

## CALIBRE DRILLING IDENTIFIES SIGNIFICANT DEPOSIT EXTENSIONS ON THE RIO TINTO – ANTIPA CITADEL FARM-IN PROJECT

### HIGHLIGHTS

- Diamond drilling at the Calibre deposit intersects significant widths of gold-copper-silver mineralisation substantially beyond the limits of the existing Mineral Resource located 45km east of Rio Tinto's Winu copper-gold-silver deposit.
- Significant assay results for the first diamond drill hole (19CED0009) include:
  - 163.9m at 0.60 g/t gold and 0.04% copper from 303.1m down hole, including:
    - 26.0m at 1.11 g/t gold and 0.05% copper from 429.0m; and
    - 0.47m at 14.45 g/t gold, 0.64% copper and 4.69 g/t silver from 310m
  - 19.8m at 0.62 g/t gold and 0.07% copper from 198.7m down hole.
- Citadel Project 2019 exploration programme completed with final drill and geophysical survey results expected prior to the end of the year.
- 2019 programme fully funded by Rio Tinto Exploration Pty Limited ("Rio Tinto") who are farming into the Citadel Project with \$3.4M<sup>1</sup> budget. Programme comprised:
  - Major ground electrical geophysical survey; and
  - 7,000m drill programme testing resource extension targets at the existing Calibre 1.3Moz gold and 69.5kt copper deposit<sup>2</sup> and multiple new greenfields targets.

### OVERVIEW

Antipa Minerals Ltd (ASX: AZY) ("**Antipa**" or "**the Company**") is pleased to provide an update on the exploration programme for the Citadel Project Rio Tinto Farm-in and Joint Venture ("**Citadel Farm-in**") in Western Australia's Paterson Province (Figure 1), with a budget of \$3.4M (fully funded by Rio Tinto) allocated to the 2019 calendar year exploration programme ("**Exploration Programme**").

### EXPLORATION PROGRAMME

The 2019 Exploration Programme has been completed and included 6,842m of reverse circulation ("**RC**") and diamond-core ("**DD**") drill testing of both brownfield and greenfield targets; including Calibre resource extension targets and aerial-electromagnetic ("**AEM**")

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<sup>1</sup> All dollar figures are in AUD unless stated otherwise

<sup>2</sup> Refer Antipa Minerals ([www.antipaminerals.com.au](http://www.antipaminerals.com.au)) and Australian Securities Exchange (ASX: AZY) news release ([www.asx.com.au](http://www.asx.com.au)) report entitled "Calibre Deposit Mineral Resource Update" created on 17 November 2017 and the Competent Person's statement on page 6 of this release

conductivity anomalies and magnetic anomalies (Refer to Tables 1 and 2 and Figures 1 to 4)). Key components of the Exploration Programme included:

- Major ground based electrical geophysical survey, gradient array induced polarisation (“GAIP”), across approximately 70 line-km that commenced 20<sup>th</sup> July 2019 and was completed in late October. Final data is pending.
- 3,181m of combined RC (1,170m) and DD (2,011m), completed late October, drill testing:
  - Calibre gold-copper-silver resource extensional targets (refer to summary below); and
  - Conceptual mineralisation targets east of the Calibre resource.

For a summary of the assay results received for the first Calibre DD hole refer to Table 1 and Figures 2 and 3.

- 3,661m of RC drill testing of:
  - Eight AEM conductivity anomalies identified in the 2018 AEM survey; and
  - One aeromagnetic target (NB: RC drill testing of a second aeromagnetic target was deferred to 2020).

Approximately 3,000m of RC drilling completed in August with assay results received (refer to summary below and Table 1 and Figure 4) and approximately 700m of RC drilling completed in October with assay results pending.

- Up to approximately 3,000m of RC drill testing of resultant 2019 GAIP chargeability anomalies. Due to delays in commencement of the GAIP survey, this follow-up RC drill testing of identified targets has been deferred until 2020.

The Exploration Programme, which is fully funded by Rio Tinto, was outlined in the Company’s ASX releases dated 16<sup>th</sup> May, 29<sup>th</sup> July and 6<sup>th</sup> September 2019. As previously advised, Antipa resumed operatorship of the Citadel Farm-in, including the execution of the Exploration Programme, on the 27<sup>th</sup> March 2019.

Antipa’s Paterson Province dual exploration strategy strives to deliver both greenfield discoveries and increase brownfield gold and/or copper resources during 2019. Exploration activities within the Citadel Project are complementary to this strategy.

### **Calibre Resource Extensional Targets**

The Calibre gold-copper-silver±tungsten deposit, discovered by Antipa in 2012 under 80m of cover, is located 45km east of Rio Tinto’s more recent Winu discovery. The Calibre deposit has a strike length of approximately 1.6km, is up to 480m thick and remains open in all directions, representing a large-scale mineral system with material potential Mineral Resource and exploration upside. The Calibre Inferred Mineral Resource<sup>3</sup> is currently 47.7Mt at 0.85 g/t gold, 0.15% copper and 0.48 g/t silver for 1.3Moz of gold, 69.5kt of copper and 0.73Moz of silver.

The recently completed 2019 Calibre drilling programme evaluated the potential for a material increase in the existing Mineral Resource. Assay results received for the first DD hole confirm significant gold-copper mineralisation 200m beyond the limits of the current Mineral Resource

(Figures 2 to 3 and Table 1). Significant assay results for the first diamond drill hole (19CED0009) include:

- **163.93m at 0.60 g/t gold, 0.04% copper and 0.23 g/t silver** from 303.07m down hole, including;
  - **0.47m at 14.45 g/t gold, 0.64% copper and 4.69 g/t silver** from 310.0m
  - **89.0m at 0.72 g/t gold, 0.03% copper and 0.22 g/t silver** from 378.0m down hole, also including;
    - **26.0m at 1.11 g/t gold, 0.05% copper and 0.28 g/t silver** from 429.0m
- **19.75m at 0.62 g/t gold, 0.07% copper and 0.52 g/t silver** from 198.65m down hole

Drill hole 19CED0009 successfully extended mineralisation approximately 200m down dip and 200m along strike to the north of existing drill holes. The Calibre gold-copper-silver±tungsten mineralisation is predominantly hosted by quartz-sulphide veins and associated silica - albite ± sulphide ± biotite ± chlorite ± potassium feldspar (k-spar) altered Proterozoic meta-sediments (mainly quartzites and silty sandstones) and also a narrow, pre-mineralisation, Proterozoic meta-dolerite dyke. A narrow, post mineralisation, Cambrian dolerite dyke is also present.

## Regional Greenfield Geophysical Targets

A total of 33 RC drill holes for 3,661m have been completed testing one aeromagnetic and eight 2018 AEM conductivity greenfield targets (Figure 4). Assay results have now been received for 29 holes (2,965m) with anomalous copper (± minor gold) highlighting the GT1-Bell, GT2, Feathertop and Blackwood targets for further investigation (Table 1 and Figure 4).

## EXPLORATION PROGRAMME - TIMING

The GAIP survey and drilling programmes were completed late October. Drill samples have been dispatched for assay and additional announcements will be made periodically as further assays are received. The final data for the GAIP survey is expected to be received within several weeks.

## OTHER EXPLORATION ACTIVITIES

Other exploration and related activities on the Citadel Project include:

- Planning for 2020 drilling programmes;
- Ongoing target generation from all available data including the current 2019 GAIP survey; and
- Possible Calibre deposit Mineral Resource update following drilling.

## FARM-IN TERMS

The Citadel Farm-in with Rio Tinto requires the following expenditure to be incurred (or paid) by Rio Tinto to earn up to a 75% joint venture interest in the Citadel Project:

- \$3M exploration expenditure within 18 months of execution of the farm-in agreement (execution date: 9 October 2015). This has now been satisfied. No joint venture interest was earned by the incurring of this amount.

- \$8M exploration expenditure within a further 3 year period commencing 11 April 2017 to earn a 51% joint venture interest. Rio Tinto is now in the third year of this stage.
- \$14M exploration expenditure within a further 3 year period to earn a 65% joint venture interest. Antipa may elect to contribute at this point and maintain a 35% joint venture interest.
- \$35M exploration expenditure within a further 3 year period to earn a 75% joint venture interest.

Rio Tinto has a right to withdraw from the Citadel Farm-in at the completion of each annual exploration programme.

