



## EXCELLENT GOLD RECOVERIES AT LORD NELSON, SANDSTONE GOLD PROJECT

*Preliminary testwork indicates gold recoveries averaging 96% in fresh rock*

### Sandstone Gold Project

Located in a world class gold province in WA

Current resource is 6.2Mt @ 1.7g/t gold for 331,000oz

Multiple targets

Multi million oz potential

Significant landholding of over 800km<sup>2</sup> within a major gold district

### Proforma Capital Structure

Issued Shares: 372m

Share Price: \$0.089

Market Cap: \$33m

Proforma based on completion of

Placement announced 22/9/20

### Directors

Non- Executive Chairman  
Richard Monti

Managing Director  
Matthew Bowles

Non-Executive Director  
Terry Wheeler

Non-Executive Director  
Dr Jingbin Wang

### Company Secretary & CFO

Graeme Smith

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### Highlights

- **Gold recoveries averaging 96%** in Lord Nelson primary zone mineralisation from preliminary Accelerated Cyanide Leach testwork
- **Gold recoveries of >93%** in Lord Nelson oxide and transitional zone mineralisation from previous metallurgical testwork
- Results of the preliminary testwork program are in line with expectations based on historical performance at the Lord Nelson mine with reported production plant gold recovery of between 93% to 96% for Lord Nelson
- Testwork carried out to date confirms the oxide, transitional and primary zone mineralisation at Lord Nelson is amenable to conventional cyanide extraction methods
- **Gold recoveries averaging >92%** from accelerated cyanide leach testwork at Indomitable, Tiger Moth, Vanguard, Havilah & Ladybird indicate these deposits are also amenable to conventional cyanide extraction methods

### Upcoming exploration

- **Multiple drill-ready targets to be tested for repeat lodes**, with an initial 5,000m, of a planned 30,000m RC drill program due to commence this week.
- **Alto recently secured commitments to raise \$5.5m in a Placement** and intends to aggressively advance exploration along the entire 3km Lords' Corridor and drill test a number of regional targets within the +800km<sup>2</sup> Sandstone Gold Project.

### **Alto's Managing Director, Matthew Bowles commented:**

*The excellent gold recoveries achieved from recent preliminary cyanide leach testwork at Lord Nelson, complements the high gold recoveries at our other deposits and those reported for Lord Nelson from previous metallurgical testwork and historical processing records by Troy Resources.*

*Whilst we remain focused on exploration and resource growth at the Sandstone Gold Project, it is pleasing to report to shareholders that testwork to date is in-line with our expectations and demonstrates the mineralisation within our current mineral resources is amenable to conventional cyanide extraction methods."*

**ASX: AME**



#altometals

## Preliminary gold recovery testwork at Lord Nelson

Alto Metals Limited (ASX: AME) (**Alto** or **Company**) is pleased to provide shareholders with an update on preliminary gold recovery testwork at the Company's various prospects including Lord Nelson, at the Sandstone Gold Project (**Sandstone Gold Project**).

## Primary Mineralisation

In August 2020, Alto collected 4 RC drill samples within primary zone mineralisation with gold grades ranging from ~3 g/t Au to ~11 g/t Au and submitted the samples to Intertek Genalysis (Intertek) for Accelerated Cyanide Leach LeachWELL™ testwork. Sample details and results are summarised in Table 1. The sampling and testwork methodology is described in more detail further below.

The preliminary testwork was carried out to determine the cyanide extractable gold and **to provide an indication of the potential gold recovery in metallurgical processes and circuits<sup>2</sup>** of the Lord Nelson primary mineralisation. This testwork is preliminary in nature and Alto intends to carry out further gold recovery testwork as the project continues to be advanced.

All four samples reported **>95% gold recovery** with an **average gold recovery of 96%** suggesting the gold within the Lord Nelson primary zone mineralisation is amenable to conventional cyanide extraction methods.

