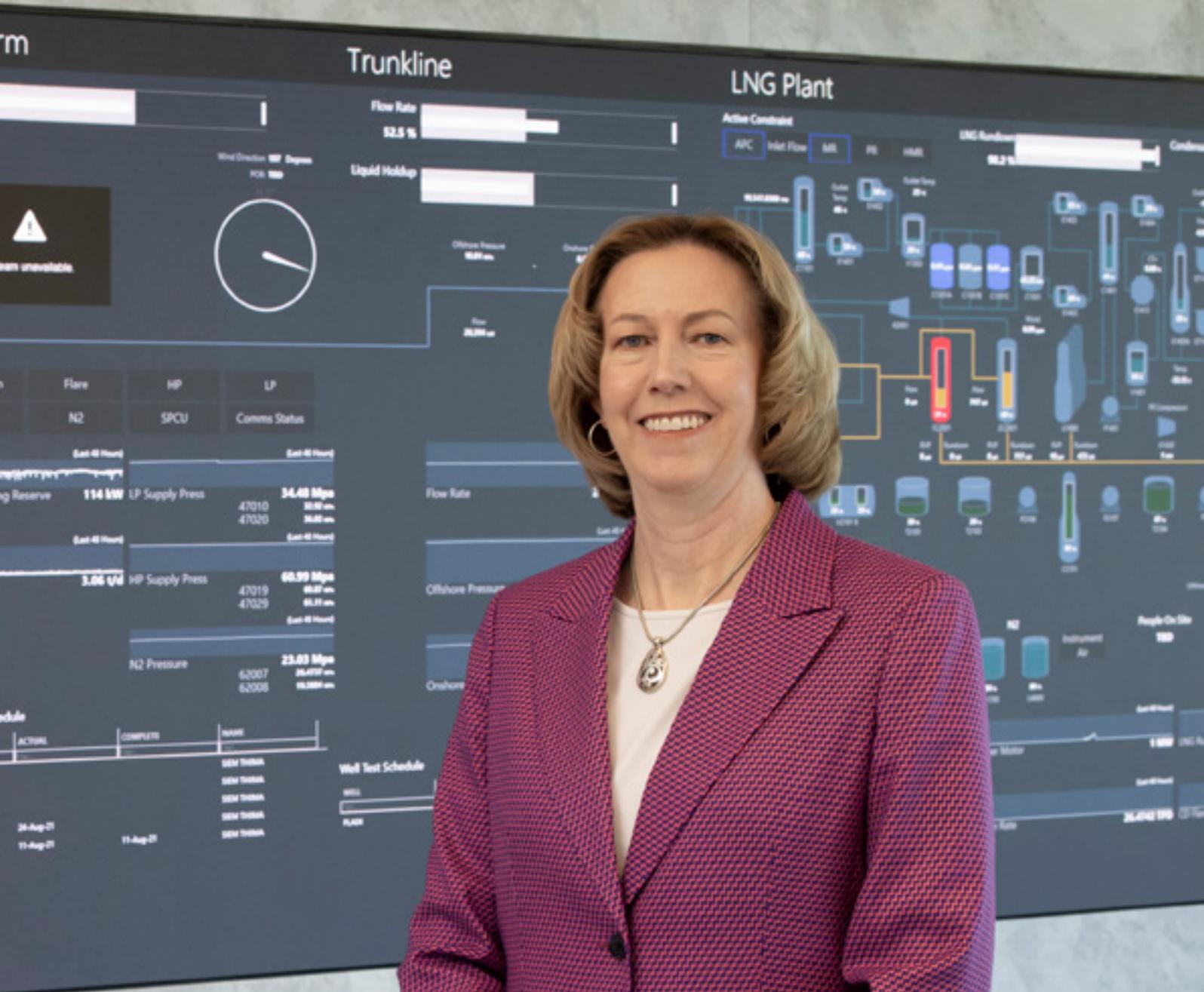


# Trunkline

PART OF  
A BETTER  
FUTURE



THE MAGAZINE FOR WOODSIDE PEOPLE | Q3 2021



## Trunkline

## LNG Plant

Flare	HP	LP
N2	SPCU	Comms Status
East-48 Hour		East-48 Hour
114 MW	LP Supply Press	34.48 MPa
	47010	35.30 MPa
	47020	35.30 MPa
East-48 Hour		East-48 Hour
3.06 MW	HP Supply Press	60.99 MPa
	47019	61.80 MPa
	47029	61.77 MPa
East-48 Hour		East-48 Hour
N2 Pressure		23.03 MPa
	62007	23.47 MPa
	62008	23.38 MPa

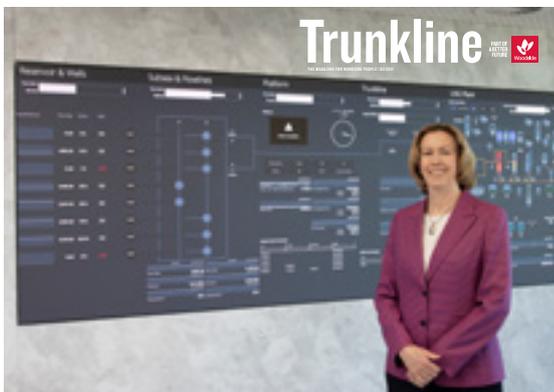
ACTUAL	COMPLETE	NAME
		SEM Trench
24-Aug-21		
11-Aug-21		

WELL	FLUSH

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## On the cover

In August, Meg O'Neill was appointed Chief Executive Officer and Managing Director – only the sixth in Woodside's 67-year-history.

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Woodside experienced a historic moment in Q2 with the unveiling of a proposed merger and the appointment of a new Chief Executive Officer and Managing Director the very same day.

A merger with BHP's petroleum business would propel Woodside into the global top 10 of independent energy companies. It offers exciting possibilities for Woodside's ambitions and plans, its investors and stakeholders, and of course its employees and contractors.

But there is much hard work needed to realise these possibilities. And our focus must remain on the company's key priorities to maintain safe and cost-effective operations, deliver its growth projects and pursue new energy opportunities for a lower carbon future.

This edition of Trunkline explains how the new Woodside Transform strategy is being rolled out throughout the business

to maintain this focus and set up the company for long-term success.

All of which demonstrates that nothing stays still in a world where the only certainty is that change is just around the corner.

And change is also coming with the way the Woodside family receive news about the company's achievements and progress.

This will be the last edition of Trunkline, with future real-time news updates to be shared on our website, intranet and social media feeds.

Inside we chart the way the magazine, just like the company, has grown and evolved over the years.

It's been an exciting journey for Trunkline, and there's plenty more excitement in store for Woodside around the corner.

Some photographs in this edition were taken before physical distancing measures were introduced to manage the risk of exposure to COVID-19.

**Notes on Petroleum Resource Estimates:** All petroleum resource estimates in this publication are to be read in conjunction with the Reserves Statement in Woodside's most recent annual report, as updated by subsequent ASX announcements available at <http://www.woodside.com.au/Investors-Media/Announcements>. This publication may contain forward-looking statements that are subject to risk factors associated with oil and gas businesses.

Trunkline is printed on New Life Recycled coated paper, which is sourced from a sustainably managed forest and uses manufacturing processes of the highest environmental standards. Trunkline is printed by a Level 2 Environmental Accredited printer. The magazine is 100% recyclable.

# Lift off

## Installation of the Pluto-Karratha Gas Plant Interconnector's massive piperack module has changed the skyline of the project and opened up multiple work fronts on site.

The Pluto-Karratha Gas Plant (KGP) Interconnector Project achieved a key milestone in Q3 with the successful installation of its critical piperack module.

Extensive and detailed planning, and significant effort combined with co-ordination from a cross-functional Woodside team and contractors, largely WA based, ensured a seamless exercise for the final lift.

Worley completed the module design in its Perth offices.

The module was fabricated at Cvmec in Henderson, south of Perth, and transported by C.H. Robinson by vessel to Dampier in the Pilbara.

The final complex and critical lift of the 164-tonne module over live process equipment was carried out by a 600-tonne crawler crane which was assembled on site, by UGL Altrad Joint Venture (UAJV) for the installation and Monadelphous for the craneage and module transporters.

"The lift was completed safely, on schedule and within budget," says Interconnector Site Manager Martin Richards.

"It is a significant milestone in what is a very important project for Woodside.

"Indeed, it's thanks to the efforts and collaboration of many contractors with Woodside's cross-functional team of project and asset personnel that the fabrication, delivery and lift went so smoothly.

"It's been an exceptional effort from the entire team – from Engineering through to Contracts and Procurement, fabrication, Logistics and construction, and also our haulage and marine contractors."

Martin adds: "Installation of the module is a key milestone – it has changed the skyline on site and has also opened up multiple additional work fronts for the site team."

The Pluto-KGP Interconnector project

will link Pluto LNG and KGP with the construction of a 3.2-km long 30-inch pipeline. Transporting gas through the Interconnector will utilise future excess capacity at KGP and has many strategic value elements.

The piperack module is a key process unit within the Interconnector Project.

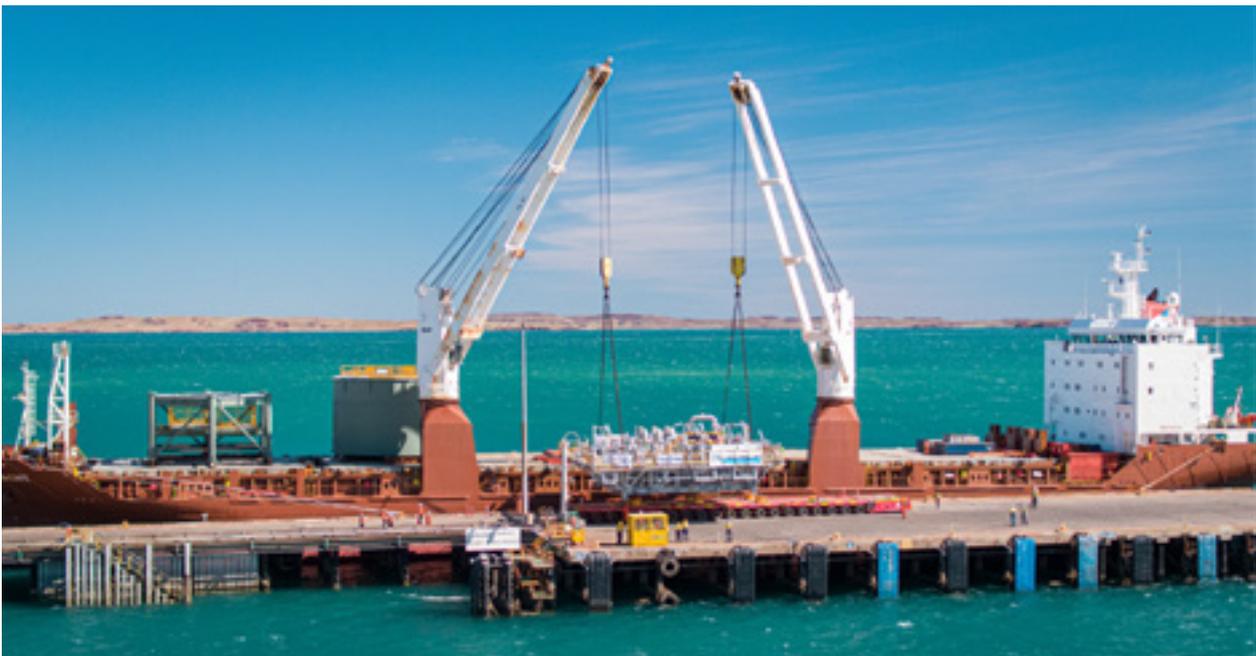
It includes a hot water/gas heat exchanger to prevent liquid drop out in the downstream pipeline, pressure control and relief valves, and multiple ancillary items.

"The scale and complexity of the unit demonstrates the extensive fabrication capability that exists within Western Australia," Project Manager Michael Gibson points out.

"It is rewarding to be able to award key contracts to WA-based companies and create local employment opportunities."

Start-up of the Pluto-KGP Interconnector is targeted in 2022.

**The Interconnector Project's piperack module was transported by vessel from Henderson, south of Perth, to the Pilbara and then by road to site.**





The proposed merger with BHP's petroleum business would support Woodside's evolution through the energy transition.

# Bringing our best together



The proposed merger between Woodside and BHP's petroleum business has been described as "company changing" and "transformational" by our Chief Executive Officer and Managing Director Meg O'Neill and Chairman of the Board Richard Goyder.

That's because it represents a unique opportunity for Woodside to significantly increase production, diversify its portfolio and fund multiple growth opportunities, creating a strong foundation for the company's long-term success.

On completion of the proposed merger, Woodside will become a top 10 global LNG producer.

"It will double our production, double our cash flow and put us in a significantly better position to compete on the global stage," Meg explains.

As the Chairman noted on 17 August: "We will be the largest energy company listed on the Australian Stock Exchange with a market capitalisation of approximately \$41 billion."

Importantly, the proposed merger also supports Woodside's role in the energy transition.

