

CONTAMINATED SITES AND ACCIDENTS RELATED SPECIFICALLY TO CSG/LNG IN AUSTRALASIA

AUSTRALIA

1. 30 January, 2013 – Floods expose gas leak

<http://au.news.yahoo.com/video/national/watch/379e9a8e-fb4a-304f-b4c6-bc1b6def3f6d/floods-expose-coal-seam-gas-leak/>

Gas discovered bubbling in water at flooded gas pad - Menangle Park. Gas company AGL, denies it is gas saying it is "just air".

2. 30 January, 2013 - Gas pipeline leak near flood-hit Qld city

<http://www.theaustralian.com.au/news/breaking-news/gas-pipeline-leak-near-flood-hit-qld-city/story-fn3dxiwe-1226564884891>

THERE'S been a major gas leak involving an underground pipeline north of the flood-hit Queensland city of Bundaberg. The natural gas pipeline has been turned off, but it'll take some time for it to depressurise, authorities have told ABC radio. The leak from the pipe, which is a couple of metres underground, is in a remote area nowhere near houses, but locals in the area, 120km north of Bundaberg, have been alerted. Mark Jackson, from the Bundaberg Disaster Management Group, said anyone within 100 metres would hear a loud roaring noise and see a misty cloud. "It might be fairly spectacular both visually and by sound," he said.

3. 15th Jan 2013 -Spill at drilling site not toxic, says Metgasco PR man

<http://www.northernstar.com.au/news/spill-at-drilling-site-not-toxic-says-metgasco-pr-/1717304/>

METGASCO has denied a toxic substance was spilled during drilling at its Glenugie coal seam gas site on Sunday. The company's external relations manager, Richard Shields, said a "minor leak" of harmless drilling mud occurred but was "contained and disposed of as per industry procedures". He said the mud, used to lubricate the drill, consisted of water and a naturally occurring clay called bentonite. He insisted it was not harmful.

4. <http://pipelinesoz.wordpress.com/page/5/>

"The APIA/POG incident database received a new incident report the other day – a pipeline leak caused by a lightning strike. The confidentiality requirements mean that I'm not going to tell you where it was or which pipeline, other than that it was in an outback environment and there was a fused crater in the pipe wall about 17 mm in diameter with a 1.6 mm diameter hole at the bottom.

What I regard as striking (!) is that lightning now ranks as the third most frequent cause of pipeline damage in the database, regardless of whether you count all incidents or just those causing loss of containment. External interference of course remains dominant with over 80% of damage incidents. The remaining causes and number of incidents are:

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- 8 construction defects (3 leaks)
- 7 lightning strikes (4 leaks)
- 6 corrosion leaks
- 5 earth movement incidents (2 leaks)

The non-leak lightning strikes were discovered through in-line inspection where strange defect indications were investigated and revealed fused craters in the pipe wall. There may be more of these that have not yet been discovered.

Two of the lightning incidents were associated with power lines, where the lightning initially struck the wires then ran down a stay wire that passed close to the pipeline. So there is an obvious way to avoid that. But apart from that situation there appears to be no mitigation available for random lightning strikes on a buried pipeline.

Earthing the pipeline (via surge diverters) serves to protect personnel and equipment who may be in electrical contact with it, but does nothing to protect the pipeline itself. In fact, providing a good earth bond might even increase the lightning risk to the pipe (someone with more knowledge of earthing than me might wish to comment).

It seems that lightning strikes are one of the few threats to a pipeline that we cannot protect against and just have to put up with. Fortunately all the indications are that any resulting loss of containment is minor."

5. 11 December 2012 - Santos Gladstone LNG fined for late reporting of oil spills

<http://www.qt.com.au/news/santos-gladstone-lng-fined-late-reporting-oil-spil/1655655/>

THE company behind one of Queensland's massive gas projects, Santos Gladstone LNG, was fined nearly \$20,000 for the late reporting of oil spills and other breaches of environmental approval conditions in the Great Barrier Reef World Heritage Area last year. The fines totalled \$19,800 and were related to the company's late reporting of five minor oil spills and two increases in turbidity levels near the Curtis Island site in the World Heritage Area (WHA).

