

# QUARTERLY REPORT



Metals X Limited is a diversified group mining, developing and exploring for minerals and metals in Australia. It is Australia's largest tin producer and a significant copper producer with a pipeline of assets from exploration to development including the world class Wingellina Nickel-Cobalt Project.

## CORPORATE DIRECTORY

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## FOR THE QUARTER ENDED 30 SEPTEMBER 2018

# HIGHLIGHTS

## CORPORATE

- ▶ Operating EBITDA \$1.7 million (previous quarter \$0.8 million).
- ▶ Board and senior management team further strengthened.
- ▶ \$50 million equity raise completed.
- ▶ Closing cash, working capital & investments of \$110.7 million.

## COPPER DIVISION – INCREASING PRODUCTION

- ▶ Production of 4,678 tonnes of copper contained in concentrate (previous quarter 3,850 tonnes).
- ▶ EBITDA of (\$5.5) million (previous quarter (\$5.6) million).
- ▶ Experienced General Manager with strong leadership and operational skills appointed.
- ▶ Prior quarter issues of grade dilution and production gradually being addressed. The impact of bolstered management, planning and productivity evidenced with considerable improvement in the second half of the quarter.
- ▶ Increased ore production outside of historic 'checkerboard' area (53% for the quarter compared to 28% prior quarter), with 70% of development outside the 'checkerboard' for the quarter.
- ▶ Broken ore stocks increased by 82% during the quarter with a fourth jumbo utilised to further increase development rates.
- ▶ Infill drilling in Area's 6 and 9 (eastern extension of orebody) returns excellent results:
  - NUG0420: 7.80 m at 2.35% Cu
  - NUG0437: 4.50 m at 3.97% Cu
  - NUG0440: 12.40 m at 2.21% Cu
- ▶ Early encouraging results from regional exploration drilling programs.

## TIN DIVISION – EXPANDING PRODUCTION

- ▶ Production of 1,616 tonnes of tin contained in concentrate at an AISC of \$18,899 per tonne of tin (previous quarter 1,418 tonnes at \$19,366 per tonne).
- ▶ EBITDA of \$7.2 million and net cash flow of \$3.6 million (MLX 50% share) (previous quarter \$6.8 million and \$1.7 million respectively).
- ▶ Ore sorter commissioning progressed during the quarter with expected ejection rates and grades being achieved subsequent to the end of the quarter.
- ▶ Development of Leatherwood decline commenced with ongoing resource development drilling returning outstanding results:
  - U6295: 3.0m at 10.69% Sn
  - U6465: 3.2m at 5.12% Sn
- ▶ Near-mine targets developed with exploration programs commencing during December quarter.
- ▶ Rentails environmental studies and modelling continued to advance the statutory approvals process.

## NICKEL DIVISION – DEVELOPMENT-READY

- ▶ Continued re-engagement with potential partners to develop the world-class Wingellina nickel-cobalt project.

*Note: EBITDA is unaudited and a non-IFRS measure. \$ are AUD unless stated otherwise. All numbers quoted are for the September 2018 quarter unless stated otherwise. Renison data is 100% of the operation unless stated as 'MLX 50%' share.*

Metals X Limited (**Metals X** or the **Company**) is pleased to present its activities report for the quarter ended 30 September 2018.

## COPPER DIVISION

### NIFTY OPERATIONS (MLX 100%)

Metals X is 100% owner of the Nifty Copper Operations (**Nifty**), located in the East Pilbara region of Western Australia.

#### OPERATIONAL STRATEGY

The focus of the Company since the acquisition of Nifty in August 2016 has been on increasing the ore production rate, returning the process plant to continuous operation and extending mine life. Since acquiring Nifty, the Company has:

- Increased Ore Reserves and extended mine life from 1 year to 6 years (with exploration ongoing);
- Completed a significant rebuild and refurbishment of site infrastructure and equipment;
- Progressively been ramping-up underground mining and development activities;
- Commenced continuous operation of the process plant (previously the plant was operating on a 2-weeks on, 1-week off basis);
- Significantly enhanced the management and operational capabilities at site.

The Company's strategic objective is to transform Nifty into a large scale, long-life mine with an annualised production rate in excess of 40,000 tonnes of contained copper in concentrate.

#### PRODUCTION, CASHFLOW AND COST

TABLE 1: NIFTY COPPER OPERATIONS PRODUCTION AND COSTS – SEPTEMBER 2018 QUARTER

<i>All \$ are AUD</i>		September 2018 Quarter	Previous Quarter	Rolling 12-months
<b>Physical Summary</b>				
<b>Mine Production</b>				
Ore tonnes mined	t	391,346	348,246	1,494,795
Ore grade mined	% Cu	1.30%	1.20%	1.32%
<b>Copper Concentrator</b>				
Tonnes processed	t	386,566	349,673	1,489,252
Ore grade processed	% Cu	1.33%	1.20%	1.33%
Recovery	% Cu	91.18%	91.49%	92.12%
Copper produced	t Cu	4,678	3,850	18,257
Copper sold	t Cu	2,759	4,018	18,407
Copper price	\$/t Cu	8,347	9,086	8,830
Realised copper price *	\$/t Cu	7,571	8,294	8,041
<b>Cost Summary</b>				
Mining	\$/t Cu	4,726	4,602	4,569
Processing	\$/t Cu	2,368	3,741	2,128
Admin	\$/t Cu	865	924	1,195
Stockpile adjustment	\$/t Cu	-52	18	-17
<b>C1 Cash Cost **</b>	<b>\$/t Cu</b>	<b>7,907</b>	<b>9,285</b>	<b>7,875</b>
Royalties	\$/t Cu	788	412	502
Sustaining capital	\$/t Cu	874	950	636
Reclamation & other adjustments	\$/t Cu	59	70	61
<b>All-in Sustaining Costs (AISC)**</b>	<b>\$/t Cu</b>	<b>9,627</b>	<b>10,717</b>	<b>9,074</b>
Project costs	\$/t Cu	-	-	-
Exploration costs	\$/t Cu	249	117	146
<b>All-in Costs (AIC)**</b>	<b>\$/t Cu</b>	<b>9,876</b>	<b>10,834</b>	<b>9,220</b>

\* Net of TC/RC charges.

\*\* The table format has changed from the previous quarter to present the commodity price net of treatment and refining charges which were previously included in cost of sales, to comply with Australian Accounting Standards. The amended presentation is consistent with the terms of the underlying concentrate sales agreements where treatment and refining changes are included as part of the pricing formula. The adjustment has no impact on gross profit or net profit.

The focus during the September quarter has been, and through the December 2018 quarter will continue to be, on improving the key operational drivers to achieve the strategic production objective:

- Short term and medium term mine planning;
- Production drilling rates;
- Development rates;
- Front line management; and
- Equipment productivity.

The underground and surface infrastructure and fixed plant already have the capacity to achieve the targeted strategic production rate. In addition, the mineral resource base at Nifty is substantial and can support a large, long-life mine.

Significant operational improvements have been achieved since the appointment of Mr Russell Cole in early September 2018 as General Manager of Nifty (refer to ASX Announcement 3 September 2018). Continued increases in copper production will result as the underlying drivers of productivity and production rate, as summarised above, are further improved.

Production during the quarter increased from the prior quarter driven mainly through a stronger performance during September. Ore mined during the quarter was 391,346 tonnes at an average grade of 1.30% Cu (June quarter 348,246 tonnes at 1.20% Cu). The combination of higher mine production and mined grade resulted in the production of 4,678 tonnes of copper in concentrate (compared to 3,850 tonnes in the June 2018 quarter).

Unit costs were lower with AISC at \$9,627/t Cu (June quarter \$10,717/t Cu). Nifty is predominantly a fixed cost operation, and along with an ongoing Company-wide focus on cost control, the all-in-sustaining-cost will benefit as production approaches nameplate capacity.

EBITDA (unaudited) for the quarter was (\$5.5) million compared to the March 2018 quarter EBITDA of (\$5.6) million. Despite higher production, EBITDA was similar to the June quarter due to the copper price being significantly lower at \$8,347/t Cu compared to the previous quarter of \$9,086/t Cu.

Effort during 2018 to date has been concentrated on expanding underground operations out of the increasingly difficult 'checkerboard' mining area, which has become a significant impediment to the achievement of the targeted production rate. During the quarter, considerable progress was made in developing the western and eastern extensions of the orebody:

- Approximately 53% of ore production was sourced from outside the 'checkerboard' (June quarter 28%) with approximately 70% of development outside the 'checkerboard' (June quarter 70%). At the end of the quarter there were 12 development headings available;
- Broken ore stocks and drilled stocks, a key determinant of production rate and contingency for production variability, increased from approximately 10,160 tonnes and 172,980 tonnes respectively during the June 2018 quarter to approximately 18,480 tonnes (peaking at one point at 48,000 tonnes of blasted stocks) and 185,860 tonnes by September 2018;
- During the current financial year, mining outside the 'checkerboard' is planned to provide approximately 50% of total ore production. By the end of the financial year, the mining rate outside the 'checkerboard' is expected to approach 70% of total production (refer to FIGURE 1 for a schematic of planned stopes on levels 14, 19, 23 and 25 outside of the 'checkerboard' area for the 2018/19 financial year).

To achieve a sustainable production rate, the objective over the next 3 to 4 months is to ensure development rates of over 700m per month and long-hole production rates of approximately 20,000m per month are achieved. Towards the end of the quarter, the operation took delivery of a third long-hole production drill rig which ensures there is adequate stope drilling capacity to reach the 20,000m per month long-hole production drilling target (September quarter monthly average was 10,500m with 2 rigs). In addition, a fifth development drill rig has been leased and will be delivered to site during October to ensure that there is sufficient capacity to achieve the targeted development rate over the next 12 months of approximately 700m per month (September development was 520m).

The Company is confident that, when the key production drivers described above are in place, the strategic production objective will be met.

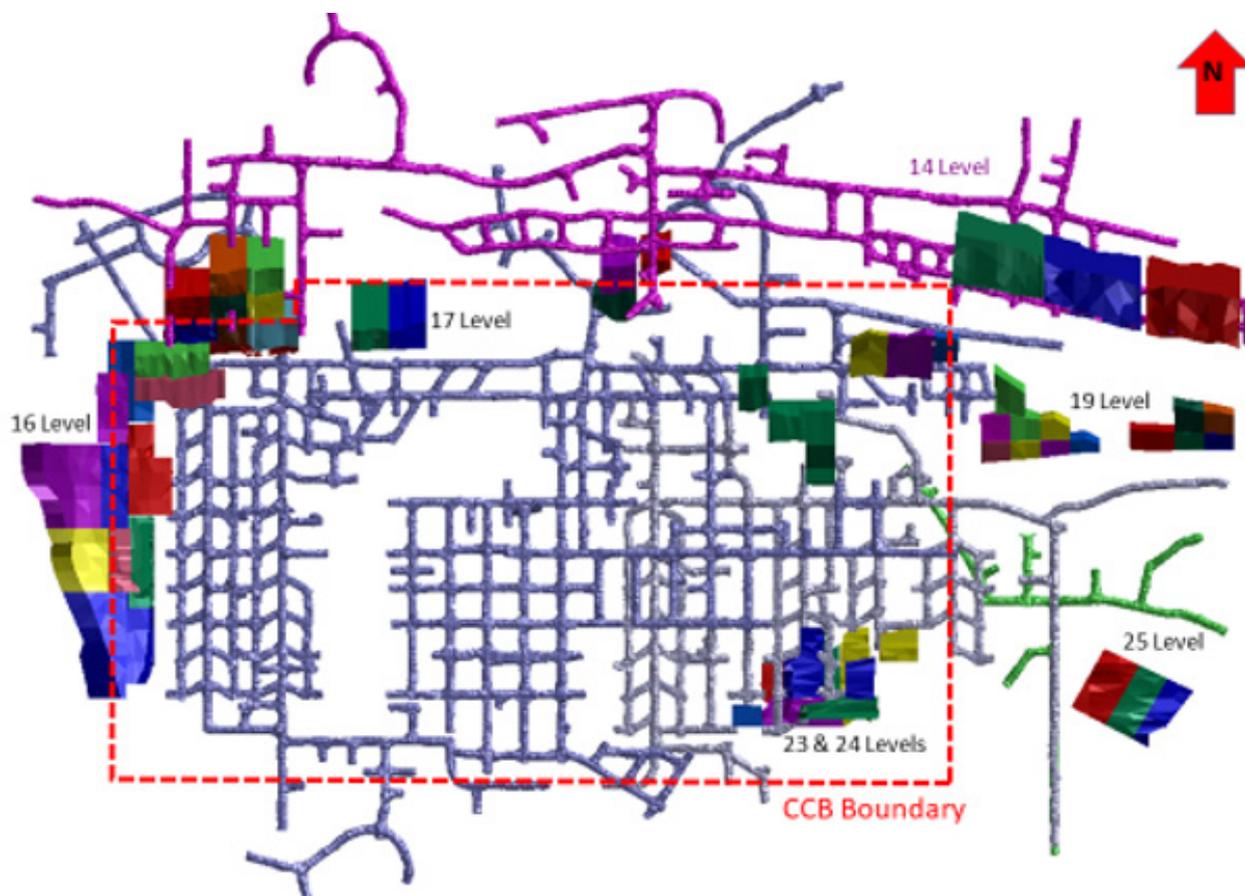


FIGURE 1 : PLAN VIEW OF NIFTY DEPOSIT SHOWING PLANNED STOPES (COLOURED SHAPES) FOR 2018/19 AND CHECKERBOARD (CCB) OUTLINE

## NIFTY UNDERGROUND DRILLING

Since acquiring Nifty the Company has put a significant effort into better understanding the stratigraphic sequence and structural architecture which hosts the orebody. This has been carried out on multiple fronts but has primarily been underpinned by targeted diamond drilling and intensive mapping of the mined openings. Approximately 65,000m of underground drilling has been completed to date.

A major focus of the underground diamond drilling program for the quarter concentrated on the definition and extension of Resources to the east in what is referred to as Region 6 (Figure 2). While most assays are still pending, preliminary results in the region have indicated mineralisation extends within an east-southeast fault bounded fold sequence, akin to the fold hinge mineralisation previously mined in the 'Checker Board' area to the west. Strong mineralisation occurs within the Middle Carbonate Unit (MCU) and produced the following significant intersections during the quarter (Figure 3) (see Appendix 1 for full drill results):

- Hole - NUG0435            44.9m at 2.3%Cu\*
- Hole - NUG0430            33.7m at 2.34%Cu\*
- Hole - NUG0433            35.6m at 2.11%Cu\*

(\* downhole width – Holes drilled at shallow dip to intersect faults).

Region 6 is still open to the east, although drilling to date has reached the end of what is possible from the currently available drill platforms. Planning is underway to develop suitable platforms to allow continued resource definition drilling of Region 6 down plunge to the east. This area has to date has only been tested by a small number of surface exploration drill holes.