"The enlarged portfolio would deliver

the cash flow and resilience to fund our evolution through the transition, investing in the right new energy opportunities in support of our aspiration to be net zero by 2050," Meg notes.

"I've often talked about the importance of being low cost and low carbon and the merger sets us up extraordinarily well to compete on both fronts."

Before the proposed merger is finalised there are a number of steps to be taken, including agreeing final transaction documents, obtaining regulatory approvals and a shareholders' vote next year.

A joint integration team has been established across the two companies to prepare for the merger, and ensure the proposed merged company is ready for business from Day 1.

Senior Vice President Corporate and Legal Daniel Kalms is leading this integration work for Woodside.

Daniel says a key focus for the integration team will be understanding how the world-class capabilities in both companies can be brought together to create a new entity that is greater than the sum of its parts.

"A measure of our success will be our ability to learn from each other and

make sure we are bringing the very best of each company into the new organisation," Daniel says.

Meg emphasises that while the proposed merger is being worked through, it is vital to concentrate on core business and our imperatives: maintaining safe and reliable operations; achieving targeted final investment for Scarborough and Pluto Train 2; delivering Sangomar Phase 1 Development; and pursuing new energy opportunities for a lower carbon future.

At the same time, work on the new Woodside Transform program (see pages 8-9) is gearing up to ensure a simpler, smarter and stronger Woodside that will thrive into the future.

Naturally, change can bring uncertainty as to what the future holds.

"I do recognise that there is apprehension and uncertainty about the change ahead and that will remain over the next few months as we work through the details of what the proposed new organisation is going to look like," Meg acknowledges.

"I encourage you to stay keenly focused on what we need to do to stay strong on what we do well today - the four key business priorities - and to stay focused on delivering them."



# Meg's mission to make a difference

Meg O'Neill is gearing up for a marathon.

But not a 42 km road race. Meg is preparing to pace herself for the challenging and exciting journey ahead as Woodside's new Chief Executive Officer and Managing Director, acknowledging the need to be in good physical and mental shape.

"The workload is pretty variable so there's no hard and fast rules," she replies when asked about the time she needs to invest in her new role, and the importance of work-life balance.

"You have to be adaptable, but you have to recognise that this role is a marathon not a sprint, so you have to make sure you take care of yourself, eat well, get adequate sleep and take some exercise."

She makes sure she does what she says, listing walking, cycling, golf and social netball games as ways she keeps active in her free time.

Then there's cheering on the Fremantle Dockers and West Coast Fever, along with visits to the theatre and concerts and taking in ocean views on walks.

"Perth's lifestyle is hard to top," she enthuses.

"As a city I think Perth is a perfect size – big enough for high-quality sports and arts and theatre, but traffic is not too bad.

"And living right on the coast is fantastic. It's a garden spot in the oil and gas world."

Meg was chatting with Trunkline only days after being confirmed in August as Woodside's CEO and Managing Director – only the sixth in our company's 67-year history.

But having served in the role in an acting capacity since April, she already has several months' experience under her belt and a good feel for what's ahead.

Woodside Chairman Richard Goyder said Meg's impeccable credentials and proven leadership capabilities, exemplified in recent months, "set her apart as the Board's top candidate for the position".

The Chairman added: "Meg is an outstanding executive with 27 years' experience working in the global oil and gas industry, with a proven track record of delivery across the oil and gas value chain, making her the ideal person to lead Woodside as we significantly expand the business in a cost-efficient and sustainable way."

Meg grew up in Boulder, Colorado, with two brothers.

Their father was an electrical engineer-cum-entrepreneur with 20-plus patents to his name, her mother a communications professional.

She enjoyed an outdoors lifestyle and as with most Americans seeking a university education, the impetus



**From left, opposite page, Meg O'Neill discusses the Pluto LNG truck loading facility with Geoff Hobley of EDL; with Fremantle Dockers player David Mundy at the Dockers' Doig Medal presentation in 2018; in her free time, Meg enjoys outdoor activities; at Mia Yellagonga, Woodside's Perth headquarters.**

was to leave home and experience a new environment. Being raised in landlocked Colorado meant the ocean held a romantic appeal.

Meg was accepted at the prestigious Massachusetts Institute of Technology in Boston and graduated with two degrees (in chemical engineering and ocean engineering) before taking a Master's in ocean systems management.

She then began what became a 23-year career with Exxon (now ExxonMobil) after a recruiter persuaded her that her future lay in designing oil and gas platforms rather than ships or luxury yachts.

She started with Exxon in Houston, Texas, but spent time in New Orleans, Indonesia, Norway and Canada before returning to Texas.

In 2018, Meg made the decision to move to Perth to join Woodside as Chief Operations Officer. Exxon had been a good employer and helped her grow professionally and personally.

Two key factors persuaded her it was time for a change.

"As I moved into Exxon's more senior management, I was feeling more removed from where the business was done," Meg recounts.

"And I wanted to join a company where I could make a difference, both in the business decisions and also in the culture of the company. With a workforce of 72,000 you feel like you can only push things so far. With Woodside's size we have strategic decisions to make and also the opportunity to shape the culture of the team."

Her decision on her very first day as acting chief executive officer to open access for all employees to Level 29 in Woodside's Mia Yellagonga headquarters was a small step but it resonated inside and outside the company.

"Symbols matter," she points out.

"My leadership is one where I really do value those opportunities to interact with people across the company because I recognise that to lead in today's world you've got to be approachable, and we've got to be able to connect as an organisation to enable effective decision making."

But hers is a path of evolution, not revolution.

"Everything I'm doing builds on what my predecessors have done," she continues.

"We can only reach our future

destination because of the journey we've been on in the past."

And the future she is pursuing for Woodside is a low cost, lower carbon destination.

Another of Meg's hallmarks is her frequent reference to courage which she wants Woodsiders to demonstrate.

"Courage is important to me," she explains.

"And if we at Woodside look back on our past, there are times when we've absolutely demonstrated that courage.

"Looking forward, we are going to be taking some big decisions and those big decisions need people who are able to proceed with courage.

"It's about everybody in the organisation backing themselves in.

"I think we can have a little bit more courage and we'll have a better workplace.

"People would have more fun - and we'll have better outcomes."

And better outcomes, even if the road is long and at times a little bumpy, is what Meg O'Neill is aiming for.



Sean Salter, Ruth Lyall, Ashleigh Hahn, Niall Myles and Gordon Mathwin are some of the cross-discipline team in Woodside Transform that will fundamentally challenge what we do and how we do it; opposite page, Ash Castle and Graham Buchanan (seated) are working on getting the Pluto Remote Operations Centre ready for business by year's end.

# Time to transform

Woodside is embracing change by transforming the business to be leaner, more resilient and better able to respond to the opportunities and challenges of growth and the energy transition.

The Woodside Transform program has been established to complete an organisational review to help Woodside become simpler, smarter and stronger with a more enabled, engaged, and capable workforce.

“Rather than incremental improvements, we are looking at all aspects of our business with a fresh set of eyes,” says Niall Myles, Senior Vice President Woodside Transform.

“We have formed a high-calibre, cross-discipline team that will objectively assess end-to-end activity and fundamentally challenge what we do and how we do it.

“Initially, this work will surface pain points and causes, identifying must-have activities, those that can be stopped and others that could be done differently.

“Not only will this guide how we set Woodside up for future, it will help us

prepare for the proposed merger with BHP’s petroleum business.”

Woodside Transform also has carriage of other streams of work that will modernise the company’s operations and better enable its employees.

One of these is the Accelerator – a mix of Woodsiders and external subject matter experts – which is developing innovative and technology-enabled solutions to long-standing challenges.

Using an agile methodology to quickly deliver value, the Accelerator comprises a number of “squads” pursuing step-change improvements.

“The Accelerator is delivering streamlined processes and tools, enabled by technology and digital improvements,” says Sean Salter, Vice President Remote Operations.

“It is optimising how we conduct key activities while ensuring decision makers have the right information to help navigate an increasingly complex operating environment.”

Importantly, our frontline employees are playing key roles in the Accelerator by building understanding of

problems, guiding the most effective solutions, and helping implement improvements.

A key focus area is maintenance.

“Significant time, money and resources are devoted to the ongoing maintenance of our assets,” explains Performance Excellence Manager Michael Richards.

“Getting this right has the potential to create significant value by ensuring that we always do the right task, at the right time, for the right business outcome.”

Maintenance Planning is one of five squads transforming our approach to maintenance.

The squad has developed a web-based tool called PRISM to efficiently plan and manage a high volume of low-complexity maintenance scopes.

PRISM assesses and assigns work orders with an urgency score, fills available capacity with the most urgent and efficient work and surfaces live data to enable execution readiness. PRISM is being trialled at Karratha Gas Plant (KGP).

# New process pilot

“Frontline feedback is being used to refine PRISM and add functionality, supporting plans to introduce the tool to all operating assets,” says Michael.

Woodside Transform is also extending and enhancing the company’s remote operations capabilities (see below).

With change set to be a constant companion over the next couple of years, Niall recognises this can create uncertainty but also brings opportunities to make a difference.

“This is both an exciting and challenging time,” he notes.

“It will bring uncertainty and it will unlock potential. It will truly transform us.

“We have proven time and again that Woodside is courageous and creative, with smart, solutions-focused people driving incredible results.

“We will prove it again.”

Our permit to work system – the Integrated Safe System of Work (ISSoW) – is a key process for managing operational risk and a crucial barrier that protects our people, assets and the environment.

“While ISSoW is an effective control, we knew there were significant opportunities to improve its efficiency,” says Neil Lansdown who is leading the Permit to Work squad.

“It’s a highly manual, administrative process, with large amounts of effort and rework regardless of the risk of the task.”

Neil’s squad was established to transform our Permit to Work process, while ensuring its strong points are reinforced.

“We’ve developed a new process that has simplified workflows and

streamlined approvals, which we’re piloting with the KGP DomGas team,” he reports.

“The future system is risk-based and better considers the experience, competency and skills of our employees.”

Maintenance Supervisor Tristan Levis says the squad has a strong focus on engaging with the people who will use the new process.

“We tested the new workflow across several assets and have now taken 277 people through training ahead of the pilot, which is expected to run until October,” says Tristan.

“Feedback from the pilot will help us identify if any further improvements are required before we implement the improved process across the rest of KGP and then other Woodside assets.”

# Remote ready

Woodside’s pioneering approach to operations is continuing with construction of the Pluto Remote Operations Centre (PROC) at Mia Yellagonga (MY).

Completion is expected in late 2021 and once operational, the PROC will be staffed 24/7 year-round and will operate Pluto’s onshore and offshore assets.

PROC Project Manager Dan Habib says operators have guided the project from the outset.

“We established a pilot facility in 2020 that demonstrated successful operation of Pluto from MY and our operators’ feedback has been incorporated into the PROC design,” Dan explains.

“Operations Readiness has been instrumental in shaping the PROC layout and selecting some digital technologies, while identifying new



and improved ways of working.”

Operations Readiness will test and refine the facility in Q1 2022 during the transition to MY operations.

Pluto Operations Manager Shawn Fernando believes the PROC will make an important contribution to Pluto’s future.

“We expect it will enable us to optimise production, simplify work processes, and improve decision quality and

workforce productivity,” Shawn reports.

“We have a team of high-quality operators in the Pluto control room who we hope will be part of PROC’s exciting future.”

Learnings are being incorporated into ambitious plans for an integrated remote operations centre at MY that will bring together the operations of Scarborough, Pluto Train 2 and Pluto foundation assets.

# Safety first in Senegal

Ensuring the right procedures, processes, equipment and training are in place for any emergency is a necessity in the oil and gas industry.

To this end, Hydrocarbon Spill Adviser Alan Crossland recently visited Senegal to help establish an effective hydrocarbon spill capability in support of the Sangomar Field Development and to coordinate training.

Alan worked closely with Sangomar Business Resilience Manager Chris Bourne, Contracting and Procurement and Logistics as well as external contractors to establish new in-country capability.

He led several activities to enhance oil spill response (OSR) awareness, and

**Hydrocarbon Spill Adviser Alan Crossland recently visited Senegal to establish new in-country capability in oil spill response.**



commission the necessary equipment and supplies.

He also led incident management exercises for Woodside's country staff in Dakar, the capital of Senegal, and the training of the spill response team at HASSMAR, the Senegal authority responsible for the country's maritime security and protection of its marine environment to establish a local response capability.

This preparedness has been established as the Sangomar drilling campaign commences – an exciting next step in Senegal's first offshore oil development.

Some 23 horizontal wells will be drilled over the next three years as part of the

country's first deep offshore oil project, with first production targeted for 2023.

Woodside is the development's operator and the majority participant in the joint venture.

"It was great to introduce the fledgling Senegal oil industry to some of the latest spill technology and best-practice OSR procedures in place," Alan says.

"There's a real keenness and enthusiasm to learn, and we're happy to be a part of this process."

DESMI, a leading manufacturer of OSR equipment, has been selected to assist Woodside with equipment maintenance and familiarisation training of local organisations which might be involved in responding to a hydrocarbon spill.

"OSR equipment is now in-country, fully commissioned and response-ready at the Senegal Supply Base," Alan reports.

