# Emerging Porphyry Copper intersected at the Kiola Project in NSW

## Highlights

- Encouraging drilling intersections of copper sulphides in several holes.
- First deep drilling at Kiola has intersected mineralisation, geology and alteration consistent with the zones of a porphyry copper discovery.
- Assay results returned from four holes drilled at Kiola Project include (Table 2):
    - 43.5m at 0.13% copper from 330m within a thick zone of magnetite-pyrite-chlorite-pyroxene epidote-garnet skarn (drillhole KIORCDD008).
    - 3m at 0.47 g/t gold from 45m and 9m at 0.29% zinc (from 289m) including 1m at 1.24% zinc (drillhole KIORCDD05W1).
- Drilling has extended the Nasdaq skarn mineralisation, which is near surface in the north, and plunges towards the Dolly's North prospect 1.5kms to the south (Figures 3 & 4).
- The potential to target porphyry copper-gold related systems from the recent drilling is being assessed to identify future drilling targets.

**Commercial Manager, Rod Wheatley commented: "Emmerson's first deep drilling at our Kiola Project has confirmed and expanded the porphyry style copper mineralisation potential of the area."**

*"Recent deep diamond drilling at the Kiola Project confirms an emerging and potentially large porphyry copper style mineralisation that stretches over 5km$^2$ - plus extends the Nasdaq gold and base metal skarn mineralisation a further 1.5kms to the south.*

*Visible chalcopyrite both in the skarns and as disseminations in altered intrusions are seen 5km to the south at the Yards prospect. These results are consistent with our 3D MIMDAS geophysical model that links the surface geology, copper and gold rock chip geochemistry - and historic regional workings - to a unifying source at depth.*

*This deeper drilling is highly encouraging with intersections of mineralisation, geology and alteration consistent with the zones of a porphyry copper system. With this new data, we will update the geological model with the aim of identifying further drill targets.*

*We would also like to thank the NSW Government's New Frontiers initiative which co-funded the Kiola drill program."*

## Kiola Project (Figure 1) – Large Scale Porphyry Project Testing Multiple Targets

First drilling to some 500m below the surface in four reverse circulation (RC) and diamond drill holes completed at Kiola has revealed geology and mineralisation consistent with the outer zones of porphyry copper mineralisation. Drilling has confirmed and linked the surface geology and elevated copper and gold geochemistry to our subsurface MIMDAS geophysical model (Figure 3).

World class porphyry districts such as Newcrest's Cadia project (> 50Moz gold; > 9.5Mt copper), some 80km to the north of Kiola (Figure 1) stretch over 5.7km and consist of a cluster of deposits which include both skarns and porphyry style mineralisation.

Indications suggest Kiola may share these attributes with drilling intersecting skarn, stockwork veins and disseminated porphyry style mineralisation over an area of approximately 5km$^2$. Given the sparse drilling, it is not known whether this promising geology and mineralisation is connected or represent discrete mineralised porphyry centres as seen at many of the deposits in this productive Macquarie Arc belt.

This drilling has extended the Nasdaq skarn (Figures 3 & 4) which occurs close to the surface in the north and plunges south over 1.5kms where it is intersected in drillhole KIORCDD008. This drillhole intersected two zones of skarn-replacing volcano-sedimentary sequences, with the upper being ~71m thick (156m to 227m) and is comprised of magnetite-pyrite-chlorite-pyroxene epidote-garnet with chalcopyrite as blebs and disseminations (Figure 2). The lower zone is ~45m thick (327m to 372m) and has similar mineralogy however chalcopyrite appears associated with magnetite and increases in abundance. Assay results from these two skarn zones show intervals of copper mineralisation (Table 2). While not considered to be economic intervals, they are interpreted to be suggestive of a significant scale source. Drillhole KIORCDD008 showed prograde and retrograde skarn mineralisation and the causative porphyry intrusion has not been intersected to date. Volcaniclastic sediments occurring in and around the skarn zones show propylitic (epidote, quartz, chlorite, pyrite, calcite) alteration.

Drillhole KIORCDD007, located ~350m southwest of KIORCDD008, intersected an intensely silicified sedimentary unit from 417m to 421.7m cut by quartz stockwork veins with blebs of chalcopyrite (Figure 5). The interval returned an assay result of 4.3m at 0.18% Cu, including 0.6m at 0.49% Cu from 417.4m (Table 2). Drillhole KIORCDD007 then intersected a hydrothermal breccia transitioning to strong chlorite-epidote alteration and then to a skarn composed of pyrrhotite-chlorite-calcite (from 447m to 453m).

Drillhole KIORCDD005W1 at the Yards prospect (Figures 3 & 4), some 3km to the south of Dolly's North, intersected hydrothermal breccia with molybdenite cutting feldspar porphyry and monzonite dykes (Figure 6). The dykes exhibit weak chlorite-hematite alteration and contain disseminated pyrrhotite and pyrite. Base metals (sphalerite-galena) occur as veins, locally with associated chalcopyrite with assay results of 9m at 0.29% Zn from 289m, including 1m at 1.24% Zn from 294m.

Drillhole KIORCDD008 has returned both very encouraging alteration and visual results in newly discovered magnetite skarn zones typical of Macquarie Arc porphyry systems. The footprint of the Kiola skarn stretches over 1.5kms of strike length and remains open. Further work is being undertaken to improve the geological understanding and establish vectors to the core of the porphyry mineralisation.

## Kiola Project Background – signs of an emerging new porphyry copper district

Emmerson's Kiola project is an early-stage gold-copper project in our NSW portfolio, centred on the 15km$^2$ Kiola Geochemical Zone (KGZ) – identified by Emmerson. It encompasses favourable Ordovician age rocks that display anomalously high gold and copper rock chip and soil geochemistry, supported by several regional historic workings.

Emmerson's multifaceted field program has included soil and rock chip geochemistry, with rock chip samples up to **19.6g/t gold and 2.16% copper** (ASX: 12 March 2020). It has also utilised aspects of the Australian Research Council (ARC) Linkage project such as "green rock alteration" and age-dating to refine the subsurface 3D model and provide vectors to copper and gold mineralisation. This has provided the framework for linking the surface geology and mineralisation within the 15km$^2$ KGZ to a unifying model at depth.

## For further information, please contact:

**Rod Wheatley**
Commercial Manager
**E:** rwheatley@emmersonresources.com.au
**T:** +61 8 9381 7838

**Media enquiries**
Michael Vaughan, Fivemark Partners
**E:** michael.vaughan@fivemark.com.au
**T:** +61 422 602 720

**This release has been authorised by the Board of Emmerson Resources Limited.**

## About Emmerson Resources, Tennant Creek and New South Wales

Emmerson is actively exploring two early-stage gold-copper projects in NSW, identified from the application of 2D and 3D predictive targeting models.

The highly prospective Macquarie Arc in NSW hosts >80Moz gold and >13Mt copper with these resources heavily weighted to areas of outcrop or limited cover. Emmerson's exploration projects contain many attributes of the known deposits within the Macquarie Arc but remain underexplored due to historical impediments, including overlying cover (farmlands and younger rocks) and a lack of effective historic exploration.

Emmerson has a commanding land position and is exploring the Tennant Creek Mineral Field (TCMF), one of Australia's highest-grade gold and copper fields that has produced over 5.5Moz of gold and 470,000t of copper from deposits including Warrego, White Devil, Orlando, Gecko, Chariot, and Golden Forty. These high-grade deposits are highly valuable exploration targets, and to date, Emmerson's discoveries include high-grade gold at Edna Beryl and Mauretania, plus copper-gold at Goanna and Monitor and these were found utilising new technology and concepts and are the first discoveries in the TCMF for over two decades.

