

Apprentice Rewarded for Efforts

Fourth year mechanical apprentice, Brent Stiller was announced as the QAL Apprentice of the Year at an official function in May.

QAL Managing Director Johann van Zyl said the Award carried significant weight in a competitive trade environment such as Gladstone and would stand the winner in good stead for his future.

"We are very proud of all our apprentices. They have received excellent training and a solid basis for their trade, a recipe for a bright and prosperous future," Mr van Zyl said.

"Brent demonstrated the necessary requirements for being QAL's apprentice of the year; safety diligence, workmanship, cooperation, comprehension, initiative, good academic results and

personal interests, such as sport and community involvement," he said.

"QAL is committed to providing appropriate apprentice training to ensure we build a skilled workforce for the future who are experienced in the complexities of a refinery the size of QAL."

Brent Stiller will complete his four year Certificate III in Mechanical (Fitting and Turning) apprenticeship at the end of this year and said the award was something that he was proud to receive.

"This a great award to have under your belt for future prospects," Brent said.

"I've learnt a lot during my apprenticeship and I've also had a good time. The training QAL has provided me with is invaluable."

As part of his prize, Brent received a return flight to a smelting operation in New Zealand where he will tour

the site and meet maintenance and operations employees and apprentices. In addition to this experience, Brent also received a \$750 cheque.



Students Gain Industry Insight

Local year 12 students have been given the opportunity to work in their trade of interest during a one-week work experience program developed in partnership by QAL and the Gladstone Schools and Industry Network (SAIN).

A total of 36 students took part in the program over a four-week period,

which provided a hands on insight into alumina processing at QAL, one of the world's leading alumina refineries.

QAL Managing Director Mr Johann van Zyl said the program has been specially designed to fit into both QAL and the local schools' existing schedules to ensure maximum benefit.

"The work experience program has been running for four years now and is highly sought after by students throughout the Gladstone region. Participating in the program enables

students to have a 'taste' of the type of work that is involved in their trade of interest and assists them greatly in choosing their future career path". Mr van Zyl said.

The program offers three electrical and six fitting and turning positions over four weeks, with nine students attending their placement each week. For further information on the program, please contact Heather Harland at SAIN on 4971 3606.

2005 – The Year of Milestone Achievement

QAL released its Annual Health, Safety, Environment and Communities (HSEC) Report in May. Highlights of the report include the milestone production of the 100 millionth tonne of alumina, continuing improvement in safety performance, no reportable licence breaches to the EPA for the second

consecutive year and further implementation of environmental improvement projects.

If you would like to join our mailing list for this report, please contact us via the following methods:

Phone: 1800 181 110
Email: media@qal.com.au
Post: Community Relations
QAL
Parsons Point
Gladstone QLD 4680



We value your support of our operations. If you would like to know more about information inside this edition, or would like to give feedback on the impact of QAL's operations, please contact QAL Community Relations, Parsons Point, Gladstone, Queensland 4680, telephone 1800 181 110 (for community related issues) or (07) 4976 2211 (for general inquiries), email media@qal.com.au, visit our website at www.qal.com.au or mail: Parsons Point, Gladstone Queensland 4680 Australia.

REFINING MOMENTS

AUGUST 2006

A Message from QAL's MD



Welcome to the second edition for 2006 of QAL's Refining Moments community newsletter.

I am pleased to report that QAL has continued to make significant progress with environmental improvement projects.

The \$45 million fly ash emission reduction project is almost complete, with six of the seven coal fired boilers on site fitted with baghouses. Boiler 7 came on line after its retrofit early August. All boiler flue gas from the two most eastern stacks now pass through baghouses and have no visible particulate emissions. The final baghouse fitting is due for completion in February 2007. More details of our progress will be presented in upcoming editions of Refining Moments.

A piece of history came tumbling down on site recently with the demolition of the 39 year old lime kilns. Since the decision to outsource lime rather than continue to manufacture it on site, the environmental improvements are clearly evident with a significant reduction of airborne dust. Further details of our environmental improvements including the installation of destratification units at the Residual Disposal Area and revegetation program are presented on page three.

This edition of Refining Moments also features an interesting article on how alumina is produced at QAL. The

Bayer Process was discovered by an Austrian chemist Karl Bayer and patented in 1887. It is remarkable that after almost 120 years, the process is still used worldwide as the most efficient way to extract alumina from bauxite. Read more on page two.

QAL announced its 2006 Apprentice of the Year in May (see page four). The highly coveted Award was presented to fourth year mechanical apprentice, Brent Stiller. Congratulations, Brent, you are a very worthy recipient of the Award.

Also featured in this edition is QAL's participation in ECOfest 2006, an invitation to our next tree planting session and details on how to receive a copy of our annual Health, Safety, Environment and Communities Report for 2005 released in May.

Thank you for taking time out to read about our activities and I look forward to presenting you with another update later in the year.

Kind regards

Johann van Zyl
Managing Director



QUEENSLAND ALUMINA LIMITED

How Alumina is Made – The Bayer Process

QAL's bauxite supplies are mined at Weipa in far north Queensland and loaded onto specially designed and QAL chartered ships that transport the bauxite 2000 kilometres south to Gladstone.

On average, a bauxite ship arrives every three days and takes approximately 32 hours to unload. Approximately two tonnes of bauxite is processed to produce one tonne of alumina through the continuous four stage 'Bayer Process'.