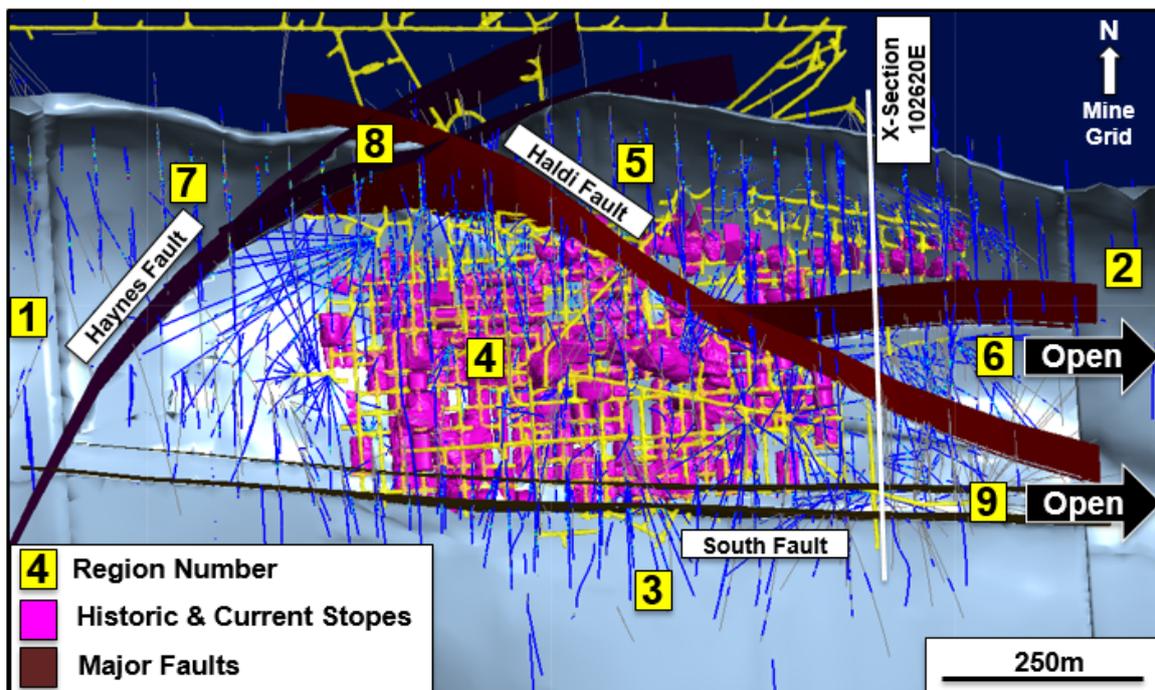


FIGURE 2 : PLAN VIEW OF EASTERN END OF THE NIFTY DEPOSIT SHOWING POSITION OF REGION 6

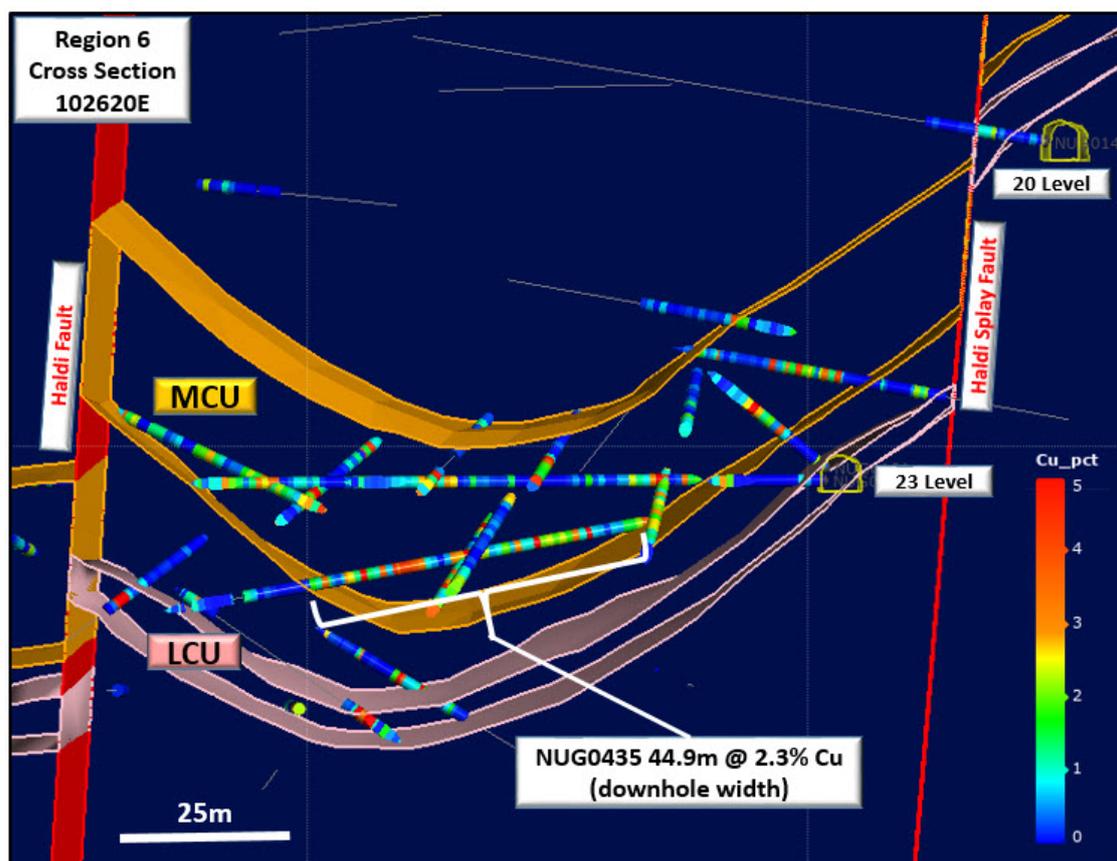


FIGURE 3 – CROSS SECTION 102620E THROUGH REGION 6 MINERALISATION HIGHLIGHTING SIGNIFICANT MINERALISATION WITHIN RECENT DRILLING

In addition to Region 6, during the quarter drilling programs were completed within Region 9 on the south-central portion of the syncline. The assay results for most of these holes are still pending but some early encouragement has been received from a number of holes as follows (see Appendix 1 for full drill results):

- Hole - NUG0420            7.8m at 2.35% Cu
- Hole - NUG0437            4.5m at 3.97% Cu
- Hole - NUG0440            12.4m at 2.21% Cu

## REGIONAL EXPLORATION

Metals X holds tenure (granted and applications) covering some 3,225 square kilometres in the Paterson province over the highly prospective Neoproterozoic Yeneena Basin (refer to FIGURE 4).

During the quarter the Company's regional exploration activities were focused on tenure north of the Nifty mine site. Drilling activities comprising 3,697m of reverse circulation drilling ("RC") and 4,332m of aircore drilling ("AC") were completed across a number of prospects including Rainbow, Rainbow South and Dromedary. Regional first pass AC drilling was also conducted around the Rainbow SE area and the Dromedary prospect and programs were commenced at Warrabarty East and near Waroo (FIGURE 4).

While the majority of assay results are pending, encouraging results have been received from the Rainbow and Rainbow South drill programs, with anomalous copper, silver, lead and zinc being intersected.

### Rainbow Prospect

The Rainbow prospect is located approximately 30 kilometres to the north-northwest of Nifty and geologically lies at the boundary between the underlying Coolbro Sandstone and the basal sequence of Broadhurst Formation (the Broadhurst Formation is the host of the Nifty and Maroochydore copper deposits).

The prospect, which comprises a substantial surface lag geochemical copper, lead and zinc anomaly, was originally discovered by WMC Resources during the early 1980's and has been subjected to erratic historic drill testing which intersected several subcropping stratabound copper mineralised horizons. The WMC geochemical anomaly, along with the position of the MLX drilling completed during the current quarter is shown on FIGURE 5.

The drilling program conducted during the quarter targeted the stronger part of the surface geochemical anomaly where it coincides with an interpreted domal fold axis.

Encouraging results have been returned over an area of some 1000m x 400m including (see Appendix 1 for full details):

- Hole - NRC006 4.0m at 1.61%Cu
- Hole - NRC007 10.0m at 0.86% Cu
- Hole - NRC008 5.0m at 1.24% Cu
- Hole - NRC011 4.0m at 1.84% Cu
- Hole - NRC012 3.0m at 1.83% Cu & 2.0m at 3.04% Cu

Importantly, the defined mineralisation remains open in all directions and the revised geological interpretation indicates that much of the historic drilling, particularly the AC, has been largely ineffective as it has often failed to reach the interpreted mineralised positions. Follow-up exploration programs including additional drilling and possible geophysical surveys are currently being planned.

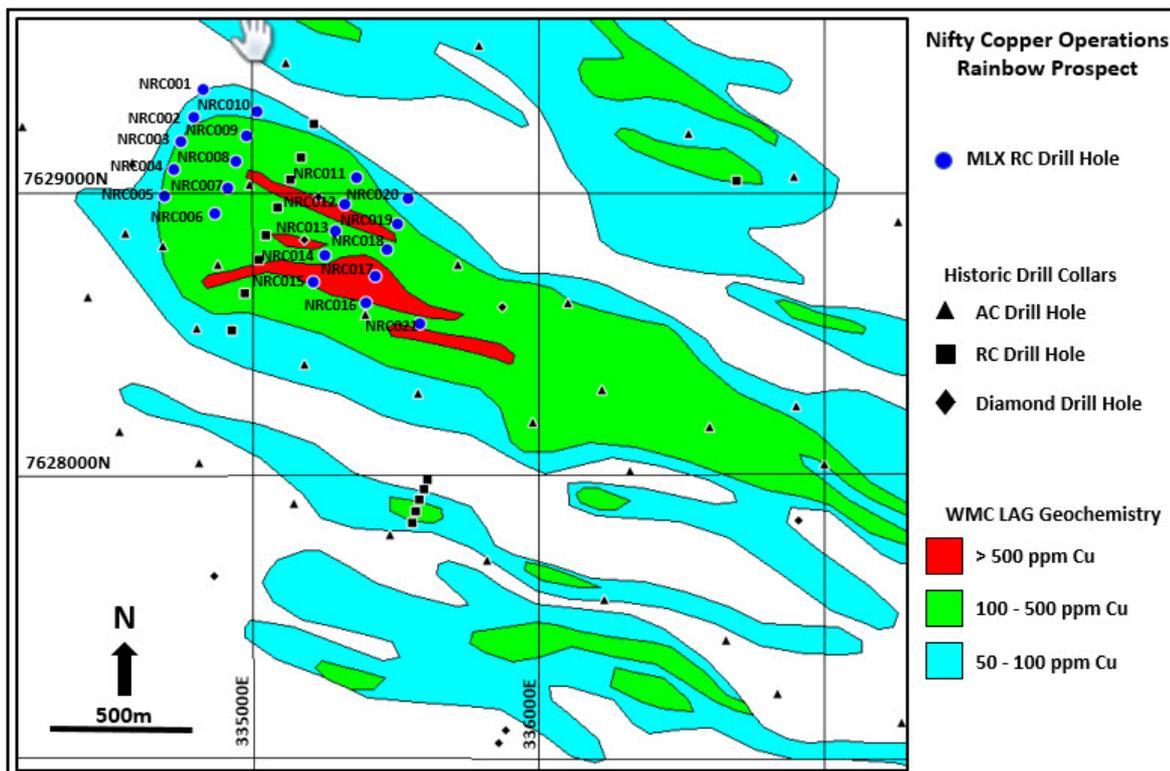


FIGURE 4: RAINBOW PROSPECT SURFACE GEOCHEMISTRY AND DRILL COLLAR LOCATIONS

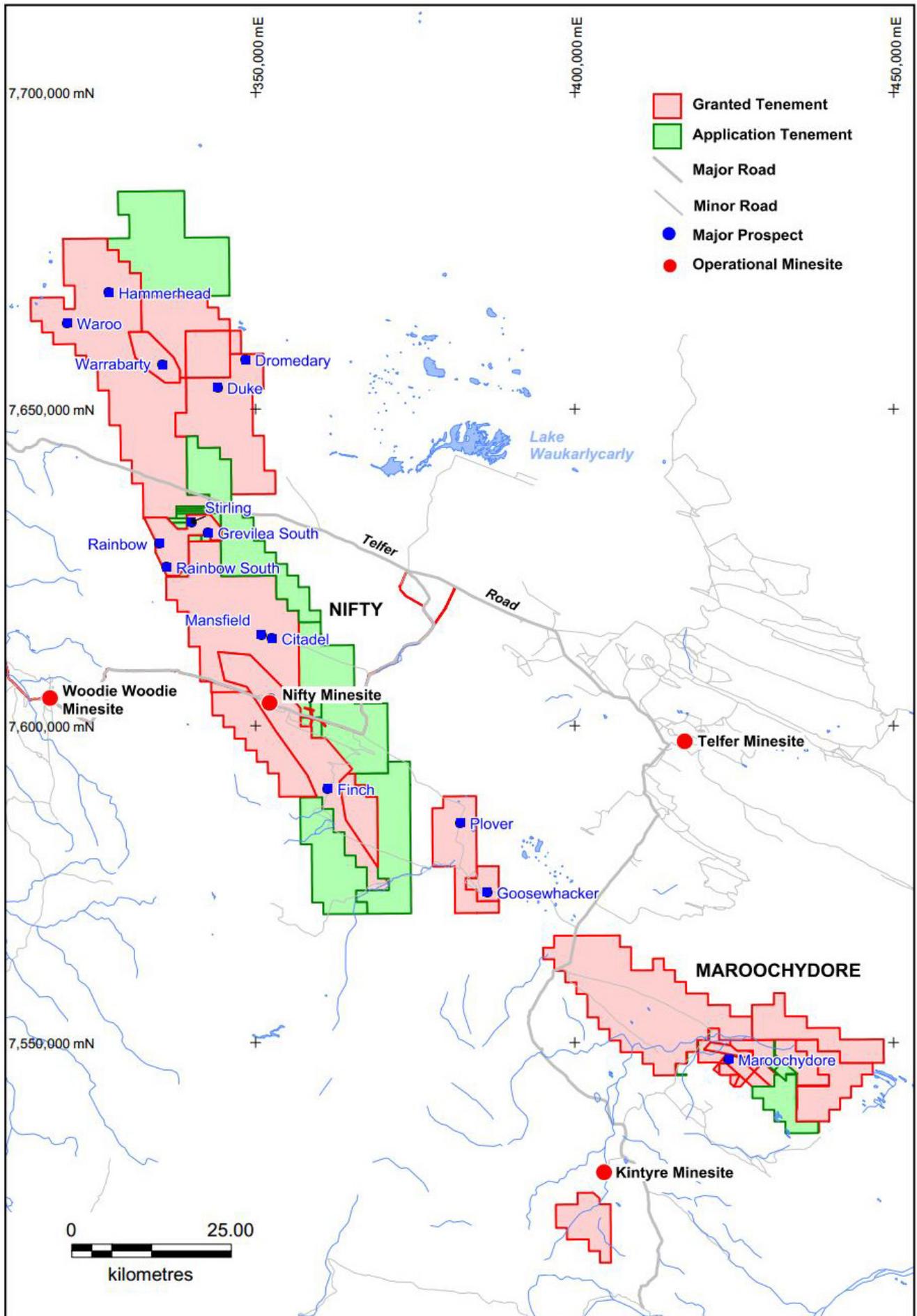


FIGURE 5 : METALS X TENURE IN THE YENEENA BASIN, PATERSON PROVINCE, WESTERN AUSTRALIA, SHOWING NIFTY MINESITE AND SIGNIFICANT PROSPECT LOCATIONS

### **Rainbow South Prospect**

The Rainbow South prospect is located approximately 5 kilometres to the south of Rainbow in a slightly higher stratigraphic position near the base of the Broadhurst Formation. Mineralisation is similar in style to that seen at Rainbow. The completed drill program was targeting the southern limb of a syncline and has returned encouraging results including (see Appendix 1 for full details);

- Hole - NRC022                      3.0m at 1.58%Cu
- Hole - NRC024                      4.0m at 1.57% Cu

Results of the drilling completed to date has extended the known mineralisation to a strike length of 600 metres with mineralisation remaining open to the north and south where higher response lag samples are present. Follow-up exploration programs including additional drilling and possible geophysical surveys are currently being planned.

