



**Middle Island**  
RESOURCES LIMITED

Middle Island Resources Limited  
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## QUARTERLY REPORT

For the period ended 31 March 2018

### HIGHLIGHTS

**Middle Island Resources Ltd**  
ACN 142 361 608

**ASX Code: MDI**

**Office:**

Suite 1, 2 Richardson Street  
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Western Australia

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**Capital Structure:**

796 million shares  
38,300,000 options

**Board Members:**

**Peter Thomas**

Chairman

**Rick Yeates**

Managing Director

**Beau Nicholls**

Non-Executive Director

**Dennis Wilkins**

Company Secretary

- Cash at 31 March 2018 of A\$1.67 million, plus receipt post quarter of \$185,000 in proceeds from clean-up residues from the Company's gold processing plant within its 100%-owned Sandstone project.
- Scoping level gold ore sorting (pre-concentration) testwork completed on the Two Mile Hill tonalite deeps deposit indicates that sorting can deliver a **185%-257% increase in grade at gold recoveries in excess of 93%, with up to 64% of the sorter feed material rejected**, delivering significant economic benefits.
- Large diameter diamond hole, MSDD261, completed at Two Mile Hill to provide material for more definitive ore sorting trials, returned an intercept of **100m at 2.02g/t Au** from 55m to 155m downhole depth, **including 7m at 18.1g/t Au**.
- The second ore sorting campaign, including iterations around crush size and grade range, is well advanced, with initial sighter and scoping trials confirming **Colour (Optical) and XRT sensors as the preferred pre-concentration approach**. One further scoping trial is underway prior to commencing the main ore sorting programme.
- Pit optimisation of the updated Mineral Resource (JORC 2012) at Sandstone's adjoining Wirraminna deposit generated an optimum pit shell that captures **72,000t at 1.97g/t gold** at a strip ratio of 9:1.
- **Considerable opportunity remains to further extend and enhance the Wirraminna deposit** via extension drilling and confirming the location of historic higher grade holes.
- Heads of Agreement executed with Tajiri Resources Corp., granting Tajiri an option to acquire a 100% interest in MDI's Reo gold project in Burkina Faso via **aggregate cash payments of US\$335,000 and the issue of 5 million shares, plus a 2% net smelter return (NSR) royalty**.

**Schedule for June quarter 2018:**

- Completion of more definitive ore sorting trials at Two Mile Hill; staged, resource definition diamond drilling of the Two Mile Hill deposit; mapping and soil geochemical surveys at Dandaraga and Ned's; possible limited RC drilling at one or more of the Wirraminna, Davis, McClaren, Cowan and Agnes gold prospects.

## **Operating Activities**

### **Corporate**

#### *Finances*

Middle Island Resources Limited (**ASX:MDI, Middle Island or the Company**), had a cash balance of A\$1.67 million as at 31 March 2018, with a further A\$185,000 received following quarter's end, representing cash proceeds derived from the mill clean-up residues collected and despatched in 2017.

#### *Strategy*

At the wholly-owned Sandstone gold project in WA, Middle Island has been primarily pursuing the extension and enhancement of the proposed gold production profile in order to recommission its on-site processing plant.

The March quarter focus was on Sandstone's Two Mile Hill tonalite deeps deposit, following recognition of the deposit's amenability to pre-concentration of gold mineralisation via ore sorting, thereby reducing the mill's throughput and costs, and increasing the mill feed grade to a level compatible with the existing processing plant's capacity.

The multi-faceted, over-arching strategy has been further progressed during the March quarter, variously via the following:-

- Large diameter diamond drilling of the Two Mile Hill tonalite deeps deposit to generate bulk composites for ore sorting trials.
- Further mineralogical, geotechnical and ore sorting testwork on the Two Mile Hill tonalite deeps deposit.
- Pit optimisation on the adjoining Wirraminna gold deposit.
- On-going review of consolidation opportunities and third-party gold deposits within the broader Sandstone district.

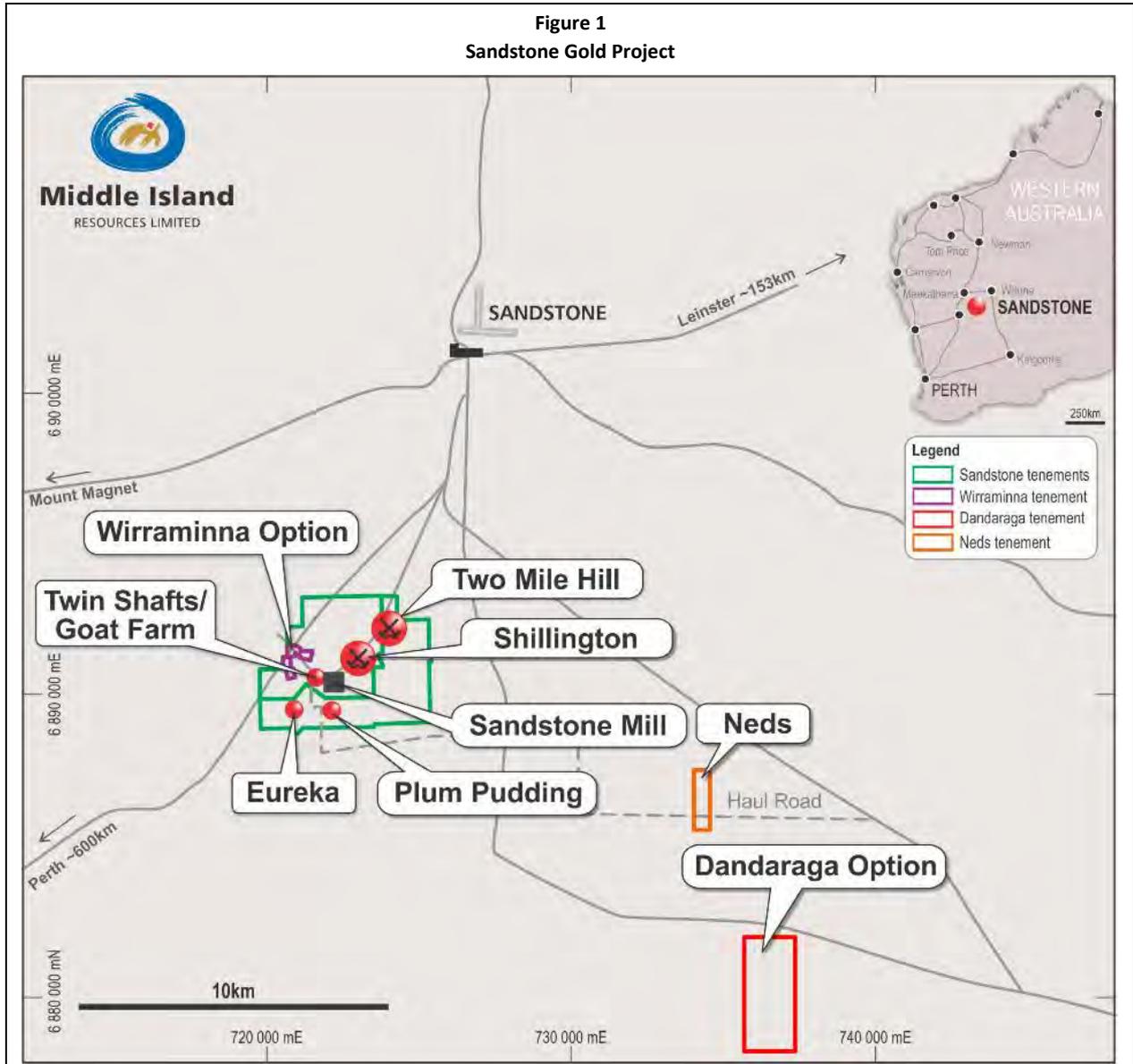
Enhanced by a greater focus on the Two Mile Hill tonalite deeps opportunity, the Company remains confident that continuing this strategic approach will ultimately lead to recommissioning and gold production at Sandstone.

