



## Appendix 4C and Quarterly Update

**29 April 2022 – Perth, Australia:** PharmAust Limited (ASX: PAA & PAAO), a clinical stage biotechnology company, is pleased to present its Appendix 4C and Quarterly Update for the period ended 31 March 2022.

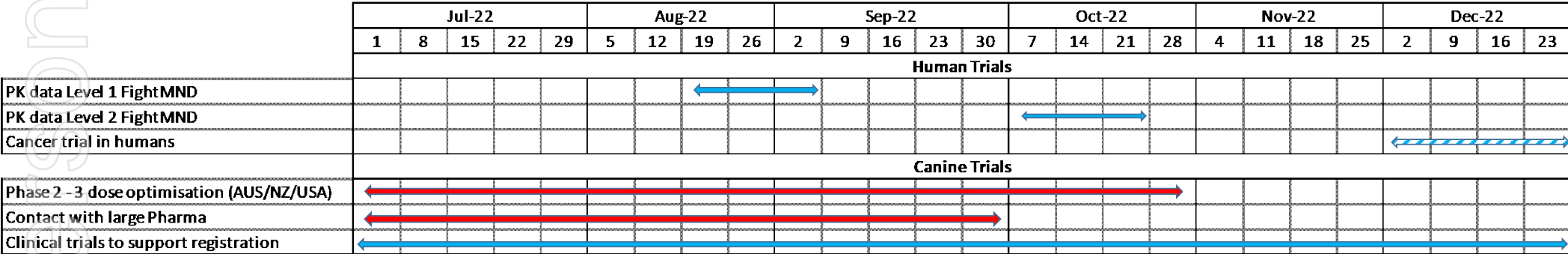
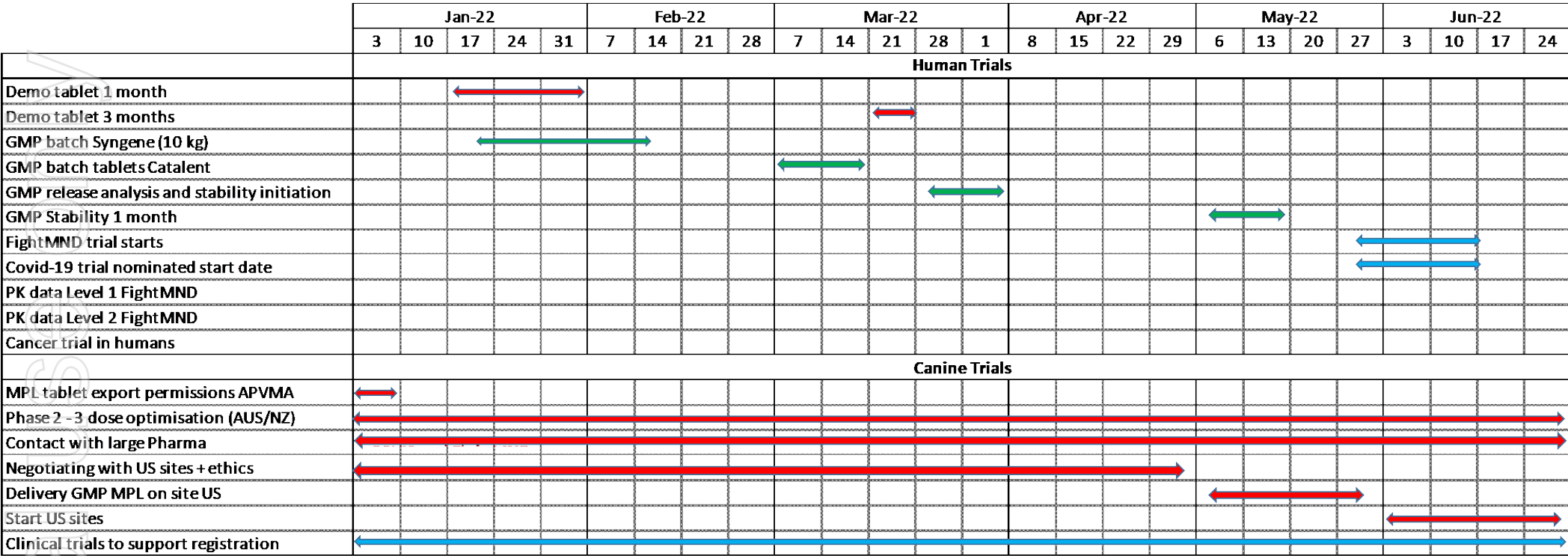
### HIGHLIGHTS:

- Completed manufacture of GMP-Grade Monepantel (MPL) for Human Clinical Trials
- Completed tablet manufacture and accelerated stability data pending
- Protocols and ethics/regulatory approvals are now in place for MND human trial
- Alithia Life Sciences appointed trial manager of MND human trial
- Patients are being recruited and commencement of the MND trial is expected in late May 2022
- PharmAust's European CRO partner, Ergomed, has identified seven hospitals in five countries showing interest in testing the effects of MPL upon COVID-19 patients
- PharmAust and WEHI investigating MPL in HTLV-1 viral infections
- WEHI demonstrated that MPL and MPLS can kill HTLV-1-transformed leukaemia cell lines and inhibit HTLV-1 protein production
- Canine cancer trial indicates the combination of MPL + prednisolone more than doubles life expectancy of dogs compared with standard-of-care
- PharmAust will seek input for the canine cancer registration (Phase 3) trial from potential licensing partners
- Plans are to conduct the registration trial in canines with B-cell lymphoma in Australia, New Zealand and the USA
- Dogs successfully recruited for canine trials in New Zealand
- Epichem completes WasteSorted e-Waste Grant from the WA state government
- Proof of concept work has been determined on Coal and Ligno-cellulosic Biomass
- Bank balance of approximately \$2.14 million as at 31 March 2022, enabling pursuit of various preclinical and clinical commitments
  - A further \$201,615 payment from FightMND received post balance date
  - A further \$708,112.79 R&D Tax Incentive Refund received post balance date



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**ACTIVITY TIMELINE:**



## **Phase I/II Human Trial in Motor Neurone Disease**

PharmAust previously announced it has received a funding commitment of A\$881,085 for a Phase I/II trial examining the effects of MPL in Motor Neurone Disease (MND), otherwise known as Lou Gehrig's disease or Amyotrophic Lateral Sclerosis (ALS).

These funds have been granted by FightMND, the largest independent funder of MND research in Australia. The trial will be overseen by Dr Susan Mathers of Calvary Health Care, Bethlehem, Melbourne and will include a second trial site headed by Professor Dominic Rowe of the Centre for Motor Neurone Disease Research Faculty of Medicine and Health Research at Macquarie University in Sydney. The funding agreement provides that PharmAust shall own all intellectual property generated from the trial.

During the Quarter, PharmAust received the first instalment payment from FightMND in the amount of \$201,615. The first instalment was dependent on PharmAust commencing manufacture of cGMP (current Good Manufacturing Practice) grade MPL tablets.

The second instalment of \$99,230 is payable after the completion of the 1-month GMP accelerated stability of the newly prepared MPL tablets which is currently underway. The third instalment of \$173,034.80 is payable upon commencement of the trial, scheduled for late May 2022.

Further instalments for a total commitment of \$881,085 will be paid by FightMND to PharmAust as additional milestones relating to the clinical trial are met.

During the Quarter, PharmAust also announced the appointment of Alithia Life Sciences Pty Ltd to manage the Phase 1/2 trial. Alithia will provide project and site management and support of the planned study due to commence in May this year. The appointment is fully funded through the Drug Development grant awarded by FightMND.

Protocols and ethics/regulatory approvals are in place for the evaluation of MPL in Motor Neurone Disease. The trial will test the safety and tolerability of MPL in patients living with MND. The trial is also set up to look for signs that MPL can slow the progression of MND. This data, in conjunction with concurrent animal studies, will determine whether MPL should go on to be tested in larger Phase 2 studies.