### **Maroochydore Oxide Project**

The Maroochydore deposit, located approximately 85km SE of Nifty, currently comprises a significant oxide Mineral Resource of 43.5 million tonnes at 0.91% Cu and 391ppm Co, with a small primary sulphide Mineral Resource of 5.43 million tonnes at 1.66% Cu and 292ppm Co based upon the limited drilling to date (refer to ASX announcement dated 18 August 2016).

Following the completion of drilling activities at Maroochydore in 2017, work has focussed on developing additional metallurgical testwork programs. Metallurgical domaining of the orebody has been completed and further testwork is planned for the December quarter.

# TIN DIVISION

## RENISON TIN OPERATIONS (MLX 50%)

Metals X owns a 50% equity interest in the Renison Tin Operations in Tasmania (**Renison**) through its 50% stake in the Bluestone Mines Tasmania Joint Venture (**BMTJV**). All data in this report is 100% of Renison unless stated as 'MLX 50%' share.

### OPERATIONAL STRATEGY

Renison is a world-class, long life underground mining operation, producing tin concentrate, which maintains approximately 8 years of Ore Reserves through extensional exploration to replenish production.

During the quarter Renison commenced the commissioning of a new purpose-built three stage crushing, screening and ore sorting plant (refer to ASX Announcement dated 3 July 2018). The ore sorter will expand production at Renison by an expected 15-20% through the rejection of waste prior to the processing plant.

Further growth of Renison is planned with the Renison Tailings Retreatment Project (**Rentails**) which is intended to increase production of tin by a further 40% through the retreatment of approximately 100,000 tonnes of tin in historic tailings. Rentails has had a DFS completed and is currently in the environmental approvals process.

In addition, Renison has substantial prospectivity on its tenure adjacent to the operating mine. A near-mine exploration strategy has been developed during the quarter and an exploration program commenced during the December 2018 quarter.

With the completion of a new tails dam in the March 2018 quarter and the new crushing and ore sorting plant in the September quarter, the operation is now well setup for the long term future, with increased production capacity and additional flexibility to allow the BMTJV to exploit the large resource base at Renison.

### PRODUCTION, CASHFLOW AND COST

TABLE 2: RENISON TIN OPERATIONS PRODUCTION AND COSTS – SEPTEMBER 2018 QUARTER

<i>All \$ are AUD</i>		September 2018 Quarter	Previous Quarter	Rolling 12-months
<b>Physical Summary</b>				
<b>Mine Production</b>				
Ore tonnes mined	t	216,010	222,378	<b>832,519</b>
Ore grade mined	% Sn	1.17%	0.98%	<b>1.15%</b>
<b>Tin Concentrator</b>				
Tonnes processed	t	187,563	184,449	743,472
Ore grade processed	% Sn	1.24%	1.09%	1.21%
Recovery	% Sn	73.46%	70.41%	73.19%
Tin produced	% Sn	1,616	1,418	6,544
Tin sold	t Sn	1,414	1,631	6,376
Tin price	t Sn	26,428	27,664	26,729
Realised tin price *	\$/t Sn	23,850	25,352	24,414
<b>Cost Summary</b>				
Mining	\$/t Sn	7,597	9,295	7,261
Processing	\$/t Sn	5,672	6,055	5,179
Admin	\$/t Sn	1,182	1,401	1,140
Stockpile adjustments	\$/t Sn	-921	-2,449	-1,165
<b>C1 Cash Cost **</b>	<b>\$/t Sn</b>	<b>13,529</b>	<b>14,302</b>	<b>12,415</b>
Royalties	\$/t Sn	1,406	1,409	<b>1,333</b>
Sustaining capital	\$/t Sn	3,948	3,555	<b>3,392</b>
Reclamation & other adjustments	\$/t Sn	16	100	37
<b>All-in Sustaining Costs (AISC) **</b>	<b>\$/t Sn</b>	<b>18,899</b>	<b>19,366</b>	<b>17,178</b>
Project costs	\$/t Sn	444	3,638	3,744
<b>All-in Costs (AIC) **</b>	<b>\$/t Sn</b>	<b>19,343</b>	<b>23,004</b>	<b>20,922</b>

\* Net of TC/RC charges

*\*\* The table format has changed from the previous quarter to present the commodity price net of treatment and refining charges which were previously included in cost of sales, to comply with Australian Accounting Standards. The amended presentation is consistent with the terms of the underlying concentrate sales agreements where treatment and refining charges are included as part of the pricing formula. The adjustment has no impact on gross profit or net profit.*

Mine production for the quarter at 216,010 tonnes of ore at 1.17% Sn (June quarter 222,378 tonnes at 0.98% Sn). Tonnes processed were 187,563 tonnes at 1.24%. Mining rates have now reached the run rate of approximately 920,000tpa required to maintain steady-state production with the ore sorter.

A key focus for the December 2018 quarter is the development and mining of the Leatherwood areas of the mine where a significant resource of high grade material has been identified (refer to FIGURE 6). Development of the lower levels (1115) of the high grade Gandalf Lode has also commenced with stoping plans being finalised for the upper levels (>1160).

The process plant and underground operations continued to perform as expected. Production for the quarter was 1,616 tonnes of tin (Sn) contained in concentrate at a C1 cost of \$13,529 per tonne of tin compared to the previous quarter of 1,418 tonnes of tin at a C1 cost of \$14,302 per tonne of tin.

The average tin price achieved for the quarter of \$26,428 per tonne was \$1,236 per tonne lower than the previous quarter (\$27,664 / t Sn). EBITDA for the quarter was \$7.2 million (MLX 50% share) compared to the previous quarter of \$6.8 million. Net cash flow was \$3.6 million (MLX 50% share) compared to \$1.7 million for the prior quarter. Despite the lower tin price, the increased net cash flow was expected following the completion of 'D' Dam construction and the practical completion of the ore sorter. Further production and cash flow increase are expected in the December 2018 with the completion of commissioning of the ore sorter.

## **RENISON EXPANSION – ORE SORTER COMMISSIONING**

The strategy with the ore sorter is to increase underground ore production to approximately 920,000 tonnes per annum, while maintaining the processing plant at approximately 720,000 tonnes per annum. The ore sorter will reject an estimated 200,000 tonnes per annum of waste at the crushing stage, upgrading the ore before the processing plant.

During the quarter mining rates achieved the steady-state production rate required to sustain the expanded processing facility, with the ore sorter, and a significant surface stockpile of ore was drawn upon, as planned, during ongoing commissioning of the ore sorter.



PHOTO 1: RENISON ORE SORTER XRT MACHINES

Towards the end of the quarter commissioning of the ore sorter was nearing completion with the percentage and grade of the rejects from the ore sorters approaching design expectations. However, the percentage of material being sent to the ore sorters is lower than design and during the December quarter, having completed commissioning, the focus will be on an optimisation program to maximise recovery and throughput by adjusting the screen sizes and crusher parameters.

## MINERAL RESOURCES AND ORE RESERVES

During the quarter the Company announced its annual update of Renison Mineral Resources and Ore Reserves (refer to ASX Announcement 23 August 2018 and Appendix 2 & 3 in this report):

- 6.25% increase in Mineral Resources at the Renison Bell underground mine after taking into consideration depletion over the last 12 months. Increasing from 203,000 tonnes of contained tin to 215,700 tonnes of contained tin.
  - Total Renison Bell Measured, Indicated and Inferred Resource of 16.437 Mt at 1.31% Sn for 215,700 tonnes of contained tin.
- Replenishment of Renison Bell mining depletion to maintain an 8 year underground Ore Reserve.
  - Total Renison Bell Proved and Probable Reserve of 6.822 Mt at 1.01% Sn for 68,800 tonnes of contained tin.

The larger resource base of approximately 18 years will continue to support the increased production from Renison with the installation of the ore sorter.

## RESOURCE DEFINITION AND DEVELOPMENT

During the quarter further significant underground drilling programs were undertaken at Renison. Three drill rigs were utilized for the first part of the quarter reducing, as planned, to two drill rigs by the end of the quarter. Drilling focus remained on further expanding the resource definition programs in the Area 5, Deep Federal, Leatherwood, Huon North and the Central Federal Bassett ("CFB") lodes.

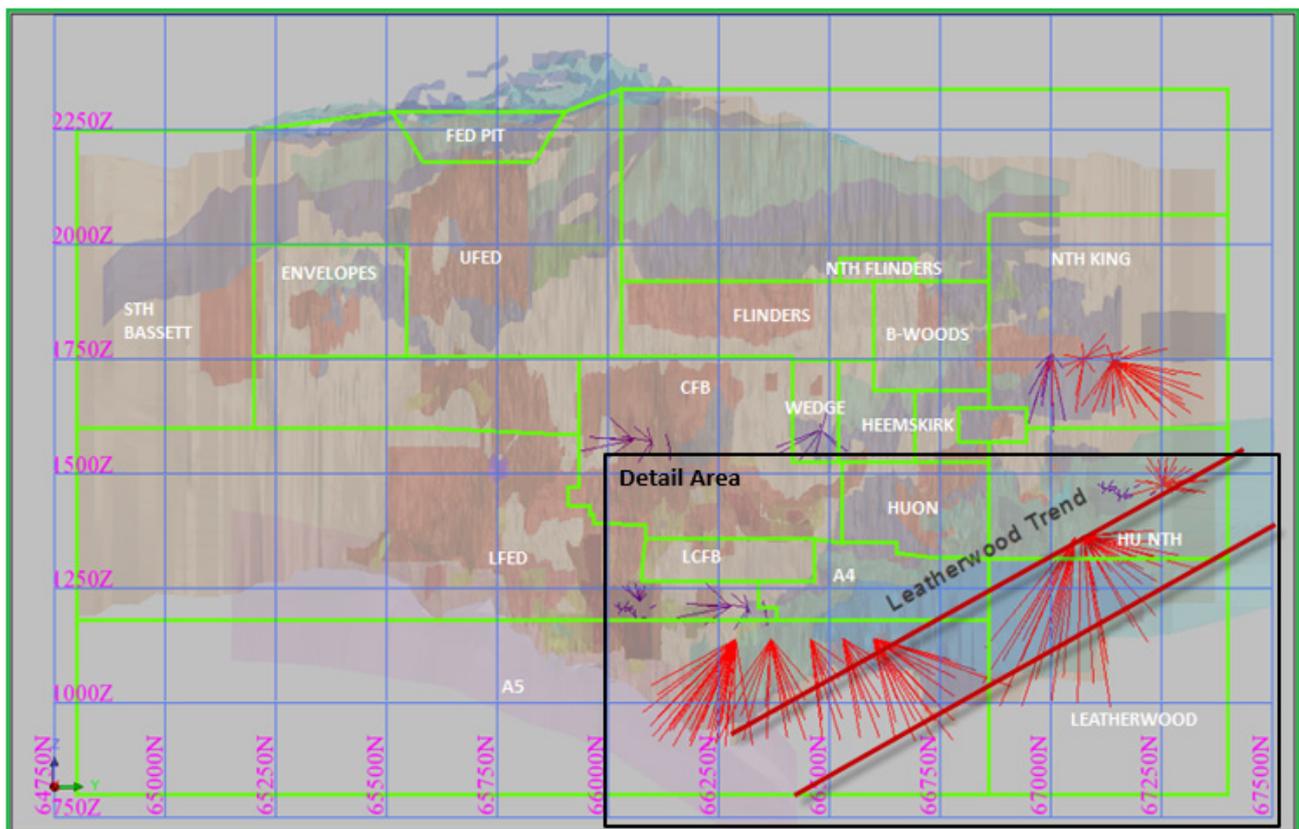


FIGURE 6: LONG SECTION OF RENISON UNDERGROUND GEOLOGY MODEL SHOWING ORE ZONES, FY2019 PLANNED DRILLING AND THE LEATHERWOOD TREND (RED LINES). REFER TO 6 FOR DRILL INTERSECTIONS IN THE 'DETAIL AREA'.

Results from these campaigns are continuing to flow through (full results in Appendix 1) with drilling continuing to demonstrate strong mineralization, in particular in holes targeting the Leatherwood Trend which is an upcoming zone of production. Recent outstanding Leatherwood results include; 3.0m at 10.69%Sn from 268m in U6295 and 3.2m at 5.12%Sn from 247m in U6465. A significant number of additional drill holes were completed during the quarter with geological processing underway and assays outstanding.

Encouraging mineralisation was returned from drill holes targeting the Huon North zone including:

- 4.5m at 2.16% Sn from 85m in U6443;
- 5.1m at 2.91% Sn from 72m in U6429;
- 7.8m at 1.89% Sn from 68m in U6435; and
- 2.5m at 2.61% Sn from 1.4m and 2m at 2.03% Sn from 74m in U6425.

In addition, and of significance, is the continued delineation of the CFB upper zone that targets grade continuity within the planned CFB upper Bulk panel where recent drill results have demonstrated continued strong mineralisation, including:

- 4.1m at 3.75% Sn from 101m in U6389;
- 3.0m at 5.84% Sn from 110m in U6383; and
- 6.0m at 1.29% Sn from 146m in U6396.

Drilling has also been ongoing in the A5 Federal Deeps zone where results demonstrate continued strong mineralisation below the current mining front including:

- 3.6m at 2.60% Sn from 147m, 2.6m at 4.43% Sn from 156m, 6.8m at 2.12% Sn from 182m and 1m at 8.82% Sn from 183m in U6162;
- 11.1m at 1.91% Sn from 236m in U6193;
- 6.7m at 2.64% Sn from 225m in U6173;
- 3.2m at 5.46% Sn from 183m in U6175; and
- 2.2m at 3.65% Sn from 168m in U6156.

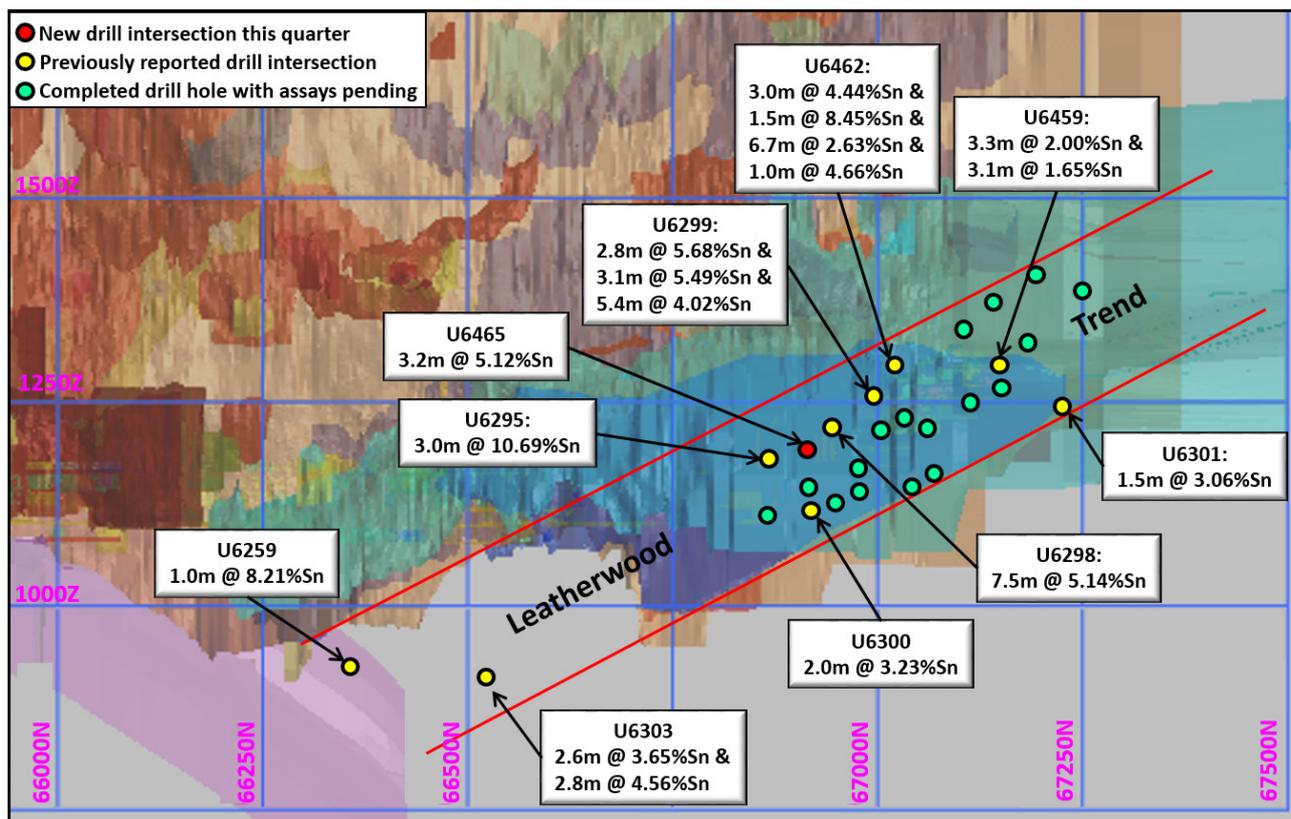


FIGURE 7: LONG SECTION OF RENISON UNDERGROUND GEOLOGY MODEL SHOWING HIGHLIGHTS OF RECENT DRILL INTERSECTIONS IN THE LEATHERWOOD TREND (RED LINES).

