



MASSIVE SULPHIDES AT SMITHS WELL PROSPECT

HIGHLIGHTS

- ✧ **30m of massive to disseminated pyrrhotite-chalcopyrite-pyrite sulphides** intersected from 276.1m downhole (YDD22-02) at Smiths Well prospect, Yuinmery
- ✧ Downhole electromagnetic (DHEM) surveys at Smiths Well define high conductance (**modelled up to 20,000S**) along strike of previously intercepted mineralisation
- ✧ The mineralisation is interpreted to be orthomagmatic in nature and is hosted in mafic-ultramafic rocks with massive pyrrhotite and globules of pyrite rimmed by chalcopyrite
- ✧ Samples have been collected and submitted for laboratory analysis
- ✧ Diamond core drilling continues at Smiths Well with hole YDD22-03 targeting the strike extension of the strong downhole electromagnetic conductor

Empire Managing Director, Sean Richardson commented:

“Massive and disseminated sulphides observed in YDD22-02 at Smiths Well are consistent with the high conductance downhole electromagnetic geophysical response detected from hole YDD21-01. This outstanding result verifies the strike and plunge extension to the mineralised horizon, offering an excellent opportunity for a significant copper-nickel-cobalt discovery at Yuinmery.

“The diamond drilling program continues at Yuinmery with hole YDD22-03 targeting strike extensions to the modelled conductor at Smiths Well prospect. The Company looks forward to updating the market as results from this drilling becomes available.”

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SUMMARY

Empire Resources (ASX:ERL, Empire) advises that it has intersected **30m of massive to disseminated pyrrhotite-chalcopyrite-pyrite sulphides** from 276.1m in diamond hole YDD22-02 at the Smiths Well prospect, Yuinmery. Pyrrhotite is the dominant sulphide mineral in all zones. A breakdown of the intercept is as follows.

- 🔷 276.1m – 278.1m: Massive to semi-massive sulphide (pyrrhotite-pyrite-chalcopyrite)
- 🔷 278.1m – 284.7m: Disseminated/stringer sulphide (pyrrhotite-pyrite-chalcopyrite)
- 🔷 284.7m – 303.5m: Massive sulphide (pyrrhotite with scattered blebby chalcopyrite and globules of pyrite rimmed by chalcopyrite)
- 🔷 303.5m – 306.1m: Disseminated/stringer sulphide (pyrrhotite-pyrite-chalcopyrite)

Diamond hole YDD22-02 (Figure 4) was designed to target a strong conductor modelled from downhole electromagnetic (DHEM) surveys completed in January 2022. The strongly responsive conductor is interpreted to be a down plunge extension of the Smiths Well mineralisation, where previous intersections included **16m @ 0.51% Cu, 0.16% Ni & 0.031% Co** from 255m in drillhole YRC21-28, and **5m @ 0.65% Cu, 0.13% Ni & 0.039% Co** from 110m in drillhole YRC21-26 including **1m @ 1.90% Cu, 0.18% Ni & 0.038% Co** from 112m ^[1].

The massive to disseminated intercept lies within an interpreted mafic-ultramafic sequence comprising coarse grained gabbroic rocks with very coarse grained (glomeroporphyritic) domains, dolerite, basalt and ultramafic lithologies.



Figure 1 – YDD22-02 Massive pyrrhotite with disseminated blebby chalcopyrite and globules of pyrite rimmed by chalcopyrite @299.7m



Figure 2 – YDD22-02 Massive pyrrhotite with blebby pyrite and patchy disseminated chalcopyrite

These observations are preliminary in nature and estimates of sulphide minerals are visual only. Samples have been collected onsite and submitted to a commercial laboratory for chemical analysis. Petrographic samples will be collected for rock and mineralogy classification.

