

Overview P&A operations Coal Exploration Bore R2315

Green Swamp Road, 15km SW of Chinchilla, drilled in 1981

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Background

UQ partnered with DNRME, Nautec and Renviro to undertake a field trial of new well abandonment technology.

The field trial tested the use of bentonite plugging technology developed at UQ in conjunction with a shrinkage compensated grout developed by Nautec.

The field trial is a deliverable of the Advanced Queensland Innovation Partnership (AQIP) program.

Records show the bore had a nominal diameter of 121mm (4 3/4"), was drilled with a blade bit and had a nominal depth of 114m GL, exposing a sequence of some 13 potential coal seams.

The bore had no reported casing or collar in place and there was no record of a protective cover plate.

Preliminary site inspection

- Undertaken to confirm the exact location of the coal exploration bore, which was located ~1m from the site marker (star picket surrounded by PVC pipe); and measure existing gas levels.
- Purpose of the PVC is assumed to be for visibility to reduce the risk of vehicles disturbing the star picket, which is approximately 9m off the bitumen on the north side road reserve.
- The bore itself was not visible and the immediate location showed evidence of relatively recent topsoil disturbance due to grading of a road drainage gutter.
- Gas monitoring during the visit showed a consistent presence of methane in the atmosphere.



Redrilling the hole



Fig 1: A 4 3/4" BHA was made up and the used to ream down the hole to 113.7m GL.

Grout placement



Fig 2: 205l of 1.94SG grout was mixed and pumped in hole. After 3h WOC the top of grout was tagged at 94.7m GL.

Plug placement



Fig 3: 467 bentonite plugs were placed successfully on top of the grout to reach final top of plug at 6m GL as per program.

Monitoring

A lockable lid with an 1/2" outlet was installed on the 7" conductor pipe. Gas/pressure measurements will be conducted once a month until end of March 2019.

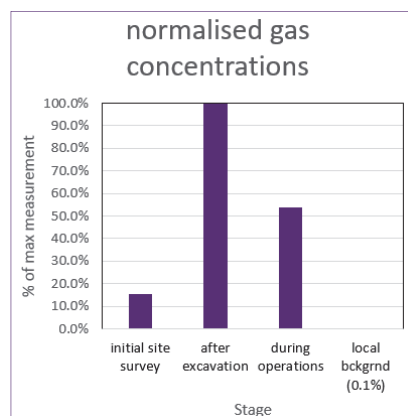


Fig 4: Change in gas concentrations

Gas Measurement

As shown in Fig 4 gas emissions during excavation and operations exceeded the background levels measured during the preliminary inspection.

After the abandonment exercise gas emissions were well below background levels.