6. 29 November 2012 - Apache shut down over gas leak

<http://au.news.yahoo.com/thewest/a/-/wa/15512614/apache-shut-down-over-gas-leak/>

Apache Energy has shut down production at its unmanned Harriet Bravo offshore LNG platform about 70km west of Dampier after a subsea flowline gas leak nearby, a company spokesman has confirmed. The spokesman said a small subsea natural gas release was detected near the Carnarvon Basin platform about 2pm on Tuesday. The cause of the leak remains unclear.

7. 16 November 2012 - Climate change implications of new study on methane emissions in coal seam gas field

<http://www.indymedia.org.au/2012/11/16/climate-change-implications-of-new-study-on-methane-emissions-in-coal-seam-gas-field>

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Coal seam gas has been touted as a green transitional fuel, far less polluting than coal, but a new study implies it may not be as green or climate friendly as the industry makes out. It hinges on the level of fugitive emissions produced in development and production of a gas field. A study by two scientists from Southern Cross University based in Lismore, northern NSW, detected much higher levels of the strong greenhouse gas methane around the Tara gas field on the Darling Downs of Queensland west of Brisbane.

<http://www.scu.edu.au/coastal-biogeochemistry/index.php/70/>

8. 22 October, 2012 – Land Holder Taking Water Fight to Santos

<http://www.nvi.com.au/story/405991/landholder-taking-the-water-fight-to-santos/?cs=382>

Mr Pickard reports that the sodium content in the water samples is actually 1030 ppm (parts per million) and the pH of the ponded water is 9.93, while the sodium content in the soil at Bohena 7 is 17200 ppm, with a pH of 11.2. "Another point to look at is the Sodium Absorption Ratio (SAR) is 200 in the ponded water," he said. "Rain water has an SAR between 1 and 2 at its worst, with bore water generally slightly higher. "Bore water for domestic use in the area (my house bore sampled 16.5.2012) was 2.6 and on 27.6.2012 was 2.97," he said. "When you get a SAR in water of four (4) you know you are in trouble... twenty (20) is desert. The native wildlife do not drink this water and live and the water is not conducive to plant and tree growth or survival either. He says, however, that the biological activity in the water tells the most compelling argument, citing astronomical counts of sulfate reducing and hydrocarbon utilising bacterias.

9. 18 October, 2012 – Family fights for compensation for well site

<http://au.news.yahoo.com/thewest/regional/countryman/a/-/news/15144422/family-fights-for-well-site-compo/>

As a fruit and vegetable producer, Mr Copeland said he was losing substantial income from the existence of the well site. "If I put zucchinis into the 9000sqm area this year I would have made in excess of \$80,000 gross," he said. "If I planted rockmelons there in April to May 2012 I could have made in excess of \$80,000 for the price we were receiving at that time." This is providing the site had been property rehabilitated and soil nutrients lifted to the appropriate levels for our industry." AWE was contacted for comment but a spokesman said the company was unable to respond because the matter was before the court.

10. September 12, 2012 – Gas Company illegally emitting acid rain compounds for 3 years – 1.

<http://au.news.yahoo.com/video/national/watch/26473248>

AGL found for 3 years have been **pumping 30% more Sulphur Oxide** into air than environmental limits allow. Also found to be exceeding limits for hazardous waste stored on site.

11. September 4, 2012 – Farmers and environmental groups blast new gas industry ad that claims coal seam gas is safe for groundwater - APPEA

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<http://www.couriermail.com.au/news/farmers-and-environmental-groups-blast-new-gas-industry-ad-that-claims-coal-seam-gas-is-safe-for-groundwater/story-e6freon6-1226464606972>

<http://www.news.com.au/breaking-news/national/csg-ad-criticised-for-false-claims/story-e6frku9-1226464941206>

Deceptive advertising by APPEA claims that CSG is safe for groundwater. A PRO-COAL seam gas (CSG) television advertisement has falsely claimed Australia's national science agency believed groundwater was safe from contamination by CSG mining, CSIRO says. The Australian Petroleum Production and Exploration Association (APPEA) authorised the television ad that aired on Network Nine at the weekend. The ad claimed CSIRO believed groundwater was "safe from coal seam gas" activities. **CSIRO has rejected the claims.** "At no time has CSIRO made such a statement, and nor do the results of CSIRO research support such a statement," a spokesman said in a statement.

