

# **POSITIVE RESULTS FROM BULK ORE SORTER TEST WORK AT HORN ISLAND**

## **Highlights**

- ◆ Results of the Tomra Ore sorter test work on two different samples (Horn Island drill core and historic 1980's mine waste dump material) has demonstrated the suitability of this low cost, low energy processing solution.
- ◆ High-volume feed rates of 48tph & 79tph were applied with high gold recoveries of 94% and 93% respectively. The Tomra system proved extremely efficient to separating mineralised sulphide vein material and rejecting predominantly barren granite host rock.
- ◆ Significant uplift of Au assay grades returned for drill core samples, achieving up 392% increase with a significant mass reduction of up to 88%.
- ◆ Significant uplift of gold grades for waste dump samples achieved with a 463% increase in grade and a reduction mass of 89%.
- ◆ Waste product reject gold assay averages for resource drill core and waste samples were 0.21g/t Au and 0.16 g/t Au respectively.
- ◆ Tomra Ore sorter results are considered material, with results being integrated into further metallurgical testing for inclusion into scoping studies as part of the future mining operation.

Advanced gold and copper explorer, Alice Queen Limited (ASX:AQX) ("Alice Queen" or the "Company"), is pleased to announce the results from its recent bulk Ore Sorter Test work at its Horn Island Project, Torres Strait, Queensland.

## **Alice Queen's Managing Director, Andrew Buxton said,**

“These results are extremely encouraging for the Company. Yesterday's ASX announcement regarding the results of the second half of the Company's RC infill program set the scene in relation the forthcoming update to the Horn Island Mineral Resource Estimate. However, most importantly, when one combine's yesterday's positive drill results with today's Tomra ore sorting results, it is easy to be very optimistic about the future outcome of the Horn island Scoping Study.”

The Company recently commissioned Tomra Ore Sorter Solutions Pty Ltd to assess the amenability of two bulk samples to Tomra's XRT ore sorting technology. Diamond core (totalling ~ 2 tonne) from the **Horn Island Inferred Resource area (JORC 2012) of 7.9 Mt @ 1.9 g/t Au for 492koz** (see ASX release 02/08/2018, "Horn Island Resource Upgrade") was assessed along with a separate sample collected from legacy low-grade stockpiles from the historic 1980's gold mining operations. A summary of these results is presented below.

## Tomra Ore Sorter Test Work

Alice Queen Limited recently engaged Tomra Sorting Solutions Pty Ltd to trial the Tomra proprietary XRT sorter systems on bulk samples of both high grade and low ore from Horn Island.

Based on the nature of mineralisation, the Company considered the Tomra method had significant potential to further improve the Horn Island Project's economics. The purpose of the work was to assess the suitability of Tomra's XRT systems to efficiently sort mineralised vein material from barren granite host rock. The results from this recently completed work supports this view with further details of the work with material results presented below. By removing waste rock before wet processing, the capital and operating cost of the project can be significantly reduced.

## Sample Preparation

Two separate bulk samples were collected including an approximate 2 tonne drill core composite sample from the Horn Island resource area and a 5 tonne sample of legacy waste dump material from the historic 1980's gold mining operations.

For performance testing, all material was screened at 8-19mm & 19-50mm as per Table 1 below. For this set of test work, the 8-19mm & 19- 50mm material was sorted. -8mm material remains unsorted while any material +50-180mm was crushed and screened into the size fractions below. Any material +180mm was too coarse to be crushed on site and was considered unsorted oversize.

**Table 1:** Sample screening sizes.

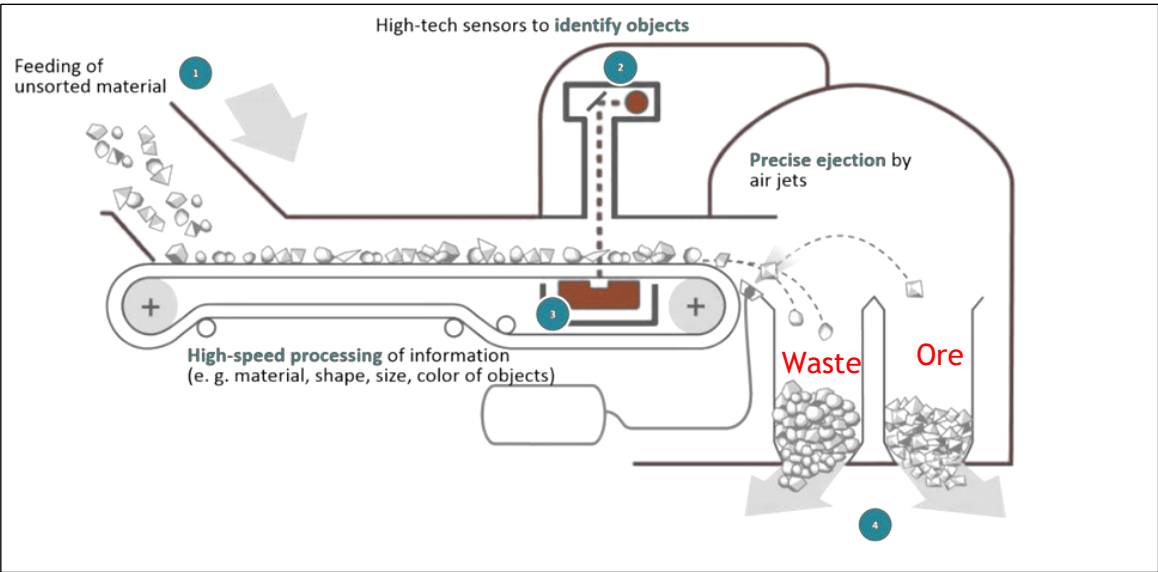
Sample	Mass Received	-8mm Square Mesh	8-19mm Square Mesh	19-50mm Square Mesh	180-300mm Square Mesh
Waste Dump	5027kg	1276kg	714kg	2143kg	894kg
Fresh Core	2036kg	336kg	300kg	1400kg	0kg

## Test Procedure

The Ore Sorter utilised in this work included Tomra's COM XRT systems. This type of sorter uses a broad-band electrical x-ray source that is applied to the material to be sorted while it is moving along a belt. The X-ray sensor system below the material produces a digital image of the material using two different energy bands. The X-ray attenuation through the material is different within **the two bands** and depends



on both the material thickness and atomic density, which allows the identification sulphide containing material from barren waste which is then rejected.



