Gas Exploration News

For the Hunter communities

July 2008

sydneygas

Quieter drilling in the Hunter

Sydney Gas has added a new multi-million dollar drilling rig for its coal seam gas exploration in the Hunter region.

The drilling rig, a Boart Longyear DiamondCore Dill LF 230, is regarded as the quietest on the market and will be used in the sensitive tourist areas of Paynes Crossing and Wollombi.

Sydney Gas Chief Executive Officer, Mr Andy Lukas said it was important to source the most productive and quietest drill rigs for exploration.

"We understand that the community wants drilling operations to be as quick and as quiet as possible," said Mr Lukas.

Boart Longyear DiamondCore Dill LF 230 pictured on left

"This was a major factor in the decision to use the Boart Longyear rig," he said.

"Sydney Gas is committed to best practice in coal seam gas exploration and we want to work with the Hunter community to develop a long term resource for the region.

"While the equipment is very expensive, we hope to see significant cost savings over the long term, quicker drilling, quieter worksites and a safer workplace for exploratory teams," Mr Lukas said.

The rig is owned and operated by McDermott Drilling which is a wholly owned subsidiary of the AJ Lucas Group.

In January 2008, AJ Lucas and Sydney Gas entered into a joint arrangement for the further exploration and commercialisation of Sydney Gas' assets.

The agreement included provision of drilling services in the Hunter region through McDermott Drilling.

The Boart Longyear rig has already been successfully used by Lucas Energy for exploration in the Gloucester basin.

It can drill up to 2,300 metres into the earth using a special head, which is one of the most effective on the market.

It features a telescopic mast and a strong drilling platform designed for deep holes and productivity even when drilling deep into the earth.

New Executive Team

New General Manager

Mark Harper

Sydney Gas has welcomed two new key executives to its team.

Our new general manager, Mark Harper joined Sydney Gas earlier this year.

Mark Harper is the former Agility Management Ltd chief executive officer, former AGL group general manager and former Australian Pipeline Industry Association president.

Mark said he was attracted to Sydney Gas due to the commitment of the new chief executive officer, Mr Andy Lukas.

"I've worked with Andy for many years and his vision for Sydney Gas spoke volumes for me," said Mark Harper.

"The coal seam gas industry is an exciting new energy source that is an ideal transition energy away from burning coal, it's not the ideal solution, but it is a significant step further," he said.

"I also understand where some of the community is coming from with their concerns about natural gas and we want to show that we are different to mining and industry they have seen before; we can co-exist in the tranquility of the Hunter," Mark Harper said.

Landholder Relations

Dana Hollis

Dana Hollis was sought by Sydney Gas to lead landholder relations and is responsible for all landholder negotiations and regulatory approvals.

Dana was respectfully known as a "landman" in the American gas and oil industry.

Dana was responsible for negotiating oil and gas leases, contracts, overseeing regulatory obligations and mineral rights at private, state and federal levels.

Her accent belies her understanding of rural Australia, having also owned a pub in Oberon and been sales manager for the Kosciuszko Thredbo resort.

"Bottom line is, landowners want us to get in and out with minimal disruption," said Dana.

"Most landowners are open to the idea of greener energy as long as it does not impact on their business and lifestyle, which is understandable," she said.

"With my experience of the industry and of country life I hope to make the exploration process as straight forward as possible," Dana Hollis said.

News briefs

CORE CONCLUSIONS

Howes Valley

DRILLING of Hunter corehole number six, in Howe's Valley, is now complete.

Testing on the core samples is being conducted and the drilling site is being rehabilitated.

Sydney Gas is preparing the final report for the Department of Primary Industries.

CURRENT CORING

Belford

DRILLING is almost complete at the Rothanal 01 site located near Belford. Drilling proceeded relatively quickly at Belford with initial core hole samples indicating extensive sandstone deposits.

Rehabilitation work will begin as soon as the drilling rig is removed.

