and processing gold only excluding CAPEX.</li> <li>Au equivalent is calculated on gold and copper only by the following formulae: AUEQ = Au + (Cu x 0.000169). Cu assays are in ppm.</li> <li>Gold Price = AUD\$2620/oz and Copper = AUD\$13,880/tonne.</li> </ul>



## Mining factors or assumptions

- Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.
- Underground mining is assumed on the basis that similar deposits have been mined successfully by underground methods at the nearby Tennant Creek field.
- Minimum mineralisation widths and composite grades have been considered during the interpretation stage.
- There may be cases where lower grade material is incorporated to maintain geological continuity of the interpretation.
- No mining factors are incorporated into the resource as these will be considered within Reserve Calculations

## Metallurgical factors or assumptions

- The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but assumptions regarding the metallurgical treatment processes and parameters made reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.
- Conventional sulphide oxidation processing methods are assumed on the basis that similar deposits have been successfully mined and processed.
- Metallurgical test work indicates ore is non-refractory.
- No metallurgical factors are incorporated into the resource as these will be considered within Reserve Calculations.

## Environmental factors or assumptions

- Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.
- Castile operates in accordance with all environmental conditions set down as conditions for grant of the respective leases.
- Castile is investigating mitigation of environmental impacts by storage of PAF material underground and utilising tails into paste fill to minimise surface disturbance and hydrology impacts. Use of paste fill will aid in maximising extraction of the resource.
- No environmental factors are incorporated into the resource as these will be considered within Reserve Calculations.



Bulk density	<ul> <li>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</li> <li>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.</li> <li>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</li> </ul>	<ul> <li>Bulk density of mineralisation at the Rover Project is variable, dependant on lithology, alteration and mineralisation.</li> <li>Geological technicians perform routine density test-work on core samples of both host rock and mineralisation. All sampled intervals are tested for density.</li> <li>Density measurements have been determined using the water immersion technique on core.</li> <li>Bulk density is modelled by lithological domains.</li> </ul>
Classification	<ul> <li>The basis for the classification of the Mineral Resources into varying confidence categories.</li> <li>Whether appropriate account has been taken of all relevant factors (i.e. relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> </ul>	<ul> <li>Resources are classified in line with JORC guidelines utilising a combination of estimation quality parameters, and geological knowledge.</li> <li>This approach considers all relevant factors and reflects the Competent Person's view of the deposit.</li> </ul>
Audits or reviews	The results of any audits or reviews of Mineral Resource estimates.	<ul> <li>Resource estimates were calculated and reviewed internally by independent contractor Cube Consulting then peer reviewed by Castile Resources' Corporate technical team.</li> </ul>



# Discussion of relative accuracy/ confidence

- Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.
- The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.
- These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.

- The reported resource estimate is considered robust, and representative of the deposits on a global scale.
- The relative accuracy and confidence of the resource is reflected in the classification category assigned.
- No production data exists to compare the resource estimate against.

#### Section 4 Estimation and Reporting of Ore Reserves

(Criteria listed in section 1, and where relevant in sections 2 and 3, also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral Resource estimate for conversion to Ore Reserves	<ul> <li>Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.</li> <li>Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves.</li> </ul>	<ul> <li>The Ore Reserve is a subset of the Mineral Resource.</li> <li>The rover1_aug2022_with_distance_cappin g.mdl resource was utilised for the Reserve Calculation.</li> <li>No previous mining has occurred.</li> <li>A technical description of the Mineral Resource is presented in the preceding sections to this table.</li> </ul>
Site visits	<ul> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul> <li>The Competent Person has visited site and is a full time employee of Castile Resources.</li> <li>Whilst preparing this estimate the Competent Person has satisfied himself that the data and analysis used in this estimate is appropriate for the proposed operating conditions for the project.</li> </ul>



