

## Who is Plenary Environment?

Plenary Environment is a consortium of companies engaged and overseen by Plenary Group to design, construct and operate a new fully enclosed biosolids thermal drying facility at the Black Rock water reclamation plant.

Plenary Group is an independent infrastructure business with significant expertise in the development and operation of public infrastructure. Its focus is on the creation of quality community assets with long lasting benefits.

Australian owned, Plenary Group has a strong and successful portfolio of public infrastructure projects including Casey Hospital, Police and Courts facilities in South Australian regional towns, the Victorian College of Pharmacy and currently has the Melbourne Convention Centre and a Defence Department housing project under construction.



## Landscaping and revegetation

Given the concerns about the appearance of the Black Rock water reclamation plant raised during community consultation, Barwon Water will continue to work with the community on issues such as site landscaping and revegetation.

Barwon Water has already begun extensive landscaping. More than 15,000 indigenous plants were placed around the Black Rock water reclamation plant in 2005/06 as part of our Black Rock Ecosystem project (pictured right).

This project, run in partnership with local community, landholders and the Landcare network is creating environmental corridors in the Breamlea and Connewarre areas. Once fully established, these corridors will provide shelter for fauna, a visual buffer for the Black Rock water reclamation plant, windbreaks and significantly reduce water loss from the soil.

A local landscaping consultant has developed innovative designs to further minimise the visual impact of Black Rock water reclamation plant infrastructure.

52,000 indigenous plants will be propagated and planted at the Black Rock facility in the next 12 months, and 30,000 indigenous plants will be established in the buffer zone and farmland.

Please visit our Open Days to learn more about our landscaping project.



Barwon Water's Waterways Management Co-ordinator David Sutherland surrounded by seedlings which will grow to become a vital fauna corridor in years to come.

## Become involved... be part of this important project

Barwon Water and Plenary Environment will establish a community reference group. The group will provide initial advice on construction and operational activities, and also be involved in on-going operations monitoring in areas such as performance standards, community information procedures and complaints handling.

For more information, Terms of Reference or to register your interest in being part of the group please contact Barwon Water on 5226 2518.

More information can be found on our website at [www.barwonwater.vic.gov.au](http://www.barwonwater.vic.gov.au)

## Barwon Water announces biosolids partner

Barwon Water is pleased to announce Plenary Environment as our project partner to upgrade the biosolids treatment process at Black Rock water reclamation plant.

Plenary Environment will construct and operate a fully-enclosed biosolids drying facility to treat Barwon Water's biosolids to the highest treatment grade possible (Grade T1), allowing them to be used as a nutrient-rich farm fertiliser or a greenhouse-friendly alternative fuel.

Barwon Water Chairman Stephen Vaughan said the biosolids upgrade was another step towards Barwon Water's vision for a 'no waste' sewerage system.

"Barwon Water is committed to an environmentally sustainable future - including a vision where 100 per cent of recycled water and 100 per cent of biosolids are dedicated to sustainable use," Mr Vaughan said.

Biosolids are produced when a natural sewage treatment process, such as that used at Black Rock water reclamation plant, is used to create water suitable for recycling.

"Recycled water is only half the story, biosolids is the other. You can't recycle water without also producing biosolids," Mr Vaughan said.

Biosolids are composed mostly of excess micro-organisms used in the biological breakdown of sewage, and once dried they are a valuable and sustainable resource.

"This facility is an investment for the future, helping us to reduce our impact on future generations by managing our biosolids responsibly," Mr Vaughan said.

## Biosolids drying plant trial successful

Earlier this year, Barwon Water and Plenary Environment undertook a successful pilot-scale trial of the drying technology which will be used at the biosolids drying facility at Black Rock water reclamation plant.

Wet biosolids from Barwon Water's water reclamation plants were dried at the small pilot plant in Melbourne.

Barwon Water Chairman Stephen Vaughan said he was delighted with the outcome of the trial.

"Barwon Water believed it was vital to test the technology using Barwon region biosolids before we entered into a contract," Mr Vaughan said.

"The biosolids pellets produced in the trial met all environmental requirements and are suitable for use as a fertiliser or fossil fuel replacement."



Pellets produced from Barwon Water's biosolids during the pilot-scale trial.

## Biosolids - fast facts

- When sewage is treated, micro-organisms digest the sewage, breaking down the organic material. Two products are created - recycled water and biosolids.
- Five and a half kilograms of biosolids are created treating each household's sewage every week. In total, the Barwon region produces a whopping 54,000 tonnes of biosolids each year, enough to fill Skilled Stadium to a depth of one metre.
- Barwon Water previously stored biosolids in lagoons at Black Rock water reclamation plant. At present, we truck our biosolids to the Werribee treatment plant where they are air-dried. This short-term interim arrangement with Melbourne Water cannot continue.

