

30 April 2020

# Sorby Hills Optimised PFS Progress Update

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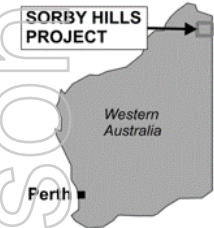
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Pacifico Minerals Limited (ASX: PMY) ('Pacifico' or the 'Company') is pleased to report on the significant progress being made on its Sorby Hills Joint Venture Project Optimised Pre-Feasibility Study ('PFS').

## HIGHLIGHTS

- Resource Upgrade justified a 50% increase in plant throughput from 1.0Mtpa to 1.5Mtpa.
- Metallurgical testwork confirms improved lead (Pb) recovery estimates.
- Excellent results from Heavy Liquid Separation ('HLS') testwork on low-grade ore.
- Open pit optimisation and mine scheduling completed.
- Simple process plant design completed with engineering and cost estimation progressing.
- Optimised PFS on track to be completed in June.
- Resource Update underway with increased confidence gained from Phase III drilling.

## BACKGROUND

The Sorby Hills Joint Venture Project ('Sorby Hills' or the 'Project') is located approximately 50 km northeast of Kununurra. There are existing sealed roads to transport concentrate from site to the facilities at Wyndham Port (150 km from the Project). Established infrastructure and existing permitting allow for fast tracked production. A previous Pre-Feasibility Study ('PFS') produced compelling economics (ASX Announcement 26 March 2019).

Following on from a significant Resource upgrade in Q4 2019 which resulted in a Global Resource estimate of 36 Mt at 4.9% Pb equivalent<sup>1</sup> (3.7% Pb, 39g/t Ag) and 0.5% Zn lying just 20 m below surface and open along strike and down dip (ASX Announcement 31 October 2019), Pacifico is completing an Optimised PFS. The Optimised PFS targets an increased mining rate and greater processing capacity and will further de-risk the project with additional testwork.

<sup>1</sup> See Appendix 1 for lead equivalent calculation.

Managing Director Mr Simon Noon commented that the Company had made significant progress since the Project's updated PFS was released in March 2019. Mr Noon stated, "We reported a very significant upgrade to the project's Resource in October last year and this has underpinned the increase in plant throughput and processing capacity."

The 50% increase in plant throughput still allows for a project life of at least 8 years.

"Pacifico looks forward to providing further information when we release the Optimised PFS, currently scheduled for June," Mr Noon said.

## PROJECT METRICS

The Optimised PFS will increase the Process Plant throughput by 50% from 1.0Mtpa to 1.5Mtpa. Two options are being assessed within the study:

1. 'Whole Ore' option, which treats mined ore directly by flotation at 1.5Mtpa; and
2. 'DMS' option, which beneficiates low-grade ore by Dense Media Separation ('DMS') and blends the upgraded product with high-grade ore to feed the flotation plant at 1.5Mtpa.

Key project metrics are presented in table 1 below.

**Table 1 Key Project Metrics**

Parameter	Unit	Whole Ore Option			DMS Option		
		Quantity	%Pb	Ag g/t	Quantity	%Pb	Ag g/t
Total Material Mined	Mt	93.4			123.4		
Ore Mined	Mt	12.0	4.0	42	16.8	3.5	36
Strip Ratio		7.8			7.4		
DMS Ore Feed	Mt	NA	NA	NA	6.2	1.8	17
DMS Product	Mt	NA	NA	NA	1.9	4.8	42
Direct Flotation Ore	Mt	12.0	4.0	42	10.6	4.5	46
Total Flotation Feed	Mt	12.00	4.0	42	12.5	4.6	46
Concentrate Production	t	718,753	62.0	590	847,975	62.0	570
Contained Pb	t	445,627			525,744		
Contained Ag	Moz	13.7			15.5		
Project Life	Yrs	<b>8.0</b>			<b>8.4</b>		

## METALLURGICAL TESTWORK

### Comminution

Comminution (crushing and grinding) tests have been performed on four composite samples to add to the existing data base for Optimised PFS level process design calculations. The testwork included SMC (drop weight), bond rod and ball mill and abrasion index testing. The testwork shows that Sorby Hills ore is amenable to semi-autogenous grinding having medium coarse competency and has a medium hardness ball mill work index in the range 9-12kWhr/t. Key material properties are presented in Table 2.

