



# Engineering Insider

ISSUE #1 | JAN 2017

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# ADE

AUSTRALIAN  
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# Letter from the General Manager



Dear all,

As the General Manager and a Director of Australian Diversified Engineering (ADE) I would like to welcome you to our inaugural newsletter.

ADE was founded in Brisbane in the last century and we are now in our 6th year at our Aspley facility. We have been an ISO9001:2008 quality assured engineering company since 2006 and we are extremely pleased to announce that we have just received our ISO9001:2015 accreditation.

Our dedicated team can provide a total in-house solution from concept through to design, fabrication and installation for those in the mining and earthmoving industries. We pride ourselves on manufacturing all our components either in-house or in Brisbane. It's our point of difference that that sets us apart in this competitive market, and we'll continue to honour it.

We are currently working on improving our world class large water truck spray control system, ADE SPRAY. With several innovations added last year and a few scheduled for this year, I believe that we now have the only spray control system in the world which can accurately spray the required amount of water on a road up to an amazing 55km per hr.

In fact we are able to, if required, deliver a depth of 0.5mm per square meter at this speed. For all the "numbers" people out there, that is up to 6.5 tonnes of water being delivered accurately to the road per minute. You can find out a bit more on our ADE spray in this newsletter.

2017 will see several new innovative products, currently under design, brought to the market. Our products are all designed with the primary focus being on safety and improved productivity. By doing this we are able to assist companies to safely improve their bottom line. Be sure to keep your eyes on these new innovations in future newsletters.

Thank you all for taking the time to read our newsletter and should you wish to discuss any of our products or services, please do not hesitate in contacting myself or one of our dedicated team members. We are always here to assist and work with our customers, and to partner with them to satisfy their engineering and product needs.

Kind regards

Clive Gray  
General Manager and Director  
Australian Diversified Engineering

# Danny visits MINExpo

ADE was one of 26 Queensland METS companies who were invited to attend MINExpo International 2016 in late September as part of the Trade & Investment Queensland (TIQ) delegation. TIQ facilitated a number of networking sessions for Queensland METS companies to meet with representatives of global mining operators at the expo. ADE Director Danny Irvine attended the expo where he presented at the Business Matching with Global Mining Operators session to some of the largest mine operators in the world including Newmont Mining, Teck Resources and Barrick Gold.



He spoke about the work ADE have been doing, in particular with the ADE Spray system which effectively improves water truck efficiency and manages the risks associated with water truck operations.



In 2013, ADE set out to solve the safety related issues of mine haul road watering with the development of the ADE Spray system. The purpose of the system is to suppress fugitive dust emissions, prevent truck slides and vehicle rollovers, and to deliver operational cost savings to mine operators through spraying haul roads more effectively and efficiently.



The key operating principle of the ADE Spray system is that it can spray a defined water application rate rather than an unknown 'high' or 'low' flow water output, thereby ensuring water output is controlled and greatly improving costs, manage water usage and efficiency.

The ADE Spray evolved with the development of the Multiport Spray Head which was designed to further improve dust management on mine haul roads.

Multiport Spray Head is a large spray head that has two orifices that open sequentially allowing superior water control but also facilitating the output of consistent water coverage at up to 55 km/h. ADE discovered that water carts are generally under-watering at speeds greater than 25 km/h, therefore resulting in higher fugitive dust emission.

ADE is undertaking a case study in the coming months to determine the true operational savings facilitated by the ability to deliver a consistent water coverage rate of up to 55 km/h, where it is predicted that the product could reduce annual fuel and maintenance costs for mine sites.

**Watch out for updates in future newsletters!**

### Adani granted approval to build Carmichael Coal Mine

Mining company Adani, has recently been granted the opportunity to begin constructing its \$22 billion Carmichael coal mine in Queensland's Galilee Basin. The mine is predicted to be Australia's biggest mining project, producing 60 million tonnes of coal a year and employing between 1,500 and 3,000 people at peak production.