## Want to know more?

### Biosolids Open Days

October 6 and 7, 2007, 11am - 3pm

- Displays and tours - see how biosolids are created
- See where the biosolids drying facility will be built
- Talk to Barwon Water and Plenary representatives.

### Black Rock water reclamation plant

Black Rock Road, Connewarre  
(Melbourne ref: Map 495 E5)

Call Barwon Water on (03) 5226 2518 for more details.



## How community consultation has changed the project

Barwon Water understands that issues surrounding sewage and biosolids management are never a popular topic. That is why we have spent the past seven years talking to the community about their key concerns surrounding biosolids treatment. This has helped us achieve the best possible project result.

Barwon Water acknowledges the important role the Biosolids Investigation Group played in developing criteria for the project. This dedicated group met ten times in two years.

Community priorities identified during consultation and stated in the tender criteria for the drying facility include:

- ◆ large-area operations with uncontrolled odours will not be accepted
- ◆ no open-air processes
- ◆ no processing biosolids from plants not owned by Barwon Water
- ◆ zero odour beyond Barwon Water's fence
- ◆ compliance with EPA noise regulations
- ◆ truck movements minimised

- ◆ a non-obtrusive visual impact
- ◆ small ecological footprint
- ◆ no dust.

The contract between Plenary Environment and Barwon Water states 46 conditions for the biosolids facility that would lead to financial penalties if breached.

Examples of conditions include odour detected beyond fence, failure to properly monitor quality of air discharged, failure to establish and maintain natural screening vegetation and failure to comply with noise regulations.



Community consultation and feedback guided the conditions Barwon Water placed on the project.

## Where will the facility be built and what will it look like?

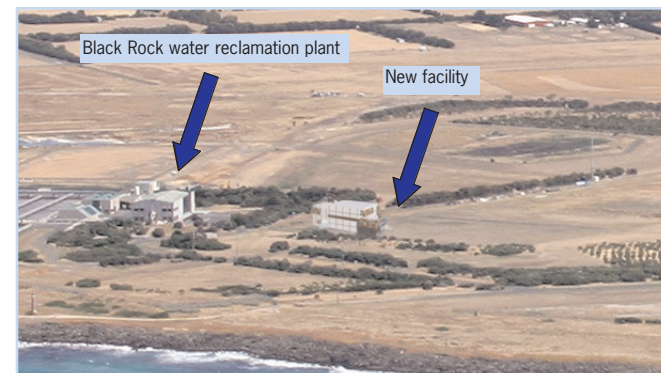


Artist's impression of the new biosolids drying facility.



The facility will be built on land owned by Barwon Water at the Black Rock water reclamation plant. This is a great location for the biosolids facility, both environmentally and economically because:

- ◆ 90 per cent of our biosolids are produced at the Black Rock water reclamation plant and treating wet biosolids at the point of production reduces the weight and volume of material that must be transported. This means safer roads, with 1000 fewer trucks entering and leaving Black Rock each year
- ◆ greenhouse gas emissions have already been reduced by up to 40 per cent compared to lagoon-based biosolids drying. The thermal drying facility will build on this with fewer truck movements further reducing greenhouse gas emissions by more than 300 tonnes per year
- ◆ four million litres of recycled water from the Black Rock water reclamation plant will be used each day instead of drinking water
- ◆ it is an efficient use of existing Geelong sewerage system infrastructure
- ◆ only Barwon Water biosolids will ever be treated at the facility.



### Key features include:

- ◆ fully-enclosed process with zero odour beyond Barwon Water's fence
- ◆ no taller than the existing buildings at Black Rock water reclamation plant
- ◆ indirect drying that does not involve burning or incinerating biosolids
- ◆ no visible air emissions
- ◆ a substantial investment in landscaping
- ◆ comprehensive safety systems
- ◆ a small footprint
- ◆ high-quality product.

## How will the drying facility work?

Wet biosolids from the Black Rock water reclamation plant will travel by enclosed conveyor belt to the drying facility. Trucks will deliver wet biosolids from Barwon Water's other water reclamation plants directly to the drying facility. Around 90 per cent of our region's biosolids come from Black Rock water reclamation plant.

Wet biosolids contain 85 per cent water.