September 4, 2012 - CSIRO wants ads pulled as coal seam gas industry claims rejected

<http://www.coastaltimes.com.au/news/national/national/general/csiro-wants-ads-pulled-as-coal-seam-gas-industry-claims-rejected/2658104.aspx>

12. August 20, 2012 – Dalby gas fire denial - Arrow

<http://www.brisbanetimes.com.au/queensland/dalby-gas-fire-not-csg-related-arrow-energy-20120820-24h5s.html>

Arrow Energy says a **gas fire burning** on one of its properties in Queensland is under control and is not linked to the company's coal seam gas activities. Fire fighters were called to a grass fire at the site of **Arrow's Daandine CSG project, west of Dalby**, on the weekend. The grass fire has been put out. Arrow Energy says the gas fire is centred on an old coal mine well, and is continuing to burn, but in a controlled, secure way.

13. July 20, 2012 - CHINCHILLA beef producer David Hubbard has seen his property impacted four times by QGC spillages this year - GGC

<http://qcl.farmonline.com.au/news/state/agribusiness-and-general/general/qgc-should-spill-details-not-just-gas/2614696.aspx>

"Drilling fluid from a QGC mining rig had twice spilled into the Condamine River, a few hundred metres from where he accessed water for stock, and **fluid also had spilled twice across a boundary fence into his paddock**, he said. The accidents, which had occurred at a neighbouring property, had taken place over a single month. While he expressed his annoyance these incidents were occurring in the first place - **a familiar story for many across rural Queensland** - Mr Hubbard said his ongoing frustration was that he was not being adequately informed by the company about the discovery of the incidents and the follow-up investigations into the impacts. He said he had only learnt about two of the incidents following his own initiative and questions."

14. July 20, 2012 - Corybas leak sparks alarm – Geraldton - AWE

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<http://au.news.yahoo.com/thewest/regional/gascoyne/a/-/news/14280202/corybas-leak-sparks-alarm/>

Gas bubbling at the surface of a fracking well on The Grange farm, **south of Dongara**, has raised new concerns about the environmental safety of the process. Nearby growers expressed fears about contamination of groundwater supplies when a leak was discovered at AWE's Corybas wellhead. AWE managing director Bruce Clement this week confirmed the company found a gas leak on the valve of Corybas 1, which was **bubbling up through rainwater in the cellar trap**. Mr Clement said the leak at the well, which was fracked at 2.51km in 2009, was picked up during routine maintenance checks and was being fixed now.

15. July 6, 2012 – Coal seam gas blamed for health problems

<http://www.abc.net.au/local/stories/2012/07/06/3540381.htm>

The Australian Medical Association's incoming president in Queensland has confirmed several of its **member doctors have raised concerns** that residents living near coal seam gas mining operations may be showing symptoms of gas exposure.

16. June 19, 2012 – Metgasco fined for failure to comply - Metgasco

<http://www.northernstar.com.au/story/2012/06/19/metgascos-wastewater-fine/>

METGASCO has been fined \$5000 by the State Government for **failing to provide information about its plans to dispose of wastewater** produced by the coal seam gas extraction process. The fines were revealed on a government web site which listed cases of "non-compliance" with the Mining Act and Petroleum (Onshore) Act. A COAL seam gas company has disposed of more than a million litres of dirty water at a sewage treatment plant in northern NSW, **breaching the plant's licence conditions**, the NSW Environment Protection Authority says

17. June 12, 2012 - Coal seam effluent salts sewerage - Metgasco

<http://www.smh.com.au/environment/coal-seam-effluent-salts-sewerage-20120611-2060v.html#ixzz1xWyBfdZU>

18. May 28, 2012 - Methane Migration Affects 5 km stretch of Condamine River - Origin

<http://www.abc.net.au/news/2012-05-30/claim-csg-river-leak-caught-on-video/4041298>

Gas is bubbling to the surface on a five-kilometre stretch of the Condamine River near Chinchilla on the Western Downs. The Queensland Government's LNG Enforcement Unit says it is investigating the claims. Mr Hutton says while he cannot rule out naturally occurring methane, the incident is unprecedented. "The landowners say they've never seen this happen before," he said. "It's along quite a lengthy stretch of the river - there's very strong bubbles coming to the surface. "This is a new phenomenon for this section of the river." Mr Hutton says the river is **close to CSG wells operated by Origin Energy**.