For six years, Adani faced an uphill battle to have its mining leases approved by the Queensland Government due to environmental approval processes and a number of court challenges. In 2014, Minister for Environment Greg Hunt, gave federal approval for the mine to proceed after Adani agreed to "36 of the strictest conditions in Australian history".

For the mine to operate, Adani must monitor all vulnerable flora and fauna that could be affected by the mine's production. The construction project will dispose of an expected one million cubic metres of dredged soil onto land rather than near The Great Barrier Reef. Adani must also contribute \$100,000 a year for ten years to a biodiversity fund for the protection and maintenance of protected species and communities.

Adani estimates the project will generate \$16.5 billion for the Australian economy, dependant on the mine's lifespan.

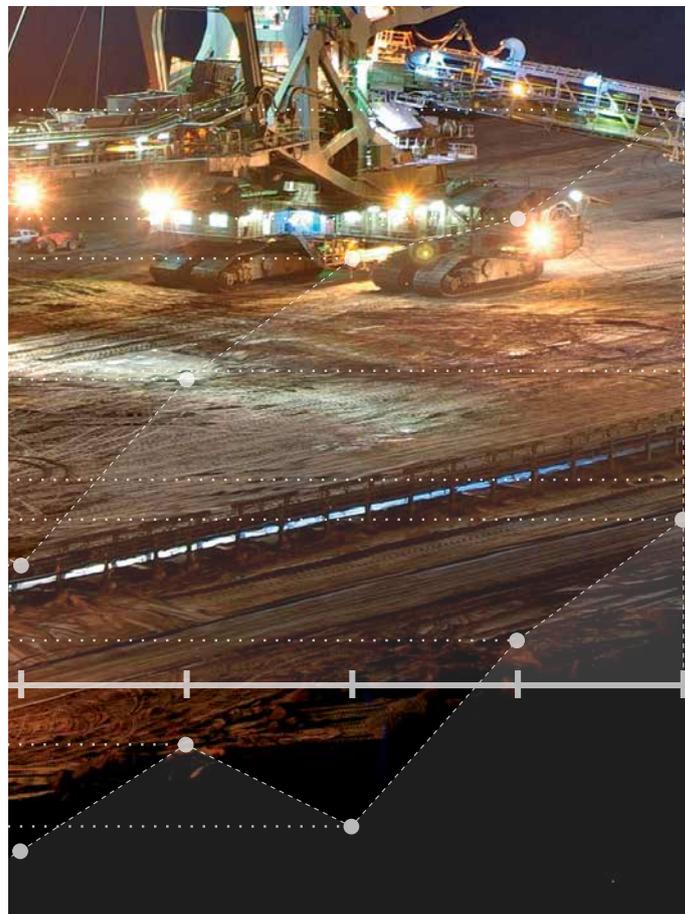
The Queensland Resource Council's Chief Executive Michael Roche says the mine is expected to "generate over \$500 million annually in direct and indirect benefits to Queensland's economy during construction and almost \$3 billion at full export capacity".

Minister for Natural Resources and Mines, Anthony Lynham welcomed the mining project saying "resources are extremely important for everyone in Queensland".

Adani hopes construction will start in the first half of 2017.

\*ABC News, 05 December, 2016, What we know about the Adani Carmichael Mine project <http://www.abc.net.au/news/2016-12-05/what-we-know-about-adani-and-the-carmichael-mine-project/8094244>

\*Sydney Morning Herald, 06 December, 2016, Adani Carmichael mine - Drilling into the numbers for Queensland, <http://www.smh.com.au/business/mining-and-resources/adani-carmichael-mine-drilling-into-the-numbers-for-queensland-20161206-gt4t8n.html>



### Australian mining industry in 2017

After a turbulent year in 2016, the Australian mining industry is readying itself to grow and boom in 2017.

2016 saw a decline for Australian mining with China's growing mining sector, the global price of iron ore and coal in a rut, and lack of enthusiasm from investors. However, some economists are inspiring hope, predicting these conditions to ease in 2017 and make way for another mining boom.