**For further information, please visit [www.antipaminerals.com.au](http://www.antipaminerals.com.au) or contact:**

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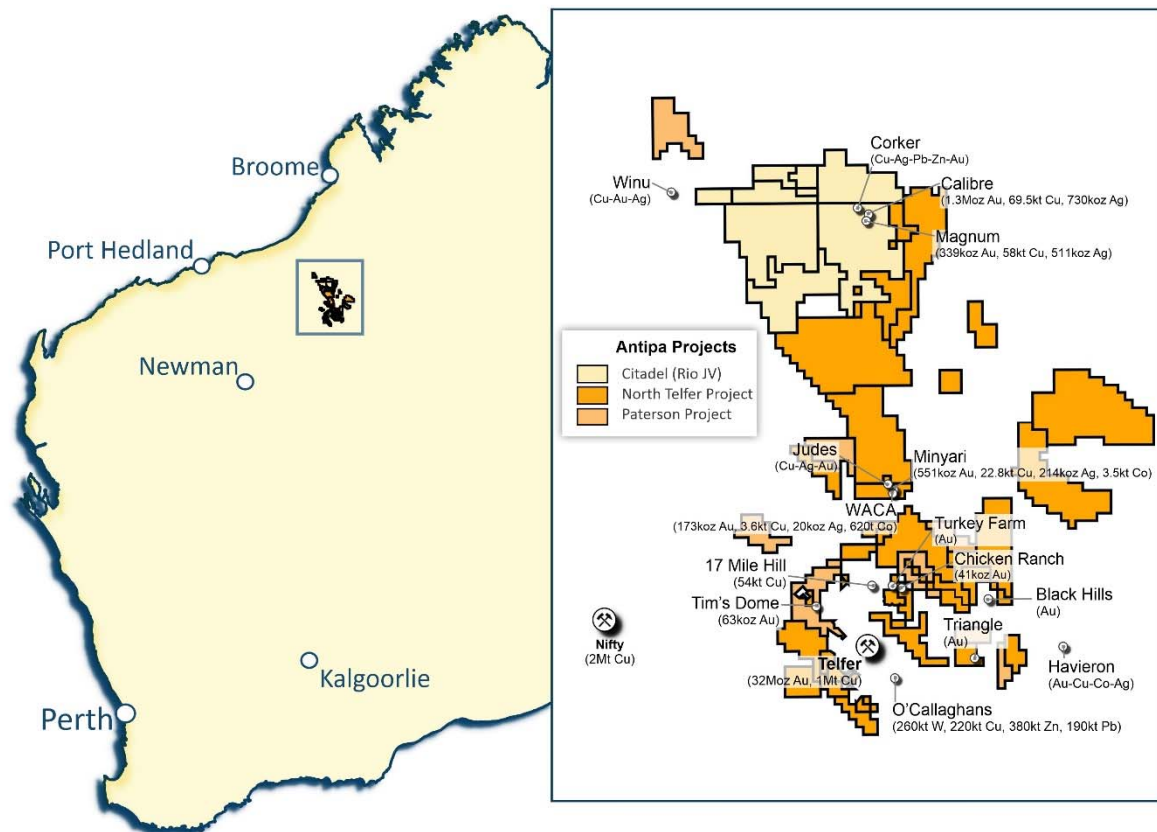
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**About Antipa Minerals:** Antipa is a mineral exploration company focused on the Paterson Province in north-west Western Australia, home to Newcrest Mining's world-class Telfer gold mine, Rio Tinto's recent Winu copper discovery and other significant mineral deposits. Having first entered the Paterson in 2011 when it was a less sought-after exploration address, the Company has used its early mover advantage to build an enviable tenement holding of approximately 5,000km<sup>2</sup>, including the 1,330km<sup>2</sup> Citadel Project that is subject to a Farm-in and Joint Venture Agreement with Rio Tinto. Under the terms of the Farm-in and Joint Venture Agreement, Rio Tinto can fund up to \$60 million of exploration expenditure to earn up to a 75% interest in Antipa's Citadel Project. Unlike certain parts of the Paterson where cover can extend to kilometres, making for difficult exploration, the Company's tenements feature relatively shallow cover: approximately 80% are under less than 80 metres. The Citadel Project lies within 5km of the Winu discovery and contains a Mineral Resource of 1.64 million ounces of gold and 128,000 tonnes of copper spread across two deposits, Calibre and Magnum. The Company has also established a Mineral Resource on its 100%-owned tenements, known as the North Telfer and Paterson Projects, with the Minyari-WACA, Chicken Ranch area and Tim's Dome deposits containing 827,000 ounces of gold and 26,000 tonnes of copper. Extensive drilling is planned for 2019 across Antipa's Paterson tenements as the company pursues a dual strategy of targeting tier-one greenfields discoveries and growing its existing resources through brownfields exploration.

**References to Rio Tinto:** All references to "Rio Tinto" or "Rio" in this document are a reference to Rio Tinto Exploration Pty Limited, a wholly owned subsidiary of Rio Tinto Limited.



**Competent Persons Statement – Exploration Results:** The information in this document that relates to Exploration Results is based on and fairly represents information and supporting documentation compiled by Mr Roger Mason, a Competent Person who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Mason is a full-time employee of the Company. Mr Mason is the Managing Director of Antipa Minerals Limited, is a substantial shareholder of the Company and is an option holder of the Company. Mr Mason has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaking 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'. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.

Various information in this report which relates to Exploration Results have been extracted from the following announcements:

- Report entitled *"Citadel Project - Phase 2 Drilling Programme - Twin Success"* created on 13 December 2012;
- Report entitled *"Citadel Project - Calibre Deposit - Major Gold-Copper Discovery"* created on 4 February 2013;
- Report entitled *"Citadel Project - 2013 Exploration Programme - Calibre Deposit Focus of Phase 1"* created on 11 February 2013;
- Report entitled *"Calibre Exploration Update"* created on 25 February 2013;
- Report entitled *"Calibre Deposit - Third Drillhole - Preliminary Results"* created on 7 March 2013;
- Report entitled *"Calibre Deposit - Third Drillhole - Assay Results"* created on 27 March 2013;
- Report entitled *"Calibre Deposit - Assay Results and New DHEM Anomaly"* created on 15 April 2013;
- Report entitled *"Calibre Deposit - Fifth Drillhole - Assay Results"* created on 19 April 2013;
- Report entitled *"Calibre Deposit - Sixth Drillhole - Assay Results"* created on 29 April 2013;
- Report entitled *"Calibre Deposit - FLEM and Magnetics Survey Results"* created on 15 May 2013;
- Report entitled *"Calibre Deposit - Seventh Drillhole - Assay Results"* created on 1 August 2013;
- Report entitled *"Calibre Deposit - Exploration Update"* created on 2 September 2013;
- Report entitled *"Calibre Deposit - Maiden Mineral Resource Estimate"* created on 28 October 2013;
- Report entitled *"Calibre Deposit - Positive Concept Study completed by Snowden"* created on 30 October 2013;
- Report entitled *"Surveys extend and upgrade Calibre and Corker target areas"* created on 26 March 2014;
- Report entitled *"Phase 2 Geochemical Surveys Define Calibre and Matilda Drill Targets"* created on 28 April 2014;
- Report entitled *"2014 Exploration Programme - Drilling Commences at Calibre"* created on 16 May 2014;
- Report entitled *"Positive Metallurgical Results for Calibre"* created on 28 May 2014;
- Report entitled *"2014 Drilling Programme Update"* created on 29 May 2014;
- Report entitled *"2014 Drilling Programme Update"* created on 25 July 2014;
- Report entitled *"Citadel Project - Calibre High Grade Opportunity"* created on 9 September 2014;
- Report entitled *"Calibre & Magnum Mineral Resources JORC 2012 Updates"* created on 23 February 2015;
- Report entitled *"Calibre Drilling Programme Commenced"* created on 15 May 2015;
- Report entitled *"Calibre Deposit Drilling Update No. 1"* created on 18 June 2015;
- Report entitled *"Calibre Deposit Drilling Update No. 2"* created on 2 July 2015;
- Report entitled *"Calibre Deposit Drilling Update No. 3"* created on 10 July 2015;
- Report entitled *"Calibre Deposit Drilling Update No. 4"* created on 28 July 2015;
- Report entitled *"Rio Tinto – Antipa Citadel Project Joint Venture"* created on 9 October 2015;
- Report entitled *"Calibre Drilling October 2015 No. 1"* created on 16 October 2015;
- Report entitled *"Calibre Drilling October 2015 No. 2"* created on 22 October 2015;
- Report entitled *"Calibre 2015 Phase 2 Drilling Update No. 3"* created on 17 November 2015;
- Report entitled *"Calibre 2015 Phase 2 Drilling Update"* created on 30 November 2015;
- Report entitled *"Calibre 2015 Drilling Phase 2 Results"* created on 16 December 2015;
- Report entitled *"Citadel Project IP Survey Identifies Multiple Chargeability Anomalies along 20km Calibre Trend"* created on 24 June 2016;
- Report entitled *"Rio Tinto Elects to Proceed to Stage 2 of Citadel Farm-In"* created on 12 April 2017;
- Report entitled *"Citadel Project - Rio Tinto Funded 2017 Exploration Programme"* created on 12 April 2017;
- Report entitled *"Rio Tinto Elects to Proceed to Stage 2 of Citadel Farm-In"* created on 12 April 2017;
- Report entitled *"Citadel Project Exploration Update"* created on 2 October 2017;
- Report entitled *"Citadel Project Exploration Update"* created on 8 November 2017;
- Report entitled *"Calibre Deposit Mineral Resource Update"* created on 17 November 2017;
- Report entitled *"Citadel Project 2018 Exploration Programme"* created on 27 March 2018;
- Report entitled *"Rio Tinto Resumes Drilling at the Citadel Farm-in Project"* created on 4 September 2018;



- Report entitled “*Citadel Project Rio JV – Additional AEM Survey*” created on 20 November 2018;
- Report entitled “*Rio Tinto Citadel Farm-in Project 2018 Exploration Update*” created on 11 December 2018;
- Report entitled “*Multiple Gold-Copper Targets identified on Rio Tinto-Antipa Citadel Farm-in Project*” created on 25 March 2019;
- Report entitled “*Indicative \$3.4M 2019 Citadel Exploration Programme*” created on 27 March 2019;
- Report entitled “*Citadel Project \$3.4M 2019 Exploration Programme*” created on 16 May 2019;
- Report entitled “*Exploration Update on Rio Tinto-Antipa Citadel Farm-in*” created on 29 July 2019; and
- Report entitled “*Citadel Project - Calibre Drilling Commences*” created on 6 September 2019.

All of which are available to view on [www.antipaminerals.com.au](http://www.antipaminerals.com.au) and [www.asx.com.au](http://www.asx.com.au).

The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcements. Mr Roger Mason, whose details are set out above, was the Competent Person in respect of the Exploration Results in these original reports.

**Competent Persons Statement – Mineral Resource Estimations for the Minyari-WACA Deposits, Calibre Deposit and Magnum Deposit, Chicken Ranch Area Deposits and Tim’s Dome Deposit:** The information in this document that relates to the estimation and reporting of the Minyari-WACA deposits Mineral Resources is extracted from the report entitled “*Minyari/WACA Deposits Maiden Mineral Resources*” created on 16 November 2017 with Competent Persons Kahan Cervo and Susan Havlin, the Calibre deposit Mineral Resource information is extracted from the report entitled “*Calibre Deposit Mineral Resource Update*” created on 17 November 2017 with Competent Person John Graindorge and the Magnum deposit Mineral Resource information is extracted from the report entitled “*Calibre and Magnum Deposit Mineral Resource JORC 2012 Updates*” created on 23 February 2015 with Competent Person Patrick Adams, and the information in this report that relates to the estimation and reporting of the Chicken Ranch Area Deposits and Tim’s Dome Deposit Mineral Resources is extracted from the report entitled “*Chicken Ranch and Tims Dome Maiden Mineral Resources*” created on 13 May 2019 with Competent Person Shaun Searle, all of which are available to view on [www.antipaminerals.com.au](http://www.antipaminerals.com.au) and [www.asx.com.au](http://www.asx.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that all material assumptions and technical parameters underpinning the estimates in the relevant original market announcements continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcements.