A satisfactory transaction on the Reo gold project in Burkina Faso, West Africa, was secured during the March quarter, with the acquirer, Tajiri Resource Corp. (Tajiri), completing a site visit and finalising its due diligence. Subject to confirmation and transfer of title, Tajiri has advised that it intends to proceed with the transaction.



## **Sandstone Gold Project (100%) – Western Australia**

The Sandstone gold project is shown in Figure 1 below.



### **Two Mile Hill Tonalite Deeps Deposit**

The Two Mile Hill tonalite deeps deposit is located 4km north (via an existing haul road) of the Company's 600,000tpa gold processing plant (Figure 1).

### **Diamond Drilling**

In order to provide sufficient material for a second, more definitive ore sorting campaign, a diamond hole (MSDD261) was drilled from surface to a depth of 284.5m with PQ and HQ diameter core.

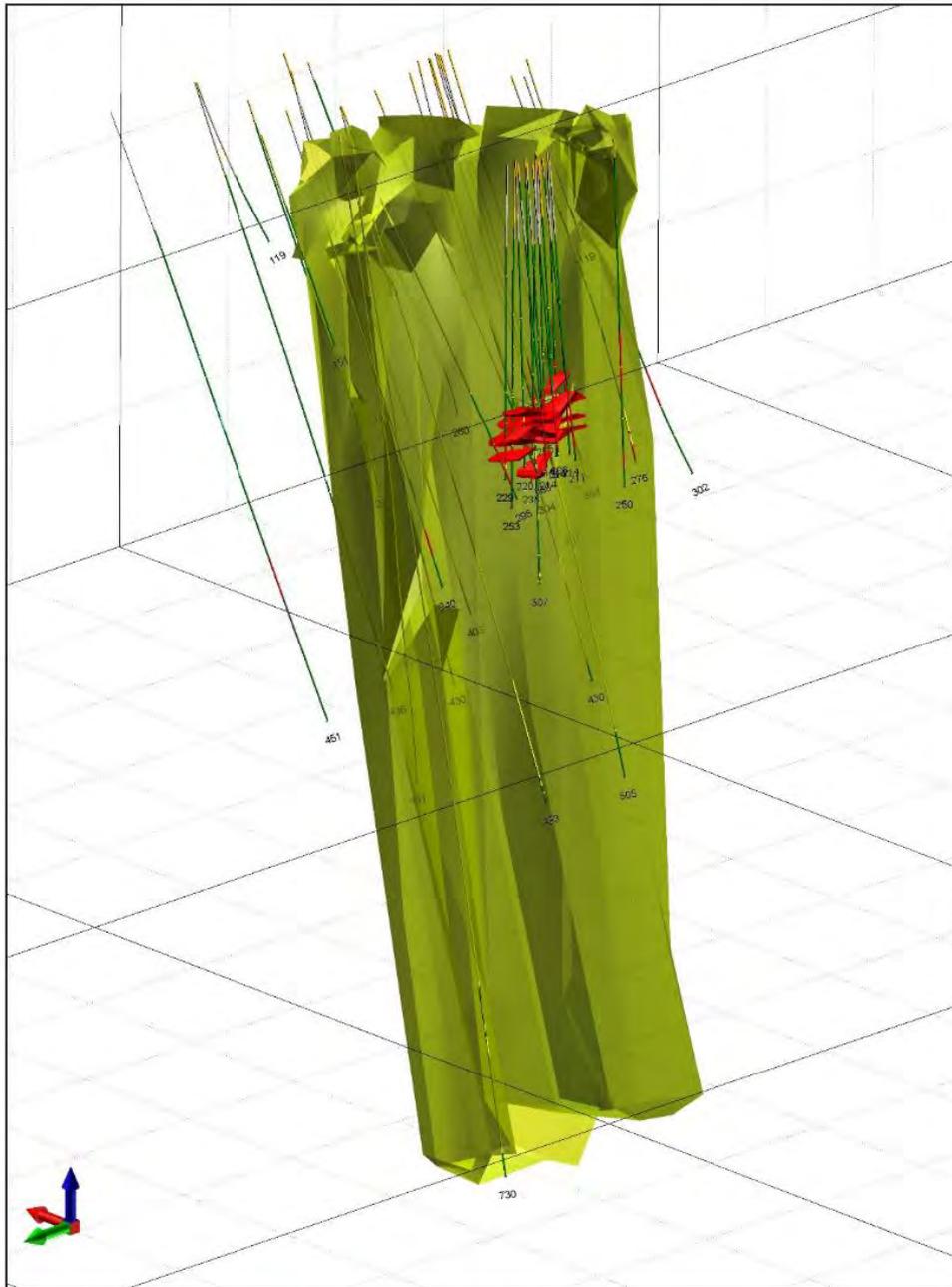
Analyses (50g fire assay) of 1m quarter core intervals from MSDD261 returned a best intercept of 100m at 2.02g/t Au from 55m downhole depth, including 7m at 18.1g/t Au from 121m depth (refer ASX Release of 26 March 2018).



