12 May 2020

South32 Limited
(Incorporated in Australia under the Corporations Act 2001)
(ACN 093 732 597)
ASX / LSE / JSE Share Code: S32 ADR: SOUHY
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South32 Limited

Hermosa Project – Mineral Resource Estimate Declaration

South32 Limited (ASX, LSE, JSE: S32; ADR: SOUHY) (South32) is pleased to report for the first time a Mineral Resource estimate for the Clark Deposit which forms part of its 100% owned Hermosa project located in Arizona, USA (Appendix 1 – Figure 1). The Clark Mineral Resource estimate (Table A) is reported in accordance with the JORC Code (2012)[1] at 55 million tonnes, averaging 2.31% zinc (Zn), 9.08% manganese (Mn) and 78g/t silver (Ag).

The Clark Deposit is interpreted as the upper oxidised, manganese-rich portion of the mineralised system that contains the previously reported Taylor Mineral Resource estimate. A scoping study to advance our understanding of the processing and end-market opportunities for the Clark Deposit is underway, while a pre-feasibility study for the separate development of the Taylor Deposit is due for completion in the September quarter 2020.

South32 Chief Executive Officer, Graham Kerr said "The declaration of a Mineral Resource estimate for the Clark Deposit marks another important milestone for the Hermosa project, following our initial Mineral Resource estimate for the Taylor Deposit in June 2019.

"When completed, the Taylor Deposit pre-feasibility study is expected to further de-risk our investment by demonstrating its ability to deliver strong shareholder returns over many decades. The Clark Deposit provides an additional option to realise longer term value from within the broader land package.

"With ongoing exploration programs testing possible extensions to the Taylor Deposit and newly identified prospects in the regional land package, we expect this work to reaffirm our view that Hermosa is one of the most exciting base metals projects in the industry."

The Hermosa project is a polymetallic development option located in Santa Cruz county, Arizona and is 100% owned by South32. It comprises the zinc-lead-silver Taylor Deposit, the zinc-manganese-silver Clark Deposit and an extensive, highly prospective land package with potential for discovery of zinc and copper mineralisation.

Full details of this update are contained in the attached report.

Appendices prepared in connection with this report have been submitted to UK Listing Authority (UKLA) national storage mechanism and are available for inspection at http://www.morningstar.co.uk/uk/NSM or are otherwise available on South32's website at http://www.south32.net.

[1] Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012.

About South32

South32 is a globally diversified mining and metals company. We produce bauxite, alumina, aluminium, energy and metallurgical coal, manganese, nickel, silver, lead and zinc at our operations in Australia, Southern Africa and South America. With a focus on growing our base metals exposure, we also have two development options in North America and several partnerships with junior explorers around the world. Our purpose is to make a difference by developing natural resources, improving people's lives now and for generations to come. We are trusted by our owners and partners to realise the potential of their resources.

FURTHER INFORMATION

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Table A: Mineral Resource estimate for the Clark Deposit as at 12 May 2020 in 100% terms[1,2]

Ore Type	Measured Mineral Resource				Indicated Mineral Resource				Inferred Mineral Resource				Total Mineral Resource			
	Mt	% Zn	% Mn	g/t Ag	Mt	% Zn	% Mn	g/t Ag	Mt	% Zn	% Mn	g/t Ag	Mt	% Zn	% Mn	g/t Ag
UG Oxide	-	-	-	-	33	2.49	9.39	56	22	2.04	8.64	110	55	2.31	9.08	78
Total	**-**	**-**	**-**	**-**	**33**	**2.49**	**9.39**	**56**	**22**	**2.04**	**8.64**	**110**	**55**	**2.31**	**9.08**	**78**

Notes:

1. Cut-off grade: NSR of US$175/t.
2. Input parameters for the NSR calculation are based on South32's long term forecasts for zinc, manganese and silver pricing; haulage, treatment, shipping, handling and refining charges. Metallurgical recovery assumptions are consistent across geological domains and are approximately 62% for zinc, 80% for manganese and 81% for silver. All masses are reported as dry metric tonnes (dmt). All tonnes and grade information have been rounded to reflect relative uncertainty of the estimate, hence small differences may be present in the totals.

Estimate of Mineral Resource for the Clark Deposit

South32 confirms the first time reporting of the Mineral Resource estimate for the Clark Deposit as at 12 May 2020 (Table A).