## EXPLORATION

In addition to the “in-mine” resource definition programs described above, during the quarter a “near-mine” exploration strategy was developed targeting potential new stand alone and incremental resource exploration targets within the Renison Camp. An exploration budget to commence testing these targets has been approved with activities having commenced during the December 2018 quarter.

## RENISON EXPANSION – RENISON TAILINGS RETREATMENT PROJECT (RENTAILS)

### Background

The objective of the Rentails Project is to re-process the estimated 22.5 million tonnes of tailings at an average grade of 0.44% tin and 0.23% copper from the historical processing of tin ore. The current tailings dams have a Probable Ore Reserve containing approximately 99,000 tonnes of tin and 51,000 tonnes of copper (refer to ASX Announcement dated 28 August 2017).

During the June 2017 quarter, the BMTJV completed an updated feasibility study (“DFS Update”) of Rentails (refer to ASX announcement dated 3 July 2017). The DFS Update confirmed a robust, high margin project.

The project will retreat the historical tailings over an 11 year period at an average rate of 2 million tonnes per annum. The average annual production of the project will be approximately 5,400 tonnes of tin in a high grade tin fume product and 2,200 tonnes of copper in a high grade copper matte. This will provide an expansion of the Renison operation of approximately 40%.

### **Project Update**

During the quarter the key activities were the continuation of the environmental approvals process and metallurgical testwork aimed at optimising the flowsheet.

Preparations for early contractor engagement are well advanced with the timing of engagement on detailed design dependent upon the progress of the environmental approvals process.

Discussions continued with the Tasmanian Government on provision of power and road upgrades.

### **Approvals Update**

The Tasmanian Environment Protection Authority (EPA) has set the Level of Assessment for Rentails at Category 2C. In addition, the project has been awarded Major Project Status under the Commonwealth Department of Industry, Innovation and Science's Major Project Facility Agency. The purpose of the Agency is to assist projects of significance in achieving a timely and efficient approvals process for project development.

A Development Proposal and Environmental Management Plan (DPEMP) is required to be submitted by BMTJV and approved by the EPA, a Development Application (DA) to be approved by the local Council and, under the EPBC Act, approval from the Commonwealth Minister of Environment & Energy. Project Specific Guidelines were provided to the BMTJV, which set the requirements for the DPEMP, in March 2018.

During the quarter, environmental studies and modelling continued with the assistance of an experienced environmental consultancy. Consultation and workshops with the EPA and other government departments are ongoing. Mining studies, with associated geochemical testwork, commenced for the purposes of producing a basis of design for tailings dam deconstruction and reconstruction for the DPEMP.

Environmental studies and the required assessments under the Project Specific Guidelines are expected to be completed such that the DPEMP can be lodged in the first half of 2019.

# NICKEL DIVISION

## WINGELLINA NICKEL-COBALT PROJECT (MLX 100%)

### Background

The Wingellina Nickel-Cobalt Project is part of Metals X's Central Musgrave Project which remains one of the largest undeveloped nickel-cobalt deposits in the world. The Central Musgrave Project has a Mineral Resource containing approximately 2.0 million tonnes of nickel and 154,000 tonnes of cobalt within which Wingellina hosts an Ore Reserve of approximately 1.56 million tonnes of nickel and 123,000 tonnes of cobalt (refer to the 2017 Annual Report).

Metals X has completed a feasibility study ( $\pm 25\%$ ) and signed an agreement with the Traditional Owners which provides consent to undertake mining activities. In November 2016 the Company received its Public Environment Review approval from the EPA.

During 2017, in response to the substantial increase in cobalt price, the Company initiated further studies and infill drilling at Wingellina focussing on 6 of 15 potential high grade cobalt – nickel starter pits within the existing Wingellina Mineral Resource. Although the 15 pits identified total a significant quantity of nickel and cobalt (326,100 tonnes Ni and 25,800 tonnes Co), collectively they contain less than 20% of the total contained nickel and cobalt in the Central Musgrave Project, which demonstrates the world-scale size of the project.

Results from the 2017 infill drill program were incorporated into preliminary optimisations of the high grade cobalt – nickel pits. The results demonstrated potential for a high grade, smaller scale and lower capital start-up option for Wingellina, rather than commencing production at the 4 million tonne per annum option in the initial feasibility study (refer to the March 2018 quarterly report).

Metallurgical testwork was also conducted in 2017/18 for the production of high quality cobalt and nickel sulphates. The testwork was successful in producing both cobalt and nickel sulphate from Wingellina ore.

### Project update

As a development-ready world-class project, with the ability to produce high grade ore for at least the first 10 years of production and the demonstrated ability to produce nickel sulphate and cobalt sulphate, Wingellina provides a number of investment and development options for potential investment partners.

Off the back of these expanded options for the project, Metals X has continued during the quarter to actively re-engage in discussions with potential partners for the development of Wingellina.

During quarter, the Company also continued with heritage and fauna and flora studies to obtain clearance for resource definition drilling on its significant calcrete deposits (a major neutralising reagent in the proposed processing plant) and also to obtain clearance for exploratory water bore drilling on the Mann Fault. Wingellina already has identified and pressure tested two bore fields that will provide sufficient water for the operation. However, the Mann Fault provides a potential closer (within 15 to 20kms) source of water for a smaller scale start-up option.

The Company also continued its discussions during the quarter with government departments and potential infrastructure partners for the establishment of infrastructure corridors to service the project with power, gas and upgraded roads.

### Development strategy

The timing of development of Wingellina will depend upon market conditions (nickel and cobalt demand and price). However, the development strategy for Wingellina remains one of development-readiness and optionality.

The work conducted over the past 18 months has leveraged off the growth in demand for battery metals and the increased cobalt price to create further options for project development; the studies have demonstrated the potential for a smaller scale (lower capital cost) high-grade start-up, as well as expanding the choice of potential final product produced. The increased optionality has afforded a wider field of potential partners to develop the project.

The focus for the December 2018 quarter will be to commence resource definition drilling on the calcrete deposit, drill test water bore targets on the Mann Fault, continuing to work with government and potential partners for infrastructure development and further discussions with potential development partners for the project.

# CORPORATE

## BOARD AND SENIOR MANAGEMENT CHANGES

During the quarter the Company made several changes to the Board of Directors and Executive team to strengthen its mining and geological expertise. In addition, a new General Manager was appointed at Nifty for the purpose of bolstering the ramp-up of Nifty (refer to ASX Announcement 3 September 2018).

The Board changes, effective 3 September 2018, were as follows:

- Appointment of Mr Damien Marantelli as a Non-Executive Director. Mr Marantelli brings substantial mining engineering and operational expertise to the Board.
- Resignation of Mr Stephen Robinson as a Director. Mr Robinson remains an executive of the Company as Executive General Manager (EGM) Projects and Planning.

The Board, bolstered with additional mining expertise, provides a balance of corporate commercial, operational, geological and project delivery skills across diversified commodities.

In order to further strengthen the technical expertise of the Executive team, the Company made the following appointments:

- Mr Simon Rigby as EGM Geology & Business Development. Mr Rigby is a geologist and brings over 25 years of international experience in mineral exploration and business development in numerous managerial roles.
- Mr Campbell Baird as EGM Mining & Technical. Mr Baird is a mining engineer and has been part of the Australian and global mining industry for over 25 years, with extensive operational and corporate experience.

## CASH AND WORKING CAPITAL

During the quarter the Company completed an equity raise of \$50 million by way of an institutional placement which was strongly supported by both existing and new investors, including high-quality domestic and offshore institutions (refer to ASX Announcement on 1 August 2018). Under the terms of the placement the Company issued approximately 76.9 million shares at a price of \$0.65 per share.

Citigroup Global Markets Australia Pty Limited and Macquarie Capital (Australia) Limited acted as Co-Manager to the placement.

Metals X closed the quarter with cash and working capital of \$100.2 million plus investments of \$10.5 million.

## COPPER HEDGING

The Company had 1,500 tonnes of copper hedged in July 2018 (refer to ASX announcement dated 27 July 2017) for the purpose of protecting downside movement in copper price.

During the month of July 2018 the copper price exceeded the ceiling price under the hedge and the Company delivered 1,500 tonnes of copper into the hedge at a loss of \$283,000.

The Company has had no copper hedging in place since 31 July 2018.

## ISSUED CAPITAL

During the quarter the Company issued 76,923,076 fully paid ordinary shares under the institutional placement of \$50 million completed on 6 August 2018 (refer to Appendix 3B lodged on 1 August 2018).

During the quarter 950,000 unlisted employee options lapsed.

The Company has the following equities on issue (refer to Appendix 3B, lodged 13 August 2018):

- |   |             |
|---|-------------|
| • Fully Paid Ordinary Shares:                           | 689,060,508 |
| • Unlisted Employee Options (\$0.76, expiry 20/01/2020) | 5,350,000   |
| • Unlisted Employee Options (\$1.32, expiry 30/11/2020) | 7,050,000   |

## MAJOR SHAREHOLDERS

The current major shareholders of the Company are:

- |                                   |        |
|-----------------------------------|--------|
| • APAC Resources (HKEX:1104)      | 9.18 % |
| • Jinchuan Group                  | 7.22 % |
| • Blackrock Group                 | 7.11 % |
| • IOOF                            | 6.04 % |
| • Industry Super Holdings Pty Ltd | 5.01 % |

# COMPLIANCE STATEMENTS

The information in this presentation that relates to Exploration Results for the Nifty Copper Operations has been compiled by Metals X Limited technical employees under the supervision of Mr Kim Kremer BSc., who is a member of the Australasian Institute of Geoscientists. Mr Kremer is a full-time employee of the Company and has sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activities which he is undertaking 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 Kremer consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Exploration Results for the Renison Tin Operations has been compiled by BMTJV technical employees under the supervision of Mr Colin Carter B.Sc. (Hons), M.Sc. (Econ. Geol), MAusIMM. Mr Carter is a full-time employee of BMTJV and has sufficient experience which is relevant to the style of mineralisation and types of deposit under consideration and to the activities which he is undertaking 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 Carter consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

The information in this report that relates to Exploration Results for the Wingellina Nickel-Cobalt Project is compiled by Metals X technical employees and contractors under the supervision of Mr. Simon Rigby B.Sc. (Hons), who is a member of the Australian Institute of Geoscientists. Mr Rigby is a full time employee of the company, and has sufficient experience which is relevant to the styles of mineralisation and types of deposit under consideration and to the activities which he is undertaking 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 Rigby consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

# APPENDIX 1 – SIGNIFICANT EXPLORATION RESULTS

## COPPER DIVISION

Significant exploration results for the Nifty Copper Operations for the quarter are shown below.

TABLE 3: SIGNIFICANT UG DRILLING RESULTS FOR NIFTY COPPER OPERATIONS – SEPTEMBER 2018 QUARTER

Lode	Hole	Intercept N	Intercept E	Intercept RL	Intercept (True Width)	From (m)	Dip	Azi
Haynes Fault Identification	NUG0291	7604165	352367	41	7m at 1.94% Cu	1.0	35.2	17.5
					13.8m at 2.16% Cu	32.0		
					3.4m at 2.18% Cu	92.0		
Region 7 LCU and MCU	NUG0334	7604642	351939	151	6.3m at 1.13% Cu	261.0	-5	163
					2.45m at 1.55% Cu	302.0		
					4.1m at 1.87% Cu	340.0		
Region 7 LCU and MCU	NUG0336	7604643	351937	149	2.65m at 1.76% Cu	225.0	-5	199
LCU/BAC (Haldi Fault)	NUG0353	7604247	352269	6	No Significant Intercept		-7	270
FWS/LCU Haynes Fault Splay	NUG0359	7604249	352274	6	No Significant Intercept		0	47
MCU/ISHL contact	NUG0361	7604141	352413	7	4.90m at 2.81% Cu*	3.5	6	137
GC 195-198 Panel	NUG0378	7604138	352243	-13	19.1m at 1.67% Cu	2.0	17	205
Region 3 LCU and MCU	NUG0384	7603662	352594	-88	2.3m at 1.36% Cu	159.0	-2	273
					7.8m at 2.13% Cu	175.0		
Region 3 East	NUG0387	7603659	352593	-90	2.2m at 1.11% Cu	172.0	-12	226
Region 3 East	NUG0392	7603661	352593	-90	2.7m at 1.62% Cu	94.2	-26	337
Region 3 LCU and MCU	NUG0393	7603662	352593	-90	No Significant Intercept		-27	226
Region 4 (23-25L)	NUG0397	7603653	352607	-90	17.1m at 2.3% Cu	48.0	-72	61
					2.9m at 17.33% Cu	78.6		
Region 5 MCU	NUG0400	7603873	352902	72	4.1m at 1.36% Cu	23.0	-6	212
Region 6 MCU	NUG0410	7603574	352704	-89	4.40m at 1.17% Cu*	182.4	-19	25
					10.00m at 2.47% Cu*	191.0		
Region 6 - MCU	NUG0411	7603561	352733		13.90m at 1.25% Cu*	116.1	-26	37
					6.00m at 1.22% Cu*	145.0		
Region 9 - East	NUG0415	7603559	352733	-88	No Significant Intercept		-50	120.7
Region 6 MCU	NUG0417	7603588	352678	-90	2.30m at 1.64% Cu*	101.1	-20	25
					11.00m at 1.83% Cu*	107.0		
					8.65m at 1.42% Cu*	139.4		
					23.00m at 2.08% Cu*	156.0		
Region 6 LCU	NUG0418	7603588	352678	-90	3.00m at 5.63% Cu*	139.9	-32	29
					6.00m at 3.75% Cu*	157.0		
Region 4 MCU	NUG0419A	7603588	352678	-90	2.8m at 3.64% Cu	92.0	-66	25
					2.3m at 2.44% Cu	112.5		
Region 6 MCU	NUG0420	7603574	352705	-90	7.8m at 2.35% Cu	200.7	-9.65	25
Region 6 MCU	NUG0428	7603749	352805	-141	5.55m at 2.4% Cu*	8.6	-14	177
					4m at 1.64% Cu*	64.0		
					23m at 2.45% Cu*	82.0		
					20.1m at 1.61% Cu*	108.0		
Region 6 MCU	NUG0430	7603750	352807	-141	33.7m at 2.34% Cu*	40.3	-22	152