Our Senegal team is also building relationships with HASSMAR and other agencies.

Woodside asked local government agencies and affiliated organisations to nominate personnel for a three-day oil spill equipment familiarisation program and 35 people attended.

Logistics service providers and other stakeholders were engaged to confirm expectations around an OSR, and Senegal Country Manager Andy Demetriou and Chris Bourne were on hand to engage with the Senegal Government.

Alan describes the work down to date as "a solid start", but adds: "We need to keep up the momentum to ensure both Woodside and Senegal retain a fit for purpose and response-ready capability for the duration of the company's involvement with Senegal."

To that end, he says contractor Desmi will be sending Dakar-based responders to France for further training at a world-renowned OSR agency to further bolster capability.



Left, crew members of the Ocean BlackRhino drilling rig (right) which began the first of a 23 well drilling campaign in July as part of the Sangomar Phase One Development.

# Drilling campaign underway

Drilling of the first well in the Sangomar Phase One Development has begun and was well on the way to completion as Trunkline went to Press in late September.

The well marks an important milestone in Senegal's first offshore oil development and is the first in a three-year program.

Well Delivery Manager David Moon reports: "Drilling performance has been good on the first well where the Drilling and Completion (D&C) team is proving the design concept for each section.

"The focus is on getting each hole section right first time."

The oil reserves were discovered in a series of exploration wells in 2014.

The field is approximately 100 km south of Dakar, Senegal's capital. The water depth is between 900m and 1.4 km, and the wells will be drilled from seabed through the different rock formations until they reach the reservoir rock around 2.5 km below sea level.

Woodside is the operator of the Rufisque Offshore, Sangomar Offshore and Sangomar Deep Offshore (RSSD) joint venture, which includes Société des Pétroles du Sénégal (PETROSEN).

Drilling of the first well began in mid-July. It is planned to be approximately 3,900m deep and is being conducted by Woodside and PETROSEN from Diamond Offshore's Ocean BlackRhino (OBR) drillship.

"We are pleased to announce the launch of these operations, which brings the realisation of an oil industry in Senegal an important step closer," Meg O'Neill, Chief Executive Officer (CEO), said in July.

In June, a Woodside team visited communities in the Fatick and Thies regions of Senegal to inform residents about the imminent commencement of the drilling campaign.

"The visit advised these communities about the commencement of the drilling campaign, provided them with a project update and documentation to support

the drilling campaign and emphasise the 500m Safety Zone," says Senegal Country Manager Andy Demetriou.

"The communities demonstrated strong interest in the information provided and appreciate the regular visits by Woodside."

Andy reports that the drilling has been widely featured in local radio and print media.

After the 23 wells have been completed, the development moves to the next stage – hooking the wells through subsea infrastructure to a floating production storage and offloading (FPSO) facility that has been named after Leopold Sédar Senghor, Senegal's first president.

The FPSO will have a production capacity of approximately 100,000 barrels per day.

First oil production from Sangomar, which the CEO has cited as one of Woodside's four strategic priorities, is targeted for 2023.

# Opening doors

Pluto LNG's first commercial truck load was successfully delivered in Q3, opening the door to new markets in the north west of Western Australia for Woodside's products.

Achieving success in these markets could make a sizeable contribution to lowering the carbon footprint of local heavy industry and transport.

It also heralds a new way to use Pluto gas in the domestic market.

Another potentially important new market for LNG is dual-fuel supply vessels which currently operate on heavy fuel oil.

The first commercial truck was loaded in early August, and Asset Manager Yvette Manolas notes that being able to load the truck a few days before the Pluto turnaround and achieve a cool-down within 24 hours was the result of collaboration by the wider team and a focus on planned and prepared operations.

Project Manager Lee Ooi emphasises: "Our priority all along was to ensure that the truck loading facility was tested and commissioned to a safe and reliable standard."

It has been calculated that about 3

billion litres of diesel are used annually in the Pilbara, mainly by large mining companies.

Iron ore carriers operating out of Pilbara ports account for another 5 billion or so litres annually.

Yvette says Woodside aims to replace these higher-emissions fuels with cleaner gas.

"Not only would this create local jobs and replace imports but it would reduce greenhouse gas emissions (GHG) by 120,000 tonnes a year – the equivalent to removing 25,000 cars from our roads," Yvette says.

On a lifecycle basis, LNG reduces GHG emissions by about 27 per cent, and virtually eliminates emissions of sulphur dioxide and fine particulate matter.

The first LNG truck load was delivered to EDL, Woodside's partner in this mobile venture.

"Achieving the first commercial truck load was the result of intensive collaboration between Projects, Asset, Operations Readiness, Engineering, Marketing Trading and Shipping, Technip Energies and our joint venture partner EDL," says Lee.

Resilience has been a key attribute to overcome the challenges to delivery, he adds.

"Now that the first truck load has been delivered, we can leverage on the success and broaden our scope," Lee says.

As an example, he points to the 10-year contract signed in April between Woodside and Strandline Resources to supply trucked LNG to Strandline's Coburn mineral sands project in WA.

The LNG will be supplied via road train from Woodside's Pluto LNG Truck Loading Facility to Coburn's power generation facilities.

Woodside and EDL have also executed agreements with Abra Mining and Calidus Mining for the supply of domestic LNG for five and seven years respectively.

Alexandra Willis, Pipeline Gas and Trucked LNG Marketing Manager, says Woodside is exploring which markets could be attracted to mobile LNG.

Mark Abbottsford, Vice President Marketing Trading and Shipping, says: "It was a great effort by many people from across the Pluto Asset, Marketing Trading & Shipping and our joint venture partner, EDL, to get us to this point."

**Adrian Button, Lee Ooi, Alexandra Willis and Rob Goulding progressed the Pluto LNG truck loading facility's first commercial truck load in August.**





Chris Murphy, Derek Hodges, Steven Cooper and Mila Kyriacou examine a model of a Factory LNG plant. Woodside has joined with a European-based multinational to commercialise the innovation.

# Factory first

LNG production can now be achieved in more places, more simply, at lower cost and with a smaller footprint.

The solution is Factory LNG and by targeting small to mid-scale projects it will displace higher-emission fuels.

Since its inception at Woodside, the Factory LNG team has identified step-change reductions in both execution and operational risks. The technology program required a broad collaborative effort from our organisation as well as our partners.

Woodside has joined with MAN Energy Solutions, a European-based multinational, to commercialise the innovative solution.

The collaboration combines Woodside's intellectual property and LNG experience with MAN's global manufacturing and project-execution expertise.

Business Disruption Program Manager Steven Cooper has been pursuing Factory LNG at Woodside for five years and says the concept centres on a manufacturing-led process where the most complex part an LNG train is built, tested and then delivered to site – complete.

Steven says Factory LNG is the natural progression in the construction of LNG trains: from the original “stick

built” where equipment and materials are delivered and built on site; to fabrication yards, where big modules are made and transported to site; to the manufacture and delivery of completed units from a factory.

“Customers can increase the number of Factory LNG containers used as the market grows, allowing investment to keep pace with demand,” Steven explains.

“Factory LNG only tackles the liquefaction of the natural gas.

“However, that’s typically the most complex, time consuming and expensive part of an LNG development.”

The unit offers 10 years low-to-no touch maintenance and its compactness allows it to adapt to site constraints.

Moreover, the electrically powered, hermetically sealed units will reduce the carbon footprint of projects by allowing customers to use the lowest emission power generation available as well as eliminating fugitive emissions to the environment.

Steven says the concept has three drivers: keep schedules and costs under control; minimise any time spent on-site; and make safe solutions which work as well as, and require about

as much maintenance as, a domestic fridge.

The concept involves a nominal 50,000 tonnes per annum unit (the size of a 40-foot shipping container) that can be transported via standard heavy-lift shipping and trucking logistics.

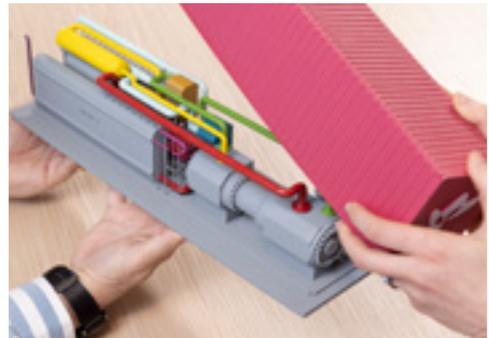
Vice President Technology Jason Crusan describes Factory LNG as a simple and reliable solution for end users that offers an attractive, accessible option for displacing fuels such as diesel with cleaner and cheaper LNG.

“Woodside is committed to diversifying markets for LNG, including as a lower-emissions fuel for activities such as trucking and shipping,” Jason says.

“The Factory LNG system also brings potential for green fuel production by coupling it with synthetic methane units or bio-gas production.

“Factory LNG could revolutionise the way LNG is produced, with lower costs and lower health, safety and environment risks.”

Steven sums up the experience: “It’s exciting to play a leading role in commercialising Woodside know-how and experience to support the global challenge and demand for a lower carbon future.”



# When printing is the future

3D printing – also known as additive manufacturing (AM) – is set to become a “business as usual” option throughout the business.

Technology Projects Team Lead Jason Tinsley is working to make that scenario a reality by the end of this year.

Jason says AM can solve many of the problems that heavy industry faces when it comes to replacing old parts that the original equipment manufacturer (OEM) can no longer supply.

“If these parts are obsolete and there are none in store, it takes a deal of time and money to provide a replacement,” Jason explains.

AM also provides Woodside with the flexibility to obtain parts that have a lower carbon footprint, are cheaper, can be made more quickly and are improved on the original design to better suit the need.

“AM can solve many of these issues because it is agile, fast and cost competitive,” Jason points out.

“What is needed is greater understanding about AM’s potential throughout Woodside and a mechanism to bring users into contact with vendors who can solve the problem.”

So what is proposed?

Technology has been working with Legal, materials engineering and Digital to build an app which will allow users to submit requests for items to be 3D printed and for these requests to be assessed and coordinated for the business.

Jason outlines the procedure the AM process will follow as being a “capture, screening, printing and digitising” workflow.

He continues: “A 3D/AM printing coordinator or focal point will screen the application and a vendor will then be

chosen to print and deliver the object.

“The part will then be added to SAP so it will become part of the normal business practice.

“It’ll be quick, cost effective and will provide a solution for many parts throughout our business.”

Vice President Technology Jason Crusan notes: “The roll-out of 3D printing at Woodside leverages the latest technology manufacturing processes and provide us with a competitive edge in the energy industry.

“We’re looking forward to seeing the work that the Technology team has put into this project being utilised by the broader Woodside community to realise the potential savings this technology can provide.”

Woodsiders seeking more information on 3D Printing at Woodside, should visit the 3D Printing & Additive Manufacturing (3DAM) SharePoint site.



## 3D blockbuster

“Double block and bleed” sounds like boxing ring jargon, but it is a proven way to safely isolate equipment in the chemical process industry.

A section of pipe is shut down on both sides (hence the “double block”) of the bleed valve (which releases any remaining pressure) so equipment can be isolated for safe maintenance or repair.

“In recent years, double block and

# Impelling case

Woodside has collaborated with vendors to find a new solution to replace steel impellers on floating production storage and offloading (FPSO) facilities.

The impellers are used on sea water lift pumps but the traditional fabrication process exposes them to metal fatigue.

“The impeller’s fins were welded to the centre drive piece known as the ‘hub’,” reports Chief Technology Materials Engineer Michael Brameld.

“That weld line can become vulnerable due to fatigue cracking.”

If the impellers are not in stock, tooling costs for the original equipment manufacturer (OEM) and the time needed to make a replacement can be prohibitive – and the original design fault remains unchanged.

Another solution is to use 5-axis machining to “sculpt” an impeller out of a solid block of steel.

“That process is expensive, not only in dollar costs but also in wasted material and energy, leading to a bigger carbon footprint,” says Technology Projects Team Lead Jason Tinsley.

When an Okha impeller failed, Michael Ford, then a Facility Surveillance Engineer, asked Technology if

3D printing might provide a cost-competitive solution.

3D printing is also called additive manufacturing (AM) because the printer adds on layers. Instead of traditional welding, AM employs direct energy deposition via a laser.

Geographe – a West Australian company with long experience in designing and making parts for heavy machinery and plant equipment – was then approached to determine whether AM could provide a better way to make an impeller.

Meanwhile, 5-axis machining was commissioned to provide a replacement impeller for the Okha.

Geographe worked with voestalpine, a supplier specialising in high-performance materials, to print the impeller and

examine the metallurgy and bond strength resulting from the printing process.

A laser beam produced heat to melt powered metal to build up the impeller’s fins on the boss.

“Because the laser is small and concentrated, you don’t get the heat-affected issues you get with traditional welding methods,” says Michael.

Michael says the AM impeller has since passed all mechanical and corrosion tests and the plan is to install it on the Okha in the near future.

FPSO Asset Manager Stuart Panton says: “To meet our targets of reducing costs while also cutting carbon emissions, Woodside will require more initiatives like this.”