**A rush of new tenement applications by major and junior explorers in both NSW and Tennant Creek highlight the prospectivity of these regions for copper and gold, and Emmerson's strategic land holding.**

***Regulatory Information***

*The Company does not suggest that economic mineralisation is contained in the untested areas, the information contained relating to historical drilling records have been compiled, reviewed, and verified as best as the Company was able. As outlined in this announcement the Company is planning further drilling programs to understand the geology, structure, and potential of the untested areas. The Company cautions investors against using this announcement solely as a basis for investment decisions without regard for this disclaimer.*

***Competency Statement***

*The information in this release on Exploration Results is based on information compiled by Dr Ana Liza Cuison, MAIG, MSEG. Dr Cuison is a Member of the Australian Institute of Geoscientists and has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which she is 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. Dr Cuison is a full-time employee of the Company and consents to the inclusion in this report of the matters based on her information in the form and context in which it appears.*

*Information in this announcement that relates to Exploration Results has been extracted from the following Company ASX announcements:*

- *ASX: 12 March 2020 – Multiple Gold-Copper Drill Targets at Kiola NSW*
- *ASX: 27 August 2020 – NSW Exploration Update*

*The Company confirms that it is not aware of any new information or data that materially affects the information that relates to Exploration Results included in previous market announcements. The Company confirms that the form and context in which the Competent Person's findings area presented have not been materially modified from the original market announcements.*

*The above announcements are available to view on the Company's website at www.emmersonresources.com.au*

**Cautionary Statement**

*The Exploration Targets described above are conceptual in nature and may or may not be achieved. It must be noted that that there has been insufficient exploration to estimate a Mineral Resource and it is uncertain if further exploration will result in the estimation of a Mineral Resource.*

**Forward-Looking Statements**

*This document may include forward-looking statements, opinions and projections, all preliminary in nature, prepared by the Company on the basis of information developed by itself in relation to its projects. Forward-looking statements include, but are not limited to, statements concerning Emmerson Resources Limited's anticipated future events, including future resources and exploration results, and other statements that are not historical facts. When used in this document, the words such as "could", "estimate", "plan," "expect," "intend," "may", "potential," "should," "believe", "anticipates", "predict", "goals", "targets", "aims", "outlook", "guidance", "forecasts", "may", "will", "would" or "should" or, in each case, their negative or other variations or similar expressions are forward-looking statements. By their nature, such statements involve known and unknown risks, assumptions,*

*uncertainties, and other important factors, many of which are beyond the control of the Company, and which may cause actual results, performance, or achievements to differ materially from those expressed or implied by such statements.*

*Forward-looking statements speak only as at the date of this document and the Company does not undertake any obligation to update forward-looking statements even if circumstances or management's estimates or opinions should change. Forward-looking statements are provided as a general guide only and should not be relied on as an indication or guarantee of future performance. No representation is made that any of these statements or projections will come to pass or that any forecast result will be achieved, nor as to their accuracy, completeness or correctness. Similarly, no representation is given that the assumptions upon which forward looking statements may be based are reasonable. Given these uncertainties, investors should not place undue reliance on forward-looking statements. The Company cautions investors against using this announcement solely as a basis for investment decisions without regard for this disclaimer.*

## Table 1: Kiola Drilling Collar Details

| Hole ID | Drill Type | East (MGA94_55) | North (MGA94_55) | RL AHD | Dip (deg) | AZI mag (deg) | Depth (m) | Drill Date | Tenement |
|---|---|---|---|---|---|---|---|---|---|
| KIORCDD005W1 | RCDDH | 660396.83 | 6213865.34 | 487.13 | -78 | 63.2 | 524.6 | 10/02/2023 | EL8590 |
| KIORCDD006 | RCDDH | 660165.70 | 6216943.51 | 469.28 | -81 | 248.2 | 555.6 | 12/03/2023 | EL8590 |
| KIORCDD007 | RCDDH | 659981.30 | 6216281.88 | 417.72 | -81 | 258.2 | 488.9 | 03/03/2023 | EL8590 |
| KIORCDD008 | RCDDH | 660183.52 | 6216556.86 | 475.06 | -81 | 78.2 | 383.5 | 09/03/2023 | EL8590 |

## Table 2: Kiola Assay Intersections

| Hole ID | Prospect | From (m) | To (m) | Width (m) | Au (g/t) | Ag (ppm) | Bi (ppm) | Co (ppm) | Cu (%) | Fe (%) | Mo (ppm) | Pb (ppm or %) | Zn (ppm or %) | Sample Type | Geology |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **KIORCDD008** | **Dolly's North** | 165 | 168 | 3.0 | 0.05 | 0.11 | 0.45 | 86 | **0.11** | 13.15 | 1.23 | 0.50 | 5.00 | 3m RC composite | Magnetite-garnet-chlorite-actinolite-epidote–pyroxene skarn. Chalcopyrite as blebs/specks in magnetite and as disseminations. |
| | | 189 | 192.3 | 3.3 | 0.01 | 0.15 | 4.89 | 199 | **0.17** | 26.80 | 2.11 | 1.20 | 6.00 | 3m RC composite | |
| | | 194 | 199 | 5.0 | 0.01 | 0.10 | 3.02 | 89 | **0.11** | 16.88 | 1.15 | 0.67 | 2.48 | Half core | |
| | | 209 | 210 | 1.0 | 0.01 | 0.36 | 0.38 | 11 | **0.35** | 17.90 | 2.88 | 0.40 | 3.00 | Half core | |
| | | 219 | 223 | 4.0 | 0.02 | 0.29 | 1.25 | 54 | **0.27** | 24.78 | 3.19 | 0.93 | 5.50 | Half core | |
| | | 330 | 373.5 | **43.5** | 0.01 | 0.13 | 2.20 | 114 | **0.13** | 13.92 | 1.58 | 0.95 | 3.26 | Half core | Magnetite-chlorite-epidote-pyrite-pyroxene-garnet skarn. chalcopyrite as blebs in magnetite and as disseminations. |
| | ***incl*** | *347* | *350* | *3.0* | *0.02* | *0.41* | *1.37* | *57* | ***0.54*** | *17.40* | *1.78* | *0.87* | *5.67* | Half core | |
| | ***incl*** | *361* | *364* | *3.0* | *0.01* | *0.41* | *5.81* | *407* | ***0.39*** | *11.91* | *1.72* | *0.83* | *4.33* | Half core | |
| **KIORCDD005W1** | **Yards** | 45.0 | 48.0 | 3.0 | **0.47** | 0.40 | 0.03 | 25 | 0.01 | 5.94 | 0.63 | 26.00 | 129.00 | 3m RC composite | |
| | | 289.0 | 298.0 | 9.0 | 0.01 | 0.86 | 0.11 | 15 | 0.02 | 4.16 | 4.70 | 402.72 | ***0.29%*** | Half core | Galena-sphalerite-chalcopyrite as veins. |
| | ***incl*** | *294.0* | *295.0* | *1.0* | *0.02* | *1.02* | *0.10* | *15* | *0.01* | *3.83* | *2.72* | *568.00* | ***1.24%*** | Half core | |
| | | 337.0 | 338.0 | 1.0 | 0.01 | 1.08 | 0.19 | 20 | 0.01 | 5.51 | 0.77 | ***0.19%*** | ***0.11%*** | Half core | |
| | | 435.0 | 436.0 | 1.0 | 0.01 | 0.94 | 0.05 | 18 | **0.17** | 4.75 | 0.94 | 2.40 | 74.00 | Half core | Chalcopyrite as disseminations and fracture fills. |
| | | 458.0 | 458.9 | 0.9 | 0.01 | 0.24 | 0.09 | 21 | **0.13** | 2.44 | 0.25 | 1.00 | 30.00 | Half core | |
| | | 489.0 | 490.0 | 1.0 | 0.01 | 0.56 | 0.05 | 16 | **0.21** | 2.04 | 3.65 | 1.60 | 37.00 | Half core | |