**Gold Metal Equivalent Information - Calibre Mineral Resource AuEquiv cut-off grade:** Gold Equivalent (AuEquiv) details of material factors and metal equivalent formula are reported in “*Calibre Deposit Mineral Resource Update*” created on 16 November 2017 which is available to view on [www.antipaminerals.com.au](http://www.antipaminerals.com.au) and [www.asx.com.au](http://www.asx.com.au).

**Gold Metal Equivalent Information - Magnum Mineral Resource AuEquiv cut-off grade:** Gold Equivalent (AuEquiv) details of material factors and metal equivalent formula are reported in “*Citadel Project - Calibre and Magnum Deposit Mineral Resource JORC 2012 Updates*” created on 23 February 2015 which is available to view on [www.antipaminerals.com.au](http://www.antipaminerals.com.au) and [www.asx.com.au](http://www.asx.com.au).

**Forward-Looking Statements:** This document may include forward-looking statements. Forward-looking statements include, but are not limited to, statements concerning Antipa Mineral Ltd’s planned exploration programme and other statements that are not historical facts. When used in this document, the words such as “could,” “plan,” “estimate,” “expect,” “intend,” “may,” “potential,” “should,” and similar expressions are forward-looking statements. Although Antipa Minerals Ltd believes that its expectations reflected in these forward-looking statements are reasonable, such statements involve risks and uncertainties and no assurance can be given that actual results will be consistent with these forward-looking statements.

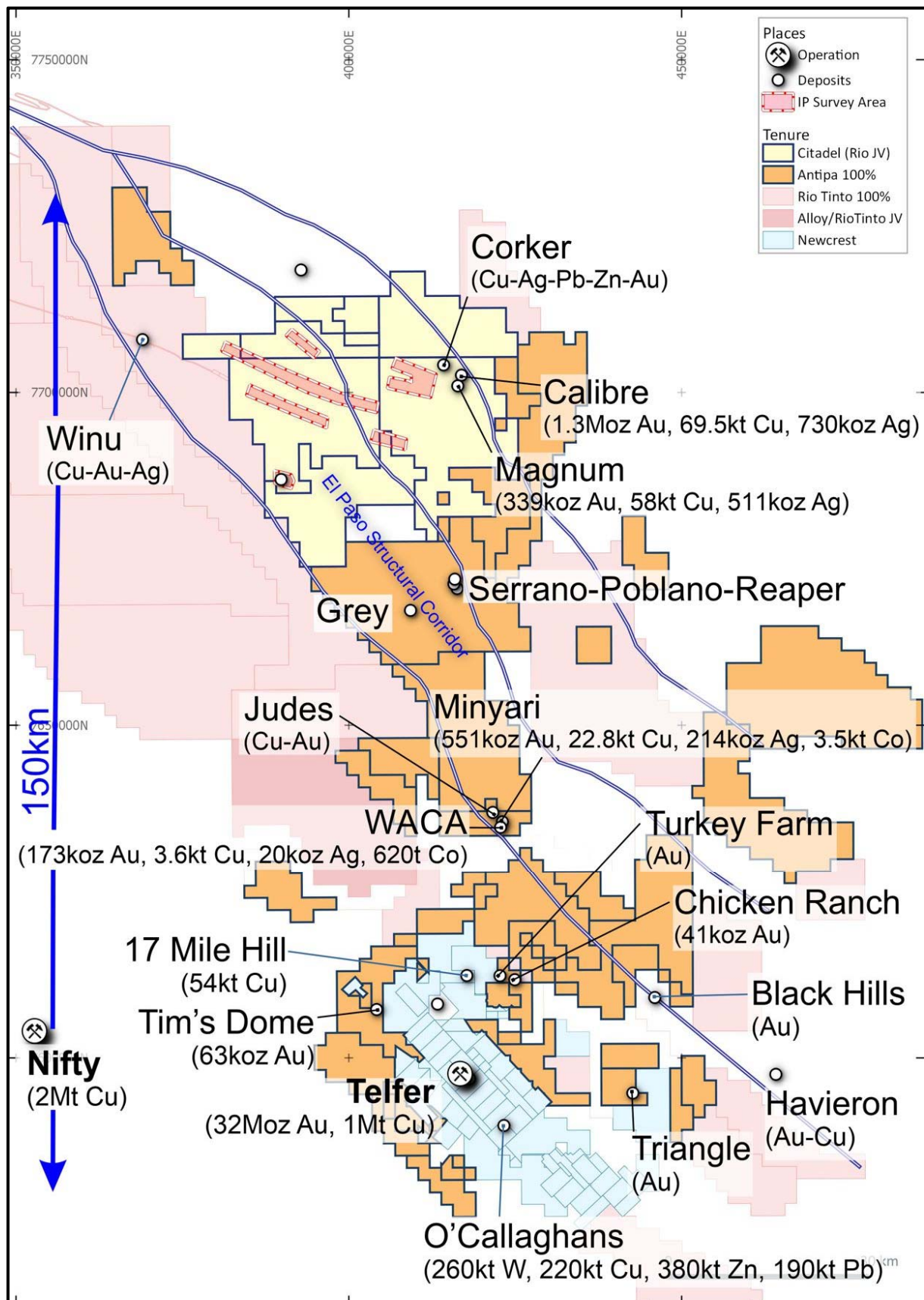


Figure 1: Plan showing location of Antipa 100% owned tenements, Antipa-Rio Tinto Citadel Farm-in (including major GAIP survey perimeter), Rio Tinto's Winu discovery, Greatland Gold plc's Havieron deposit, Newcrest Mining Ltd's Telfer Mine and O'Callaghans deposit, and Metals X Nifty Mine. NB: Regional GDA94 / MGA Zone 51 co-ordinates, 50km grid.



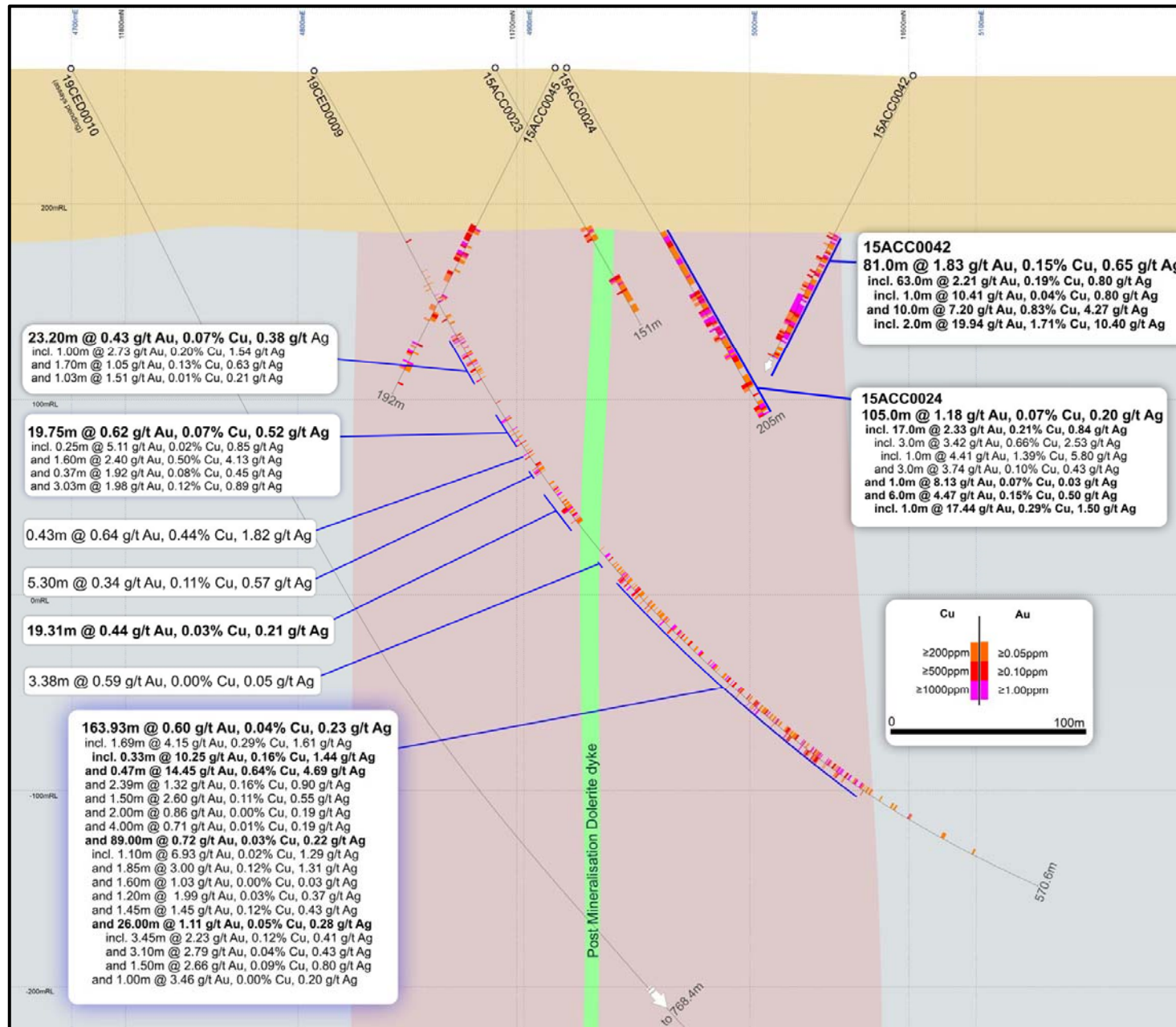
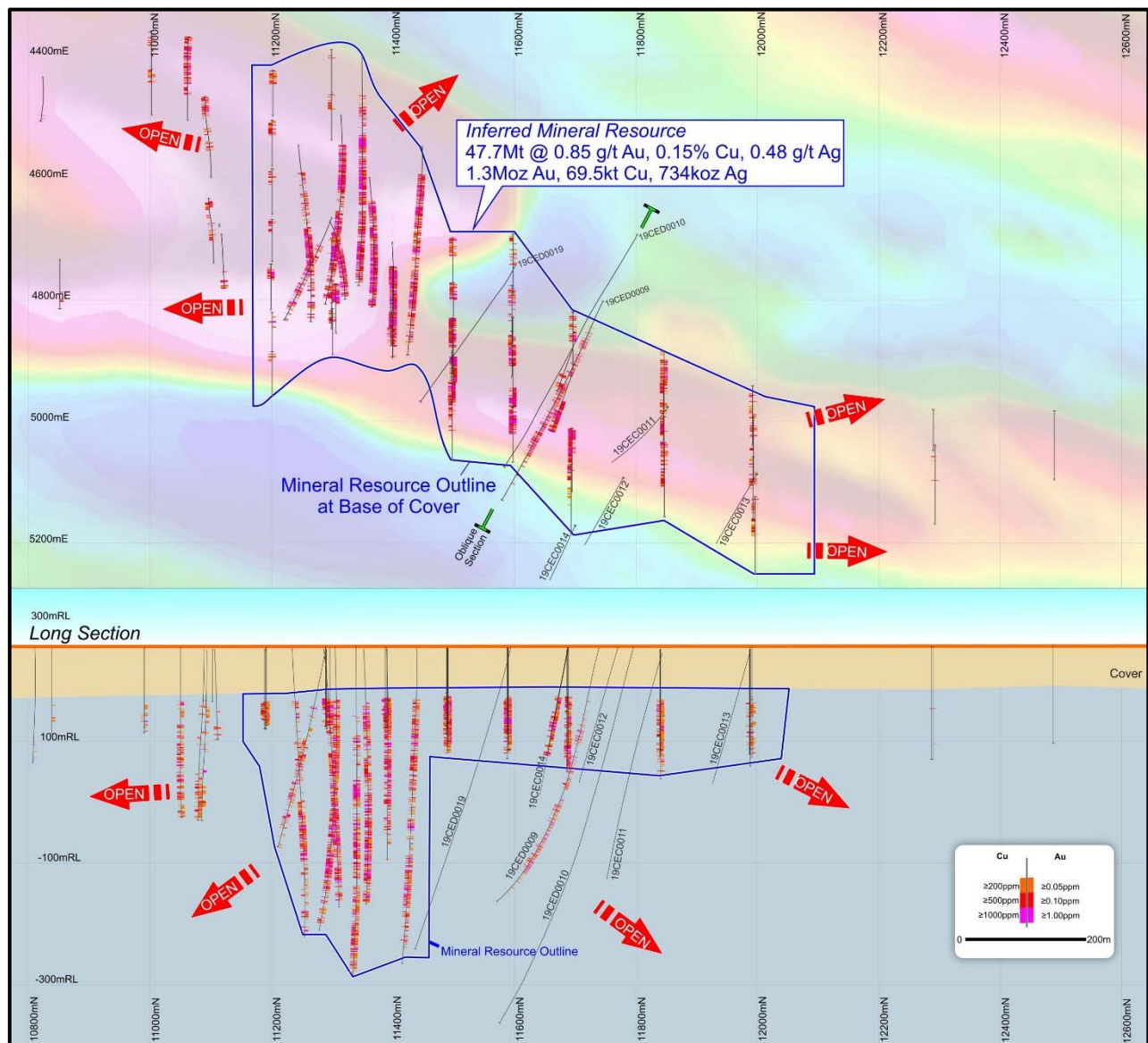


