

ASX: DEG

9 July 2020

High gold recoveries achieved at Hemi

Excellent metallurgy results from initial testing at Brolga

Highlights:

- Initial metallurgical testwork on Brolga mineralisation has achieved excellent gold recoveries:
 - Oxide 93.0 % based on CIL leach
 - Fresh 96.3 % based on sulphide flotation, oxidation and CIL leach
- The testwork flowsheet comprised a conventional carbon in leach (CIL) circuit to treat oxide mineralisation. An industry accepted circuit comprising sulphide flotation to generate a concentrate prior to oxidation was used to treat fresh mineralisation.
- The flotation circuit generated a gold-rich sulphide concentrate that was oxidised using pressure oxidation (POX). The concentrate represented approximately 10% of the ore feed to the flotation circuit. That is, approximately 10% mass pull. Oxidised flotation concentrate from the POX circuit was treated by CIL to recover gold. Other methods of oxidation will also be assessed during ongoing test work.
- POX is an established treatment process used worldwide on large scale gold deposits such as Hemi. Examples of operations that are currently using a POX circuit include: Macraes, Porgera and Lihir in the Asia Pacific region, various Carlin deposits in the USA and Alacer Gold's Copler Mine in Turkey.
- Additional samples from Brolga and Aquila covering oxide, transitional and fresh mineralisation will be tested to assess variability and to optimise the flowsheet.
- Previous testwork conducted on other regional resources (2.2Moz) outside Hemi indicates that the Hemi testwork flowsheet would be suitable to treat those deposits.
- Additional metallurgical testwork results are expected later in the current September quarter.

De Grey Mining Managing Director, Glenn Jardine commented:

"The gold recovery achieved in the initial metallurgical testwork of oxide, transition and fresh mineralisation at Brolga is very encouraging. The testwork significantly de-risks the potential development of Hemi as a Tier 1 gold project in a Tier 1 jurisdiction. The testwork flowsheet used for Hemi can also be applied to De Grey's other regional resources in the Mallina Basin.

Hemi is a growing resource and contains a combination of oxide, transitional and fresh sulphide mineralisation. We will continue to increase our understanding of the scale and metallurgical properties of each of these domains across the deposit with ongoing testwork.

Hemi's excellent location, along a major transport, gas and power corridors, all within 60km of Port Hedland, is a major advantage for a Tier 1 gold resource and development project."

Level 3, Suite 24-26, 22 Railway Road, Subiaco WA 6008 PO Box 2023 Subiaco WA 6904 E admin@degreymining.com.au P +61 8 6117 9328 F +61 8 6117 9330 degreymining.com.au ABN: 65 094 206 292 FRA Code: WKN 633879 De Grey Mining Limited (ASX: DEG, "De Grey" or the "Company") is pleased to report positive results from initial metallurgical testwork from the Hemi gold deposit, located approximately 60km south of Port Hedland in Western Australia.

The initial metallurgical testwork was conducted by ALS Metallurgy, a leading global testing and analysis company, under the supervision of GR Engineering Services Limited (GRES) and with input from De Grey's technical team.

Hemi Metallurgy Testwork Program

Comprehensive testwork is currently in progress on composites obtained from two diamond drill holes (HEDD001 and HERC011D) at Brolga. Three of the composite samples contain fresh mineralisation and another composite comprises transitional mineralisation. Composite 4, comprising fresh mineralization, has completed a full suite of testwork including crushing, grinding (150µm to 53µm), multi-element analysis, gravity separation, whole of ore cyanide leaching and CIL treatment, sulphide flotation, oxidation and cyanide leaching of oxidised flotation concentrate and cyanide leaching of flotation tailings.

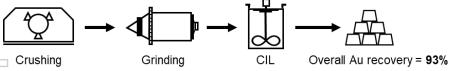
An additional six dedicated larger diameter (PQ and HQ) diamond core holes (HEDD004 - HEDD009) have been completed to provide larger volume samples within the oxide, transition and fresh domains throughout the deposit. These holes have been drilled and are currently being sampled and transported to ALS Metallurgy in Perth and will provide a detailed assessment of metallurgical variability across the deposit. Detailed results of this comprehensive program are expected later this current September quarter.

Drill hole locations and sample intervals of the composites are provided in Table 2, Figure 3 and Figure 4.