**Figure 1.** Simplified scheme of the Tomra Com Series processing

Examples of raw and classified XRT images collected are shown in Table 1 below. Based on ore specific algorithms, ore particles are identified and separated from barren waste using jets of compressed air.

**Table 1.** Raw (left) and processed (right) XRT images of tested material. Gold containing material is indicated by arrows below and is clearly distinguishable from barren waste.

Material/Scan	Raw XRT image	Classified XRT Image
Drill Core		
8-9mm		
Contrast XRT Feed		







**Figure 2.** Tomra full size test plant facility in Sydney where 2t drill core and 5t waste dump material was tested. Processing involved on site jaw crusher, screening plant, feed bin, and regulated conveyor system delivering screened material into the Tomra Ore Sorter

## Results

Sorting of both bulk samples has proven highly effective. Importantly the test work demonstrated the machine's ability to achieve:

1. A significant uplift in gold grade
2. A low mass pull to the concentrate stream
3. High throughputs of 48t/hr to 79t/hr

In summary, the best results for both sample types is as follows:

- ◆ **Drill Core (Resource Area):** Ore sorter improved average grade by up to 392% with the highest mass reduction of 88%. The rejected waste product stream averaged a low 0.21g/t Au.
- ◆ **Waste Dump (Historic Gold Mining):** Ore sorter improved average grade by up to 463% with highest mass reduction of 89%. The rejected waste product stream averaged a low 0.16g/t Au.

The ore sorter production and assay results of the two sample types are presented in the below tables, noting that the XRT-DE runs were completed on the XRT-CON waste stream.



**Table 2.** Au results from screened fractions of drill core sample material (~2t) collected from the Horn island resource area. Ore Sorter Product grades are highlighted in red text.

Sample	Feed Size	Run	Feed Rate	Sensor	Fraction	Mass (kg)	Mass (%)	Au (ppm)	Au Recovery	Cumulative Au Recovery
Fresh Core	8-19mm	Run 2	32	XRT-CON	Feed	300	100%	1.13	63%	84%
					Product	44	15%	4.84		
					Waste	256	85%	0.50		
		Run 3	38	XRT-DE	Feed	256	100%	0.50	56%	
					Product	49	19%	1.46		
					Waste	207	81%	0.27		
	19-50mm	Run 7	48	XRT-CON	Feed	789	100%	1.37	94%	98%
					Product	306	39%	3.33		
					Waste	483	61%	0.13		
		Run 9	50	XRT-DE	Feed	480	100%	0.13	60%	
					Product	60	13%	0.64		
					Waste	420	88%	0.06		
		Run 8	79	XRT-CON	Feed	611	100%	1.54	93%	96%
					Product	255	42%	3.43		
					Waste	356	58%	0.18		
		Run 10	73	XRT-DE	Feed	366	100%	0.18	42%	
					Product	50	14%	0.55		
					Waste	316	86%	0.12		

**Table 3.** Au results from screened fractions of waste dump material (~5t) collected from the Horn island resource area. Ore Sorter Product grades are highlighted in red text.

Sample	Feed Size	Run	Feed Rate	Sensor	Fraction	Mass (kg)	Mass (%)	Au (ppm)	Au Recovery	Cumulative Au Recovery
Waste Dump	8-19mm	Run 1	34	XRT-CON	Feed	714	100%	0.44	64%	80%
					Product	81	11%	2.48		
					Waste	633	89%	0.18		
		Run 4	31	XRT-DE	Feed	629	100%	0.18	46%	
					Product	118	19%	0.45		
					Waste	511	81%	0.12		
	19-50mm	Run 5	46	XRT-CON	Feed	1046	100%	0.56	72%	78%
					Product	306	29%	1.37		
					Waste	740	71%	0.23		
		Run 11	44	XRT-DE	Feed	741	100%	0.23	23%	
					Product	99	13%	0.39		
					Waste	642	87%	0.20		
		Run 6	75	XRT-CON	Feed	1097	100%	0.42	83%	88%
					Product	383	35%	0.99		
					Waste	714	65%	0.11		
		Run 12	M/A	XRT-DE	Feed	715	100%	0.11	32%	
					Product	117	16%	0.22		
					Waste	598	84%	0.09		



All product grades were  $\geq 3.33$ ppm from a single pass and as high as 4.84ppm for the 8-19mm material. Au recoveries were excellent achieving 94% and 93% in single passes at 48tph and 79tph respectively for the 19-50mm material. Although the Au recovery was lower than expected for the fresh core 8-19mm run 2 material (63%), it is important to realize the concentrate mass was quite low (85% mass rejection) and so the parameters can be modified to pull more mass to product in favour of higher Au recovery. Similarly, to the waste dump runs, the scavenger DE-XRT runs did achieve favourable results, but the grade is likely too low to be economical when used in isolation. It is worth noting however, that as the two sorting programs use the same sensor, they can be run in a single pass in tandem for a combined result. This scenario has not been fully assessed and represents an upside that will be reviewed in subsequent test work.