Figure 2: Calibre Deposit interpreted (schematic) cross-section showing drill hole Au-Cu-Ag intersections including 19CED0009. NB: 100m grid – Approx. north looking.



**Figure 3: Calibre Deposit Plan over aeromagnetic image and west looking Vertical Projection showing all Calibre drill (including 2019) holes and depicting gold grade distribution. NB: 100m Calibre Local grid.**



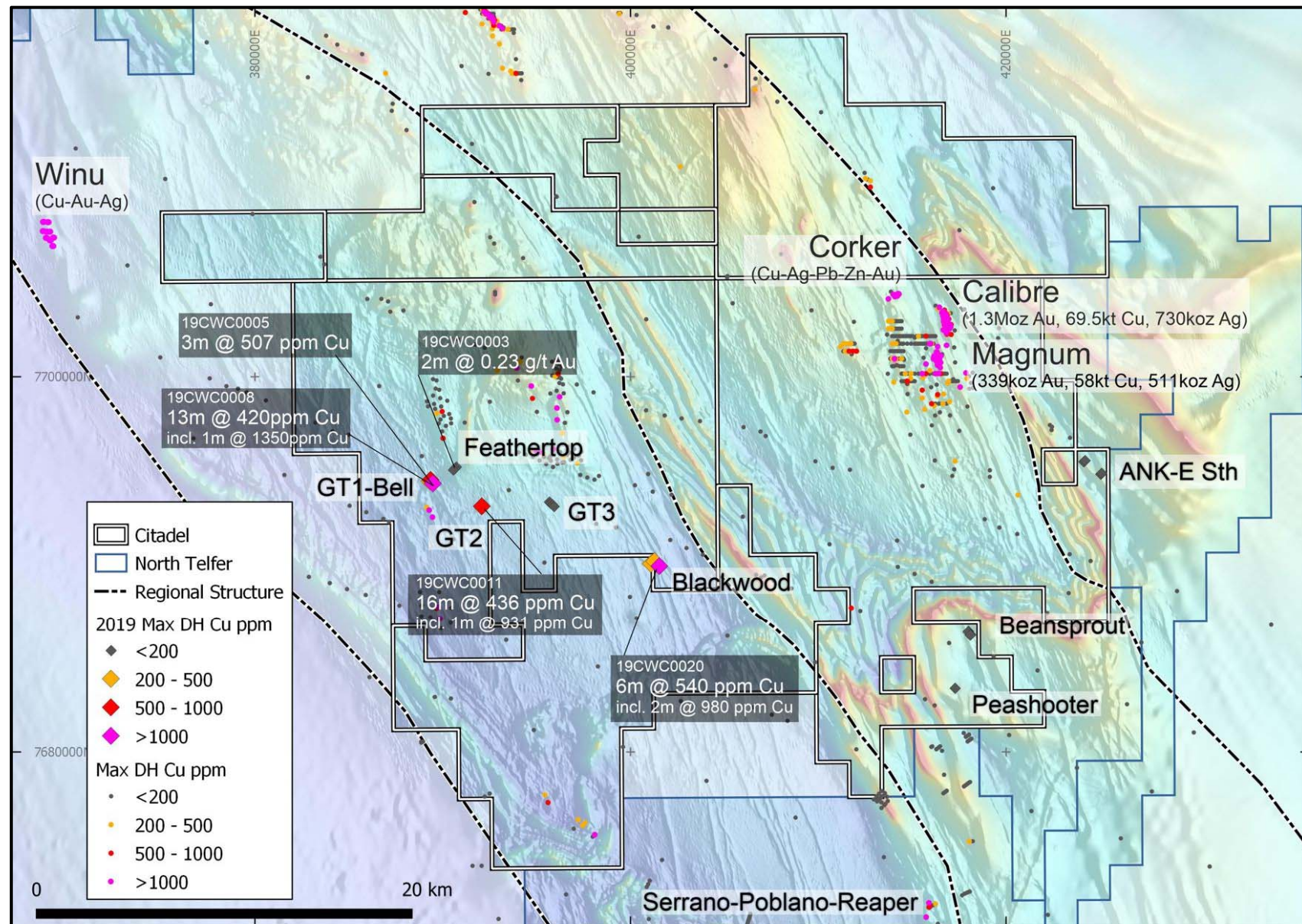


Figure 4: Plan showing the Antipa-Rio Tinto Citadel Project Joint Venture region of Antipa's Paterson Province projects, completed 2019 RC drill target areas and deposits including Rio's Winu Cu-Au-Ag deposit and the Calibre and Magnum Mineral Au-Cu-Ag Resources. NB: Over airborne magnetic image (Pseudo-colour First Vertical Derivative and typically a 50 to 100m flight-line spacing at an altitude of 30m) and Regional GDA94 / MGA Zone 51 co-ordinates, 25km grid.

**Table 1: 2019 Citadel Project Drill Hole Drill Intersections:**  
**Gold-Copper-Silver**  
*(i.e.  $\geq 0.5\text{m}$  with  $\text{Au} \geq 0.30 \text{ g/t}$  and/or  $\text{Cu} \geq 500 \text{ ppm}$  and/or  $\text{Ag} \geq 0.50 \text{ g/t}$ )*