Lode	Hole	Intercept N	Intercept E	Intercept RL	Intercept (True Width)	From (m)	Dip	Azi
Region 6 MCU	NUG0431	7603750	352807	-141	10.6m at 1.85% Cu*	9.3	-13	169
					5.8m at 1.57% Cu*	22.6		
					21m at 1.34% Cu*	82.0		
Region 6 MCU	NUG0432	7603767	352765	-140	11.9m at 2.15% Cu*	17.3	0	190
					8.85m at 2.21% Cu*	56.0		
					13.4m at 1.89% Cu*	82.5		
					8.05m at 1.67% Cu*	106.2		
Region 6 MCU	NUG0433	7603773	352746	-140	35.6m at 2.11% Cu*	18.4	0	190
					18.4m at 1.78% Cu*	69.0		
Region 6 MCU	NUG0434	7603758	352785	-141	14.5m at 1.85% Cu*	19.0	-10	190
Region 4 LCU	NUG0434	7603758	352785	-141	8.5m at 2.24% Cu	117.0	-10	190
					9.5m at 1.77% Cu*	140.0		
Region 6 MCU	NUG0435	7603767	352765	-141	8m at 2.18% Cu*	22.0	-10	193
					44.9m at 2.3% Cu*	34.0		
					5.6m at 1.31% Cu*	118.4		
					12.15m at 5% Cu*	141.9		
Region 9 MCU	NUG0437	7603622	352615	-140	4.5m at 3.97% Cu	31.0	-70	293
					2.2m at 3.42% Cu	40.4		
Region 9 MCU	NUG0438	7603622	352615	-139	3.1m at 2.16% Cu	31.0	-44	285
					4.95m at 1.82% Cu	44.7		
Region 9 MCU	NUG0440	7603620	352620	-140	2.9m at 2.23% Cu	22.0	-76	85
					12.4m at 2.21% Cu	33.0		
Region 9 MCU	NUG0460	7603669	352644	59	2.7m at 2.19% Cu	5.9	2.5	130
					8.1m at 1.66% Cu	35.0		

Notes to table:

- Widths are true unless notated with \*\*
- Coordinates are intersection.
- Significant = >5% Cu.

TABLE 4 – SIGNIFICANT SURFACE EXPLORATION DRILLING RESULTS FOR NIFTY OPERATIONS - SEPTEMBER 2018 QUARTER

Prospect	Hole ID	MGA North	MGA East	Azi	Dip	EOH Depth	Depth From	Significant Intersections >0.3% Cu (ICP)
Rainbow	NRC001	7629369	334817	0	-90	120	60	1m at 0.97%
							79	1m at 0.53%
Rainbow	NRC002	7629274	334783	0	-90	120	96	2m at 1.34%
							117	2m at 1.12%
Rainbow	NRC003	7629186	334747	0	-90	120	69	1m at 1.6%
Rainbow	NRC004	7629087	334712	0	-90	126	89	1m at 1.1%
Rainbow	NRC005	7628995	334678	0	-90	150	130	2m at 0.5%
							138	4m at 0.35%
Rainbow	NRC006	7628927	334860	0	-90	160	47	1m at 0.32%
							54	2m at 2.03%
							68	1m at 2.05%
							80	2m at 0.43%
							86	4m at 1.61%
							100	1m at 0.41%

Prospect	Hole ID	MGA North	MGA East	Azi	Dip	EOH Depth	Depth From	Significant Intersections > 0.3% Cu (ICP)
Rainbow	NRC007	7629018	334902	0	-90	126	39	1m at 0.39%
							50	1m at 2.05%
							64	10m at 0.86%
							80	1m at 1.15%
							85	1m at 0.39%
							89	1m at 1.63%
							95	2m at 2.07%
Rainbow	NRC008	7629112	334937	0	-90	102	37	1m at 0.46%
							64	1m at 1.22%
							78	3m at 1.88%
							82	1m at 0.46%
							87	1m at 1.04%
							92	1m at 0.61%
Rainbow	NRC009	7629205	334972	0	-90	126	20	3m at 0.41%
							32	1m at 0.91%
							50	1m at 0.50%
							53	1m at 0.32%
							69	1m at 0.81%
							79	2m at 1.59%
Rainbow	NRC010	7629299	335007	0	-90	132	70	1m at 0.71%
							77	1m at 0.77%
							89	1m at 2.52%
Rainbow	NRC011	7628690	335207	0	-90	144	35	4m at 0.40%
							72	1m at 3.15%
							95	4m at 1.84%
							134	1m at 2.68%
Rainbow	NRC012	7628784	335240	0	-90	132	27	1m at 1.5%
							32	1m at 1.26%
							34	1m at 0.44%
							63	2m at 3.04%
							75	2m at 2.58%
Rainbow	NRC013	7628870	335272	0	-90	126	19	1m at 0.37%
							22	1m at 0.40%
							27	1m at 2.23%
							64	1m at 0.69%
							76	1m at 1.85%
Rainbow	NRC014	7628965	335311	0	-90	126	16	1m at 0.31%
							44	1m at 0.42%
							50	1m at 1.51%
							54	1m at 0.61%
							75	1m at 3.01%
							86	1m at 1.13
							95	1m at 2.79%
111	1m at 0.79%							

Prospect	Hole ID	MGA North	MGA East	Azi	Dip	EOH Depth	Depth From	Significant Intersections >0.3% Cu (ICP)
Rainbow	NRC015	7629059	335345	0	-90	108	29	5m at 0.72%
							31	3m at 0.78%
							59	3m at 0.31%
							70	1m at 0.65%
							74	1m at 0.39%
							76	1m at 1.28%
							95	1m at 0.6%
Rainbow	NRC016	7628613	335389	0	-90	150	9	3m at 0.41%
							21	1m at 0.43%
							25	2m at 1.83%
							36	1m at 0.75%
							44	1m at 1.12%
							102	1m at 3.03%
Rainbow	NRC017	7628710	335425	0	-90	132	9	1m at 0.88%
							22	2m at 1.34%
							32	1m at 2.48%
							41	1m at 0.73%
							48	1m at 0.98%
							80	1m at 0.38%
Rainbow	NRC018	7628809	335460	0	-90	126	13	3m at 0.37%
							32	2m at 0.59%
							44	1m at 1.25%
							53	1m at 2.62%
Rainbow	NRC019	7628910	335427	0	-90	120	5	1m at 0.31%
							37	1m at 0.33%
							43	1m at 0.32%
							55	1m at 1.06%
							67	2m at 1.42%
Rainbow	NRC020	7628993	335533	0	-90	132	34	1m at 0.52%
							64	1m at 0.70%
							69	1m at 0.72%
							79	3m at 0.46%
							89	1m at 0.36%
							91	2m at 1.66%
							100	1m at 2.05%
							109	1m at 1.32%
							116	1m at 0.57%
Rainbow	NRC021	7628550	335580	0	-90	108	4	1m at 0.43%
							13	1m at 0.41%
							24	2m at 0.31%
							35	1m at 1.10
							45	1m at 1.18%
							55	1m at 0.74%

Prospect	Hole ID	MGA North	MGA East	Azi	Dip	EOH Depth	Depth From	Significant Intersections > 0.3% Cu (ICP)
Rainbow South	NRC022	7624466	336466	230	-60	90	29	4m at 0.61%
							42	3m at 2.38%
							61	1m at 1.43%
Rainbow South	NRC023	7624494	336513	230	-60	132	59	1m at 0.37%
							64	3m at 1.74%
							75	2m at 1.24%
							98	1m at 0.82%
Rainbow South	NRC024	7624528	336551	230	-60	144	86	1m at 0.96%
							89	1m at 1.12%
							94	4m at 1.57%
							104	2m at 1.03%
							127	1m at 0.62%
							130	1m at 0.68%
Rainbow South	NRC025	7624295	336586	230	-60	90	18	2m at 0.42%
							32	1m at 0.44%
							54	2m at 0.50%
Rainbow South	NRC026	7624331	336628	230	-60	108	59	2m at 0.45%
							73	2m at 1.23%
							96	1m at 0.63%
Rainbow South	NRC027	7624365	336661	230	-60	132	89	3m at 0.63%
							103	1m at 2.88%

## TIN DIVISION

Significant exploration results for the Renison Tin Operations for the quarter are shown below.

TABLE 5: SIGNIFICANT UNDERGROUND DRILLING RESULTS FOR RENISON TIN OPERATIONS – SEPTEMBER 2018 QUARTER

Lode	Hole	Intercept N	Intercept E	RL	Intercept (True Width)	From (m)	Dip	Azi (mine grid)
6401	U6295	67055	44677	1362	3m @ 10.69% Sn & 0.81% Cu	268	-44.28	211.4
HN	U6014	67009	44481	1350	1.7m @ 2.3% Sn & 0.18% Cu	102.5	-5.77	285.1
LW	U6296	66894	44594	1156	1m @ 3.5% Sn & 0.19% Cu	273.59	-47.79	203.6
LW	U6296	66878	44585	1134	0.8m @ 2.45% Sn & 0.13% Cu	302.27	-47.79	203.6
A5	U6492	66072	44583	1225	2.5m @ 1.42% Sn & 2.62% Cu	11.31	17.48	89.1
A5	U6492	66071	44647	1244	2m @ 3.11% Sn & 3.29% Cu	78.34	17.48	89.1
A5	U6539	66059	44618	1163	0.5m @ 9.77% Sn & 0.01% Cu	24.61	-40.46	314.7
A5	U6541	66109	44705	1211	5.5m @ 1.19% Sn & 0.06% Cu	10	24.7	11.9
CFB	U6361	66105	44406	1636	1.6m @ 1.07% Sn & 3.97% Cu	12.19	-8.29	118.2
CFB	U6361	66069	44469	1625	1m @ 1.31% Sn & 0.08% Cu	86	-8.29	118.2
A5	U6145	66800	44586	1182	0.8m @ 8.77% Sn & 0.35% Cu	288.8	8.73	318.1
A5	U6145	66818	44570	1185	1.5m @ 2.19% Sn & 0.02% Cu	313	8.73	318.1
A5	U6493	66073	44582	1224	2.5m @ 2.18% Sn & 1.53% Cu	12	16.56	83.7
HN	U6443	67236	44421	1464	4.5m @ 2.16% Sn & 0.3% Cu	84.76	-7.63	101.1
CFB	U6380	66257	44408	1573	3.8m @ 1.43% Sn & 1.02% Cu	25.04	21.8	74.0
CFB	U6380	66272	44463	1595	3.5m @ 1.52% Sn & 0.26% Cu	88	21.8	74.0
A5	U6491	66070	44579	1225	1.2m @ 3.82% Sn & 4.71% Cu	9.69	26.587	96.9
A5	U6491	66063	44634	1252	2m @ 1.48% Sn & 0.67% Cu	71.76	26.587	96.9
HN	U6550	67356	44394	1482	0.8m @ 1.37% Sn & 0.19% Cu	115	3.2675	30.3
HN	U6550	67358	44396	1482	1.1m @ 1.71% Sn & 0.27% Cu	119	3.2675	30.3
A5	U6148	66689	44666	1146	0m @ 1.23% Sn & 0.01% Cu	150	1.3	310.0
A5	U6148	66731	44622	1148	0m @ 1.34% Sn & 0.02% Cu	212	1.3	310.0
CFB	U6389	66235	44403	1562	1.4m @ 1.56% Sn & 0.3% Cu	20.79	0.401	128.3
CFB	U6389	66186	44466	1562	4.1m @ 3.75% Sn & 0.22% Cu	101	0.401	128.3
CFB	U6389	66178	44475	1561	1.4m @ 2.21% Sn & 0.08% Cu	113.42	0.401	128.3
lfed	U6490	66071	44583	1224	0.9m @ 2.49% Sn & 2% Cu	11.86	12.572	94.1
lfed	U6490	66067	44652	1236	0.5m @ 3.33% Sn & 0.17% Cu	81.12	12.572	94.1
HN	U6429	67242	44394	1505	3m @ 1.82% Sn & 0.19% Cu	60.87	26.273	101.1
HN	U6448	67223	44382	1523	0.8m @ 2.03% Sn & 0.09% Cu	69	42.29	122.3

Code	Hole	Intercept N	Intercept E	RL	Intercept (True Width)	From (m)	Dip	Azi (mine grid)
A5	U6162	66472	44664	1102	1.3m @ 1.59% Sn & 0.12% Cu	66	-23.17	279.2
A5	U6162	66481	44617	1080	3.6m @ 2.6% Sn & 0.17% Cu	147	-23.17	279.2
A5	U6162	66483	44609	1076	2.6m @ 4.43% Sn & 0.18% Cu	155.94	-23.17	279.2
A5	U6162	66484	44603	1073	6.8m @ 2.12% Sn & 0.04% Cu	162.58	-23.17	279.2
A5	U6162	66488	44586	1065	1m @ 8.82% Sn & 0.14% Cu	181.5	-23.17	279.2
UFED	U6277	65767	44390	1792	0.8m @ 5.16% Sn & 0.15% Cu	53	-23.6	117.0
UFED	U6277	65740	44439	1768	1.9m @ 1.21% Sn & 0.4% Cu	111	-23.6	117.0
UFED	U6277	65738	44444	1765	1.9m @ 1.07% Sn & 1.47% Cu	120	-23.6	117.0
HN	U6571	67045	44407	1493	3.5m @ 1.71% Sn & 0.08% Cu	0.2	-0.11	269.9
A5	U6175	66295	44606	1067	1.4m @ 2.02% Sn & 0.1% Cu	178.18	-23.27	242.8
A5	U6175	66293	44602	1065	3.2m @ 5.46% Sn & 0.05% Cu	182.92	-23.27	242.8
HN	U6576	67015	44403	1493	2.5m @ 1.88% Sn & 0.1% Cu	4	-0.26	270.2
HN	U6565	67075	44410	1492	6.1m @ 1.37% Sn & 0.14% Cu	0.2	-0.64	89.4
HN	U6578	67000	44415	1493	1m @ 1.36% Sn & 0.09% Cu	2	0.58	90.3
HN	U6562	67090	44410	1495	1.8m @ 1.77% Sn & 0.22% Cu	0	0	0.0
HN	U6585	66957	44411	1494	1.6m @ 1.24% Sn & 0.12% Cu	0.2	0	0.0
A5	U6490	66071	44582	1223	1m @ 2.49% Sn & 2% Cu	11.86	13.48	92.6
A5	U6490	66066	44645	1237	1.3m @ 1.04% Sn & 0.52% Cu	77	13.48	92.6
HN	U6436	67227	44406	1481	5.1m @ 2.91% Sn & 0.66% Cu	72.06	4.65	109.2
HN	U6563	67090	44411	1492	2.5m @ 2.87% Sn & 0.23% Cu	1	0.78	90.9
HN	U6601	67270	44399	1492	1.5m @ 1.75% Sn & 0.16% Cu	0	0.82	89.4
HN	U6600	67254	44404	1499	1.2m @ 1.59% Sn & 0.49% Cu	4.64	55.51	90.2
HN	U6587	67180	44413	1490	3.3m @ 7.46% Sn & 0.8% Cu	7	-0.865	91.0
HN	U6599	67255	44403	1492	4.8m @ 2.05% Sn & 0.29% Cu	0.1	0.05	90.4
HN	U6599	67254	44413	1492	6.4m @ 2.07% Sn & 0.24% Cu	8	0.05	90.4
HN	U6599	67254	44418	1492	3.6m @ 2.18% Sn & 0.19% Cu	16.05	0.05	90.4
HN	U6606	67300	44397	1496	0.5m @ 3.61% Sn & 0.19% Cu	0.1	-0.075	91.3
CFB	U6369	66403	44446	1555	0.4m @ 4.18% Sn & 0.04% Cu	106.8	-11.38	63.4
CFB	U6369	66407	44453	1553	1.2m @ 1.47% Sn & 0.54% Cu	115	-11.38	63.4
LFed	U6494	66074	44586	1223	1.1m @ 3.14% Sn & 2.02% Cu	14.73	7.443	83.4
LFed	U6494	66084	44677	1235	2.8m @ 4.03% Sn & 1.48% Cu	106	7.443	83.4