Criteria	JORC Code explanation	Commentary
Study status	<ul> <li>The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.</li> <li>The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered.</li> </ul>	<ul> <li>A pre-feasibility study has been completed for Rover 1.</li> <li>A full mine plan was developed for the inclusion of material into the Ore Reserve including capital and operating development. This design assumed a mining recovery of 95% and no additional dilution outside the designed shapes.</li> </ul>
Cut-off parameters	<ul> <li>The basis of the cut-off grade(s) or quality parameters applied.</li> </ul>	<ul> <li>A cut-off grade of 2.25g/t Au.</li> <li>Eq was utilised for Rover 1. This cut-off grade only considers gold and copper.</li> <li>The following formula was utilised for the calculation of the AuEq: AuEq=Gold (g/t) +Copper (ppm) * 0.00016415736. Formula was based on a gold price of AUD\$2,620 and a copper price of AUD\$13,880/t.</li> </ul>



#### Criteria

#### **JORC Code explanation**

#### Commentary

## Mining factors or assumptions

- The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).
- The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.
- The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc.), grade control and pre-production drilling.
- The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).
- The mining dilution factors used.
- The mining recovery factors used.
- Any minimum mining widths used.
- The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.
- The infrastructure requirements of the selected mining methods.

- A full design has been carried out to determine the material which can be included into the Ore Reserve. Stopes were assessed individually to ensure they were above the cut-off grade with no inferred material to be included within the ore reserve. Development headings were then included on the basis of their stoping blocks.
- Top down, bottom up long hole open stoping methods were selected for mining the ore reserve. Paste fill has been assumed for all stope voids. This mining method is regularly utilised in Australia and considered appropriate for the deposit.
- Jumbo development of sufficient size to support a mechanised stoping fleet will be used
- Minimum mining width of the stopes was 3.0mW including a minimum hangingwall and footwall diluition of 0.5m (each). Ore development was set at 4.5mW x 4.5mH. No additional dilution was considered. Stope optimisation was completed with all blocks below 1.5g/tAuEq was set to 0g/t. All blocks below 2.0g/tAuEq were set to waste for the purposes of determining if material could be classified within the Ore Reserve.
- Stopes had a minimum strike of 10m.
  Ore drive development is designed at 25m (floor to floor) and all stopes are full height. Stopes were restricted to a strike of 40m prior to filling. Geotechnical parameters were recommended by Mining One Mining Consultants. Wall angles were set to a minimum of 60° ensuring the flow of ore to the development level for extraction.
- Mining recovery for both development and stoping was 95%.
- Additional inferred material may be mined in addition to the Ore Reserve. This material has not been included within this report and only enhances the economic outcomes of the Prefeasibility study.
- All associated infrastructure has been included within the Prefeasibility Study in order the Ore Reserve to be extracted. This includes the capital development required to access the ore body from the surface, along with the capital infrastructure required on the surface. It was assumed that a 5.5mW x 5.5mH decline will be developed for access to the ore. An exhaust network of 3.5m raise bore holes will be developed to ventilate the project.



Criteria	JORC Code explanation	Commentary
	·	Additional 2.4m raise bores will be developed in fresh air to act as escapeways. It was assumed that a battery powered haulage fleet will be utilised.
Metallurgical factors or assumptions	<ul> <li>The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.</li> <li>Whether the metallurgical process is well-tested technology or novel in nature.</li> <li>The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.</li> <li>Any assumptions or allowances made for deleterious elements.</li> <li>The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.</li> <li>For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications?</li> </ul>	<ul> <li>It is assumed that the ore will be treated by Pressure Oxidisation. This method was recommended in the external metallurgical study as appropriate for the ore body. Pressure Oxidiation is a well tested technology currently being utilised in projects within Australia and Internationally. This will extract the gold, copper and cobalt metal. The magnetite will be magnetically separated from the material using low intensity magnetic separator technology.</li> <li>Testwork to a prefeasibility standard has been completed, with further testwork planned. Additional testwork will investigate different metallurgical domains. Current testwork has focused on a sample representing the average grade of the first five years.</li> <li>No deleterious elements have been identified for the process method under consideration.</li> <li>Recovery factors of 92.4% for gold, 82.9% for cobalt, 95.3% for copper as defined in metallurgical studies.</li> <li>A recovery factor of 67.7% for the magnetite have been applied to the project as defined in metallurgical studies.</li> <li>Pilot scale test work is to be completed in the coming months testing a bulk sample.</li> <li>Magnetite material can meet specifications through simple separation as defined in metallurgical studies.</li> </ul>
Environmental	The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported.	<ul> <li>Only preliminary designs for waste and tails dumps have been considered. Locations of these dumps have been provided to Environmental Consultants who have undertaken preliminary environmental risk assessments.</li> <li>No application has been made for approval at this time.</li> <li>Waste Rock characterisation studies are underway on unprocessed mined material. Further characterisation of tails material is planned for pilot plant material.</li> <li>It is planned for paste fill to be utilised at Rover 1 which will significantly reduce the volume of material required to be stored within the tails dam. A dam capable of accepting the full volume of planned processed material has been proposed.</li> </ul>