| Hole ID | Prospect | From (m) | To (m) | Width (m) | Au (g/t) | Ag (ppm) | Bi (ppm) | Co (ppm) | Cu (%) | Fe (%) | Mo (ppm) | Pb (ppm or %) | Zn (ppm or %) | Sample Type | Geology |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 502.0 | 503.0 | 1.0 | 0.01 | 0.71 | 0.04 | 21 | **0.23** | 2.31 | 0.95 | 1.60 | 40.00 | Half core | |
| **KIORCDD006** | **KIP-7** | 386.0 | 388.0 | 2.0 | 0.02 | 0.88 | 5.33 | 326 | **0.46** | 8.41 | 3.34 | 2.60 | 16.00 | Half core | Chalcopyrite as fracture fills. |
| | | 473.5 | 475.0 | 1.5 | 0.01 | 0.24 | 0.76 | 37 | **0.34** | 3.38 | 3.48 | 0.70 | 10.00 | Half core | |
| | | 509.0 | 510.0 | 1.0 | 0.01 | 0.04 | 0.59 | 32 | **0.12** | 3.67 | 0.73 | 0.80 | 12.00 | Half core | |
| | | 533.0 | 534.0 | 1.0 | 0.01 | 0.10 | 0.65 | 12 | **0.12** | 4.61 | 20.90 | 0.60 | 22.00 | Half core | |
| **KIORCDD007** | **KIP-10** | 51.0 | 54.0 | 3.0 | 0.04 | 0.25 | 0.57 | 37 | **0.10** | 5.21 | 2.04 | 1.40 | 37.00 | 3m RC composite | |
| | | 75.0 | 78.0 | 3.0 | 0.03 | 0.47 | 24.10 | 56 | **0.24** | 5.56 | 13.55 | 4.40 | 40.00 | 3m RC composite | |
| | | 171.0 | 174.0 | 3.0 | 0.01 | 0.17 | 0.56 | 31 | **0.10** | 5.89 | 1.15 | 0.80 | 23.00 | 3m RC composite | |
| | | 342.0 | 343.0 | 1.0 | 0.01 | 0.50 | 0.85 | 48 | **0.11** | 6.83 | 7.46 | 3.90 | 72.00 | Half core | |
| | | 417.4 | 421.7 | 4.3 | 0.01 | 1.24 | 7.03 | 1 | **0.18** | 1.20 | 21.11 | 2.33 | 6.14 | Half core | Blebs of chalcopyrite hosted in quartz stockworks. |
| | ***incl*** | *417.4* | *418.0* | *0.6* | *0.01* | *3.32* | *8.91* | *1* | ***0.49*** | *1.90* | *14.15* | *2.30* | *12.00* | Half core | |

*Notes:*

1) *RC samples are all 3m composite.*
2) *RC and Core samples analysed by multi element analysis ME-MS41 (Agua Regia with ICP-MS Finish) method.*
3) *For Copper interval - minimum cut-off of 0.1% Cu. Maximum of 7m internal dilution.*
4) *For Gold interval - minimum cut-off of 0.1g/t Au.*
5) *For Lead interval - minimum cut-off of 0.1% Pb.*
6) *For Lead interval - minimum cut-off of 0.1% Zn.*
7) *Intersections are reported as downhole lengths and not true width.*

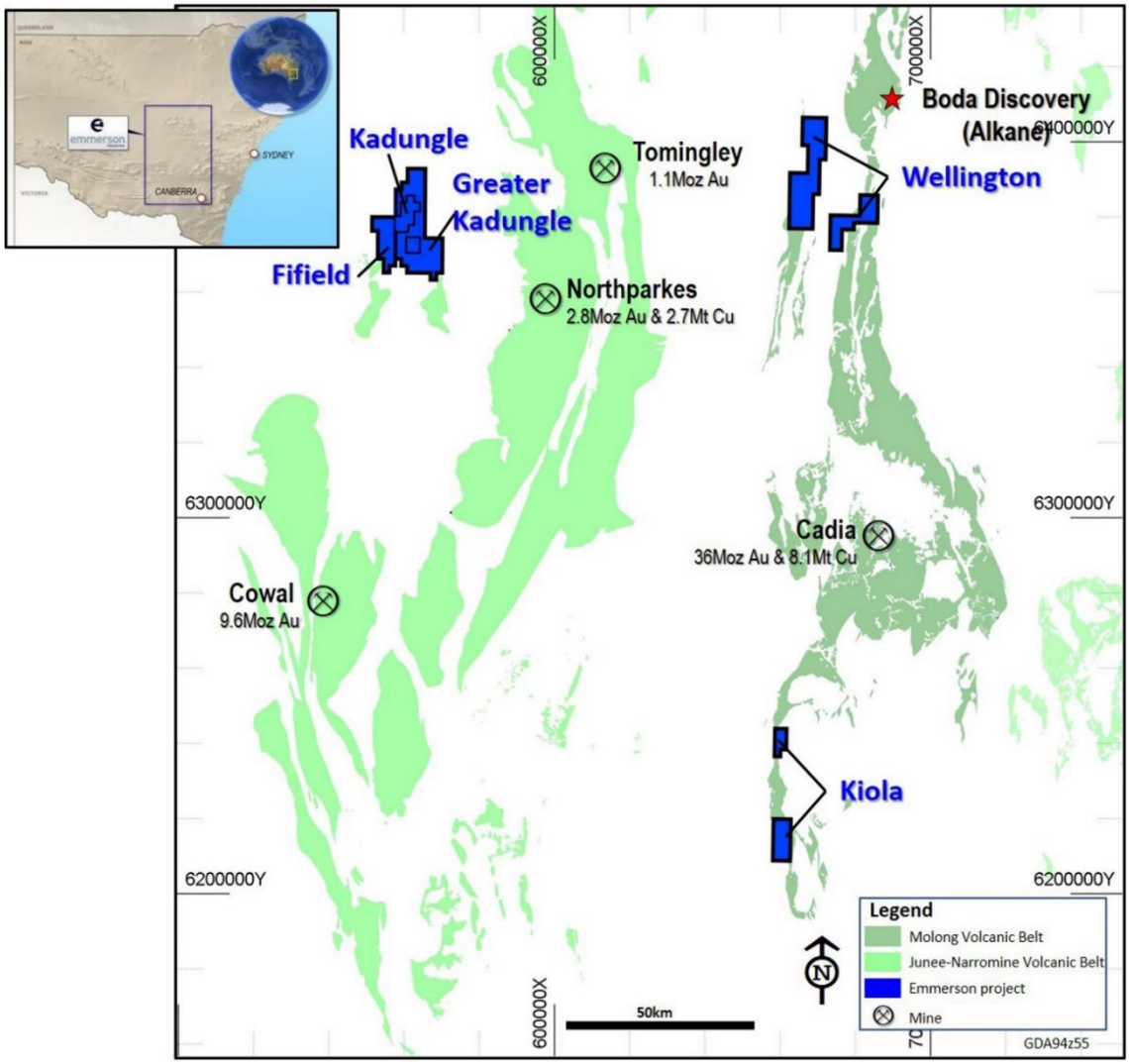


***Figure 1**: Location of Emmerson's NSW Projects (Held by Lachlan Resources – a 100% owned subsidiary of Emmerson). The background is from the regional magnetic image representing the Molong and Junee-Narromine Volcanic Belts of the Macquarie Arc.*

