



**RIEDEL**  
RESOURCES

ACN 143 042 022

Suite 1, 6 Richardson Street  
West Perth  
Western Australia 6005

ASX Code: RIE

[riedelresources.com.au](http://riedelresources.com.au)

#### KEY COMPANY INFORMATION

##### Capital Structure

Ordinary Shares: 418m  
Unlisted Options: 18m

##### Top 20 Shareholders

67.72%

##### Cash Reserves

A\$2.34m  
(at 30 June 2018)

ASX and Media Release  
26 October 2018

## CÁRMENES COBALT-COPPER PROJECT – SPAIN

### DRILLING PROGRAMME HIGHLIGHTS EXPLORATION POTENTIAL AND VALIDATES EXPLORATION STRATEGY

#### HIGHLIGHTS

- ✧ Maiden four-hole programme completed at Profunda Mine Prospect for a total of 1,030 metres of diamond core drilling
- ✧ High-grade potential highlighted by drill hole CMN-3 which tested immediately below a seven metre previously mined “stope”, results include;  
**1.95m @ 7.72% Cu, 0.11% Co, 0.09% Ni, 0.44% U and 0.24% Zn from 136.15m; including**  
**0.90m @ 16.45% Cu, 0.21% Co, 0.17% Ni, 0.96% U and 0.52% Zn from 136.15m**
- ✧ CMN-3 and CMN-4 intersected unforeseen mine voids/stopes which historically exploited high-grade breccia-hosted Cu-Co-Ni mineralisation
- ✧ Programme supports the view that mineralisation within the Cármenes Project area could support repetitions of Profunda style targets
- ✧ Riedel's understanding of the structural and geological controls on breccia-type cobalt-copper-nickel mineralisation significantly improved despite permitting delays resulting in re-location of drill collars to non-optimal locations
- ✧ Full data and project review commissioned to accurately determine follow-up exploration activities and next steps

**Riedel Resources Limited** (ASX: RIE) (“Riedel” or “the Company”) is pleased to provide an update and assay results from the drilling programme recently completed at the Profunda Mine Prospect located within the Cármenes Project in Northern Spain.

The programme successfully tested three significant geophysical and geochemical anomalous zones delineated by induced polarisation (IP) geophysics and confirmed the presence of disseminated sulphide and oxide mineralisation analogous to Profunda style mineral deposits.

Four holes were drilled for 1,030 metres and a total of 177 half core samples were taken from selected intervals and submitted to ALS, Seville, Spain for multi-element ICP and ore grade analysis. Geologists, from JV partner SIEMCALSA, completed detailed geological, structural and radiometric logging of the core and identified mineralised intercepts of mixed oxide/sulphide copper, cobalt, nickel, zinc and uranium minerals adjacent to the historic La Cueva workings (*see Figures 1 and 2*).

Further, assay results confirm the presence of a richly mineralised but previously exploited system at La Profunda with high grade Cu-Co mineralisation discovered in wall rock adjacent to historic mine workings. These drilling results support the view that mineralisation elsewhere in the Cármenes Project area could support repetitions of Profunda style targets.



**FIGURE 1. Mineralised section of drill core from CMN-3 –136.15-138.10m (1.95m @ 7.72% Cu; 0.11% Co, 0.09% Ni; 0.44% U; 0.24% Zn)**

**TABLE 1: Drillhole details**

Hole No.	Easting (UTM mE)	Northing (UTM mN)	Elevation (m)	Azimuth (°)	Dip (°)	Length (m)
CMN-1	287,308	4,759,934	1,410	N 229	45W	190
CMN-2	287,081	4,760,192	1,567	N 112	46E	220
CMN-3	287,286	4,760,159	1,530	N 164	42S	420
CMN-4	287,352	4,760,151	1525	N 177	46S	200
PROJECTION SYSTEM: ETRS89 / UTM ZONE 30N						
Total metres						1,030