Criteria	JORC Code explanation	Commentary
Infrastructure	The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed.	<ul> <li>No current infrastructure is present at Rover 1.</li> <li>Castile currently has sufficient tenement footprint to allow for the construction of required project infrastructure.</li> <li>Castile plans to use existing the rail line and airport facility at Tennant Creek. Transportation is planned to be on the Darwin/Adelaide rail line with International products sourced through Darwin port.</li> <li>A gas pipeline is within 40km of the Rover 1 Project. A new solar project is being proposed north of Tennant Creek. Castile has assumed Rover 1 electricity requirements will be provided by gas powered generator, supplied via a spur line.</li> <li>It is planned to utilise labour from within the Northern Territory on a fly in-fly out basis from Darwin.</li> </ul>
Costs	<ul> <li>The derivation of, or assumptions made, regarding projected capital costs in the study.</li> <li>The methodology used to estimate operating costs.</li> <li>Allowances made for the content of deleterious elements.</li> <li>The source of exchange rates used in the study.</li> <li>Derivation of transportation charges.</li> <li>The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.</li> <li>The allowances made for royalties payable, both Government and private.</li> </ul>	<ul> <li>Cost for processing both operating and capital have been provided by third party Engineering Consultants.</li> <li>Capital costs for mining equipment were provided by the supplier. Capital and operating costs for mining have been constructed from first principals.</li> <li>Sundry capital costs have been sourced from inflated historic quotes.</li> <li>Transportation costs were validated by third party Engineering Consultants.</li> <li>No deleterious elements were present within the final specified products. Further testwork including pilot test plant to be carried out.</li> <li>Preproduction Capital costs for the project have been estimated at \$280M. Mining Operating costs are estimated at \$60/t ore and processing operating costs are estimated at \$10/t ore.</li> <li>Allowance for private royalties as required. Northern Territory royalties have been included within the Financial Model.</li> </ul>



Criteria	JORC Code explanation	Commentary
Revenue factors	<ul> <li>The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.</li> <li>The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products.</li> </ul>	<ul> <li>The following Australian dollar prices have been assumed for the project:         <ul> <li>Copper \$12,308/t</li> <li>Gold \$2,615/oz</li> <li>Cobalt \$92,308/t</li> <li>Magnetite \$350/t</li> </ul> </li> <li>These prices were determined internally by Castile Resources.</li> <li>All products are considered final products when leaving site. All products were considered FOB Darwin. The gold will be sold to an Australian Mint.</li> <li>The grades of all products were considered when calculating revenue and recoveries. No equivalent grades were considered outside the initial design of stoping blocks.</li> </ul>
Market assessment	<ul> <li>The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.</li> <li>A customer and competitor analysis along with the identification of likely market windows for the product.</li> <li>Price and volume forecasts and the basis for these forecasts.</li> <li>For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract.</li> </ul>	<ul> <li>It is considered all products will continue to be in demand and is expected to increase for copper and cobalt with the decarbonisation economy.</li> <li>The ongoing use of magnetite as an industrial mineral is expected to continue for the production of plastics and coal washing sectors. It is intended to sell all magnetite to a single purchaser.</li> </ul>
Economic	The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.  NPV ranges and sensitivity to variations in the significant assumptions and inputs.	<ul> <li>The project has been evaluated in a nominal cash flow model with a discount rate of 10%. A positive NPV was realised for the Ore Reserve material. No impact of mining material outside the ore reserve was considered in this estimate, however was considered as part of the Pre-feasibility Study.</li> <li>Costs as estimated above were utilised for the cash flow model.</li> <li>Sensitivity analysis has been conducted on the ore reserve. From this analysis the key variables were exchange rate, copper price, gold price, mining and processing costs. All factors were tested on a ±10% movement basis.</li> </ul>
Social	The status of agreements with key stakeholders and matters leading to social licence to operate.	<ul> <li>Castile has a Deed of Exploration agreement with the Central Land Council. This agreement outlines the steps needed to proceed to a Mining Agreement between Castile and the CLC. Castile has had ongoing positive communication with the CLC.</li> <li>Castile has a positive working relationship with the Northern Territory government.</li> </ul>



