



## CAIRNS REGIONAL COUNCIL

### LANDFILL PROJECT WINS TOP ENVIRONMENTAL, SUSTAINABILITY AWARDS

**An innovative landfill closure project, the \$15 million Portsmith Landfill Closure has received top environmental awards from Engineers Australia** for curbing emissions and ensuring the protection of World Heritage-listed areas.

The project team comprising Cairns Regional Council, Golder Associates and BMD Constructions won both the Environmental and Sustainability categories at the Engineers Australia QLD Division Awards held on Friday 14 September 2012.

The project, which included risk assessment, stormwater and sediment management and slope stability, aimed at ensuring the protection of the internationally recognised Great Barrier Reef Marine Park and Wet Tropics Rainforest.

Servicing Cairns and the surrounding area from 1985 to 2009, the Portsmith Landfill spanned 20 hectares and contained 1.7 million cubed metres of waste material. Subject to tropical monsoon rainfall conditions and located within a protected mangrove wetland adjacent to the Great Barrier Reef Marine Park World Heritage Area, the landfill was originally constructed without engineered liners or leachate collection systems.

The project was project managed by Cairns Regional Council, designed by Golder and constructed by BMD Constructions.

Environmental management strategies were first implemented in 1999

to reduce risks to the surrounding environment whilst the landfill was still in operation. Initial planning and design works for appropriate closure and post-closure care commenced in 2005, with the majority of work being delivered on schedule in December 2011.

The project required the innovative adoption of best practice planning, design, construction and project management methods to sustainably upgrade environmental protection measures that included:

- \* Increasing flood immunity to 1 in 100 year average recurrence interval rainfall events;
- \* Reducing stormwater seepage into the waste by 99%;
- \* Reducing sediment discharge into adjacent wetlands by 90%;
- \* Reducing greenhouse gas emissions by 80%;
- \* Improving the stability factor of safety.

Cairns Regional Council's Acting General Manager Water and Waste Jon Turner said the excellent environmental results were the result of good planning and a strong team effort.

"This project is the culmination of several years of planning and a desire to meet ambitious emissions reduction targets," Mr Turner said.

"We chose contractors with the relevant expertise to carry out this work and the result is exceptional.

"We are now looking to take this project to the next level with the potential harvest of energy generat-

ed on the landfill site now being investigated."

Golder Associates Managing Director Australia, Adam Kilsby, said the awards were recognition for the project team's success in ensuring the protection of an area of immense importance to Australia and the world.

"Golder is committed to sustainable development and this project demonstrates our ability to ensure environmental protection in one of the most sensitive areas on the planet, while delivering client and technical service excellence," Mr Kilsby said.

The annual Engineers Australia Engineering Excellence Awards are the premier event for the engineering profession in Queensland. Promoting industry excellence, fostering leadership, and encouraging innovation and sustainability, the awards attract representation from across Queensland's engineering community.

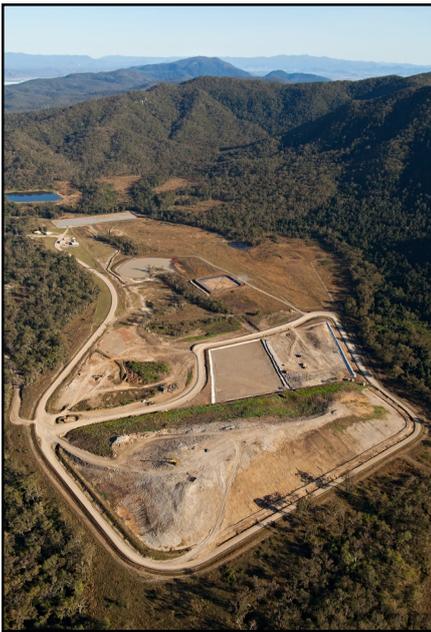
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## MACKAY REGIONAL COUNCIL

The \$6,000,000 Hogan's Pocket Landfill project was officially opened by Council on Wednesday 29 August 2012. Along with the construction of the 3 hectare landfill cell the project included the construction of a silty water management system, two sedimentation ponds with a combined capacity of 70ML, construction of a new 10ML leachate pond and construction of a clean water diversion system.

The new cell groundwater diffusion system incorporates a triple lining; a compacted clay liner, a geo-synthetic liner (double liner) and a HDPE liner.



Council has commissioned an Improving Waste Outcomes working group with a specific focus on improving resource re-

covery and waste diversion from landfill.

The group will assess immediate issues such as improving public event recycling services, internal recycling services and internal education., long term issues include organic waste management along with construction and demolition waste management. These projects will feed into the 2013/14 budget process and Councils waste management strategy review.

**The installation of a landfill gas collection system and flare** at Hogan's Pocket landfill is progressing with the assessment of the economic viability for power generation underway. Gas flaring is expected to commence in December 2012. .

**A bin audit** with the primary focus of kerbside recycling has been undertaken by Council. 2846 recycling bins were inspected over a six week period. 13.25% of the recycling bins were contaminated with either major or minor contamination, with an assumption of a higher overall percentage due to only visible recycled material on the top of the bin can be inspected..