**Table 1. Summary of Accelerated Cyanide Leach Testwork at Lord Nelson.**

Deposit	Hole ID	From (m)	To (m)	Head Grade <sup>1</sup> (g/t Au)	Leach Grade <sup>2</sup> (g/t Au)	Tail Grade <sup>3</sup> (g/t Au)	Recovery (%)	Rock Type
Lord Nelson	SRC169	36	40	7.14	7.88	1.67	82.5%	Oxide
	SRC168	116	120	4.28	5.39	0.17	96.9%	Fresh
	SRC175	211	215	10.1	9.24	0.14	98.5%	Fresh
	SRC176	240	244	10.5	11.5	0.52	95.7%	Fresh
	SRC188	248	250	3.21	3.08	0.15	95.4%	Fresh

**Footnotes:** 1 Grade by 50gm FA on "A" sample. 2 Grade by LeachWELL™ on "B" sample. 3 Grade by 50gm FA on "B" sample tail

## Oxide and Transitional Mineralisation

A further 1 sample was collected within oxide zone mineralisation at Lord Nelson and submitted to Intertek for the same testwork (refer Table 1 above). This sample returned a gold recovery of 82.5%.

More rigorous metallurgical testwork was previously carried out at Lord Nelson by Troy Resources NL (Troy) as part of initial feasibility study work on both oxide and transitional ore (Troy, 2009)<sup>1</sup>. This testwork determined:

- Lord Nelson ore was found to be free milling.
- Gravity gold recovery was found to be required to prevent coarse gold entering the leach circuit and being partially lost to the tailings and it was estimated that over 20% of total gold could be recovered as concentrate from the oxide ore and close to 40% for the transitional ore.
- Acceptable **gold recoveries of >93% for oxide and transitional ores** were obtained after 24 hours of direct cyanide leaching.

Troy mined the Lord Nelson deposit as an open pit mine to ~90m below surface between 2005 and 2010 and recovered 207koz at 4.6 g/t Au. The ore was processed through Troy's Sandstone treatment plant, which had a general design flow sheet described by Troy as fairly typical of other gold plants in operation on the WA goldfields (Troy, 2009) <sup>1</sup>.

Troy reported that recovery of gold at the Sandstone plant typically ranged from 93% to 96% with total recovery in the period July 2006 to end of June 2007 (i.e. during mining and processing of Lord Nelson) of 94.4%.

### **Preliminary Gold Recovery testwork at Indomitable & Vanguard Camps, Havilah and Ladybird**

In 2018 and 2019 the Company announced maiden mineral resource estimates for the Vanguard Camp, Indomitable Camp, Havilah and Ladybird deposits (refer to ASX announcements on 25/09/18 and 11 June 2019).

As part the Mineral Resource estimation, Alto collected and submitted a total of 25 samples to Intertek Genalysis for Accelerated Cyanide Leach LeachWELL™ testwork.

Samples comprised various grades and lithologies within oxide, transitional and primary mineralisation as summarised in Table 2.

An **average gold recovery of >92%** was reported indicating the mineralisation at these deposits is also amenable to conventional cyanide extraction methods.

### **Accelerated Cyanide Leach LeachWELL™ Methodology**

Analysis was carried out by Intertek Genalysis (Intertek) in Maddington. Intertek stated that *“High grade cyanide leaches utilise the LeachWELL™ accelerant to determine the cyanide extractable gold and provide an indication of potential recoveries in metallurgical processes and circuits. Recovery and analysis of the residues provide the option of reporting total gold values and thus determining the refractory gold fraction”*<sup>2</sup>.

Alto's samples comprised 10kg composite samples collected using split pvc from the 1m RC intervals. Samples were submitted to Intertek in Maddington, dried and split into two equal 5kg portions labelled “A” and “B”.

Sample A was crushed to 2mm, a split was taken and pulverised to 75um followed by 50gm fire assay for gold (Intertek Genalysis method code FA50/AA).

Sample B was pulverised to nominal 90% passing 106um. A 1kg split was analysed by 24 hour pH10 cyanide leach (Accelerated Cyanide Leach LeachWELL™) with an ICP-MS finish for gold (Intertek Genalysis method code LW1000/MS).

The tails were recovered, washed, re-homogenised and analysed by 50gm fire assay for gold (Intertek Genalysis method FA50T/OE).