Hole ID	Target	From (m)	To (m)	Interval (m)	Gold (g/t)	Copper (ppm)	Silver (g/t)
19CED0009	Calibre	98.80	99.50	0.70	0.81	28	0.14
19CED0009	Calibre	130.24	134.39	4.15	0.77	65	1.05
	Including	130.24	130.44	0.20	2.33	103	0.68
	Including	133.64	134.39	0.75	3.59	129	0.70
19CED0009	Calibre	143.30	144.00	0.70	0.14	1,794	1.40
<b>19CED0009</b>	<b>Calibre</b>	<b>152.70</b>	<b>175.90</b>	<b>23.20</b>	<b>0.43</b>	<b>724</b>	<b>0.38</b>
	Including	152.70	153.70	1.00	2.73	1,986	1.54
	Including	156.60	158.30	1.70	1.05	1,306	0.63
	Including	174.27	175.30	1.03	1.51	72	0.21
19CED0009	Calibre	179.00	179.63	0.63	0.13	1,887	0.93
<b>19CED0009</b>	<b>Calibre</b>	<b>198.65</b>	<b>218.40</b>	<b>19.75</b>	<b>0.62</b>	<b>661</b>	<b>0.52</b>
	Including	198.65	198.90	0.25	5.11	165	0.85
	Including	202.80	204.40	1.60	2.40	5,022	4.13
	Including	209.73	210.10	0.37	1.92	823	0.45
	Including	215.37	218.40	3.03	1.98	1,203	0.89
19CED0009	Calibre	224.00	224.43	0.43	0.64	4,410	1.82
19CED0009	Calibre	231.00	236.30	5.30	0.34	1,107	0.57
<b>19CED0009</b>	<b>Calibre</b>	<b>247.00</b>	<b>266.31</b>	<b>19.31</b>	<b>0.44</b>	<b>342</b>	<b>0.21</b>
19CED0009	Calibre	289.92	293.30	3.38	0.59	19	0.05
19CED0009	Calibre	301.26	301.81	0.55	0.37	7	0.03
<b>19CED0009</b>	<b>Calibre</b>	<b>303.07</b>	<b>467.00</b>	<b>163.93</b>	<b>0.60</b>	<b>365</b>	<b>0.23</b>
	Including	303.07	304.76	1.69	4.15	2,870	1.61
	<b>Also Incl.</b>	<b>303.67</b>	<b>304.00</b>	<b>0.33</b>	<b>10.25</b>	<b>1,560</b>	<b>1.44</b>
	<b>Including</b>	<b>310.00</b>	<b>310.47</b>	<b>0.47</b>	<b>14.45</b>	<b>6,370</b>	<b>4.69</b>
	Including	332.91	335.30	2.39	1.32	1,623	0.90
	Including	340.00	341.50	1.50	2.60	1,136	0.55
	Including	359.00	361.00	2.00	0.86	40	0.19
	Including	366.00	370.00	4.00	0.71	116	0.19
	<b>Including</b>	<b>378.00</b>	<b>467.00</b>	<b>89.00</b>	<b>0.72</b>	<b>342</b>	<b>0.22</b>
	<b>Also Incl.</b>	<b>380.90</b>	<b>382.00</b>	<b>1.10</b>	<b>6.93</b>	<b>248</b>	<b>1.29</b>
	Also Incl.	398.30	400.15	1.85	3.00	1,185	1.31
	Also Incl.	406.40	408.00	1.60	1.03	6	0.03
	Also Incl.	411.80	413.00	1.20	1.99	344	0.37
	Also Incl.	419.00	420.45	1.45	1.45	1,232	0.43
	<b>Also Incl.</b>	<b>429.00</b>	<b>455.00</b>	<b>26.00</b>	<b>1.11</b>	<b>548</b>	<b>0.28</b>
	<b>Also Incl.</b>	<b>437.65</b>	<b>441.10</b>	<b>3.45</b>	<b>2.23</b>	<b>1,171</b>	<b>0.41</b>
	<b>Also Incl.</b>	<b>444.90</b>	<b>448.00</b>	<b>3.10</b>	<b>2.79</b>	<b>433</b>	<b>0.43</b>
	Also Incl.	453.50	455.00	1.50	2.66	911	0.80
	Also Incl.	459.00	460.00	1.00	3.46	15	0.20
19CED0009	Calibre	472.00	473.00	1.00	0.45	231	0.10
19CED0009	Calibre	478.45	479.05	0.60	0.43	164	0.13
19CED0009	Calibre	495.50	497.00	1.50	0.59	7	0.02
19CED0009	Calibre	516.00	517.00	1.00	0.37	39	0.03
19CED0009	Calibre	533.00	534.00	1.00	0.42	13	0.08
19CWC0003	Feathertop	98	100	2	0.23	99	0.03
19CWC0005	GT1-Bell	58	61	3	0.01	507	0.12
19CWC0008	GT1-Bell	39	52	13	0.00	420	0.03
	Including	39	40	1	0.00	1,350	0.04
19CWC0011	GT2	40	56	16	0.01	436	0.14
	Including	54	55	1	0.05	931	0.19
19CWC0020	Blackwood	65	71	6	0.01	540	0.23
	Including	65	67	2	0.00	980	0.29

**Notes:** Table 1 intersections are length-weighted composite assay intervals reported using the following criteria:

*Intersection Interval = Nominal cut-off grade scenarios:*

- $\geq 0.30\text{ppm}$  gold which also satisfy a minimum down-hole interval of  $0.5\text{m}$ ; and/or
- $\geq 500\text{ppm}$  copper which also satisfy a minimum down-hole interval of  $0.5\text{m}$ ; and/or
- $\geq 0.5\text{ppm g/t}$  silver which also satisfy a minimum down-hole interval of  $1.0\text{m}$ .
- No top-cutting has been applied to assay results for gold (NB: maximum  $1.0\text{m}$  Au grade  $6.89 \text{ g/t}$ ), copper (NB: maximum  $1.0\text{m}$  Cu grade  $7,443 \text{ ppm}$ ), or silver.
- Intersections are down hole lengths, true widths not known with certainty.

**Table 2: 2019 Citadel Project Drill Hole Collar Locations (MGA Zone 51/GDA 94)**

Hole ID	Deposit / Target Area	Hole Type	Northing (m)	Easting (m)	RL (m)	Hole Depth (m)	Azimuth (°)	Dip (°)	Assay Status
19CEC0001	Peashooter	RC	7,683,382	417,303	250	10	070	-60	Abandoned
19CEC0002	Peashooter	RC	7,683,358	417,259	250	124	070	-60	Received
19CEC0003	Beansprout	RC	7,686,408	418,042	250	130	237	-60	Received
19CEC0004	Beansprout	RC	7,686,380	418,000	250	112	237	-60	Received
19CEC0005	Beansprout	RC	7,686,239	418,164	250	124	237	-60	Received
19CEC0006	Beansprout	RC	7,686,212	418,122	250	118	237	-60	Received
19CEC0007	Beansprout	RC	7,686,093	418,285	250	16	237	-60	Abandoned
19CWC0001	Feathertop	RC	7,695,129	390,675	250	160	044	-60	Received
19CWC0002	Feathertop	RC	7,695,057	390,605	250	154	044	-60	Received
19CWC0003	Feathertop	RC	7,694,985	390,536	250	154	044	-60	Received
19CWC0004	GT1	RC	7,694,543	389,401	250	80	227	-60	Received
19CWC0005	GT1	RC	7,694,475	389,328	250	80	047	-60	Received
19CWC0006	GT1	RC	7,694,414	389,262	250	82	047	-60	Received
19CWC0007	GT1	RC	7,694,359	389,529	250	80	227	-60	Received
19CWC0008	GT1	RC	7,694,291	389,456	250	80	047	-60	Received
19CWC0009	GT1	RC	7,694,222	389,383	250	81	047	-60	Received
19CWC0010	GT2	RC	7,693,182	392,151	250	130	115	-60	Received
19CWC0011	GT2	RC	7,693,075	392,101	250	100	300	-60	Received
19CWC0012	GT3	RC	7,693,298	395,663	250	100	046	-60	Received
19CWC0013	GT3	RC	7,693,255	395,770	250	100	228	-60	Received
19CWC0014	GT3	RC	7,693,153	395,834	250	70	046	-60	Received
19CWC0015	GT3	RC	7,693,100	395,960	250	70	228	-60	Received
19CWC0016	Blackwood	RC	7,690,017	401,066	250	130	055	-60	Received
19CWC0017	Blackwood	RC	7,690,074	401,148	250	142	055	-60	Received
19CWC0018	Blackwood	RC	7,690,132	401,230	250	148	055	-60	Received
19CWC0019	Blackwood	RC	7,689,939	401,589	250	130	055	-60	Received
19CWC0020	Blackwood	RC	7,689,882	401,507	250	130	055	-60	Received
19CWC0021	Blackwood	RC	7,689,824	401,425	250	130	055	-60	Received
19CED0008	Calibre	DD	7,703,097	416,626	267	102	070	-63	Abandoned
19CED0009	Calibre	DD	7,703,097	416,626	267	570.60	072	-58	Received
19CED0010	Calibre	DD	7,703,061	416,512	269	768.40	070	-60	Pending
19CED0019	Calibre	DD	7,702,954	416,690	270	570.00	070	-60	Pending
19CEC0011	Calibre	RC	7,703,300	416,682	264	405	077	-61	Pending
19CEC0012	Calibre	RC	7,703,335	416,822	266	255	073	-56.9	Pending
19CEC0013	Calibre	RC	7,703,490	416,662	266	255	075	-60	Pending
19CEC0014	Calibre	RC	7,703,330	416,925	265	255	066	-56.5	Pending
19CEC0015	ANK-E-Sth	RC	7,695,432	424,119	270	195	045	-70	Pending
19CEC0016	ANK-E-Sth	RC	7,695,480	424,171	271	195	045	-70	Pending
19CEC0017	ANK-E-Sth	RC	7,694,761	425,012	276	159	045	-70	Pending
19CEC0018	ANK-E-Sth	RC	7,694,819	425,069	275	147	045	-70	Pending

**Notes:** Drill Hole Collar Table:

- Refer to JORC Table 1 Section 1 for full drill hole information; including drill technique, sampling and analytical details.