This intercept in MSDD261 is entirely consistent with previous diamond drilling at Two Mile Hill, including intersections of 508.3m at 1.38g/t, 372.7m at 1.52g/t, 230.4m at 1.62g/t, 353.3m at 1.04g/t, 141.0m at 2.30g/t and 156.3m at 1.14g/t Au.

Drilling at the Two Mile Hill deeps deposit confirms the presence of a substantial and ubiquitously mineralised system measuring 250m in strike and up to 90m in width that is mineralised to at least 713m depth and remains open beneath this level (Figure 2). This latest drill intercept, along with encouraging results derived from recent metallurgical, mineralogical and ore sorting testwork, confirms the potential for underground mining beneath the proposed open-pit cutback at Two Mile Hill.

**Figure 2**  
An isometric model of the Two Mile Hill tonalite deposit, looking southeast.

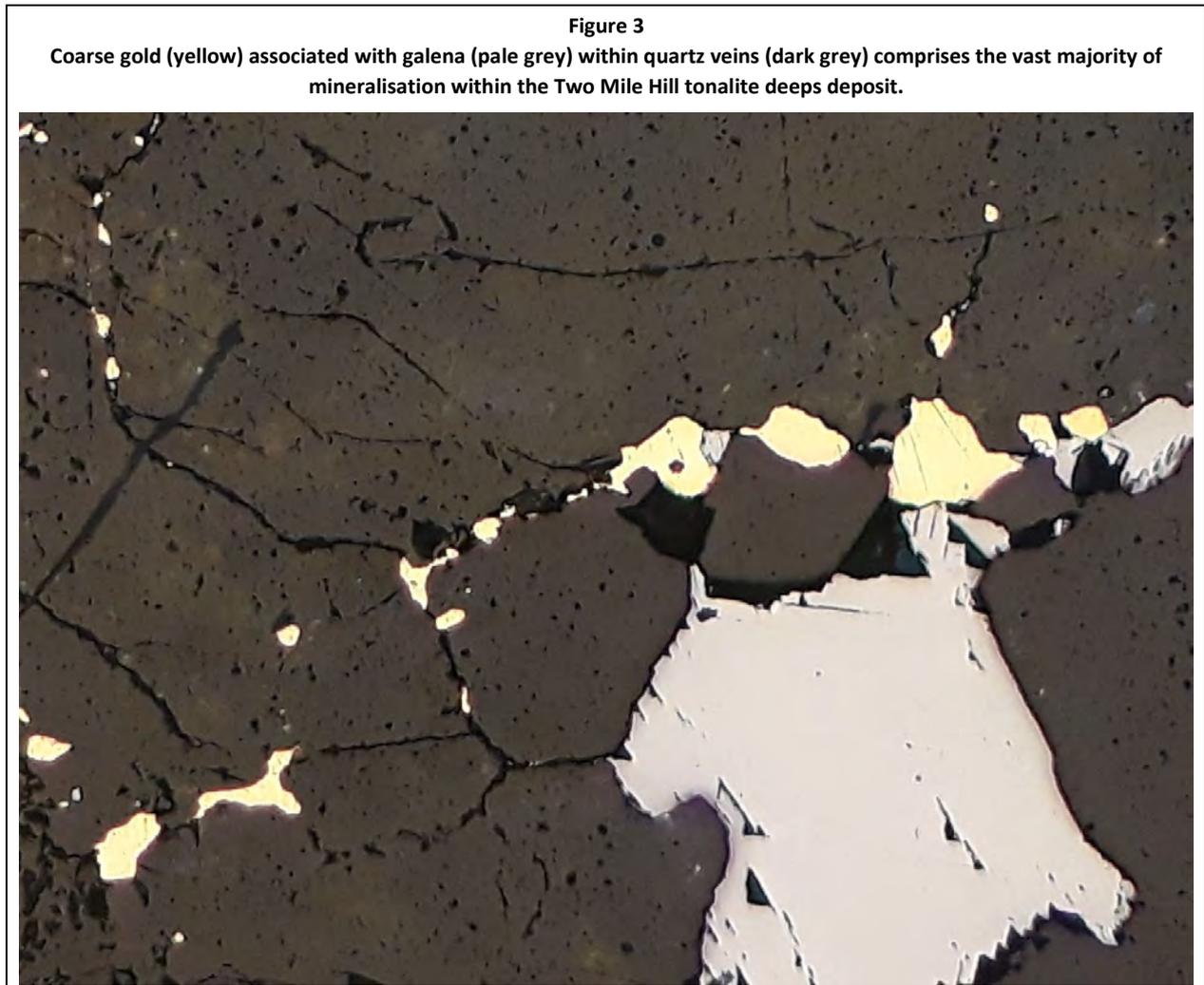


	<b>Legend</b> <b>Geology</b> <span style="color: yellow;">■</span> Laterite <span style="color: red;">■</span> BIF Mineralisation <span style="color: green;">■</span> Basalt <span style="color: yellow;">■</span> Tonalite <span style="color: yellow;">■</span> Quartz	Scale is Approximate	Plot Date 28 Nov 2017	Sheet 1 of 1	<b>Isometric view of Two Mile Hill Tonalite</b>	<b>Sandstone Operations</b>
		20 0 20m	Plot File: Vizex			

### Mineralogical Testwork

Petrography was undertaken on a suite of samples comprising all visual variants of tonalite derived from the Two Mile Hill deeps deposit during the quarter to better understand the nature of gold mineralisation for planning and interpreting ore sorting campaigns.