## CÁRMENES PROJECT TECHNICAL SUMMARY

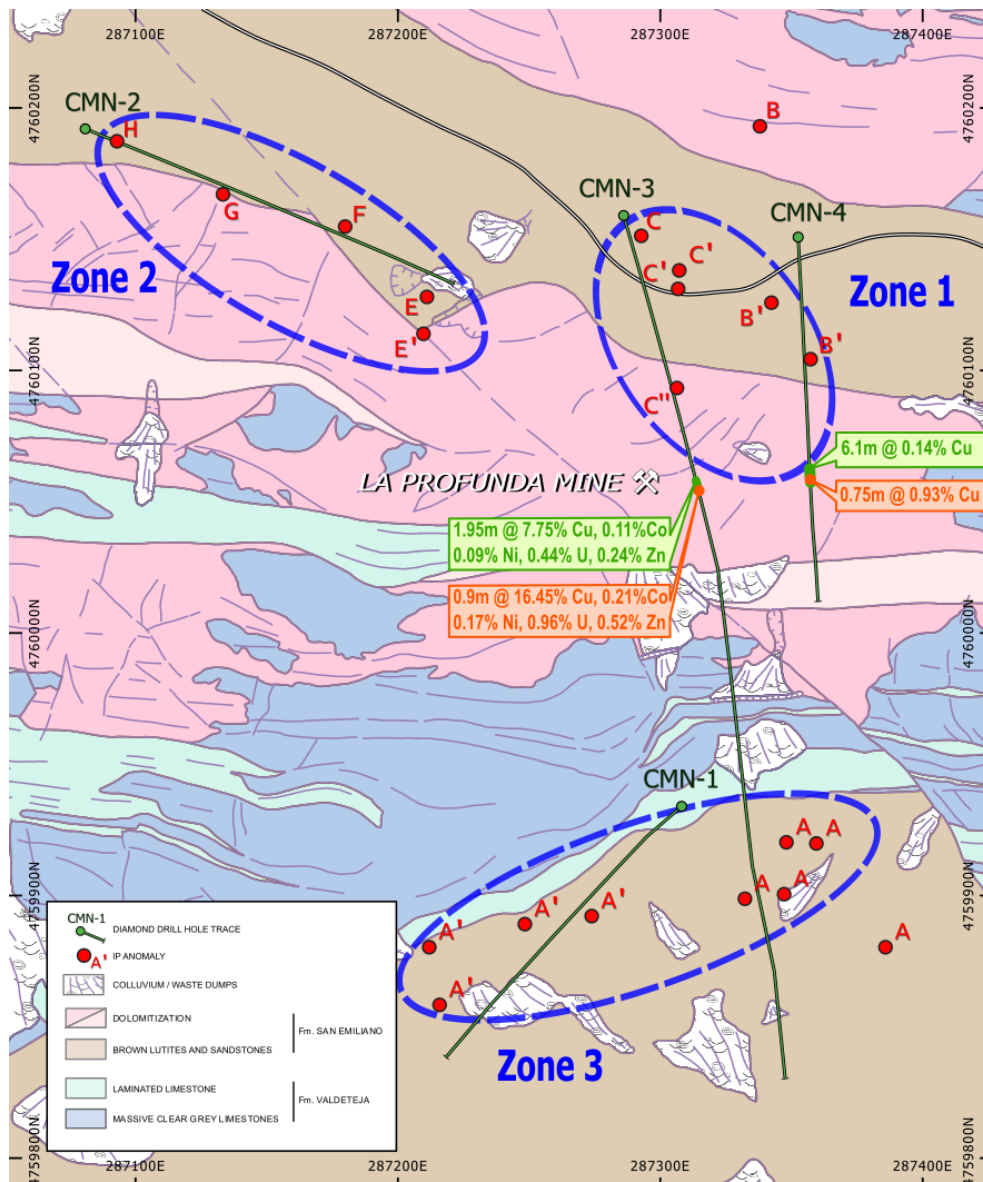
### OBJECTIVES OF THE MAIDEN DRILLING PROGRAMME

Pole-dipole induced polarisation (PDIP) geophysical surveys (including cross-lines) were completed in 2017 and 2018 near the Profunda Mine to validate and better define numerous geophysical anomalies generated in earlier successful orientation PDIP surveys completed in 2016.