Oxide Mineralisation – Brolga

Twelve samples of oxide mineralisation were taken from two RC holes (HERC034 and HERC035) drilled at Brolga. Each sample was separately tested using conventional CIL testwork by a 24 hour bottle roll cyanide extraction method. The samples selected covered a range of mineralisation styles including sediments, mafic intrusive and intermediate intrusive. Head grades varied between 0.1 g/t Au and 4.1 g/t Au. The average grade of all samples was 1.5 g/t Au. Metallurgical recovery of gold varied between 85% and 98% at an average metallurgy recovery of 93% as shown in Figure 1.

Figure 1: Simplified testwork flowsheet for oxide ore (note: numbers subject to rounding)



Fresh Mineralisation – Brolga

Composite 4 comprised fresh mineralisation taken from across two diamond drill holes HEDD001 and HERC011D at Brolga. The testwork on composite 4 comprised sulphide flotation of a gold-rich concentrate followed by pressure oxidation of the concentrate which is then subjected to conventional CIL to recover gold. In addition, to increase the overall gold recovery, the tailings from sulphide flotation were also subjected to CIL to recover gold not included in the flotation concentrate.

Overall gold recovery of 96.3% was achieved on the composite 4 sample with the sample flowsheet including pressure oxidation shown in Figure 2.

Composite 4 was assessed at a grind size of p80 of 75µm. Flotation testwork was also conducted using a single stage of flotation. The mass pull from the composite to concentrate was approximately 10%.



Flotation testwork to optimise grind size, concentrate grade, mass pull and overall gold recovery is continuing. The assayed head grade of composite 4 was 2.62 g/t Au. It should be noted that the head grade of composite 4 may not represent the overall average grade of the Brolga or Hemi deposits. For example, lower head grades can result in lower overall recoveries. However, the low tail grade achieved in the testwork conducted on composite 4 was very encouraging for achieving high recoveries at lower head grades.

The four composite samples were selected for initial metallurgical testwork as they contained similar levels of sulphide mineralisation. Composite 1 is partially oxidised and forms part of the transition zone. Composite 4 was selected for the initial assessment due to the largest volume of sample material. All four samples consistently contain high sulphide content of both arsenopyrite and pyrite.

Composites 1 through 3 were tested using flotation and CIL using the same flowsheet as shown in Figure 2 with the results of pressure oxidation pending.

Metallurgical recoveries for these three composites prior to treatment through POX compared with Composite 4, also prior to treatment through POX, are shown in Table 1. A recovery of 99% was achieved through POX treatment for Composite 4 and overall recoveries for Composites 1 to 3 are also expected to be high after POX treatment.

Composite Number	Description	Head Grade (g/t Au)	Gold Recovery into Flotation Concentrate (%)	Concentrate Mass Pull (%)	-	Overall Gold Recovery prior to POX (%)
1	Transition*	1.45	83.0	8.8	80.7	96.7
2	Fresh	3.11	93.0	9.4	59.7	97.2
3	Fresh	2.68	92.2	8.5	62.1	97.0
4	Fresh [^]	2.62	92.5	7.5	66.9	97.5

*comprises oxide, partially oxidized and fresh mineralisation

^using 10kg bulk flotation test; all other composite samples are from 1kg flotation test.

The transition sample, composite 1, produced a lower flotation recovery relative to composites 2 to 4, which comprise fresh mineralisation. However, after the flotation tailing was treated using CIL, the overall recovery for composite 1 was greater than 95%. This is a very encouraging result for transition mineralisation and given the head grade of composite 1 was 1.4 g/t Au.

As previously discussed, testwork and optimisation of each stage of processing is ongoing. Further testwork will include optimising the grind size, flotation grade, mass pull, flotation recovery and flotation tail recovery.

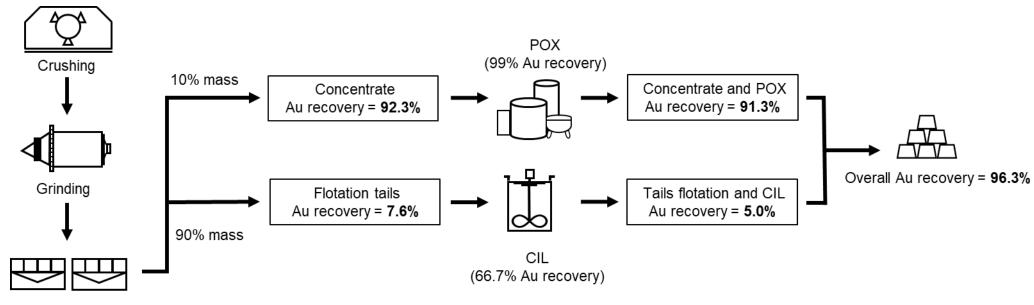


Figure 2: Simplified testwork flowsheet for fresh ore (note: numbers subject to rounding)

Flotation

The oxidised flotation concentrate after POX is also subject to CIL to achieve the stated 99% POX recovery. Figure 2 is simplified and doesn't show this step.

