ASX Announcement
6 April 2021

ASX: **ODM**

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Acquisition of Grasmere Copper Deposit

- Odin Metals Limited ("Odin" or "the Company") (ASX: ODM) has executed a binding purchase agreement ("Agreement") with Ausmon Resources Limited ("Ausmon") (ASX: AOA) to acquire 100% of the Grasmere copper deposit ("Proposed Acquisition").
- **The Grasmere copper deposit is located within EL6400, which sits within Odin's Koonenberry Project (Figure 1) and was the only gap within the 2,600 km^2 project which covers ~150 km strike of the significantly under-explored Koonenberry Copper Belt.**
- **Grasmere contains an Indicated and Inferred Mineral Resource Estimate reported in accordance with JORC (2004) totalling 5.75 Mt @ 1.03% Cu, 0.35% Zn, 0.05 g/t Au, 2.3 g/t Ag** (Ausmon, Activities Report June 2020), including
  - **9.00m at 4.38% Cu from 46.0m in GSRD029[1,2]**
  - **7.00m at 3.04% Cu from 53.0m in GSRD042[1,2]**
  - **9.75m at 2.25% Cu, 0.81% Zn from 120.0m in PD89GR05[1,2]**
  - **6.50m at 2.85% Cu, 0.67% Zn from 60.5m in PD89GR06[1,2]**
  - **12.0m at 0.53% Cu, 1.35g/t Au from 54.0m to End of Hole in ESSO43[1,2]**
- **The Grasmere deposit is** hosted in a semi continuous mineralised zone over a strike length of 4Km and defined by 75 drill holes and is open at depth and **along strike within 21km's of VMS prospective tenure controlled by Odin.**
- **The Company considers the Koonenberry Belt to be highly prospective** for a number of styles of mineralisation including **VMS hosted Cu–Zn–Au–Ag deposits**, which is substantiated by the presence of the Grasmere deposit.
- Consideration for the Proposed Acquisition comprises the issue by Odin of 15,000,000 fully paid ordinary shares to Ausmon (or its nominee) at Completion ("Consideration Shares") escrowed for 12 months and AU$100,000.
- The Grasmere copper deposit purchase is a **complimentary and significant addition to the recently announced Koonenberry Project acquisition** (ASX Announcement "District Scale Copper Project Acquisition", 18 February 2021).
- Detailed modern HeliTEM2 airborne electromagnetic survey over an area of 1,150 km2, covering known mineralised areas. Scheduled to commence in April 2021.
- Drilling at the Grasmere Copper Deposit including Regional and follow-up drilling along strike, at Grasmere North and at Cymbric Vale. Planned to commence in the 3rd quarter of 2021.
- Subject to shareholder approval at a General Meeting scheduled to be held the 8th of April 2021, Odin will have cash reserves of $4m and market cap of ~$12m

Commenting on the acquisition, Executive Chairman Jason Bontempo said.

"The Grasmere deposit is the largest copper rich massive sulphide mineralised zone identified to date in western New South Wales. The acquisition consolidates the Company's Koonenberry Project, closing the only existing gap along the Grasmere trend. The addition of Grasmere to the Koonenberry Project not only validates the fertility of this region, but furthermore gives the Company a solid base towards building a significant resource base at Koonenberry."

Odin has executed a binding purchase agreement ("Agreement") with Ausmon to acquire 100% of its wholly owned subsidiary, Great Western Minerals Pty Ltd ("GWM"), the key asset of which is Exploration Licence 6400 located in New South Wales ("Proposed Acquisition"), which hosts the Grasmere Copper VMS deposit.