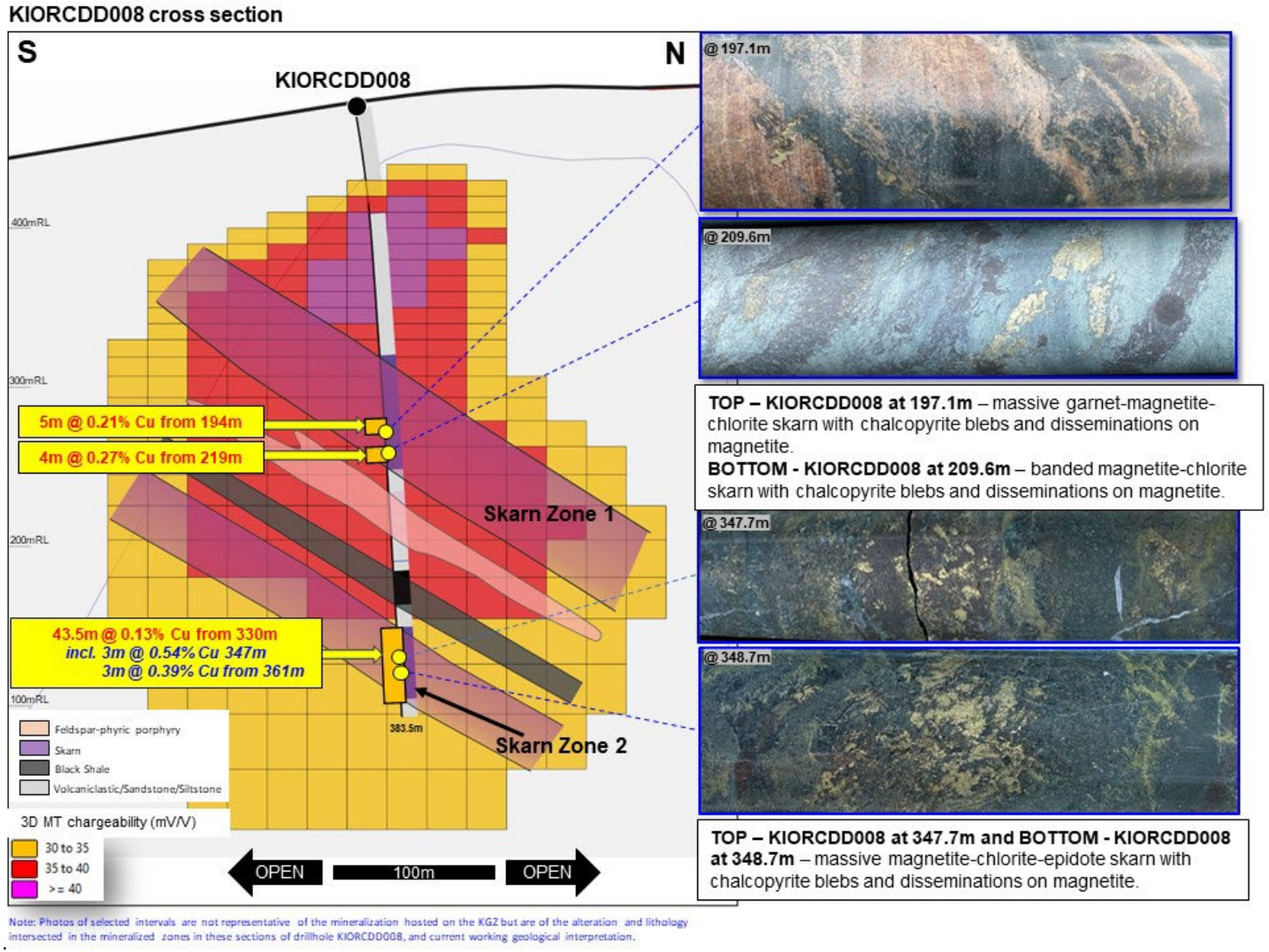


***Figure 2: Multiple zones of copper (chalcopyrite) in skarn from KIORCDD008 cross-section.***

*(background = 3D Magnetotelluric (MT) - referenced DC chargeability model).*

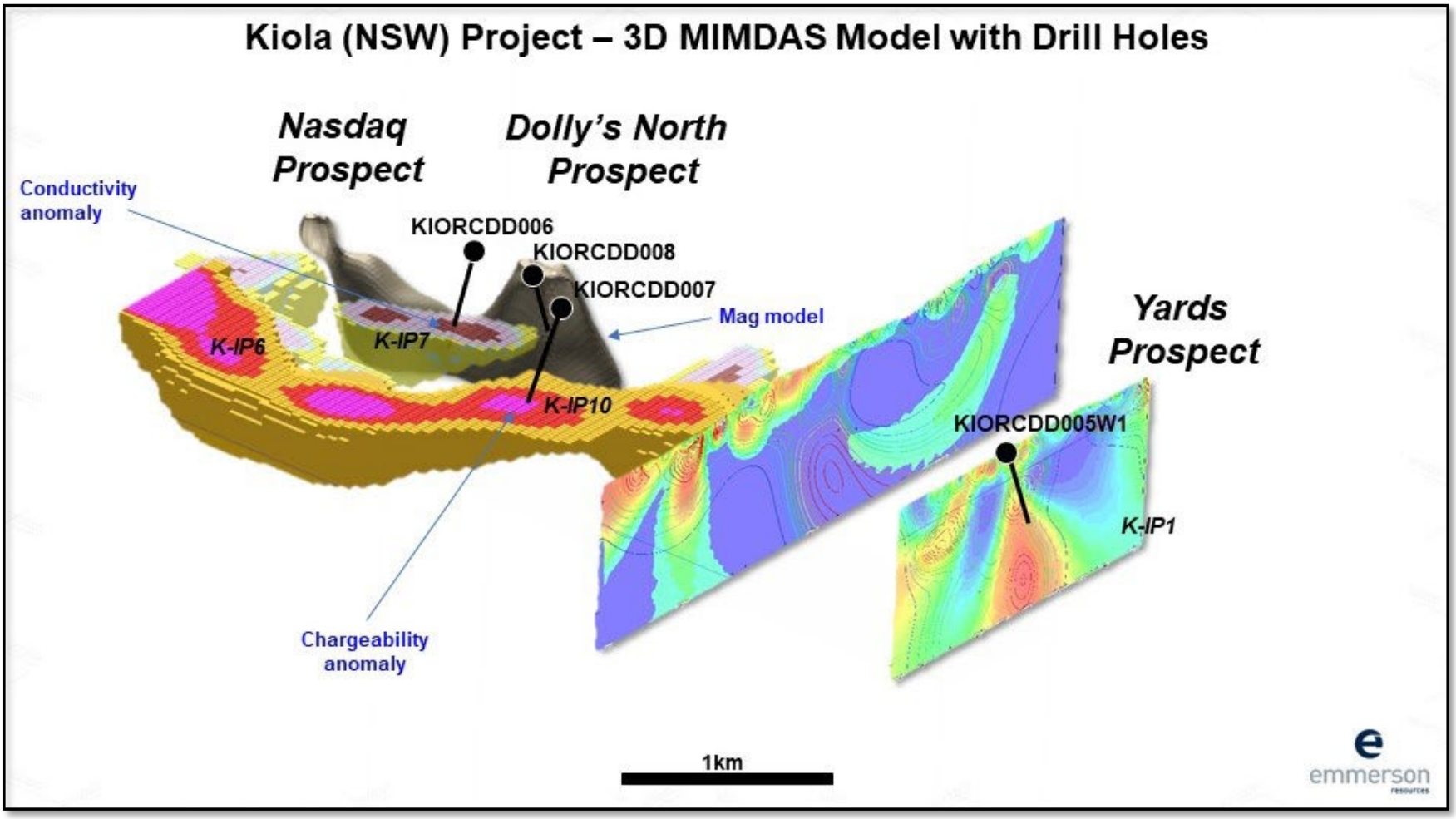


***Figure 3:*** *Unifying 3D and 2D MIMDAS Geophysical inversion model with completed drill holes (black). Noting the chargeable and conductive zones (red colour) have been confirmed as zones of sulphide and/or skarn at Dolly's North prospect.*