**Table 2 Key Comminution Material Properties**

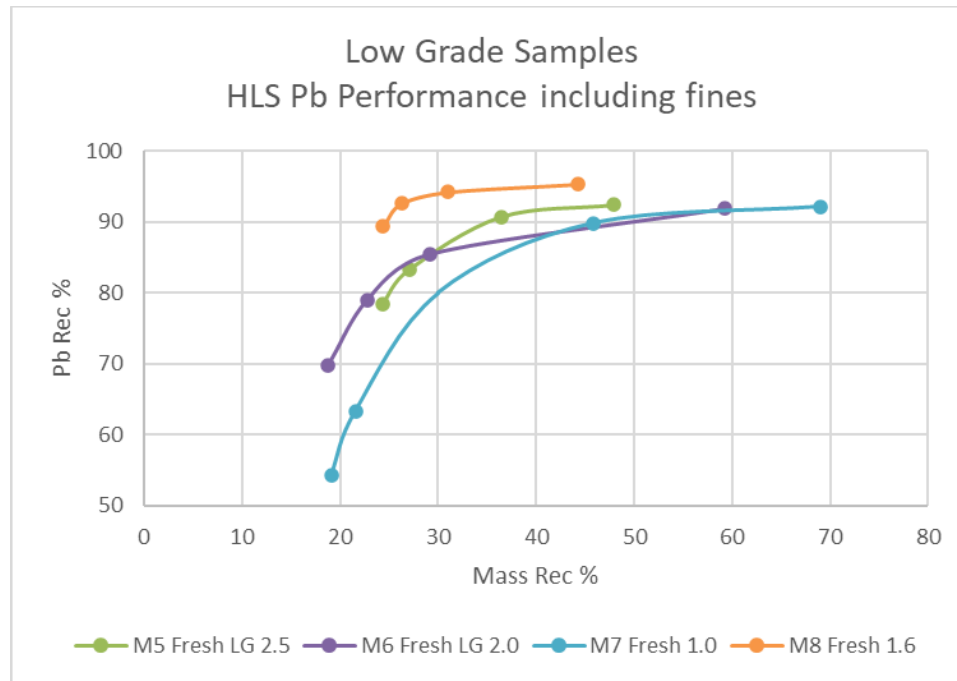
Comminution Parameter	Average Value
Drop Weight index, kWh/m <sup>3</sup>	5.3
A x b	51.6
Rod mill work index, kWh/t	15.5
Ball mill work index, kWh/t	10.2
Abrasion index	0.025

### Heavy Liquid Separation

HLS beneficiation testwork was carried out on six fresh (primary) ore composites with head grades ranging from 1.0 to 5.4%Pb to confirm amenability to beneficiation. The samples were tested at -12 +1 mm size fraction over the SG range 2.7 to 3.0 in 0.1 increments.

Results from HLS testwork on low-grade samples showed a good response averaging 79.5% Pb recovery to a sinks + fines product containing 24.5% mass. **This equates to an upgrade ratio of 3.24.**

Good upgrades were also obtained from the higher-grade samples; however, the reject grade also increases and is considered too high at this stage. The opportunity to include higher-grade in the DMS process will be explored with additional testwork as part of the Definitive Feasibility Study.



Based on these results, a flowsheet including a DMS beneficiation circuit upgrading low-grade ore in parallel with a direct feed high-grade ore stream is being assessed within the Optimised PFS.

**Final full-scale DMS performance**, corrected for fines content and DMS cyclone efficiency, is estimated to be 30% mass recovery with 81% Pb and 73% Ag recoveries giving upgrade ratios of **2.7 for Pb** and **2.4 for Ag**.

### Flotation

This year, new flotation testwork was conducted on four composite samples (one oxide and three fresh ore types). The flotation circuit consists of a staged sulphide and oxide rougher followed by two stages of combined rougher concentrate cleaning. A primary grind size is 106µm. No regrind is necessary. The reagent regime is simple consisting of soda ash, collector, frother, and sodium hydrosulphide for oxide ore sulphurisation.

The testwork culminated with a locked cycle test of the prime 'life of mine' grade fresh composite which represents approximately 75% of the feed schedule.

Test results for each composite, the locked cycle test result and final Optimised PFS recovery estimates are presented in Table 3.

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**Table 3 Flotation Performance Results and Estimates**

Test	Sample	Mass %	Head Grade				Recovery %	
			%Pb	%Fe	Ag g/t	Pb:Fe	Pb	Ag
<b>Test Results</b>								
CT6280 Locked Cycle	M4 (fresh)	NA	5.19	3.2	28	1.62	95.4	85.0
CT6265 Batch	M4 (fresh)	70	5.19	3.2	28	1.62	93.9	84.1
CT6277 Batch	M3 (fresh)	10	5.74	3.87	24	1.48	96.3	83.1
CT6283 Batch	M5 (fresh)	20	2.86	5.01	20	0.57	88.5	58.1
CT6281 Batch	M2 (oxide)	100	2.79	3.09	21	0.90	84.0	94.4
<b>PFS Recovery Estimates</b>								
Weighted Average Fresh			4.78	3.63	26	1.34	93.5	80.0
LCT Off-set Fresh ore							1.9	1.5
<b>Final Fresh ore</b>							<b>95.4</b>	<b>81.5</b>
Oxide			2.79	3.09	21.0	0.90	84.0	94.4
<b>Final Oxide ore</b>							<b>84.0</b>	<b>94.4</b>
<b>Average LOM ore (76% Fresh) <sup>1</sup></b>			<b>4.30</b>	<b>3.50</b>	<b>24.8</b>	<b>1.23</b>	<b>92.7</b>	<b>84.6</b>