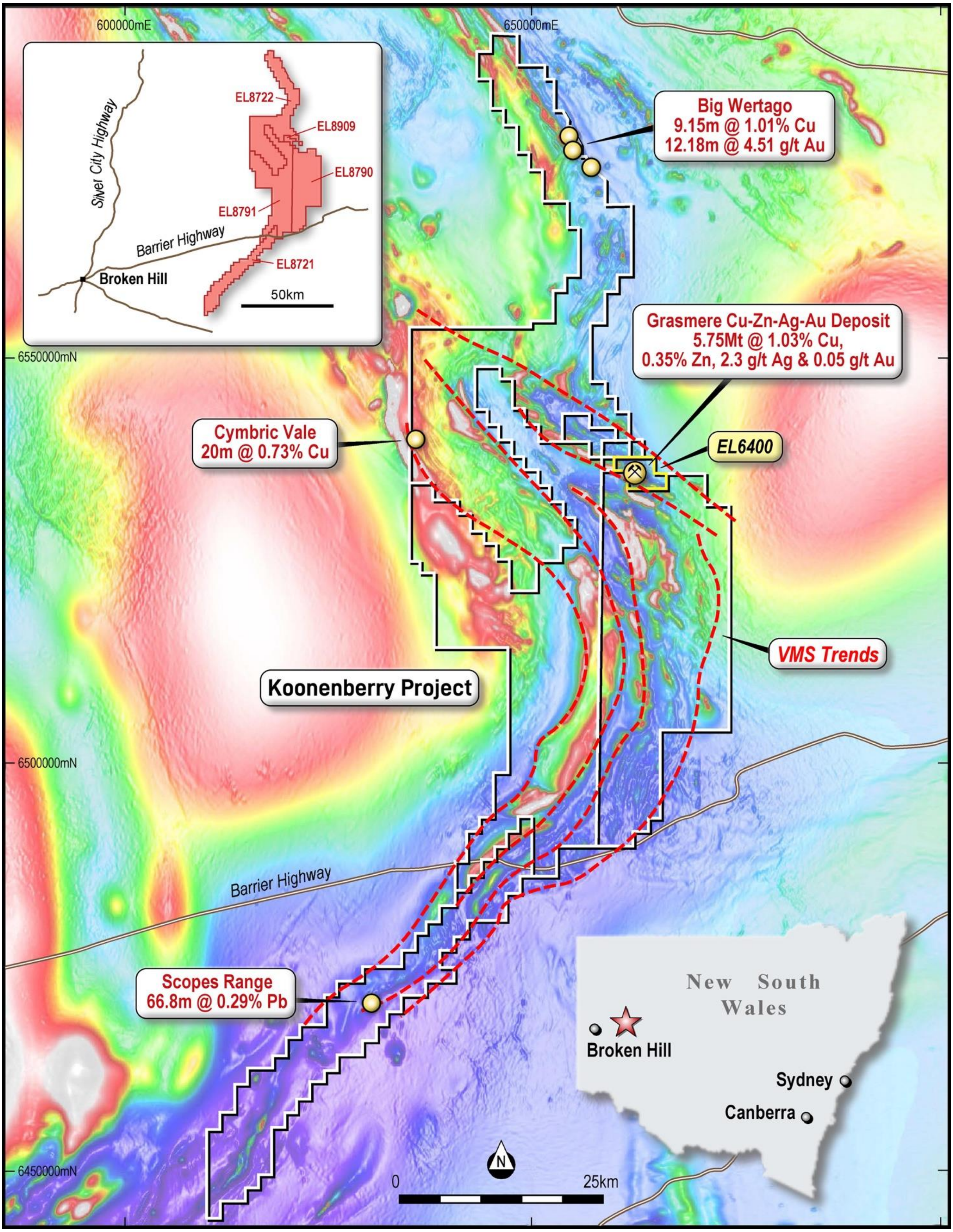

Figure 1: Aeromagnetic Survey highlighting Koonenberry Fault Structure, and Grasmere deposit

About the Grasmere Deposit

The Grasmere deposit is the largest copper rich massive sulphide zone identified to date in western New South Wales. It is located with the Company's Koonenberry Project which is an emerging, district scale, copper and base metals exploration package located 80km east of Broken Hill, New South Wales. Access to the project areas is via the Barrier Highway, which connects Sydney to Adelaide via Broken Hill, several sealed main roads, rural roads and farm tracks.

The Koonenberry Project contains a further 21km of the prospective Grasmere VMS trend, while EL 6400 (Grasmere acquisition) adds a further 24 km^2 to the existing 2,600km^2 of the Koonenberry Project.

Advanced Prospects and Proposed Work

Grasmere North: The Grasmere North Prospect Area covers approximately 21km of the prospective trend which is located directly along strike from the newly acquired Grasmere deposit, which reports Mineral Resources (JORC 2004) totalling 5.75Mt @ 1.03% Cu, 0.35% Zn, 2.3 g/t Ag and 0.05 g/t Au (Ausmon, Activities Report June 2020)

Cymbric Vale: Hosted by Mt Arrowsmith Volcanics and high-grade Ponto Group, the region was lightly explored in 2007 by PlatSearch NL.[3] where air-core drilling (20 holes completed regionally) intersected 20m @ 0.73% Cu and 20m @0.33% Cu. This work has never been followed up.

Anomalous surface rock chip samples (up to 5.6% Cu) covering more than 1.2 km strike[3].

A 1km long late-time moving-loop electromagnetic anomaly roughly coincident with the zone of workings and gossans[3].