**Opposite page, Lee Djumas and Vinay Lonial discuss the advantages of 3D printing of a monoflange; below, Michael Brameld and Jason Tinsley with a 3D-printed impeller, planned to be installed on the Okha FPSO.**



bleed valves have gradually become smaller to minimise fatigue risk due to vibration,” says Principal Mechanical Engineer Vinay Lonial.

But conventional manufacturing has its limitations and further reduction in size was becoming challenging due to the intricate geometry necessary.

Vinay says an opportunity was identified to use 3D printing, or additive manufacturing (AM), to overcome existing manufacturing constraints – and further reduce the mass, as well as improve and increase flow through.

To achieve this, one type of double

block and bleed valve was selected: a monoflange body.

“A monoflange body means a single module incorporates both the block valves and the bleed valve,” Vinay explains.

“It was decided to redesign the monoflange from the ground up to utilise the flexibility and complexity that 3D printing allows.”

Technology worked with mechanical engineers like Vinay, the FutureLab at Monash University and external original equipment manufacturers (OEM) to come up with the final product, 3D printed from stainless steel at Monash.

“It successfully increased flow-through by avoiding harsh internal channel junctions, yet it was also offered reduced mass and volume,” says Vinay.

The part was fully approved for pressure-containing hydrocarbon service use by Woodside’s appropriate technical authorities and is expected to be installed at Karratha Gas Plant this year.

“This component is a great example of how collaboration can produce greater efficiencies – and it also serves as a major stepping stone for Woodside to realise 3D printing becoming part of ‘business as usual’,” says Technology Projects Team Lead Jason Tinsley.

## A day in the life of a ...

# production maintenance technician

Watching glorious sun rises and sunsets over the horizon as humpbacks dance on the sea and whale sharks cruise below.

For Production Maintenance Technician Caitriona Puren, working and living on a floating production storage and offloading (FPSO) facility is exactly where she dreamed her job would take her.

Caitriona operates the Ngujima-Yin FPSO process system, 50 km off the coast of Exmouth in Western Australia.

The vessel receives crude oil from the Vincent and Greater Enfield reservoirs, separating the fluids, including crude oil and natural gas, via the production facilities onboard.

On an FPSO, a production maintenance technician might work as a panel operator or outside area operator.

The former works the settings on a control panel to manage the plant settings to maximise production; rotating to an outside area operator, who has responsibility for the safe

execution of plant operations, permits to work and maintenance.

“Every day is so different,” she reports.

“You’re on the front line and reacting to things as they happen.”

Caitriona says she thrives on new challenges.

“A lot of the other people out here have a trade background – but with engineering you miss out on how to use tools like a shifter,” she reports.

“So it can be more hands on fixing things which you are taught on the job.”

So how did Caitriona end up operating an oil production facility?

At the end of Year 12, she received a Woodside Co-Op Scholarship to study petroleum engineering at the University of New South Wales and graduated with honours.

In 2015 she started as a graduate at Woodside in Reservoir Management

before a spell as a reservoir engineer for North West Shelf and as a reservoir operations engineer for Enfield (on the Nganhurra FPSO).

“My final rotation in the grad program as a ResOps engineer piqued my interests in operations and production,” she says.

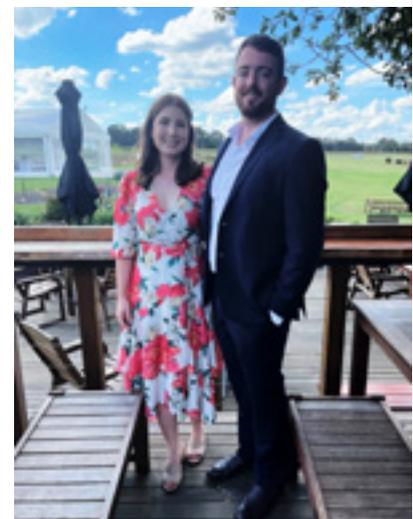
“I enjoyed the fast pace and practical problem solving required in the role.”

Caitriona also worked as the reservoir operations engineer for Ngujima-Yin and helped start-up three Greater Enfield reservoirs while managing Vincent wells, production and offtakes within facility constraints.

She has now transferred to Production and enjoys the ability to travel with partner Matthew when she’s not at work.

“It’s an awesome lifestyle,” she enthuses.

“Before COVID I’d travel around the world and in the past year we’ve seen a lot of Australia.”





Opposite page, Production Maintenance Technician Caitriona Puren operates the process system on the Ngujima-Yin, 50 km off the coast of Exmouth in Western Australia, and says every day is different; off duty, with partner Matthew in the Hunter Valley, NSW; above, an exercise session on the Ngujima-Yin helideck run by the crew. Photo by Natalie Yeates.

Below is a typical day for Caitriona onboard an FPSO.

**22:30:** Alarm wakes me up and I get organised and head downstairs to the mess for coffee and breakfast.

**23:30:** Shift handover meeting to discuss what has occurred during the previous shift, current status of the process and any ongoing work or issues that require follow up.

**23:45:** Review Ensure Safe Production (ESP) – an online portal which includes various operations targets, instructions, control bulletins, standing orders and the like.

**00:00:** Complete Start of Shift Orientation (SoSo) which provides an initial overview of my area of responsibility to gain an understanding of the status of the plant. I rotate between control room operator and outside process operator so my tasks

will vary depending on where I am for the day. Working in Operations, we are responsible for safe and reliable “on spec” production – that is, no water issues.

**00:30:** Start of shift meeting to discuss perfect HSE day, operational targets and instructions, and shift priorities.

**00:45:** Discussion with Lead Technician John Magog on the priorities for Operations during the shift and any unplanned work scopes that need to be prioritised during the shift.

**01:00:** I complete my rounds and Operator Proactive Monitoring (OPAM) – daily tasks to monitor and review the status of the plant. This helps identify any potential issues and to rectify them before they escalate.

**06:00:** Pre-start meeting with all day shift personnel to stretch, review safe cards and first priority events

(FPE) around the business and HSE performance.

**07:00:** I review/complete the permit sign-ons, check in with the reservoir operations engineer to discuss any well moves, and examine the production optimisation and constraints management before we take a break.

**09:30:** Verify all OPAM tasks have been completed and compile my shift report. Other tasks at this time during the work swing may include emergency response exercises, safety meetings, process safety management reviews, audits, planned work orders.

**11:30:** Shift handover meeting to the afternoon shift.

**12:00:** End of shift – time for dinner (which is always delicious), gym and video calls with Matthew and my family before bed, usually around 3pm.

# End of an era

As we announced on page 3, this is the last edition of Trunkline. Over the past 29 years, readership of “the magazine for Woodside people” has spread far beyond the company’s offices and assets to our joint venture partners, contractors, customers and other stakeholders.

Successive editors have kept readers informed and entertained with articles on Woodside’s successes and Woodsiders’ achievements, inside and outside work. Sadly, one of those editors, Michael Parry, died shortly before the deadline for this addition of Trunkline. Some will remember Mike’s steady hand on the Trunkline tiller between 2005 and 2008. We extend Woodsiders’ deepest sympathies to his family.

On the opposite page, Graeme Atherton, the editor of Trunkline’s first edition (right), recalls the magazine’s birth; following pages showcase some of the magazine’s front covers over the three decades; Kellie Bombardieri, editor between 2008 and 2019, speaks for all the magazine’s editors when she writes of her pleasure and privilege in relaying Woodside stories to the Woodside family; and former Woodsider Kerry Smith closes this extended version of Turning Back the Pages by detailing her family link to Trunkline’s predecessor, The Woodside Newsletter.

Mark Irving, Editor



## Goodwyn reaches for the sky



*Dwarfed by the growing jacket at the Batam site recently were (l to r): Resident Substructure Fabrication Engineer Kevin Neylon; General Manager Development Don Henry; Senior QA/Welding Engineer Richard Digby; Senior Construction Engineer Kim Barrett; P.T. McDermott’s John Caro; and Manager Government & Public Affairs Matt Pollard.*

Like pieces of a giant meccano set, the steel legs and structural members of the Goodwyn ‘A’ jacket are gradually coming together and the huge structure is inching skyward.

Recent construction activity on Batam Island, Indonesia, has focused on the first roll-ups, in which prefabricated side sections of the jacket were rolled

into their vertical positions to be followed by the installation of inner framework.

By mid-February, the jacket fabrication work, being undertaken by P.T. McDermott of Indonesia, was 67 per cent complete. The jacket is scheduled for installation on the Goodwyn gas/condensate field in October.

### “Trunkline”

This is the first edition of your company magazine to appear under the name of “Trunkline” — the title chosen in a competition to find a new name for “Woodside News”.

“Trunkline” was suggested by Paul van Sandwyck, of Information Development, and it won him a weekend for two at the Burswood Resort Hotel.

“Trunkline” is published for all employees of Woodside Petroleum Ltd and its subsidiaries, whether they work in Melbourne, Perth, Karratha, offshore or overseas.

We would like our new masthead to represent more than just a change of name. “Trunkline” is your magazine — and we want to make it as informative, interesting and relevant as possible. But we need your help.

Constructive suggestions and story ideas for your staff publication are always welcome, as are written contributions.

Suggestions or written work can be submitted to the following Public Affairs personnel: Graeme Atherton or Peter Herkenhoff (Perth); Iain McCoy or Lynda Osborne (Karratha); Darren Grevis-James (Melbourne).

## Top Company

Woodside’s fine record in export achievement and its sound financial performance were among the key factors in the company being named Western Australia’s 1991 Company of the Year.

Deputy Premier Ian Taylor is pictured presenting the award to Executive General Manager Peter Brown at a function in Perth. The award is sponsored by the WA Chamber of Commerce and Industry and the AMP Society.

A panel of business leaders judged the award on the basis of several criteria, including export performance, human resource management, financial performance and benefit to the State.

Chamber executive director Ross McLean said Woodside’s ability to demonstrate a high degree of achievement in all of these criteria made it a worthy winner.





Opposite page, the very first edition of Trunkline, edited by Graeme Atherton. Above, Trunkline's predecessor was Woodside News, which Graeme (pictured on Goodwyn A platform in the mid-90s) inherited when he joined the company.

# In the beginning

**Trunkline was born in February 1992, “delivered” by its first editor – former newspaper journalist Graeme Atherton. Graeme later edited the book *Fifty Years of Woodside’s Energy*, published in 2004 to mark the company’s 50th birthday. Here, he recalls Trunkline’s birth.**

I gave up my newspaper career to join Woodside in April 1988 as the company was in the throes of moving to its new headquarters at No 1 Adelaide Terrace, Perth.

Amid the turmoil of moving offices, my new boss Matt Pollard told me my immediate task was to produce the next edition of the staff magazine, which hadn't been published since its previous editor had left six months earlier. And so I was introduced to Woodside News.

It was an A3 black and white newspaper-style publication which had evolved from a humble newsletter started during Woodside's earlier exploration years. It was supposed to be published bi-monthly, so the next edition was well overdue. I managed to get it published a few weeks later – featuring the successful big office move on the front page.

Another journalist, Iain McCoy, joined our department and we decided it was time to give Woodside News a new

look. We reduced it to a more compact A4 format and added some colour.

We discussed giving it a new name but couldn't come up with any bright ideas. So Woodside News it remained until the end of that year, when we resolved the issue by inviting Woodside staff to offer suggestions for a new name.

The name Trunkline was submitted by Information Development Officer Paul van Sandwyck.

We liked the reasoning behind it: just as our subsea trunkline connected our offshore and onshore operations, Trunkline would connect the company with its employees – and help staff connect with each other.

The first edition of the magazine to appear under its new Trunkline banner was published in February 1992, featuring construction progress on the new Goodwyn A platform jacket.

Trunkline survived a cost-cutting program in 1994 but, for a period

of time, it was produced with fewer pages, reverted to black and white and had its frequency reduced to quarterly.

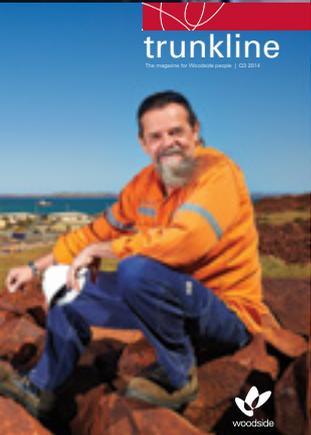
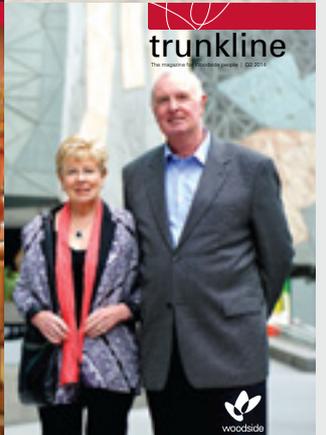
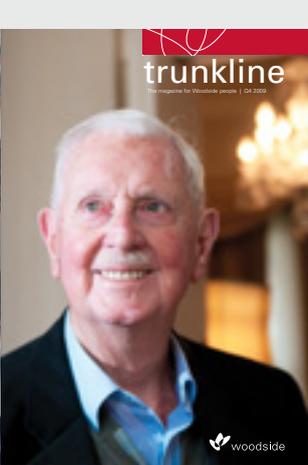
Eventually, however, it would be produced in full colour. Its editorship was taken over in 1995 by another former journo, Mike Edmondson – one of several editors who have kept it going ever since.