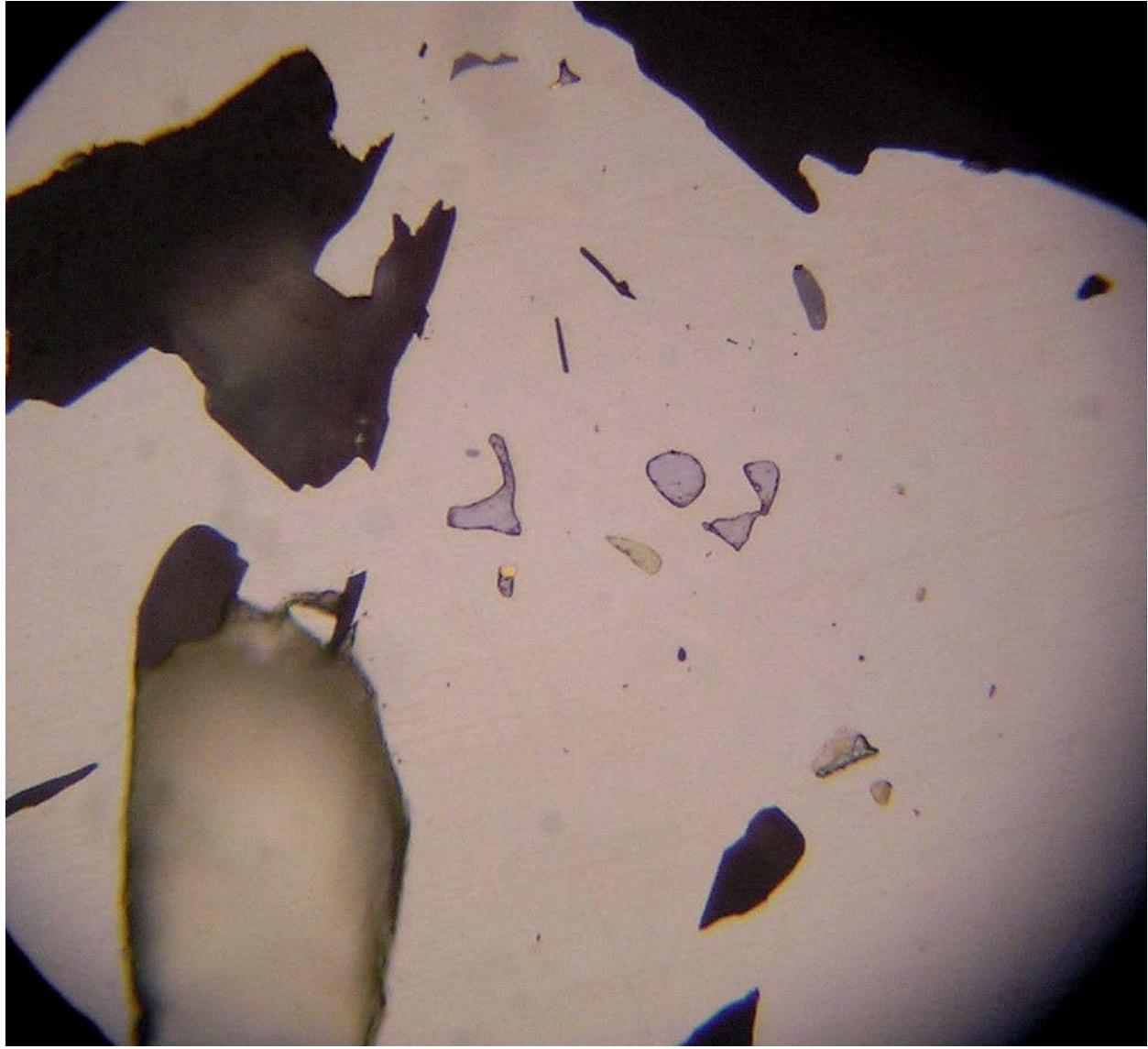
The polished sections confirm that the vast majority of gold occurs within quartz veins in close association with galena (lead sulphide), as shown in Figure 3.



A very limited quantity of gold is also associated with localised pyritic variants of the tonalite, occurring as extremely fine grained (1-2 microns) particles that are partially or totally occluded within coarser euhedral pyrite (and/or galena within the pyrite) as shown in Figure 4.

Figure 4

Limited, ultra-fine gold (bright yellow), again associated with galena (pale grey) and chalcopyrite (pale yellow), occluded within euhedral pyrite (beige) within a pyritic variant of the tonalite host at the Two Mile Hill deposit.



Based on 50g fire assaying of the tonalite off-cuts, with one exception (and interestingly not including that in which gold was microscopically identified), the gold grades are low, consistent with the 0.15g/t Au average grade of the tonalite derived from the original mineralogical testwork.

The study also identified that chloritic variants of the tonalite appear to represent a weaker phase of the same (sericite-carbonate) alteration event, rather than a separate earlier metamorphic or later retrograde event.

The other key finding is that the tonalite appears to represent the original intrusive composition, rather than an alteration product of a precursor granitoid rock.