Lode	Hole	Intercept N	Intercept E	RL	Intercept (True Width)	From (m)	Dip	Azi (mine grid)
CFB	U6383	66243	44403	1571	2.6m @ 2.41% Sn & 1.83% Cu	18.8	21.628	108.4
CFB	U6383	66226	44454	1593	1.1m @ 1.87% Sn & 0.18% Cu	76.82	21.628	108.4
CFB	U6383	66216	44484	1605	2.9m @ 5.84% Sn & 0.27% Cu	110	21.628	108.4
HN	U6552	67376	44384	1498	1.3m @ 1.89% Sn & 0.66% Cu	129.22	10.056	21.5
CFB	U6378	66265	44405	1585	0.9m @ 1.57% Sn & 0.5% Cu	88	41.078	57.3
CFB	U6378	66295	44451	1634	1.4m @ 2.74% Sn & 0.32% Cu	103.47	41.078	57.3
CFB	U6382	66247	44403	1575	0.9m @ 2.37% Sn & 1.91% Cu	19.34	30.24	100.1
A5	U6193	66262	44697	1111	1.2m @ 2.75% Sn & 0.02% Cu	109.79	-16.46	256.1
A5	U6193	66233	44574	1073	11.1m @ 1.91% Sn & 0.1% Cu	235.76	-16.46	256.1
A5	U6259	66359	44697	921	0.8m @ 8.21% Sn & 0.35% Cu	222.62	-75.66	260.5
A5	U6156	66208	44654	1104	2.2m @ 3.65% Sn & 0.05% Cu	168.17	-13.3	242.0
A5	U6156	66186	44610	1092	0.8m @ 2.25% Sn & 0.05% Cu	220.09	-13.3	242.0
A5	U6156	66178	44595	1087	0.2m @ 25.86% Sn & 0.05% Cu	238.75	-13.3	242.0
Mid FED	U6279	65789	44443	1769	1.4m @ 1.89% Sn & 1.54% Cu	104.9	-24.57	90.1
HN	U6431	67312	44402	1482	0.6m @ 2.25% Sn & 0.14% Cu	86.1	4.778	48.4
HN	U6437	67211	44407	1486	3.3m @ 1.42% Sn & 0.2% Cu	77	7.485	120.5
HN	U6444	67203	44434	1452	2.7m @ 1.37% Sn & 0.18% Cu	106	-12.03	117.2
UFED	U6117	65913	44389	1845	0.7m @ 4.85% Sn & 0.27% Cu	76.31	13.052	151.3
A5	U6143	66482	44693	1123	0.3m @ 10.09% Sn & 0.24% Cu	63.43	-16.91	294.5
A5	U6143	66517	44615	1097	1.3m @ 2.29% Sn & 0.07% Cu	151.69	-16.91	294.5
A5	U6143	66519	44612	1096	1.3m @ 1.52% Sn & 0.03% Cu	156.72	-16.91	294.5
A5	U6143	66535	44577	1084	1.6m @ 5.32% Sn & 0.13% Cu	196.27	-16.91	294.5
HN	U6553	67379	44396	1479	2.6m @ 1.01% Sn & 0.3% Cu	135	1.246	28.2
HN	U6553	67390	44402	1480	0.9m @ 2.83% Sn & 0.15% Cu	148	1.246	28.2
HN	U6553	67394	44404	1480	0.9m @ 2.93% Sn & 0.17% Cu	152	1.246	28.2
HN	U6432	67301	44404	1481	1.3m @ 3.91% Sn & 0.39% Cu	81.11	4.2	53.0
HN	U6551	67355	44383	1500	1.8m @ 1.96% Sn & 0.19% Cu	110.63	12.5	25.3
A5	U6631	66160	44581	1182	0.7m @ 2.31% Sn & 0.68% Cu	28	40	95.0
A5	U6631	66160	44586	1187	5.7m @ 1.92% Sn & 0.22% Cu	33.25	40	95.0
A5	U6632	66161	44597	1172	0.6m @ 5.34% Sn & 0.23% Cu	39	15	90.0

Lode	Hole	Intercept N	Intercept E	RL	Intercept (True Width)	From (m)	Dip	Azi (mine grid)
HN	U6433	67261	44352	1477	1m @ 1.68% Sn & 0.02% Cu	15	5.8	61.1
A5	U6624	66055	44629	1221	3.6m @ 1.91% Sn & 0.18% Cu	0	-18.4	330.0
HN	U6434	67256	44352	1476	0.8m @ 1.54% Sn & 0.01% Cu	14	5.6	76.9
HN	U6434	67268	44408	1482	3m @ 3.45% Sn & 0.18% Cu	69.23	5.6	76.9
HN	U6426	67290	44388	1503	2.8m @ 6.57% Sn & 0.51% Cu	66.81	23.7	53.1
HN	U6445	67277	44380	1523	0.9m @ 1.89% Sn & 0.35% Cu	65.95	43.5	60.0
A5	U6173	66272	44705	1104	0.4m @ 4.59% Sn & 0.05% Cu	102.45	-21.62	260.2
A5	U6173	66261	44641	1078	0.5m @ 3.63% Sn & 0.11% Cu	173.14	-21.62	260.2
A5	U6173	66253	44593	1059	6.7m @ 2.64% Sn & 0.2% Cu	224.92	-21.62	260.2
CFB	U6401	66138	44391	1566	0.5m @ 3.67% Sn & 1.48% Cu	2	10.765	93.5
CFB	U6402	66138	44392	1564	0.9m @ 3.44% Sn & 0.26% Cu	2	-1.077	93.3
CFB	U6402	66136	44448	1563	1.3m @ 1.16% Sn & 0.24% Cu	61	-1.077	93.3
CFB	U6402	66134	44482	1563	1.2m @ 2.19% Sn & 0.13% Cu	93.75	-1.077	93.3
CFB	U6402	66133	44490	1562	3.5m @ 1.21% Sn & 0.64% Cu	100.07	-1.077	93.3
CFB	U6402	66133	44495	1562	2.3m @ 3.13% Sn & 1.29% Cu	105	-1.077	93.3
LWD	U6465	66940	44566	1166	3.2m @ 5.12% Sn & 0.34% Cu	246.6	-51.34	222.5
CFB	U6341	65942	44448	1710	2.5m @ 1.06% Sn & 0.21% Cu	49.1	26.981	86.5
CFB	U6341	65942	44452	1712	0.6m @ 3.17% Sn & 0.77% Cu	53.27	26.981	86.5
HN	U6435	67247	44408	1480	7.8m @ 1.89% Sn & 0.35% Cu	67.94	4.237	93.4
HN	U6439	67284	44388	1467	1.2m @ 5.89% Sn & 0.02% Cu	58.7	-6.508	59.2
A5	U6633	66228	44581	1171	0.8m @ 2.28% Sn & 0.02% Cu	28	17.511	101.6
HN	U6425	67255	44340	1477	2.5m @ 2.61% Sn & 0.17% Cu	1.4	20.6	46.7
HN	U6425	67301	44390	1502	2m @ 2.03% Sn & 0.45% Cu	73.85	20.6	46.7
CFB	U6709	66301	44481	1499	5.5m @ 3.74% Sn & 0.21% Cu	1	-73.4	270.0
CFB	U6710	66305	44480	1505	0.9m @ 6.34% Sn & 0.26% Cu	0	3.7	271.4
CFB	U6707	66290	44484	1507	2.8m @ 2.34% Sn & 0.7% Cu	0	25.3	271.2
CFB	U6704	66254	44478	1472	2.1m @ 3.65% Sn & 0.82% Cu	29.87	-77.6	261.1
CFB	U6711	66305	44479	1508	0.7m @ 6.14% Sn & 0.31% Cu	1	40.2	271.0
CFB	U6711	66305	44477	1510	0.8m @ 1.69% Sn & 0.19% Cu	5	40.2	271.0
CFB	U6711	66305	44468	1517	4.8m @ 0.83% Sn & 0.19% Cu	13.49	40.2	271.0
CFB	U6711	66306	44462	1523	2.8m @ 1% Sn & 0.14% Cu	23	40.2	271.0

Lode	Hole	Intercept N	Intercept E	RL	Intercept (True Width)	From (m)	Dip	Azi (mine grid)
CFB	U6712	66315	44475	1511	2.8m @ 1.67% Sn & 0.16% Cu	5	41.3	269.0
A5	U6478	66941	44685	1062	2.1m @ 1.15% Sn & 0.03% Cu	319	-65	173.0
CFB	U6705	66271	44487	1497	2.3m @ 2.16% Sn & 0.44% Cu	3.5	-66	268.0
CFB	U6706	66290	44480	1502	11.5m @ 1.28% Sn & 0.34% Cu	0	-17.2	270.0
CFB	U6396	66015	44484	1573	1.8m @ 2.64% Sn & 0.43% Cu	126.52	0	109.0
CFB	U6396	6607	44505	1572	6m @ 1.29% Sn & 0.3% Cu	146	0	109.0
CFB	U6708	66296	44488	1479	2.5m @ 2.63% Sn & 0.71% Cu	18	-88	0.0

Notes to table:

- Widths are true
- Coordinates are intersection.
- Grid is Renison Mine Grid.
- Significant = >4% Sn.

# APPENDIX 2 – MINERAL RESOURCE ESTIMATES

## COPPER DIVISION

The Mineral Resource estimates for Nifty Copper Operations are in compliance with the JORC Code (2012 Edition). The Nifty Oxide and Heap Leach Mineral Resource estimates are at 31 March 2017 and were published on 31 May 2018. The Nifty Sulphide Mineral Resource is at 31 August 2017 and was published on 12 October 2017. The Maroochydore Copper Prospect Mineral Resource estimate is at 31 March 2016 and was published by Aditya Birla Minerals on 16 May 2016. There have been no material changes to these Mineral Resource estimates since the dates of these publications.

TABLE 6: NIFTY COPPER OPERATIONS MINERAL RESOURCE ESTIMATE

Deposit	Mineral Resource Category <sup>1</sup>	Mt <sup>2</sup>	Grade % Cu	Copper tonnes <sup>2</sup>
Nifty Sulphide <sup>3</sup>	Measured	25.36	1.68%	426,000
	Indicated	8.10	1.31%	106,000
	Inferred	8.12	1.11%	90,000
	<b>Total</b>	<b>41.58</b>	<b>1.50%</b>	<b>622,000</b>
Nifty Oxide <sup>4</sup>	Measured	1.43	0.91%	13,000
	Indicated	1.22	0.86%	10,000
	Inferred	1.68	0.83%	14,000
	<b>Total</b>	<b>4.33</b>	<b>0.86%</b>	<b>37,000</b>
Nifty Heap Leach <sup>5</sup>	Measured	-	-	-
	Indicated	2.85	0.75%	20,000
	Inferred	0.46	0.66%	3,000
	<b>Total</b>	<b>3.31</b>	<b>0.74%</b>	<b>23,000</b>
<b>TOTAL NIFTY OPERATIONS</b>	Measured	26.79	1.64%	439,000
	Indicated	12.17	1.12%	136,000
	Inferred	10.26	1.04%	107,000
	<b>Total</b>	<b>49.22</b>	<b>1.39%</b>	<b>682,000</b>

1. Mineral Resources are reported inclusive of Mineral Resources modified to produce the Ore Reserve;
2. Tonnes are reported as million tonnes (Mt) and rounded to nearest 10,000; Cu tonnes are rounded to nearest 1,000 tonnes; rounding may result in some slight apparent discrepancies in totals.
3. Cut-off grade of 0.75% Cu.
4. Cut-off Grade of 0.4% Cu.
5. Cut-off Grade of 0.5% Cu.

TABLE 7: MAROOCHYDORE COPPER PROSPECT MINERAL RESOURCE ESTIMATE

Deposit	Mineral Resource Category	Mt <sup>1</sup>	Copper		Cobalt	
			Grade % Cu	Copper tonnes <sup>2</sup>	Grade ppm Co	Cobalt tonnes <sup>2</sup>
Oxide <sup>3</sup>	Measured	-	-	-	-	-
	Indicated	40.80	0.92%	375,000	388	15,800
	Inferred	2.40	0.81%	19,000	451	1,100
	<b>Total</b>	<b>43.20</b>	<b>0.91%</b>	<b>394,000</b>	<b>391</b>	<b>16,900</b>
Sulphide <sup>4</sup>	Measured	-	-	-	-	-
	Indicated	-	-	-	-	-
	Inferred	5.43	1.66%	90,000	292	1,600
	<b>Total</b>	<b>5.43</b>	<b>1.66%</b>	<b>90,000</b>	<b>292</b>	<b>1,600</b>
<b>TOTAL<sup>5</sup></b>	Measured	-	-	-	-	-
	Indicated	40.80	0.92%	375,000	388	15,800
	Inferred	7.83	1.40%	110,000	341	2,700
	<b>Total</b>	<b>48.63</b>	<b>1.00%</b>	<b>486,000</b>	<b>380</b>	<b>18,500</b>

1. Tonnes are reported as million tonnes (Mt) and rounded to nearest 10,000;
2. Cu tonnes are rounded to nearest 1,000 tonnes; Co tonnes are rounded to the nearest 100 tonnes;
3. Cut-off Grade of 0.5% Cu;
4. Cut-off Grade of 1.1% Cu;
5. Rounding may result in some slight apparent discrepancies in totals.

## TIN DIVISION

The Mineral Resource estimate for the Renison Tin Operations is in compliance with the JORC Code (2012 Edition) and is at 31 March 2018 and was published on 23 August 2018. There has been no material change to the Mineral Resource estimates since the date of this publication.

Metals X's equity share is 50% of the Mineral Resource estimates shown below.