<sup>1</sup>The grades shown represent the weighted average grades of the test samples and not the final production schedule grades.

Comparison of the new flotation recovery performance to previous studies is shown in Table 4.

**Table 4 Current vs Previous Recovery Estimates**

Recovery	Current PFS		Lycopodium PFS Update 2019		KBL PFS 2012	
	Pb	Ag	Pb	Ag	Pb	Ag
Fresh Ore	95.4	81.5	NA	NA	NA	NA
Oxide Ore	85.0	94.4	NA	NA	NA	NA
Overall	<b>92.7</b>	<b>84.6</b>	91	87	91	87

The previous two studies used the same recovery estimates and did not assess the oxide and fresh ore types separately in their recovery estimates. Importantly, they were targeting lower-tonnage higher-grade projects.

The current recovery estimates have better sample representation and the improved Pb recovery more than compensates for the small reduction in Ag recovery. **The latest testwork will have a positive impact on the Project's NPV.**

All flotation testwork to date has been conducted on un-beneficiated ore samples. For the purpose of the Optimised PFS, it is assumed that the flotation performance of beneficiated product is consistent with un-beneficiated ore.

## **GEOLOGY AND RESOURCES**

The October 2019 MRE (completed following the Phase II drilling results) has been used for the Optimised PFS pit optimisation.

A high-level review of the perceived impact of Phase III drilling data in addition to ongoing refinements to the geological model on the MRE has been completed.

## Summary

- Localised tonnage increases are likely to be seen where new drilling extends the current Mineral Resource shapes or fills gaps in the current model;
- Refined geological models for the weathering profiles and updated density dataset add greater confidence to the Mineral Resource Estimate;
- Unlikely to see a material decrease in grade within the reported Mineral Resource; and
- Possible minor increase or decrease in reported global grades due to re-domaining of drill hole samples.

As a result of the above, Pacifico has commissioned CSA Global to complete a further MRE update. This work is expected to be completed during May 2020.

## **PERMITTING AND APPROVALS**

The Sorby Hills Joint Venture Project proposal is to develop a lead-silver-zinc open pit mine, associated infrastructure, and processing facilities. Sorby Hills sits on **pre-native title granted mining tenements**.

In the October 2013, the Western Australian Environmental Protection Authority ('EPA') Report (1491), concluded: *'The Project can be managed to meet the EPA's objectives, provided there is satisfactory implementation by the proponent ('Sorby Management Pty Ltd' or 'Sorby') of the EPA's recommended conditions.'* **Subsequently ministerial approval was granted in April 2014.**

## **Requested Changes to Conditions**

Condition 3-1 of Ministerial Statement 964 requires Sorby Management Pty Ltd to substantially commence the proposal within five years of the date of issue of the Statement (before 2 April 2019). Sorby requested an extension of the Time Limit of Authorisation (now referred to as 'Time Limit for Proposal Implementation') for substantial commencement to be extended for a further five years to 2 April 2024.

During April 2019 Pacifico received Report 1632 from the EPA (ASX Announcement 17 April 2019), recommending that it is appropriate to amend condition 3 of Ministerial Statement 964 to allow for the extension of the timeframe for substantial commencement of the Sorby Hills Joint Venture Project for a further 5 years and in May 2019, Pacifico received Ministerial confirmation that condition 3 of Ministerial Statement 96 had been amended to allow for the timeframe for substantial commencement of the Sorby Hills Joint Venture Project, to be **extended for a further 5 years, to 2 April 2024** (ASX Announcement 29 May 2019).

Pacifico has taken a conservative approach with its pit optimisations for the Optimised PFS and has excluded the Alpha and Beta deposits. These deposits sit outside of the open pit development zone approved by the EPA. The Company is focused on fast tracking Sorby Hills to production and would therefore prefer to avoid a material change in the size of the development zone.