The estimates of Mineral Resources are reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, 2012 (JORC Code) and the Australian Securities Exchange Listing Rules. This report summarises the information contained in the JORC Code Table 1 which is included in Appendix 1 to this report. The breakdown of the total Mineral Resource estimate into the categories specified in the JORC Code is contained in Table A.

Geology and geological interpretation

The Clark Deposit within the Hermosa project (Appendix 1 – Figure 2) is the oxidised portion of a carbonate replacement deposit (CRD) style, massive sulphide deposit. It is hosted in Mesozoic Hardshell volcanic rocks and underlying Permian carbonate rocks of the Pennsylvanian Naco Group of south-eastern Arizona (Appendix 1 - Figure 3).

The zinc-manganese-silver oxide mineralisation of the Clark Deposit is interpreted to be an up-dip extension of the zinc-lead-silver sulphide Taylor Deposit, although of different mineralogy and geochemistry. Mineralisation primarily spans the contact between the Hardshell volcanic rocks and the underlying Concha carbonate stratigraphy for approximately 1.3km from near surface down a general northwest dip of 30° to where it abuts the Taylor sulphide mineralisation. The 800m lateral extent of mineralisation at the Clark Deposit has not been closed off by drilling.

Drilling techniques

Initial drilling of the Clark Deposit conducted by ASARCO between 1950-1991 utilised three different drilling methods of rotary air hammer (RH) (91 holes), diamond core (DDH) (22 holes), and reverse circulation (RC) (one hole). Wildcat Silver, later becoming Arizona Minerals Inc (AMI), drilled 165 RC and 267 DDH drill holes between 2007 to 2018. South32 drilling continued to extend the drill footprint at both the Clark and Taylor deposits following the acquisition of AMI in August 2018, adding an additional 31 DDH drill holes to the total drill hole database considered for this Mineral Resource estimation.

Four AMI and three South32 DDH drill holes twinned ASARCO RH drilling to validate geology and assay data.

The geological model is based on data from 579 drill holes of various styles including RH, RC, and DDH of HQ (95.6mm) or NQ (75.3mm) diameter (Appendix 1 - Figure 4), all drilled from surface of which 311 intersect the mineralisation at the Clark Deposit and were utilised in the Mineral Resource estimation (Appendix 1 - Figure 5).

Sub-vertical drilling was undertaken until August 2018 and 259 of these holes were utilised in the estimation. Since August 2018 all holes were angled between 60°and 85° to maximise the mineralisation intersection angle. Core orientation was introduced from October 2018 to incorporate structural measurements into geological modelling for stratigraphic and fault interpretation.

Sampling and sub-sampling techniques

Details of the sampling procedures are unknown for the ASARCO drilling campaigns of 1950-1991, however sample lengths were predominantly 1.5m (5'), ranging between 6cm and 6m. AMI drill holes were sampled at nominal 1.5m (5') intervals or terminated at litho-structural boundaries for DDH, producing a sample range between 15cm and 2m. Diamond drill core was sampled by hydraulic splitting until 2013, from then onwards a core saw was used for sampling. RC holes were drilled wet by AMI, with cleaning of the holes between 5' sample intervals.

AMI and South32 samples were submitted for preparation at external certified laboratories in Tucson (Skyline Laboratories and Australian Laboratory Services (ALS)) and Reno (Inspectorate Laboratories). Preparation involved crushing of the sample, a rotary split portion for each sample, and pulverisation to generate pulps for assay. Specific preparation methods vary between laboratories and drilling campaigns. Since 2014, samples have been prepared by ALS Minerals Tucson and involve drying, crushing the entire sample to more than 70% passing 2mm, rotary splitting to achieve a 250g subsample and pulverizing to greater than 85% passing 75µm.

Sample analysis method

AMI re-analysed 4,272 ASARCO pulp samples at Skyline Laboratories in 2006 to validate the copper, lead, zinc, and manganese assay results using inductively-coupled plasma and atomic absorption spectrometry (ICP-AAS). Silver and gold fire assays of a second split from each pulp were undertaken by Assayers Canada in Vancouver.

AMI drill samples taken between 2007-2012 were prepared at Skyline Labs and analysed by ICP for copper, lead, zinc, and manganese. Silver assays of 250g duplicate pulps for all samples were sent to Assayers Canada from 2006-2009 (fire assays) and Inspectorate Laboratories in Reno for 2010-2012 (fire assay with AAS finish).

Over 2013-2014, AMI identified a low bias for silver reported by fire assay through a quality control program using in-house standards. A re-assay of 8,078 samples from 188 holes mostly from the Clark Deposit was undertaken by ALS Minerals using a four-acid digest and ICP-AAS. These replaced the original fire assay silver results in the database.