1. Digestion – Dissolving bauxite's alumina content

Bauxite is finely ground in mills, then mixed with a recycled caustic soda solution and steam in digester vessels operating at high temperature and pressure. This dissolves the alumina content of the bauxite and the solution is then cooled in a series of flash tanks.

2. Clarification – Settling out undissolved impurities



The impurities, which remain undissolved, are allowed to settle as a fine mud in thickening tanks. After several washing stages to recover caustic soda, this residue is pumped to storage dams. The solution of alumina in caustic soda is further clarified by filtration.

3. Precipitation – Forming alumina crystals

The next step involves the recovery of alumina crystals from the caustic solution. In open-top tanks, the solution is stirred by

mechanical agitation, cooled and seeded with previously precipitated alumina to assist crystal formation.

4. Calcination – High-temperature drying of alumina

The precipitated material (called hydrate) is washed and calcined at temperatures exceeding 1000 degrees Celsius. This forms the dry white anhydrous aluminium oxide power, alumina, which is cooled and conveyed to storage for shipment.

Celebrating The Environment

Story telling in a turtles belly and a giant bilby helped set the scene for the region's biggest environmental festival, ECOfest.

Held at the Tondoon Botanic Gardens, the festival annually

celebrates World Environment Day (WED), and is organised by Gladstone City Council.

Focussing on the WED theme for 2006, Deserts and Desertification, the program included stage shows with the ever popular Ranger Tim, performances by the water wise Pooki Doos and an array of wildlife including

crocodiles, bilbies and snakes.

Environment Superintendent, Melissa Russell said QAL has been a supporter of ECOfest since its inception and is proud to be associated with such an innovative environmentally focussed event.

"ECOfest is a great opportunity for the community to learn more about their environment in a relaxed setting and this year attracted a record crowd of an estimated 6,500 people." Ms Russell said.

"QAL's display showcased our performance and environmental achievements and was one of more than forty information stalls present on the day. Our volunteers and staff distributed over 800 calico bags and awarded competition prizes including a Worm-Aerator complete with worms and a water saving shower head."

World Environment Day is an international celebration commemorated every year on June 5 to recognise the first United Nations Conference on the Human Environment at Stockholm in 1972. ECOfest is held annually on the first Sunday of June.



Environmental Project Update

Lime Kilns Become History

The end of an era came tumbling down at QAL this month, as the final stage of the lime kiln demolition was completed.

The two 37 metre tall lime kiln stacks have been part of the skyline for almost 40 years and were used for the on site manufacture of lime from limestone.

Engineering Manager Mike O'Neill said the demolition of the lime kilns was an important milestone for QAL in reducing emissions.

"Since QAL is now procuring its lime from Cement Australia rather than manufacturing it on site, there was no further need for the kilns," Mr O'Neill said.

"The change has not resulted in any major change to the refining process and the removal of the lime

kilns has improved the environmental performance of the plant, with a further reduction of airborne particulate emissions from the refinery."

Moltini Adams was awarded the contract for the demolition, which has taken almost five months to complete. Over 1000 tonnes of steel was recycled from the demolition project.



New Technology Hits the Water

QAL is reducing odour events from the Residual Disposal Area (RDA) with the recent installation of two destratification units.

Red mud, a by-product of the Alumina process, has been stored at the refinery's Disposal Area since the commencement of operations in 1967. Situated between QAL and Boyne Island, the facility covers an area of approximately 1000ha.

Health, Safety, Environment and Communities Manager Ross Greenhalgh, said following two significant odour events from the RDA last year, QAL has been investigating ways to proactively manage the issue and prevent a similar occurrence.

"QAL is committed to reducing the odour from the facility and the impact on the Boyne Island and Tannum Sands community," Mr Greenhalgh said.

"Following an in-depth investigation into the sources and solutions to the odour, a decision was made to install two solar powered destratification units. The process is relatively new technology, and is effectively a surface mounted impeller system which mixes the thermal

layers throughout the cross section of the dam," he said.

"The units are an Australian design and have proven to be an innovative solution for reservoirs both in Australia and overseas. QAL's RDA units were installed in early May and preliminary investigations indicate that they are working effectively."

As with any reservoir or dam, seasonal changes affect water quality. Warm water is less dense than cool water, and in summer the surface water warms and denser cooler water sinks. The water becomes 'stratified' because there is no mixing of the layers and oxygen is unable to reach the cooler bottom water.

When this happens, bacterial activity occurs in the absence of oxygen (anaerobic environment) at the bottom of the dam resulting on the production of odourous gases.

De-stratification is used to avoid the formation of layers of water (stratification) that have little or no oxygen and involves mixing the body water to break up the thermal layers. This leads to a uniform temperature and oxygen gradient over the depth of the storage, which significantly reduces the potential for bacterial growth.

Tree Planting Goal on Track

QAL's Community Tree Planting Committee is well on track for its goal of planting 2100 trees by the years end.

In the last two months, the committee has planted 1,420 trees in the buffer zone area between QAL and the Barney Point community.

Health Safety Environment and Community Manager, Ross Greenhalgh said the revegetation plan had been in progress for the last four years and would create a lush green corridor between QAL and inter tidal mangroves.

"Over 14,000 native species including Acacias, Casuarinas, Eucalyptus, Hibiscus and Melaleuca have been planted in the area so far," Mr Greenhalgh said.

"The combination of light rains and a recently installed irrigation system have provided the trees with a great start and we are already witnessing significant growth."

The next planting session for 2006 is planned for September.

If you would like to be part of the next planting session or further information, please contact QAL Community Relations on 1800 181 110.