Depending on the grade of the ore,  $\geq 90\%$  recoveries are considered achievable. ROM ore is expected to outperform crushed drill core, due to the extra dilution incurred with drill-core shaped material resulting in misclassification due to edge effects. It is likely that when bulk material is run on site, the process will be optimised in real time to further improve sorting quality.

## Conclusions

The results from this set of test work were considered highly successful with results indicating positive amenability to Tomra XRT sorting technology. Significant gold grades were achieved across the two bulk samples with substantial mass reduction achieved at a high throughput rate. These results will be integrated into metallurgical testing and included into the Company's ongoing Scoping Study into mining at the Horn Island gold resource. By reducing the mass of ore reporting to the capital and energy intensive grinding and leaching circuits, the project's economics will be significantly enhanced.

The Company intends to update shareholders once metallurgical results are made available.



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### Competent Persons Statement

The information in this announcement that relates to exploration results is based on information compiled by Mr Adrian Hell BSc (Hons) who is a full-time employee of Alice Queen Limited. Mr Hell is a member of the Australasian Institute of Mining and Metallurgy (AusIMM). Mr Hell has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves". Mr Hell consents to the inclusion of this information in the form and context in which it appears in this report.

### ASX Listing Rule 5.23 Statement

The information in this ASX Release that relates to the Company's Mineral Resource estimate is extracted from and was reported in the Company's ASX announcement titled "Horn Island Resource Upgrade" dated 2 August 2018, which is available at [www.asx.com.au](http://www.asx.com.au) the competent person being Mr. Richard Buerger BSc. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in those announcements continue to apply and have not materially changed. The Company confirms that the form and context of the Competent Person's findings in relation to that Mineral Resource estimate have not been materially modified from the original market announcements.



# JORC Code, 2012 Edition – Table 1 report template

## Section 1 Sampling Techniques and Data

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

Criteria	JORC Code explanation	Commentary																																																																																																																																																																	
<b>Sampling techniques</b>	<p><i>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.</i></p>	<ul style="list-style-type: none"><li>Composite sections of ½ drill core were selected from previously reported PQ, HQ &amp; NQ drill hole across the Horn Island Resource area. All ½ core drill core samples were combined totalling an approximate 2 tonnes. Drill core composite sections sampled are presented in the below table. Sampling criteria considered area that represented potential minable parcels of material.</li></ul> <table><tr><th>Hole ID</th><th>from</th><th>to</th><th>total</th><th>Dia</th><th>KG</th><th>LithGroup</th></tr><tr><td>16NGD004</td><td>57</td><td>84</td><td>27</td><td>HQ</td><td>95</td><td>MFGP/QFGP</td></tr><tr><td>17NGD018</td><td>88</td><td>114</td><td>26</td><td>HQ</td><td>91</td><td>MFGP/QFGP</td></tr><tr><td>17NGD018</td><td>125</td><td>135.8</td><td>10.8</td><td>HQ</td><td>38</td><td>QFGP</td></tr><tr><td>17NGD018</td><td>153.4</td><td>164</td><td>10.6</td><td>HQ</td><td>37</td><td>QFGP</td></tr><tr><td>17NGD025</td><td>82</td><td>103</td><td>21</td><td>HQ</td><td>74</td><td>MFGP</td></tr><tr><td>17NGD025</td><td>111</td><td>123</td><td>12</td><td>HQ</td><td>42</td><td>MFGP</td></tr><tr><td>17NGD025</td><td>131</td><td>162</td><td>31</td><td>HQ</td><td>109</td><td>MFGP/QFGP</td></tr><tr><td>17NGD025</td><td>244</td><td>263</td><td>19</td><td>HQ</td><td>67</td><td>MFGP/QFGP</td></tr><tr><td>17NGD027</td><td>95</td><td>128</td><td>33</td><td>HQ</td><td>116</td><td>MFGP/QFGP</td></tr><tr><td>18NGD082</td><td>126</td><td>142</td><td>16</td><td>NQ</td><td>56</td><td>QFGP</td></tr><tr><td>20NGD084</td><td>82</td><td>88</td><td>6</td><td>PQ</td><td>40</td><td>MFGP</td></tr><tr><td>20NGD084</td><td>112</td><td>127</td><td>15</td><td>PQ</td><td>90</td><td>QFGP</td></tr><tr><td>20NGD084</td><td>142</td><td>156</td><td>14</td><td>PQ</td><td>85</td><td>QFGP</td></tr><tr><td>20NGD084</td><td>169</td><td>182</td><td>13</td><td>PQ</td><td>80</td><td>QFGP</td></tr><tr><td>20NGD085</td><td>36</td><td>56</td><td>20</td><td>PQ</td><td>119</td><td>MFGP</td></tr><tr><td>20NGD085</td><td>62</td><td>111</td><td>49</td><td>PQ</td><td>300</td><td>MFGP/QFGP</td></tr><tr><td>20NGD085</td><td>120</td><td>152</td><td>32</td><td>PQ</td><td>200</td><td>QFGP</td></tr><tr><td>20NGD085</td><td>164</td><td>175</td><td>11</td><td>PQ</td><td>70</td><td>QFGP</td></tr><tr><td>20NGD086</td><td>58</td><td>77</td><td>19</td><td>PQ</td><td>120</td><td>MFGP</td></tr><tr><td>20NGD086</td><td>90</td><td>111</td><td>21</td><td>PQ</td><td>136</td><td>MFGP</td></tr><tr><td>20NGD086</td><td>119</td><td>126</td><td>7</td><td>PQ</td><td>45</td><td>QFGP</td></tr><tr><td colspan="5">Totals</td><td colspan="2">2007</td></tr></table>	Hole ID	from	to	total	Dia	KG	LithGroup	16NGD004	57	84	27	HQ	95	MFGP/QFGP	17NGD018	88	114	26	HQ	91	MFGP/QFGP	17NGD018	125	135.8	10.8	HQ	38	QFGP	17NGD018	153.4	164	10.6	HQ	37	QFGP	17NGD025	82	103	21	HQ	74	MFGP	17NGD025	111	123	12	HQ	42	MFGP	17NGD025	131	162	31	HQ	109	MFGP/QFGP	17NGD025	244	263	19	HQ	67	MFGP/QFGP	17NGD027	95	128	33	HQ	116	MFGP/QFGP	18NGD082	126	142	16	NQ	56	QFGP	20NGD084	82	88	6	PQ	40	MFGP	20NGD084	112	127	15	PQ	90	QFGP	20NGD084	142	156	14	PQ	85	QFGP	20NGD084	169	182	13	PQ	80	QFGP	20NGD085	36	56	20	PQ	119	MFGP	20NGD085	62	111	49	PQ	300	MFGP/QFGP	20NGD085	120	152	32	PQ	200	QFGP	20NGD085	164	175	11	PQ	70	QFGP	20NGD086	58	77	19	PQ	120	MFGP	20NGD086	90	111	21	PQ	136	MFGP	20NGD086	119	126	7	PQ	45	QFGP	Totals					2007	
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Drill core composite sample locations for Tomra ore sorter work, red polyline defines Horn Island resource outline

