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# ASX ANNOUNCEMENT

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**ASX Code: IPT** 

# LARGE STRONG EM CONDUCTOR IDENTIFIED AT PLATINUM SPRINGS,

# **BROKEN HILL Ni-Cu-PGM JOINT VENTURE PROJECT, NSW**

- A large strong EM conductor about 420 metres by 85 metres in dimension and buried at a depth of about 350 metres below surface has been identified in the extensive EM survey in progress at the Broken Hill project in joint venture with IGO.
- The conductor is about 1,000 metres along trend from previous drill hole PSD002 which intersected massive sulphide with similar electrical conductance to the new conductor and returned:
  - 0.6 metres at 11.5 g/t platinum, 25.6 g/t palladium, 1.4 g/t gold, 7.6% copper, 7.4% nickel and 44.3 g/t silver from 57.1 metres down hole
- The conductor lies within a major shear zone interpreted to be a possible feeder zone for the extensively mineralised nine-kilometre long Moorkai Trend. Such feeder zones are prime targets for massive sulphide mineralisation.
- The EM survey is expected to take a further three months to complete.

Impact Minerals Limited is pleased to announce that a significant electromagnetic (EM) conductor has been identified in the extensive ground EM survey that is in progress at the company's Broken Hill project in NSW and which is being funded by joint venture partner IGO Limited (ASX:IGO) (Figure 1 and ASX Releases 9<sup>th</sup> November 2021 and 27<sup>th</sup> January 2022).

The new EM conductor has been modelled to have a high conductance of about 8,000 siemens and with the top edge of the modelled EM plate centred at a depth of about 350 metres below surface. It has a length of about 420 metres and extends for at least 85 metres down dip moderately to the south.

The conductor is considered prospective for massive sulphide mineralisation based on its discrete dimensions and high conductance, and is a priority target for follow-up work.

Impact Minerals' Managing Director Dr Mike Jones said "It is fantastic to have made an early breakthrough on the major EM survey at Broken Hill with our joint venture partner IGO. The EM conductor lies within a major structure that may have been a feeder zone for the entire Moorkai Trend and in an area with no previous exploration. It is a very compelling target, and we look forward to receiving more results from the EM survey as it progresses."



Figure 1. Location of newly identified EM plate in relation to the 9 km long Moorkai Trend with previous rock chip and drill results (pre-Impact work).

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The EM plate is located approximately 1,000 metres southeast along strike from the main Platinum Springs Prospect where previous drilling by Impact returned a narrow intercept of high-grade massive sulphide mineralisation in PSD002 (Figure 1 and ASX Release 23<sup>rd</sup> February 2016) that returned:

0.6 metres at 11.5 g/t platinum, 25.6 g/t palladium, 1.4 g/t gold, 7.6% copper, 7.4% nickel, 44.3 g/t silver, 0.16% cobalt, 1.3 g/t rhodium, 1.7 g/t iridium, 2.0 g/t osmium and 0.8 g/t ruthenium from 57.1 metres down hole (Figure 2).

A down hole EM survey of PSD002 indicated the massive sulphide had a high conductance greater than 5,000 siemens and similar to that modelled for the new conductor (Figure 2).



**Figure 2.** High grade massive sulphide from PSD02. The sulphide has a conductance in excess of 5,000 siemens and similar to that modelled for the new conductor.

### About the Platinum Springs Prospect and Moorkai Trend

The Platinum Springs Prospect lies at the southern end of the Moorkai Trend, a nine kilometre long ultramafic to mafic dyke and chonolith complex that is very poorly explored (Figures 1 and 3).

Although high grade rock chips occur along the entire Trend, only the southern end has been explored in detail but with limited success prior to Impact's work in the area. This is because the mineralisation appeared to be discontinuous and erratic and the controls on its distribution were poorly understood.

Work by Impact, including extensive drilling, identified high grades of nickel-copper-PGM's in a channel-like structure at the base of the ultramafic unit and which has yet to be followed up (ASX Release 9th March 2021).

The channel-like structure was identified in close-spaced drilling using Impact's proprietary ratio for PGM mineralisation and was the first coherent zone of mineralisation defined in the area in over 30 years of exploration. This work has led to a new geological framework within which to understand the Moorkai Trend (ASX Releases 9<sup>th</sup> March 2021).

The EM conductor is located within a major structure to the southeast of the main outcrops of the Moorkai intrusive complex (Figures 1 and 3). It is possible that the Moorkai Trend formed in a large (now folded) perpendicular structure between two major shear zone structures which bound the intrusive complex (Figure 3).

These shear zones may be feeder zones to the Moorkai Trend and also raise the possibility that the Trend continues to the south to southeast where similar strongly magnetic rocks occur under thin cover (Figure 3).