## PATERSON PROVINCE – 2019 Citadel Project Drill Hole Sampling

### JORC Code 2012 Edition: Table 1 - Section 1 Sampling Techniques and Data (Criteria in this section shall apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
Sampling techniques	<ul style="list-style-type: none"> <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 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 mineralisation that are Material to the Public Report.</li> <li>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 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 (e.g. submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<p><b>2019 Reverse Circulation (RC) Drilling</b></p> <ul style="list-style-type: none"> <li>Prospects/targets/deposits have been sampled by 36 RC drill holes, totaling 4,831 m, with an average drill hole depth of 134.2 m.</li> <li>Assay results are pending for 8 RC drill holes.</li> <li>RC drill holes were generally drilled on a range of hole spacings along line and across line, testing geophysical (AEM <math>\pm</math> aeromagnetic) <math>\pm</math> geochemical targets, with 4 RC holes in the vicinity of the Calibre deposit.</li> <li>Drill hole locations and orientations for all 2019 holes are tabulated in the body of this report.</li> </ul> <p><b>Reverse Circulation (RC) Sampling</b></p> <ul style="list-style-type: none"> <li>RC sampling was carried out under Antipa protocols and QAQC procedures as per industry best practice.</li> <li>One metre samples were collected from a cyclone into a plastic bucket and then laid out on the ground in rows of 10.</li> <li>Compositing RC samples in lengths between 2 to 4 m was undertaken via combining 'Spear' samples of the 1.0 m intervals to generate a 2 kg (average) sample. Areas of anomalous portable XRF Device (Niton or Olympus) ('pXRF') results or zones of encouraging geological observations were sampled as single metres. All samples are pulverised at the laboratory to produce material for assay.</li> </ul> <p><b>2019 Diamond Core Holes</b></p> <ul style="list-style-type: none"> <li>At the Calibre deposit 3 x 2019 diamond core holes (+ one hole abandoned in the rock-roll pre-collar) were completed, totaling 1,909 m, with an average drill hole depth of 636.3 m (NB: excludes the abandoned 102 m hole).</li> <li>Assay results are pending for 2 diamond core holes.</li> <li>Diamond core holes were drilled on a range of hole spacings along line and across line, testing Calibre deposit extensional mineralisation targets.</li> <li>Drill hole locations and orientations for all 2019 holes are tabulated in the body of this report.</li> </ul> <p><b>Diamond Core Sampling</b></p> <ul style="list-style-type: none"> <li>Diamond core sampling was carried out under Antipa and Rio Tinto Exploration Pty Ltd protocols and QAQC procedures as per industry best practice.</li> <li>HQ and NQ diamond core was drilled on a 6 m "run".</li> <li>The core was cut using an automated core-cutter and sample was collected from half-core on a 0.2 m to 1.0 m minimum sample length basis respectively.</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (e.g.</li> </ul>	<p><b>Reverse Circulation (RC) Drilling</b></p> <ul style="list-style-type: none"> <li>RC drilling was undertaken with the following rigs:</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>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).</i></p>	<ul style="list-style-type: none"> <li>25 RC holes = Austex X350 6x6 truck mounted rig; drill depth capacity of approximately 350 m with an on-board compressor producing 900 cfm at 350 psi and separate 8x8 truck mounted axillary booster providing total air capacity of 2400 cfm at 1000 psi.</li> <li>11 RC holes = DRA RC600 8x8 truck mounted rig; drill depth capacity of approximately +500 m with an on-board compressor producing 1150 cfm at 500 psi and separate 8x8 truck mounted axillary booster providing total air capacity of 2250 cfm at 1000 psi.</li> <li>Depending on the local target area geometries inclined drill holes were directed towards various azimuths ranging from 044° to 300° (GDA94 MGA Zone 51 co-ordinates), with inclination angles of -60°.</li> </ul> <p><b>Reverse Circulation (RC) Drilling</b></p> <ul style="list-style-type: none"> <li>A 137.5 mm face sampling RC hammer.</li> </ul> <p><b>Diamond Core Holes</b></p> <ul style="list-style-type: none"> <li>The drilling consisted of Mud rotary rock-roll drilling to several metres above the Permian-Proterozoic unconformity, followed by HQ diamond core drilling to designated competent ground, followed by NQ diamond core drilling to the end of hole.</li> <li>The core was orientated using the ACT III RD tool. At the end of each run, the low side of the core was marked by the drillers and this was used at the site for marking the whole drill core with a reference line.</li> </ul>
<p><i>Drill sample recovery</i></p>	<ul style="list-style-type: none"> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<p><b>Reverse Circulation (RC) Drill Samples</b></p> <ul style="list-style-type: none"> <li>RC sample recovery and sample quality were recorded via visual estimation of sample volume and condition of the drill spoils.</li> <li>RC sample recovery typically ranges from 90 to 100%, with only very occasional samples with less than 70% recovery.</li> <li>RC sample recovery was maximized by endeavoring to maintain a dry drilling conditions as much as practicable.</li> <li>Relationships between recovery and grade are not evident and are not expected given the generally excellent and consistently high sample recovery.</li> <li>RC results are generated for the purpose of exploration and potentially for Mineral Resource estimations.</li> </ul> <p><b>Diamond Core Holes</b></p> <ul style="list-style-type: none"> <li>Core recovery was measured and recorded continuously from the start of the casing to the end of the hole for every hole.</li> <li>Each core run length, generally 6 m, was marked by a core block which provided the depth, the core drilled and the core recovery.</li> <li>Generally, core recovery was &gt; 99%.</li> </ul>

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> <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>	<p><b>Reverse Circulation (RC) Drill and Diamond Core Logging</b></p> <ul style="list-style-type: none"> <li>Geological logging of 100% of all intervals was carried out recording colour, weathering, lithology, mineralogy, alteration, veining and sulphides.</li> <li>Logging includes both qualitative and quantitative components.</li> <li>RC samples were measured for magnetic susceptibility using a handheld Magnetic Susceptibility meter at 1 m intervals.</li> <li>The logging of the RC chips was done after sieving and washing of the material collected from the RC rig's cyclone.</li> <li>RC samples are generally analyzed in the field using a pXRF for the purposes of geochemical and lithological interpretation and the selection of sampling intervals.</li> <li>For diamond core holes structural and geotechnical measurements were also recorded.</li> <li>All the drill holes were logged before sampling.</li> <li>All logging is entered directly into a notebook computer using the Antipa Proprietary Logging System which is based on Microsoft Excel. The logging system uses standard look up tables that does not allow invalid logging codes to be entered. Further data validation is carried out during upload to Antipa's master Access SQL database.</li> <li>The core was photographed both wet and dry inside the core trays.</li> </ul>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>The sample preparation technique for RC and diamond core samples are documented by Antipa Mineral Ltd's and also, for diamond core, Rio Tinto standard procedures documents and are in line with industry standards in sample preparation.</li> </ul> <p><b>Reverse Circulation (RC) Samples</b></p> <ul style="list-style-type: none"> <li>One metre samples were collected from a cyclone into a plastic bucket and then laid out on the ground in rows of 10 or 20.</li> <li>Compositing RC samples of between 2 to 4 m was undertaken via combining 'Spear' samples of the intervals to generate a 2 kg (average) sample. Areas of anomalous pXRF results or anomalous geological observations were sampled as single metres.</li> <li>All samples are crushed and pulverised at the laboratory to produce material for assay.</li> </ul> <p><b>Diamond Core Samples</b></p> <ul style="list-style-type: none"> <li>Diamond core was sawn into two, and half was collected into a bag and submitted for analysis, the other half was kept in the tray and stored.</li> <li>The core was typically sampled at 1 m intervals with breaks for major geological changes, with sample interval lengths ranging from 0.2 to 1.0 m.</li> <li>The core may also be scanned using CoreScan's Hyperspectral Core Imager which integrates high resolution reflectance spectroscopy (0.5mm), visual imagery (0.05mm) and 3D laser profiling to map mineralogy and geochemistry.</li> <li>All samples are crushed and pulverised at the laboratory to produce material for assay.</li> </ul>

Criteria	JORC Code explanation	Commentary
		<b>Reverse Circulation (RC) and Diamond Core Sample Preparation</b> <ul style="list-style-type: none"> <li>Sample preparation of RC samples was completed at ALS Limited laboratory in Perth following industry best practice in sample preparation involving oven drying, coarse crushing of the RC sample down to nominal 70% passing -6 mm, followed by fine crushing using a rotary splitter down to nominal 70% passing -2 mm to produce a 750 gram sub-sample, followed by pulverisation of the entire sample (total prep) using a LM2 grinding mill to a grind size of 85% passing 75 µm and split into 30 to 50 gram sub-sample/s for analysis.</li> <li>Duplicate samples were collected at each stage of the preparation, with a rate of 1:50 (field duplicates) or 1:20 (crush and pulp duplicates) samples. Duplicate results show acceptable levels of precision for the style of mineralisation.</li> <li>The sample sizes are considered to be appropriate to correctly represent the sulphide style of mineralisation encountered in the region, the thickness and consistency of the intersections and the sampling methodology.</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>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.</li> <li>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.</li> </ul>	<b>Analytical Techniques</b> <ul style="list-style-type: none"> <li>All samples were submitted to an ALS Limited laboratory in Perth.</li> <li>51 elements were analysed using 4-acid digest followed by ICP-OES/MS measurements including qualitative Au, Pt and Pd.</li> <li>30 to 50 grams of sample were used for Au analysis by fire assay with AAS finish. The sample sizes are considered to be appropriate to correctly represent the style of mineralisation.</li> <li>Quality control samples consisted of field duplicates (1:50), crush duplicates (1:20), pulp duplicates (1:20), blanks (1:20) and commercial certified reference materials (3:100) with the grade of the inserted standards not revealed to the laboratory. All the results are checked in the mater database before being used, and the analysed batches are continuously reviewed to ensure they are performing within acceptable accuracy and precision limits for the style of mineralisation.</li> <li>No material contamination was noted in the laboratory process.</li> <li>Sample preparation checks for fineness were carried out by the laboratory as part of its internal procedures.</li> <li>Elements analysed for Au, Ag, Al, As, Ba, Be, Bi, Ca, Cd, Ce, Co, Cr, Cs, Cu, Fe, Ga, Ge, Hf, In, K, La, Li, Mg, Mn, Mo, Na, Nb, Ni, P, Pb, Pd, Pt, Rb, Re, S, Sb, Sc, Se, Sn, Sr, Ta, Te, Th, Ti, Tl, U, V, W, Y, Zn and Zr.</li> <li>No geophysical tools were used to determine any element concentrations in this report.</li> <li>Handheld portable XRF analyser (Niton XL3t 950 GOLDD+ or Olympus Professional) devices are used in the field to investigate and record geochemical data for internal analysis. However, due to 'spatial' accuracy/repeatability issues this data is generally not publicly reported for drill holes, other than for specific purposes/reasons.</li> <li>Inter laboratory cross-checks analysis programmes have not been conducted at this stage.</li> <li>In addition to Antipa supplied CRM's, ALS Limited laboratory includes in each sample batch assayed</li> </ul>