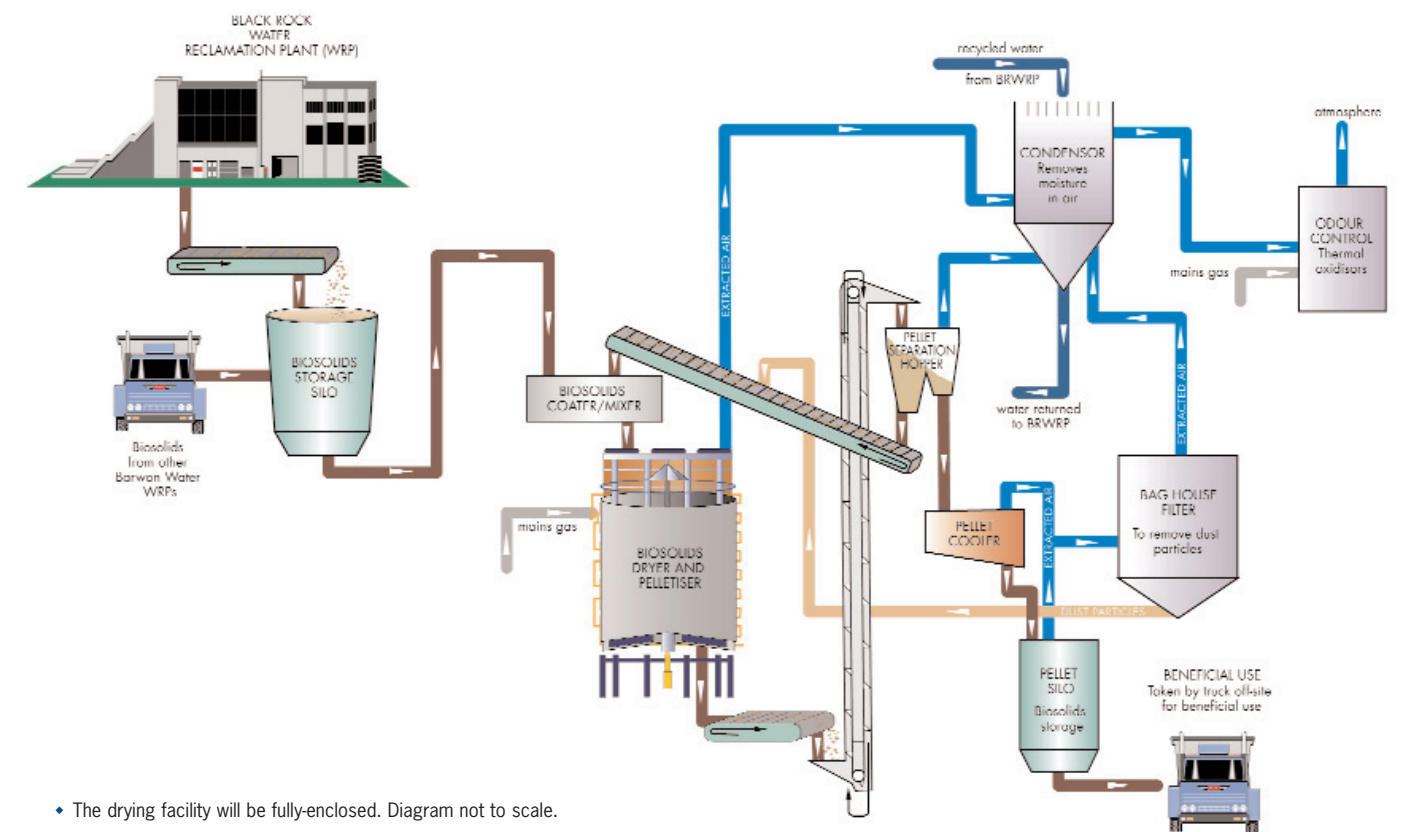
The drying process begins by mixing wet biosolids with dry biosolids pellets. This helps the wet biosolids form into new pellets. The mixed biosolids then enter the pelletiser and are raked across heated plates, drying and forming into biosolids pellets. The pellets are continually raked across the plates and, as they reach the end of a plate, fall to a plate below, where the process continues.

When the pellets reach the bottom of the pelletiser, a conveyor belt is used to load them into a separation hopper. At this point, some of the pellets, particularly the smaller ones, are returned to the start of the process to be mixed with wet biosolids entering the facility.

The remaining biosolids are fed into a pellet cooler which uses air to cool the biosolids.

Once cooled, the pellets move by an enclosed conveyor belt to a storage silo. From here, they are loaded into trucks and transported to the end-use location, such as broad-acre farms.

Water produced by the drying process is returned to the Black Rock water reclamation plant.



◆ The drying facility will be fully-enclosed. Diagram not to scale.

## Environment Protection Authority (EPA) Works Approval

Barwon Water and Plenary Environment will provide a detailed submission to the Environment Protection Authority as required by the EPA Works Approval process.

This independent process will ensure the facility can meet all State Environmental Protection Policies and the EPA biosolids guidelines before the project can proceed.

The EPA Works Approval process involves a 21-day period for formal community input. This will be advertised in the *Geelong*

*Advertiser* and *Herald Sun*. The community will be able to obtain copies of the project submission from the EPA.

If approved, an Environmental Licence for the facility will be issued, which will include strict monitoring and reporting requirements.

For more information on the Works Approval process, please contact EPA Victoria on 5226 4825.