- Legacy waste dump material from the historic and abandoned gold mining operation was sampled using excavator, sourcing unsorted rock from surface to approximately 1-2m depth visual screening of larger than 0.5m diameter rock was undertaken.



Above figure outlines Waste dump sample locations south side of historic open cut pit area

*Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.*

- Composite drill core samples were selected by a geologist based on previously reported gold assays intercept results of original primary  $\frac{1}{2}$  core intervals. The combined composite 2 tonne sample provided an estimated average grade of 1.4g/t Au.
- Waste dump sampling was supervised by geologist and trained field assistant undertaken across 5 sites from an area historically termed the low grade stockpile.

*Aspects of the determination of mineralisation that are Material to the Public Report.*

- Two large composite samples were collected for Tomra Ore sorting work including ~2 tonne composite drill core sample and ~5 tonne waste dump material
- All samples were submitted to Tomra Ore Sorting Solutions for initial jaw crushing, screening, and ore sorting.
- Tomra ore sorter processed and screened sorter material was freighted to ALS Metallurgy Perth for further crushing/pulverisation, sub sampling and gold (Fire Screen and BLEG) and silver (ICP) analysis

## **Drilling techniques**

*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.).*

- 3 PQ diameter diamond drill holes were completed for the Tomra ore sorting test work.
- Other ½ core samples were collected from previously completed and reported NQ and HQ drilling.

## **Drill sample recovery**

*Method of recording and assessing core and chip sample recoveries and results assessed.*

- Core recovery for all holes has been measured from drillers run blocks with 99% of the sample intervals recovered > 90%, discounting overburden.
- Poor recovery has only been noted in overburden (0-2m depth) and strongly weathered & oxidised zones. This area represents a negligible section of the total drill hole material

*Measures taken to maximise sample recovery and ensure representative nature of the samples.*

- Diamond core has been reconstructed into continuous runs for orientation marking with depths checked against the depths given on the driller's core blocks.
- Excavator used a solid bucket which limited sample loss during excavator of each sample.

*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.*

- As core recovery is >90% for the fresh mineralisation, there is no evidence that a relationship exists between grade and sample recovery.

## **Logging**

*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*

- All AQX drill core has been measured for recovery and RQD by drill run, using the core10 method. Intervals of lost core assessed and assigned.
- Intervening metre marks have been labelled on the drill core.
- All diamond core has been logged to industry best standards for lithology, alteration, veining, mineralisation and structure, using a specific set of logging codes to ensure consistency in logging.
- Structural measurements of specific features i.e. vein orientations, fault and foliation etc... have also been taken for the entire length of orientated drill core.

<b>Logging</b> continues	<i>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.</i> continues	<ul style="list-style-type: none"> <li>• All drill core logging is captured on the company's "in-house" Access based digital logging template with a number of validation requirements prior to final acceptance.</li> <li>• No geological logging completed on the waste dump material sample.</li> </ul>
	<i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography</i>	<ul style="list-style-type: none"> <li>• Logging is quantitative in nature.</li> <li>• 100% of core has been photographed wet, in shade with high resolution/megapixel camera.</li> <li>• Tomra screened materials is photographed and recorded. XRF scanning images are also captured of screen batch products.</li> </ul>
	<i>The total length and percentage of the relevant intersections logged.</i>	<ul style="list-style-type: none"> <li>• All drill core has been logged with the information (lithology, structure, alteration, mineralisation and magnetic susceptibility) digitally captured in an Access database.</li> <li>• Tomra used basic descriptors for the waste dump samples</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<i>If core, whether cut or sawn and whether quarter, half or all core taken.</i>	<ul style="list-style-type: none"> <li>• ½ core sampling was collected from remaining reference material in core trays at the Horn island core farm. No reference material remains on site for the composite intervals selected for the Tomra work</li> </ul>
	<i>If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.</i>	<ul style="list-style-type: none"> <li>• Waste dump sampling included blasted and excavated rocks stockpiled from previous historic mining operations. Sampling was completed by an excavator which loaded samples directly into bulka bags. Some visual screening of larger greater than 0.5m diameter material was completed.</li> </ul>
	<i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i>	<ul style="list-style-type: none"> <li>• All sample preparation prior to Ore Sorting undertaken at Tomra Ore Solutions in Sydney. Sample preparation process at Tomra included crushing and pre-screening of drill core and waste dump samples into the following sub samples: -8mm, 8-19mm, 19-50mm 180-300mm. -8mm material is considered unsorted undersize material while any material +50-180mm was crushed and screened into the size fractions Plus 180mm was too coarse to crush and considered unsorted oversize. Results of the Tomra preparation work is presented below table.</li> </ul>