With success in the clinic, PharmAust expects that in due course MPL will receive orphan drug designation by the FDA for the indication of motor neurone disease. Such designations come with a number of financial and supportive benefits. The Orphan Drug Act provides for granting special status to a drug or biological product to treat a rare disease or condition upon request of a sponsor.

The late May trial start date remains on track with tablet manufacture completed and stability data pending.

## **Phase II Canine Trials**

PharmAust has made significant progress in the clinical trials of its primary drug candidate, Monepantel (MPL).

During Phase 2a and Phase 2b studies, MPL demonstrated effective anti-cancer activity, which supports continued development into Phase 3 registration trials.

PharmAust has determined an optimum drug plasma range for anticancer activity and minimal side effects.

Of the seven pet dogs treated with drug plasma levels of MPL in the optimum range, six achieved stable disease of target lesions and one had a partial response (60% regression), with some tumours completely disappearing, as assessed by the administering veterinarians. Side effects were minimal or not detected.

In comparison, the most common side effects of a dog being treated with chemotherapy include gastrointestinal effects (vomiting, diarrhea or loss of appetite) and decreases in blood cell counts. Also, during chemotherapy, owners need to take precautions when handling their pets and their waste. Drugs may be excreted in the urine and faeces, so it is not advisable for children to play with their pets.

Post-trial, some veterinarians and the respective pet owners have elected to continue MPL treatment and, sometimes, in combination with prednisolone. The combination of MPL with prednisolone has provided average extension of survival to these pet dogs of 16-24 weeks, more than double the life expectancy than standard of care (palliative steroid therapy) that typically provides for 6-8 week survival in association with a range of adverse events. Canines treated with MPL during the trial and after the trial at this optimum level experienced a high quality

of life and minimum adverse events were reported. These canine outcomes bode well for further human cancer trials to be pursued in CY 2022.

Discussions have commenced for FDA registration and GCP implementation.

PharmAust is in confidential exploratory discussions with several leading global pharmaceutical companies to co-develop and commercialise MPL for the treatment of veterinary cancers.

Plans are to continue and expand the current trial in Australia, New Zealand and the USA for registration of MPL as an anticancer drug in canines with B-cell lymphoma. Canine patients have already been recruited for canine trials in New Zealand.



Pet dogs in the MPL tablet Phase 2 trial enjoying time with their owners

### **Phase II Human Cancer Trial**

Further to the responses and outcomes in canines, PharmAust continues to take key steps towards progressing the evaluation of MPL in human trials. Clinical interest has focused on leukaemia, glioblastoma, esophageal, gastrointestinal, ovarian and pancreatic cancers.

PharmAust has identified Principal Investigators in USA, Italy and the United Kingdom to evaluate the new MPL tablet in humans in Phase 2 trials, as a follow on from the Phase I clinical trial undertaken at the Royal Adelaide Hospital in 2015. PharmAust will continue to look for further sites to broaden recruitment possibilities.

Commencement of a human cancer Phase II trial is expected in Q4 CY 2022.

### **COVID-19 Testing**

In collaboration with three independent laboratories, PharmAust has investigated the capacity of MPL and MPLS *in vitro* to inhibit:

- i) SARS-CoV2-induced cell death,
- ii) SARS-CoV2 RNA release from infected cells, and
- iii) SARS-CoV2 RNA infection of neighbouring cells.

All three laboratories demonstrated that both MPL and MPLS protect against cell death *in vitro* following infection with SARS-CoV2. Furthermore, two laboratories investigated the effects of MPL and MPLS upon the early stages of the SARS-CoV2 virus lifecycle by examining RNA release into the culture growth media *in vitro*.

During the Quarter, PharmAust engaged UK-based Ergomed Clinical Research, a subsidiary of the London Stock Exchange listed Ergomed plc (LON: ERGO) to commence clinical trials testing the anti-viral effects of monepantel (MPL) in individuals infected with SARS-CoV2, the causative agent of COVID-19 disease.