Proposed work: In the near term the Company is planning:

- Digital compilation of data from historic works. Currently underway.
- Detailed modern HeliTEM[2] airborne electromagnetic survey over an area of 1,150 km^2, covering known mineralised areas. Scheduled to commence in April 2021.
- Drilling at the Grasmere Copper Deposit including Regional and follow-up drilling along strike, at Grasmere North and at Cymbric Vale. Planned to commence in the 3rd quarter of 2021.

Previous Work

The existing Grasmere JORC (2004) Indicated and Inferred Mineral Resource Estimate contains 5.75 Mt @ 1.03% Cu, 0.35% Zn, 0.05 g/t Au, 2.3 g/t Ag (Ausmon, Activities Report June 2020), hosted in a semi continuous mineralised zone over a strike length of ~4Km, and defined by 75 drill holes.

Earliest works in the region included regional stream sediment, rock chip and soil sampling programs which showed numerous high copper values[3] in the Koonenberry Project, including over the Grasmere deposit. Early drilling at Grasmere was completed predominantly by CRA and Esso, and later by Black Range Minerals Ltd. Drilling outside the Grasmere deposit along strike, is mostly limited to historical RAB drilling by BP/Seltrust.

Grasmere Resource

The Grasmere Mineral Resource Estimate has been classified and reported in accordance with JORC (2004) and is reported below at a 0.5% Copper cut-off grade. The figures quoted in this report use the fresh rock totals only, as any future operation of this style of mineralisation would be expected to comprise of standard froth flotation methods of extraction at a plant, for which oxide material is not amenable.

Grasmere Mineral Resource 2006, JORC (2004)							
Material Type	**Classification**	**Cut-off**	**Tonnes**	**Cu %**	**Zn %**	**Au g/t**	**Ag g/t**
Oxide	Indicated	0.50% Cu	374,000	1.29	0.18	0.07	2.67
	Inferred		87,000	1.16	0.11	0.03	1.75
	Sub-total		460,000	1.26	0.17	0.06	2.50
Fresh	Indicated		3,022,000	1.15	0.30	0.06	2.53
	Inferred		2,731,000	0.90	0.40	0.04	2.05
	Sub-total		**5,753,000**	**1.03**	**0.35**	**0.05**	**2.30**
TOTAL	Indicated		3,396,000	1.17	0.28	0.06	2.55
	Inferred		2,818,000	0.91	0.39	0.04	2.04
	Sub-total		6,214,000	1.05	0.33	0.05	2.32

Table 1: Grasmere JORC (2004) mineral resource estimate (Ausmon, Activities Report June 2020).

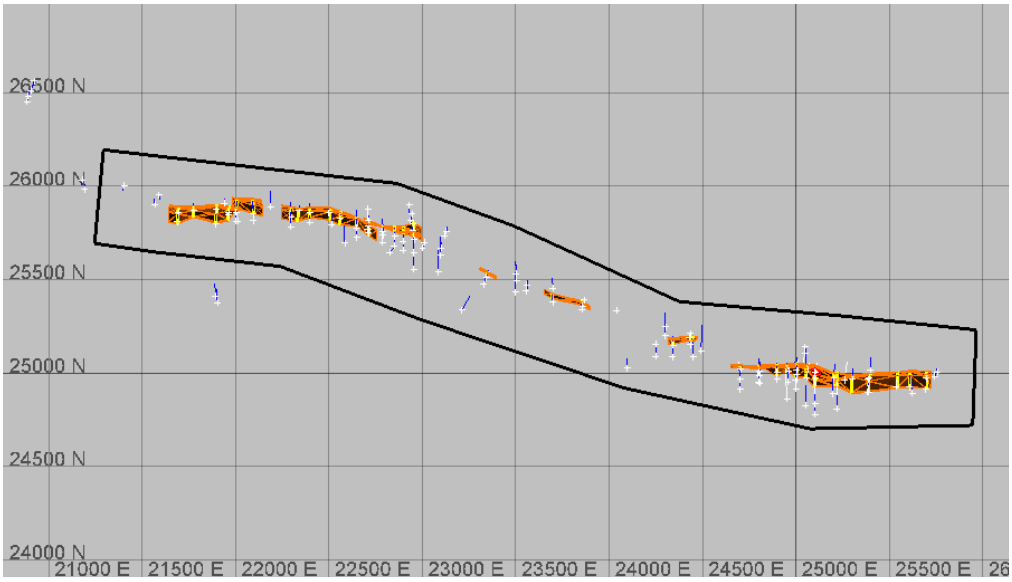

Figure 2: Modelled wireframes and drill traces at the Grasmere deposit

Geology/Mineralogy of Grasmere

The Grasmere massive sulphide deposit is hosted by the Grasmere Formation within massive mafic units of the Bittles Tank Volcanics outcropping to the northeast of the deposit. Also present within the Grasmere Formation are thin quartz–magnetite horizons interpreted to be exhalative VMS horizons. The sequence hosting the massive sulphide zone includes:

- Thinly bedded metamorphosed carbonaceous shales and siltstones with minor fine grained feldspathic sandstones. These have been metamorphosed to a quartz–chlorite–brown biotite–pale carbonate assemblage reflecting upper greenschist facies metamorphism.