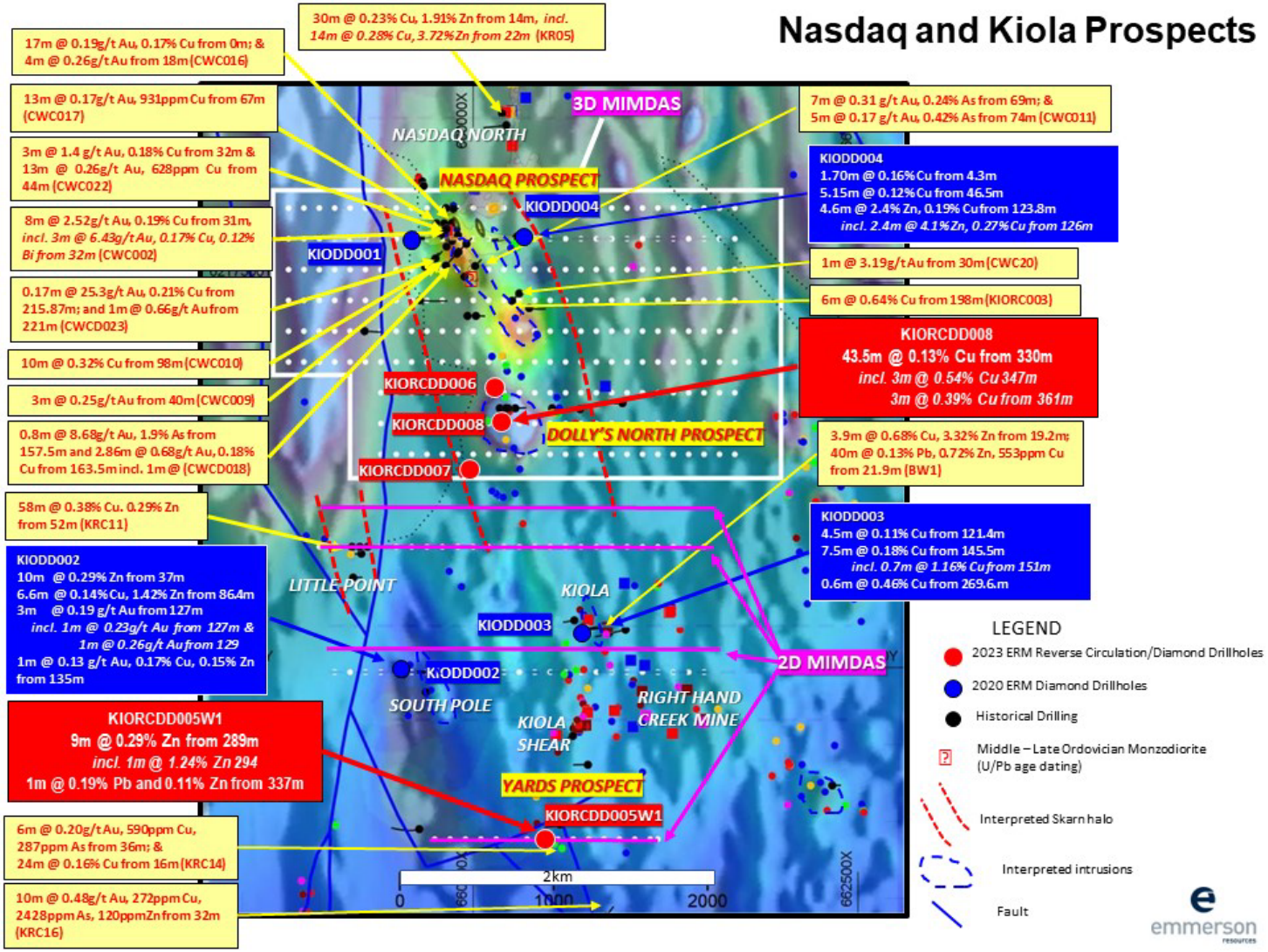


***Figure 4:*** *Plan view of the Kiola Geochemical Zone (KGZ) showing recent drilling results (red callouts) and historic drill results at the Nasdaq skarn, and the southern South Pole, Kiola Shear and Right Hand Creek Mines (ASX: 27 August 2020). Note the background image is the Reduced to Pole Magnetics and Electromagnetic (EM) image, with blue colour outlining interpreted Ordovician age intrusions.*


***Figure 5:*** *Drill hole KIORCDD007 – Intensely silicified meta sediment cut by quartz stockwork veins containing chalcopyrite as fracture fill and blebs.*

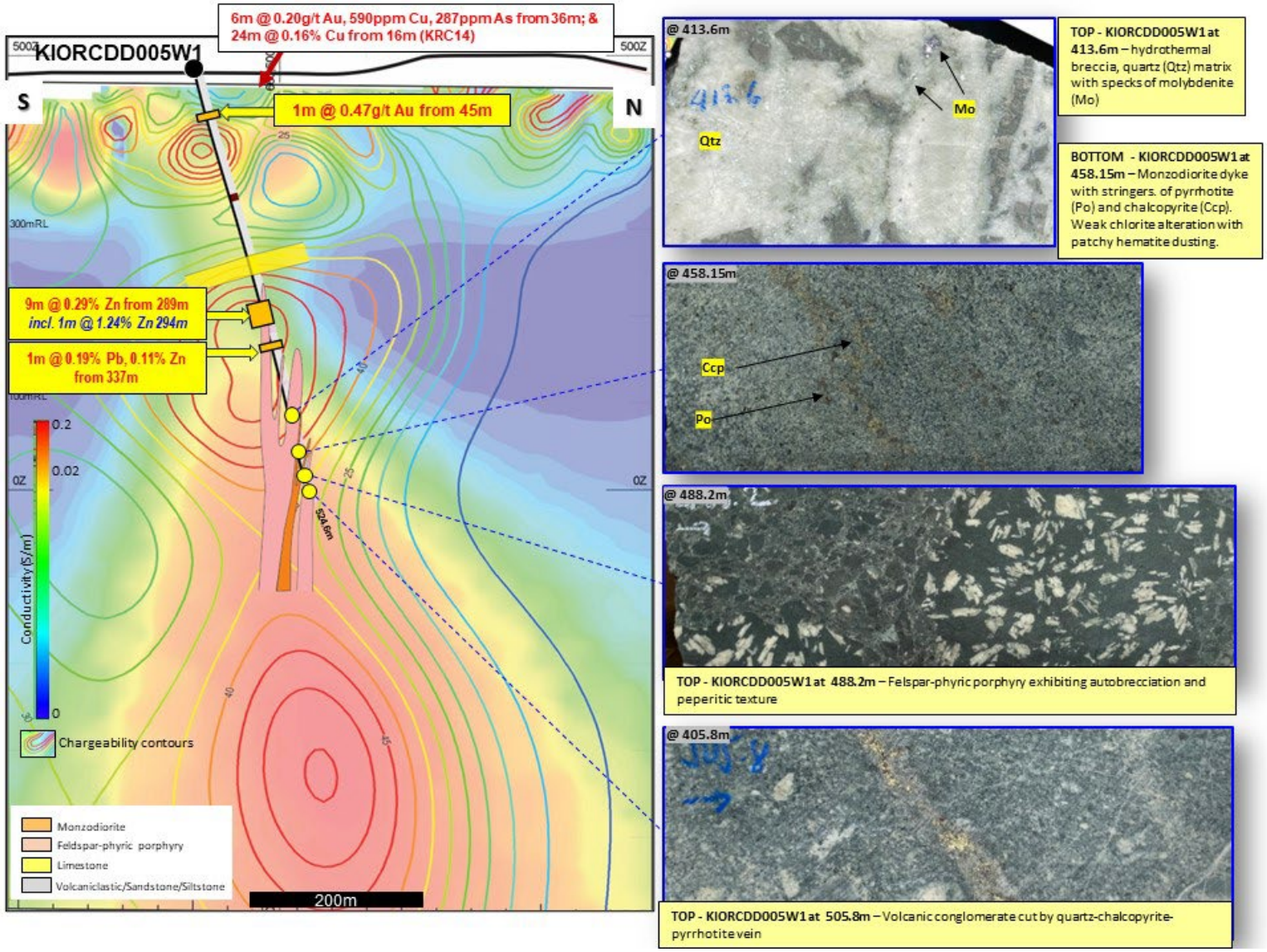


***Figure 6: Yards Prospect:*** *Cross section and trace of drill hole KIORCDD005W1. Background (red) is the strong, depth extensive chargeable anomaly coincident with large conductive anomaly. Drill core showing hydrothermal breccia with molybdenite, and multiple intrusions cut by quartz-chalcopyrite-pyrrhotite veins.*