Importantly, geophysical contracting and consulting company International Geophysical Technology, S.L. (IGT) concluded in January 2018 that *"The results of the measurements made using Pole-Dipole array are very similar to those of the 2016 study in its qualitative aspects and also regarding the characteristics of the anomalies detected in lines 2017A, 2017D, 2018E, 2018F and 2018G. These are punctual anomalies defined by moderate - low values of Chargeability, which can **reasonably be interpreted as the effect of metal sulphides disseminated in pipe-like structures**".*

A portion of the Profunda area was also covered with a gradient array induced polarisation (GAIP) geophysical survey which generated a significant anomaly on the La Profunda La Cuevona (Big Cave).

The IGT-generated IP anomalies were also supported by Ion Leach Soil Geochemistry anomalies and detailed geological mapping at scale 1: 2,000. The combined data resulted in the identification of three key Target Zones which are highlighted in Figure 2.



**FIGURE 2. Geological map showing the location of IP anomalies, drill collars with the projection of drill traces and mineralised intersections to the surface at Profunda Mine Prospect**

Furthermore, in collaboration with the University of Oviedo, a structural study of the Profunda area was commissioned to better understand the structural controls on Profunda breccia-type deposits.

In conclusion, following a comprehensive review of all of these exploration methodologies, the Riedel-SIEMCALSA JV elected to carry out a small drilling programme at, and near to, the Profunda mine with key aims to:

- interrogate the nature and tenor of the geochemical and geophysical anomalies;
- determine the effectiveness of the geochemical and geophysical exploration techniques; and
- investigate the potential to discover extensions and repetitions of the “Profunda” style cobalt-copper-nickel sulphide mineralisation hosted in breccias with a “pipelike” shape, similar to that observed and sampled in the old La Cueva mine workings.

## DRILLED TARGETS AND RESULTS

### CMN-1 (190m)

The objective of CMN-1 was to test multiple PDIP chargeability anomalies to the south of the La Profunda Mine. Soil geochemistry could not be completed in this area due to contamination by remnants of mining dumps and waste.

The hole drilled through limestone and lutites containing diagenetic pyrite and very fine grained siderite mineralisation. The chargeability anomalies are believed to have been induced due to the presence of centimetre wide bands of diagenetic pyrite mineralisation and very fine grained siderite developed throughout the lutite, increasing the density of the lutites from 2.6-2.7g/cm<sup>3</sup> to 3.1-3.2 g/cm<sup>3</sup> (see Figure 3).

In conclusion, the PDIP anomalies can be satisfactorily explained by the presence of this mineralisation.