Criteria	JORC Code explanation	Commentary
		<p>certified reference materials, blanks and up to 10% replicates.</p> <ul style="list-style-type: none"> <li>Selected anomalous samples are re-digested and analysed to confirm results.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Significant intersections have been visually verified by one or more alternative company personnel and/or contract employees.</li> <li>For diamond core, all the sample intervals were visually verified using high quality core photography through Imago, and some selected samples were taken inside the mineralised interval for optical microscopy by qualified petrologists.</li> <li>All logging is entered directly into a notebook computer using the Antipa Proprietary Logging System which is based on Microsoft Excel. The logging system uses standard look up tables that does not allow invalid logging codes to be entered. Further data validation is carried out during upload to Antipa's master SQL database.</li> <li>No adjustments or calibrations have been made to any assay data collected, which are electronically uploaded from the laboratory to the database.</li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>Accuracy and quality of surveys used to locate drill holes (collar and down-hole 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 style="list-style-type: none"> <li>km = kilometre; m = metre; mm = millimetre.</li> <li>Drill hole collar locations are surveyed using a handheld Garmin 64S GPS which has an accuracy of <math>\pm 3</math> m.</li> <li>The drilling co-ordinates are all in Geocentric Datum of Australia GDA94 MGA Zone 51 co-ordinates.</li> <li>Inclined RC drill holes are checked for drill rig set-up azimuth using a Suunto Sighting Compass from two directions.</li> <li>Vertical RC drill holes do not require drill rig set-up azimuth checking.</li> <li>Drill hole inclination is set by the driller using a clinometer on the drill mast and checked by the geologist prior the drilling commencing.</li> <li>2019 Drill hole down hole surveys: <ul style="list-style-type: none"> <li>Downhole surveys were only completed for RC drill holes 19CEC0011 to 19CEC0014 and diamond core holes 19CED0009, 19CED0010 and 19CED0019 using a gyroscopic downhole survey tool.</li> </ul> </li> <li>The topography is relatively flat, and if defaulted the topographic surface is set to 250m RL.</li> <li>Prior to 2019 the Company has utilised and referenced a local grid at Calibre which is defined below. References in the text and the Calibre deposit diagrams are all in the Local Grid. Table 1 is in GDA94 / MGA Zone 51: <ul style="list-style-type: none"> <li>Calibre Local Grid 0.00m east is 421,535.53m east in GDA94 / MGA Zone 51;</li> <li>Calibre Local Grid 0.00m north is 7,691,393.40m north in GDA94 / MGA Zone 51;</li> <li>Calibre Local Grid North (360°) is equal to 315° in GDA94 / MGA Zone 51; and</li> <li>Calibre Local Grid elevation is equal to GDA94 / MGA Zone 51.</li> </ul> </li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>Whether the data spacing and distribution is sufficient to</li> </ul>	<ul style="list-style-type: none"> <li>RC drill sample compositing is sometimes applied for the reporting of the exploration results.</li> <li>No compositing of diamond core samples has been applied.</li> </ul>



Criteria	JORC Code explanation	Commentary
	<p><i>establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i></p> <ul style="list-style-type: none"> <li><i>Whether sample compositing has been applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>The reporting of both RC and diamond core assay results as broader intersection intervals may occur on the basis tabulated in the body of this report.</li> <li>Regional Geophysical Targets (AEM ± aeromagnetic): <ul style="list-style-type: none"> <li>Drill spacing was variable depending on target rank, target dimensions (along strike and/or across strike); if more than one drill line per target then drill lines were generally spaced approximately 250 to 750 m apart with an average drill hole spacing on each section between 50 to 100 m.</li> <li>The typical section spacing/drill hole distribution is not considered adequate for the purpose of Mineral Resource estimation.</li> </ul> </li> <li>Calibre deposit 2019 RC drill holes may be used for the purpose of Mineral Resource estimation in conjunction with other drill holes (i.e. pre 2019 RC drill holes and 2019 and pre-2019 diamond core holes).</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li><i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>No consistent and/or documented material sampling bias resulting from a structural orientation has been identified for the “regional” geophysical targets at this point in time.</li> <li>For the Calibre deposit drilling is mainly orientated perpendicular to the dominant structural trend.</li> <li>However, both folding, multiple vein directions and faulting have been variously recorded in the region via diamond core drilling, surface mapping and geophysical datasets.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li><i>The measures taken to ensure sample security.</i></li> </ul>	<ul style="list-style-type: none"> <li>Chain of sample custody is managed by Antipa and, in relation to 2019 diamond core also Rio Tinto Exploration Pty Ltd, to ensure appropriate levels of sample security.</li> <li>Samples in calico bags are stored on site in enclosed stillages and transported via road on trucks from site to an ALS Limited laboratory in Perth via Port Hedland.</li> <li>Each sample was given a barcode at the laboratory and the laboratory reconciled the received sample list with physical samples. Barcode readers were used at the different stages of the analytical process.</li> <li>The laboratory uses a LIMS system that further ensures the integrity of results.</li> </ul>
Audits or reviews	<ul style="list-style-type: none"> <li><i>The results of any audits or reviews of sampling techniques and data.</i></li> </ul>	<ul style="list-style-type: none"> <li>Sampling techniques and procedures are regularly reviewed internally, as is the data.</li> <li>Consultants Snowden, during completion of the 2013 Calibre Mineral Resource estimate, undertook a desktop review of the Company’s sampling techniques and data management and found them to be consistent with industry standards.</li> </ul>

## PATERSON PROVINCE – 2019 Citadel Project Drill Hole Reporting

### Section 2 – Reporting of Exploration Results (Criteria listed in the preceding section also apply to this section)

Criteria	JORC Code explanation	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li><i>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.</i></li> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>The RC drilling is located within Exploration Licenses: <ul style="list-style-type: none"> <li>E45/2876;</li> <li>E45/2877; and</li> <li>E45/4561.</li> </ul> </li> <li>Antipa currently has a 100% interest in all Citadel Project tenements and there are no royalties on these tenements.</li> <li>On 9 October 2015 Farm-in and JV Agreements were executed between Antipa and Rio Tinto Exploration Pty Limited (Rio Tinto). Refer to the main body of the report for further information pertaining to these agreements.</li> <li>E45/2876, E45/2877 and E45/4561 are contained completely within land where the Martu People have been determined to hold Native Title rights. No historical or environmentally sensitive sites have been identified in the area of work.</li> <li>E45/2874, E45/2901, E45/4212, E45/4213 and E45/4214 are contained completely within land where the Nyangumarta People have been determined to hold Native Title rights. No historical or environmentally sensitive sites have been identified in the area of work.</li> <li>The tenements are all in 'good standing' with the Western Australian DMIRS.</li> <li>There are no known impediments exist, including to obtain a licence to operate in the area.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li><i>Acknowledgment and appraisal of exploration by other parties.</i></li> </ul>	<ul style="list-style-type: none"> <li>Prior to 1991 limited to no mineral exploration activities.</li> <li>1991 to 1996 BHP Australia completed various regional airborne geophysical surveys (e.g. aeromagnetics, radiometrics, GeoTEM, ground magnetics, surface EM), geochemical Air core and selected diamond core drilling programmes across a significant area which covered the Citadel Project. Whilst this era of exploration highlighted a number of areas as being variously anomalous, BHP did not locate any basement (Proterozoic) precious or base metal mineralisation. In 1995 BHP Minerals completed an MMI-A/MMI-B soil programme over an area which was ultimately found to be the region within which the Magnum deposit was located.</li> <li>1997 to 2002 JV partners Croesus-Gindalbie completed minor surface geophysical surveys (e.g. electromagnetics) and various drilling programmes across parts of the Citadel Project (i.e. 17 x Diamond core, 10 x RC and 134 x Air core drill holes) leading to the discovery of the Magnum Au-Cu-Ag deposit, and its partial delineation, in 1998.</li> <li>2002 to 2003 JV partners Teck Cominco and Croesus-Gindalbie completed detailed aeromagnetic and radiometric surveys over the entire Citadel Project, Pole-Pole IP over 8 targets and limited drilling (i.e. 4 x Diamond core holes) within the Citadel Project.</li> <li>2004 to 2005 JV partners NGM Resources and Croesus-Gindalbie completed limited drilling (i.e. 3 x Diamond core holes) at selected Citadel Project prospects intersecting minor Au-Cu-Ag</li> </ul>

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		<p>mineralisation at the Colt prospect.</p> <ul style="list-style-type: none"> <li>• 2006 to 2010 Glengarry Resources/Centaurus Metals undertook re-processing of existing data and re-logging of some drill core. No drilling or geophysical surveys were undertaken, and so no new exploration results were forthcoming.</li> <li>• 2011 to 2015 Antipa Minerals Ltd exploration of the Citadel Project including both regional and prospect/area scale geophysical surveys (i.e. VTEM, ground EM, DHEM, ground magnetics and ground gravity) and geochemical surveys (i.e. MMI-M™ and SGH™ soil programmes) and drilling programmes (i.e. diamond core and RC) resulting in two greenfield discoveries in 2012, i.e. Calibre and Corker, and subsequent drilling programmes.</li> <li>• October 2015 to March 2017 Antipa Minerals Ltd operators under a Farm-in Agreement executed on the 9 October 2015 between Antipa and Rio Tinto Exploration Pty Limited (“Rio Tinto”), a wholly owned subsidiary of Rio Tinto Limited. RC drilling at Calibre late 2015, and in 2016 an extensive IP survey, a regional target RC drilling programme and single (deep) diamond core hole were completed.</li> <li>• April 2017 to March 2019 Rio Tinto operators under the Farm-in Agreement (see above).</li> <li>• 2017 and 2018 exploration activities included: <ul style="list-style-type: none"> <li>• Further extensive IP survey (2017) in the southeastern portion of E45/2877;</li> <li>• Air Core drilling Programme (2017) in the central region (Rimfire area) of E45/2876;</li> <li>• RC drilling programme (2017) testing targets located on E45/2876 (Rimfire area) and 45/2877 (Calibre area);</li> <li>• RC drilling programme (2018) testing several targets located on E45/2876 and 45/4561; and</li> <li>• Two (i.e. 2017 and 2018) aerial electromagnetic surveys primarily over various portions of all of the Citadel Project tenements have been completed.</li> </ul> </li> <li>• March 2019 Antipa Minerals Ltd operators under the Farm-in Agreement (see above).</li> <li>• 2019 exploration activities are ongoing.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>• <i>Deposit type, geological setting and style of mineralisation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Citadel Project region of the Paterson Province is located on the Anketell Shelf of the Yeneena Basin, a Neoproterozoic aged sequence of meta-sedimentary rocks, mafic intrusives and granitoids that has been intruded by post-mineralisation Cambrian dolerite dykes and is entirely covered by younger Phanerozoic sediments typically ranging in thickness of between 10 to 130 m.</li> <li>• The Paterson is a low to moderate grade metamorphic grade (i.e. greenschist to lower-amphibolite) terrane, with local hydrothermal alteration and/or contact metamorphic mineral assemblages and styles are indicative of a high-temperature local environment.</li> <li>• Precious and/or base metal mineralisation is hydrothermal in nature and is shear, fault and strata/contact controlled and is typically sulphide bearing.</li> <li>• Mineralisation styles include vein, stockwork, breccia and skarns.</li> <li>• Mineralisation includes chalcopyrite, pyrite, pyrrhotite, bismuthine, sphalerite, galena, scheelite and wolframite.</li> </ul>