- Fine-grained, generally foliated, plagioclase–rich mafic rocks with some zones containing remnant roughly aligned plagioclase laths suggesting that some rocks were flow banded basalts. These mafic units are now partly to pervasively epidote– carbonate–actinolite altered with chlorite and magnetite; and
- Un-mineralised breccia zones that include clasts of broken quartz veins/filled fractures fragments, silicified fragments and deformed meta-shale/siltstone fragments/zones.

Distal to the massive sulphide zone, the host rock package preserves a pervasive schistose foliation with only very minor sulphide-bearing veinlets present. These veinlets crosscut the penetrative fabric and contain a quartz–adularia–(±chlorite) assemblage with minor pyrite and trace chalcopyrite; they are followed by Fe-carbonate and coarse pyrite; with a final stage of stage of calcite–pyrite–chalcopyrite–sphalerite with rare marcasite. The veins have been boudinaged and deformed by later deformation events.

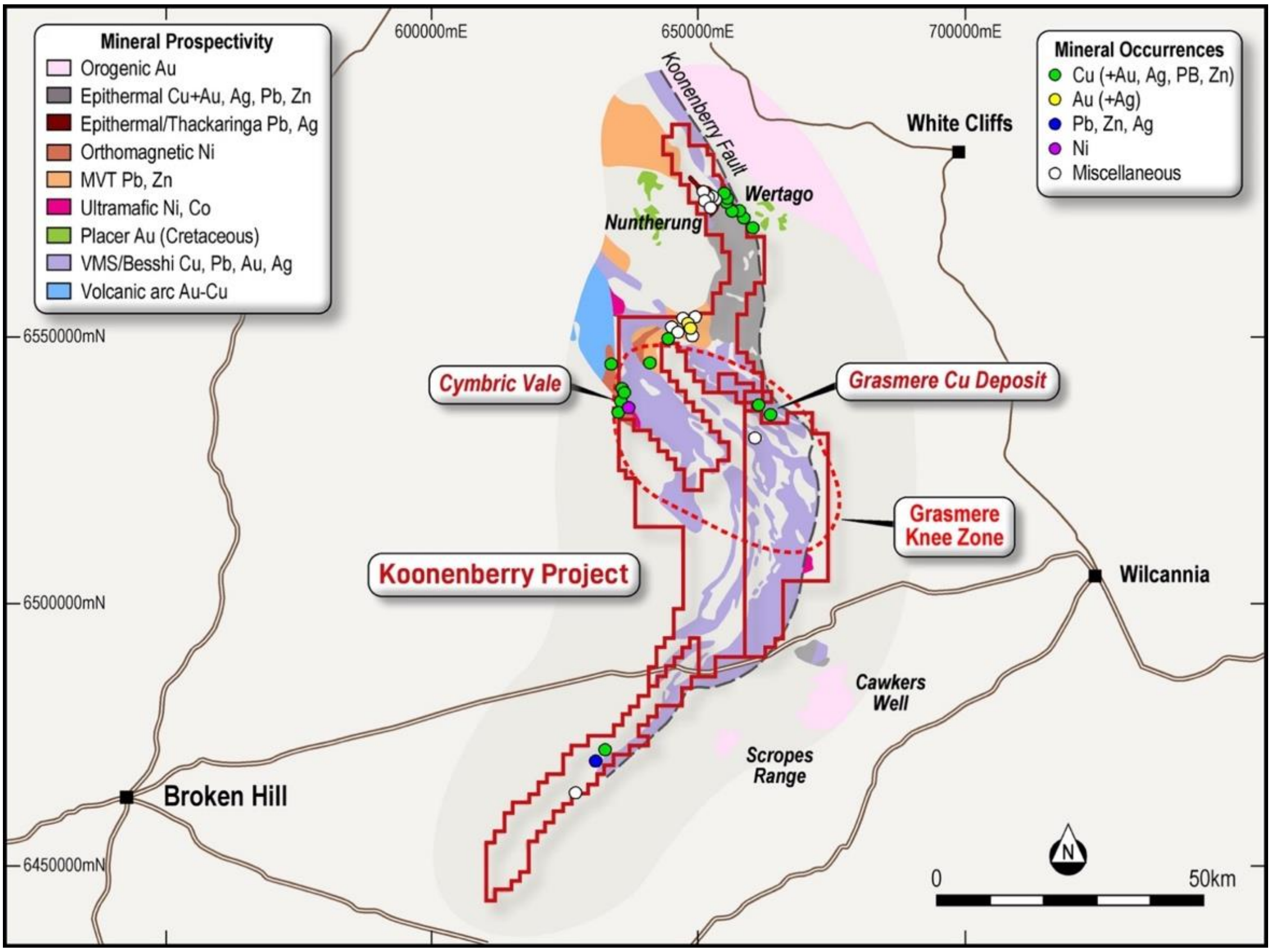

Figure 3: Mineral System map showing VMS Cu–Zn–Au–Ag potential and the location of the Grasmere deposit

Mineralised zones are developed within dilatational zones/shear zones that crosscut stratigraphy, extending to +350m below surface. This massive sulphide zone is ~4 km long and offset by later faulting.

Two conflicting models have been proposed for the copper mineralisation at Grasmere. Given that mineralisation crosscuts stratigraphy, early work proposed that mineralisation is of the Besshi (pelitic–mafic) volcanic associated massive sulphide (VAMS) model, where mineralisation has subsequently been deformed and remobilised into a fault/shear zone.

Alternatively, later work has proposed that mineralisation fits the epigenetic structurally controlled high sulphide model since the massive sulphide zone is hosted by a fault/shear that crosscuts stratigraphy (not stratiform) and mineralised zones at Grasmere postdate the initial deformation event.

Competency contrast between laminated/thinly bedded fine-grained sedimentary rocks and more massive mafic units may be significant in localising mineralised zones. Sulphides are dominated by pyrite with lesser chalcopyrite, minor bornite and sphalerite. Significant magnetite is also present within the ore zone, while minor covellite and marcasite has also been observed. Gangue mineralogy is dominated by quartz, carbonate (Fe-carbonate, calcite), chlorite and adularia. Minor biotite (replaced by chlorite), actinolite, muscovite and late zeolite can also be present.