Australia is investing in innovation in 2017. In the competitive market, companies are rethinking old technology, bringing them up-to-date and reshaping mining in Australia. Automation is the most sought out function with the one machine able to perform more and more unique actions. Rio Tinto, BHP, Roy Hill, and Fortescue are continually striving in implementing autonomous hauling systems. The industry will have to face changes like these head on and embrace any and all new technology in the fight to stay competitive.



## Flawed and Dangerous – Why safety is the number one priority

Safety is paramount on mine sites with mining companies seeking alternative solutions to outdated, flawed and dangerous equipment to avoid injury for their staff and contractors.

At Australian Diversified Engineering equipment is made to the highest quality, and one company that has implemented a custom designed solution is Downer.

Downer approached ADE in 2013 after the immense pressure from a grease fitting dislodged a service persons safety glasses and hard hat resulting in injury to their right eye.

We sat down with the team from Downer and researched all aspects of protective equipment used within the company, the safety measures put in place, and the actions of the workers. We found the protective gear normally used was not effective enough, and the standard process of removing the hose from a greasing nipple in the case of a blockage was intrinsically flawed and dangerous.

As safety is a number one priority on mine sites and within our organisation, we designed an effective, customised solution – the Remote Grease Pressure Release System. The system removes the hazard of the pressure from the hose.

The benefits of the system are:

- It retrofits to existing grease systems
- Releases pressure to the High Pressure Grease System
- Releases pressure to the High Volume Grease System
- Is compatible with hydraulic and pneumatic grease pumps
- Can be installed on mobile service vehicles or in the workshop
- Has a wireless transmitter for remote grease pressure release
- Features system indicator lights
- Operates on 24V DC operating voltage

Since completion, Downer has installed the Remote Grease Pressure Release System to their entire fleet of service vehicles.

The game-changing impact of the device was also recognised by the Queensland Mining Health and Safety Conference when the potentially life-saving invention was awarded Highly Commended at the conference's Innovation Awards.

## Dedicated Customer Service – Even at Christmas!



The team at ADE pride themselves on their customer service, regularly going above and beyond to meet clients' needs. Balancing work and pleasure can be tough, particularly during the festive season but ADE's Sales Manager Eric Tomicek came up with the perfect solution – turn your work event into a family holiday! Here's his story...

With 2016 almost at a close I was looking forward to spending a few weeks away from the office with my family. However fully aware that the mining industry never sleeps I expected some discreet working from home would probably be necessary.

In the run up to Christmas ADE delivered a number of water truck spray systems that would be installed over the

holiday break ready for work in early 2017. So it came as no surprise when a valued customer asked me to come to their worksite to perform the final checks before the water trucks wheeled into action. The location was Blackwater in Central Queensland and I was needed on site right in the middle of the ADE Christmas shutdown period, when the kids expected dad to be home.

Balancing work and life is a conundrum for many Sales Managers but our desire at ADE to provide great customer service at all times meant I needed a solution.

With a bit of careful planning and smooth talking suddenly our family holiday was transferred to Blackwater – an exciting road trip in the family wagon.



We set off on New Years Day; myself, my wife and three kids, on the 800kms journey from our home in Brisbane. To break up the drive and make it family friendly I scheduled some stops along the way; a night in Hervey Bay, Gladstone and a visit to Seventeen Seventy and Lake Awoonga. Despite the wind and rain we also made the obligatory ice-cream stops – a big hit with everyone.

After a few days on the road we arrived in Blackwater. I immediately headed off to work to configure and test the ADE Spray system on the truck before it was put in use.

The family meanwhile had to fend for themselves but kept themselves very busy and entertained checking out the local sights, swimming at the local pool but the main highlight

quickly became watching the long coal trains pass by on the journey to Gladstone.

With my work complete, a happy client and the trucks all ready to roll, we headed home this time with a stop at Hervey Bay and the Sunshine Coast.

After 1,900kms and 22 hours of driving we arrived home. I was very thankful that I had had the opportunity to share a bit of my work life with my family, showing them some mining trucks, experiencing a mining town and giving them a small insight into the journey of coal.



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