**Sub-sampling techniques and sample preparation**

*continues*

Sample	Mass Received	-8mm Square Mesh	8-19mm Square Mesh	19-50mm Square Mesh	180-300mm Square Mesh
Waste Dump	5027kg	1276kg	714kg	2143kg	894kg
Fresh Core	2036kg	336kg	300kg	1400kg	0kg

- Screened and Tomra sorter processed material (ore and reject) were individually placed in labelled bulka bags. These large samples were subsequently sent ALS Metallurgy (Perth) sample preparation, sub sampling and geochemical analysis.
- ALS Metallurgy sample preparation included blend and rotary split to obtain a 15kg sample. Samples were then submitted to a control crushing to <3.35mm fraction. <3.35mm samples were then blended and rotary split to obtain three subsamples. Each subsample comprised 4 x 1kg samples which were submitted for 1kg fire screen assay, 1kg BLEG and 0.5kg Ag (ICP Scan).
- Sample preparation at ALS Metallurgy is summarised below  
 Receive Samples and Inventory - 25 Samples  
 Crush to Nominal <10 mm - 18 Samples  
 Rotary Blending & Splitting <150 kg - 8 Samples  
 Rotary Blending & Splitting >150 kg - 12 Samples  
 Control Crush 10kg to <3.35 mm  
 Rotary Blending & Splitting 3x Subsamples

*Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.*

- Subsampling was undertaken at ALS Metallurgy which meets QAQC requirements to manage large sample weights. This was undertaken using rotary splitting methods. All subsampling was supervised by ALS accredited lab personnel. This was undertaken to review potential nuggety effect of gold and QAQC for homogenisation of samples. In total 3 subsamples were collected.

*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.*

- Core samples submitted to Tomra represented the second and retained reference ½ core stored in core trays at the Horn island project.

*Whether sample sizes are appropriate to the grain size of the material being sampled.*

- Sample size including 2tonne drill core composite and 5tonne waste rock sample is consider a more than sufficient size for the nature for the analysis being performed.



***Quality of assay data  
and laboratory tests***

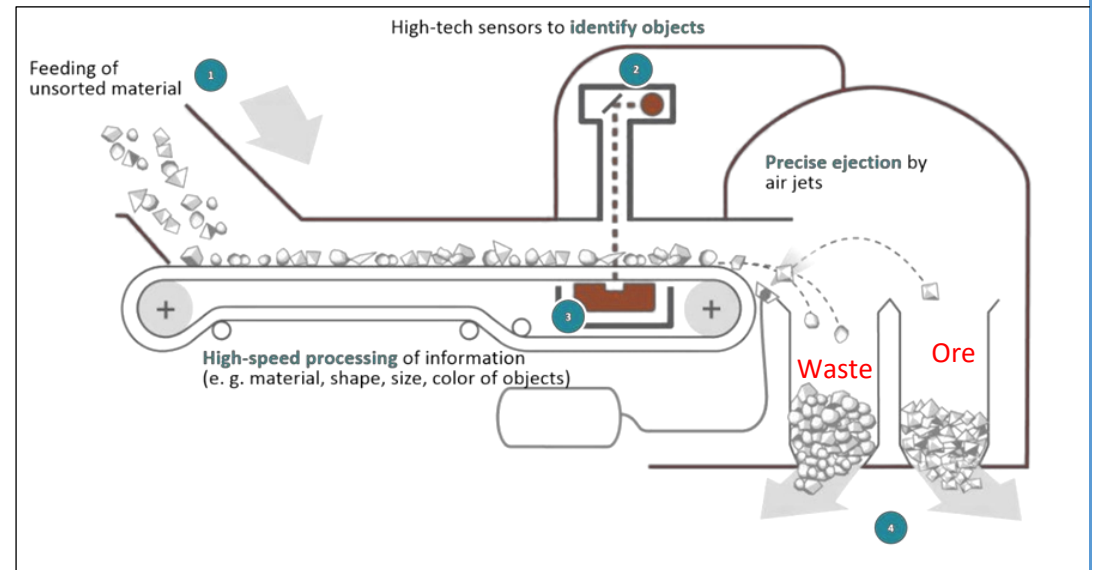
*The nature, quality and appropriateness of the  
assaying and laboratory procedures used and  
whether the technique is considered partial or total.*

- Screened samples were processed using Tomra Proprietary COM XRT sorter system. The COM Tertiary XRT Sorter uses a broad-band electrical x-ray source that is applied to the material to be sorted while it is moving along a belt. The X-ray sensor system below the material produces a digital image of the material, using two different energy bands. The X-ray attenuation through the material is different within the two bands and depends on both, the material thickness and atomic density. Special transformation of the attenuation images of the two bands classifies each pixel per the measured atomic density. Because the X-rays pass through the particles and are a measure of the attenuation through the entire rock, XRT separation is independent of surface quality of the material or its moisture. Surface properties such as colour and texture and/or contaminations such as dirt, dust, paint, etc. are irrelevant to the detection.