## Appendix 1

*The exploration results contained within the above Emmerson release are in accordance with the guidelines of The Australasian Code for the Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2012)*

**Section 1: Sampling Techniques and Data – Kiola Project Area – Dolly's North and Yards Prospects – Reverse Circulation and Diamond Drilling**

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

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td>Sampling techniques</td><td>• 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 downhole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.<br>• Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.<br>• Aspects of the determination of mineralisation that are Material to the Public Report.<br>• In cases where 'industry standard' work has been done this would be relatively simple (e.g., 'reverse circulation drilling was used to obtain 1m samples from which 3kg was pulverised to produce a 30g 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.</td><td>• The Kiola Exploration Target were drilled with Reverse Circulation (RC) pre-collar, then with Diamond Drillhole (DDH) tail. Four holes have been completed for a total of 1,952.6m: KIORCDD005W1, KIODD006, KIODD007 and KIODD008.<br>• KIORCDD005W1(K-IP1), located at the Yards prospect, is an angled hole to test three targets with strong chargeable zones near surface and a large, very strong, depth extensive coincident chargeable/conductive zone. The hole drilled RC precollar to 91.6m and wedged at 72.7m to control lift. The hole was planned to drill down to 850m but was stopped at 524.6m due to excessive lift.<br>• KIORCDD008 (K-IP12), located at Dolly's North prospect, is a steeply dipping hole to test a strong coincident chargeability and magnetic anomaly.<br>• KIORCDD007 (K-IP10), located ~350m southwest of Dolly's North prospect, is a steeply dipping hole to test a strong chargeability anomaly at depth.<br>• KIORCDD006 (KIP7), located ~380m north of Dolly's North prospect, is a steeply dipping hole to test a strong chargeability anomaly at depth.<br>• A 3m composite samples are collected directly off the cyclone is riffle split to separate and produce two samples, with one side going into a pre-numbered calico sample bag, effectively providing a 3m composite sample for analysis. The other half were then placed back into the original sample bag and left on site.<br>• The 3m composite samples weighs from 3 – 5kg, from which a representative sample is pulverised to produce a 0.5g charge for analysis by Aqua Regia with ICP-MS Finish (ME-MS41).<br>• Diamond core sampled on geological intervals cut into half core to provide sample weights from 3 – 6kg. Individual core samples are crushed and pulverised to 0.5 charge for analysis by Aqua Regia with ICP-MS Finish (ME-MS41).</td></tr>
<tr><td>Drilling techniques</td><td>• 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).</td><td>• RC and Diamond accounts for 100% of the current reported drilling at Kiola Exploration Target.<br>• Drill rig used in RC pre-collar for KIORCDD05W1, KIORCDD006, KIORCDD007, KIORCDD005W1 diamond tail was a Multipurpose Track Mounted UDR1200.<br>• Drill rid used for KIORCDD006, KIORCDD007 and KIORCDD008 was a Multipurpose Track Mounted Hanjin D&B 35.
<table>
<tr><th>Hole ID</th><th>RC precollar</th><th>Diamond HQ3 (m)</th><th>Diamond NQ3 (m)</th><th>Final Depth (m)</th></tr>
<tr><td>KIORCDD005W1</td><td>72.7</td><td>47.3</td><td>404.6</td><td>524.6</td></tr>
<tr><td>KIORCDD006</td><td>332.3</td><td>15.1</td><td>208.2</td><td>555.6</td></tr>
<tr><td>KIORCDD007</td><td>300.0</td><td>20.7</td><td>168.2</td><td>488.9</td></tr>
<tr><td>KIORCDD008</td><td>192.3</td><td>34.2</td><td>157</td><td>383.5</td></tr>
</table>
• RC drilling used 5.5-inch face sampling bit.<br>• HQ[3] core diameter is 61.1mm.<br>• NQ[3] core diameter is 45.0mm.<br>• Standard inner tube has been used for the diamond core drilling.<br>• No triple tube has been used for all diamond holes.<br>• The core was oriented using downhole Digital Ori Tool HQ and NQ</td></tr>
</table>

<table>
<tr><th>Criteria</th><th>JORC Code Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>(AXIS).</td></tr>
<tr><td>Drill sample recovery</td><td>• Method of recording and assessing core and chip sample recoveries and results assessed.<br>• Measures taken to maximise sample recovery and ensure representative nature of the samples.<br>• 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.</td><td>• Core recoveries are fair for reported RC precollar drilling and DDH drilling.<br>• RC samples are visually checked for recovery, moisture and contamination.<br>• Any issues or concerns are recorded in the sampling ledger.<br>• The RC cyclone and splitter are routinely cleaned with more attention spent during the drilling of damp or wet samples.<br>• Diamond drill core recoveries were recorded during drilling and reconciled during the core processing and geological logging. There was a consistent competency encountered in the rocks during drilling and no significant drill core lost occurred during drilling.<br>• Diamond drill core recovery was marked after each drill run using plastic blocks calibrating depth by the drilling contractor. The driller adjusting rig procedures as necessary including rotation, fluid, pressure to maintain sample integrity.<br>• Emmerson field technician contractor then measure/check the recovery after each run, RQD and fracture count, and core loss is recorded and entered in the logging template (Geotech sheet).<br>• Diamond drill core recovery for the following holes:
<table>
<tr><th>Hole ID</th><th>Diamond tail (m)</th><th>Percent Recovery</th></tr>
<tr><td>KIORCDD005W1</td><td>451.9</td><td>100%</td></tr>
<tr><td>KIORCDD006</td><td>223.3</td><td>98%</td></tr>
<tr><td>KIORCDD007</td><td>188.9</td><td>100%</td></tr>
<tr><td>KIORCDD008</td><td>191.2</td><td>97%</td></tr>
</table>
• No detailed analysis was conducted to determine relationships between sample recovery of metal grades.<br>• Emmerson do not consider that there is evidence for sample bias that may have occurred due to preferential loss/gain of fine/coarse material.</td></tr>
<tr><td>Logging</td><td>• 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.<br>• Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.<br>• The total length and percentage of the relevant intersections logged.</td><td>• All holes drilled at Kiola Exploration Target are geologically logged.<br>• Standard operating procedures were employed for logging KIORCDD005W1, KIORCDD006, KIORCDD007 and KIORCDD008.<br>• RC and DDH logging data is directly entered into field Toughbook laptop using a spreadsheet logging template. Standardised Codes were used for lithology, oxidation, alteration, presence of sulphide information are recorded.<br>• RC drill chips are collected every 1m interval from the green plastic bag, sieved, cleaned and scooped and placed in the RC chip trays corresponding to the depth/interval of being sampled.<br>• Drill Hole Data including meta data, any gear left in the drill hole, lithological, mineral, downhole survey, sampling, magnetic susceptibility are collected and entered to into field laptop.<br>• DDH includes structural logging records orientation of veins, fractures and lithological contacts. Geotechnical logging records the recovery, core lengths, RQD, fracture counts and hardness.<br>• Visual copper sulphides have been logged for KIORCDD007 and KIORCDD008. Refer to Table 2 and body of text in this announcement with the assay results. All lengths are down-hole lengths and not true width.<br>• Magnetic susceptibility data were collected for RC and diamond core every 1m meter as per standard procedure using a Terraplus KT-10 magnetic susceptibility meter.<br>• Drill core was logged both qualitative (discretional) and qualitative (% volume).<br>• DDH diamond were photographed (wet and dry).<br>• All RC precollar were photograph on chip trays (wet and dry).<br>• All RC precollar (total length- 916.2m), were geologically logged.</td></tr>
</table>