19. May 24, 2012 - Varanus gas explosion report slams Apache Energy – LNG/Apache

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<http://www.abc.net.au/news/2012-05-24/varanus-gas-explosion-report-released/4031146/?site=northwestwa>

The report is critical of Apache, saying the company had ultimate responsibility for maintaining the site and should have identified the risk that corrosion posed to the affected pipeline. It has described Apache's safety culture as 'middle-rank'.

20. May 12, 2012 – Gas leak forces suspension at QGC rig at Surat Basin - QGC

<http://www.couriermail.com.au/business/gas-leak-forces-suspension-at-queensland-gas-company-rig-at-surat-basin/story-fn7kjcme-1226347929202>

Gas leak forces suspension at Queensland Gas Company rig at Surat Basin-QGC. THE Queensland Gas Company has suspended operations at one of its drilling rigs on the western Darling Downs after detecting a gas leak. A 150-metre exclusion zone was established around the Surat Basin rig as a precaution late on Saturday night. The incident occurred during drilling of the **Argyle 162** well, about 25km southwest of Chinchilla, on a QGC-owned property.

21. April 28, 2012 - CSG company spills fluid into river - QGC

<http://www.smh.com.au/environment/water-issues/csg-company-spills-fluid-into-river-20120428-1xr4k.html>

Drilling fluid linked to a CSG project has **leaked into a Queensland river** that is part of the Murray-Darling Basin. The leak occurred when contractors for coal seam gas company **QGC** were drilling to run a pipeline underneath the Condamine River in Queensland's southwest.

22. Missed pollution leak raises concern about credibility of mine audit

<http://www.eco-business.com/news/missed-pollution-leak-raises-concern-about-credibility-of-mine-audit/>

The breaches included **suspected dumping of drilling mud and a failure to properly rehabilitate** a site. But the audit, conducted in September and October, failed to detect serious incidents at coal seam gas drilling sites in the Pilliga woodland in north-west NSW. The sites had long been the subject of community concern and numerous breaches were self-reported by the owner Santos in February. Santos found the sites' previous operator, Eastern Star Gas, had serially breached environmental rules, including **16 spills or leaks of contaminated water**. It also found evidence of error-ridden work practices, such as records lost, and land cleared apparently without approval.

23. Apr 4, 2012 - Queensland reveals Condamine water quality report

<http://www.abc.net.au/news/2011-11-24/chinchilla-condamine-water-quality-report/3677838>

The Queensland Government has confirmed the **toxicity of coal seam gas water to aquatic organisms is assessed against environmental standards after it is released into rivers and not prior to discharge**. This approach appears to stand at odds with the approach taken by the Queensland co-ordinator-general in his approach to contaminant guidelines when he approved the Australia Pacific Liquid Natural Gas (APLNG) project. Environmental protection standards are

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set through ANZECC aquatic ecosystem guidelines. In June 2010, the Queensland Government granted an **environmental approval allowing APLNG to discharge the equivalent of eight Olympic swimming pools of treated coal seam gas water per day** into the Condamine River south of Chinchilla. The water comes from the company's desalination plant on the **Walloon gas field**, which is part of **Origin Energy and ConocoPhillips'** \$35 billion coal seam gas and liquefied natural gas plant near Gladstone.

24. February 10, 2012 - Arsenic and lead found in contaminated water leak at coal seam gas drill site - Santos

<http://www.smh.com.au/environment/water-issues/arsenic-and-lead-found-in-contaminated-water-leak-at-coal-seam-gas-drill-site-20120209-1rx7s.html>

FOUR separate leaks of polluted water have now taken place at a coal seam gas drilling site near Narrabri in northern NSW since June, the resources company Santos confirmed. The spills of contaminated water led to the detection last month of toxic heavy metals, including **arsenic, lead and chromium, plus traces of petrochemicals in water and earth samples** taken in the Pilliga forest area. Tests last year also showed elevated levels of metals and chemicals, though these were initially blamed on the use of chemical fertilisers on farms. **The company then conceded that an unreported spill of 10,000 litres of polluted water had taken place in June.** But Santos has now reported a series of leaks that occurred since it took over the site from Eastern Star Gas late last year. "There have been **three subsequent, smaller leaks** of water from coal seams within Eastern Star's Pilliga operations in the weeks immediately following Santos' acquisition of the company," a spokesman said.