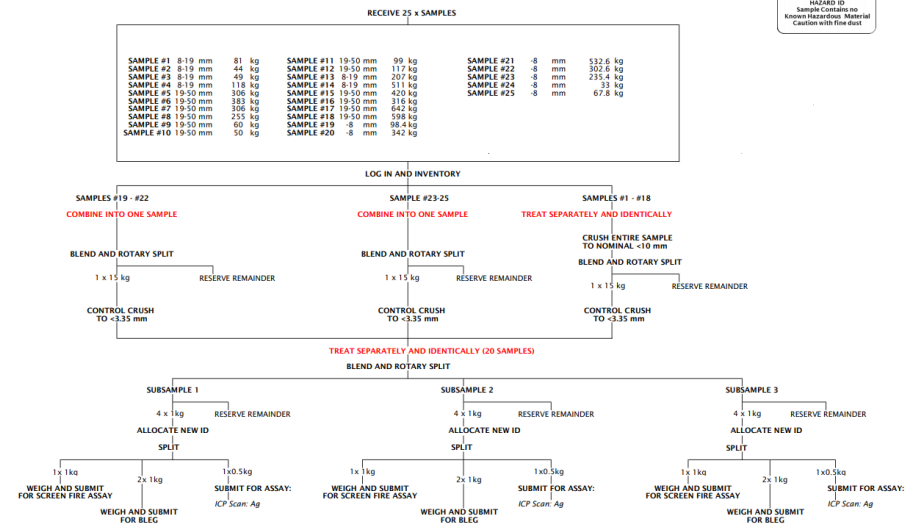


Above image is the XRT sorter system used for the Ore sorter test work

- Workflow of the Tomra sorter system is outlined below.



- The above diagram highlights a “belt” sorter configuration, which means the unsorted material (1) is fed and moving along with the belt. The actual scanning (2) + (3) is happening while the material is moving along with the belt. After scanning and evaluation of the data, compressed air is used to eject the identified objects to one of the bays of the separation chamber (4). Depending on the classification the selected particles are either ejected upwards by air jets or non-ejected. It is important to note that “Eject” refers to the material that the system has been configured to blow out of the material stream; this can be either the waste or the product.
- Geochemical analysis of Tomra screened and sorter was undertaken at ALS Metallurgy Perth. Samples were submitted for following analysis 1kg Fire Screen Assay , 1kg Au BLEG and 0.5kg Ag by ICP scan. Sample prep and geochemical analysis workflow is outlined below



- All sample assaying is documented with a finalised assay certificate signed off by qualified assayer.
- ALS Global Ltd is the company's approved assayer who is a ISO certified organisation with industry leading quality protocols.

*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.*

- No other tools are used for analysis during drilling and surface sampling.

*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.*

- No QAQC samples were used for this Tomra sorter and geochemical analysis
- All logging and sampling undertaken under the supervision of a qualified geologist.

#### **Verification of sampling and assaying**

*The verification of significant intersections by either independent or alternative company personnel.*

- Composite sample selection of drill core material was undertaken by qualified geologist.

*The use of twinned holes.*

- No hole twinning has been undertaken.

<p><i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i></p>	<ul style="list-style-type: none"> <li>• All drill core sampling and analytical data has been stored directly into an in-house developed Access data management system.</li> <li>• All data has been maintained, validated, and managed by company contracted administrative geologist.</li> <li>• Analytical results received from the lab have been loaded directly into the database with no manual transcription of these results undertaken.</li> <li>• Original lab certificates have been stored electronically.</li> </ul>
<p><i>Discuss any adjustment to assay data.</i></p>	<ul style="list-style-type: none"> <li>• No adjustment to Tomra ore sorter results have been undertaken.</li> <li>• No adjustment to geochemical data has been undertaken.</li> <li>• Feed assay results were back calculated from assay feed and waste products results</li> </ul>
<p><b>Location of data points</b></p> <p><i>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.</i></p>	<ul style="list-style-type: none"> <li>• Sample locations X &amp; Y coordinates have been determined using a handheld GPS (+/-5 m).</li> <li>• Elevation corrected using digital elevation model derived from LIDAR data.</li> <li>• During drilling, down hole surveys at 30m intervals have been completed using a reflex single shot digital magnetic camera.</li> </ul>
<p><i>Specification of the grid system used.</i></p>	<ul style="list-style-type: none"> <li>• All locations recorded using map datum GDA94/MGA UTM Zone 54.</li> </ul>
<p><i>Quality and adequacy of topographic control.</i></p>	<ul style="list-style-type: none"> <li>• The topographic control is taken from Digital Elevation Model derived from LIDAR data, Queensland State Government 2011 acquisition (+/-1m)</li> </ul>
<p><b>Data spacing and distribution</b></p> <p><i>Data spacing for reporting of Exploration Results.</i></p>	<ul style="list-style-type: none"> <li>• Drill core composite samples collected from area of resource which is considered is representative of the style of mineralisation.</li> <li>• Waste dump sampling was restricted to five sample locations and collected from surface to approximately 1-2m depth. This sampling is considered to sufficiently to determine its representativity of the entire waste dump areas</li> </ul>
<p><i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral</i></p>	<ul style="list-style-type: none"> <li>• This work is not appropriate for reporting a mineral resource</li> </ul>