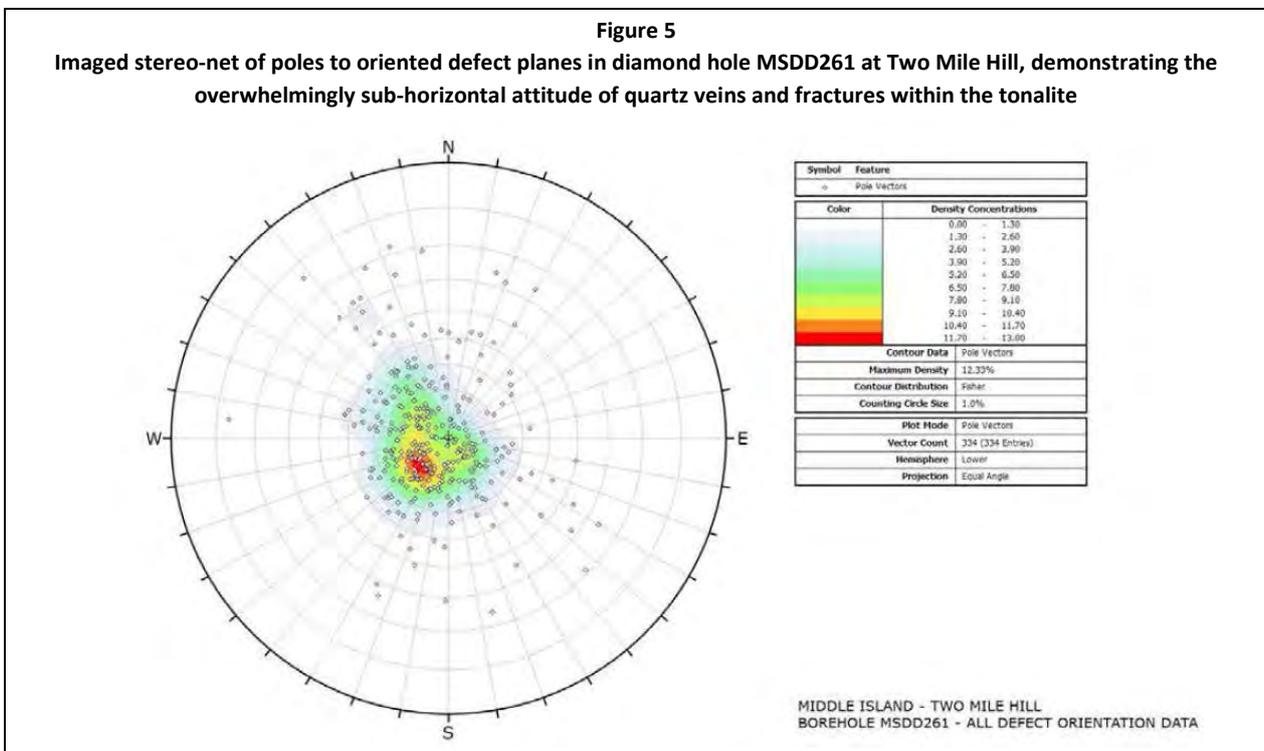
## Geotechnical Assessment

Prior to cutting the core, a preliminary geotechnical analysis of MSDD261 was undertaken by external geotechnical consultants, Peter O'Bryan & Associates (O'Bryan), in order to assess the physical properties of the primary Two Mile Hill tonalite for a range of possible underground mining methods.

MSDD261 was geologically logged on site, and RQD (rock quality designation) and fracture frequency data collected by MDI before transport to Perth. O'Bryan then geotechnically logged the core before it was cut for assay and ore sorting purposes.

Although no dedicated rock strength testing was done, the fresh tonalite is deemed to be consistently strong, and is expected to have a uniaxial compressive strength of >150MPa.

The logged defect orientations show the majority of defects are sub-horizontal, as expected (Figure 5). It has been assumed that reasonably dry underground conditions, the local ground stress field will be benign and mining-induced stress changes can be readily managed.



Assessment of possible mining methods was based on consideration of deposit geometry, mineralisation distribution and general rock mass conditions. Applying designated rating values for the applicable characteristics of the Two Mile Hill tonalite indicates the preferred mining method is sub-level stoping. Cut and fill stoping and sub-level caving methods may also be viable, but are ranked significantly lower than sub-level stoping.

The "shrinkage under fill" method, as used at Mt Wright gold mine in Queensland, is not specifically considered in the stoping selection, but was commented on by O'Bryan. This method can experience high dilution from the introduced fill, but O'Bryan suggests this could be mitigated at Two Mile Hill by mining primary open stopes, leaving a crown pillar and rib pillars, followed by mass blasting and mining of these, in conjunction with introducing fill from surface for support of the final void.

O'Bryan stresses that the assessment is very preliminary and more geotechnical data are required to confirm a preferred mining method and stoping sequence.

## Ore Sorting

Initial ore sorting trials demonstrated that the Two Mile Hill tonalite deeps deposit is amenable to pre-concentration, with a high selectivity of gold mineralisation using X-ray (XRT) and Optical (Colour) sensors. The testwork indicates that sorting can deliver a 185%-257% increase in grade with gold recoveries in excess of 93% and up to 64% of the sorter feed material being rejected (refer ASX Release of 15 January 2018).

In order to confirm this outcome, a series of four primary (fresh) composites have been selected from HQ and PQ diamond core from MSDD261. The composites comprise broad, single, continuous intervals of half core over three grade ranges (high grade - HG, medium grade - MG and low grade - LG). The HG composite was crushed into two fractions at -45mm/+15mm and -30mm/+10mm to assess the impact of crush size on sorting, while the MG and LG composites are derived from half HQ core and were crushed at -30mm/+10mm.

The composites were provided to Steinert for initial sighter and scoping trials using its commercial-scale unit in Perth. Based on the sighter test results, a combination of XRT (to detect and separate higher density sulphides associated with gold) and Optical (to detect and isolate quartz, which hosts the vast majority of gold, on the basis of colour) sensors were confirmed to yield the optimum result.

Especially given the coarse, particulate nature of the majority of gold mineralisation, the various product fractions derived from each composite (along with the fines) are being assayed via multiple 2kg bottle rolls (with residue assays) to determine an average calculated head grade in each case.

While the priority remains on establishing the sorting characteristics of the primary (fresh) material, two partially weathered/oxidised composites of half PQ diamond core have also been submitted for sorting at a -45/+15mm crush size, in order to assess ore sorting on material derived from the planned Two Mile Hill open pit.

As with the primary (underground) component of the deposit, a positive ore sorting outcome on the oxide mineralisation has the potential to reduce the deposit's unit haulage and process operating costs, thereby increasing the size of the optimum pit.

One further scoping trial is being undertaken, at the Tomra facility in Sydney, prior to selection of the optimum processing route and unit to undertake the main ore sorting trial during the June quarter.