Ergomed has identified several hospitals in five countries showing interest in testing the effects of MPL upon COVID-19 patients. Ergomed will finalise at least six sites in up to four countries.

Initial protocol endpoints being considered include:

- Pharmacokinetics of MPL and MPLS
- Establishment of recommended dose for Phase 2 study (safety and efficacy outcomes from MND study will facilitate MPL-dose optimisation in humans)
- Assessment of MPL and MPLS levels in patients' circulation to help dose optimisation
- Time to sustained resolution or improvement of COVID-19 symptoms
- Time to progression of COVID-19 symptoms
- Reductions in SARS-CoV2 viraemia

### **HTLV-1 Testing**

PharmAust executed a Research Services Agreement with the Walter and Eliza Hall Institute (WEHI), Melbourne to investigate the effects of monepantel (MPL) upon human T-lymphotrophic virus-1 (HTLV-1) infections *in vitro*.

- The virus can cause a type of cancer called adult T-cell leukaemia/lymphoma (ATL).
- HTLV-1 is transmitted primarily through infected bodily fluids including blood, breast milk and semen.
- Risk factors include unprotected sex, injecting drug use and transplantation of tissue, blood and blood products.
- An estimated 5–10 million people globally are infected with HTLV-1

During the Quarter, WEHI demonstrated that MPL and MPLS can kill HTLV-1-transformed leukaemia cell lines and inhibit HTLV-1 protein production, as measured by *in vitro* assays. The ability of MPL to induce cell death of HTLV-1 transformed cells is greater than that in a control non-transformed cell line (Jurkat). These data performed in triplicate indicate that MPL may interfere with the complex HTLV-1 lifecycle. Further investigation using pre-clinical models may be warranted to understand the mechanism of action, and ability of MPL to slow disease progression.

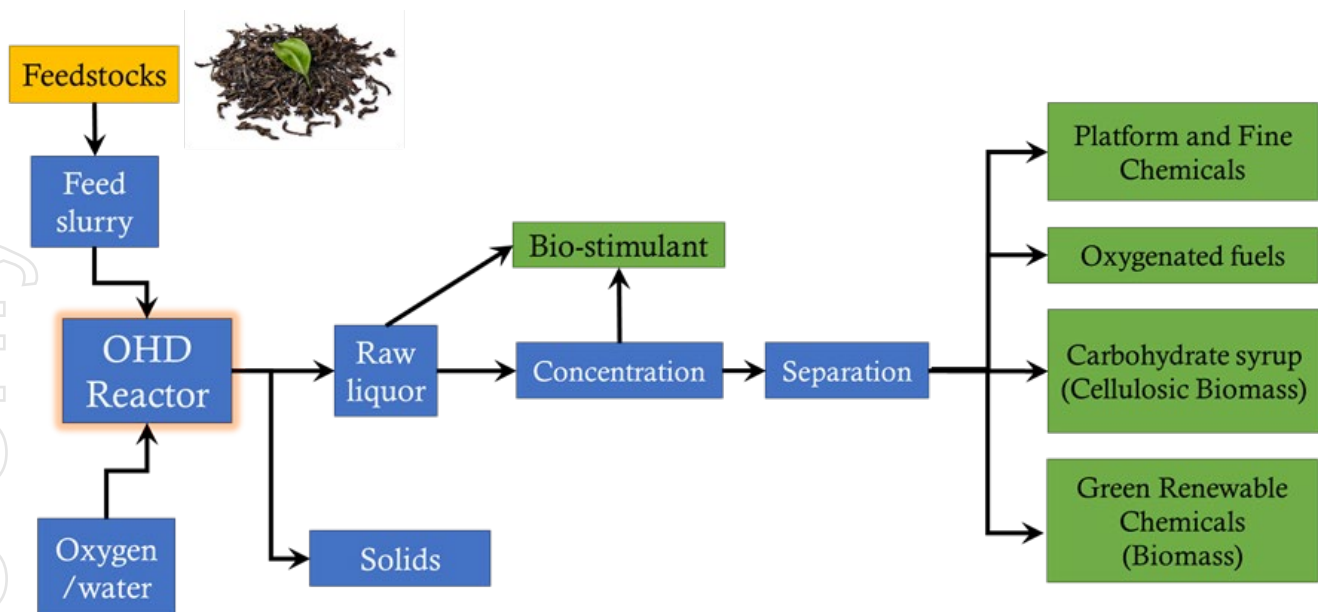
This work supports PharmAust's broader program investigating the anti-viral effect of MPL for other pathogens such as SARS-CoV-2.