<i>Resource and Ore Reserve estimation procedure(s) and classifications applied.</i>		
	<i>Whether sample compositing has been applied.</i>	<ul style="list-style-type: none"> <li>• Sample compositing has been applied to obtain are large sample size for Tomra Ore Sorter processing.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i>	<ul style="list-style-type: none"> <li>• Drill core composite samples targeted a estimated grade range intercept average of 1.4g/t Au.</li> <li>• Composite drill core sampling targeted broad zones of mineralisation.</li> </ul>
	<i>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.</i>	<ul style="list-style-type: none"> <li>• It's not considered to be the case and therefore not reported.</li> </ul>
<b>Sample security</b>		<ul style="list-style-type: none"> <li>• All sampling has been selected and supervised by a qualified and experienced geologist</li> <li>• All ½ drill core have been sealed in plastic bags with cable ties immediately after collection. All drill core and waste dump samples have been stored in a secure, permanently staffed facility prior to shipping.</li> <li>• Drill core sample bags loaded into polyweave sacks, then loaded into bulka bags readied for transport. Waste dump samples loaded directly into bulka bags and readied for transport</li> <li>• Sample dispatch includes travel by ship from Ngurupai (Horn Island) to Cairns, then on shipped to Tomra Ore sorter solutions , Sydney. Shipping has been undertaken by reputable transport logistics specialists (Sea Swift Pty Ltd) with freight security protocols.</li> <li>• Samples were dispatched from Tomra to ALS Metallurgy Perth for gold and silver analysis via road freight with tracking provided</li> <li>• All samples are cleared and monitored for freight by Department of Agriculture (Permit to move Soils approved) and signoff by AQIS.</li> <li>• ALS Metallurgy , Perth provides a sample receipt upon delivery of all samples to its laboratory.</li> </ul>
	<i>The measures taken to ensure sample security.</i>	
<b>Sample security</b> <i>continues</i>		
	<i>The measures taken to ensure sample security</i> <i>continues</i>	
<b>Audits or reviews</b>	<i>The results of any audits or reviews of sampling techniques and data.</i>	<ul style="list-style-type: none"> <li>• The competent person from Mining Plus Pty Ltd has undertaken a site visit in late October 2017 to review mineralisation styles and core logging and data collection processes. In</li> </ul>



addition, the Competent person from AQX has been closely involved in recent drilling and all surface sampling programs including supervision and as such has visited the site on numerous occasions.

- Independent consultant Mineral Mapping Pty Ltd in 2018 & 2019 reviewed the drill core, soils, rock chip geochemical data and consider it valid, correct, and satisfactory.
- Independent Consultant Klondike Exploration Services Pty Ltd in 2018 & 2019 reviewed all geochemical data and considered it valid, correct, and satisfactory.

## 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>	<i>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.</i>	<ul style="list-style-type: none"> <li>Kauraru Gold Ltd is the 100% undivided and unencumbered owner of EPM25520 covering the Nguruapi Project.</li> <li>Kauraru Gold Ltd is a joint venture company between Alice Queen Ltd and the Kaurareg Aboriginal Land Trust. Surface title for portions of the historic Horn Island Mine site is held by the Torres Shire Council</li> <li>Other land areas above EPM25520 are held by the Kaurareg Aboriginal Land Trust</li> <li>St Barbara Limited entered into an Earn-In and Joint Venture with Alice Queen Limited on the two tenements on 5 June 2019.</li> <li>St Barbara Limited withdrew from its Earn in and Joint Venture with Alice Queen Limited on 29<sup>th</sup> March 2021.</li> </ul>
	<i>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.</i>	<ul style="list-style-type: none"> <li>The tenure is in good standing and operations are compliant.</li> <li>AQX/Kauraru Gold Ltd knows of no impediment to obtaining a licence to operate in the area.</li> </ul>
<b>Exploration done by other parties</b>	<i>Acknowledgment and appraisal of exploration by other parties.</i>	<ul style="list-style-type: none"> <li>Previous explorers include Seltrust Mining Corporation Pty Ltd, BP Minerals, Torres Strait Gold Pty Ltd, Augold NL, Carpenteria Exploration Company Pty Ltd. A modern operation was established by Augold Pty Ltd in 1987 and operated until 1989.</li> <li>No historic data has been used in this report and therefore not considered material for the purposes of this report.</li> </ul>
<b>Geology</b>	<i>Deposit type, geological setting and style of mineralisation.</i>	<ul style="list-style-type: none"> <li>Geology of the Horn Island Gold Project comprises comagmatic extrusive volcanic rocks and I-type intrusive rocks (with a range of recognisable textural and mineralogical phases) of Late Carboniferous to Early Permian age.</li> <li>Kauraru Gold is targeting Intrusive Related Gold System (IRGS) type deposits.</li> <li>The Horn Island gold mineralisation is hosted in a series of clustered quartz-sulphide (dominantly pyrite, galena, and sphalerite) vein arrays and stockwork zone, this associated with the Intrusion Related Gold System (IRGS)</li> </ul>