In an organisation that embraces change as readily as Woodside, it is a testament to Trunkline's value to the company – and a tribute to its numerous staff contributors and supporters – that it endured essentially unchanged for almost 30 years.

But it was perhaps inevitable that the move towards paperless communications would eventually catch up with it. I just hope that whatever form of staff communication succeeds it proves to be as successful.

Vale, Trunkline – you served the company well.







trunkline  
The magazine about Woodside people | Q4 2010



Standards set: Gemma Jones celebrates the gains made during a review and rewrite of about 300 of Woodside's engineering standards.



Trunkline  
The magazine for Woodside people | Q2 2018

## Raising the standard

It was a job expected to take four years.

All of Woodside's engineering standards were to undergo a "back to basics" rewrite.

They had become too cumbersome and complicated, at odds with the agility and efficiency the company wanted to achieve.

But once the project team was assembled, they decided that this task couldn't wait and, with the appropriate support, they got the job done in 18 months.

Executive vice president of Development Robert Edwards described it as a remarkable accomplishment that served as a timely enabler of many other productivity initiatives, particularly those involving external spend.

As our suppliers had pointed out, the old standards featured heavy overlay that added unnecessary cost to our projects.

They were also difficult to update, resulting in a high number of deviations.

Given our global aspirations and our inherent focus on being a partner of choice, the need to streamline, simplify and consolidate was obvious.

Ted Fletcher and Alex Hyndman led the dedicated project team as they worked to rewrite about 300 of Woodside's engineering standards to achieve the consistency and clarity required.

The effort involved 100 authors across 28 disciplines.

Internal and external experts provided the technical content while a wider range of stakeholders were involved in reviewing, assessing, recommending and approving the best way forward.

Their approach was pragmatic – identify the most appropriate international standard then limit overlay to only that necessary to reflect the Woodside experience.

Any proposed additions would have to be justified in a process carefully watched over by our engineering authorities.

The results. The standards are now fit-for-purpose and industry aligned, they are more consistent and easier to navigate as well as simpler and quicker to update.

Some still need a little tidying up and all will be open to ongoing review as part of a feedback process that has been built in to capture continuous improvement opportunities.

As a recent celebration held to mark how much had been achieved by the team in the past 18 months, chief executive officer Peter Coleman summed up the significance of the effort.

"The standards will improve our efficiency, productivity and competitiveness without compromising our commitment to safety and quality."



Woodside

# Thanks for the memories

**Kellie Bombardieri, currently Woodside Transform Communications and Engagement Manager, edited Trunkline for more than a decade. Kellie reflects on how the magazine might have changed over the years but it has always remained people focused.**

Trunkline underwent some cosmetic changes during my time as editor, keeping up with Woodside's evolving branding.

But its focus never wavered.

It was, as its strapline said, the magazine for Woodside people – people who worked there at the time, in the past or in a hoped-for future; people with family who worked there or were stakeholders in some way.

Trunkline shared stories of the company's achievements through the eyes of those who made those things happen.

It shared the grit and the glory, the challenges and the triumphs, the

cleverness and the camaraderie.

It showcased the personalities behind the news headline or ASX announcement.

Unsolicited feedback, received regularly, indicated that it hit the mark – and the first evidence of this came early in my tenure.

Then Chief Executive Officer Don Voelte passed on a note from former managing director Charles Allen who had just read the latest edition.

Charles, who was at the helm in the 1980s when Woodside was just starting up operations, had written to say how much he had enjoyed reading the magazine.

He commented that what had started out as a little newsletter to keep the Woodside workforce connected had grown up, like the company itself, to be something much more substantial.

Appreciation was echoed by many others for many different things over the years – a staffer's child inspired by the story of a female marine pilot, an accountant who liked how the magazine articulated the triple bottom line, the international office crew who said it made them feel "part of the family", the offshore workers grateful they could "show" their kids where they worked... the list goes on.

This cemented what a privilege it was to be Trunkline editor.



## Trunkline

The magazine for Woodside people | Q4 2019



## Dockers chalk up Goodwyn

As a fleet of 100+ vessels, the Fremantle Dockers are the largest of its kind in the world. They only maintain the station while the vessel is in port, and they have a lot of work to do. The Dockers are a team of 100+ people, and they are all passionate about their work. They are a team that works hard and is always looking for ways to improve. They are a team that is always ready to help and support each other. They are a team that is always looking for ways to make a difference. They are a team that is always looking for ways to make a difference.

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Kellie Bombardieri says Trunkline has showcased some significant milestones in Woodside's history but its people have always been front and centre at the magazine, as these photos taken from issues published during her editorship illustrate.

But it did not mean that everyone was lining up to appear in its pages.

"This will cost me a carton," was the common response when asking anyone in Karratha to feature. This was sometimes upped to two cartons if you were at the supply base.

But once the magazine was out, any reservations dissipated and people who appeared in the latest edition clamoured for extra copies to share with family and friends or to keep as a memento.

Sometimes those photos featured the unexpected – like Fremantle Dockers' Matthew Pavlich and Aaron Sandilands playing kick-to-kick on the Goodwyn A helipad with the crew – and sometimes

they showcased important milestones – such as the launch of the jacket for the North Rankin Complex.

On a couple of big occasions – such as Woodside's 60th anniversary and the start-up of our Pluto LNG Plant – hard-cover commemorative foldouts were offered. One of those offered a disk full of memories.

The fact that disk drives are now a little passe shows how quickly times change.

When I first started working on Trunkline, aerial shots would be taken by a photographer harnessed into a helicopter, leaning out of its open door.

Now we would just put a drone up.

Things change, times move on and so we come to the final edition of this magazine for Woodside people.

If I had to create a showreel of fond memories from my time as editor, it would run long, numerous stories acknowledging milestones, awards, novel solutions, courage, innovation and teamwork.

But really it is the people who leave a lasting impression – our inaugural Hall of Fame inductees, families at Woodside Week, offshore crew holding up a "we did it" sign, meeting the children of our founders... the list goes on and on.

So to all the Woodside people, I say thank you.



# THE WOODSIDE NEWSLETTER

JUNE 1981

## Introducing - The Woodside Newsletter

This is the first issue of "The Woodside Newsletter" - a publication which will circulate to all Woodside people in our offices in Melbourne, Perth, Brisbane, Karratha, Jervoise Bay, Geraldton, Sale, Tu and Singapore.

Its publication marks another milestone in the metamorphosis of this Company from a small entrepreneurial organisation towards a major Australian energy producer.

When we were formed, as Woodside (Lakes Entrance) Oil NL, in 1954, there was no need for a staff newsletter.

The permanent staff of fewer than a dozen people fitted comfortably into a small office in Melbourne and communication was by the most effective possible means - talking to each other.

Through the efforts of these people, and the many who have followed them, Woodside is set to become a company of considerable national significance.

Today, the Woodside Group - Woodside Petroleum Ltd, Woodside Offshore Petroleum Pty Ltd, Woodside LNG Pty Ltd, Vamang Ltd and Mining Share Registry Pty Ltd - employs almost 800 people.

Approximately 470 of these are based with the operating subsidiaries in Perth, and another 60 in the Melbourne corporate office.

Fewer than half of these people were with us at the beginning of 1980. They have come to us from disparate backgrounds throughout Australia and the world. Most have been recruited to join the core of long-term Woodside employees in the



J.G. DONALDSON  
CHAIRMAN

immense task of harnessing the energy reserves of the North West Shelf gas fields for use in Australia and abroad. Others are joining the exploration team which is looking to the North West Shelf and beyond for targets which we hope will provide further challenges for the developers.

We, on the Board of Woodside, believe that a dialogue between the company and its people is the best way to keep the people informed and interested in their work. For a company with our numbers and our geographical spread of people, a staff newsletter is a useful adjunct to other forms of communication.

We hope that you will enjoy "The Woodside Newsletter," that it will help to keep you informed about what your colleagues are achieving in other parts of the organisation and, if you are a newcomer, that it will help you to develop an understanding of your Company and its activities.

## \$25 Million contribution for Karratha facilities

The Participants in the North West Shelf Joint Venture will give more than \$25 million towards regional and community facilities in the Karratha area.

This is how the money will be spent:

- \$9,980,000 for roadworks to upgrade the West Pilbara Regional Water Supply.
- \$7,928,600 towards construction of the West Pilbara Regional Hospital, the West District Senior High School, the Millars Well Primary School and extensions to the police station.
- \$6,538,000 to the Roebourne Shire Council for community and recreation facilities.
- \$600,000 to the Roebourne Shire Council for upgrading Karratha Airport.

The Joint Ventures' contribution of \$6,538,000 to the Shire for recreation facilities will be split between an immediate commitment of \$4,032,000 and a deferred commitment of \$2,506,000.

The contribution by the Joint Ventures was agreed after negotiations between the Shire of Roebourne, led by Shire President, Mrs Robyn Crane; the State Government, represented by the Minister for Resources Development, Mr Peter Jones and the Member for Pilbara, Mr Brian Sodeman; and Woodside Offshore Petroleum Pty Ltd, led by General Manager, Mr Ross Harrison.

# THE WOODSIDE NEWSLETTER

AUGUST 1981

## Exploration is our future

By Charles Allen

The discovery of crude oil offshore in Illara No 1 exploration well and the return of the drillship Regional Endeavour to spot in the Fisher No 1 exploration well offshore in the Damper Sub-Basin have highlighted the importance of an active exploration effort to the Woodside Group.

Exploration is an investment for our future. Without it we would have a relatively short life as a company.

It seems to me that this fact is sometimes overshadowed by the sheer magnitude of the effort being put into the development of the North West Shelf natural gas which was discovered by Woodside's exploration team.

It also seems our people sometimes forget that, irrespective of the effort being put into development, we are among the most active petroleum exploration groups in Australia.

The offshore exploration programme which is being operated by Woodside Offshore Petroleum, is one of the biggest in both expenditure and number of wells drilled ever conducted in Australia.

We have drilled 48 exploration wells in the past 14 years, and have conditional commitments to drill another 18 during the next four.

This will require a virtually continuous offshore drilling programme during the next four



DICK ALLEN  
CHIEF EXECUTIVE

years. Though we will only be operating one rig for most of that period, we will need to bring in a second from time to time.

At present Woodside's exploration acreage is concentrated entirely on the North West Shelf where we have permits covering 52,000 Km<sup>2</sup>. Though this is considerably less than the 370,000 Km<sup>2</sup> we held until 1972, it still represents a very large prospective area by any standard.

In the years up until we have commenced production of LNG we are faced with an enormous outlay of the capital for new production facilities.

*continued next page*

## Japanese pledge LNG purchase

Another milestone in the North West Shelf Project has passed with Japanese power and gas utilities signing the memorandum of intent, to purchase Liquefied Natural Gas. Here is the text of a statement issued on behalf of the sellers on June 23, 1981:

"BHP, Shell, BP and Chevron, the four companies responsible for the sale of North West Liquefied natural gas, announced today that they have each reached agreement on a Memorandum of Intent, subject only to formal execution, for the supply of LNG to eight Japanese power and gas utilities.

The eight Buyers are the leading Utility companies responsible for the majority supply of electricity and gas in Japan.

After an initial build up period of approximately 2 years the agreements provide for the supply of 6 million tonnes of LNG a year. It is contemplated that the supply period will be about 19 years and that supplies will start in 1986.

The agreements will be followed immediately by negotiations towards Sale and Purchase Agreements detailing the terms of the supply of LNG to the Japanese utilities.

Woodside Petroleum has a 50 percent interest in the North West Shelf project through three wholly owned subsidiaries who have agreed in principle to sell their LNG to Shell Development (Australia) Pty Ltd and Hematite Petroleum Pty Ltd (BHP).

Therefore the four Sellers of LNG are Hematite, 33% percent, and Shell, 33% percent, BP International Ltd, 16% percent, and Chevron Oil Trading, 16% percent."

# Kerry's sentimental discovery

Before Trunkline and before Woodside News there was The Woodside Newsletter - "to keep you informed about what your colleagues are achieving in other parts of the organisation", as company founder Geoff Donaldson wrote in its first issue.

Rare copies of the The Woodside Newsletter, a forerunner to Trunkline magazine, have been unearthed by former Woodsider Kerry Smith.

The newsletters were collected by Kerry's father who worked as a contractor on Woodside's pioneering projects in the Pilbara.

"He was very proud of the work he'd done for the company," Kerry says.

"When I went through his boxes of papers after he passed away, I found the newsletters which I'd never seen before.

"I thought 'oh my goodness - this is

incredible. Dad obviously felt they were important enough to save because he had collected them and saved them for decades'.

"I got quite emotional reading them and thought, 'this is decades of history going right back to 1980 when my Dad was working for Woodside'.



## PROJECT MAKES GOOD PROGRESS



Former Woodsider Kerry Smith with the first editions of *The Woodside Newsletter*, saved by her late father Bob Lewis who was a contractor to the company in the 1980s. Kerry recalls her early years in the Pilbara were the happiest of her childhood as she explored Karratha and surrounds on her BMX.