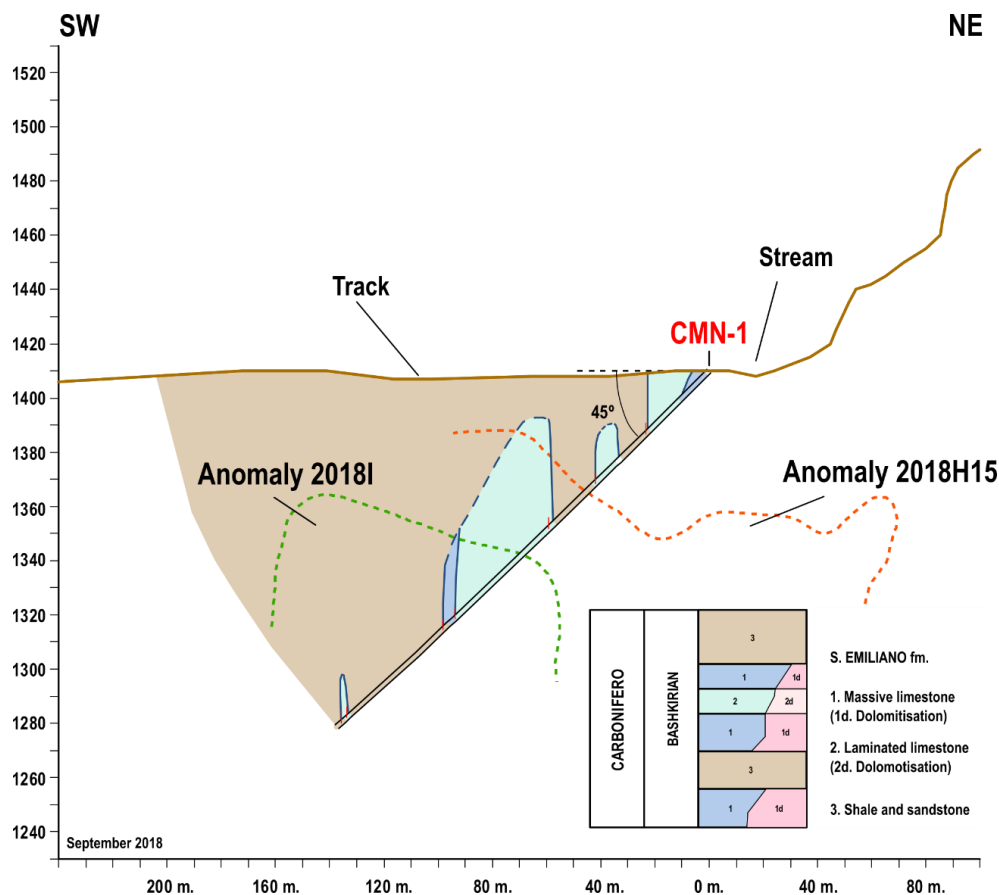


FIGURE 3. Pseudo section showing the drill trace of CMN-1

### CMN-2 (220m)

This drillhole (see Figure 2) targeted PDIP chargeability anomalies H, G, F and E with coincident Ion Leach soil geochemical and radiometric anomalies. Target Zone 2 was located near the prospective contact between carbonate and detrital rocks, however, despite the Company's plan to drill these targets from the north, permitting requirements resulted in drill hole CMN-2 being relocated and drilled parallel to bedding without providing a satisfactory explanation of the nature of the anomalies.

### CMN-3 (420m)

This drillhole was designed to test the margins of the La Profunda mine and PDIP anomalies in Target Zones 1 and 3. The drill hole passed below the La Cueva stope but unfortunately intersected unforeseen historic workings or voids between 129.20m and 136.00m in depth. Notwithstanding, in the footwall to the old workings, exceptional mineralisation, probably representative of the previously mined stope material and analogous to previously sampled material in the La Cueva mine, was intersected between 136.15m and 137.05m, viz:

- **1.95m** (136.15m - 138.10m) at **7.72% Cu, 1104ppm Co, 856ppm Ni, 2429ppm Zn** and **4437ppm U**, *including*;
- **0.90m** (136.15m - 137.05m) at **16.45% Cu, 2090ppm Co, 1715ppm Ni, 5150ppm Zn** and **9590ppm U**

The drill hole intersected another unforeseen gallery between 148m and 150.3m, then at 273 metres depth, cut through black lutites containing pyrite in interbedded limestone, sandstone and lutites, in a similar geological setting to that observed in CMN-1 in Target Zone 3.

### CMN-4 (200m)

Due to the discovery of the richly mineralised intercept in CMN-3, SIEMCALSA recommended an additional drill hole to test for mineralised extensions to the east of La Cueva. Drillhole CMN-4 intersected unforeseen historic workings or voids between 142.80m and 146.80m in depth and a fracture system and minor mineralisation which may be analogous to the Profunda mineralising event. Mineralisation detected:

- **0.75m** (127.25m - 128.00m) at **0.93% Cu**; *or*
- **6.10m** (124.20m - 130.30m) at **0.14% Cu**

It is interpreted that the drill hole may have passed above the key target area.

### Downhole Geophysics

The drill hole targets were largely based on the interpretation of geophysical anomalies (PDIP and radiometric anomalies) and following completion of the drilling campaign geophysical contracting company IGT was engaged to carry out downhole geophysics readings in drillholes CMN-2, CMN-3 and CMN-4. The aim of this work was to detect mineralisation nearby or peripheral to the drill holes to be tested.