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**Figure 3.** 1VD mag image showing location of new EM plate in relation to the Moorkai intrusive trend with interpreted feeder zone.

#### The Importance of Feeder Zones

Recent published scientific work, and by the CSIRO in particular, has shown that many chonoliths and other steeply dipping mafic-ultramafic intrusions that host significant massive sulphide deposits, commonly have mineralisation within conduits that act as feeder zones to the entire intrusive complex.

These feeder zones are priority target areas because the research work has also shown that within intrusions with strong vertical magma flow, massive sulphides are often deposited as the magma slows its

ascent and drains back down into the main conduit. This "back flow" can cause deposition of massive sulphides in the feeder zone as proposed in a very elegant model for chonolith development developed by Professor Steve Barnes and co-workers at CSIRO (Figure 4).

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Impact has been using this model to help drive its exploration programme at Broken Hill (ASX Release 21<sup>st</sup> January 2021). Accordingly, the Company views the new conductor identified by IGO as a compelling target.



**Figure 4.** Model for the formation of nickel-copper-PGM deposits within evolving magma conduits including chonoliths. Note the massive sulphide within the feeder zones/conduit necks (from Barnes, S.J. et al. Ore Geology Reviews Volume 76, July 2016, Pages 296-316)

### NEXT STEPS

The new EM conductor is considered a prospective target for massive nickel sulphide mineralisation due to its strong conductance and geometry, as well as its proximity to a large (possible feeder) structure and previous massive sulphide intersections.

It is hoped that further conductors will be identified as the survey, which is expected to take about three months to complete, progresses across the Impact-IGO joint venture tenements.

IGO has indicated it will wait until the end of the survey to assess any conductors identified for further work.

### About the Electromagnetic (EM) Survey.

The ground EM survey which is in progress at Broken Hill is part of the recently announced joint venture with IGO where IGO has the right to earn a 75% interest in EL7390 and EL8234 (Figure 5 and ASX Release 9<sup>th</sup> November 2022).

The EM survey, which is using a deep penetrating SQUID system and is expected to take up to a further three months to complete, has been designed to test the entire area of the two tenements for deposits of high-grade massive sulphide nickel-copper-PGM, including the Moorkai Trend and the Little Broken Hill Gabbro (Figure 5). Further details are provided in the accompanying JORC Table.

At the Little Broken Hill Gabbro, Impact completed the first ever drill programme across the sevenkilometre long intrusion and identified numerous areas of highly anomalous PGM's in the basal unit to the intrusion over several kilometres (ASX Release 15<sup>th</sup> April 2021).



Figure 5. Impact's ground holding with the JV tenements highlighted in blue (EL7390) and green (EL8234)

## Broken Hill Joint Venture with IGO

The principal terms of the joint venture with IGO are:

- 1. IGO can spend \$6 million over four years to earn a 51% interest in the project (Stage 1 earn in). An unincorporated joint venture between IGO and Impact will be formed at this time.
- 2. IGO can spend a further \$12 million over a further four years to earn a 75% interest in the project (Stage 2 earn in).
- 3. After Stage 2 is complete, the parties can elect to contribute pro-rata or dilute. If one party's interest dilutes to less than 10% then its interest will convert to a 1% Net Smelter Royalty.
- 4. If, after completing Stage 1, IGO elects not to proceed to Stage 2 or, during Stage 2 does not meet its expenditure requirements, IGO will revert to a 49% interest in the project giving Impact a majority 51% interest.
- 5. A minimum expenditure of \$500,000 in the first year is required. IGO can withdraw prior to the minimum expenditure being reached by paying the lesser amount of either the balance of unspent minimum expenditure or \$200,000.

# **EXPLORATION UPDATE ON OTHER PROJECTS**

- The RC drill programme at Doonia has now finished with assay results due by early May.
- Investigations into the composition of the gas intercepted at Doonia are still in progress (ASX Release 27<sup>th</sup> January 2022). An attempt to sample the gas for analysis will commence this month.
- Negotiations are in progress to secure a diamond drill rig for follow-up work at Hopetoun.
- Preliminary soil sample programmes are planned for other WA early stage projects including Arkun.