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| | | 100%.<br>• All the diamond tail core (total length – 1,055.3m) were geologically and geotechnically logged 100%.<br>• RC chips and diamond core is stored at RME geological Services (RMEGS) yard in Orange, NSW. |
| *Sub-sampling techniques and sample preparation* | • If core, whether cut or sawn and whether quarter, half or all core taken.<br>• If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.<br>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.<br>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.<br>• 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. | • Standard sampling operating procedures are used for sampling RC and diamond core.<br>• The 3m composite samples weight from 2 – 5kg.<br>• RC sampling: 3m composite sample directly off the cyclone is riffle split to separate and produce two samples, with one side going into a pre-numbered calico sample bag, effectively providing a 3m composite sample for analysis. The other half were then be placed back into the original sample bag and left on site.<br>• Diamond core sampling: Diamond core was halved using an automatic core saw at RMEGS yard in Orange, NSW. The core interval for sampling was marked by Supervising geologist during logging, taking into account the contact of mineralization and alteration. Samples were collected from the same side of drill core and dispatched for assay. The remaining half core is retained and stored at RMEGS yard for future viewing and cross-checking of assay values against the actual geology. Half core samples are submitted for analysis, unless a field duplicate is required, in which case quarter core samples are submitted.<br>• Diamond core sample weight varies between 3 – 5kg.<br>• The RC and core sample sizes are considered to be appropriate to correctly represent the mineralization on the style of mineralisation.<br>• Standards, Blanks and Duplicates are routinely inserted in the sampling batch for QAQC purposes. |
| *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 partial or total.<br>• 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.<br>• 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. | • KIORCDD008, KIORCDD007 and KIORCDD005W1 intersections are reported in this Announcement.<br>• The RC and core samples are submitted to ALS Laboratory in Orange for preparation and analysis. The sample preparation follows industry best practice.<br>• The following techniques were requested for analysis:<br>  ○ ME-MS41 (Agua Regia with ICP-MS Finish - analysis for 51 elements).<br>  ○ For Au >500 ppb will trigger Fire Assay Au-AA24).<br>• No downhole geophysical tools or handheld XRF instruments were used to determine grade.<br>• Magnetic susceptibility data are collected every 1m for both RC samples and diamond core as per standard procedure using a Terraplus KT-10 magnetic susceptibility meter.<br>• Laboratory checks include CRM's and/or in-house controls, blanks, splits, and replicates that are analysed with each batch of samples submitted. These QC results are reported along with sample values in the final analytical report. |
| *Verification of sampling and assaying* | • The verification of significant intersections by either independent or alternative company personnel.<br>• The use of twinned holes.<br>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.<br>• Discuss any adjustment to assay data. | • Laboratory data is received in digital format and uploaded directly to the database.<br>• Assay data from the lab is received as .csv. The results are then loaded by Emmerson Database contractor into industry-standard database (Datashed). Sample data sheets were used to merge the assay results with the sample intervals for each hole.<br>• Geochemical data is managed by ERM using and external database administrator and secured through a relational database (Datashed).<br>• Assay data and intercepts are cross-check internally by the Group Exploration Manager (GEM, Competent Person) of Emmerson. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| | | • The GEM verified significant intersections reported in the RC and core samples.<br>• Assay data and intercepts are cross-check internally by GEM.<br>• The merged assay and geology imported and plotted to Micromine software for assessment.<br>• Data back-ups are employed to Corporate OneDrive.<br>• No adjustment were made on original assay data for the purpose of reporting grade and mineralized intervals.<br>• No twin drill holes have been completed at the Golden Forty Project.. |
| *Location of data points* | • Accuracy and quality of surveys used to locate drillholes (collar and downhole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.<br>• Specification of the grid system used.<br>• Quality and adequacy of topographic control. | • Collar locations and details are shown in Table 1 within the main text.<br>• All reported drill hole collars are surveyed using a differential GPS and by a suitably qualified company contractor.<br>• Collar survey accuracy is ± 30 mm for easting, northing and elevation coordinates.<br>• Downhole survey measurements are collected every 30m using True North seeking Gyro (Axis)<br>• All coordinates are based on Map Grid Australia Zone 55H Geodetic Datum of Australia 1994.<br>• Topographic measurements are collected from the final survey drill hole pick up. |
| *Data spacing and distribution* | • Data spacing for reporting of Exploration Results.<br>• 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.<br>• Whether sample compositing has been applied. | • Drill density in the Kiola Exploration Target area is variable.<br>• Emmerson considers the Kiola Project to be an Early-Stage Exploration Target.<br>• The mineralised areas are yet to demonstrate sufficient grade or continuity to support the definition of a Mineral Resource and the classifications applied under the 2012 JORC code.<br>• No sample compositing was applied. |
| *Orientation of data in relation to geological structure* | • Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.<br>• 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. | • Exploration drilling were angled and directed as best as possible across the interpreted geological and mineralized orientation.<br>• Review of available drill data, historical reports and geological maps suggest that the Kiola Exploration Target has been drilled at the correct orientation.<br>• Diamond core sampling is generally defined by geological characteristics and controlled by alteration and lithological boundaries No orientation-based sampling bias has been identified in the data at this point. |
| *Sample security* | • The measures taken to ensure sample security. | • RC 3m composite samples are collected and bagged in a pre-determined Sample Number by field technician at the drill site.<br>• Cut core and RC samples were placed in sealed calico bags with predetermined sample number. The samples are placed in sealed polyweave bags for transport to the sample preparation and analysis at ALS facility in Orange, NSW.<br>• The assay laboratory confirms that all samples have been received and that no damage has occurred during transport. .<br>• Sample receipt is logged into Emmerson's sample ledger.<br>• While samples are being prepared in the laboratory they are considered to be secured.<br>• All RC chips and diamond core are stored at RMEGS yard in Orange, NSW. |
| *Audits or reviews* | • The results of any audits or reviews of sampling techniques and data. | • No formal audits ore reviews have been completed on the samples being reported. |

**Section 2: Sampling Techniques and Data – Kiola Project Area – Dolly's North and Yards Prospects – Reverse Circulation and Diamond Drilling**