## **Wirraminna Gold Deposit**

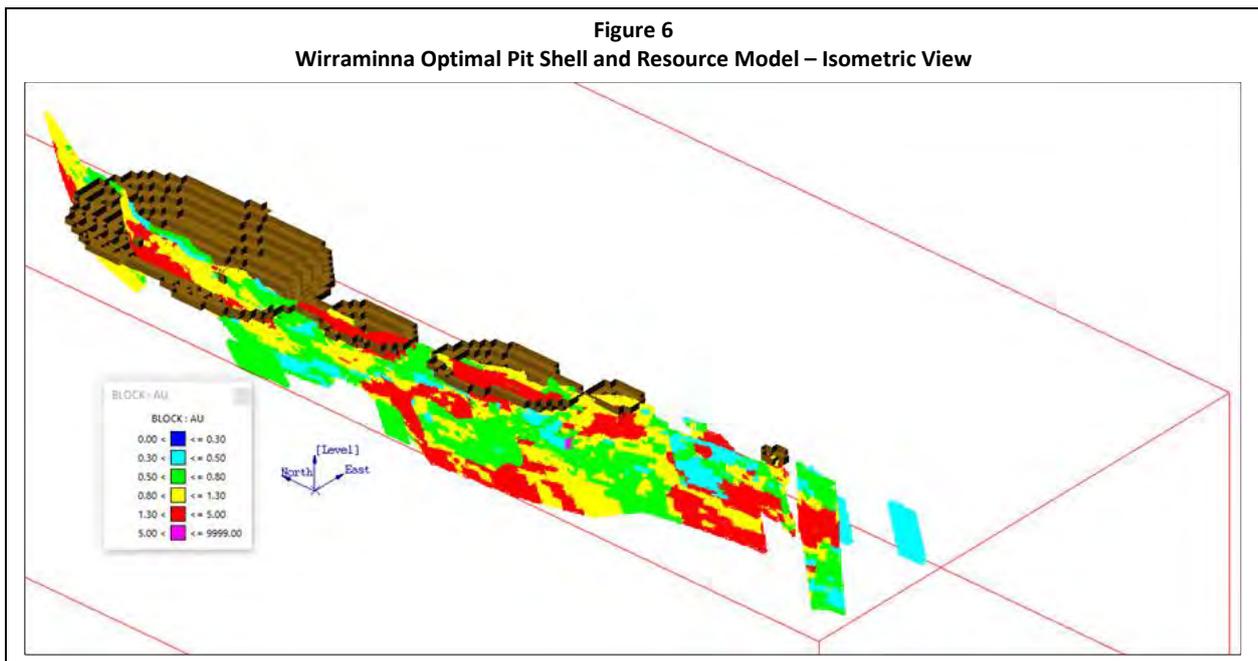
The Wirraminna gold deposit lies only 1km west of the Company's 100%-owned, 600,000tpa Sandstone gold processing plant (Figure 1).

An updated Mineral Resource for Wirraminna deposit was completed during the December quarter (refer ASX Release of 8 December 2017). The updated Mineral Resource more than doubled to 550,000t at 1.3g/t Au for 23,000oz gold (at a 0.5g/t lower cut-off grade) following verification, infill and extension drilling (Figure 6). Some 55% of the new Wirraminna Mineral Resource is classified as Indicated, with the balance in the Inferred category.

## Pit Optimisation

Open pit optimisations (refer ASX Release of 18 January 2018) were undertaken at a base case gold price of A\$1,600/oz, utilising other input parameters derived from the December 2016 Sandstone project Pre-Feasibility Study. The optimal pit shell, based on the maximum undiscounted operating cash flow, includes 72,000t at a grade of 1.97g/t gold, almost all of which comprises Indicated Mineral Resources, at a strip ratio of 9:1. This pit shell depth is to a maximum of 45m from surface and hence is wholly contained within the oxide zone.

An isometric view of the optimal pit shell and the Mineral Resource model is shown in Figure 6 below.



Increasing the overall pit slope to 45 degrees resulted in an approximate 30% increase in contained resource in terms of tonnes and 60% increase in net operating cash flow.

Considerable opportunity remains to further expand the Wirraminna deposit via follow-up RC drilling, including confirming the location of historic higher grade holes, infill drilling of Inferred Mineral Resources and the extension of higher grade zones down-plunge.

## **Sandstone Mill Clean-up**

Some 6.5t of mineralised residues derived from the Sandstone processing plant were despatched for gold recovery in the September 2017 quarter. The cash proceeds derived from processing these residues, representing A\$185,000, were received immediately following the end of the March quarter and, as such, will be reflected in the June quarter financials. This is a pleasing result, consistent with the upper end of the anticipated range, the proceeds of which will be applied to on-going exploration and administration.

**Sandstone Resource Statement**

Mineral Resources applicable to the Sandstone gold project as at 31 March 2018 are provided in Table 1 below.

<b>Table 1</b>						
<b>Sandstone Gold Project Mineral Resource Statement</b>						
<b>Deposit</b>	<b>COG (g/t Au)</b>	<b>Tonnes</b>	<b>Grade (g/t Au)</b>	<b>Contained Gold (oz.)</b>	<b>JORC Classification</b>	<b>JORC Classification</b>
Two Mile Hill – Open Pit	0.7	1,012,000	1.36	44,000	Indicated	2012
Two Mile Hill – Open Pit	0.7	114,000	1.10	4,000	Inferred	2012
Two Mile Hill – Tonalite (below 380m RL)	0.5	8,944,000	1.35	391,000	Inferred	2004
Two Mile Hill – BIF (below 380m RL)	2.0	59,100	9.90	18,800	Indicated	2004
Shillington – Open Pit	0.7	1,015,000	1.33	43,000	Indicated	2012
Shillington – Open Pit	0.7	272,000	1.17	10,000	Inferred	2012
Plum Pudding – Open Pit	1.0	50,000	1.60	2,572	Inferred	2004
Wirraminna – Open Pit	0.5	307,000	1.50	14,600	Indicated	2012
Wirraminna – Open Pit	0.5	243,000	1.10	8,400	Inferred	2012
<b>Total Indicated</b>		<b>2,393,100</b>	<b>1.56</b>	<b>120,400</b>	<b>Indicated</b>	
<b>Total Inferred</b>		<b>9,673,000</b>	<b>1.34</b>	<b>416,000</b>	<b>Inferred</b>	
<b>Total Resource</b>		<b>12,673,000</b>	<b>1.38</b>	<b>537,000</b>	<b>Indicated &amp; Inferred</b>	
<b>Exploration Target*</b>		<b>24-34Mt</b>	<b>1.1-1.4</b>	<b>0.9-1.5Moz</b>	<b>Exploration Target</b>	2012