## **HYDROGEOLOGICAL SITE INVESTIGATION PROGRAM**

Using Pacifico's reinterpreted geological model, together with reinterpretation of recent and historical drilling and hydraulic testing programs, Pennington Scott has developed a hydrogeological conceptual site model of the Sorby Dolomite and Webber Plane alluvial aquifers. While historic investigations had difficulty interpreting complex pump tests from the karstic aquifer using traditional analytical equations; the use of modern radial flow modelling is providing much improved and confident analysis. A regional numerical groundwater model is now being developed over the mining area and will be calibrated against wet season recharge events.

Although the model is still in progress, **the results from new pump tests as well as reinterpreted historical pump tests indicate that the Sorby Dolomite is not as permeable as previously thought.**

Pennington Scott is also undertaking Gold Sim water balance modelling, coupled with catchment modelling of the Keep River, to develop a seasonal stormwater harvesting and surface water management strategy for the Project.

## OPTIMISED PFS STATUS

The following provides an overview of the key study areas and progress to date.

### Geology and Resources (CSA Global and Pacifico)

- MRE updated based on Phase II drilling results for use in PFS Pit Optimisation;
- Phase III drilling produced PFS metallurgical samples;
- Ongoing refinements to the geological model and ore SG estimates; and
- Further MRE revision incorporating the above underway.

### Mining (Entech)

- Geotechnical site investigations complete;
- Hydrogeological site investigations complete;
- Two process plant configurations are being investigated in mine optimisation studies:
  - Whole ore flotation; and
  - Low-grade beneficiation by DMS and direct feed of high-grade;
- Pit optimisations completed for both options;
- Preliminary scheduling completed for both options;
- Mining contract cost estimation in progress;
- Preliminary designs commencing; and
- Surface water drainage and pit dewatering studies commenced.

### Metallurgical Testwork (DRA and Pacifico)

- Comminution testwork complete for crushing and milling circuit design;
- HLS testwork complete for DMS circuit design; and
- Flotation testwork complete
  - Metallurgical testwork and final PFS recovery performance estimates complete;
  - Reagent scheme improved with low operating cost; and
  - Simplified circuit design.

### Process Plant and Infrastructure Engineering (DRA)

- Option studies completed covering the following selections:
  - Grinding circuit design – single stage SAG mill selected;
  - DMS has been identified as being a viable option to upgrade low-grade ore; and
  - Power supply – site diesel power station selected.
- Project throughput increased to 1.5Mtpa;
- Two flowsheet options being developed to PFS level of detail for consideration:
  - Whole ore direct milling and flotation without beneficiation; and
  - Low grade beneficiation by DMS with high grade feed direct to flotation:
    - DMS feed capacity 750,000tpa producing 225,000tpa mill feed; and
    - 1.275Mtpa high grade flotation feed.

- Process engineering is complete;
- Discipline engineering nearing completion;
- Tailings storage facility design complete (Coffey); and
- Concentrate transport study completed (Minerals to Market).

The Board of Pacifico Minerals Limited has authorised the release of this announcement.

**FOR FURTHER INFORMATION PLEASE CONTACT:**

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**ABOUT PACIFICO MINERALS LIMITED**

Pacifico Minerals Ltd ('Pacifico') (ASX: PMY) is a Western Australian based exploration company with interests in Australia and Colombia. In Australia, the company is currently focused on advancing the Sorby Hills Joint Venture Project in WA. Pacifico owns a 75% interest in the Joint Venture with the remaining 25% (contributing) interest held by Henan Yuguang Gold & Lead Co. Ltd.

**ABOUT HENAN YUGUANG GOLD AND LEAD CO LTD**

Henan Yuguang Gold and Lead Co., Ltd ('HYG') was established in 1957 by the government of Jiyuan City which is in Henan Province in North China. In July 2002, HYG (exchange code: 600531) was listed on the Shanghai Stock Exchange (SSX). Current ownership is approximately 29.61% by Jiyuan City. HYG is the largest lead smelting company and silver producer in China and has been among the Top 500 Chinese enterprises and Top 500 China manufacturing enterprises for the last five consecutive years. The main products produced by HYG are electrolytic lead, gold, silver and copper which are all registered at LME and LBMA respectively. In 2017, HYG produced 415,100 tonnes of electrolytic lead, 110,000 tonnes of copper, 958 tonnes of silver, 7,383 kg of gold and achieved sales of about US\$2,684 million. HYG's plants are largely modern, focussed on development of industrial technology and are environmentally friendly. Its recently refurbished lead smelting plant has achieved full automation. More information can be found on the HYG website; <http://www.yggf.com.cn/en/>.