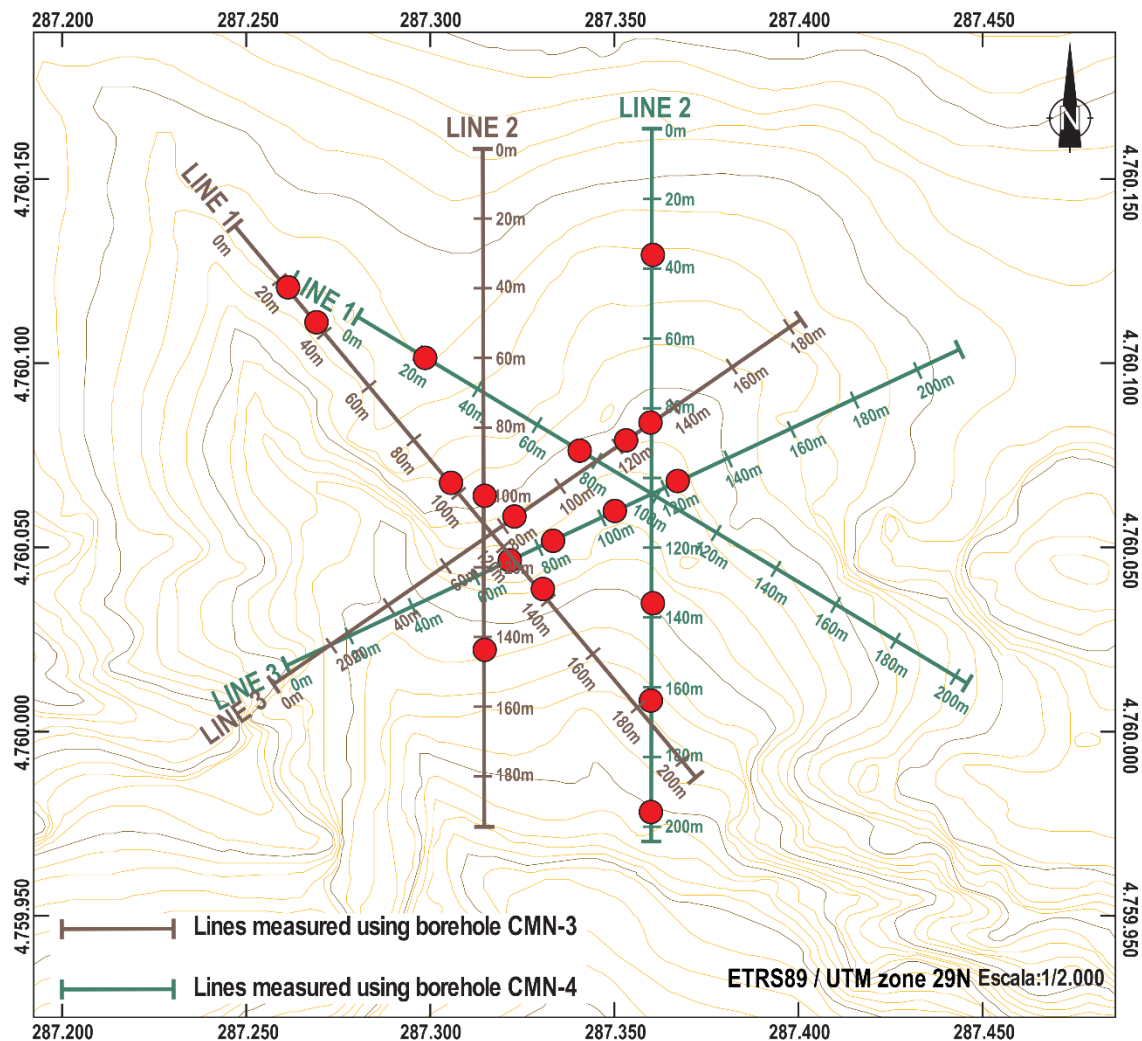
As well as down hole IP geophysics, the use of radiometry (Natural Gamma-type) to detect the presence of mineralisation and the mineralising event was recommended because complex disseminated breccia-hosted sulphide mineralisation, such as that at Mina Profunda, is associated with various oxides of uranium.

Although it was intended that pole-dipole arrays would be placed inside the boreholes as well as on the surface, this proved to be impractical so only surface IP readings could be collected with transmitting electrodes inside the boreholes. This provided a limitation on the anomalies generated because depths to the anomalies could not be calculated.



In summary, in CMN-2 downhole IP and downhole radiometry was unsuccessful because the probes could not penetrate below 10 metres in depth.