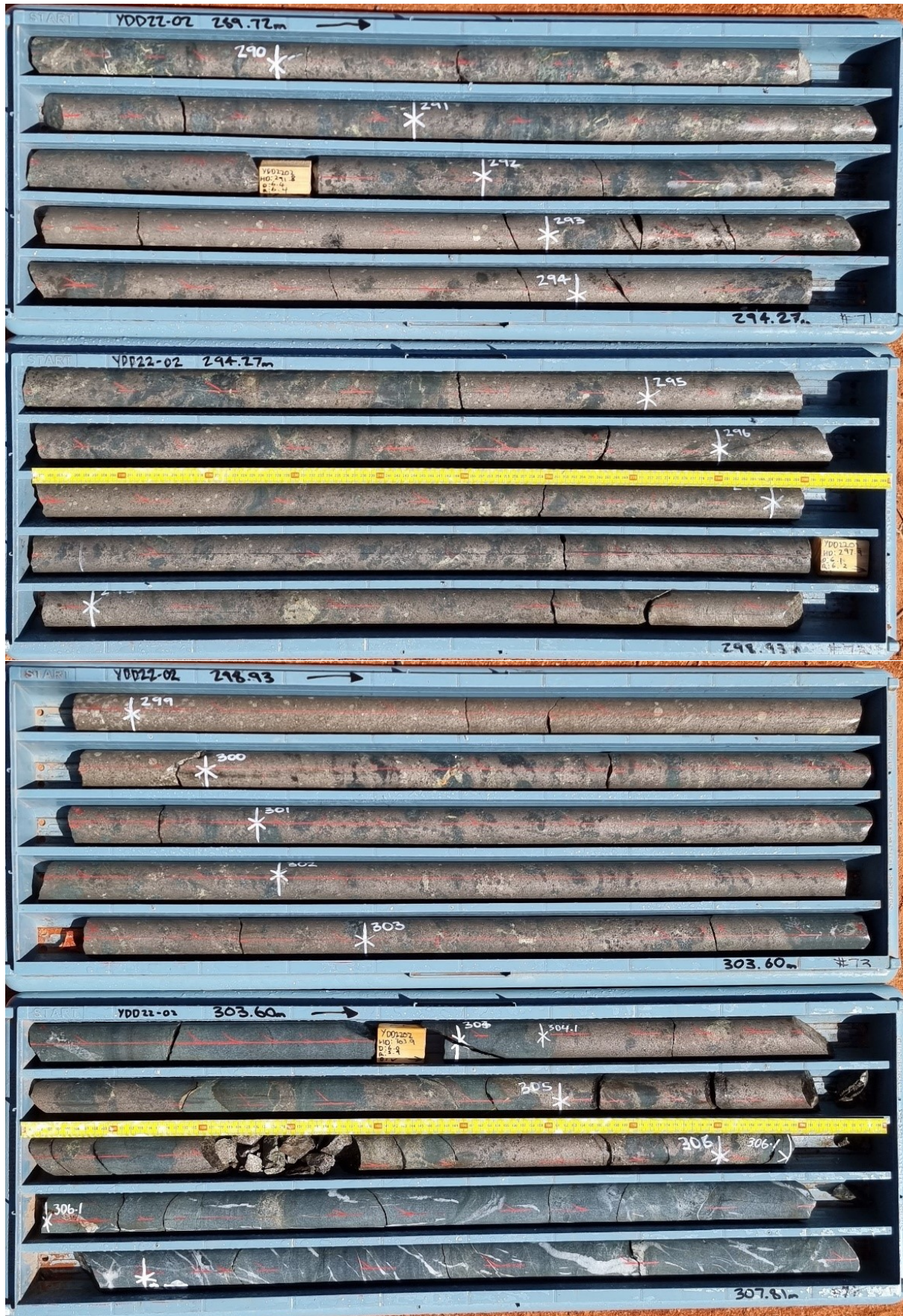


Figure 3 – Visible Sulphides in YDD22-02 from 289.72m (Trays 71-74)

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Smiths Well – Copper-Nickel-Cobalt Potential

In May 2020 Empire identified a steeply plunging structure trending in a northeast direction at the Smiths Well prospect. This structure has been tested by RC drilling for over 200m of strike and to 240m vertical depth. The structure is associated with the regional magnetic trend and remains open to the northeast and down dip. There is high probability that the copper-nickel mineralisation will continue beyond the zone already identified.

Drilling to date has returned broad zones of disseminated to matrix sulphide mineralisation, including chalcopyrite, pyrrhotite and pyrite in varying concentrations. Drill intercepts of >1% Cu, and associated nickel (>0.2% Ni), gold and cobalt values demonstrate the potential of the prospect ^[2].