The alteration zone associated with mineralisation is narrow and consists of a quartz–carbonate assemblage with Fe chlorite (replacing biotite) and minor white mica.

(Source: P. M. Downes and J. A. Fitzherbert, MinSys NSW Group. December 2018).

Proposed Acquisition Terms

Consideration for the Proposed Acquisition comprises the issue by Odin of 15,000,000 fully paid ordinary shares to Ausmon at Completion ("Consideration Shares") and up to AU$100,000 cash (being $97,360 if renewal of the Exploration Licence is for at least 50% of its current area but less than 100%).

Completion of the Proposed Acquisition is subject to the satisfaction or waiver of a number of conditions before the date which is six calendar months from execution, being:

1. approval of the Minister under the Mining Act 1992 (NSW) for the effective change of control of GWM;
2. renewal of at least 50% of the Exploration Licence on terms acceptable to Odin;
3. Odin conducting due diligence to its satisfaction, acting reasonably, on GWM's corporate matters, business, assets and operations;
4. GWM's creditors as at settlement being as agreed; and
5. Odin obtaining all necessary shareholder approvals, including under Listing Rule 7.1 for the issue of the Consideration Shares.

The Consideration Shares will be escrowed for twelve months from the date of Completion. The Agreement also includes warranties and other terms that are standard for an agreement of this nature.

Authorised for release by: Jason Bontempo – Executive Chairman

For further information on Odin and its projects please visit: www.odinmetals.com.au or contact:

Email: info@odinmetals.com.au

1 See Appendix 1 and 2 for and complete results and JORC Table 1 material assumptions.
2 Grades are uncut. Depths and widths are downhole.
3 See ASX Announcement "District Scale Copper Project Acquisition", 18 February 2021, for further information, Competent Person's Consent, material assumptions, and technical parameters concerning historical work at the Koonenberry project.