An estimate of gold recovery was calculated as a percentage using the results from the above two methods and the formula:

$$\text{Recovery (\%)} = (\text{LW1000/MS}) / [(\text{LW1000/MS}) + (\text{FA50T/OE})] \times 100$$

**Table 2. Summary of Accelerated Cyanide Leach Testwork at other Alto deposits**

Deposit	Hole ID	From (m)	To (m)	Head Grade <sup>1</sup> (g/t Au)	Leach Grade <sup>2</sup> (g/t Au)	Tail Grade <sup>3</sup> (g/t Au)	Recovery (%)	Rock Type
Tiger Moth (Indomitable Camp)	SRC115	32	36	0.14	0.17	0.01	94%	Oxide
		52	56	5.11	6.99	0.36	95%	Oxide
		56	60	2.7	2.6	0.21	93%	Oxide
		92	96	0.26	0.14	0.01	93%	Oxide
Indomitable (Indomitable Camp)	SRC086	30	32	0.46	0.43	0.05	90%	Oxide
		32	34	0.21	0.23	0.02	92%	Oxide
		34	36	1.81	1.15	0.08	93%	Oxide
		88	90	0.48	0.39	0.02	95%	Oxide
		90	92	2.11	2.54	0.18	93%	Oxide
		92	94	0.83	1.14	0.07	94%	Oxide
Vanguard	SRC114	28	32	0.1	0.13	0.01	93%	Oxide
		80	84	4.45	4.16	0.21	95%	Fresh
		84	88	7.73	5.96	0.25	96%	Fresh
		88	92	0.96	0.78	0.12	87%	Fresh
		92	96	1.92	1.45	0.05	97%	Fresh
Havilah	SRC118	36	40	2.255	2.69	0.17	94%	Transitional/ Fresh
		40	44	0.610	0.74	0.05	94%	Transitional/ Fresh
		44	48	0.235	0.30	0.03	91%	Transitional/ Fresh
		48	52	0.279	0.35	0.03	92%	Transitional/ Fresh
		52	56	0.262	0.26	0.02	93%	Transitional/ Fresh
		60	62	0.757	0.78	0.10	89%	Transitional/ Fresh
		68	72	0.045	0.02	X		Transitional/ Fresh
Ladybird	SRC119	52	56	3.648	3.86	0.50	89%	Oxide/ Transitional
		56	60	1.042	1.10	0.08	93%	Oxide/ Transitional

**Footnotes:** 1 Grade by 50gm FA on "A" sample. 2 Grade by LeachWELL™ on "B" sample. 3 Grade by 50gm FA on "B" sample tail

**Table 3: Drill hole information (MGA94 Zone 50)**

Deposit	Hole ID	Easting	Northing	mRL	Dip	Azimuth	Depth
Lord Nelson	SRC169	746270	6883490	473	-60	90	80
	SRC168	746213	6883450	475	-60	90	140
	SRC175	746011	6883570	473	-60	90	230
	SRC176	745973	6883619	472	-60	90	266
	SRC188	745972	6883571	475	-60	90	260
Tiger Moth	SRC115	733598	6891165	500	-62	0	102
Indomitable	SRC086	733270	6892294	500	-60	60	102
Vanguard	SRC114	740807	6884218	488	-82	197	102
Havilah	SRC118	743980	6881206	477	-60	180	80
Ladybird	SRC119	740650	6887210	499	-60	45	80

For further information regarding Alto and its Sandstone Gold Project please visit the ASX platform (ASX: AME) or the Company's website at [www.altometals.com.au](http://www.altometals.com.au).

This announcement has been authorised by the Board of Alto Metals Limited.

Mr Matthew Bowles  
 Managing Director  
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 E: [admin@altometals.com.au](mailto:admin@altometals.com.au)

**Source References in this announcement**

1. Troy Resources NL (2009). Sandstone Project, Mid West Region, Western Australia, Effective Date July 31<sup>st</sup> 2009  
 Link: [http://www.troyres.com.au/images/files/technical/Sandstone\\_Technical\\_Report\\_September\\_09.pdf](http://www.troyres.com.au/images/files/technical/Sandstone_Technical_Report_September_09.pdf).
2. Intertek Genalysis Schedule of Services and Charges 2020.