**FORWARD LOOKING STATEMENTS**

Certain statements in this document are, or may be, 'forward-looking statements' and represent Pacifico's intentions, projections, expectations or beliefs concerning among other things, future exploration activities. The projections, estimates and beliefs contained in such forward-looking statements necessarily involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Pacifico, and which may cause Pacifico's actual performance in future periods to differ materially from any express or implied estimates or projections. Nothing in this document is a promise or representation as to the future. Statements or assumptions in this document as to future matters may prove to be incorrect and differences may be material. Pacifico does not make any representation or warranty as to the accuracy of such statements or assumptions.

**COMPETENT PERSON STATEMENT**

Please refer to the below letter from DRA Pacifico Pty Ltd.

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// DRA Pacific Pty Ltd

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29 April 2020

### CERTIFICATE OF AUTHOR

I, John Fleay B.Eng(Mineral Processing), do hereby certify that:

1. I am currently employed as Manager Metallurgy with DRA Pacific Pty Ltd, 256 Adelaide Terrace, Perth, 6000.
2. This certificate applies to the specific metallurgy sections contained in the ASX Release "Sorby Hills PFS Progress Update", 30 April 2020 prepared by Pacifico Minerals Ltd.
3. My technical qualifications are Bachelor of Engineering (Mineral Processing) and I am a Fellow member of the Australian Institute of Metallurgy (AusIMM No:320872).  
  
I am a graduate of WA School Of Mines (WASM). I have appropriate experience in these matters, by way of my qualifications and 25 years of experience in the mining and resource sector.
4. I have not visited the Sorby Hills Project site.
5. I am responsible for the metallurgy sections of the Sorby Hills Prefeasibility Study (PFS) which is currently in progress. This ASX release includes metallurgical information from this PFS.
6. I am independent of the Issuer and related companies.

Effective Date: April 30, 2020

Signing Date: April 29, 2020



John Fleay  
Manager Metallurgy  
DRA Pacific Pty Ltd

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## APPENDIX 1 - CALCULATION OF Pb EQUIVALENT GRADES

The contained metal equivalence formula is made on the following assumptions based on historical metallurgical work included in a Pre-Feasibility Study (KBL ASX Announcement, 8 April 2014) and modified by more recent metallurgical testwork results (PMY ASX Announcement 17 July 2019), and on the published London Metal Exchange closing spot metal prices of 16 April 2020.

- Lead price US\$ 1664/t;
- Silver price US\$ 0.508/g (US\$15.78/oz);
- Lead recoverable to concentrate 91%; and
- Silver recoverable to concentrate 90%.

It is Pacifico's opinion that all elements included in the metal equivalent calculation have a reasonable potential to be recovered and sold. The formula used to calculate lead equivalent grade is:

*Lead equivalent grade Pb% = ((Grade % Pb x recoverable % Pb x price US\$ per tonne Pb metal / 10,000) + (grade g/t Ag x recoverable % Ag x price US\$/g)) / (Grade % Pb x recoverable % Pb x price US\$ per tonne Pb metal / 10,000)*

Metal equivalents are highly dependent on the metal prices used to derive the formula. Pacifico notes that the metal equivalence method used above is a simplified approach. Only preliminary metallurgical recoveries are available. The metal prices are based on closing spot LME prices of 16 April 2020 and do not reflect the metal prices that a smelter would pay for concentrate nor are any smelter penalties or charges included in the calculation.

Owing to limited metallurgical data zinc grades are not included at this stage in the lead equivalent grade calculation.

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## APPENDIX 2 – JORC, 2012 EDITION – TABLE 1