Glendon

SITE preparation has begun at the Roughit (RI01) site located in Glendon and drilling is expected to begin within the next couple of weeks.

A second community meeting was held at the Glendon Community Hall on July 1 to provide information to local landowners and community members. It is anticipated that the Glendon exploration will be complete by mid-September.

Paynes Crossing

A new multi-million dollar drill rig has arrived at Paynes Crossing (see story on page one). Drilling is expected to begin in the next week and should be complete by late September.

The use of the Boart Longyear drilling rig will mean minimal noise in the local area.

Wollombi

Due to wet weather, Sydney Gas has rescheduled drilling plans at the Wollombi site. The core hole at Paynes Crossing will be drilled first and the rig will then move to Wollombi. This means local residents will get the benefits of the new quieter and quicker drill rig. Work in Wollombi is expected to begin in September.

WOLLOMBI FLOOD LEVELS

Sydney Gas has further investigated concerns about potential flooding of the Wollombi corehole site.

Cessnock City Council confirmed the one-in-100 year flood level is 100.3 metres, approximately 1.7 metres below the natural ground level of the drilling site.

The one in 100 year flood event is a projection made by hydrologists, which anticipates that statistically there is only a one percent chance of that flood height being exceeded in any one year. These projections are calculated on historical records in the region.

The height of the corehole site is 102.0 metres, measured in the Australian Height Datum, the standard for measuring elevation.

A flood of 102 metres would be considered a flood of extreme magnitude, the chances of experiencing a flood of this size would vastly exceed a 1:100 year event.

Flood levels near Mulla Villa during the June 2007 floods.
Photo courtesy of Caroline Maul, Mulla Villa.

Sydney Gas has also checked information using the photos of the 2007 flood event provided by local residents. Using contour maps, the estimated flood level in photos was approximately 97.5metres AHD.

While such floods would prohibit entry to the site, fortunately the site would be above the flood level.

NEXT STEPS IN EXPLORATION

Test Wells

As part of our continued exploration in the Broke and Bulga area, we are currently evaluating possible locations for pilot test wells.

As soon as these locations are known we will begin consultation with the local community.

Test wells are an important next step in determining the viability of coal seam gas reserves..

Upper Hunter activities

Sydney Gas is preparing a review of environmental factors (REF) to the Department of Primary Industries (DPI) for four coreholes in the Upper Hunter Shire.

An REF is similar to an environmental impact statement for a development application.

The sites are on private property and Sydney Gas has received approval from the landowners for the exploration on their land.

Sydney Gas has begun community consultation and has more meetings planned.

The exploration is is subject to the DPI approval and is not expected to begin until the end of August.

Once approved, the full REF document for these coreholes will be available on the Sydney Gas website.

Seismic surveys

To gather more information on the geology of the Upper Hunter area, we plan to do more than 150 kilometres of seismic survey, to commence in October.

A seismic survey uses geophones and low frequency pulse equipment to detect geological strata.

This information, in conjunction with existing geological data, is used to determine where to further explore.

Seismic surveys have been likened to an ultrasound of the earth.

The lines of the survey are still being finalised.

Well winner:
The winner of the *spot the well competition* was **Donna Burley** of Singleton... Congratulations!

Gas 101 - Water aquifers

ARGUABLY the most important issue for rural communities in Australia is water.

When we speak to new communities about coal seam gas exploration their most important question is "Will this affect our water table?".

To address this concern, we decided to explain the often misunderstood topic of water aquifers.

An aquifer is a seam of the earth that contains water. The term water table is used to describe the water level in an aquifer.