In January 2022, Empire engaged Southern Geoscience Consultants (SGC) to undertake a downhole electromagnetic (DHEM) survey at Smiths Well. The DHEM survey predominantly focussed on identifying conductors along strike and down plunge of previously identified and drill confirmed conductors.

A single strong anomaly was detected from hole YDD21-01 using a loop designed to couple with the known geometry from previous drilling. A plate with high conductance of ~20,000 S was modelled up dip and to the northeast of the drill hole. The modelled plate (Figure 6) dips at 53° towards the northwest and has extensive strike length of 159 m. The fit between the observed and modelled response is very good and the conductor is believed to be a strike extension of the main Smiths Well mineralisation horizon.

Diamond drill hole YDD22-02 was planned to intercept the modelled plate 50m along strike and two-thirds up dip from the modelled base of the conductor where it is expected that an extensive sulphide pile has formed. The drillhole intercepted massive to disseminated sulphides at 276.1m as planned and the thick downhole intercept of 30m conforms to the prevailing geological model.

Diamond drilling continues at Yuinmery where hole YDD22-03 at the Smiths Well prospect tests the strike extension of the January 2022 modelled DHEM conductor.

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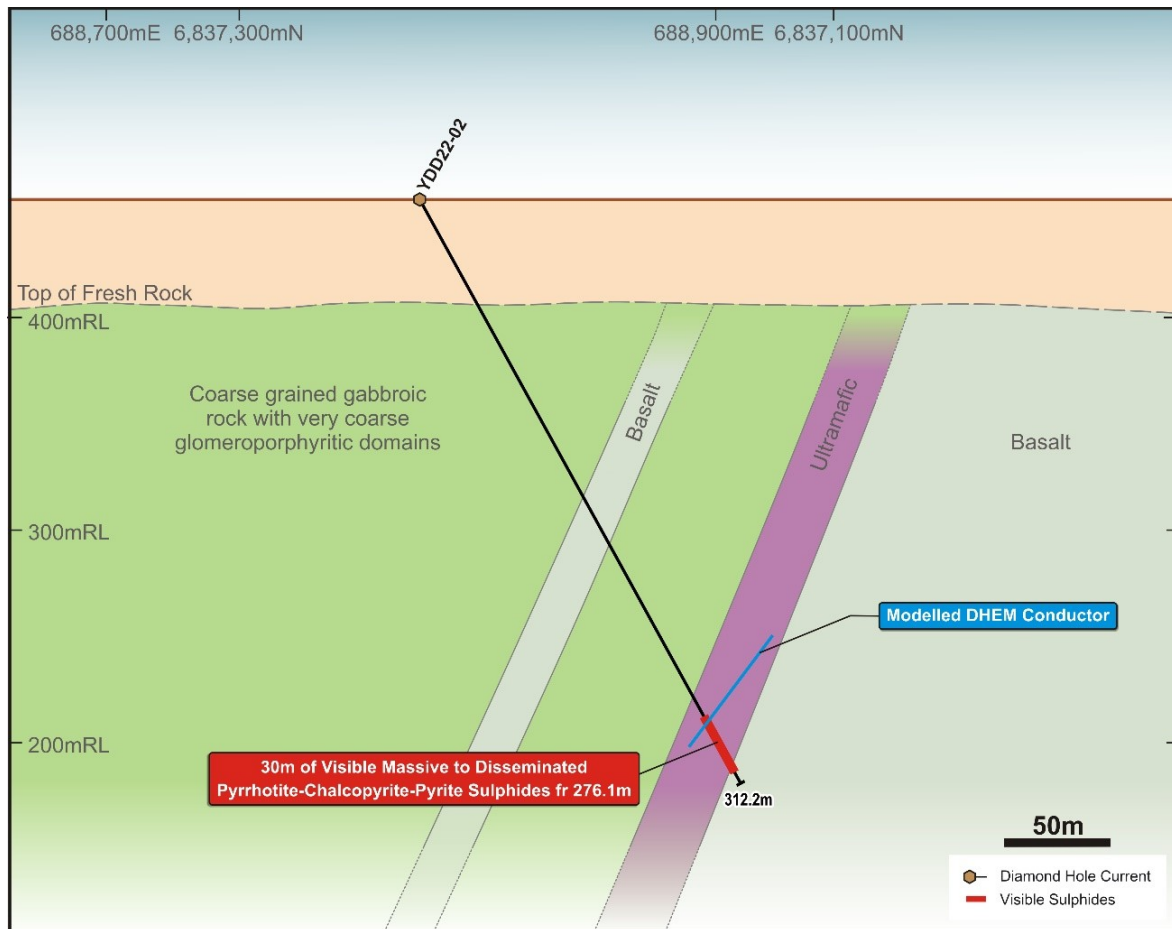