### Section 1 Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary																																																																								
<b>Sampling Techniques</b>	<p>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.</p> <p>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.</p>	<p>Metallurgical Samples: The comminution testwork reported above is based on four composite samples representing transition, oxide, fresh and waste rock material types in composites C1, C2, C3 and C4 respectively. The HLS testwork reported above was completed on four low grade based fresh ore composite samples (M5, M6, M7 and M8). The flotation testwork reported above was based on four composite samples, one oxide and three grade based fresh samples (M2, M3, M4 and M5).</p> <p>All samples were composited from multiple holes and multiple intervals of ½ HQ diamond drill core sample from Pacifico's recent Phase 1 and 2 drilling campaigns. The make-up and distribution of the composites is summarised in the following Table.</p> <table border="1" style="margin: 10px auto;"> <thead> <tr> <th>Sample</th> <th>Description</th> <th># Drill Holes</th> <th># Intervals</th> <th>Total Meters</th> <th>Ore Zones</th> </tr> </thead> <tbody> <tr> <td>C1</td> <td>Transition</td> <td>11</td> <td>13</td> <td>13</td> <td>B, Omega</td> </tr> <tr> <td>C2</td> <td>Oxide</td> <td>5</td> <td>12</td> <td>12</td> <td>B, Omega</td> </tr> <tr> <td>C3</td> <td>Fresh</td> <td>17</td> <td>26</td> <td>26</td> <td>B, Omega</td> </tr> <tr> <td>C4</td> <td>Waste</td> <td>2</td> <td>11</td> <td>11.5</td> <td>B, Omega</td> </tr> <tr> <td>M2</td> <td>Oxide</td> <td>3</td> <td>12</td> <td>12</td> <td>B, Omega</td> </tr> <tr> <td>M3</td> <td>Fresh High Flotation Feed Grade</td> <td>5</td> <td>8</td> <td>9</td> <td>B, Omega</td> </tr> <tr> <td>M4</td> <td>Fresh LOM Flotation Feed Grade</td> <td>4</td> <td>10</td> <td>12</td> <td>B, Omega</td> </tr> <tr> <td>M5</td> <td>Fresh 2.5%Pb Grade</td> <td>8</td> <td>13</td> <td>14</td> <td>B, Omega</td> </tr> <tr> <td>M6</td> <td>Fresh 2.0%Pb Grade</td> <td>5</td> <td>10</td> <td>12</td> <td>B, Omega</td> </tr> <tr> <td>M8</td> <td>Fresh 1.5%Pb Grade</td> <td>4</td> <td>8</td> <td>12</td> <td>B, Omega</td> </tr> <tr> <td>M7</td> <td>Fresh 1.0%Pb Grade</td> <td>11</td> <td>12</td> <td>12</td> <td>B, Omega</td> </tr> </tbody> </table> <p>Metallurgical samples were selected with the aim to satisfy the following conditions:</p> <ul style="list-style-type: none"> <li>• Ore that would be mined, i.e. within the proposed pit shells</li> <li>• Reflect the main oxidation types and lithologies, particularly the more oxidised cerussite ores and the fresh galena ores</li> <li>• Select grades in line with the production schedule and/or life of mine grade</li> <li>• Allow for spatial representivity (i.e. spread of depth and along strike where possible)</li> </ul>	Sample	Description	# Drill Holes	# Intervals	Total Meters	Ore Zones	C1	Transition	11	13	13	B, Omega	C2	Oxide	5	12	12	B, Omega	C3	Fresh	17	26	26	B, Omega	C4	Waste	2	11	11.5	B, Omega	M2	Oxide	3	12	12	B, Omega	M3	Fresh High Flotation Feed Grade	5	8	9	B, Omega	M4	Fresh LOM Flotation Feed Grade	4	10	12	B, Omega	M5	Fresh 2.5%Pb Grade	8	13	14	B, Omega	M6	Fresh 2.0%Pb Grade	5	10	12	B, Omega	M8	Fresh 1.5%Pb Grade	4	8	12	B, Omega	M7	Fresh 1.0%Pb Grade	11	12	12	B, Omega
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<b>Drilling Techniques</b>	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).	All metallurgical sample was from HQ diamond drill core																																																																								
<b>Drill Sample Recovery</b>	Method of recording and assessing core and chip sample	Core recovery for diamond core was acceptable with recoveries better than 97% through the mineralised zones.																																																																								

	<p>recoveries and results assessed.</p> <p>Measures taken to maximise sample recovery and ensure representative nature of the samples.</p> <p>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.</p>	
<b>Logging</b>	<p>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.</p> <p>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</p> <p>The total length and percentage of the relevant intersections logged.</p>	<p>Diamond drill core was logged at a secure facility in Kununurra, where it is also stored.</p> <p>All core was logged in detail. Core was processed with orientation lines and metre marks and RQD. Recoveries and RQD's were recorded.</p> <p>Structural measurements of stratigraphy and fault orientations were made where the ori-marks and orientation lines were of sufficient confidence.</p>
<b>Sub-sampling Techniques and Sample Preparation</b>	<p>If core, whether cut or sawn and whether quarter, half or all core taken.</p> <p>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</p> <p>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</p> <p>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</p> <p>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.</p> <p>Whether sample sizes are appropriate to the grain size of the material being sampled.</p>	<p>Drill hole and intercept selection for the samples was based on the core logging and assay data, and the material type classification based on a weathering index. Samples were selected to represent oxide, transition or fresh sulphide mineralogy as required. As required, intervals were selected to provide a target Pb grade.</p> <p>Drill holes and intervals were selected to offer the most representative spatial distribution, with a focus on B and Omega regions which are dominant in the first half of the ore schedule.</p>
<b>Quality of Assay Data and Laboratory Tests</b>	<p>The nature, quality and appropriateness of the assaying and laboratory procedures</p>	<p>All the metallurgical testwork reported was conducted by ALS Metallurgical laboratory in Balcatta, Perth. This laboratory is NATA accredited. All testwork procedures used are industry standard.</p>