Criteria	JORC Code explanation	Commentary
Other	<ul> <li>To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:</li> <li>Any identified material naturally occurring risks.</li> <li>The status of material legal agreements and marketing arrangements.</li> <li>The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent.</li> </ul>	<ul> <li>No naturally occurring risks have been identified. Tennant Creek is subject to intense high rainfall events. These events are not expected to have a significant impact on the monthly production estimates utilised.</li> <li>No legal or marketing agreements have commenced.</li> <li>The Government Approval Process has not commenced. Work is ongoing for the preparation of this report.</li> <li>Pilot scale test work for the processing plant is expected to occur soon formalising final product specifications.</li> <li>The ore reserve sits on a current Mineral Retention Licence which will need to be expanded to include all infrastructure requirements. Castile currently holds sufficient tenement foot print for this to occur.</li> <li>The Mining Agreement process with the CLC is outlined, but no activity has commenced.</li> <li>The only significant outstanding environmental concern is the hydrological survey and water testwork. Sufficient water is expected to be sourced within Castile Tenements.</li> </ul>
Classification	<ul> <li>The basis for the classification of the Ore Reserves into varying confidence categories.</li> <li>Whether the result appropriately reflects the Competent Person's view of the deposit.</li> <li>The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any).</li> </ul>	<ul> <li>No Measured Mineral Resource is present. The whole Ore Reserve is considered Probable Ore Reserves and has been derived from the Indicated Mineral Resource.</li> <li>Any inferred material that has been included within the Ore Reserve was classified as waste and therefore no positive impact on the economics.</li> <li>The Ore Reserve appropriately reflects the Competent Persons view of the deposit.</li> </ul>
Audits or reviews	<ul> <li>The results of any audits or reviews of Ore Reserve estimates.</li> </ul>	<ul> <li>No audits or reviews have been conducted on the Ore Reserve. A full audit of the reserve will be conducted as part of the feasibility study.</li> </ul>



#### Criteria

#### **JORC Code explanation**

#### Commentary

# Discussion of relative accuracy/ confidence

- Where appropriate a statement of relative accuracy confidence level in the Ore Reserve estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical geostatistical procedures to quantify the relative accuracy of reserve within stated confidence limits, or, if such an approach is not deemed appropriate. а qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.
- The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.
- Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage.
- It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.

- The design, schedule, and financial model, on which the Ore Reserve is based has been completed to a Pre-Feasibility Study standard, with a corresponding level of confidence.
- All modifying factors have been applied to designed mining shapes on a global scale.
- Future commodity price forecasts carry an inherent level of risk.
- There is a degree of uncertainty associated with geological estimates.
   The Ore Reserve classification reflect the level of geological confidence in the estimates.
- There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the level of study.
- The ore treatment process is not a novel process and is being utilised in Australian and International Operations.
- Further work is being undertaken by Castile prior to a Final Investment Decision.
- There are no modifying factors identified at the time of this statement that are not accounted for and that would have a material impact on the Ore Reserve estimate.