Figure 4 – Smiths Well Oblique Cross Section YDD22-02

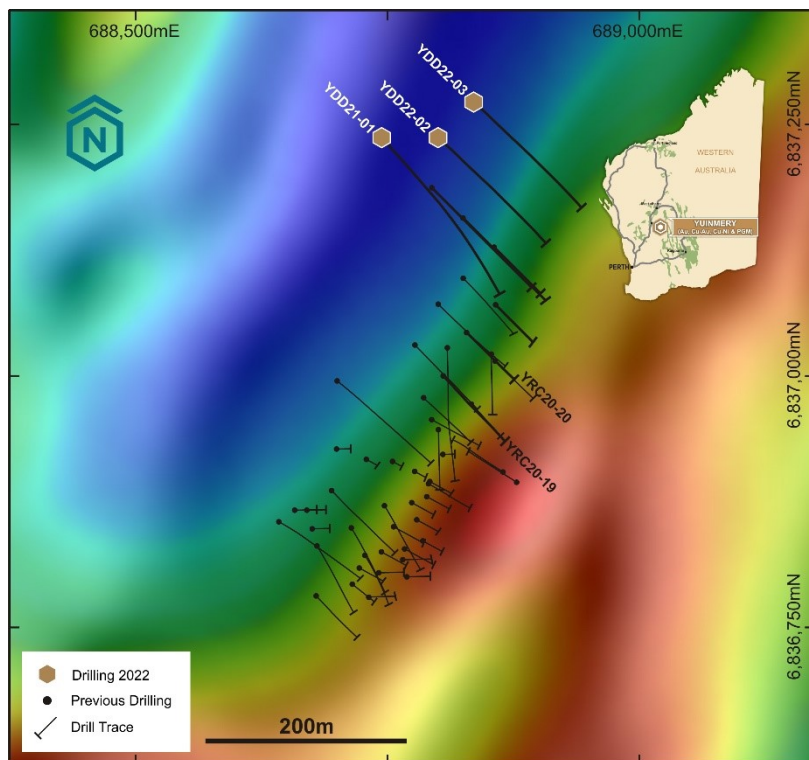


Figure 5 – Smiths Well Drill Collar Locations. Base Image RTP_Eagcs50nl

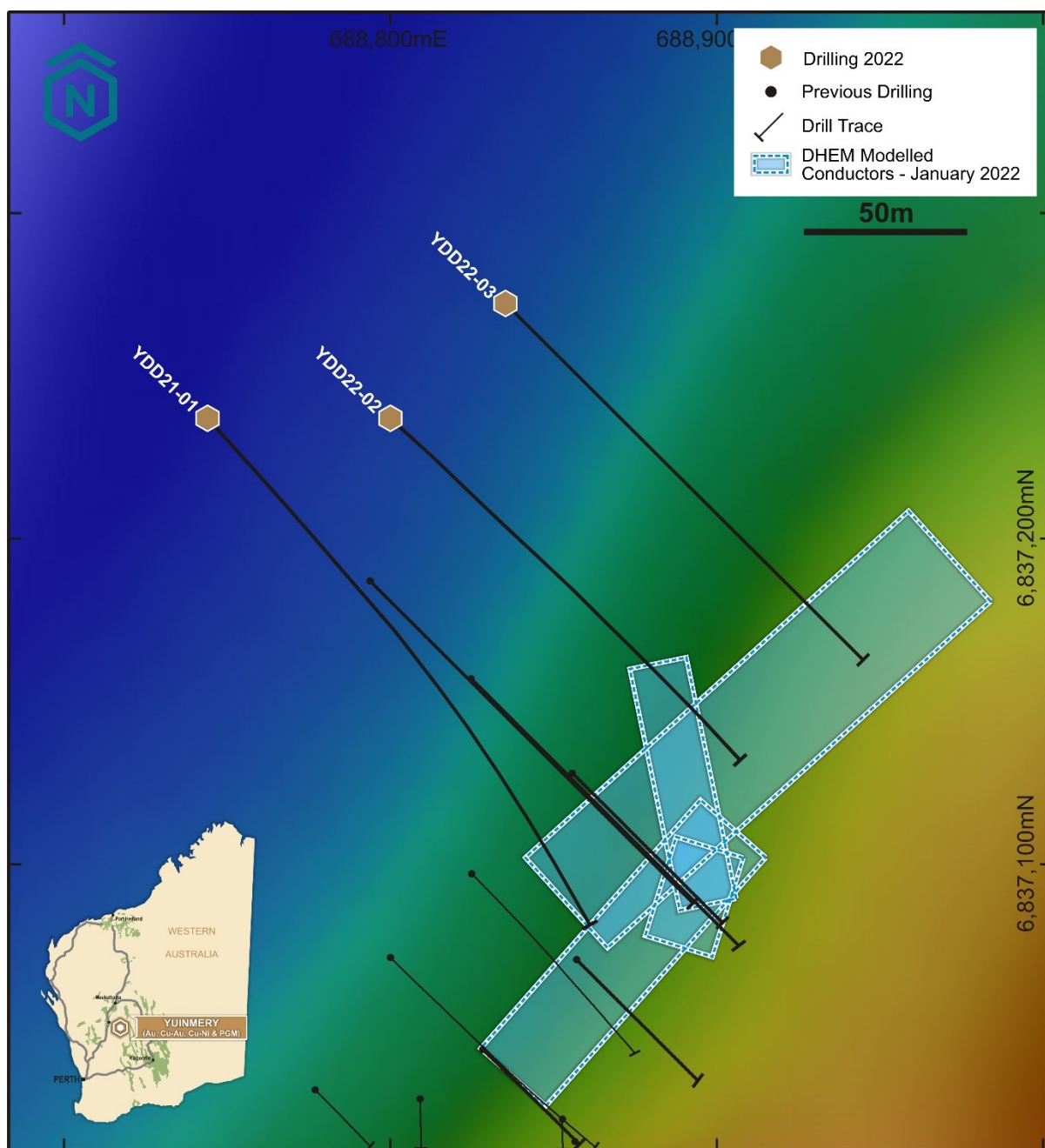


Figure 6 – January 2020 DHEM Conductors & Drill Collars
Base Image RTP_Eagcs50nl

FORWARD PLAN

Empire continues to systematically identify and test prospective targets at Yuinmery.

Drill samples selected from visual observations have been submitted to a commercial laboratory for chemical analysis. Current advice for laboratory analysis turnaround times is 8 to 10 weeks from submission.

One more hole (YDD22-03) is to be drilled at the Smiths Well prospect during the current campaign to test the northeast limits of the modelled conductor.

A single diamond hole is planned to be drilled at the Constantine prospect where anomalous Ni and PGM values have been observed in historic RAB and recent RC drilling. YRC21-21 ended in mineralisation with an intercept of **12m @ 0.41g/t Pd** from 120m ^[1] and is planned to be extended by up to 150m of diamond NQ core to test the stratigraphic sequences and assess mineralisation potential at depth

Selective samples will be collected and submitted for petrographic analysis to characterise the host geology and sulphide mineralogy.

Geophysical surveys, including the use of downhole electromagnetic (DHEM) will continue to be utilised to plan and target drilling. Future geophysical surveys will be planned based on data gathered during drilling.

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CORRECTION

Empire has identified a typographical error in previous announcements involving the use of % unit instead of g/t unit in some text when describing palladium (Pd) and platinum (Pt) metal values.