TABLE 8: RENISON TIN OPERATIONS MINERAL RESOURCE ESTIMATE<sup>6</sup>

Deposit	Mineral Resource Category <sup>1</sup>	Tin			Copper		
		'000 tonnes <sup>2</sup>	Grade % Sn	Tin tonnes <sup>2</sup>	'000 tonnes	Grade % Cu	Copper tonnes <sup>2</sup>
Renison Tin Mine <sup>3</sup>	Measured	1,540	1.69%	25,900	1,540	0.36%	5,500
	Indicated	7,142	1.30%	92,700	6,949	0.28%	19,700
	Inferred	7,756	1.25%	97,000	7,748	0.11%	8,700
	<b>Total</b>	<b>16,437</b>	<b>1.31%</b>	<b>215,700</b>	<b>16,236</b>	<b>0.21%</b>	<b>33,900</b>
Mt Bischoff <sup>4</sup>	Measured	-	-	-	-	-	-
	Indicated	968	0.59%	5,700	-	-	-
	Inferred	699	0.47%	3,300	-	-	-
	<b>Total</b>	<b>1,667</b>	<b>0.54%</b>	<b>9,000</b>	<b>-</b>	<b>-</b>	<b>-</b>
Rentails Project <sup>5</sup>	Measured	23,886	0.44%	104,400	23,886	0.22%	52,700
	Indicated	-	-	-	-	-	-
	Inferred	-	-	-	-	-	-
	<b>Total</b>	<b>23,886</b>	<b>0.44%</b>	<b>104,370</b>	<b>23,886</b>	<b>0.22%</b>	<b>52,700</b>
Total	Measured	25,426	0.51%	130,300	25,426	0.23%	58,300
	Indicated	8,109	1.21%	98,400	6,949	0.28%	19,700
	Inferred	8,455	1.19%	100,300	7,748	0.11%	8,700
	<b>Total</b>	<b>41,990</b>	<b>0.78%</b>	<b>329,000</b>	<b>40,122</b>	<b>0.22%</b>	<b>86,700</b>

1. Mineral Resources are reported inclusive of Mineral Resources modified to produce the Ore Reserve;
2. Tonnes are reported as kilo tonnes ('000t) and rounded to nearest 1,000; Sn and Cu tonnes are rounded to the nearest 100 tonnes; rounding may result in some slight apparent discrepancies in totals.
3. Cut-off grade of 0.7% Sn.
4. Cut-off Grade of 0.5% Sn.
5. Cut-off Grade of 0.0% Sn.
6. The Rentails Mineral Resource is at 31 May 2018.

## NICKEL DIVISION

The Mineral Resource estimate for the Central Musgrave Project is in compliance with the JORC Code (2012 Edition) and is at 30 June 2016 and was published on 18 August 2016. There has been no change to the Mineral Resource estimate since the date of this publication.

TABLE 9: CENTRAL MUSGRAVE PROJECT MINERAL RESOURCE ESTIMATE

Deposit	Mineral	Mt <sup>2</sup>	Nickel		Cobalt	
			Grade	Nickel	Grade	Cobalt
Wingellina (cut-off 0.50% Ni)	Measured	37.6	0.98%	368	0.07%	28.0
	Indicated	130.9	0.91%	1,193	0.07%	94.6
	Inferred	14.1	0.87%	122	0.06%	9.1
	<b>Total</b>	<b>182.6</b>	<b>0.92%</b>	<b>1,684</b>	<b>0.07%</b>	<b>131.7</b>
Claude Hills (cut-off 0.50% Ni)	Measured	-	-	-	-	-
	Indicated	-	-	-	-	-
	Inferred	33.3	0.81%	270	0.07%	22.7
	<b>Total</b>	<b>33.3</b>	<b>0.81%</b>	<b>270</b>	<b>0.07%</b>	<b>22.7</b>
Total Central Musgrave Project	Measured	37.6	0.98%	368	0.07%	28.0
	Indicated	130.9	0.91%	1,193	0.07%	94.6
	Inferred	47.4	0.83%	392	0.07%	31.8
	<b>Total</b>	<b>215.8</b>	<b>0.91%</b>	<b>1,953</b>	<b>0.07%</b>	<b>154.4</b>

1. Mineral Resources are reported inclusive of Mineral Resources modified to produce the Ore Reserve;
2. Tonnes are reported as million tonnes (Mt) and rounded to nearest 100,000; nickel tonnes are reported as thousand tonnes (kt) and rounded to the nearest 1000 tonnes; cobalt tonnes are reported as thousand tonnes (kt) and rounded to the nearest 100 tonnes; rounding may result in some slight apparent discrepancies in totals.

# APPENDIX 3 – ORE RESERVE ESTIMATES

## COPPER DIVISION

The Ore Reserve estimate for Nifty Copper Operations is in compliance with the JORC Code (2012 Edition) and is at 31 August 2017 and was published on 12 October 2017. There has been no material change to the Ore Reserve estimate since the date of this publication.

TABLE 10: NIFTY COPPER OPERATIONS ORE RESERVE ESTIMATE

Deposit	Ore Reserve Category	Ore Mt <sup>2</sup>	Grade % Cu	Copper tonnes <sup>2</sup>
Nifty Sulphide <sup>1</sup>	Proved	11.75	1.76%	207,000
	Probable	2.15	1.42%	30,500
	<b>Total</b>	<b>13.90</b>	<b>1.71%</b>	<b>237,500</b>

1. The Ore Reserve is based on the Nifty sulphide Mineral Resource estimate at 31 August 2017, with applied modifying factors, at a 1.0% Cu cut-off grade, using a copper price of US\$5,750/t and assumed exchange rate of USD/AUD 0.7419 for a price of AUD \$7,750/t Cu
2. Tonnes are reported as million tonnes (Mt) and rounded to the nearest 10,000; copper tonnes are rounded to the nearest 500 tonnes; rounding may result in some slight apparent discrepancies in totals.

## TIN DIVISION

The Ore Reserve estimate for the Renison Tin Operations is in compliance with the JORC Code (2012 Edition) and is at 31 March 2018 and was published on 23 August 2018. There has been no material change to the Ore Reserve estimate since the date of this publication.

Metals X's equity share is 50% of the Ore Reserve estimate shown below.

TABLE 11: RENISON TIN OPERATIONS ORE RESERVE ESTIMATE

Project	Ore Reserve Category <sup>1</sup>	Tin			Copper		
		Ore '000 tonnes	Grade % Sn	Tin tonnes <sup>2</sup>	Ore '000 tonnes	Grade % Cu	Copper tonnes <sup>2</sup>
Renison Tin Mine	Proved	1,310	1.29%	16,900	1,310	0.33%	4,300
	Probable	5,512	0.94%	51,800	5,512	0.20%	10,900
	<b>Total</b>	<b>6,822</b>	<b>1.01%</b>	<b>68,800</b>	<b>6,822</b>	<b>0.22%</b>	<b>15,200</b>
Rentails	Proved	-	-	-	-	-	-
	Probable	22,313	0.44%	98,900	22,313	0.23%	50,700
	<b>Total</b>	<b>22,313</b>	<b>0.44%</b>	<b>98,900</b>	<b>22,313</b>	<b>0.23%</b>	<b>50,700</b>
Renison total	Proved	1,310	1.29%	16,900	1,310	0.33%	4,300
	Probable	27,825	0.54%	150,800	27,825	0.22%	61,600
	<b>Total</b>	<b>29,135</b>	<b>0.58%</b>	<b>167,700</b>	<b>29,135</b>	<b>0.23%</b>	<b>65,800</b>

1. The Ore Reserve is based on the Renison Mineral Resource estimate at 31 March 2018, with applied modifying factors, at a cut-off grade of 0.8% Sn for the Renison Tin Mine and 0.0% Sn for Rentails;
2. Sn and Cu tonnes are rounded to the nearest 100 tonnes; rounding may result in some slight apparent discrepancies in totals.

## NICKEL DIVISION

The Ore Reserve estimate for the Wingellina Nickel-Cobalt Project is in compliance with the JORC Code (2012 Edition) and is at 30 June 2016 and was published on 18 August 2016. There has been no change to the Ore Reserve estimate since the date of this publication.

TABLE 12: WINGELLINA NICKEL-COBALT PROJECT ORE RESERVE ESTIMATE

Project	Ore Reserve Category <sup>1</sup>	Ore Mt <sup>2</sup>	Nickel		Cobalt	
			Grade % Ni	Nickel kt Ni <sup>2</sup>	Grade % Co	Cobalt kt Co <sup>2</sup>
Wingellina	Proved	-	-	-	-	-
	Probable	168.4	0.93%	1,561	0.07%	122.6
	<b>Total<sup>2</sup></b>	<b>168.4</b>	<b>0.93%</b>	<b>1,561</b>	<b>0.07%</b>	<b>122.6</b>

1. The Ore Reserve is based on the Wingellina Mineral Resource estimate at 30 June 2016 with applied modifying factors, at a cut-off grade of 0.5% Ni;
2. Tonnes are reported as million tonnes (Mt) and rounded to nearest 100,000; nickel tonnes are reported as thousand tonnes (kt) and rounded to the nearest 1000 tonnes; cobalt tonnes are reported as thousand tonnes (kt) and rounded to the nearest 100 tonnes; rounding may result in some slight apparent discrepancies in totals.

# APPENDIX 4 – JORC CODE (2012) TABLE 1

## COPPER DIVISION

### INFORMATION MATERIAL TO UNDERSTANDING THE EXPLORATION RESULTS

THE INFORMATION IN THIS TABLE REFERS TO THE FOLLOWING PROJECTS AT THE NIFTY COPPER OPERATIONS: NIFTY SULPHIDE, NIFTY OXIDE AND NIFTY HEAP LEACH

## SECTION 1: SAMPLING TECHNIQUES AND DATA

(Criteria in this section apply to all succeeding sections)

Criteria	JORC Code explanation	Commentary
<p><b>Sampling techniques</b></p> <p><b>Drilling techniques</b></p> <p><b>Drill sample recovery</b></p>	<ul style="list-style-type: none"> <li>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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>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.</li> <li>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.).</li> <li>Method of recording and assessing core and chip sample recoveries and results assessed.</li> <li>Measures taken to maximise sample recovery and ensure representative nature of the samples.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The deposit has been drilled and sampled using various techniques with diamond and reverse circulation drilling utilised for mineral estimation. This information comes from surface and underground and is on variable spacing along and across strike. The total metres within the immediate vicinity of the Deposit are 249,973m. The holes are drilled on most occasions to intersect as near as possible perpendicularly the synclinal east plunge mineralisation.</li> <li>The drilling programs have been ongoing since initial discovery to both expand the mineralisation and provided control for mining. The hole collars were surveyed by Company employees/contractors with the orientation recorded. Down hole survey is recorded using appropriate equipment. The diamond core was logged for lithology and other geological features.</li> <li>The diamond core varied from HQ to NQ in diameter and mineralised intervals and adjacent locations were sampled by cutting the core in half. The RC samples were collected from the cyclone of the rig and spilt at site to approximate 2 to 3Kg weight. The preparation and analysis was undertaken at accredited commercial laboratories, ALS or Intertek Genalysis. Both laboratories have attained ISO/IEC 17025 accreditation. ALS uses the ME-ICP61 four acid digest methods using a sample of 0.2g with an ICP-OES finish. Over limit results (&gt;1% Cu) are re-analysed using the ME-OG62 method, which involves subjecting a 0.4g sample to a four acid digest with an ICP-OES finish. Intertek Genalysis use a four acid digest using a 0.2g sample with an ICP-OES finish. Over limit results (&gt;1% Cu) are re-assayed using an ore grade four acid digestion of 0.2g sample, and an AAS finish. The analysis and preparation of recent diamond drilling by Metals X has been undertaken at the onsite Nifty laboratory which has been contracted to accredited analytical testing service by ALS. On-site, ALS uses a Fusion XRF15C method for analysis.</li> <li>The drilling was completed using a combination of surface and underground drilling. In general the orientation of the drilling is appropriate given the strike and dip of the mineralisation.</li> <li>The core recovery is recorded in the database and in most instances was in excess of 95%. This was assessed by measuring core length against the drilled core run. There is no record of the quantity (weight) of RC chips collected per sample length.</li> <li>The ground conditions in the mineralised zone are competent. In areas of less competent material core return is maximised by controlling drill speed. In the case of RC samples areas of less competent material are identified in the log.</li> <li>Whilst no assessment has been reported, the competency of the material sampled would tend to preclude any potential issue of sampling bias.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.</li> <li>The total length and percentage of the relevant intersections logged.</li> </ul>	<ul style="list-style-type: none"> <li>The routine logging of core and chips describes the general geology features including stratigraphy, lithology, mineralisation, alteration etc. For the majority of holes this information is sufficient and appropriate to apply mineralisation constraints. Some core drilling is orientated and structural measurements of bedding, joints, veins etc. has occurred as well as fracture densities.</li> <li>Geological logging has recorded summary and detailed stratigraphy, lithology, mineralisation content, and alteration, some angle to core axis information, vein type, incidence and frequency, magnetic content.</li> <li>The entire length of all holes, apart from surface casing, was logged.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>• If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</li> <li>• For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>• Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>• 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.</li> <li>• Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>• All core to be sampled was cut in half using a mechanical saw. It is not known if the core was consistently taken from the same side of the stick.</li> <li>• RC chip samples are collected via a cyclone which is cleaned with air blast between samples. The samples riffled to collect between 2 and 3kg. Most samples are dry with any moisture noted on the logs.</li> <li>• Field sub-sampling for chip samples appears appropriate as is the use of core cutting equipment for the submitted core. Procedures adopted in the laboratories are industry standard practises including that in the mine site facility.</li> <li>• In field riffles are cleaned between sampling using compressed air. The diamond cutting equipment is cleaned during the process using water. All laboratories adopt appropriate industry best practises to reduce sample size homogeneously to the required particle size.</li> <li>• No field duplicate information was observed.</li> <li>• The style of mineralisation and high sulphide content does not rely on grain size as being influential on grade. Thus there is confidence in the overall grade of the deposit being fairly represented by the sampling.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>• 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.</li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• The assay techniques are appropriate for the determination of the level of mineralisation in the sample.</li> <li>• No geophysical tools were utilised to ascertain grade.</li> <li>• Standard and Blanks are included with all samples sent for analysis in the rate of between 1 in 20 and 1 in 30. The most recent reporting covering the majority of holes used in the estimate provide support for the quality of the Cu assays.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>• The verification of significant intersections by either independent or alternative company personnel.</li> <li>• The use of twinned holes.</li> <li>• Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>• Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>• The extensive data set has been reviewed by various parties including Maxwell Geoscience and DataGeo and the intersections within the mineralisation have been confirmed.</li> <li>• No twinned holes observed but there is a significant amount of closely spaced supportive drilling results.</li> <li>• Field data is captured electronically, validated by the responsible geologist and stored on corporate computer facilities. Protocols for drilling, sampling and QAQC are contained with the company operating manuals. The information generated by the site geologists is loaded into a database by the company database manager and undergoes further validation at this point against standard acceptable codes for all variables.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• Specification of the grid system used.</li> <li>• Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>• The collar positions were resurveyed by the Company surveyor or their contractors from a known datum. The survey is on a known local grid with demonstrated control. The orientation and dip at the collars is checked (aligned) by the geologist and down hole recording of azimuth and dip are taken at 30m intervals on most occasions using appropriate equipment.</li> <li>• The regional grid is GDA94 Zone 50 and the drilling is laid out on a local grid.</li> <li>• Topographic control is from surface survey - note the deposit modelled is totally underground and is not influenced by surface topography.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>• Data spacing for reporting of Exploration Results.</li> <li>• 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.</li> <li>• Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>• The majority of drilling utilised is on 40m x 20m grid specifically targeting lithological and hence mineralisation sequence definition.</li> <li>• The geological sequence is well understood from the mining which supports the current drill spacing as adequate for both grade continuity assessment and lithological modelling</li> <li>• The sampling reflects the geological conditions. For mineral resource estimation a 1m composite length was chosen given that this is the dominant sample length in dataset.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Given the shape of the sequence, the drilling as best as practically possible, is orientated to intersect the sequence perpendicularly. This is limited to drill sites from underground and surface.</li> <li>No sampling bias is considered to have been introduced.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>The samples once collected and numbered are stored in the lockable site core yard. Each sample bag is securely tied with the sample number on the bag and inside on metal tags transported by commercial contractors to Perth. Upon receipt at the laboratory the samples are checked against the dispatch sheets to ensure all samples are present.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data.</li> </ul>	<ul style="list-style-type: none"> <li>Resources and reserves are routinely reviewed by the Metals X Corporate technical team.</li> <li>Database management companies have over the past 2 years audited the drill hole database and found it representative of the information contained.</li> </ul>