PharmAust's Chief Scientific Officer Dr Richard Mollard stated, "These early results provide evidence that MPL and MPLS may inhibit the HTLV-1 virus according to two different mechanisms. Firstly, the anti-cancer effect of MPL and MPLS are potentially evident in killing cells transformed by the HTLV-1 virus. Secondly, an anti-viral effect is potentially evident whereby MPL and MPLS may directly interfere with viral protein production, independent of effects on the survival of transformed cells. PharmAust will follow up on these results to determine precisely how HTLV-1 protein production is inhibited and the clinical relevance of these data."

### **EPICHEM PTY LTD - 100% OWNED SUBSIDIARY**

PharmAust's wholly owned subsidiary, Epichem Pty Ltd, continues to advance its innovative, novel and disruptive waste conversion and re-purposing technology, Oxidative Hydrothermal Dissolution (OHD). A benchtop flow reactor has been built and commissioned for operation. Proof of concept work has been carried out and determined on Coal and Ligno-cellulosic Biomass.





Epichem has completed a WA Government New Industries Fund WasteSorted e-waste Grant project to convert e-waste using OHD. The grant funding supported Epichem's use of Oxidative Hydrothermal Dissolution technology to convert e-waste into useful end products, recover valuable metals and produce useful high value chemicals. The research and development program supported a new and innovative solution to process collected e-waste and reduce the amount of e-waste ending up in landfill. The WasteSorted e-Waste grants support the WA Waste Avoidance and Resource Recovery Strategy 2030 objectives - to avoid waste, recover more value and resources from waste and protect the environment from the impacts of waste.

Epichem is also partnering with the Curtin University WA School of Mines to research and develop OHD for use in mineral extraction. This project will investigate the potential of OHD liquors for hydrometallurgy and mineral processing applications.

Epichem is also in confidential discussions with organisations to validate the conversion and re-purposing potential of their respective feedstock and biomass.

Epichem was recently recognised and awarded as the 2021 WA Exporter of the Year for International Health. Epichem has been widely recognised having won the coveted WA Exporter Award on five occasions and is in the WA Export Hall of Fame.

#### **Appendix 4C – Quarterly Cash Flow Report**

PharmAust's cash position at 31 March 2022 was \$2.14 million. The company is adequately funded to continue its current activities during these uncertain times and will continue to demonstrate appropriate fiscal management.

During the quarter, payments for Research and Development of \$0.184 million represented costs involved with the development of the Company's primary drug candidate, Monepantel (MPL) and salary allocations of Dr Richard Mollard who is 100% focused on R&D activities.

Payments for Product Manufacturing and Operating Costs represent wholly owned subsidiary Epichem Pty Ltd's expenditure allocated to manufacturing and operating.

Payments for Staff Costs represent salaries for laboratory, administration, sales and general management activities.

Payments for Administration and Corporate Costs represent general costs associated with running the Company, including ASX fees, legal fees, rent, etc.

The aggregate amount of payments to related parties and their associates included in the current quarter Cash flows from operating activities were \$0.148 million comprising Directors' fees, salaries and superannuation.

Cash outflows for the quarter were in line with management expectations. The cash balance at 31 March 2022 was \$2.14 million. Please refer to the attached Appendix 4C for further details on cash flows for the quarter

### **Subsequent Events**

Following approval from the ATO of the Company's application for a Research and Development rebate, an amount of \$708,112.79 was deemed refundable on PharmAust's 2021 Tax Return and paid to PharmAust.