“I know that these kind of things were important to Dad but as a child you don’t think about them.”

The *Woodside Newsletter* was launched in June 1981.

Its first front page was taken up largely by a message from Woodside’s founding chairman, Geoff Donaldson (more formally called J G Donaldson in the newsletter), and his message included the words: “Its publication marks another milestone in the metamorphosis of this Company from a small entrepreneurial organisation towards a major Australian energy producer.”

Kerry’s father, Robert (Bob) Lewis, kept a handful of these newsletters.

Bob moved to the Pilbara with his family in 1980 when Kerry was six. He was an engineer working for a

construction company that became a valued Woodside contractor.

“He was the area manager for the company which primarily undertook Woodside contracts including constructing the King Bay Supply Base, the Nickol Bay Hospital and Karratha Gas Plant’s Train 1,” Kerry recalls.

She remembers her time in the Pilbara as “the happiest time in my childhood by far”.

Kerry explains: “I have a lot of special memories and it was quite a different upbringing to what kids these days are used to.

“We were given freedom to roam the countryside on our BMX bikes as long as we were home before the streetlights came on. And we would watch the turtles lay their eggs at night-time on the beaches and later

collect their babies and carry them down to the water.”

Bob died in Noosa in Queensland in 2014 and it was some time before some of his papers were shipped back to his daughter.

By then, Kerry was something of a Woodside veteran.

She had joined the company in 1998 as a technical assistant before transferring to the graduate program.

Her last role before leaving Woodside in 2020 was in a leadership position in the Governance, Risk and Compliance function.

Kerry now works as a consultant in a variety of areas, from strategy and planning to establishing a robotics skills hub targeting participation by females and Indigenous students.

# Understanding underwater heritage

Traditional Custodians of Murujuga retain an ongoing connection to Sea Country and the cultural knowledge that today's waters cover a land once occupied by their ancestors.

Now, archaeological science is beginning to back this up.

In 2020, the Deep History of Sea Country (DHSC) project published the first discovery in Australia of sub-tidal Indigenous artefacts from two locations in the Dampier Archipelago, in Western Australia's North West.

Woodside has since been collaborating with Murujuga Aboriginal Corporation (MAC) and DHSC members Professor Jo McDonald and Dr Mick O'Leary from the University of Western Australia (UWA).

The aim is to understand the potential heritage values of this submerged cultural landscape which is in and adjacent to the Scarborough gas resource.

Woodside is proposing to develop this resource through new offshore facilities connected by pipeline to an expansion of the Pluto LNG onshore facility which includes a new LNG train.

"Given the understanding of submerged Indigenous heritage in Australia is in its infancy, Woodside had to take a pro-active, values-led approach to its management of cultural heritage by engaging with Traditional Custodians and researchers to conduct studies that will form the equivalent of onshore cultural heritage best practice," explains Daniel Thomas, Woodside's Senior Heritage Adviser.

Daniel is part of a multi-disciplinary team from Woodside, UWA and MAC that recently undertook an archaeological research project.

That project built on scientific evidence that people have occupied Australia for at least 65,000 years ago, when the nearest coast to the archipelago was more than 100 km away.

As temperatures rose after the last glacial age, maximum sea levels rose.

This flooded a cultural landscape that had been lived upon for thousands of years until it reached current levels around 7,000 years ago.

As part of this project, UWA

reconstructed the submerged landscape and identified key features likely to have been centres of cultural activity where archaeological material may remain.

This research project concluded that the Scarborough development proposal is likely to have nil to low impact on archaeological heritage values.

Nor will it impact any submerged igneous rock, which could have the potential to contain as yet undiscovered examples of Murujuga's internationally significant petroglyphs, the project found.

"The approach taken by Woodside and key stakeholders to understand the submerged cultural landscape is the first since DHSC's discovery and sets a positive precedent for future development activities," says Michael Robinson, Senior Vice President Scarborough Development

"Woodside looks forward to continuing its engagement with Traditional Custodians and MAC on the management and co-existence with Murujuga's cultural heritage."

**Daniel Thomas, Professor Jo McDonald and Dr Mick O'Leary from the Deep History of Sea Country project at the Mia Yellagonga campus to detail the findings of recent archaeological research.**



**Traditional Custodians of Murujuga retain both an ongoing connection to Sea Country and the cultural knowledge that today's waters cover a land once occupied by their ancestors.**



Simon Chester, Amy Nielsen and Stuart Bond discuss with Jarrod Collings of Intervention Engineering how a remotely operated micro marine drone can inspect the insides of caissons.

# Challenging norm pays dividends

“Challenging the norm” is the mantra that drives the North West Shelf (NWS) gas fabric maintenance team.

The team is also charged with providing the most cost-effective lifecycle solutions.

And the task of internally inspecting the North Rankin A (NRA) caissons led to both boxes being ticked.

Caissons are pipes suspended under offshore platforms that are used to separate and dispose of liquids or import seawater for use on the platform.

The options available to safely and quickly confirm the internal condition of the caissons below water level with key infrastructure nearby were extremely limited.

“The top of the caissons contains hydrocarbons and this meant the simplest solution was to inspect subsea from the bottom of the caisson,” says Simon Chester, the team’s Project Lead.

Broad collaboration delivered a novel, low-risk and effective result.

The team partnered with a West

Australian company, Intervention Engineering (IE), to investigate whether conventional equipment from another industry could be re-purposed.

IE is a specialist in small remotely operated vehicle (ROV) operations, and Managing Director Stuart Barrow says there have been great advances recently in airborne drones.

“This technology is directly applicable to the small ROV market, which is now experiencing its own leap in capability,” Stuart adds.

“This was a situation where the adaptability of our client to work outside the norm paid dividends.”

Woodside and IE were able to fly a remotely operated micro marine drone up the inside of NRA’s in-service D5 caisson from its opening at a depth of 40 metres.

Entering from the caisson’s bottom end meant avoiding the hazards of the caisson’s hydrocarbons.

The drone provided high definition video footage crucial for inspectors to confirm

the condition and integrity of the caisson.

Fabric Maintenance Superintendent Stuart Bond says adapting technology developments to quickly and effectively resolve issues drives the success of the team.

“We identified that minor modifications to a standard piece of equipment used in recreation, aquaculture and public safety could deliver a viable and safe solution,” Stuart reports.

Simon adds: “Our ‘New Way of Working’ looks for quick, quality, cost-effective solutions and IE was a great partner.”

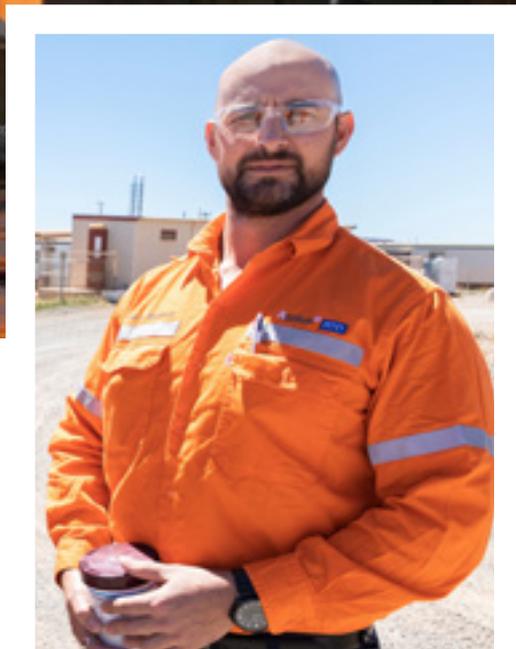
Amy Nielsen, Asset Manager Offshore Gas Platforms, points out that NWS Gas assets require life extension to continue operating safely to end-of-field life, so doing things differently can provide the key to success.

“The team has been proactive in applying new solutions to existing problems, demonstrating the Woodside values of courage and ownership,” she says.

“It’s exactly the behaviour that gives us confidence in our future.”



Corrosion Technology Specialist Travis Baensch (inset) says a new Humidur product with fire-retardant qualities (pictured tested in Europe) brings many benefits, including substantially reduced preparation and application times.



# Fire power

Humidur, the two-part single application epoxy coating adopted by Woodside in 2018, has played a significant role in improving the company's maintenance programs.

And Woodside has helped develop a new Humidur product which brings important fire-retardant qualities.

The latest development work centres on passive fire protection (PFP), which is classified as a safety critical element for the company's assets.

One of PFP's roles in the oil and gas industry is to provide the necessary control, mitigation, and protection of steel in the event of a gas explosion and fire.

"Its primary role is to aid and facilitate safe evacuation of personnel by ensuring the steel maintains its integrity during the event of a fire scenario," explains Corrosion Technology Specialist Travis Baensch.

This protection is traditionally by concrete or masonry cladding over steel, or by proprietary and generic methods including polymer resin-based materials or epoxy intumescent-based PFP products and systems.

"These systems require specialised equipment, are variously either expensive, time-consuming and difficult to apply or require specialised labour skills," explains Travis.

Woodside's Production Technology team identified a significant internal business driver from Goodwyn A (GWA) and Karratha Gas Plant (KGP) assets to design a new PFP system that met the required performance and quality but was achieved more quickly and cost effectively.

Woodside set the Belgian manufacturer of Humidur the challenge of creating a PFP version of the coating, with independent testing carried out in the Netherlands and Norway.

In February 2021, the new product, Humidur Char, was given the seal of approval by an independent certifier and plans to integrate the product into a GWA scope began immediately.

Brownfields Project Engineer Soon Khoo helped managed the change with the various internal stakeholders and the first applications of Humidur Char took place on GWA in April this year.

Travis says: "By combining PFP properties with Humidur we have access to a world-class, all-in-one, single-product system that meets the highest industry testing and qualification criteria.

"Humidur Char carries over all the benefits from the traditional Humidur product range while simultaneously reducing the need for additional PFP layers and materials like reinforcing mesh, thus substantially reducing the cost and time for preparation and application."

# Teamwork delivers quick response

Technology's collaboration with a vendor provided a quick solution to an issue onboard Okha, the North West Shelf Project's floating production storage and offloading (FPSO) facility.

FPSO facilities like Okha achieve reliable real-time communications with other assets using advanced antenna tracking systems that can account for movement and rotation of the vessel.

The azimuth axis servo motor controller on board the Okha – a critical component in the on-board antenna tracking system which is used to maintain the antenna heading – failed in April 2021.

The motors used in the antenna tracker system are highly complicated pieces of hardware, able to control their position to a fraction of a degree. To be used effectively they require similarly complicated motor controller hardware systems.

Unfortunately, the spare controller was faulty and unserviceable.

Without it the antennae on board the FPSO could not track towards its destined location – the Angel platform – which would severely degrade the

integrity of the data link crucial to the operation of the FPSO.

“This meant that a manual system had to be implemented whereby a rope was tied to the antenna bracket, and someone had to pull on a rope to adjust its heading, with a second person monitoring the heading from the control room and directing the efforts of the person doing the manual work,” says Stephen Standley, Projects Manager in Production Technology.

“This was a highly resource intensive activity with the FPSO constantly rotating.”

A replacement was quickly ordered from the original equipment manufacturer (OEM) but unfortunately delivery would not be so prompt and the expected lead time of up to six months would create additional risk plus cost.

Stephen engaged RemSense to investigate.

“RemSense has a long history of working with Woodside delivering innovative technology solutions over

a wide variety of disciplines, and I thought this would be a perfect job for them,” says Stephen.

RemSense got to work on solving the problem.

A replacement controller was designed, manufactured, and tested to meet the factory acceptance test (FAT).

“With no knowledge of the inner workings of the controller, RemSense came up with a fully functional replacement motor controller for Okha,” says RemSense Senior Engineer Rory O'Connor.

“Furthermore, this was achieved within two months of the original engagement, or a third of the time the OEM would have been able to supply a solution.”

This effort was the result of a highly effective collaborative effort between RemSense and Woodside, as RemSense relied on rapid and detailed feedback from Production Maintenance Technician Tony Clark and other engineers on Okha to deliver such a complex system in such a short time frame.

**When a motor controller failed on board the Okha FPSO facility, a manual system involving a rope tied to the antenna bracket was set up to maintain the antenna tracking system until close collaboration with a vendor and speedy work paid dividends.**



# Peak of her profession

Woodsider Shamila Vijayamanohar has been named Australia's 2021 Corporate Accountant of the Year in the Australian Accounting Awards.

Shamila, a Senior Finance Analyst in the newly created business intelligence team, says she was shocked but delighted to collect the prestigious award – though COVID-19 meant she

couldn't collect it in person at the awards night ceremony, held in Sydney in June.

Born and raised in Malaysia, Shamila joined Woodside's Graduate Program in 2015 following a double degree in commerce and law at the University of New South Wales before completing her chartered accountancy accreditation in 2018.

“At Woodside I've enjoyed a variety of roles during the grad program and since,” she says.

“I've worked in financial accounting across various business units, I've worked on the Woodside Management System project and I've worked in management accounting, focusing on corporate expenditure.”