**Competent Persons Statement**

The information in this Report that relates to current and historical Exploration Results is based on information compiled by Dr Changshun Jia, who is an employee of Alto Metals Ltd. Dr Jia is a Member of the Australian Institute of Geoscientists and has sufficient experience of relevance to the styles of mineralisation and the types of deposits under consideration, and to the activities undertaken, to qualify as a Competent Person as in the 2012 Edition of the Joint Ore Reserves Committee (JORC) Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Jia consents to the inclusion in the report of the matters based on the information in the context in which it appears.

**Forward-Looking Statements**

This release may include forward-looking statements. Forward-looking statements may generally be identified by the use of forward-looking verbs such as expects, anticipates, believes, plans, projects, intends, estimates, envisages, potential, possible, strategy, goals, objectives, or variations thereof or stating that certain actions, events or results may, could, would, might or will be taken, occur or be achieved, or the negative of any of these terms and similar expressions. which are only predictions and are subject to risks, uncertainties and assumptions which are outside the control of Alto Metals Limited. Actual values, results or events may be materially different to those expressed or implied in this release. Given these uncertainties, recipients are cautioned not to place reliance on forward-looking statements. Any forward-looking statements in this release speak only at the date of issue. Subject to any continuing obligations under applicable law and the ASX Listing Rules, Alto Metals Limited does not undertake any obligation to update or revise any information or any of the forward-looking statements in this release or any changes in events, conditions or circumstances on which any such forward-looking statement is based.

## Exploration Results

The references in this announcement to Exploration Results for the Sandstone Gold Project were reported in accordance with Listing Rule 5.7 in the announcements titled:

*Lord Nelson Resource Increase, 27 May 2020*

*Alto Increases Total Mineral Resources to 290,000oz. Sandstone Gold Project. 11 June 2019.*

*40m @ 3.5g/t gold Confirmatory Intersection from 60m at Vanguard, Sandstone Gold Project, WA. 15 October 2018*

*Maiden Gold Resource at Indomitable and Vanguard Camps. Sandstone WA. 25 September 2018.*

The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcements noted above.

**Table 4: Mineral Resource Estimate for Sandstone Gold Project**

Deposit	Category	Cut-off (g/t Au)	Tonnage (kt)	Grade (g/t Au)	Contained gold (oz)
Lord Henry <sup>(b)</sup>	Indicated	0.8	1,200	1.6	65,000
<b>TOTAL INDICATED</b>			<b>1,200</b>	<b>1.6</b>	<b>65,000</b>
Lord Henry <sup>(b)</sup>	Inferred	0.8	110	1.3	4,000
Lord Nelson <sup>(a)</sup>	Inferred	0.8	1,820	1.9	109,000
Indomitable & Vanguard Camp <sup>(c)</sup>	Inferred	0.3-0.5	2,580	1.5	124,000
Havilah & Ladybird <sup>(d)</sup>	Inferred	0.5	510	1.8	29,000
<b>TOTAL INFERRED</b>			<b>5,020</b>	<b>1.7</b>	<b>266,000</b>
<b>TOTAL INDICATED AND INFERRED</b>			<b>6,220</b>	<b>1.7</b>	<b>331,000</b>

*Small discrepancies may occur due to rounding*

The references in this announcement to Mineral Resource estimates for the Sandstone Gold Project were reported in accordance with Listing Rule 5.8 in the following announcements:

Note (a): Lord Nelson: announcement titled "*Alto increases Lord Nelson Resource by 60% to 109,000 ounces at 1.9g/t Gold*" dated 27 May 2020,

Note (b): Lord Henry: announcement titled: "*Maiden Lord Henry JORC 2012 Mineral Resource of 69,000oz.*" dated 16 May 2017,

Note (c): Indomitable & Vanguard Camp: announcement titled: "*Maiden Gold Resource at Indomitable & Vanguard Camps, Sandstone WA*" dated 25 September 2018; and

Note (d): Havilah & Ladybird: announcement titled: "*Alto increases Total Mineral Resource Estimate to 290,000oz, Sandstone Gold Project*" dated 11 June 2019.

The Company confirms that it is not aware of any new information or data that materially affects the information included in the previous market announcement noted above and that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the previous market announcement continue to apply and have not materially changed.