The typographical error can be found in the following announcements:

- 🏠 “Sulphides Intersected at Yuinmery YT01 Prospect” 7 February 2022
- 🏠 “Diamond Drilling Commences at Yuinmery” 15 December 2021
- 🏠 “Quarterly Report for the Period Ending 30 September 2021” 18 October 2021
- 🏠 “Excellent Results from Yuinmery Drilling” 22 September 2021

The typographical error occurs as follows:

36m @ 0.34% Cu, 0.07% Ni, **0.16% Pd, 0.03% Pt** and 0.07g/t Au

Should be read as:

36m @ 0.34% Cu, 0.07% Ni, **0.16g/t Pd, 0.03g/t Pt** and 0.07g/t Au

28m @ **0.14% Pd** from 104m

Should be read as:

28m @ **0.14g/t Pd** from 104m

12m @ **0.41% Pd** from 120m

Should be read as:

12m @ **0.41g/t Pd** from 120m

All the affected announcements correctly use the g/t designation for Pd and Pt values for all imagery, tables of results, headlines and throughout the body of the announcements.

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This announcement is authorised for release by:

Sean Richardson
Managing Director

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Additional Information

Further details relating to the information in this release can be found in the following ASX announcements:

1. ASX:ERL “*Excellent Results from Yuinmery Drilling*” 22 September 2021
2. ASX:ERL “*Strong DHEM Responses and Broad Sulphide in Drilling at Yuinmery*” 3 June 2020

Competent Person Statements

The information in this report that relates to Exploration Results is based on information compiled and/or reviewed by Mr Mark Shelverton, who is a Member of the Australian Institute of Geoscientists. Mr Shelverton is a full-time employee of Empire Resources and has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity he 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”. Mr Shelverton consents to the inclusion in this presentation of the matters based on this information in the form and context in which they appear.

About Empire

Empire Resources Limited (ASX:ERL) is a gold and copper focussed exploration and development company. Empire owns four highly prospective projects. The Yuinmery Copper-Gold Project 470km northeast of Perth in the Youanmi Greenstone Belt, the Barloweerie multi-element precious and base metal project, the Nanadie Copper-Gold Project southeast of Meekatharra in the Murchison Region and the Penny's Gold Project 45km northeast of Kalgoorlie in the prolific Eastern Goldfields Region of Western Australia. Empire's projects have numerous exploration targets with excellent potential.

Empire has an experienced team of exploration, development and financial professionals who are committed to developing a sustainable and profitable mineral business. Empire seeks to extract value from direct exploration of its existing projects as well as identifying value accretive investment opportunities that complement the Company's development objectives.



Empire Resources Project Location

	Hole ID	East	North	RL	Depth	Az	Dip
YT01	YDD22-01	687,250	6,835,575	462	304.0	180	-60
Smith's Well	YDD21-01	688,744	6,837,237	455	364.7	135	-60
	YDD22-02	688,800	6,837,237	455	312.2	135	-60
	YDD22-03	688,835	6,837,272	455	310*	135	-60

Table 1 – Diamond Drillhole Summary

* Planned depth

Sulphide Mode	Percentage Range
Massive	>80%
Semi-Massive & Matrix	40-80%
Net-Textured	20-40%
Matrix	20-40%
Heavily Disseminated	10-40%
Disseminated & Blebby	1-10%
Trace	<1%

Table 2 – Sulphide Field Logging Guideline

JORC TABLE 1 FOR THE YUINMERY PROJECT

Section 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	- Nature and quality of sampling (eg 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 Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. - Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used. - Aspects of the determination of mineralisation that are Material to the Public Report. - In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information	- Sampling is yet to be done - Diamond drilling samples will be collected from core at 0.2m-1.2m where geological conditions change. Core selected for sampling will be cut in half, with 1 half sent for assay analysis and the remaining half retained.
Drilling Techniques	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).	- Diamond drilling from surface to end of hole. - Downhole surveys using Axis Champ Gyro - Core orientation using orientation tool kit - HQ3 – Triple tube used to recover core from surface until competent fresh rock encountered - HQ2 diameter core from surface until competent fresh rock encountered, NQ2 core to end of hole
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	Diamond drilling used as the most effective drill method in reducing contamination, preserving geology.