25. February 2012 – APPEA Report: LNG tank gas release – Woodside

<http://www.appea.com.au/images/stories/Safety/71%20%20lng%20tank%20gas%20release.pdf>

During the installation of an LNG loading pump a significant amount of hydrocarbon gas was generated and released to the atmosphere when the loading pump at 300C came into contact with the -1620C LNG product within the pump well. The resultant vapour cloud engulfed the work party located on the scaffold above the LNG tank. The scaffold had only one "intended" means of escape which was blocked by the vapour cloud due to the prevailing wind direction. The work group left the scaffold and waited for the gas release to dissipate. After initial contact and subsequent gas release the pump was lowered to normal position. There were no injuries or immediate damage associated with this incident

26. January 14, 2012 - Coal-seam gas pollution spill went unreported - Santos

<http://www.theaustralian.com.au/national-affairs/coal-seam-gas-pollution-spill-went-unreported/story-fn59niix-1226244002610>

COAL-SEAM gas giant **Santos** has admitted a company it now owns last year spilled 10,000 l of polluted waste water in the Pilliga State Forest, in northern NSW, potentially **contaminating 1.2ha of bushland.**

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27. Dec, 2011 – Report - AGL

<http://2011.aglsustainability.com.au/index.html#/76/zoomed>

A total of **53 environmental incidents at AGL operated sites** were recorded in AGL's corporate incident reporting systems during FY2011, compared with 15 incidents recorded in FY2010. One of the incidents was rated as having a high potential risk (the **overtopping of a dam at the Downlands Facility during the Queensland floods in December 2010**). Other incidents included minor spills and leaks, administrative non-compliances and noncompliant air emissions. In addition to environmental incidents at AGL operated sites, during FY2011, **a number of incidents occurred at the AGL-Arrow Energy Moranbah Gas Project joint venture**, where Arrow Energy is the operator. Further information can be found in the 2011 Annual Report available at 2011annualreport.agk.com.au.

28. Dec, 2011 – Qld Gov. CSG (6 monthly) Compliance Report

<http://www.ehp.qld.gov.au/management/coal-seam-gas/pdf/csg-compliance-report-jan.pdf>

The Queensland government reported that in only the **first six months of 2011 there were forty-five CSG compliance related incidents, including twenty-three spills of CSG water during operations, four uncontrolled discharges of CSG water, three exceedances of discharge limits, three overflows of storage ponds, and other incidents relating to vegetation clearing and BTEX contamination** (see "Drilling Down – link on final page)

29. October 2011 – APPEA Report: LNG Pressure Vacuum breaker **loss of containment – gas release**

[http://www.appea.com.au/images/stories/Policy - Safety and Health/incident alerts/60 - Pressure Vacuum breaker loss of containment.pdf](http://www.appea.com.au/images/stories/Policy_-_Safety_and_Health/incident_alerts/60_-_Pressure_Vacuum_breaker_loss_of_containment.pdf)

A **gas cloud was observed** emanating from the hydrocarbon Pressure Vacuum (PV) breaker on-board a GPSO. The PV breaker released at a lower pressure than the expected design pressure, resulting in the release of about 28,000kg of hydrocarbon gas. The cargo tanks took approximately 1.5 hours to depressurise via the PV breaker.

30. September 17, 2011 - Academics warn of looming seam-gas 'mess'

<http://www.theaustralian.com.au/national-affairs/academics-warn-of-looming-seam-gas-mess/story-fn59niix-1226139356296>

"Dr Mudd said one of his students had recently conducted such a study of a CSG well, and found while one nearby water bore was unaffected by the operations another 5km away suffered a "very major impact". "If a an undergraduate student can do that in three weeks of full-time work why the hell hasn't the government done that?" he said. A LEADING resource economist has called for restrictions on the booming coal-seam gas industry until proper water quality and technology monitoring systems can be implemented.