JORC Code, 2012 Edition Table 1.

Section 1 Sampling Techniques and Data

Item	Comments
Sampling techniques	<ul style="list-style-type: none"> <li>• Samples were collected using Reverse circulation (RC) drilling techniques.</li> <li>• RC samples were passes directly from the in-line cyclone through a rig mounted cone splitter. Samples were collected in 1m intervals into bulk plastic bags and 1m calico splits (which were retained for later use).</li> </ul>
Drilling techniques	<ul style="list-style-type: none"> <li>• Alto's RC drilling programme used a KWL 350 drill rig with an onboard 1100/350 compressor using a face sampling hammer of nominal 140mm diameter.</li> </ul>
Drill sample recovery	<ul style="list-style-type: none"> <li>• RC drill sample recovery was estimated as a percentage and recorded on field sheets prior to entry into the database.</li> <li>• There were no reported issues with regards to recovery.</li> </ul>
Logging	<ul style="list-style-type: none"> <li>• Alto's RC drill chips were sieved from each 1 m sample and geologically logged.</li> <li>• Washed drill chips from each 1m sample were stored in chip trays and photographed.</li> <li>• Geological logging of drillhole intervals was carried out with sufficient detail to meet the requirements of resource estimation.</li> </ul>
Subsampling techniques and sample preparation	<ul style="list-style-type: none"> <li>• Subsamples submitted for accelerated cyanide leach testwork comprised a 10kg composite subsample collected by Alto personnel from the 1m bulk samples using a split PVC scoop and then submitted to Intertek Genalysis (Intertek) in Maddington, Perth.</li> <li>• Intertek is located in Maddington, Perth, Western Australia.</li> <li>• Intertek were responsible for sample preparation and assaying for drillhole subsamples and associated check assays.</li> <li>• Intertek dried and split the samples into two equal 5kg portions labelled "A" and "B".</li> <li>• Sample A was crushed to 2mm, a split was taken and pulverised to 75um followed by 50gm fire assay for gold (Intertek Genalysis method code FA50/AA).</li> <li>• Sample B was pulverised to nominal 90% passing 106um. A 1kg split was analysed by 24-hour pH10 cyanide leach (Accelerated Cyanide Leach LeachWELL™) with an ICP-MS finish for gold (Intertek Genalysis method code LW1000/MS).</li> <li>• The tails were recovered, washed, re-homogenised and analysed by 50gm fire assay for gold (Intertek Genalysis method FA50T/OE).</li> </ul>
Quality of assay data and laboratory tests	<ul style="list-style-type: none"> <li>• Laboratory Certified Reference Materials (CRM) and/or in-house controls, blanks, splits and replicates were analysed with each batch of samples by the laboratory. These quality control (QC) results are reported along with the sample values in the final report. Selected samples are also re-analysed to confirm anomalous results.</li> <li>• Laboratory and field QAQC results were reviewed by Alto personnel.</li> </ul>
Verification of sampling and assaying	<ul style="list-style-type: none"> <li>• The intervals selected for sampling were determined by Alto personnel based on fire assay results reported previously.</li> <li>• Each sample reported a gold assay grade determined by fire assay and a grade determined by the leachwell method.</li> <li>• Twinned holes were not required or appropriate.</li> <li>• The assay data was not adjusted.</li> <li>• An estimate of gold recovery was calculated as a percentage using the formula;</li> <li>• <math>Recovery (\%) = (LW1000/MS) / [(LW1000/MS) + (FA50T/OE)] \times 100</math></li> </ul>
Location of data points	<ul style="list-style-type: none"> <li>• The grid is based on GDA 94 zone 50.</li> <li>• Alto used handheld Garmin GPS to locate and record drill collar positions, accurate to ±5 m, which is sufficient for exploration drilling. Subsequently RM Surveys (licensed surveyor) has surveyed or has been engaged to carry out collar surveys for all Alto RC holes with RTK GPS with accuracy of ±0.05 m.</li> <li>• Down hole surveys are carried out by the drilling contractor using a north seeking Gyro. The Company has previously engaged an independent contract surveyor to carry out down hole surveys.</li> </ul>
Data spacing and distribution	<ul style="list-style-type: none"> <li>• The drill orientation and spacing varies between deposits and is designed to intersect mineralisation perpendicular to the interpreted mineralised zones.</li> <li>• Subsamples submitted for testwork were selected from mineralised zones within particular weathering and lithological domains at each deposit.</li> </ul>