Criteria	JORC Code explanation	Commentary
<b>Geology</b> <i>continues</i>	<p><i>Deposit type, geological setting and style of mineralisation.</i></p> <p><i>continues</i></p>	<p>mineralisation similar to other Australian Nth Qld deposits including Ravenswood, Mt Wright, Kidston or Mt Leyshon.</p> <ul style="list-style-type: none"> <li>The vein zones at the deposit scale are defined using a recent structural model (refer to ASX release 2nd August 2018) which is formed from localised brittle shear rotational movement. Brittle shear movement subsequently forms a network of dilutional zones which were later filled with mineralised fluids. These dilation zones (vein clusters) display a steep dipping lensoidal geometry. However shallow dipping vein cluster arrays are also observed and typically dominant in areas where enveloping brittle shear zones narrow and merge.</li> <li>Geochemical and petrographic studies indicate gold is associated with base metal sulphides and also appears as free gold within veins.</li> <li>Alteration comprises sericite, chlorite to silica. An intense zone of alteration appears central to the resource area, associated with the contacts between granite porphyry (QFGP, MFGP) and equigranular granite (EQG) phases. This alteration zone is considered associated with the main fluid feeder zone for mineralisation. Steeping away from the main alteration zone is very localised alteration associated with veins.</li> <li>A thin rhyolite dyke occurs across the deposit which has little mineralisation associated with it.</li> <li>A later stage and series of very thin andesite dykes occur across resource area which crosscut mineralisation. No economic Au-intercepts has been observed within these dykes.</li> <li>Alice Queen Limited has reported (ASX release 2nd August 2018) a mineral resource estimate (inferred) for the Horn Island gold deposit at 7.96Mt at 1.9g/t gold for 492,000 ounces of gold using a 0.5g/t gold cutoff grade. Drill assay data from recently completed extension drilling has not been included for any formal revision of the resource estimate.</li> </ul>
<b>Drill hole Information</b>	<p><i>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:</i></p> <ul style="list-style-type: none"> <li><i>easting and northing of the drill hole collar</i></li> <li><i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i></li> </ul>	<ul style="list-style-type: none"> <li>All drill collar information previously reported.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <li>○ <i>dip and azimuth of the hole</i></li> <li>○ <i>down hole length and interception depth</i></li> <li>○ <i>hole length.</i></li> </ul>	
	<p><i>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.</i></p>	<ul style="list-style-type: none"> <li>• Silver analysis data has been excluded however not considered material to Ore Sorter test work results</li> </ul>
<b>Data aggregation methods</b>	<p><i>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.</i></p>	<ul style="list-style-type: none"> <li>• No cutting of low or high grade has been applied</li> <li>• For display and statistical purposes, below detection limit assays are set to 10% of the detection limit, i.e. &gt;0.01 g/t is set to 0.001g/t. However, is not relevant to the results of this work</li> </ul>
	<p><i>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.</i></p>	<ul style="list-style-type: none"> <li>• Subsequent intervals of similar assay grade may be aggregated by length weighting to report a longer composite in text statements.</li> </ul>
	<p><i>The assumptions used for any reporting of metal equivalent values should be clearly stated.</i></p>	<ul style="list-style-type: none"> <li>• No metal equivalents have been reported</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<p><i>These relationships are particularly important in the reporting of Exploration Results.</i></p>	<ul style="list-style-type: none"> <li>• Detailed vein and structural logging, complete with alpha and beta angles or dip and dip direction (field samples) have been used to find common vein cluster orientations.</li> </ul>

Criteria	JORC Code explanation	Commentary
	<i>If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.</i>	<ul style="list-style-type: none"> <li>Geometry of mineralisation is defined within a series lensoidal dominantly steeply and shallow dipping vein cluster arrays, stockworks and breccias bounded and controlled by an underlying brittle to cataclastic shear zone. Drilling has generally intersected the mineralisation at an oblique to perpendicular to its down dipping trend.</li> <li>The boundaries of the mineralisation in the Horn Island gold deposit and SSR gold zone, in particular the lateral extents, has not been established by drilling to date. The mineralisation currently remains open.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b> <i>continues</i>	<i>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').</i>	<ul style="list-style-type: none"> <li>Down hole lengths only reported for drill data.</li> <li>Intersections represent down hole apparent widths.</li> <li>True width has been estimated to be 80-95% of reported intercept.</li> </ul>
<b>Diagrams</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>Refer to report for all relevant maps, diagrams and tables</li> </ul>
<b>Balanced reporting</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>All Au fire assay results have been returned from recent completed NQ extension diamond drilling program. Au screen fire assay results remains pending.</li> <li>Significant drill hole assay intercepts (&gt;0.5g/t Au) have been reported only.</li> <li>Assay results below 0.5g/t Au have not been presented in this reported except when reported within a significant assay intercept interval.</li> </ul>
<b>Other substantive exploration data</b>	<i>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.</i>	<ul style="list-style-type: none"> <li>Previous drill hole gold assay data is reported on 2nd August 2018 (refer to ASX release 2nd August 2018 titled “ Horn Island Gold Project Inferred Resource Upgrade ), 7th May 2018 (refer to ASX release 7th May 2018 titled “ Updated Resource Drilling Bonanza Interval 7m @ 22g/t Au from 30m); 30th April 2018 (refer to ASX release 30th April 2018 titled “ Further Significant Gold Intersected at SSR); 24th January 2018 (refer to ASX release 24th January 2018 titled “ Horn Island Drilling Update), 22nd August 2017 (refer to ASX release 22nd August 2017 titled “ Horn Island Phase One Resource Definition Drilling Assay Results), 10th June 2016 (refer to ASX release 10th June 2016 titled “ Results and Exploration Update”), 7th April 2016 (refer to ASX release 7th April 2016 titled “ Gold Mineralisation Confirmed at Depth &amp; Along Strike”), 26th February 2016 (refer to</li> </ul>



Criteria	JORC Code explanation	Commentary
		<p>ASX release 26th February 2016 titled “ Horn Island Drilling Delivers Further Gold Intercepts”), &amp; 22nd January 2016 (refer to ASX release 22nd January 2016 titled “ Drilling Intercepts 1 Metre at 108g/t Au at Ngurupai (Horn Island) Project, 5th March 2021 (refer to ASX release 5th March titled “ Horn Island Phase 1 RC Interim Infill Results”) &amp; 28<sup>th</sup> April 2021 (refer to ASX release titled: Further results from the Horn Island RC infill drilling)</p> <ul style="list-style-type: none"> <li>Mineral Resource Estimate was reported by Alice Queen Limited on 2nd August 2018 (refer to ASX release 2nd August 2018 titled “ Horn Island Gold Project Inferred Resource Upgrade ) (JORC 2012 status: inferred ) for the Horn Island gold deposit at 7.96Mt at 1.9g/t gold for 492,000 ounces of gold using a 0.5g/t gold cutoff grade.</li> </ul>
<b>Further work</b>	<p><i>The nature and scale of planned further work (e.g. tests for lateral extensions or depth extensions or large-scale step-out drilling).</i></p> <p><i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i></p>	<ul style="list-style-type: none"> <li>Metallurgical studies to be undertaken on Tomra ore sorter samples</li> <li>Tomra test results will be integrated into scoping studies which will test the economic viability of a potential mining operation at Horn Island.</li> </ul>