## **Dr Mike Jones** Managing Director

### **Competent Persons Statement**

The review of exploration activities and results contained in this report is based on information compiled by Dr Mike Jones, a Member of the Australian Institute of Geoscientists. He is a director of the company and works for Impact Minerals Limited. He has sufficient experience which is relevant to the style of mineralisation and types of deposits under consideration and to the activity which 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 (the JORC Code). Mike Jones has consented to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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#### **APPENDIX 1 - SECTION 1 SAMPLING TECHNIQUES AND DATA FOR THE BROKEN HILL PROJECT**

Criteria	JORC Code explanation	Commentary
Sampling techniques	Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.	The Moorkai Trend is a nine km long chonolith complex that is being surveyed by a ground EM system. Initial loops are 400 metres in dimension transmitting a current of ~65A at 0.5Hz to generate a large moment. Coupled with this transmitter system a low noise high temperature SQUID (HTS) and Smartem24 receiver were used to obtain the lowest noise data.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used	Loop size was chosen to maximise the potential for the discovery of a reasonable sized massive sulphide body.
	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 (e.g. 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (e.g. submarine nodules) may warrant disclosure of detailed information	N/A
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).	N/A
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed	N/A
	Measures taken to maximise sample recovery and ensure representative nature of the samples	N/A
	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.	N/A
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.	N/A
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.	N/A
	The total length and percentage of the relevant intersections logged	N/A

	Criteria	JORC Code explanation	Commentary
-	Sub-sampling techniques and sample preparation	If core, whether cut or sawn and whether quarter, half or all core taken.	N/A
		If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.	N/A
		For all sample types, the nature, quality and appropriateness of the sample preparation technique.	N/A
		Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	N/A
		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.	N/A
		Whether sample sizes are appropriate to the grain size of the material being sampled.	N/A
	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.	N/A

Criteria	JORC Code explanation	Commentary
		Configuration Slingram
		Loop Size 400m
		Line Spacing 400m (infill 200m)
		Station Spacing 200m
	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.	Total line kms17.6km (90 stations), Infill- 9.6km (53 Stations)
		Receiver system Smartem24 Jessie Deep HTS – Bz (up), Bx (along i.e., east/ north), By (across line i. e. north/ west)
		Transmitter SensorAs supplied GeoResults DRTXe400m east ofLocationloop centre (infill 400m north of loop centre)
		Effective current Ramp Transmitter -65A 0.5 ms As supplied
		Frequency Effective current Ramp 0.5 Hz -65A 0.5ms
	Frequency Effective current 0.5Hz ~65A	
		Frequency 0.5 Hz
		All ground EM data have been collected by GEM Geophysics using the above survey parameters.
	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.	Standard industry data quality control is applied by the survey team.
Verification of sampling and assaying	The verification of significant intersections by either independent or alternative company personnel.	The results have not been verified by independent or alternative companies. This is not required at this stage of exploration.
	The use of twinned holes.	N/A
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Primary data is recorded by the field team and sent to a central office for processing and interpretation
	Discuss any adjustment to assay data.	There are no adjustments to the assay data.
Location of data points	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.	Station locations are located by DGPS
	Specification of the grid system used.	The grid system for Broken Hill is MGA_GDA94, Zone 54.

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	Criteria	JORC Code explanation	Commentary
		Quality and adequacy of topographic control.	DGPS
-	Data spacing and distribution	Data spacing for reporting of Exploration Results.	N/A
		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.	N/A
		Whether sample compositing has been applied.	N/A
	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.	The orientation of mineralisation is yet to be determined. The survey lines are oriented EW sub parallel to the strike of the unit at Platinum Springs. This may vary across the survey.
		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.	N/A
	Sample security	The measures taken to ensure sample security.	N/A
	Audits or reviews	The results of any audits or reviews of sampling techniques and data.	At this stage of exploration, a review of the survey techniques and data by an external party is not warranted.

#### 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 Broken Hill Project currently comprises 10 exploration licences covering 950 km <sup>2</sup> . The tenements are held 100% by Impact Minerals Limited. No aboriginal sites or places have been declared or recorded over the licence area. There are no national parks over the licence area. IGO Limited has the right to earn 75% of E7390 and E8234
	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 tenements are in good standing with no known impediments.
Exploration done by other parties	Acknowledgment and appraisal of exploration by other parties.	There has been no significant previous work at this prospect prior to Impact Minerals work.
Geology	Deposit type, geological setting and style of mineralisation.	Nickel-copper-PGE sulphide mineralisation associated with an ultramafic intrusion.

Criteria	JORC Code explanation	Commentary
Drill hole Information	<ul> <li>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes: <ul> <li>easting and northing of the drill hole collar</li> <li>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</li> <li>dip and azimuth of the hole</li> <li>down hole length and interception depth</li> <li>hole length.</li> </ul></li></ul>	N/A
Data aggregation methods	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.	N/A
	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.	N/A
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	N/A
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (e.g. 'down hole length, true width not known').	N/A
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 drill hole collar locations and appropriate sectional views.	Refer to Figures in body of text.
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.	All results reported are representative

Criteria	JORC Code explanation	Commentary
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.	Assessment of other substantive exploration data is not yet complete however considered immaterial at this stage.
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). Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive	Follow up work programmes will be subject to interpretation of results which is ongoing. A 3D review of the mineralisation is currently underway to better interpret the orientation of mineralisation and assist follow-up drilling.