Competent Persons Statement:

The information in this report that relates to Exploration results and Mineral Resources is an accurate representation of the available data and is based on information compiled by Mr Simon Mottram who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Mottram is a Director of Odin Metals Limited. Mr Mottram has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person (CP) as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Mottram consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

APPENDIX 1

Grasmere Deposit – Referenced Historic Drill Results

Hole ID	Drill Type	Drilled for (Company)	DATUM	UTM-E	UTM-N	RL (m)	Dip	Az	Depth (m)	Status	From (m) Downhole Depth	To (m) Downhole Depth	Width (m) Downhole Depth	Cu (%)	Zn (%)	Au (g/t)
GSRD029	**RC**	**Black Range Minerals**	**GDA94 Z54**	**661385.0**	**6537196.0**	1000	**018.0**	**-62.0**	**64.00**	Historic	**46.00**	**55.00**	**9.00**	**4.38**	0.03	0.06
GSRD042	**RC**	**Black Range Minerals**	**GDA94 Z54**	**661436.0**	**6537148.0**	1000	**020.0**	**-57.0**	**76.00**	Historic	**53.00**	**60.00**	**7.00**	**3.04**	0.02	0.10
PD89GR05	**RC**	**CRA**	**GDA94 Z54**	**663279.0**	**6535798.0**	1000	**212.0**	**-65.0**	**132.5**	Historic	**120.00**	**129.75**	**9.75**	**2.25**	0.81	>0.01
PD89GR06	**RC**	**CRA**	**GDA94 Z54**	**663167.0**	**6535743.0**	1000	**358.0**	**-65.0**	**80.0**	Historic	**60.50**	**67.00**	**6.50**	**2.85**	0.67	0.01
ESSO43	**RC**	**Esso**	**GDA94 Z54**	**661314.0**	**6537235.0**	1000	**023.0**	**-55.0**	**66.0**	Historic	**54.00**	**66.00***	**12.00**	0.53	0.14	**1.35**

*** End of Hole**

Appendix 2
JORC Code (2012) Edition Table 1

Section 1: Sampling Techniques and Data

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. ▪ 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 (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.	▪ Samples are half core (Core sizes were HQ and NQ) for diamond drilling, and random chips split by riffle splitter for RC drilling. ▪ Sample representivity is not known by the CP. ▪ Samples were dried, crushed and split to approximately 1kg, then pulverised to 80% passing 75micron. Assay techniques used mere a mixture of ICP with atomic absorption finish or fire assay for precious metals. There are a total of 442 samples from 75 holes that were used in the resource modelling.
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).	▪ Drilling is a mixture of Diamond (13 holes) and RC. Further information is not known at this time.
Drill sample recovery	▪ Method of recording and assessing core and chip sample recoveries and results assessed. ▪ 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.	▪ Method of recording and assessing core and chip sample recoveries are not known by the CP. ▪ Measures taken to maximise sample recovery and ensure representative nature of the samples are not known by the CP. ▪ No relationship is known or recorded in historic work.
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.	▪ The CP believes that the samples logging is appropriate. ▪ All sample intervals were logged for material-type and quantitative description of lithology, mineral content, alteration and weathering conditions. ▪ All drill holes were logged in their entirety.
Sub-sampling techniques and sample preparation	▪ If core, whether cut or sawn and whether quarter, half or all core taken. ▪ 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.	▪ Core was sawn with an industry standard core saw. Half core was used. ▪ RC chips were riffle split. ▪ Sample preparation was appropriate. ▪ Quality control is not known by the CP. ▪ Measures taken to ensure that the sampling is representative are not known by the CP. ▪ Sample sizes were appropriate.
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	▪ The laboratory procedures are not known by the CP. Samples were dried, crushed and split to approximately 1kg, then pulverised to 80% passing 75micron. Assay techniques used mere a mixture of ICP with atomic absorption finish or fire assay for precious metals. ▪ No tools were used. ▪ Quality control procedures are not known by the CP, however the resource report (2006) notes that the client advised that both internal and laboratory results from the

Criteria	JORC Code explanation	Commentary
	acceptable levels of accuracy (e.g. lack of bias) and precision have been established.	analysis of standards, blanks and duplicates was within acceptable ranges
Verification of sampling and assaying	▪ The verification of significant intersections by either independent or alternative company personnel. ▪ The use of twinned holes. ▪ Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols. ▪ Discuss any adjustment to assay data.	▪ No drill assay results are discussed in this report. ▪ The use of twin holes is not known by the CP. ▪ Data entry procedures are not known by the CP. ▪ There has been no adjustment to assay data that the CP is aware of.
Location of data points	▪ Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation. ▪ Specification of the grid system used. ▪ Quality and adequacy of topographic control.	▪ Accuracy and quality of surveys used is not known by the CP, however the resource report (2006) notes that the location of the drill hole collars was surveyed using standard surveying equipment from a local base station Where possible historic drill hole collar locations have been re-surveyed. ▪ A local grid is used, whose relationship to GDA94 Zone 54 is understood. ▪ Quality and adequacy of topographic control is not known by the CP. The CP believes this data may not be reliable as all holes are recorded as having the same RL.
Data spacing and distribution	▪ Data spacing for reporting of Exploration Results. ▪ 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. ▪ Whether sample compositing has been applied.	▪ Drill holes are on sections 50m to 150m apart. ▪ The CP assumes that the data spacing and distribution was sufficient for the consultancy that performed and reported the JORC (2004) mineral resource estimate discussed in this report. ▪ The historical resource report (2006) reports that samples have been composited to 1m intervals.
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. ▪ 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.	▪ It appears to the CP that drill orientation is oriented to achieve as best as possible intersections that are perpendicular to the mineralisation. ▪ No sampling bias is known.
Sample security	▪ The measures taken to ensure sample security.	▪ Measures taken to ensure sample security are not known to the CP.
Audits or reviews	▪ The results of any audits or reviews of sampling techniques and data.	▪ The CP is not aware of any audits or reviews of sampling techniques and data.