In CMN-3 an IP electrode was emplaced in contact with water and sulphide mineralisation between 136m and 137m depth, in CMN-4 an IP electrode was emplaced at a depth of 129 metres and at the surface IP data was collected along “star-shaped” receiver arrays. The locations of the surface IP anomalies recorded (in red) are shown in Figure 4 below.



**FIGURE 4. Locations of key downhole IP chargeability anomalies from CMN-3 and CMN-4**

In CMN-3 the downhole Natural Gamma Logging tool could not penetrate below 70 metres depth due to deformation of the PVC pipe in the hole so any areas of interest below this depth could not be tested.

In CMN-4 downhole Natural Gamma Logging data was collected to 142 metres depth.

Graphical representations of the Natural Gamma Logging data collected are presented in Figure 5 below.



Although permitting issues resulted in non-optimal drill hole locations and drill orientations being implemented, analysis and interpretation of the results of the drilling programme have facilitated a far greater understanding of the geological and structural controls on mineralisation associated with Profunda breccia-hosted type mineral deposits.

In this limited drilling programme, targeting and drilling for extensions to the La Profunda deposit were compromised by the discovery of previously unknown mine stopes and voids, however, only two drill holes targeted these extensions and follow-up downhole geophysical surveys show that potential for the discovery of depth extensions and other ore shoots remains.

The high-grade footwall mineralisation intersected in drill hole CMN-3 highlights the grade potential which the Company has targeted in its regional exploration programmes for the discovery of other non-outcropping or blind Profunda-type deposits.

Another key conclusion from this drilling programme is that PDIP anomalies in drill holes CMN-1 and CMN-3 can be attributed to the presence of pyrite and siderite mineralisation in rocks marginal to the north and south of the prospective “pink dolomites” of the San Emiliano Formation. Although of no economic importance, the conclusion that IP surveys coincide with alteration/mineralisation is an important conclusion from this programme, validating the effectiveness of the geophysical technique in exploration. At Profunda, the strong GAIP anomaly was also shown to be most likely generated from alteration and mineralisation.

The immediate focus for Riedel is on implementing the findings from this programme to design a follow-up regional exploration programme aimed at targeting new La Profunda-type discoveries.

With the full suite of drilling results and data sets now received by the Company, the Board will commission a full data and project review to accurately determine strategies and next steps for the Cármenes Copper-Cobalt Project Joint Venture.

**-ENDS-**

**For further information please contact:**

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**Released through Sam Burns, Six Degrees Investor Relations, +61 400 164 067**

**About Riedel Resources Limited**

Riedel Resources Limited listed on ASX on 31 January 2011 and is an Australian-based exploration company focused on the exploration and development of technology metals in Europe.

Further information can be found at the Company's website [www.riedelresources.com.au](http://www.riedelresources.com.au)

**About SIEMCALSA**

**SIEMCALSA** (*Sociedad De Investigación Y Exploración Minera De Castilla Y León S.A.*) is a parastatal corporation established in 1988 devoted to the promotion and stimulation of the mining sector in the autonomous community of Castilla and León (Spain).

Further information can be found at the Company's website [www.siemcalsa.com](http://www.siemcalsa.com)

**Competent Person's Statement**

*The information in this report that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Jeffrey Moore, who is a Member of The Australian Institute of Mining and Metallurgy. Mr Moore is a full-time employee of Riedel Resources Limited. Mr Moore has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Moore consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*