**Shamila Vijayamanohar has been named Corporate Accountant of the Year but says she still looks forward to improving and expanding her skills.**



Her current role, in the business Intelligence team, focuses on automating and streamlining current finance reporting to enable Finance to focus on more forward-looking insights and to drive a more cost-conscious culture.

The awards, now in their eighth year, are independent of any professional accountancy body and aim to acknowledge and reward high-achieving professionals.

This year's field saw more than 302 finalists across 34 categories.

In April, Shamila was notified that she had been nominated and the next month, she was told she was a finalist.

In June she watched the awards ceremony by live video, at home with her partner Pesila and pet greyhounds Roma and Jerry.

“Honestly, I was shocked for quite a while afterwards as I genuinely did not expect to win but that transitioned to feeling ecstatic,” Shamila reports.

She says she is thankful for all the opportunities she has been given at Woodside as well as the trust her managers and mentors have given her.

She explains that both the Graduate Program and the rotations she has experienced has taught her to step out of her comfort zone.

“It's also introduced me to a diverse group of people whom I'm very fortunate to have known and learnt from,” she adds.

“I'm looking forward to taking on more challenges and improving and expanding my skills.”



Dreams of Place saw more than 100 musicians from the Western Australian Youth Orchestras (WAYO) and the West Australian Symphony Orchestra (WASO) join Indigenous performers Barry McGuire and Della Rae Morrison at the Perth Concert Hall.

# Side by side on stage

In an Australian arts industry first, Western Australian Youth Orchestras (WAYO) and the West Australian Symphony Orchestra (WASO) recently joined forces on stage.

Dreams of Place, held in July at the Perth Concert Hall, showcased an exciting collaboration between both orchestras and local Indigenous performers Barry McGuire and Della Rae Morrison.

More than 100 of Western Australia's most talented musicians joined Barry and Della Rae as they shared their connection to country through song.

Woodside enjoys partnerships with both WASO and WAYO and this concert was the culmination of educational workshops and rehearsals which provided unique development opportunities, and which enabled WASO professionals to work closely with WAYO musicians.

WAYO cellist Elena describes the experience as fantastic.

"I had an incredible time developing my orchestral skills in a professional

environment and playing some truly meaningful and exciting repertoire," she reports.

Chief Executive Officer Meg O'Neill acknowledges the important role Woodside's partnerships with WASO and WAYO play in strengthening capacity within the arts sector.

"The aims of those partnerships include delivering long-term progression pathways for young musicians and

opening up opportunities to reach new audiences through creative performances," Meg says.

"The Dreams of Place collaboration delivers on both those objectives."

Woodside has enjoyed a partnership with WAYO for 30 years and with WASO for much of the past decade.

The next joint performance of the orchestras is set for March.





# Having a whale of a time

One of the world's largest fish has been found to have an almost insatiable attraction to a Woodside asset off the coast of Western Australia.

The fish is the *Rhincodon typus* – commonly known as the whale shark – and one was detected multiple times a day over a month visiting the Pluto platform.

Named Shark 19503, the whale shark visited the platform legs, between 130 and 580 times a day over a 24-day period across June-July 2018.

“Overall, Shark 19503 was detected 4,894 times,” Paul Thomson writes in the journal *Frontiers in Marine Science*.

“Fifty nine percent of detections occurred during the day with 41% occurring at night.”

Another whale shark was detected at North Rankin A platform, but paid

far fewer visits, and the reasons are unknown. As Dr Thomson notes: “Like people, no two whale sharks are the same!”

Dr Thomson is a researcher at the Oceans Graduate School and the University of Western Australia (UWA) Oceans Institute in Perth.

His pilot study was aimed solely at determining the effectiveness of acoustic telemetry equipment in detecting visiting tagged marine animals and to understand how megafauna species may utilise these structures.

“We put out acoustic receivers around Woodside platforms and also attached them to remotely operated vehicles (ROVs) during pipeline inspections to listen for marine animals tagged with acoustic transmitters or tags,” he says.

The titanium tags were attached to animals up to two years earlier at

Ningaloo, south of the oil and gas platforms, by the CSIRO and have an expected life span of 10 years or more.

They are the same sort of tags and receivers used along the Perth coastline to check for tagged sharks near popular beaches.

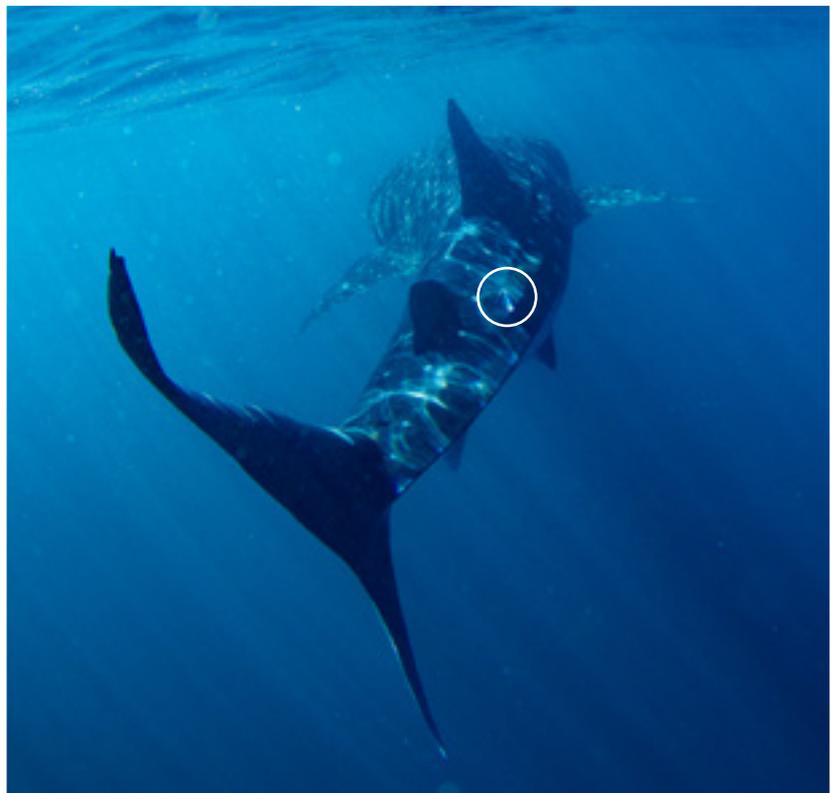
“We wanted to trial the technology around oil and gas structures and see if they could help us understand how marine animals use the habitat provided by these structures,” Dr Thomson continues.

“This is important as it may help the regulators and industry make informed decisions on decommissioning in the future and help understand the ecology of these habitats.

“From this pilot study we determined that the technology of tracking the marine animals such as whale sharks works around oil and gas subsea



**Researcher Paul Thomson, above, has been determining the extent to which megafauna like whale sharks are attracted to subsea oil and gas structures, like Woodside’s Pluto platform. Right, a titanium tag, circled, will enable monitoring of this whale shark for 10 years or longer.**



infrastructure and from this we made some recommendations for future research.”

Subsea infrastructure supporting the oil and gas and renewable energy industries can attract commercially important fish species as well as megafauna including sea lions, turtles, sharks, manta rays and whales.

They are likely attracted by the marine growth and microorganisms which grow on and around the infrastructure.

Potential impacts of this attraction, whether positive or negative, on migratory marine megafauna remain unknown.

Dr Thomson and researcher colleagues detected two whale sharks visiting two platforms, but the patterns of visitation varied markedly.

While Shark 19503 was detected almost continually every day for a month,

the other whale shark visited only infrequently over a three-month period.

Clearly, further research is needed to understand this variation in behaviour which could be due to many different factors.

Woodside provided logistics and access both to the platforms and ROVs undertaking pipeline inspections on the North West Shelf Project so the receivers could be deployed in 2018.

Dr Thomson says the next step, dependent on funding, is for a tagging campaign of more marine species,

Woodside’s Chief Environment Scientist Luke Smith says: “Over the years our offshore workers have commonly seen whale sharks swimming around our platforms.

“It’s great to see data that highlights that our platforms are an important stopover for some whale sharks as they journey around the eastern Indian Ocean.”

# Caring for Country

Woodside's activities are conducted across several ecological and cultural landscapes.

"Our commitment to sustainability is underpinned by understanding the environment, heritage, and the communities which best understand their social, environmental, cultural and economic values," explains Sharon Reynolds, Senior Manager Indigenous Affairs.

"Protecting Country is fundamental in supporting and enhancing these values that are important for Woodside as a business and for our stakeholders."

Woodside recognises the vital role that Indigenous rangers play in protecting Country, managing heritage and providing meaningful and culturally appropriate employment, training and career pathways.

The company's Caring for Country initiatives are part of our continued commitment to sustainability, Indigenous communities and reconciliation.

They extend the way that Woodside supports Indigenous peoples' knowledge and continued cultural practices on land and sea.

Building upon a decade of support and experience with the Murujuga Ranger Program, Woodside will continue to work directly with communities to support the design, management and operation of their ranger programs and Caring for Country activities.

"Recognising the significant cultural, environmental and economic benefits, we have expanded support for Caring for Country through our carbon and renewable energy projects including on Noongar Country in the South West of Western Australia," Sharon says.

"These initiatives reflect our vision for reconciliation through empowering Indigenous voices."

Last year, Woodside partnered with Greening Australia to provide seed collection training in the south-west of WA.

"Under a plan to plant 7.5 million native trees we are creating employment and business development opportunities for five Noongar ranger programs," says



John Litchfield, Carbon Origination Adviser.

"These partnerships are key to Woodside's future approach to sustainability and reconciliation and will strengthen the relationship we hold with Murujuga Traditional Owners and extend our relationships with the Noongar community."

Woodside intends to embark on

nationally significant projects with ranger groups that have intergenerational impacts and benefit.

"Our Caring for Country initiatives will continue to bind us in a relationship with Indigenous rangers and their connection to Country that is fundamental to Woodside's future," Sharon notes.

For more information, visit [woodside.com.au/sustainability/climate-change](http://woodside.com.au/sustainability/climate-change)

## Art for all

Woodsiders and Indigenous university students residing in Perth worked together to create a stunning large artwork at Mia Yellagonga in Q2 to celebrate NAIDOC Week.

The artwork was facilitated by the Woodside Reconciliation Community in partnership with Vice President Business Finance Kimberly Walpot and the Finance and Commercial Division.

It was organised by the Dandjoo Darbalung Indigenous Access Program at St Catherine's College and open to everyone at Woodside.

Woodside's relationship with St Catherine's began in 2014. Our support continues through the Dandjoo Darbalung Program, and many students have participated in our employment pathways.

After a discussion about identifying strategies in creating authentic community engagement, a workshop to complete the collaborative artwork was set up on Level 2 in Karlak on the Mia Yellagonga Campus.

The artwork was based around sharing family connections designed around



Opposite page: Woodside has partnered with Greening Australia to provide seed collection training; above, senior and emerging artists from Roebourne compiled 45 artworks for the Ngardamarri exhibition (image by Taryn Hays, courtesy of FORM); below, the stunning artwork composed by Woodsiders and Dandjoo Darbalung students.

# Showtime

An exhibition of stunning new Indigenous art supported by Woodside was opened in Q3 by Executive Vice President Operations Fiona Hick.

FORM'S Ngardamarri (which means side by side in Yindjibarndi language) was a celebration of artmaking by senior and emerging artists in the Pilbara town of Roebourne.

Ngardamarri's 45 works were created by 16 Roebourne artists.

FORM is a Perth-based not-for-profit organisation which develops and advocates for creativity in Western Australia.

"This year the Woodside-operated Pluto LNG Project partnered with FORM to support the delivery of a program of arts practice and professional skills

workshops across Roebourne and to work towards the exhibition we see here tonight," Fiona said.

"Ngardamarri is a celebration of the stunning artwork being created in Roebourne, and it is a testament to the vibrancy of this artistic community."

One of the creative project spaces FORM manages is The Goods Shed in Claremont, Perth, where Ngardamarri was held.

The workshops leading to this exhibition contributed to professional development and supporting a sustainable, long-term future for Roebourne artists.

"Pluto LNG is proud to support the artistic and professional growth of these art groups and I am delighted by what surrounds us tonight," said Fiona.

In addition to supporting the workshops with FORM, Woodside is working with the art groups to develop a new celebration of art and culture to be held on Country, in Roebourne, later this year.

These initiatives represent a new era in Woodside's 13-year partnership with the Roebourne art groups and are an important part of our Reconciliation Action Plan (RAP) journey.

Through our partnership with FORM and work with Roebourne artists for an on-Country event, we are proud to support programs which have a social and community outcomes whilst fulfilling a commitment under our land access agreement.

Ngardamarri ran from the end of July to the end of September.

colour themes representing the Noongar six seasons.

The concept of moort, or family beyond the immediate nuclear family, was evident with Woodsiders adding connections to work-based groups and clubs.

These connections were added to the artwork by Dandjoo Darbalung students to add a further narrative.

When finished, the artwork will be framed and showcased at Mia Yellagonga.





Marc Senders, Voula Terzoudi, Brett Van Der Mescht and Trudi Angwin have discovered one benefit of diversity includes strengthening bonds between colleagues.