Since 2014, all samples have been prepared by ALS Tucson and analysed at ALS Vancouver using four-acid digestion, ICP-AAS, and more recently inductively-coupled plasma and optical emission spectrometry (ICP-OES). Quality control protocols introduced and maintained since this time comprise certified reference material (CRM) inserted every 20 samples, field duplicates every 15m (50'), blank material submitted at the start and end of every sample batch, coarse crush and pulp repeats every 40 samples, and third-party laboratory pulp repeats every 50 samples.

Efforts to validate ASARCO sampling over the project history comprise two campaigns of pulp re-assay by AMI in 2006 (4,272 samples) and South32 in 2019 (3,070 samples). The findings for the 2019 re-assay program generally indicate excellent reproducibility in ICP results for zinc, manganese and silver across grade ranges material to the Mineral Resource work. Gravimetric fire assay results for silver at lower grades (less than 10g/t Ag) generally perform poorly against the modern ICP results. The poor performance of these historical analytical techniques against modern results has been well-documented in previous studies.

Minor element assays from the South32 re-assay program were also inserted into the drilling database for historical samples where no previous analysis had been undertaken and to underpin the estimation of these elements.

Estimation methodology

Resource estimation was conducted using ordinary kriging interpolation for three elements of economic interest (zinc, manganese, silver) and seven elements for metallurgical or rock characterisation (iron, lead, calcium, sulphur, magnesium, potassium, aluminium). Estimation search criteria, nested as two passes, are consistent with geostatistical models developed for each estimation domain according to the appropriate geological controls.

Sample selection criteria, block dimensions, and other parameters of the estimation were reviewed against results of qualitative kriging neighbourhood analysis (QKNA). Validation includes statistical analysis, swath plots and visual inspection.

Specific gravity measurements from drill cores were used as the basis for estimating dry bulk density in tonnage calculations for both mineralised and non-mineralised material. Initial testing and comparison of pre- and post-drying sample weights from a small 280 sample population within two drill holes indicated a moisture content of 2.03%.

Mineral Resource classification

Mineral Resource classification criteria are based on the level of data informing both the geological model and grade estimation. Grade estimation confidence is overlaid on the geological modelling classification criteria whereby estimation parameters such as slope of regression are matched to block estimation criteria that relates to the number and distance of data informing the estimate in relation to semi-variogram models for each element. No Measured Mineral Resources have been defined for the Clark Deposit due to uncertainty associated with historical drill hole data, local variability illustrated by the South32 twin drilling program and considering the conceptual level of process flow sheet development. Indicated Mineral Resources are estimated from at least five samples in two drill holes with data spacing within approximately 100m and are not defined in the SE areas of the Clark Deposit which is supported primarily by RC drilling. Inferred Mineral Resources are constrained by the reporting of estimates to within demonstrated grade and geological continuity ranges, and generally to the extents of the confined Mineral Resource domains.

Mining and metallurgical methods and parameters

Reasonable prospects for eventual economic extraction have been determined through assessment of mining, processing and financial aspects at a scoping level study on the Clark Mineral Resource estimate. The assessment outcome informs the net smelter return (NSR) cut-off value used for reporting the Mineral Resource estimate.

Cut-off grade

The Clark Deposit of the Hermosa project is a zinc-manganese-silver deposit which uses an equivalent NSR value as a grade descriptor. Input parameters for the NSR calculation are based on South32's long term forecasts for zinc, manganese and silver pricing; haulage, treatment, shipping, handling and refining charges. Metallurgical recovery assumptions are consistent across domains and are approximately 62% for zinc, 80% for manganese, and 81% for silver.

A dollar equivalent cut-off of NSR US$175/dmt forms the basis of assessment for reasonable prospects for eventual economic extraction, supported by inputs detailed to scoping study level.

Competent Person's Statement

The information in this report that relates to Mineral Resources for the Clark Deposit represents an estimate as at 12 May 2020, and is based on information compiled by Matthew Hastings, a

Competent Person who is a Member and Chartered Professional of The Australasian Institute of Mining and Metallurgy.

Mr. Hastings is a full-time employee of SRK Consulting (U.S.) Inc. and was engaged by South32 to provide a Mineral Resource estimate for the Clark Deposit. Mr. Hastings has sufficient experience 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 Resources and Ore Reserves'. Mr Hastings consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

Additional information is contained in Appendix 1.