*\*Includes 2004 Two Mile Hill Inferred Mineral Resource – Tonalite (below 380m RL)*

The Mineral Resource update reflects the upgrade of the Wirraminna deposit from 2004 to 2012 JORC Code compliance, addition of the Two Mile Hill tonalite deeps Exploration Target and an adjustment of the 2004 Inferred Resource relating to the Two Mile Hill tonalite deposit (below 380mRL) to exclude 2012 Indicated and Inferred Mineral Resources above 380mRL.

**Planned 2018 June Quarter Activities**

Activities planned at the Sandstone Project for the June quarter variously comprise:-

**Two Mile Hill Tonalite Deeps**

- Completion of more definitive ore sorting trials to include multi-stage XRT/Colour sorting, with iterations around grade range and crush size.
- Commencement of staged, resource definition diamond drilling of the mineralised tonalite deeps deposit to an initial depth of ~420m.

**Wirraminna**

- Additional RC drilling to extend the Wirraminna deposit and confirm historic high grade drill results.

**Davis**

- Possible limited follow-up RC drilling.

**Cowan**

- Limited initial rock chip sampling and RC drilling of recently identified mineralised quartz vein.

**McClaren**

- Possible limited initial RC drilling.

**Dandaraga**

- Geological mapping and soil sampling over the entire project, and possible limited RC drilling at Agnes.

**Ned's**

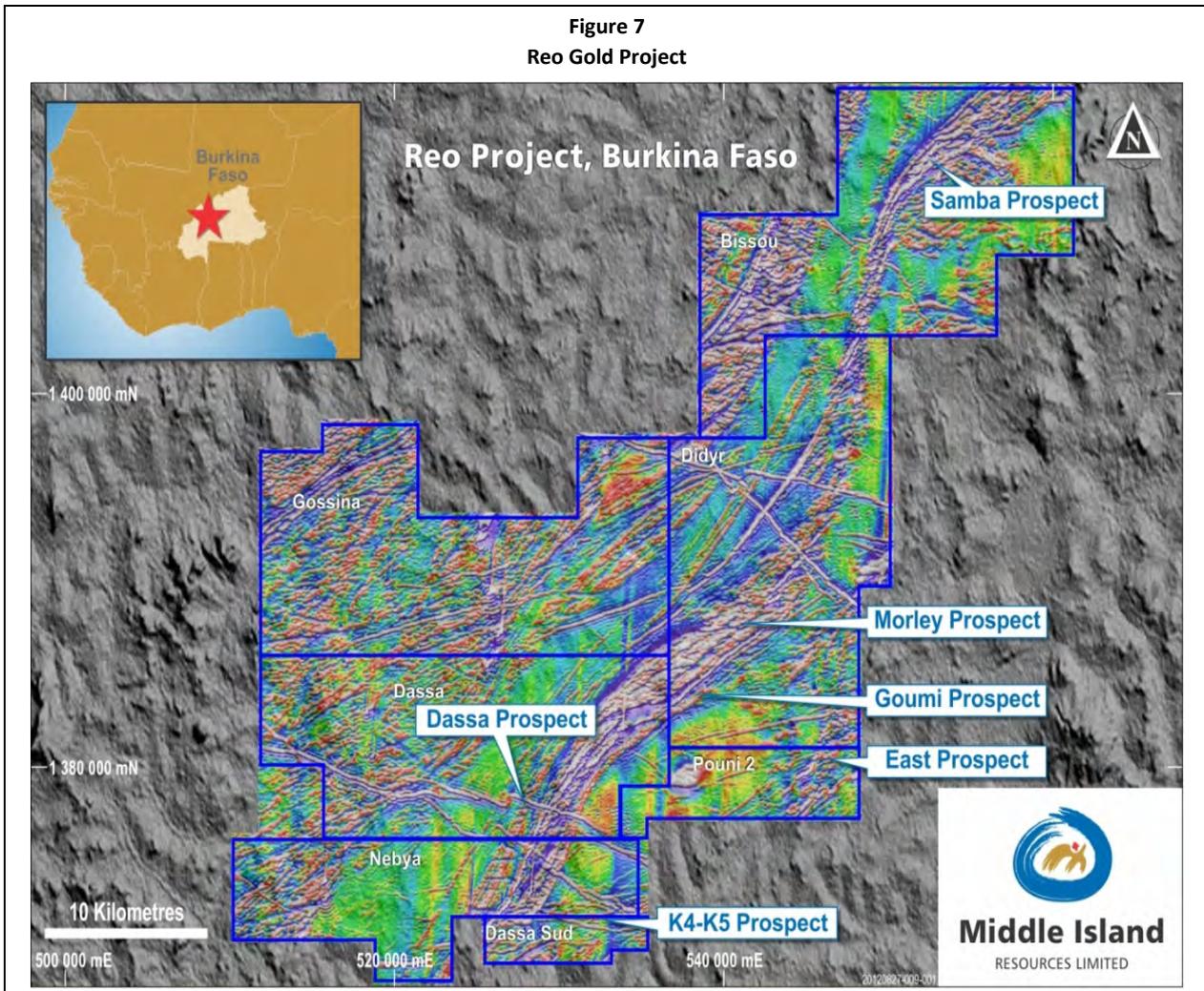
- Soil sampling over the entire project.

**Other**

- Continue to review other proximal consolidation transactions.

## **Reo Gold Project (100%) – Burkina Faso**

The Reo gold project is shown in Figure 7 below.



### **Exploration**

No exploration was undertaken at the Company's 100%-owned Reo gold project in Burkina Faso during the March quarter, pending the outcome of the remaining permit extension applications and identifying an appropriate partner to help fund the project through to feasibility.