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	<p>used and whether the technique is considered partial or total.</p> <p>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.</p> <p>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.</p>	
<b>Verification of Sampling and Assaying</b>	<p>The verification of significant intersections by either independent or alternative company personnel.</p> <p>The use of twinned holes.</p> <p>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</p> <p>Discuss any adjustment to assay data.</p>	<p>Metallurgical samples and testwork: Technical representatives of both Pacifico and DRA Pacific have been involved with the selection of the samples and have had a collaborative involvement in designing the testwork program, managing this program, reviewing the testwork results.</p> <p>Calculated head grades from each test are checked against the assay head grade. Any discrepancy is followed up by re-assaying.</p>
<b>Location of Data Points</b>	<p>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.</p> <p>Specification of the grid system used.</p> <p>Quality and adequacy of topographic control.</p>	<p>The Pacifico Phase 1 and 2 drill hole collars were accurately surveyed using a DGPS by a registered surveyor and recorded in GDA94 Zone 52.</p>
<b>Data Spacing and Distribution</b>	<p>Data spacing for reporting of Exploration Results.</p> <p>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.</p>	NA

	Whether sample compositing has been applied.	
<b>Orientation of Data in Relation to Geological Structure</b>	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.	NA
<b>Sample Security</b>	The measures taken to ensure sample security.	Drill samples were originally stored and processed at a secure facility in Kununurra and a Laboratory in Darwin. All samples taken by Pacifico personnel to the truck depot in Kununurra and placed on a pallet and sealed for transport direct to the Intertek-Genalysis laboratory in Darwin. The metallurgical samples were taken from these two locations and have remained stored under secure premises at ALS Balcatta.
<b>Audits or Reviews</b>	The results of any audits or reviews of sampling techniques and data.	Metallurgical sample: Representatives of both Pacifico and DRA have inspected the testwork being conducted. Mr Craig Toogood of ALS managed the testwork program. Testwork result interpretation has been performed by both Pacifico and DRA personnel with review and final sign-off by Mr John Fleay of DRA Pacific.