	- Measures taken to maximise sample recovery and ensure representative nature of the samples. - Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.	Diamond core will be sawn in half and sampled over 0.2m-1.2m intervals (commonly 1m) where geological conditions change
Logging	- 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. - Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography. - The total length and percentage of the relevant intersections logged.	- All drilling was logged for geology in the field by a qualified geologist. Lithological and mineralogical data was recorded for all drill holes using a coding system developed specifically for the Project. Primary and secondary lithologies are recorded in addition to colour, grain size, alteration type and intensity, estimates of mineral quantities. - Geological logging is qualitative in nature.
Sub-sample techniques and sample preparation	- If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry. - For all sample types, the nature, quality and appropriateness of the sample preparation technique. - Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples. - Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling. - Whether sample sizes are appropriate to the grain size of the material being sampled.	No sub sampling undertaken
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. - For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc. - Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been	- The assaying and laboratory procedures used are appropriate for the material tested. - Sampling was guided by Empire's QAQC procedures. - Certified analytical standards and blanks to be inserted at a rate of 1 in every 25. - The laboratory will also carry out its own internal QAQC checks including duplicates taken from the submitted samples.

	<i>established.</i>	
Verification of sampling and assaying	• <i>The verification of significant intersections by either independent or alternative company personnel.</i> • <i>The use of twinned holes.</i> • <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i> • <i>Discuss any adjustment to assay data.</i>	• The drill program was completed under guidance of the listed CP who is a contractor to Empire. • No twin holes were drilled as this is a reconnaissance drill program. • Geological logs and sampling data were recorded into excel spreadsheet templates on a laptop. These files were compiled and loaded into an Access database. • No adjustment to assay data was carried out unless noted. • The samples are selected based on their geological logs.
Location of Data points	• <i>Accuracy and quality of surveys used to locate drillholes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i> • <i>Specification of the grid system used.</i> • <i>Quality and adequacy of topographic control.</i>	• Collars were initially surveyed using a hand-held GPS and surveyed with a DGPS unit soon thereafter • GDA94_50 • Surface elevation is adjusted using points surveyed by DGPS and reported when appropriate.
Data spacing and distribution	• <i>Data spacing for reporting of Exploration Results.</i> • <i>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.</i> • <i>Whether sample compositing has been applied.</i>	• Drill holes were generally spaced at 50m across lines spaced between 75m and 50m. • The hole spaced provided good coverage along the drill line. • This drilling is reconnaissance in nature and will not be used for any Mineral Resource estimations.
Orientation of data in relation to geological structure	• <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> • <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>	• VMS mineralisation is considered to trend in the direction of foliation / bedding and as such may have multiple orientations due to the large syncline feature. • Holes were drilled perpendicular to observed or interpreted geology strike direction. • The direction of sampling is not considered to bias results
Sample Security	• <i>The measures taken to ensure sample security.</i>	• Drill core is collected daily from the site and brought back to the Yunmery Station for logging and storage. • Samples are transported by road to Perth by Empire Resources personnel.
Audits or reviews	• <i>The results of any audits or reviews of sampling techniques and data.</i>	• The program was completed, and data processed by the competent person who is an employee of Empire.

Section 2 Reporting of Exploration Results

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. - 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.	- The project consists of six granted tenements (two mining and four exploration), for a total area of 106.7 km² - Mining tenements; M57/265 and M57/636 and exploration tenement; E57/1037 and E57/1159 are 100% owned by Empire - Exploration tenements are; E57/681 and E57/1027 are 91.89% owned by Empire and are subject to a Net Smelter Royalty (NSR) of 1.25%
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	- Western Mining Corporation Ltd commenced base metal exploration in the area in 1969 and continued until 1981. Soil sampling, ground magnetics, IP and EM were exploration methods used to target their vacuum, percussion and diamond drilling programs. - Esso Australia Ltd explored the area between 1979 and 1984 using EM, RAB and diamond drilling in the search for Golden Grove - Scuddles type base metal deposits. - Black Hill Minerals Ltd explored part of the area for base metals between 1986 and 1991. This involved rock chip sampling and limited percussion drilling. - Meekal Pty Ltd commenced an exploration program in 1985 by remapping parts of the syncline and rock chip sampling. In 1986 Meekal introduced Arboyne NL into the project who carried out gold exploration by drilling reverse circulation holes under old gold workings. - Between 1989 and 1991 RGC Exploration Pty Ltd explored the area concentrating on the potential for gold mineralization. This exploration consisted of geological mapping, rock chip sampling and some RAB drilling. - In 1992 Meekal Pty Ltd joint ventured the project to Giralia Resources NL, who brought in CRAE as a partner in 1993. CRAE completed a ground EM survey and drilled three diamond holes in its search for base metals. - Gindalbie Gold NL then explored the area for gold between 1995 and 2000. This work entailed a wide spaced soil