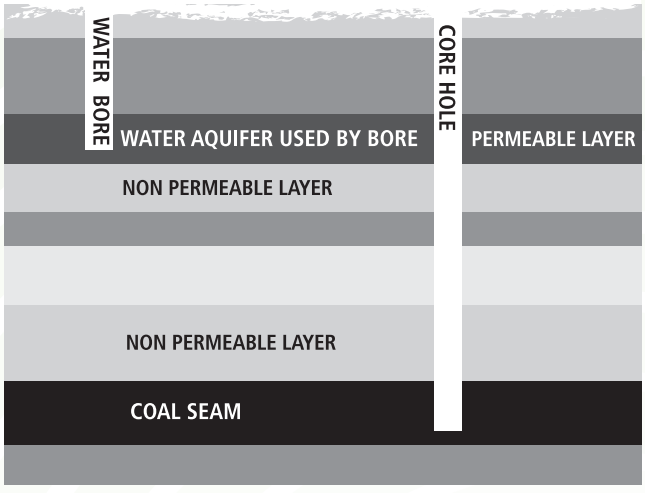
Some people have described that drilling through an aquifer could risk cracking it; causing it to collapse and sending all the water down into a huge void somewhere. This is not true.

An aquifer is really a layer of earth that is infused with water, much like a sponge.

If a layer of the earth, known as strata, can absorb water is maybe a water aquifer.

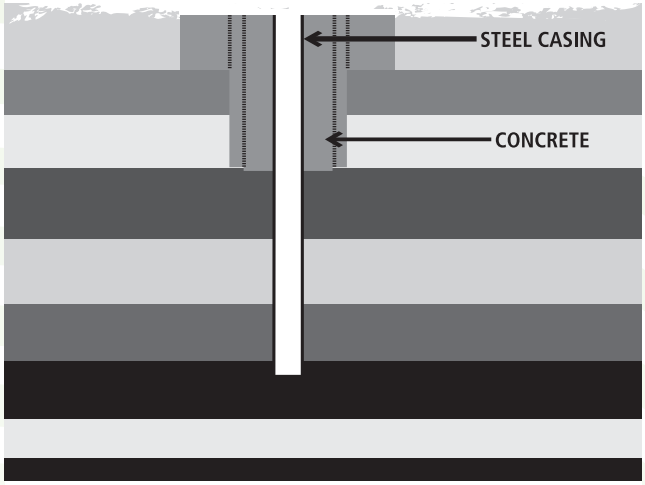
Water that gathers between rock fractures is also an aquifer.

Under these water-filled layers there are usually many layers of earth and rock that are impermeable, that is, they cannot absorb water. These layers provide a natural barrier to stop water seeping through to deeper layers.



To extract water, using a water bore, drillers drill into an aquifer and pump the water out of this layer. In the Broke and Bulga region, most water bores draw from aquifers that are within 15 metres of the surface, a few draw from deeper depths down to 70 metres. In other areas of the Hunter aquifers used by the community may be more than 200 metres in depth.

When we drill a core hole, which is approximately 10cm in diameter, we protect the aquifers by casing the upper sections of the hole with steel and concrete. Casing the corehole seals all of the layers effectively, preventing water movement. This is a common practice used effectively by drilling companies in Australia and also used as best practice by the NSW government's own departments.



CROSS-SECTION OF A CORE HOLE CASING

As depth increases, hydraulic conductivity generally decreases. This means, the deeper the strata, the harder it is for water to flow. Generally at lower depths there is no need to case the hole, however if a deep aquifer is identified and may be affected, we will case and concrete past that layer.

During drilling, samples are taken of each layer of earth to understand what layers of strata are between the aquifers and the coal seams.

Sydney Gas needs to see that there are adequate levels of impermeable strata above the coal.

For gas to be extracted we cannot allow water to enter the coal seam from the layers above.

No water is extracted from aquifers or the coal seam during the corehole exploration.

Once the corehole is no longer required, it is filled with concrete which "plugs" all of the layers.

Test wells and production wells

When a test or production well is established, the entire depth of the hole is cased to ensure no seepage into the well.

To allow for the extraction of gas, the coal seam and well must be free of water.