## SECTION 2: REPORTING OF EXPLORATION RESULTS

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

Criteria	JORC Code explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The Nifty deposit is situated on mining lease M271/SA, which is 100% held by Nifty Copper Pty Ltd, a wholly owned subsidiary of Metals X.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>WMC Resources Ltd discovered Nifty in 1980 by using regional ironstone sampling and reconnaissance geology. Malachite staining of an outcrop and Cu-anomalous ironstones from dune swale reconnaissance sampling were the initial indicators. This was followed up by lag sampling on a 500 x 50m grid that detected a 2.5 x 1.5km Cu-Pb anomaly. Secondary Cu mineralisation was intersected in percussion drilling in mid-1981, with high grade primary ore (20.8m at 3.8% Cu) discovered in 1983. WMC commenced open pit mining of the secondary oxide ore in 1992 and continued mining until September 1998 when Nifty was sold to Straits Resources.</li> <li>The project was subsequently purchased from Straits Resources by Aditya Birla Minerals Ltd in 2003.</li> <li>Open pit mining ceased in June 2006.</li> <li>Copper extraction using heap leaching ceased in January 2009.</li> <li>Underground mining of the primary (chalcopyrite) mineralisation started in 2009.</li> <li>The project was purchased from Aditya Birla in 2016 by Metals X Ltd.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>The Nifty deposit is hosted within the folded late-Proterozoic Broadhurst Formation which is part of the Yeneena Group. The Broadhurst Formation is between 1000 m to 2000 m thick and consists of a stacked series of carbonaceous shales, turbiditic sandstones, dolomite and limestone. Structurally, the dominant feature is the Nifty Syncline which strikes approximately southeast-northwest and plunges at about 6-12 degrees to the southeast. The stratabound copper mineralisation occurs as a structurally controlled, chalcopyrite-quartz- dolomite replacement of carbonaceous and dolomitic shale within the folded sequence. The bulk of the primary mineralisation which is currently being mined is largely hosted within the keel and northern limb of the Syncline.</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>• 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: <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> </li> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to body of the Report.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>• 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.</li> <li>• 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.</li> <li>• The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to body of the Report.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>• These relationships are particularly important in the reporting of Exploration Results.</li> <li>• If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>• 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').</li> </ul>	<ul style="list-style-type: none"> <li>• Refer to body of the Report.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• NA</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• NA</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>• 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.</li> </ul>	<ul style="list-style-type: none"> <li>• NA</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>• The nature &amp; scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>• Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>• Open pit and underground feasibility works;</li> <li>• Validation drilling in areas of potential economic mineralisation;</li> <li>• Infill drill areas of data paucity proximal to the underground development. This will increase resource confidence and resultant classifications.</li> <li>• Validation of the underground void model.</li> </ul>

# TIN DIVISION

## INFORMATION MATERIAL TO UNDERSTANDING THE EXPLORATION RESULTS

THE INFORMATION IN THIS TABLE REFERS TO THE FOLLOWING PROJECTS AT THE RENISON TIN OPERATIONS: RENISON BELL, RENTAILS AND MT BISCHOFF

### SECTION 1 SAMPLING TECHNIQUES AND DATA

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

Criteria	JORC Code Explanation	Commentary
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>Nature and quality of sampling (eg 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.</li> <li>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</li> <li>Aspects of the determination of mineralisation that are Material to the Public Report.</li> <li>In cases where 'industry standard' work has been done this would be relatively simple (eg '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 (eg submarine nodules) may warrant disclosure of detailed information.</li> </ul>	<p><b>Diamond Drilling</b></p> <ul style="list-style-type: none"> <li>The bulk of the data used in resource calculations at Renison has been gathered from diamond core. Three sizes have been used historically NQ2 (45.1mm nominal core diameter), LTK60 (45.2mm nominal core diameter) and LTK48 (36.1mm nominal core diameter), with NQ2 currently in use. This core is geologically logged and subsequently halved for sampling. Grade control holes may be whole-cored to streamline the core handling process if required.</li> <li>NQ and HQ core sizes have been recorded as being used at Mount Bischoff. This core is geologically logged and subsequently halved for sampling.</li> <li>There is no diamond drilling for the Rentails Project.</li> </ul> <p>Face Sampling -Each development face / round is horizontally chip sampled at Renison. The sampling intervals are dominated by geological constraints (e.g. rock type, veining and alteration / sulphidation etc.). Samples are taken in a range from 0.3m up to 1.2m in waste. All exposures within the orebody are sampled. A similar process would have been followed for historical Mount Bischoff face sampling.</p> <ul style="list-style-type: none"> <li>There is no face sampling for the Rentails Project.</li> </ul> <p><b>Sludge Drilling</b></p> <ul style="list-style-type: none"> <li>Sludge drilling at Renison is performed with an underground production drill rig. It is an open hole drilling method using water as the flushing medium, with a 64mm (nominal) hole diameter. Sample intervals are ostensibly the length of the drill steel. Holes are drilled at sufficient angles to allow flushing of the hole with water following each interval to prevent contamination.</li> <li>There is no sludge drilling for the Mount Bischoff Project. There is no sludge drilling for the Rentails Project.</li> </ul> <p><b>RC Drilling</b></p> <ul style="list-style-type: none"> <li>RC drilling has been utilised at Mount Bischoff.</li> <li>Drill cuttings are extracted from the RC return via cyclone. The underflow from each interval is transferred via bucket to a four tiered riffle splitter, delivering approximately three kilograms of the recovered material into calico bags for analysis. The residual material is retained on the ground near the hole. Composite samples are obtained from the residue material for initial analysis, with the split samples remaining with the individual residual piles until required for re-split analysis or eventual disposal.</li> <li>There is no RC drilling for the Renison Project.</li> <li>There is no RC drilling for the Rentails Project.</li> </ul> <p><b>Percussion Drilling</b></p> <ul style="list-style-type: none"> <li>This drilling method was used for the Rentails project and uses a rotary tubular drilling cutter which was driven percussively into the tailings. The head of the cutting tube consisted of a 50mm diameter hard tipped cutting head inside which were fitted 4 spring steel fingers which allowed the core sample to enter and then prevented it from falling out as the drill tube was withdrawn from the drill hole.</li> <li>There is no percussion drilling for the Renison Project.</li> <li>There is no percussion drilling for the Mount Bischoff Project.</li> <li>All geology input is logged and validated by the relevant area geologists, incorporated into this is assessment of sample recovery. No defined relationship exists between sample recovery and grade. Nor has sample bias due to preferential loss or gain of fine or coarse material been noted.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</li> <li>The total length and percentage of the relevant intersections logged</li> </ul>	<ul style="list-style-type: none"> <li>Diamond core is logged geologically and geotechnically.</li> <li>RC chips are logged geologically.</li> <li>Development faces are mapped geologically.</li> <li>Logging is qualitative in nature.</li> <li>All holes are logged completely, all faces are mapped completely.</li> </ul>

Criteria	JORC Code Explanation	Commentary
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>If core, whether cut or sawn and whether quarter, half or all core taken.</li> <li>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</li> <li>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</li> <li>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</li> <li>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.</li> <li>Whether sample sizes are appropriate to the grain size of the material being sampled.</li> </ul>	<ul style="list-style-type: none"> <li>Drill core is halved for sampling. Grade control holes may be whole-cored to streamline the core handling process if required.</li> <li>Samples are dried at 90°C, then crushed to &lt;3mm. Samples are then riffle split to obtain a sub-sample of approximately 100g which is then pulverized to 90% passing 75µm. 2g of the pulp sample is then weighed with 12g of reagents including a binding agent, the weighed sample is then pulverised again for one minute. The sample is then compressed into a pressed powder tablet for introduction to the XRF. This preparation has been proven to be appropriate for the style of mineralisation being considered.</li> <li>QA/QC is ensured during the sub-sampling stages process via the use of the systems of an independent NATA / ISO accredited laboratory contractor.</li> <li>The sample size is considered appropriate for the grain size of the material being sampled.</li> <li>The un-sampled half of diamond core is retained for check sampling if required.</li> <li>For RC chips regular field duplicates are collected and analysed for significant variance to primary results.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</li> <li>For geophysical tools, spectrometres, 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.</li> <li>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</li> </ul>	<ul style="list-style-type: none"> <li>Assaying is undertaken via the pressed powder XRF technique. Sn, As and Cu have a detection limit 0.01%, Fe and S detection limits are 0.1%. These assay methodologies are appropriate for the resource in question.</li> <li>All assay data has built in quality control checks. Each XRF batch of twenty consists of one blank, one internal standard, one duplicate and a replicate, anomalies are re-assayed to ensure quality control.</li> <li>Specific gravity / density values for individual areas are routinely sampled during all diamond drilling where material is competent enough to do so.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>The verification of significant intersections by either independent or alternative company personnel.</li> <li>The use of twinned holes.</li> <li>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</li> <li>Discuss any adjustment to assay data.</li> </ul>	<ul style="list-style-type: none"> <li>Anomalous intervals as well as random intervals are routinely checked assayed as part of the internal QA/QC process.</li> <li>Virtual twinned holes have been drilled in several instances across all sites with no significant issues highlighted. Drillhole data is also routinely confirmed by development assay data in the operating environment.</li> <li>Primary data is loaded into the drillhole database system and then archived for reference.</li> <li>All data used in the calculation of resources and reserves are compiled in databases (underground and open pit) which are overseen and validated by senior geologists.</li> <li>No primary assays data is modified in any way.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Specification of the grid system used.</li> <li>Quality and adequacy of topographic control.</li> </ul>	<ul style="list-style-type: none"> <li>All data is spatially oriented by survey controls via direct pickups by the survey department. Drillholes are all surveyed downhole, currently with a GyroSmart tool in the underground environment at Renison, and a multishot camera for the typically short surface diamond holes.</li> <li>All drilling and resource estimation is undertaken in local mine grid at the various sites.</li> <li>Topographic control is generated from remote sensing methods in general, with ground based surveys undertaken where additional detail is required. This methodology is adequate for the resource in question.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Data spacing for reporting of Exploration Results.</li> <li>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.</li> <li>Whether sample compositing has been applied.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling in the underground environment at Renison is nominally carried-out on 40m x 40m spacing in the south of the mine and 25m, x 25m spacing in the north of the mine prior to mining occurring. A lengthy history of mining has shown that this data spacing is appropriate for the Mineral Resource estimation process and to allow for classification of the resource as it stands.</li> <li>Drilling at Mount Bischoff is variably spaced. A lengthy history of mining has shown that this data spacing is appropriate for the Mineral resource estimation process and to allow for classification of the resource as it stands.</li> <li>Drilling at Rentails is usually carried out on a 100m centres. This is appropriate for the Mineral resource estimation process and to allow for classification of the resource as it stands.</li> <li>Compositing is carried out based upon the modal sample length of each individual domain.</li> </ul>

Criteria	JORC Code Explanation	Commentary
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Drilling intersections are nominally designed to be normal to the orebody as far as underground infrastructure constraints / topography allows.</li> <li>Development sampling is nominally undertaken normal to the various orebodies.</li> <li>It is not considered that drilling orientation has introduced an appreciable sampling bias.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>The measures taken to ensure sample security.</li> </ul>	<ul style="list-style-type: none"> <li>At Renison, Mount Bischoff and Rentails samples are delivered directly to the on-site laboratory by the geotechnical crew where they are taken into custody by the independent laboratory contractor.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>The results of any audits or reviews of sampling techniques and data</li> </ul>	<ul style="list-style-type: none"> <li>Site generated resources and reserves and the parent geological data is routinely reviewed by the Metals X Corporate technical team.</li> </ul>

## SECTION 2 REPORTING OF EXPLORATION RESULTS

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

Criteria	JORC Code Explanation	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>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.</li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>All Tasmania resources are hosted within 12M1995 and 12M2006. Both tenements are standard Tasmanian mining leases.</li> <li>No native title interests are recorded against the Tasmanian tenements.</li> <li>Tasmanian tenements are held by the Bluestone Mines Tasmania Joint Venture of which Metals X has 50% ownership.</li> <li>No royalties above legislated state royalties apply for the Tasmanian tenements.</li> <li>Bluestone Mines Tasmania Joint Venture operates in accordance with all environmental conditions set down as conditions for grant of the mining leases.</li> <li>There are no known issues regarding security of tenure.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>Acknowledgment and appraisal of exploration by other parties.</li> </ul>	<ul style="list-style-type: none"> <li>The Renison and Mount Bischoff areas have an exploration and production history in excess of 100 years.</li> <li>Bluestone Mines Tasmania Joint Venture work has generally confirmed the veracity of historic exploration data.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>Deposit type, geological setting and style of mineralisation.</li> </ul>	<ul style="list-style-type: none"> <li>Renison is one of the world's largest operating underground tin mines and Australia's largest primary tin producer. Renison is the largest of three major Skarn, carbonate replacement, pyrrhotite-cassiterite deposits within western Tasmania. The Renison Mine area is situated in the Dundas Trough, a province underlain by a thick sequence of Neoproterozoic-Cambrian siliciclastic and volcanoclastic rocks. At Renison there are three shallow-dipping dolomite horizons which host replacement mineralisation.</li> <li>Mount Bischoff is the second of three major Skarn, carbonate replacement, pyrrhotite- cassiterite deposits within western Tasmania. The Mount Bischoff Mine area is situated within the Dundas Trough, a province underlain by a thick sequence of Neoproterozoic- Cambrian siliciclastic and volcanoclastic rocks. At Mount Bischoff folded and faulted shallow-dipping dolomite horizons host replacement mineralisation with fluid interpreted to be sourced from the forceful emplacement of a granite ridge and associated porphyry intrusions associated with the Devonian Meredith Granite, which resulted in the complex brittle / ductile deformation of the host rocks. Lithologies outside the current mining area are almost exclusively metamorphosed siltstones. Major porphyry dykes and faults such as the Giblin and Queen provided the major focus for ascending hydrothermal fluids from a buried ridge of the Meredith Granite. Mineralisation has resulted in tin-rich sulphide replacement in the dolomite lodes, greisen and sulphide lodes in the porphyry and fault / vein lodes in the major faults. All lodes contain tin as cassiterite within sulphide mineralisation with some coarse cassiterite as veins throughout the lodes.</li> <li>The Rentails resource is contained within three Tailing Storage Facilities (TSF's) that have been built up from the processing of tin ore at the Renison Bell mine over the period 1968 to 2013.</li> </ul>

Criteria	JORC Code Explanation	Commentary
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>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: <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> </li> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Excluded results are non-significant and do not materially affect understanding of the Renison deposit.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.</li> <li>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.</li> <li>The assumptions used for any reporting of metal equivalent values should be clearly stated.</li> </ul>	<ul style="list-style-type: none"> <li>Results are reported on a length weighted average basis.</li> <li>Results are reported above a 4% Sn cut-off.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>These relationships are particularly important in the reporting of Exploration Results.</li> <li>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</li> <li>If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').</li> </ul>	<ul style="list-style-type: none"> <li>Interval widths are true width unless otherwise stated.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No new discoveries reported.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>Presented above.</li> <li>Excluded results are non-significant and do not materially affect understanding of the Renison deposit.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>No relevant information to be presented.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</li> <li>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</li> </ul>	<ul style="list-style-type: none"> <li>Exploration assessment and normal mine extensional drilling continues to take place at Renison.</li> <li>Exploration assessment continues to progress at Mount Bischoff.</li> <li>Project assessment continues to progress at Rentals.</li> </ul>