Contaminants found during the audit included plastic bags, food waste, disposable nappies, ciga-

rette butts, clothing, green and garden waste and general household waste.. These findings highlighted that residents may still be unaware or misunderstand what is actually recyclable material and the current education focus will be on the correct disposal of shopping bags and correct recycling methods.

During the audit properties that presented additional bins than they were paying for were also investigated and rectified.

**Dress before you dump multimedia campaign** was launched in August and was implemented utilising radio, television, Council connect and signage at council waste facilities.

The campaign is primarily aimed at customers using council waste disposal facilities and encourage residents to comply with safety requirements of the facilities including:

- \* Fully enclosed shoes
- \* Long pants
- \* Protective glasses (sunglasses)
- \* Protective gloves
- \* No alcohol or smoking on site
- \* Children under 12 and family pets are to remain in the vehicle at all times
- \* Bring a friend to share a heavy load

It is expected that this campaign will assist waste facility attendants in enforcing site safety requirements.



For further information, please contact WMAA Events: T: 1300 651 026 E: [registration@wmaa.asn.au](mailto:registration@wmaa.asn.au) W: [www.wasteq.com.au](http://www.wasteq.com.au)

## HINCHINBROOK SHIRE COUNCIL

**The NDRRA works in Hinchinbrook Shire** continue to generate huge quantities of clean fill and inert waste. This waste has been utilized as day cover, final cover, road construction and pads at Warrens Hill, as well as to cap old landfills. The clean fill and inert waste will also be stockpiled for future use.

**The contract with MAMS domestic waste and recycling services** has been extended by three years.

The extension was granted in view of the contractor's consistent high performance and the contract will be up for renewal 30 June 2016.

**Warrens Hill stage two development** will be resumed and is to include the finalisation of the second

last cell and the building of the respective leachate collection system.

**The development of a regional waste management strategy** driven by Townsville City Council with the support and involvement of Hinchinbrook, Burdekin and Charters Towers. A big thank you to Townsville City Council for driving this process..

**Waste levy:** Council is progressing with trouble shooting some of the detailed data returns and would like to extend a big thanks to Sally Greenup at DERM for her continued support!

## COOK SHIRE COUNCIL

**The "Chilli Beach Clean-up"** held annually since 2009, is an initiative of the Portland Roads and the Lockhart River Community.

Chilli Beach is located between Portland Roads and Lockhart River in Cape York. It takes approximately 14 hours to drive from Cooktown to Chilli Beach.

The event receives in kind support from Cook Shire Council, Lockhart River Aboriginal Shire Council, Queensland Parks and Wildlife Service and organisations such as, Rio Tinto (Weipa), and Tangaroa Blue.

Tangaroa Blue took a coordinating role in the 2012 clean up. Bringing

in an extra 40 volunteers (including a Conservation Volunteer Australia team) and extended the clean-up from a half day to a five day event.

The organisers were aware that most of the litter would be plastic and planned to transport the expected 100m<sup>3</sup> collected plastic to a recycling agent in Brisbane (approx. 2,470km away).

The careful planning process pointed out the financial constraints in transporting materials such a distances and so the organisers approached Cook Shire Council to assist in the Clean-up by supplying a Baler and two operators to compact the plastic .

Baling was done at the Lockhart River Council Depot, 36km from Chilli Beach and each load took two hours for the round trip.

More than 60 volunteers assisted in the clean -up operation collecting over 4 tons of plastic. The waste included 4696 thongs, a refrigerator, mountains of rope and even gas cylinders.

The plastics were compacted into 6 bales, transported to Cooktown and will be stored until mid September when the recycling agent (Replas) starts their Brisbane operation.

**This event was supported by a Caring for our Country grant.**



## BURDEKIN SHIRE COUNCIL

### Council is now utilising innovative technology to receive waste

Burdekin Shire Council has a population of 15,500 mainly located in the townships of Ayr and Home Hill and is serviced by 4 transfer stations and a single landfill. Until recently, council's transfer stations and landfill were supplied with a computerised system that incurred costly licence fees and data had to be extracted from the system by bringing the handheld devices to the main office. Recently, a new system developed by TipSite System Pty Ltd has been installed, providing improvements for data acquisition and waste collection and reducing administrative costs.

In 2011, with the State Government's mandate to install a weighbridge for the collection of the Qld waste levy, Council saw an opportunity to re-evaluate both software and hardware installed at all of its waste facilities.

Partially funded by State Government grants, a single lane two way weighbridge was installed at the entrance to the Kirknie Road landfill. Card readers, double boom gates and associated software including an external printer were installed allowing account customers and contractors to utilise programmed cards to automatically weigh in and out of the landfill. In addition, a call button was installed to allow the casual customer, without their own card, to have the operator come to the weighbridge office to oversee the transaction. To power the entire system, solar panels and a battery bank were installed, sufficient to run the weighbridge, equipment and air-conditioner. This was supplied and installed at a significantly lower price, compared to connection with the power grid, whilst also

having the advantage of avoiding future power bills for the site.