PharmAust received the first installment payment from FightMND in the amount of \$201,615. The first instalment was dependent on PharmAust completing the manufacture of cGMP (current Good Manufacturing Practice) grade MPL.

Neither of these funds are included in this Appendix 4C as they were received after 31 March 2022.

**This announcement is authorised by the Board.**

#### **Enquiries:**

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#### **About PharmAust (PAA):**

PharmAust Limited is listed on the Australian Securities Exchange (code: PAA) and the Frankfurt Stock Exchange (code: ECQ). PAA is a clinical-stage company developing therapeutics for both humans and animals. The company specialises in repurposing marketed drugs lowering the risks and costs of development. These efforts are supported by PAA's subsidiary, Epichem, a highly successful contract medicinal chemistry company that generated \$2.2 million in revenue in FY 2021.

PAA's lead drug candidate is monepantel (MPL), a novel, potent and safe inhibitor of the mTOR pathway – a pathway having key influences in cancer growth and neurodegenerative diseases. MPL has been evaluated in Phase 1 clinical trials in humans and Phase 2 clinical trials in dogs. MPL treatment was well-tolerated in humans, demonstrating preliminary evidence of anticancer activity. MPL demonstrated objective anticancer activity in dogs. PAA is uniquely positioned to commercialise MPL for treatment of human and veterinary cancers as well as neurodegenerative disease as it advances a reformulated version of this drug through Phase 1 and 2 clinical trials.



## Appendix 4C

### Quarterly cash flow report for entities subject to Listing Rule 4.7B

**Name of entity**

PharmAust Limited

**ABN**

35 094 006 023

**Quarter ended ("current quarter")**

March 2022

<b>Consolidated statement of cash flows</b>	<b>Current quarter \$A'000</b>	<b>Year to date (9 months) \$A'000</b>
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers	1,122	2,845
1.2 Payments for		
(a) research and development	(184)	(634)
(b) product manufacturing and operating costs	(544)	(1,306)
(c) advertising and marketing	(72)	(215)
(d) leased assets	(6)	(33)
(e) staff costs	(693)	(1,949)
(f) administration and corporate costs	(240)	(449)
1.3 Dividends received (see note 3)		
1.4 Interest received		1
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Government grants and tax incentives	50	50
1.8 Other (provide details if material)	58	35
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(509)</b>	<b>(1,654)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire or for:		
(a) entities		
(b) businesses		
(c) property, plant and equipment		
(d) investments		
(e) intellectual property		
(f) other non-current assets		

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Consolidated statement of cash flows		Current quarter \$A'000	Year to date (9 months) \$A'000
2.2	Proceeds from disposal of:		
	(a) entities		
	(b) businesses		
	(c) property, plant and equipment		
	(d) investments		
	(e) intellectual property		
	(f) other non-current assets		
2.3	Cash flows from loans to other entities		
2.4	Dividends received (see note 3)		
2.5	Other (provide details if material)		
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>		
<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of equity securities (excluding convertible debt securities)		738
3.2	Proceeds from issue of convertible debt securities		
3.3	Proceeds from exercise of options		
3.4	Transaction costs related to issues of equity securities or convertible debt securities		
3.5	Proceeds from borrowings		
3.6	Repayment of borrowings		(38)
3.7	Transaction costs related to loans and borrowings		
3.8	Dividends paid		
3.9	Other (provide details if material)		
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>		<b>700</b>
<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	2,644	3,089
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(509)	(1,654)
4.3	Net cash from / (used in) investing activities (item 2.6 above)		

Consolidated statement of cash flows		Current quarter \$A'000	Year to date (9 months) \$A'000
4.4	Net cash from / (used in) financing activities (item 3.10 above)		700
4.5	Effect of movement in exchange rates on cash held		
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>2,135</b>	<b>2,135</b>

5. Reconciliation of cash and cash equivalents at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts		Current quarter \$A'000	Previous quarter \$A'000
5.1	Bank balances	2,123	2,632
5.2	Call deposits	12	12
5.3	Bank overdrafts		
5.4	Other (provide details)		
<b>5.5</b>	<b>Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>2,135</b>	<b>2,644</b>