### **Option to Purchase Agreement**

Middle Island has executed a Heads of Agreement (HOA) to divest its 100% interest in the Reo gold project to Tajiri Resources Corp. (TSX-V:TAJ, Tajiri) via an Option to Purchase Agreement (refer ASX Release of 13 February 2018).

Tajiri has paid MDI US\$35,000 on execution of the HOA in return for a three-month exclusivity period in which to complete its due diligence. Tajiri has subsequently completed a site visit and due diligence review, and, subject to confirmation of title, advises that it wishes to proceed with the transaction.

On signing of a formal Option to Purchase Agreement, the essential terms of which are set out in the HOA, Tajiri is required to pay a further US\$150,000 and issue to Middle Island 2.5 million Tajiri shares. By that agreement, Middle Island will grant Tajiri an exclusive option to purchase MDI's entire interest in the Reo project (the Option). The term of the Option is 18 months. During the Option term, Tajiri must pay all expenses associated with maintaining the Reo Project permits in accordance with Burkinabe law.

Should Tajiri elect to exercise the Option, it will pay a further US\$150,000 and issue Middle Island with a further 2.5 million Tajiri shares.

The stipulated number of shares the subject of the two tranches to be issued to Middle Island were calculated on a fully diluted basis based on Tajiri's current capital structure, with additional shares to be issued to Middle Island at no cost if Tajiri issues further shares or options prior to exercising the Option. All shares issued to MDI will be subject to any mandatory minimum TSX-V restriction periods.

If the Option is exercised by Tajiri, Middle Island will retain a 2% net smelter return (NSR) royalty on any minerals derived from the Reo project. Tajiri will have the right to acquire that royalty from Middle Island for US\$5 million.

If the Option is not exercised by Tajiri, Middle Island will retain all consideration already paid to Middle Island and it will continue to own its 100% interest in the Reo Project.

### **Tenure**

Following ratification of the new Mining Act in Burkina Faso in February 2017, the first two permit extension applications for the Reo Project were granted during 2017. It is anticipated that remaining extension applications will be granted during 2018 and progress on these continues to be actively pursued and closely monitored.

## **Safety, Environmental & Social**

### **Health, Safety & Environment**

No injuries, safety or environmental incidents were recorded at the Company's projects and premises during the March quarter.

Rehabilitation of disturbed areas at the Sandstone gold project, primarily drill sites, is being progressively undertaken in accordance with POW requirements. Safety signage and restricted access areas associated with the open pits and the processing plant are being regularly maintained.

### **Social**

The Company continues to engage with the Shire of Sandstone, pastoralists and the local community.

Contact with our host communities at the Reo project in Burkina Faso is being maintained, to ensure they are informed of Middle Island's status, and this arrangement continues to be actively reciprocated.

## **Comment**

### **Middle Island Managing Director, Mr Rick Yeates:**

"Middle Island continues to make excellent progress on its multi-faceted strategy at Sandstone, presently focussed on the Two Mile Hill tonalite deeps deposit.

"An intersection of 100m at 2.02g/t Au in MSDD261 was undoubtedly a highlight, along with significant progress made on understanding the deposit's mineralogy, geotechnical parameters and ore sorting attributes.

"The Heads of Agreement to divest the Reo gold project in Burkina Faso during the quarter is a pleasing outcome. The transaction structure allows Middle Island shareholders to retain a significant indirect interest in the upside potential of the Reo project via the Tajiri equity and royalty components. The full equity component also offers shareholder exposure to Tajiri's highly prospective gold project interests in Guyana, South America.

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WEBSITE: [www.middleisland.com.au](http://www.middleisland.com.au)

### Forward Looking Statements

Certain statements made during or in connection with this communication, including, without limitation, those concerning the economic outlook for the mining industry, expectations regarding gold prices, exploration costs and other operating results, growth prospects and the outlook of Middle Island's operations contain or comprise certain forward looking statements regarding Middle Island's exploration operations, economic performance and financial condition. Although Middle Island believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be given that such expectations will prove to have been correct.

Accordingly, results could differ materially from those set out in the forward looking statements as a result of, among other factors, changes in economic and market conditions, success of business and operating initiatives, changes that could result from future acquisitions of new exploration properties, the risks and hazards inherent in the mining business (including industrial accidents, environmental hazards or geologically related conditions), changes in the regulatory environment and other government actions, risks inherent in the ownership, exploration and operation of or investment in mining properties in foreign countries, fluctuations in gold prices and exchange rates and business and operations risks management, as well as generally those additional factors set forth in our periodic filings with ASX. Middle Island undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events.

### Competent Persons' Statement

Information in this report relates to exploration results that are based on information compiled by Mr Rick Yeates (Member of the Australasian Institute of Mining and Metallurgy). Mr Yeates is a fulltime employee of Middle Island and has sufficient experience which is relevant to the style of mineralisation and type of deposits under consideration and to the activities undertaken to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Yeates consents to the inclusion in the release of the statements based on his information in the form and context in which they appear.

Middle Island Resources Limited (**Company**) advises the following information required under ASX Listing Rule 5.3.3 as at 31 March 2018:

**Mining Tenements**

Tenements	Mining tenements acquired during the quarter	Mining tenements disposed during the quarter	Mining tenements held at the end of the quarter	Tenement location
Pouni	-	HOA to divest 100% signed	100% - extension pending	Burkina Faso
Dassa	-	HOA to divest 100% signed	100% - extension pending	Burkina Faso
Didyr	-	HOA to divest 100% signed	100%	Burkina Faso
Dassa Sud	-	HOA to divest 100% signed	100%	Burkina Faso
Nebya	-	HOA to divest 100% signed	100% - extension pending	Burkina Faso
Gossina	-	HOA to divest 100% signed	100% - extension pending	Burkina Faso
M57/128	-	-	100%	Western Australia
M57/129	-	-	100%	Western Australia
P57/1395	-		Option to acquire 100%	Western Australia
P57/1384	-		100%	Western Australia
E57/1028	-		Option to acquire 100%	Western Australia

Visit [www.middleisland.com.au](http://www.middleisland.com.au) for further information and announcements.