## Section 2 Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary																								
<b>Mineral Tenement and Land Tenure Status</b>	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.	<p>Pacifico Minerals Ltd acquired a 75% interest in the Sorby Hills lead-silver project in Western Australia on 5 October 2018. Yuguang (Australia) Pty Ltd and wholly owned subsidiary of Henan Yuguang Gold &amp; Lead Co. Ltd (HYG) owning the remaining 25%. The Sorby Hills Project comprises five mining leases (M80/196-197 and M80/285-287), all of which are currently held jointly between Sorby Hills Pty Ltd (75%) and Yuguang (Australia) Pty Ltd (25%).</p> <table border="1"> <thead> <tr> <th>Tenement</th> <th>Area (km<sup>2</sup>)</th> <th>Granted</th> <th>Expiry</th> </tr> </thead> <tbody> <tr> <td>M80/196</td> <td>9.99</td> <td>22/01/1988</td> <td>21/01/2030</td> </tr> <tr> <td>M80/197</td> <td>9.95</td> <td>22/01/1988</td> <td>21/01/2030</td> </tr> <tr> <td>M80/285</td> <td>5.57</td> <td>29/03/1989</td> <td>28/03/2031</td> </tr> <tr> <td>M80/286</td> <td>7.89</td> <td>29/03/1989</td> <td>28/03/2031</td> </tr> <tr> <td>M80/287</td> <td>8.15</td> <td>29/03/1989</td> <td>28/03/2031</td> </tr> </tbody> </table> <p>The Mining Leases are centred at coordinates 128°57'E, 15°27'N. The project area is approximately 50 km north-northeast of the township of Kununurra, in the far north of Western Australia, and covers a total area of 12,612.40 hectares (ha). Native title has not been granted over the area. The Mining Leases were granted prior to the High Court acknowledging Native Title and therefore native title has been extinguished over the MLs. The project area lies adjacent to the proposed Goomig Range Conservation Park.</p>	Tenement	Area (km <sup>2</sup> )	Granted	Expiry	M80/196	9.99	22/01/1988	21/01/2030	M80/197	9.95	22/01/1988	21/01/2030	M80/285	5.57	29/03/1989	28/03/2031	M80/286	7.89	29/03/1989	28/03/2031	M80/287	8.15	29/03/1989	28/03/2031
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		Tenure is in good standing until 2030 (in some cases, out to 2031). Mining Leases M80/286 & M80/197 have a current cultural clearance access agreement in place; for the remaining mining tenements normal cultural clearance plans would be required. No mining agreement has been negotiated.
<b>Exploration Done by Other Parties</b>	Acknowledgment and appraisal of exploration by other parties.	The Sorby Hills area has been systematically explored by numerous companies since 1971. Prominent amongst these were ELF Aquitaine (1973-1981) with various JV partners (SEREM, St Joe Bonaparte & BHP), BHP (1981-1988), in JV with Triako; and CBH/Kimberley Metals/KBL Mining. Previous work included, geologic mapping, soil geochemistry, airborne and ground geophysics and extensive drilling campaigns.
<b>Geology</b>	Deposit type, geological setting and style of mineralisation.	<p>The Sorby Hills mineralisation is regarded as having many features typical of Mississippi Valley Type (MVT) deposits. Mineralisation is focussed on the contact between the Knox Sediments and the underlying Sorby Dolomite.</p> <p>The Sorby Hills mineralisation consists of 13 discrete carbonate hosted Ag Pb Zn deposits (previously referred to as pods), Pods A–J, Beta Pod East, Beta Pod West and Alpha pod. The pods form a linear north-south belt extending over 7 km, sub parallel to the eastern margin of the Precambrian Pincombe Inlier and within the Carboniferous Burt Range Formation of the Bonaparte Basin.</p> <p>The mineralisation is largely stratabound and hosted mainly on the contact between Knox Sediments and Sorby Dolomite, sometimes in a dolomitic breccia, which generally dips shallowly to the east. The mineralised pods average 7–10 m in thickness, are generally less than 1 km long and 100 to 500 m wide. There is some structural control to the mineralisation, with higher grade zones associated with faulting. Some of this faulting is interpreted to be at a low angle. Mineralisation is often thicker and/or of higher grade in areas of strong brecciation.</p> <p>The Sorby Hills primary mineralisation is typically silver and lead-rich with moderate to high pyrite (FeS<sub>2</sub>) content and generally low amounts of sphalerite (ZnS). Galena (PbS) occurs as massive to semi-massive crystalline lenses often found in the more argillaceous units, and as coarse to fine disseminations or as open-space fill in fractures, breccias and vughs. Sphalerite typically predates galena and occurs as colloform open-space fill. It is typically more abundant at the lateral fringes of and below the lead mineralisation. Silver values tend to increase as the lead content increases and is generally assumed to be closely associated with the galena. A discrete pyrite zone is seen to occur below the base-metal mineralisation.</p> <p>The upper portions of the deposits are often oxidised and composed of a variable mix of cerussite (PbCO<sub>3</sub>) and galena. Cerussite has also been observed deeper in the deposits where faults, fractures and or cavities have acted as conduits for meteoric waters. The extent to which secondary lead minerals exist through the deposit has not been systematically documented.</p>
<b>Drill Hole Information</b>	<p>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:</p> <ul style="list-style-type: none"> <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> <p>If the exclusion of this information is justified on the basis that the information is not Material and this exclusion</p>	N/A. This release relates to the results of metallurgical testwork, not an update to drilling, exploration results, resource or reserve reporting.

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	<p>does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.</p>	
<b>Data Aggregation Methods</b>	<p>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 stated.</p> <p>Material and should be stated.</p> <p>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.</p> <p>The assumptions used for any reporting of metal equivalent values should be clearly stated.</p>	<p>NA. No aggregated exploration data is reported here. The release relates to the results of ongoing metallurgical testwork, not an update to drilling, exploration results, resource or reserve reporting.</p>
<b>Relationship Between Mineralization Widths and Intercept Lengths</b>	<p>These relationships are particularly important in the reporting of Exploration Results.</p> <p>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</p> <p>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').</p>	<p>N/A. The release relates to the results of ongoing metallurgical testwork, not an update to drilling, exploration results, resource or reserve reporting.</p>
<b>Diagrams</b>	<p>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.</p>	<p>N/A. The release relates to the results of ongoing metallurgical testwork, not an update to drilling, exploration results, resource or reserve reporting.</p>
<b>Balanced Reporting</b>	<p>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.</p>	<p>All of the relevant data for the metallurgical results have been accurately summarised and provided in this report.</p>

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<b>Other Substantive Exploration Data</b>	<p>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.</p>	<p>N/A</p>
<b>Further Work</b>	<p>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.</p>	<p>The metallurgical testwork reported above is a summary of all testwork conducted for the current pre-feasibility study.</p> <p>Further metallurgical testwork is planned to support a definitive feasibility study in the near future. This testwork will include:</p> <ul style="list-style-type: none"> <li>• Additional comminution samples</li> <li>• Additional HLS testing of schedule composites and variability samples across all ore types</li> <li>• Additional flotation testing of schedule composites and variability samples, including flotation testing of beneficiated low grade samples</li> <li>• Pilot scale DMS testing</li> </ul>

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