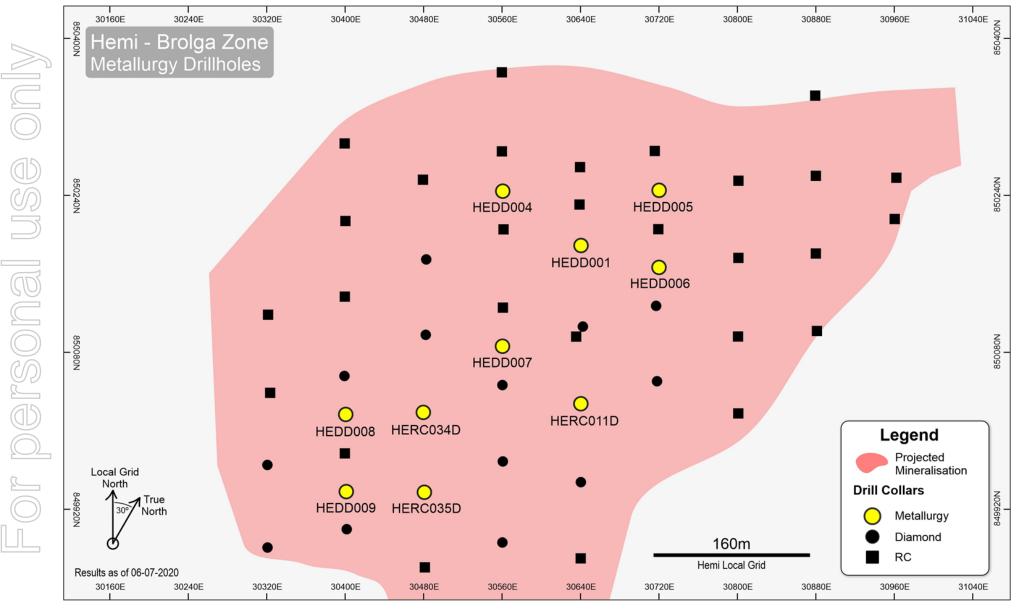
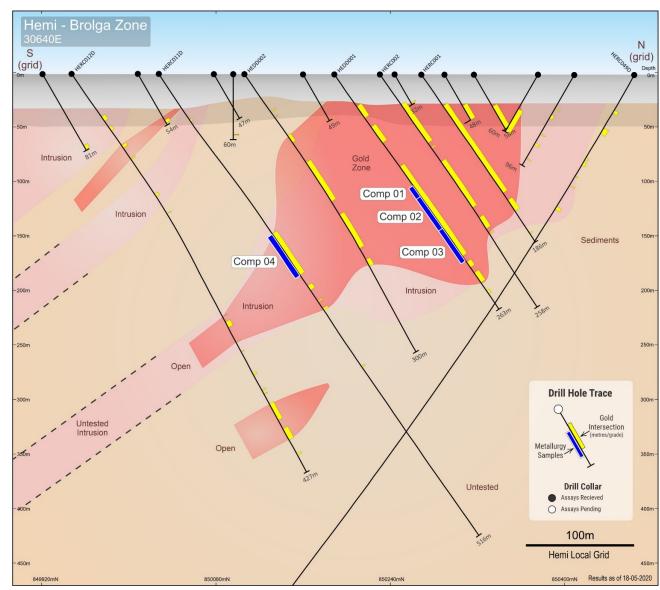


Figure 3: Plan showing Metallurgy Drill Hole Locations – Brolga (local grid)

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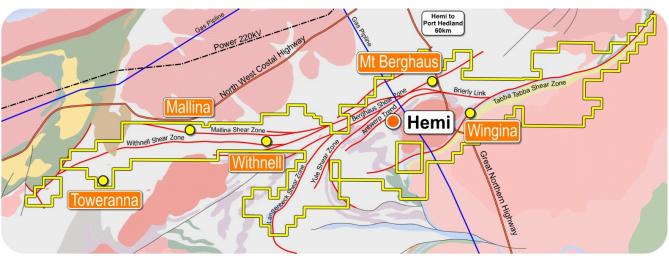
Background

Hemi is a new major gold discovery with world class infrastructure at its doorstep. Gold mineralisation at Hemi is hosted in a series of intrusions associated with stringer and disseminated sulphide rich zones. This style of mineralisation is new to the Pilbara region and shows a scale of mineralisation not previously seen in the Mallina Basin.