Contracted staff at the landfill and transfer stations have found the TipSite system easy to use which provides transaction data that can be viewed within minutes from a p.c. located at the Burdekin Shire Council office. This has already been useful in following up queries and keeping track of transactions. In addition, images are captured and stored with the transactions themselves, so that it is a very simple operation to check all information regarding a single transaction.

The main advantage of the TipSite system installed at the landfill has been in allowing the landfill operator freedom to undertake landfill operations without the need to constantly be available in the weigh bridge office. This has minimised costs to council through not having to engage additional operators or cut landfill opening hours that would have been the case had standard equipment been installed.

On the reporting side of things, the TipSite system allows easy use of the data acquired and can be extracted to an excel spreadsheet or other desired format for a variety of purpose including submission through QWOLS. Notes and other infor-

mation can be inserted by an operator into any transaction whilst there is sufficient ability for Council to make amendments to the system to suit the data collection required. Of most help, accurate data will now be available to Council for a range of applications including waste management planning and determining actual waste disposal costs.

In summary the installation of TipSite at Council's landfill has been advantageous by:

- \* Having all movements on and off the site tracked with financial accountability and audit tracking through TipSite to prevent manipulation of data by operators
- \* Removal of licence fees associated with previously installed software, saving Council an estimated \$18,000 annually.
- \* Reduced cost through removing the need for further operators and preventing reductions in landfill operating hours or services.
- \* Improvements in data collection available for future planning and greater information available to account customers on their transactions, and
- \* Allowing unattended operations to only approved vehicles through the programming of cards.



In the future, the use of programmed cards may prove to be advantageous if council wishes to sell cards for prepaid waste disposal in the future.

Whilst having been developed interstate, Burdekin Shire Council is the first customer in Queensland to use TipSite Systems for data acquisition at waste disposal sites. Further information on the system installed is available from Anne McLaughlin, Burdekin Shire Council or TipSite Systems Pty Ltd [www.tipsitesystems.com](http://www.tipsitesystems.com)

## TOWNSVILLE CITY COUNCIL

### Truck Art Works A Treat!

The Truck Art competition has been held in Townsville since 2009. Each year, local school students are given the opportunity to create an artwork with an accompanying message about recycling and/or waste reduction. The winning artworks are converted into vinyl signs that are installed onto the side of a council waste collection vehicle for 12 months. In addition to the truck art, cash prizes are presented to the winning schools at a morning tea held during Recycling Week in November. The objective of this competition is to:

- \* Raise awareness about the importance of waste reduction and recycling.
- \* Give students an outlet to express their thoughts and feelings in relation to waste reduction and recycling.
- \* Give the citizens of Townsville the opportunity to see the views and opinions of the younger generation in regards to waste reduction and recycling.

Last year, changes were made to the way the competition was run, to encourage further participation from school students. Schools were given the opportunity to access a recycling educator; a trained teacher hired to visit schools, answer any questions about waste and recycling, and encourage good waste management



and recycling practices. In the lead

up to National Recycling Week, the recycling educator visited a number of schools across the Townsville region. Power point presentations, games, brainstorming and class discussions were used to encourage students to not only question their current waste and recycling practices, but also think of ways to improve them. The submitted artworks for the competition were reflective of the interesting and provocative discussions held between the recycling educator and students of various schools.

After the competition had ended, the recycling educator conducted follow up visits to various schools that had submitted artwork. During these visits students often told the recycling educator that littering was something they did not do as often/anymore, and items such as plastic water bottles and grocery bags, were being reused (and in some cases, refused!) instead of being thrown away after a single use. In previous years, there have been no more than 15 entries into the competition. With over 200 entries submitted in 2011, the competition was regarded as a huge success!

Each year we aim to make this competition bigger and better; and 2012 is no exception! If you live in Townsville and would like to enter the Truck Art Competition, please email our Recycling Educator directly at [kate.cuzzilla@townsville.qld.gov.au](mailto:kate.cuzzilla@townsville.qld.gov.au) for further details.

**Townsville's first landfill gas capture and flaring system** went live at Stuart recently.

Waste and Water Committee chair Cr Ray Gartrell said the system would capture methane gas emissions from the site and convert it into carbon dioxide.



“Methane is a greenhouse gas that is generated as the waste at the landfill decomposes and has a global warming potential twenty one times that of carbon dioxide,” Cr Gartrell said.

“The installation of the system is an important step toward ensuring our operations are environmentally sustainable and will reduce our liability under the carbon tax.”

The gas will be extracted under a vacuum and is fed via a piping system to a flare where it currently being burnt off.

The gas will be measured to determine volume and quality (methane content) for a period of 3-6 months to see if there is sufficient quantity and quality to run a generator.

17 gas wells have also been installed at Hervey Range landfill in anticipation of flaring the gas early in 2013.