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 Grasmere acquisition comprises of EL6400 in which Odin is acquiring 100%, free of any royalties in addition to standard Australian Government royalties. The Koonenberry Project comprises 5 Exploration licences covering 2,600km2 in which Odin has the 100%. Peel Far West Pty Ltd retains a 1% Net Smelter Royalty (“NSR”) on any production, in addition to standard Australian Government royalties. ▪ There are no known impediments that would prevent mining development.
Exploration done by other parties	▪ Acknowledgment and appraisal of exploration by other parties.	▪ The Company’s CP recognises that the quality and integrity of historical work is currently unknown, but materially relevant in the context of this report, and that in the future further work will allow the historic work to be evaluated in more detail.
Geology	▪ Deposit type, geological setting and style of mineralisation.	▪ Two conflicting models have been proposed for the copper mineralisation at Grasmere. Given that mineralisation crosscuts stratigraphy, early work proposed that mineralisation is of the Besshi (pelitic–mafic) volcanic associated massive sulphide (VAMS) model, where mineralisation has subsequently been deformed and remobilised into a fault/shear zone. Alternatively, later

Criteria	JORC Code explanation	Commentary
		work has proposed that mineralisation fits the epigenetic structurally controlled high sulphide model since the massive sulphide zone is hosted by a fault/shear that crosscuts stratigraphy (not stratiform) and mineralised zones at Grasmere postdate the initial deformation event.
Drill hole Information	▪ 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: ○ easting and northing of the drill hole collar ○ elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar ○ dip and azimuth of the hole ○ down hole length and interception depth ○ hole length. ▪ If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.	▪ No exploration results are discussed in this report.
Data aggregation methods	▪ In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. ▪ 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. ▪ The assumptions used for any reporting of metal equivalent values should be clearly stated.	▪ No exploration results are discussed in this report.
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').	▪ No exploration results are discussed in this report.
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.	▪ A project location plan has been included.
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.	▪ The geometry/shape of mineralisation and distribution of mineralised zones is shown in Figure 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.	▪ All material and meaningful data, relevant to the scope of work in this report, has been included in this report.
Further work	▪ The nature and scale of planned further work (eg 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.	▪ In the near term proposed may consist of regional and follow-up drilling along strike of Grasmere, at Grasmere North and at Cymbric Vale, in addition to detailed more modern airborne EM and digital compilation of data from historic works. ▪ Potential for exploration success exists along strike from the Grasmere copper deposit and within the Koonenberry project, as outlined in this report.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	▪ Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. ▪ Data validation procedures used.	▪ The drillhole database and sample data was validated by DATAGEO Geological Consultants, WA for Black Range Minerals. All relevant data was imported into Vulcan. ▪ Procedures used are not known to the CP.
Site visits	▪ Comment on any site visits undertaken by the Competent Person and the outcome of those visits. ▪ If no site visits have been undertaken indicate why this is the case	▪ The CP has not completed a site visit. ▪ With the current and ongoing travel restrictions it is unknown when this will occur.
Geological interpretation	▪ Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. ▪ Nature of the data used and of any assumptions made. ▪ The effect, if any, of alternative interpretations on Mineral Resource estimation. ▪ ▪ The use of geology in guiding and controlling Mineral Resource estimation. ▪ The factors affecting continuity both of grade and geology.	▪ Geological interpretation was completed by geologists from Black Range Minerals Limited and DATAGEO Geological Consultants, WA. In this report the CP was satisfied that the interpretation is appropriate based on the available data. ▪ Detailed geological/alteration/structural logging in conjunction with chemical assays have been used during the interpretation process. No assumptions have been made. ▪ The CP considers the mineralised boundaries to be appropriate, and that alternative interpretations do not have the potential to impact significantly on the MRE. ▪ Geology, alteration and structure have been used to guide the model. Wireframes have been constructed for the main mineralised horizons as determined by the geological logging and chemical assays. ▪ Continuity of grade (mineralisation) and geology is controlled by structure which can be traced between drill holes by visual and geochemical characteristics.
Dimensions	▪ The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.	▪ The Grasmere mineral resource is comprised of 6 discrete bodies over a strike of ~4km, open at depth. The 3 larger zones bodies contain ~90% of reported tonnes and metal, lying in the top 200m from surface.
Estimation and modelling techniques	▪ The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used. ▪ The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data. ▪ The assumptions made regarding recovery of by-products. ▪ Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation). ▪ In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed. ▪ Any assumptions behind modelling of selective mining units. ▪ Any assumptions about correlation between variables. ▪ Description of how the geological interpretation was used to control the resource estimates. ▪ Discussion of basis for using or not using grade cutting or capping. ▪ The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	▪ The Mineral Resource has been completed using 6 individual domains constructed using a nominal 0.5% Cu cut-off grade. Samples were composited to 1 m intervals based on assessment of the raw drill hole sample intervals. ▪ Modelling was carried out by both Ordinary Kriging and Multiple Indicator Kriging and the estimates compared. The resource is reported below the base of weathering. ▪ No assumptions have been made regarding the recoverability of by-products. ▪ The CP is not aware of any analysis for deleterious elements. ▪ The block model uses 25m East x 2m North x 10m RL blocks, with sub-blocking to 12.5m East x 1m North x 5m RL to match mineralisation and geological boundaries. ▪ No assumptions have been made regarding modelling of selective mining units. ▪ The variable response of Zn to Cu above Cu cut-offs is due potentially to different zonation within the total mineralisation zone for these 2 elements, whereas Au and Ag appear to have a predictable response against Cu. ▪ Sectional interpretation incorporates lithological and assay information to define the mineralisation zones. Zones are modelled by joining between sections, with termination at half distance to the next cross section at the end of the zones to create solid models. These were incorporated into a blockmodel. ▪ Given the presence of high-grade shoots, high grade cuts were not applied. ▪ Block Cu, Zn, Au and Ag grades are estimated using MIK. Search orientation and distances were governed by