There are at least four other look-alike intrusion targets already identified the immediate vicinity of Hemi -Scooby, Shaggy, Antwerp and Alectroenas. Three already host known shallow gold mineralisation with Alectroenas never previously drilled.

A detailed aeromagnetic over the Scooby to Antwerp trend has recently been completed. The results are being analysed to identify potential new intrusive targets.

Mallina Gold Project showing main gold deposits and the new Hemi Discovery.



This announcement has been authorised for release by the De Grey Board.

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Competent Person's Statement

The information in this report that relates to exploration results is based on, and fairly represents information and supporting documentation prepared by Mr. Andrew Beckwith, a Competent Person who is a member of The Australasian Institute of Mining and Metallurgy. Mr. Beckwith is an employee of De Grey Mining Limited. Mr. Beckwith has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves". Mr. Beckwith consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Previously Released ASX Material References

The information in this report that relates to the Hemi deposit and/or Metallurgical testwork that has been previously released includes;

Resources:

• 2020 Mallina Gold Project Resource update, 2 April 2020.

Exploration:

- Multiple new targets increase exploration potential, 2 July 2019;
- New Gold Discoveries at Hemi and Antwerp, 17 December 2019;
- Hemi confirms potential for major discovery, 6 February 2020;
- Further impressive thick and high grade gold at Hemi, 11 February 2020;
- Major extension of sulphide mineralisation at Hemi, 26 February 2020;
- RC drilling confirms large scale gold system at Hemi, 5 March 2020;
- Continuing extensive sulphide mineralisation intersected at Hemi, 10 March 2020;
- Hemi continues to grow, 17 March 2020;
- Major Gold Extensions defined at BROLGA, 25 March 2020.
- Brolga continues to grow, 9 April 2020
- Aircore drilling defines third large gold zone at Hemi, 17 April 2020
- Brolga and Aquila drilling update, 22 April 2020
- Large gold system defined at Crow, 1 May 2020
- Exploration update,20 May 2020
- Significant extension at Hemi- Aquila, 27 May 2020
- HEMI Major extension, 5 June 2020
- HEMI Broad, high grade extensions at Aquila, 9 June 2020
- Further High Grade & Expanded Footprint at Hemi, 22 June 2020

Metallurgy:

- Positive gold recoveries enhance Pilbara Gold Project potential, 12 February 2019
- High gold recoveries with conventional CIL processing at Toweranna, 13 June 2019
- Mallina drilling, new targets and metallurgy update, 15 July 2019

Table 2: Drill location information

Weathering Domain	HoleID	Depth from (m)	Depth to (m)	Downhole width(m)	Collar East (GDA94)	Collar North (GDA94)	Collar RL (GDA94)	Dip (°)	Azimuth	Hole Depth (m)	Met Composite Sample
Oxide	HERC034D	35	36	1	649206	7692088	69	-55	332	444	CN leach
Oxide	HERC034D	36	37	1	649206	7692088	69	-55	332	444	CN leach
Oxide	HERC034D	37	38	1	649206	7692088	69	-55	332	444	CN leach
Oxide	HERC034D	38	39	1	649206	7692088	69	-55	332	444	CN leach
Oxide	HERC034D	39	40	1	649206	7692088	69	-55	332	444	CN leach
Oxide	HERC035D	41	42	1	649247	7692018	70	-54	330	448	CN leach
Oxide	HERC035D	45	46	1	649247	7692018	70	-54	330	448	CN leach
Oxide	HERC035D	46	47	1	649247	7692018	70	-54	330	448	CN leach
Oxide	HERC035D	47	48	1	649247	7692018	70	-54	330	448	CN leach
Oxide	HERC035D	48	49	1	649247	7692018	70	-54	330	448	CN leach
Oxide	HERC035D	50	51	1	649247	7692018	70	-54	330	448	CN leach
Oxide	HERC035D	52	53	1	649247	7692018	70	-54	330	448	CN leach
Transition	HEDD001	121.2	134	12.8	649260	7692316	69	-56	326	263	Comp #1
Fresh	HEDD001	134	170	36	649260	7692316	69	-56	326	263	Comp #2
Fresh	HEDD001	170	207	37	649260	7692316	69	-56	326	263	Comp #3
Fresh	HERC011D	180.3	226	45.7	649341	7692176	69	-56	327	516	Comp #4

JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

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

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. 	 All RC and diamond drilling and sampling wa undertaken in an industry standard manner Samples were collected with a diamond drill ri drilling NQ diameter core. Core for the composite samples was provided to th laboratory, as quarter core, after logging an photographing. Holes were sampled over mineralised intervals t geological boundaries on a nominal 1m basis or les as required. RC samples are provided on a 1 m basis with th residual sample used for the cyanide leach testwork 			
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.). 	 The diamond drill holes were NQ size core. RC drill holes were form face sampling hammer an 51/2 inch diameter 			
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. 	 Samples are considered representative with good recoveries. Core recovery is measured for each drilling run by the driller and then checked by the Company geological team during the mark up and logging process. Samples are considered representative with generally 100% recovery. No sample bias is observed 			
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. 	 Company geologists logged each hole an supervised all sampling. Diamond and RC sample results are appropriate for a resource estimation with sampling undertaken o a nominal 1m basis or less based on geological 			





Criteria	JORC Code explanation	Commentary
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. 	 Drill hole collar locations for diamond are located by Differential GPS to an accuracy of +/-20cm. Locations are given in GDA94 zone 50 projection. Drill hole information is provided in the report Topographic control is by air photo photogrammetry to a resolution of either 0.10m or 0.15m, together with DGPS control.
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. 	 The composite core samples in this report relate to existing diamond core holes drilled by the company at the Brolga deposit. The new metallurgical holes are specific holes drilled into the previously defined mineralised envelope in order to provide further quality core samples of the mineralisation. These holes remain to be tested. All holes have been geologically logged and provide a strong basis for geological control and continuity of mineralisation. Results are sufficient to provide support for the results to be used in a resource estimate. Metallurgical results will be used to define the proposed processing flowsheet and expected recoveries for economic evaluations. Sample compositing has not been applied to the individual assays Sample core for specific metallurgical test work.
Orientation of data in relation to geological structure Sample	 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. The measures taken to ensure sample 	 The drilling is approximately perpendicular to the strike of mineralisation and therefore the sampling is considered representative of the mineralised zone. Samples were collected by company personnel ar
security	security.	delivered direct to the laboratory via a transpo contractor
Audits or reviews	• The results of any audits or reviews of sampling techniques and data.	 No audits have been completed. Review of QAC data has been carried out by company geologists GRES metallurgist has assessed the data.

Section 2 Reporting of Exploration Results

h	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 license to operate in the area. 	 The mineralisation are on tenements of the Mallina Gold Project, located approximately 60km south of Port Hedland. The Hemi deposit is located on E45/3392 held by Last Crusade Pty Ltd, which is a 100% subsidiary of De Grey Mining.
	Exploration done by other parties	 Acknowledgment and appraisal of exploration by other parties. 	 De Grey has completed all recent modern exploration to define the Hemi mineralisation. Ongoing drilling and exploration activities continue.
	Geology	• Deposit type, geological setting and style of mineralisation.	 The mineralisation targeted is intrusion hosted gold mineralisation and is considered a new style of mineralisation in the Pilbara region. The Hemi gold mineralisation is sulphide hosted within an intrusive body
	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. 	Drill hole location and directional information is provided in this report.
	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. Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results the proceedure used for such and should be stated. 	 The results have been presented by the independent laboratory. No upper cuts or truncations have been undertaken

(Criteria listed in the preceding section also apply to this section.)

results, the procedure used for such

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Criteria	JORC Code explanation	Commentary
D	 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. 	
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'). 	 The drill holes are interpreted to be approximately perpendicular to the strike of mineralisation. The drilling was completed to provide core in order to define the mineralisation and is being used to carry out determination of rock quality properties including strength, hardness, recovery and sulphide concentrations.
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.	• Data and plans are provided in the report.
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 report is considered balanced and provided in context. Further metallurgical results are on-going with updated results expected during the September quarter 2020.
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. 	 Previous metallurgical testwork has been completed on the existing gold resources within the Mallina Gold Project. This new metallurgical data is only on the new Hemi deposit which has recently been discovered by De Grey. Results support the previous metallurgical data on the other resources
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. 	 Independent consultant engineers (GRES) are evaluating the results to establish a preferred processing plant, components, design including layout operating costs and capital requirements. Further ongoing metallurgical test work is continuing with an additional 6 dedicated diamond core holes with processing and metallurgical testwork underway. Additional sampling of the other deposits at Hemi is currently underway.