		sampling program but although several anomalous zones were identified no drilling was undertaken. - Mineral Resources Australia / La Mancha explored the northern end of the project area between 2002 and 2010 completing; extensive soil sampling (Auger), reconnaissance (RAB / Aircore) drilling and geophysical surveys (VTEM and aeromagnetic surveys). - Empire Resources Ltd commenced exploration in the area during 2006. To date a number of RAB, RC and diamond drilling programmes have been completed as well as aerial, surface and downhole electromagnetic (EM) surveys.
Geology	<i>Deposit type, geological setting and style of mineralisation.</i>	- The Yuinmery project area covers the eastern portion of the Archaean Youanmi greenstone belt with rock types consisting largely of altered mafic and ultramafic volcanic and intrusive rocks with chloritic felsic and intermediate volcanic units. The volcanic units contain several intercalated strongly sulphidic cherty sediments which are host to VMS copper-gold mineralization. In the project area these rocks lie on the eastern side of the regional Youanmi Fault and form the southern closure of a northerly plunging syncline. - The volcanic rocks have been intruded by dolerites, gabbros, pyroxenites and other ultramafic rocks which probably form part of the layered Youanmi Gabbro Complex. Several zones of copper - gold mineralization have been identified within the project area by previous surface sampling and drilling. The volcanogenic massive sulphide style mineralization is associated with cherts, felsic volcanic breccias and tuffs. - Gold mineralisation is interpreted to be associated with lower order shears subsidiary to either the Youanmi or Yuinmery Shear zones. Gold sits in sub-vertical shears, and forms narrow, steep plunging high grade shoots at minor flexures in the shears as quartz-sulphide lodes.
Drill hole Information	<i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:</i> <i>easting and northing of the</i>	Hole locations are tabulated along with accompanying collar location diagrams within this report

	• <i>drillhole collar</i> • <i>elevation or RL (elevation above sea level in metres) of the drillhole collar</i> • <i>dip and azimuth of the hole</i> • <i>down hole length and interception depth</i> • <i>hole length.</i>	
Data aggregation methods	• <i>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.</i>	• Data was compiled using excel spreadsheets and loaded into an Access database. • The data was audited using QGIS and Surpac data auditing features. • A nominal cut-off grade of 2,000ppm Cu and 100ppb Au have been applied to the assay results, unless noted.
Relationship between mineralisation widths and intercept lengths	• <i>If the geometry of the mineralisation with respect to the drillhole angle is known, its nature should be reported.</i> • <i>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect.</i>	• Broad anomalous copper envelopes have been interpreted from the drilling completed. Exact widths and geometry are still to be determined, so all intercepts are reported as downhole intervals.
Diagrams	• <i>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.</i>	• Diagrams are included within the report
Balanced reporting	• <i>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.</i>	• All data from the program is provided in the report
Other substantive exploration data	• <i>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.</i>	• Downhole electromagnetic surveys were completed and EM plates were modelled by Empires Geophysical Consultant to aid in drill design. • DHEM Survey Specifics ○ Contractor - SGC ○ Transmitter - DRTX ○ Current – 50 Amp ○ TX Frequency - 1 Hz ○ Duty cycle - 50% ○ Loop size - 200 x 100 m ○ Receiver – EMIT DigiAtlantis ○ Sensor - DigiAtlantis (3C, B-field) ○ Station Spacing - 10 to 20 m ○ Components - A, U and V

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Further work	• <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> • A full review of results will be undertaken prior to planning and execution of future programs • Reconnaissance drilling programs planned to test high priority target areas. • Soil and rock sampling programs • Prospect scale mapping • Reinterpretation of geophysical data, including EM and aeromagnetic / radiometric data • RC and diamond drilling • Geophysical surveys
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