Criteria	JORC Code explanation	Commentary
		orientation of mineralised zones and the mathematical representation of the grade continuity.
Moisture	▪ Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	▪ Tonnages have been estimated on a dry, in situ basis. No moisture values were reviewed.
Cut-off parameters	▪ The basis of the adopted cut-off grade(s) or quality parameters applied.	▪ The Mineral Resource has been reported above a cut-off grade of 0.5% Cu in 2006. The CP considers this still to be reasonable when considering an open pit style operation.
Mining factors or assumptions	▪ Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.	▪ No assumption or consideration is given at this stage of work.
Metallurgical factors or assumptions	▪ The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.	▪ The resource report 2006 considers that froth flotation is by far the most likely route for economic extractions and thus the resource is report below the base of oxidation for this reason.
Environmental factors or assumptions	▪ Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	▪ No assumptions regarding possible waste and process residue disposal have been made.
Bulk density	▪ Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples. ▪ The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit. ▪ Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.	▪ No environmental samples are reported. ▪ The specific gravity of the fresh mineralisation at Grasmere is assumed, at 3.50 t/m3. ▪ The resource report (2006) reports that the assumption is based on information from similar deposits.
Classification	▪ The basis for the classification of the Mineral Resources into varying confidence categories. ▪ Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data). ▪ Whether the result appropriately reflects the Competent Person's view of the deposit.	▪ The resource classification is based on a combination of geological confidence, data separation and block location. ▪ DATAGEO Geological Consultants, WA reported in 2006 that they believe appropriate account has been taken. ▪ The mineral resource estimate appropriately reflected the view of the DATAGEO Geological Consultants, WA CP.
Audits or reviews	▪ The results of any audits or reviews of Mineral Resource estimates.	▪ The Odin CP is not aware of any internal audits or reviews.
Discussion of relative accuracy / confidence	▪ Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and	▪ The Mineral Resource accuracy is communicated through the classification assigned to the deposit by DATAGEO Geological Consultants, WA and in accordance with the JORC (2004) Code using a qualitative approach. All information available to the Odin CP has been communicated in Section 1, 2 and 3 of this Table.

Criteria	JORC Code explanation	Commentary
	confidence of the estimate. ▪ The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. ▪ These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	▪ The mineral resource statement relates to a global estimate of in-situ tonnes and grade. ▪ The deposit defined by the mineral resource covered in this document, has not and is not currently being mined.