## JORC Code, 2012 Edition – Table 1

### Section 1 Sampling Techniques and Data

Criteria	Commentary
<i>Sampling techniques</i>	<ul style="list-style-type: none"> <li>All drilling has been diamond core drilling by drilling company Sondeos y Perforaciones Industriales, S.A. (SPI) using PQ, HQ and NQ core diameters</li> <li>Sample intervals were selected for analysis on the basis of geological criteria</li> <li>The selected sample intervals were split and half core dispatched to ALS laboratory in Seville, Spain for base metals, cobalt and silver by multi-element analysis (ME-ICP61, if above UDL (+)-OG62)</li> <li>This style of exploration is appropriate for the copper-cobalt 'pipe' style mineralization predicted in the project area.</li> </ul>
<i>Drilling techniques</i>	<ul style="list-style-type: none"> <li>All drilling has been diamond core drilling by drilling company Sondeos y Perforaciones Industriales, S.A. (SPI) using PQ, HQ and NQ core diameters.</li> </ul>
<i>Drill sample recovery</i>	<ul style="list-style-type: none"> <li>Drill sample recovery is generally good (average &gt;90%), and very good (&gt;95%) over sampled intervals.</li> </ul>
<i>Logging</i>	<ul style="list-style-type: none"> <li>Logging was completed on geological criteria including lithology, mineralisation alteration assemblage and or the presence of sulphides using visual estimates, bedding and structural information, as well as radiometric readings downhole and on core recovered</li> <li>Downhole IP was completed on CMN-3 in contact with water and sulphide mineralisation between 136m and 137m depth, in CMN-4 an IP electrode was emplaced at a depth of 129 metres and data was collected at surface in a star-shaped array</li> <li>Natural Gamma Logging data was collected successfully in CMN-4.</li> </ul>
<i>Sub-sampling techniques and sample preparation</i>	<ul style="list-style-type: none"> <li>Core was cut lengthways perpendicular to geological structures wherever possible using a diamond saw,</li> <li>Sample intervals were collected from zones of special interest such as PDIP targets, zones of intensive alteration and mineralised intervals</li> <li>Intervals sampled varied from 0.55 metres to 2.5 metres in length of material, the remaining half core was retained for future revisions. The samples were introduced in a sample bag with a sample ticket.</li> </ul>
<i>Quality of assay data and laboratory tests</i>	<ul style="list-style-type: none"> <li>The assay procedures used are considered appropriate for the style of mineralisation, are best practice and total in nature.</li> </ul>
<i>Verification of sampling and assaying</i>	<ul style="list-style-type: none"> <li>QA/QC control samples include: Customised Project Standard (CPS) inserted at a rate of 1: 20 samples, customised blanks inserted at a rate of 1: 20 samples and duplicates (sample preparation replicate - coarse crush on selected samples and pulp replicates at a rate of 1: 20 samples) into the sample stream.</li> </ul>
<i>Location of data points</i>	<ul style="list-style-type: none"> <li>Drill holes, mining galleries, tracks were located using a GPS device: (Leica 1200)</li> <li>All drillhole information has been referenced to the coordinate reference system ETRS89 / ETRS-UTM30 (EPSG: 25830).</li> </ul>
<i>Data spacing and distribution</i>	<ul style="list-style-type: none"> <li>The drilling programme was designed to test PDIP targets and hole collar locations were selected according to accessibility</li> <li>The angled drill holes were spaced between (approximately) 65 to 225</li> </ul>

Criteria	Commentary
	metres
<i>Orientation of data in relation to geological structure</i>	<ul style="list-style-type: none"> <li>Samples were taken from zones of special interest such as PDIP targets, zones of intensive alteration and mineralised intervals perpendicular to geological structures wherever possible.</li> </ul>
<i>Sample security</i>	<ul style="list-style-type: none"> <li>All sampling carried out under the control SIEMCALSA</li> <li>Samples are stored at the SIEMCALSA sample library (litoteca) in Salamanca, Spain.</li> </ul>
<i>Audits or reviews</i>	<ul style="list-style-type: none"> <li>Jeff Moore, Executive Chairman of Riedel completed an onsite review of the drilling programme. Mr Moore observed drilling in progress and a representative suite of drill holes was viewed, along with outcrop exposures and drill hole collars.</li> </ul>