6. Payments to related parties of the entity and their associates		Current quarter \$A'000
6.1	Aggregate amount of payments to related parties and their associates included in item 1	148
6.2	Aggregate amount of payments to related parties and their associates included in item 2	
<i>Note: if any amounts are shown in items 6.1 or 6.2, your quarterly activity report must include a description of, and an explanation for, such payments.</i>		

Director's Salaries & Superannuation

7. <b>Financing facilities</b> <i>Note: the term "facility" includes all forms of financing arrangements available to the entity. Add notes as necessary for an understanding of the sources of finance available to the entity.</i>	<b>Total facility amount at quarter end \$A'000</b>	<b>Amount drawn at quarter end \$A'000</b>
7.1 Loan facilities		
7.2 Credit standby arrangements		
7.3 Other (please specify)		
7.4 <b>Total financing facilities</b>		
7.5 <b>Unused financing facilities available at quarter end</b>		
7.6 Include in the box below a description of each facility above, including the lender, interest rate, maturity date and whether it is secured or unsecured. If any additional financing facilities have been entered into or are proposed to be entered into after quarter end, include a note providing details of those facilities as well.		

8. <b>Estimated cash available for future operating activities</b>	<b>\$A'000</b>
8.1 Net cash from / (used in) operating activities (item 1.9)	(509)
8.2 Cash and cash equivalents at quarter end (item 4.6)	2,135
8.3 Unused finance facilities available at quarter end (item 7.5)	
8.4 Total available funding (item 8.2 + item 8.3)	1,626
8.5 <b>Estimated quarters of funding available (item 8.4 divided by item 8.1)</b>	3.19
<i>Note: if the entity has reported positive net operating cash flows in item 1.9, answer item 8.5 as "N/A". Otherwise, a figure for the estimated quarters of funding available must be included in item 8.5.</i>	
8.6 If item 8.5 is less than 2 quarters, please provide answers to the following questions:	
8.6.1 Does the entity expect that it will continue to have the current level of net operating cash flows for the time being and, if not, why not?	
Answer: N/A	
8.6.2 Has the entity taken any steps, or does it propose to take any steps, to raise further cash to fund its operations and, if so, what are those steps and how likely does it believe that they will be successful?	
Answer: N/A	
8.6.3 Does the entity expect to be able to continue its operations and to meet its business objectives and, if so, on what basis?	
Answer: N/A	
<i>Note: where item 8.5 is less than 2 quarters, all of questions 8.6.1, 8.6.2 and 8.6.3 above must be answered.</i>	

**Compliance statement**

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

29 April 2022

Date: .....

By the board

Authorised by: .....  
 (Name of body or officer authorising release – see note 4)

**Notes**

1. This quarterly cash flow report and the accompanying activity report provide a basis for informing the market about the entity's activities for the past quarter, how they have been financed and the effect this has had on its cash position. An entity that wishes to disclose additional information over and above the minimum required under the Listing Rules is encouraged to do so.
2. If this quarterly cash flow report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, *AASB 107: Statement of Cash Flows* apply to this report. If this quarterly cash flow report has been prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standard applies to this report.
3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.
4. If this report has been authorised for release to the market by your board of directors, you can insert here: "By the board". If it has been authorised for release to the market by a committee of your board of directors, you can insert here: "By the [name of board committee – eg Audit and Risk Committee]". If it has been authorised for release to the market by a disclosure committee, you can insert here: "By the Disclosure Committee".
5. If this report has been authorised for release to the market by your board of directors and you wish to hold yourself out as complying with recommendation 4.2 of the ASX Corporate Governance Council's *Corporate Governance Principles and Recommendations*, the board should have received a declaration from its CEO and CFO that, in their opinion, the financial records of the entity have been properly maintained, that this report complies with the appropriate accounting standards and gives a true and fair view of the cash flows of the entity, and that their opinion has been formed on the basis of a sound system of risk management and internal control which is operating effectively.

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