Item	Comments
	<ul style="list-style-type: none"> <li>Sample compositing has been applied as discussed above.</li> </ul>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> <li>Drill orientation is designed to intersect mineralisation perpendicular to the interpreted mineralised zones.</li> <li>Geological and mineralised structures have been interpreted from RC drilling.</li> <li>The data derived from the subsamples submitted for testwork relates to mineralised zones within particular weathering and lithological domains.</li> </ul>
Sample security	<ul style="list-style-type: none"> <li>Subsamples collected from the 1m bulk sample were placed in a green plastic bag then into another green plastic bag (ie double bagged) then into a bulka bag that was tied and dispatched to the laboratory via JPB Contracting (private contractor).</li> <li>Sampling data was recorded on field sheets and entered into Excel.</li> <li>Laboratory submission sheets are also completed and sent to the laboratory prior to sample receipt.</li> <li>There were no issues with transport and receipt of samples.</li> </ul>
Audits and reviews	<ul style="list-style-type: none"> <li>No external audits or reviews have been undertaken.</li> </ul>

## Section 2 Reporting of Exploration Results

Item	Comments
Mineral tenement and land tenure	<ul style="list-style-type: none"> <li>Alto's Sandstone Project is located in the East Murchison region of Western Australia and covers approximately 800km<sup>2</sup> with numerous exploration licences, prospecting licences and mining leases.</li> <li>All tenements are currently in good standing with the Department of Mines, Industry Regulation and Safety.</li> <li>Royalties include a 2% of the Gross Revenue payable to a third party, and a 2.5% royalty payable to the State Government.</li> </ul>
Exploration done by other parties	<ul style="list-style-type: none"> <li>Previous exploration and mining at the Sandstone Project has been carried out by many companies.</li> <li>Recent mining and exploration was carried out by Troy Resources NL between ~1000 and ~2010.</li> <li>Prior to Troy, mining and exploration was carried out by Herald Resources Limited and exploration by numerous other companies including Western Mining Corporation Limited.</li> </ul>
Geology	<ul style="list-style-type: none"> <li>The Sandstone Project is located within the Sandstone Greenstone Belt, which is defined as a triangular shaped belt interpreted to be a north-plunging antiform located at the northern end of the Southern Cross province. The belt consists of mafic volcanic and intrusive rocks with subordinate ultramafic, banded iron formation, and siliciclastic sediments. Granitoid plutons intrude the southern margin of the belt.</li> <li>The gold deposits are typical Archaean greenstone orogenic gold deposits.</li> </ul>
Drillhole information	<ul style="list-style-type: none"> <li>Refer to table included in this ASX announcement.</li> </ul>
Data aggregation methods	<ul style="list-style-type: none"> <li>An estimate of gold recovery was calculated as a percentage using the formula;  <math display="block">\text{Recovery (\%)} = (\text{LW1000/MS}) / [(\text{LW1000/MS}) + (\text{FA50T/OE})] \times 100</math> </li> </ul>
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> <li>Not applicable as the samples were selected within mineralised zones within particular weathering and lithological domains at each deposit.</li> </ul>
Diagrams	<ul style="list-style-type: none"> <li>Refer to plans and figures included in this ASX announcement.</li> </ul>
Balanced reporting	<ul style="list-style-type: none"> <li>The subsamples comprised a range of gold grades within different weathering domains (ie oxide, transitional, fresh) and lithological units (clay zone, granodiorite, dolerite).</li> </ul>



Item	Comments
Other substantive exploration data	<ul style="list-style-type: none"><li>As referenced in this ASX announcement, Troy Resources NL carried out metallurgical testwork at Lord Nelson as part of feasibility studies and mining of the oxide/transitional zone.</li></ul>
Further work	<ul style="list-style-type: none"><li>Alto is continuing with exploration and resource drilling at the various prospects and deposits within the Sandstone Project. Further gold recovery testwork may be carried out in the future.</li></ul>