## Section 2 Reporting of Exploration Results

Criteria	Commentary
<i>Mineral tenement and land tenure status</i>	<ul style="list-style-type: none"> <li>Spanish Mineral Investigation Tenements PI 1507 Cármenes and PI 1506 Valverdín are held by Sociedad De Investigación Y Exploración Minera De Castilla Y León S.A. ("SIEMCALSA") and managed by Riedel Resources Limited (Riedel) through a Joint Venture whereby Riedel can earn-in an interest up to 90% in the Cármenes Project by way of funding staged exploration and development expenditure, with provision to acquire the remaining 10%.</li> <li>PI 1506 Valverdín is valid until May 12, 2021.</li> <li>PI 1507 Cármenes is valid until May 12, 2021.</li> <li>Agreements with land owners and authorisations for works have been received by SIEMCALSA with respect to PI 1506 Valverdín.</li> <li>There are no known impediments to obtaining a licence to operate or explore in the tenements under consideration.</li> </ul>
<i>Exploration done by other parties</i>	<ul style="list-style-type: none"> <li>The area is untested by other parties using modern exploration techniques.</li> </ul>
<i>Geology</i>	<ul style="list-style-type: none"> <li>The Profunda and Divina Providencia Cu-Ni-Co (<math>\pm</math>Au-U) historic mines and Valverdín (Au-As) mineral occurrence are located in the southern slope of the Cantabrian Zone of the Iberian Massif in the Castilla y León region of Northern Spain, within a 60 km Paleozoic belt.</li> <li>Host rocks are limestones and dolomites of Namurian and Carboniferous ages, the whole area was subject to intense hydrothermal dolomitisation.</li> <li>Mineralisation is structurally-controlled, hydrothermal, carbonate-hosted breccia-type mineralisation. (Cu-Co-Ni (<math>\pm</math>-Au-U) as sulphides and arsenates (La Profunda), Au (Valverdín) and Pb-Cu-Zn-Ag (Fontun) in limestone and shale stratigraphy.</li> <li>All mineralisation types represent a single hydrothermal event with well-defined zonation processes, genetically linked to the movements of large regional faults (León fault).</li> <li>Known deposits have a pipe morphology of sub-vertical orientation with about 50 m diameter and height of 200m.</li> </ul>
<i>Drill hole Information</i>	<ul style="list-style-type: none"> <li>The drilling programme that is the subject of this report comprised four diamond core drill holes for a total of 1030 metres.</li> </ul>

Criteria	Commentary																																								
	<table><tr><th>Hole ID</th><th>Easting (m)</th><th>Northing (m)</th><th>Elevation (m)</th><th>Dip</th><th>Azimuth</th><th>Length (m)</th><th>Intercept depth</th></tr><tr><td>CMN-1</td><td>287308.1</td><td>4759934</td><td>1409.5</td><td>-45°W</td><td>N229°E</td><td>190</td><td></td></tr><tr><td>CMN-2</td><td>287080.84</td><td>4760191.79</td><td>1567.1</td><td>-46°E</td><td>N112°E</td><td>220</td><td></td></tr><tr><td>CMN-3</td><td>287286.01</td><td>4760158.51</td><td>1530</td><td>-42°S</td><td>N164°E</td><td>420</td><td></td></tr><tr><td>CMN-4</td><td>287352.5</td><td>4760150.9</td><td>1525</td><td>-46°S</td><td>N177°E</td><td>200</td><td></td></tr></table>	Hole ID	Easting (m)	Northing (m)	Elevation (m)	Dip	Azimuth	Length (m)	Intercept depth	CMN-1	287308.1	4759934	1409.5	-45°W	N229°E	190		CMN-2	287080.84	4760191.79	1567.1	-46°E	N112°E	220		CMN-3	287286.01	4760158.51	1530	-42°S	N164°E	420		CMN-4	287352.5	4760150.9	1525	-46°S	N177°E	200	
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<i>Data aggregation methods</i>	<ul style="list-style-type: none"><li>No data aggregation applied.</li></ul>																																								
<i>Relationship between mineralisation widths and intercept lengths</i>	<ul style="list-style-type: none"><li>Mineralisation is generally intersected with true-width down-hole lengths</li></ul>																																								
<i>Diagrams</i>	<ul style="list-style-type: none"><li>Maps and diagrams are provided in body of the report.</li></ul>																																								
<i>Balanced reporting</i>	<ul style="list-style-type: none"><li>Data is presented for both positive and negative results and can be considered balanced.</li></ul>																																								
<i>Other substantive exploration data</i>	<ul style="list-style-type: none"><li>As reported in the body of the report.</li></ul>																																								
<i>Further work</i>	<ul style="list-style-type: none"><li>A full data and project review to accurately determine strategies and next steps for the Cármenes Copper-Cobalt Project Joint Venture</li></ul>																																								