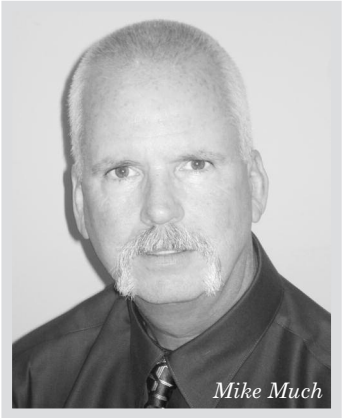
The coal seam contains water and gas. To draw the gas from the seam, we first need to dewater the coal. This reduces the pressure in the seam, allowing the gas to escape from the coal.

Excess water entering the seam would prevent gas being released from the coal.

Therefore, it is not in Sydney Gas' interest to have any water seepage into the coal seam.

Protecting the Hunter's aquifers is not only important to the community; it is also important to Sydney Gas' exploration process.

Degassing gas myths


Mike Much

Mike Much is a highly respected engineering manager who has worked in the gas and petroleum industry for more than 28 years.

Mike has drilled and completed more than 1000 coal seam gas wells and is considered a world expert in this field.

This edition we have asked him to address two questions from a resident of Belford:

Will exploration cause increased traffic on local roads?

Fortunately gas exploration is a relatively small operation that usually only involves several people being on the site for eight to twelve weeks.

They usually travel to the site in separate vehicles and park within the exploration site, so there is no significant increase in traffic during drilling.

When work begins, it is a bit like preparing to build a house. A 30 metre by 60 metre site is leveled using basic earthmoving equipment.

Depending on where the site is, a gravel road may need to be constructed, for vehicles and the drill rig to reach the site. If this is the case, standard gravel road building traffic could be expected, going to and from the site.

Overall truck movements are also minimal and usually include:

- trucks transporting general earthmoving equipment for site preparation;
- occasional use of a water truck if there is a gravel road;
- one or two trucks to transport the drilling rig, and
- a mobile crane may also be used for the first one or two days of drilling.

Some sites may require more work than others and this may mean some more vehicles.

For example, if a temporary bridge is installed over a creek, this may involve the Roads and Traffic Authority engineers and an extra truck.

The typical hours of drilling are 7am until 6pm on weekdays and Saturdays.

Will gas exploration lead to more dust?

Again, just like the construction of a house, the exploration activities have the potential to generate some dust on the site.

The good news is that our drilling sites must be a minimum of 200 metres from any houses and usually it is more than this. The chance of any neighbours being impacted by dust is much lower than if a house was built next door to you.

There will be some minor earthworks for site preparation, which will result in exposed earth for a few weeks. We save the original top soil from the area and store it on site under plastic during the entire process. We use bunds and silt traps to make sure any run off from the rain does not take any soil from the site into the surrounding paddocks.

Because the drill uses water and a drilling mud, any dust from the layers of earth is absorbed into the water and then stored in tanks on site. The drill cuttings are also absorbed in this mud and water.

Vehicles accessing the site will be using gravel roads, so water trucks are available to ensure dust is kept to a minimum. We try to keep all vehicle movements to a minimum, to reduce the impact of dust from the gravel roads.

When we bring in gravel to refresh the roads, we ensure that the vehicle tailgates are fixed and loads are covered at all times.

Immediately after we finish drilling we start to rehabilitate the area. The original top soil is laid back on the site and we begin replanting native vegetation.

Even though the risk of dust emissions is low, we want to do everything to keep any impact on residents to a minimum.

If you have a burning gas question, or you would like to find out what is fact and what is hot air, please send it in:

Degassing gas myths
Sydney Gas
Level 11, 1 O'Connell Street,
Sydney. NSW. 2000.
Email: office@sydneygas.com

Your say

ALL community feedback and questions are important to Sydney Gas. If you have a question, concern, some feedback or a complaint please let us know.
You can contact our Hunter based staff:

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Elizabeth Flaherty, Public Relations - Hunter,
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Alternatively you can contact our head office directly:

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Community line
We are available to the local community
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