# Life support

They came together more than a decade ago and have established a firm bond despite their differences.

“We call ourselves ‘the veterans,’” says Business Services Manager Voula Terzoudi with a laugh.

Voula, Trudi Angwin, Marc Senders and Brett Van Der Mescht first assembled as a support group at a two-day leadership course back in 2013 and discovered an affinity amid their diversity.

Topics range from children to their superannuation; from current work-life balance to what to do after their careers.

“We are so diverse and we don’t always have the same view but we’re always listening to each other – and we trust each other,” Voula explains.

“We’ve each had our own personal

challenges, and with our children and spouses, and we’ve bounced ideas between us on our own development and that of our teams.

“You hear really interesting perspectives and get a more balanced view on issues and challenges.

“It’s a comfortable and safe space – very respectful.”

New Energy Opportunity Manager Marc Senders agrees, adding: “It’s also given us all a great insight into other areas of the business, both about what they do in these areas and how and with whom they do it.

“As a first reaction everyone craves confirmation of their own thoughts; but being challenged on your own thoughts and being open to these challenges will lead to much better results.

“We were put together by the course leaders – we didn’t pick each other.

“It was suggested we keep in touch as a support network for any leadership issues we might come across. They never told us to stop, so we are still going.”

They meet formally at least once a quarter outside work, and informally “whenever necessary”.

In between, they keep in touch via messaging.

Business Resilience Manager Trudi Angwin says: “We all have incredibly different personalities and I don’t think you could pick us as a natural fit.

“But somehow it works brilliantly. There is no natural ‘lead’; we all ebb and flow that way quite organically.”

# Leading from the front

As Gary McWiggan approached the milestone age of 30, he decided to scratch the travel itch before it was too late.

The plan was to spend a couple of years travelling before returning home to South Australia and taking up a supervisor's position at the Adelaide oil refinery where he'd worked.

Gary picked up a job at Woodside in Western Australia in 1983; but the signs pointed to an early return home when his wife Rose arrived at the then pioneer town of Karratha.

"She cried," Gary recalls. "She said, what have you brought me to?"

"Ten years later, she didn't want to leave."

But both are leaving now with Gary retiring from Woodside in November – 38 years and one month after joining.

In the intervening decades, he's enjoyed a wide range of jobs, onshore and offshore, and says that variety is one reason he's stayed so long.

"The years have gone very quickly," he notes.

Glen Gordon, Operations Team Lead (OTL) on the North Rankin Complex (NRC) notes: "Gary was an original member of what was called the Dirty Dozen – the first group of 12 operators who started at KGP."

He went offshore for the pre-commissioning and start-up of GWA in 1994.

He worked on the Echo Yodel project – our first subsea tieback to GWA – where he saw the project through from design all the way to start up, and held many other positions as well, including a stint as Offshore Installation Manager (OIM).

Gary ends his Woodside career as an OTL on NRC, eliciting glowing praise from managers and colleagues.

"Gary's been a fantastic leader throughout his career and an excellent company representative in its frontline operations – a role model of our Compass values and for operational discipline," says OIM Wade Harrison.

Dean Edwards, Operations Skillpool Manager in Production Support, says: "I've worked with Gary for more than 30

years and cannot speak highly enough of him.

"Gary comes across as a quiet, unassuming person, but his work ethic, knowledge and genuine intent is second to none. He's a quiet achiever and in my view a true legend.

"A real stand-out feature is his ability to stay calm whilst sizing up any given situation, especially under pressure.

"He is a very dedicated person who has worked extremely hard and shown great resilience over almost four decades to help Woodside build the world-class operation we find ourselves being a part of today."

COVID-19 has altered Gary's plans to scratch the travel itch once again.

Instead, it's his five-acre hobby farm in WA's south west and his fishing that will keep him occupied.

"Woodside's been a very good company to work for and I've had so many opportunities and made a lot of friends – that's why I've stayed," he says.

**Retiring Woodside veteran Gary McWiggan has been hailed as a true leader in frontline operations by his colleagues and managers.**



## RANDOM DISCOVERIES

This is where Woodsiders discover a little bit more about their colleagues – and what they’ve been getting up to outside work hours. Think of it as Trunkline’s version of the water cooler.

Because whether it’s satisfying a passion for a sport, an unusual hobby or doing good deeds in the community, Woodside’s employees and contractors tend to live life to the full. As a result, they often have interesting stories or experiences to recount.

### Going, going . . .

Fans of Simon Hehir’s photography skills, evidenced frequently on Woodside’s Yammer platform, will be interested to learn his eye is not always razor sharp.

There was the time he plucked a bottle of wine from his stash under the stairs and mistakenly cracked open what turned out to be a coveted bottle from his Woodside collection.

“I drank it accidentally and thought, ‘I’ve opened the wrong bottle,’” Simon recalls.

But he enjoyed it so much, he polished it off (but not, he hastens to add, in the course of a single evening).

Simon, in his 36th year at the company and currently Principal Assurance Engineer, has amassed an admirable collection of dual-labelled bottles from some top West Australian wineries – their labels on the front, Woodside’s added to the rear.

They were collected when such bottles

were the customary way the company celebrated milestones in its history.

For example, one was issued to staff to commemorate the LNG start-up at Karratha Gas Plant’s Trains 1 and 2; another to celebrate the Legendre Project; another for the start-up of Echo Yodel.

Simon regards himself as a social drinker rather than a connoisseur, who prefers

reds and has a penchant for cabernet merlot.

He’s been storing them under the stairs for the right time to savour one till his wife Deanna had a Marie Kondo house-cleaning moment and issued an ultimatum: “drink ‘em or lose ‘em”.

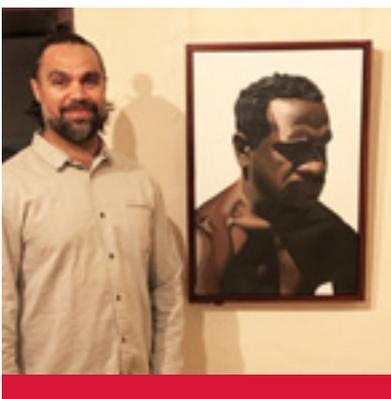
He now plans to “enjoy the moment” and savour them sooner rather than later.



### All in the family

Maintenance Technician Victor Bellotti has collected a “highly commended” in this year’s Cossack Art Awards for his portrait of Lloyd Hubert, a mechanical apprentice based at Karratha Gas Plant.

The judges said the work was “a strong and beautifully articulated portrait”,



noting a lot of time and effort had gone into the artwork.

The acrylics on canvas work was placed second in the portraits section of the awards, regarded as one of regional Australia’s most prestigious art awards.

Victor, who joined Woodside in 2013, tells Trunkline he is “very happy” with his painting’s highly commended placing.

“I’ve always been keen on art and sports and since finishing my sports I’ve taken up the brushes again,” he explains.

He says he had tried various styles and genres of painting, adding: “I haven’t found my style yet and this is my first genuine attempt at a portrait.”

Victor asked Lloyd to sit for the portrait because he is a family member and the

pair enjoy a good relationship.

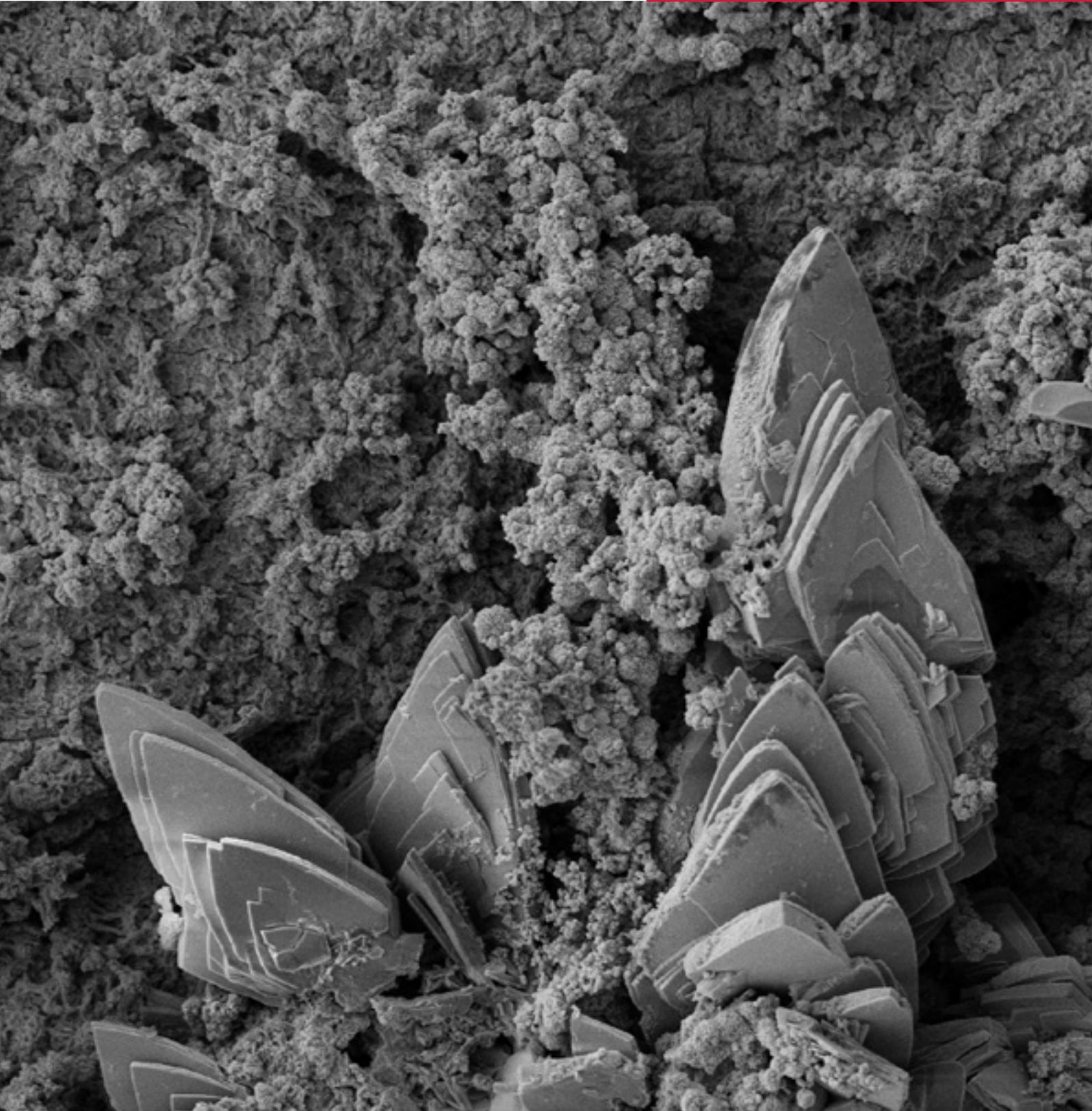
And the prize is not his first notable artistic achievement. An Indigenous collegiate member, Victor also designed the Fremantle Dockers Indigenous round jumper a couple of years ago.

Lloyd, a proud Yindjibarndi man, happily agreed when Victor asked him to sit for the painting.

“When he showed me the upcoming painting I was thrilled to see it and I knew it was going to be a wicked portrait of me,” says Lloyd.

“I told Victor: ‘It’s great to see an Indigenous man who does paintings like this’.

“He said it would be his first, and I said: ‘Of many, bro – you are a great artist. This painting is deadly.’”



Woodside's long relationship with Perth's Curtin University facilitates close contact with researchers and academics working on problems for our company, including corrosion. Since 2018, the Curtin Corrosion Centre has held an annual photo competition for students and this image was the 2019 winner – taken by Erika Suarez at the beginning of her PhD studies. The scanning electron microscope image captures a carbon steel surface covered by a copious biofilm and corrosion products. To produce corrosion, Erika immersed the steel in seawater for 30 days together with microorganisms delivered to the university from the wreck of a warship. Unsurprisingly perhaps, she has entitled the image "Sydney Opera House". The shipwreck? HMAS Sydney. Erika says she considers the similarity "beyond a coincidence". Dr Suarez finished her PhD last year and is now a Postdoctoral Fellow at Curtin.

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# Reservoir & Wells

# Subsea & Flowlines

# Platform



(Last 48 Hours)

Flow Rate	Choke	MEG
0 t/d	0 %	OK
1,860 t/d	19 %	OK
0 t/d	1 %	LOW
3,340 t/d	35 %	OK
5,351 t/d	66 %	OK
4,565 t/d	54 %	OK
5,519 t/d	65.8 %	OK
0 t/d	0 %	LOW



Line A (Last 48 Hours)		Line B (Last 48 Hours)	
Flow Rate	8,864 t/d	Flow Rate	11,530 t/d
Pressure	12.71 MPa	Pressure	13.85 MPa
Temperature	60 C	Temperature	65 C

Platform

Flow Rate **71.3 %**

Platform

Generation

Filters

Power Gen Spinning

Flare Rate

Supply Vessel Schedule

18-Aug-21

19-Aug-21

20-Aug-21

21-Aug-21

22-Aug-21

23-Aug-21

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