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| *Mineral tenement and land tenure status* | • 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.<br>• 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. | • EL8590 is located between the townships of Cowra and Boorowa, in central NSW.<br>• EL8590 has good access from the Lachlan Valley Way and sealed and unsealed roads and tracks. Land use is mixed grazing and cropping on variably undulating terrain.<br>• EL8590 is 90% held by Lachlan Resources (Emmerson Resources) and 10% by Duke Exploration.<br>• Exploration licence EL8590, originally comprising 203 units, was granted on the 5th of June 2017 for a period of four years and reduced to 25 units (71km$^2$) on the 14th of November 2018. A licence renewal application for a further four years was approved in 2021.<br>• EL8590 is in good standing and no known impediments exist. |
| *Exploration done by other parties* | • Acknowledgment and appraisal of exploration by other parties. | • From 1966 – 1986, Mines Exploration, Jododex, Teck and Noranda investigated various parts of EL8590 for base metal, skarn and vein hosted mineralisation. Various geological mapping, stream sediment sampling, soil sampling, geophysical surveys and drilling programs were completed. In total 14 drill holes were drilled at discrete targets. Mines Exploration drilled one hole targeting a gossanous horizon and associated IP anomaly which returned 3.9m @ 0.68% Cu, 3.31% Zn and 0.45 oz/t Ag (from 19.2m, BW-1). Subsequent drilling failed to return further anomalous results. Multiple magnetic, electromagnetic and IP anomalies were defined by several explorers; however systematic ground truthing of these anomalies found the majority were cultural, and those that were drilled were identified as pyritic black shales (Teck 1982 & 1983).<br>• In the mid-1990's North Mining (EL4730) targeted large tonnage, intrusive related, Ordovician Cu-Au Mineralisation (Carey et al 1997). Various rock chip and stream sediment sampling, mapping and geophysical survey programs were completed. Outcrop rock chip sampling returned encouraging results including 5.57% Cu and 0.152 g/t Au in one sample, and 109ppm Mo in another. Upon relinquishment, North recommended further geological mapping and reconnaissance AC drilling of anomalous areas, as a number of prospects were still considered prospective (Mari & Burrell 1998).<br>• Gateway Mining (EL5514) carried out a comprehensive exploration program from 1998-2012 (Gordon 2014), targeting Ordovician porphyry and skarn style mineralisation. During the tenure period joint ventures were formed with Straits (2003), Goldminco (2003-2006) and Minotaur (2006-2011). Various mapping, sampling and geophysical surveys assisted to delineate drill targets. A total of 62 RC holes and 11 diamond tails were drilled. Some encouraging intercepts were returned including 26m @ 0.21% Cu and 2.27% Zn (from 10m, KRC05); 8m @ 0.32% Zn (from 52m,KIORC003); and 6m @ 0.64% Cu (from 198m, KIORC003: including 1m @ 1.24% Cu from 202m). Gateway satisfactorily tested all delineated targets and concluded that the lack of Ordovician aged intrusions downgraded the prospectivity for Ordovician porphyries. Gateway highlighted the likelihood that a larger mineralised system may be present at depth around the Nasdaq prospect area; however, it would be sub economic.<br>• Clancy Exploration Ltd (EL8151) acquired the tenement from 2013-2015, work completed included probabilistic targeting, open file assessment of previous explorations and SWIR analysis of historical drillholes. Clancy sought a Joint venture partner for the project, but nothing eventuated, and relinquished the ground. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| *Geology* | • Deposit type, geological setting and style of mineralisation. | • EL8590 is located within the Macquarie Arc in the eastern sub-province of the Lachlan Orogen. The Macquarie Arc is host to numerous porphyry Au-Cu deposits and consists mainly of subduction-related Ordovician intermediate to mafic volcanic, volcaniclastic and associated intrusive rocks.<br>• Location of EL8590 is within the southern Molong Volcanic Belt. EL8590 is located immediately underneath the Benambran unconformity and within 5km-10km of the Lyndhurst-Neville Fault (locally termed the Frogmore Fault zone) that juxtaposes the Bega terrane with the Macquarie Arc.<br>• The Kiola Project in EL8590 covers a portion of the Ordovician Molong Volcanic Belt, which also hosts the Cadia-Ridgeway Cu-Au porphyry deposits, situated 80km to the north.<br>• The dominant host rocks belong to the Ordovician Kenyu Formation and comprise mafic volcaniclastic sandstone and siltstone, basaltic to andesitic massive polymictic conglomerate and recrystallized limestone/marble. The Kenyu Fm is commonly sulphidic (Po>Py>Cpy) with sulphides present as disseminations and thin veins. The Kenyu Fm is bounded to the west by the Silurian Hawkins Volcanics (rhyolite, rhyodacite and ignimbrites with volcaniclastic sediments and minor limestone) and is bounded to the east by granites of the Silurian Hovells Suite (Wyangala and Licking Gully Granites), which in turn are intruded by the Devonian Boggy Plains (Wyoming) Granite and Cainozoic basalt.<br>• The Kenyu Fm in EL8590 hosts many historical workings although all have been small, generally confined to small pits or shafts exploiting narrow quartz-malachite shear veins.<br>• The "Kiola Geochemical Zone" (KGZ, Van der Stelt, 2010) covers an area of 8km x 5km and includes a plethora of old workings as well as 11 mineral occurrences. Historical drilling has been concentrated at the Nasdaq Prospect and southwards along a NS fault corridor to the Kiola Prospect. The deepest hole (KIORC002, EOH 337.4m) only tests to 292m below ground level and the vast majority of holes only test to half this vertical depth.<br>• Historical targets inside the KGZ zone, from north to south, include Stewart and Party workings, Stewart, Harcombe and Party Workings, Nasdaq, Adams Shaft, Dolly's, Little Point, Fox Tank (aka Fox, Tank or Kiola), Sapling Gully Workings, Bellview Mine, Yard (aka Ingleside or Kiola 2), Sheridan Grid and the Yundoo Lode. Taylor (2003) notes that quartz veins at the Right Hand Creek yielded up to **29.8g/t Au** (epithermal?) but does not define which of the two prospects or one mine with this name sourced this sample. |
| *Drillhole information* | • A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:<br>o Easting and northing of the drillhole collar.<br>o Elevation or RL of the drillhole collar.<br>o Dip and azimuth of the hole.<br>o Downhole length and interception depth.<br>o Hole length. | • A list of drill hole information and collar details is provided in the main text, Table 1.<br>• Non-significant assay values were not individually reported. Lower cut-offs are shown in Table 2. |
| *Data aggregation methods* | • In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade | • Mineralized intersections are reported as down hole intervals and not weighted averages. |

| Criteria | JORC Code Explanation | Commentary |
|---|---|---|
| | truncations (e.g., cutting of high grades) and cut-off grades are usually Material and should be stated.<br>• 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.<br>• The assumptions used for any reporting of metal equivalent values should be clearly stated. | • The results discussed are exploration results only and no allowance is made for recovery losses that may occur should mining eventually result, nor metallurgical flow sheet considerations.<br>• Cut-off grades applied to results reported in this report are:<br>o Minimum cut-off of 0.1 g/t Au. No maximum cut-off.<br>o Minimum cut-off of 0.1 % Cu. No maximum cut-off.<br>o Minimum cut-off of 0.1 % Pb. No maximum cut-off.<br>o Minimum cut-off of 0.1 % Zn. No maximum cut-off.<br>• Maximum internal dilution of 7 metres for Cu interval.<br>• No metal equivalent values reported. |
| *Relationship between mineralization widths and intercept lengths* | • These relationships are particularly important in the reporting of Exploration Results.<br>• If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.<br>• If it is not known and only the downhole lengths are reported, there should be a clear statement to this effect (e.g., 'downhole length, true width not known'). | • Preliminary interpretation from structural orientations suggest the trend of mineralization is rough NNW from Nasdaq to Dolly's North and to Yards prospect.<br>• The holes at Dolly' North and surrounds (KIORCDD008, KIORCDD007 and KIORCDD006) are several hundred apart and nature of mineralization (dip and direction/plunge) mineralization is still to be established.<br>• Reported assay results are downhole lengths only, true width not known. |
| *Diagrams* | • 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 drillhole collar locations and appropriate sectional views. | • Refer to Figures in body of text for location of holes. |
| *Balanced reporting* | • 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. | • Drilling results are reported at cut-offs as shown in Table 2**.** |
| *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. | • Various geophysical surveys have been conducted over the Kiola Exploration Target from previous exploration companies. |
| *Further work* | • The nature and scale of planned further work (e.g., tests for lateral extensions or depth extensions or large-scale step-out drilling).<br>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive. | • Further work on the reported exploration targets will involve:<br>o Update of the geological model and geological and structural interpretation of KGZ from recent drilling.<br>o Representative samples will be collected to assist in refining the geological model.<br>o Assess the assay results. |