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Drill hole Information	<ul style="list-style-type: none"> <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: <ul style="list-style-type: none"> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul> </li> <li>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>A summary of all available information material to the understanding of the exploration region exploration results can be found in the main body of the report (including drill hole collar table providing collar co-ordinates, orientations and length for all reported drill holes).</li> <li>A summary of all available previously reported information material to the understanding of the exploration region exploration results can also be found in previous Western Australia (WA) DMIRS publicly available reports.</li> <li>All the various technical and exploration reports are publicly accessible via the WA DMIRS' online WAMEX system.</li> <li>The specific WA DMIRS WAMEX and other reports related to the exploration information the subject of this public disclosure have been referenced in previous public reports.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide details of all exploration completed by the Company since 2011; these reports are all available to view on <a href="http://www.antipaminerals.com.au">www.antipaminerals.com.au</a> and <a href="http://www.asx.com.au">www.asx.com.au</a>.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>In reporting Exploration Results, 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.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>This release has no reference to previously unreported drill results, sampling, assays or mineralisation.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide details of all exploration completed by the Company since 2011; these reports are all available to view on <a href="http://www.antipaminerals.com.au">www.antipaminerals.com.au</a> and <a href="http://www.asx.com.au">www.asx.com.au</a>.</li> <li>The reported average intersection grades may be length-weighted averages, with a minimum intersection interval length of 1 m and maximum internal dilution allowed is 10 m.</li> <li>Metal equivalence is not used in this report.</li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <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 style="list-style-type: none"> <li>Regional Geophysical Targets (AEM ± aeromagnetic): <ul style="list-style-type: none"> <li>The drill section spacing and sampling, at this stage, is insufficient to establish the geometrical relationships between the drill holes and any mineralised structures.</li> <li>Therefore, at this stage the reported intersection lengths are down hole in nature and the true width, which will be dependent on the local mineralisation geometry/setting, is not known.</li> </ul> </li> <li>Calibre Deposit: <ul style="list-style-type: none"> <li>The reported intersection lengths are down hole in nature and the true width, which will be dependent on the local mineralisation geometry/setting, is not known with complete certainty.</li> <li>For the diamond core holes down hole intersections represent between 60 to 75% of the mineralisation domain/envelope true width depending on the drill hole orientation, both azimuth and dip.</li> </ul> </li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>Appropriate maps and sections (with scales) and tabulations</li> </ul>	<ul style="list-style-type: none"> <li>All appropriate maps and sections (with scales) and tabulations of intercepts are reported or can</li> </ul>

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	<i>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.</i>	<p>sometimes be found in previous WA DMIRS WAMEX publicly available reports.</p> <ul style="list-style-type: none"> <li>This release has no reference to previously unreported drill results, sampling, assays or mineralisation.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide maps and sections (with scales) and tabulations of intercepts generated by the Company since 2011; these reports are all available to view on <a href="http://www.antipaminerals.com.au">www.antipaminerals.com.au</a> and <a href="http://www.asx.com.au">www.asx.com.au</a>.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <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 to avoid misleading reporting of Exploration Results.</li> </ul>	<ul style="list-style-type: none"> <li>All significant results are reported or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> <li>This release has no reference to previously unreported drill results, sampling, assays or mineralisation.</li> <li>Antipa Minerals Ltd publicly disclosed reports provide details of all significant exploration results generated by the Company since 2011; these reports are all available to view on <a href="http://www.antipaminerals.com.au">www.antipaminerals.com.au</a> and <a href="http://www.asx.com.au">www.asx.com.au</a>.</li> </ul>
Other substantive exploration data	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>This announcement refers to previous exploration results including geophysics, drill results and geology which can be found in previous public reports.</li> <li>All meaningful and material information has been included in the body of the text or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> <li>Zones of mineralisation and associated waste material have been measured for their specific gravity (“density”) at both the Calibre and Magnum deposits located on exploration licence E45/2877. The measurement used the hydrostatic/gravimetric method (Archimedes Principle of buoyancy).</li> <li>Multi element assaying has been conducted variously for a suite of potentially deleterious elements including arsenic, sulfur, lead, zinc and magnesium.</li> <li>Hyperspectral and high-resolution core imagery may be collected for the 2019 diamond core using a CoreScan Hyperspectral Core Imager.</li> <li>To date no downhole ‘logging’ surveys have been completed for the 2019 drill holes.</li> <li>Geotechnical logging (e.g. Recovery, RQD and Fracture Frequency) is not possible for RC drill material; however, all diamond core holes (i.e. Calibre, Magnum, Corker, Blue Steel, etc) receive geotechnical logging. No geotechnical logging was obtained from the WA DMIRS WAMEX reports.</li> <li>Downhole information on structure type, dip, dip direction, alpha angle, beta angle, gamma angle, texture and fill material is not possible for RC drill material; however all diamond core holes (i.e. Calibre, Magnum, Corker, Blue Steel, etc) receive structural logging which can be obtained from the Company’s pre-existing SQL database and WA DMIRS WAMEX reports.</li> <li>Metallurgical test-work results available on these particular tenements is restricted to the Calibre gold-copper-silver-tungsten deposit. Preliminary metallurgical test-work results are available for the Calibre deposit, this report is available to view on <a href="http://www.antipaminerals.com.au">www.antipaminerals.com.au</a> and <a href="http://www.asx.com.au">www.asx.com.au</a>.</li> <li>The Calibre deposit’s simple and coarse grained copper mineralogy, is almost exclusively</li> </ul>



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		<p>chalcopryrite. No copper oxide or other copper sulphide minerals were observed. The gangue mineralogy is dominated by quartz and feldspar. The straightforward mineralogy has produced very favourable metallurgical outcomes from the low copper ore grades of Calibre.</p> <ul style="list-style-type: none"> <li>• Preliminary metallurgical test work was completed at the Bureau Veritas Minerals Pty Ltd laboratories in Perth, Western Australia under the management of Bureau Veritas metallurgists and Antipa's Managing Director.</li> <li>• A master 39 kilogram metallurgical composite sample was composed of material from 90 individual samples. All samples were collected from diamond core representative of the Calibre gold-copper-silver-tungsten mineralisation. As no oxide mineralisation is known to occur at Calibre the samples were all of primary and transitional mineralisation.</li> <li>• The master metallurgical composite sample was constructed to have precious and base metal grades comparable to the Calibre Inferred Mineral Resource. The head grade for the composite used in the definitive metallurgical test was 0.63 g/t gold, 0.23% copper, 0.80 g/t silver, 0.02% tungsten tri-oxide and 0.97% sulfur.</li> <li>• The preliminary metallurgical test work which focused on the precious and base metals has comprised: <ul style="list-style-type: none"> <li>• Mineralogical, and metallurgical data investigation via the QEMSCAN® micro-analysis system;</li> <li>• HLS density beneficiation test work;</li> <li>• Sulphide Flotation;</li> <li>• Tungsten Flotation; and</li> <li>• Cyanide leaching of sulphide flotation tailings for recovery of remaining gold and silver.</li> </ul> </li> <li>• The Calibre mineralisation is planned to be crushed and ground with the following products being produced: <ul style="list-style-type: none"> <li>• A sulphide concentrate containing copper, gold and silver;</li> <li>• Gold doré (containing gold and silver); and</li> <li>• A tungsten concentrate.</li> </ul> </li> <li>• Preliminary metallurgical test work has shown that saleable products for copper, gold and silver can be produced from the Calibre mineralisation at good metallurgical recoveries.</li> <li>• Further test-work is required with respect to tungsten concentrate specifications; however, the initial results are considered encouraging, including mineralogy investigation using QEMSCAN® which revealed the tungsten minerals to be comparatively coarse grained and well liberated. As a consequence, a conservative recovery of 50% was assumed for tungsten.</li> <li>• Heavy Liquid Separation (HLS) test work was used to assess the amenability of the ore to physical upgrade processes such as gravity. The HLS results highlighted the excellent density beneficiation qualities of the Calibre mineralisation.</li> <li>• Geophysical surveys carried out over significant regions of the Citadel Project include airborne electromagnetics, aeromagnetics, airborne radiometrics, some induced polarisation/resistivity and</li> </ul>

Criteria	JORC Code explanation	Commentary
		ground gravity surveys, and magnetic susceptibility from drill sample material. Satellite imagery is also available.
<i>Further work</i>	<ul style="list-style-type: none"> <li><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></li> <li><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></li> </ul>	<ul style="list-style-type: none"> <li>Planned further work: <ul style="list-style-type: none"> <li>Ongoing review and interpretations of the 2019 and historical exploration data;</li> <li>Planning and execution of follow-up exploration activities to identify potential high-grade mineralisation;</li> <li>Geophysical data modelling (including AEM and Aeromagnetics); and</li> <li>Full geological interpretation including 3D modelling where data supports.</li> </ul> </li> <li>The Calibre deposit results presented here indicate that the mineralisation is not closed off by the drilling performed to date.</li> <li>All appropriate maps and sections (with scales) and tabulations of intercepts are reported or can sometimes be found in previous WA DMIRS WAMEX publicly available reports.</li> </ul>