31. September 14, 2011 - QLD gas well **leaking** - QGC

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Gas is leaking from a **five-centimetre crack in a pipe** on a Queensland coal seam gas development. **Queensland Gas Company** senior vice-president Jim Knudsen said the leak was not dangerous and an exclusion zone had been set up while workers fixed the problem. The pipe was damaged on Monday near the well head at **QGC's Berwyndale South gas field**

September 13, 2011 - Crews work to fix *leaking* gas well - QGC

<http://www.thechronicle.com.au/story/2011/09/13/crews-work-fix-leaking-gas-well-toowoomba/>

A SAFETY zone has been established around a **Darling Downs** gas well which has been **leaking** since last night.

September 13, 2011 - Gas mine *leaking* in southern Queensland – QGC

<http://www.smh.com.au/environment/gas-mine-leaking-in-southern-queensland-20110913-1k7do.html#ixzz1Y9QBEyFG>

32. August 22, 2011 - Santos fined over *outback gas blast* – Santos (Ethane- not CSG but worth noting as it was a lack of maintenance which caused this issue)

<http://www.abc.net.au/news/2011-08-22/santos-fined-moomba-explosion/2850122>

Oil and gas producer Santos has been fined for **breaching workplace safety laws** over an explosion at its **Moomba** natural gas plant in South Australia.

33. August 10, 2011 - NSW Gov't issues AGL with a formal warning after coal seam gas well *well blow-out* - AGL

<http://www.kateausburn.com/2011/08/10/nsw-govt-issues-agl-with-a-formal-warning-after-coal-seam-gas-well-blow-out/>

The NSW Government has issued AGL with an official warning following an incident during maintenance of a coal seam gas well at a site in **Camden** on 17 May 2011.

August 10, 2011 - AGL warned over coal seam *well leak* - AGL

<http://www.northernstar.com.au/story/2011/08/10/agl-warned-over-coal-seam-well-leak/>

ENERGY firm AGL has been formally warned by the NSW government after a **leak** at one of its coal seam gas wells in **southwest Sydney**.

34. August 3, 2011 - Coal seam *damage to water inevitable* - APPEA

<http://www.eco-business.com/news/coal-seam-damage-to-water-inevitable/>

“Coal seam damage to water table inevitable” APPEA

35. July 21, 2011 - *Leaking, bubbling* coal seam gas well - Pilliga State Forest NSW -Santos

Video from the Pilliga: <http://www.youtube.com/watch?v=qf5Rj3vfQPc>

36. June 21, 2011 – Arrow fined \$40,000 for *Breach* – Arrow & QGC

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<http://www.couriermail.com.au/ipad/arrow-hit-with-40000-fine-for-breach/story-fn6ck2gb-1226078776279>

ARROW Energy has been hit with a \$40,000 fine - Queensland's biggest penalty to date against a coal seam gas company - for **five breaches of the petroleum and gas laws** at the **Daandine Homestead property near Dalby**. The fine does not include any penalty for the blowout of Arrow's well on the same property, which is still under investigation by the State Government. Arrow was fined in this instance over breaching access laws that state a landowner must be given 10 days' notice before a company can enter private property. Another breach related to a technical issue over a pipeline. The fines followed more than a year of controversy for the emerging industry. Rival company **Queensland Gas** was also fined almost \$20,000 in April for **illegally clearing trees** at its project near Tara.

37. June 13, 2011 - Gas chief admits company at fault - Metgasco

<http://www.northernstar.com.au/story/2011/06/13/gas-chief-admits-company-at-fault-over-storage-pon/>

METGASCO CEO Peter Henderson has conceded the gas company was remiss in **not cleaning up two ponds** after drilling at a site at **Dyraaba** was abandoned.

38. June 7, 2011 - Coal seam gas leaks posed fire threat: report

<http://www.abc.net.au/news/video/2011/06/07/3238112.htm?site=southqld>

A new report has revealed **five coal seam gas wells in Queensland could have ignited** after they developed leaks.

39. June 5, 2011 - Coal Seam Gas Pond Toxic water storage leaking and overflowing -Metgasco

http://www.youtube.com/watch?v=smP9tL_e3U8 - Dobie's Bight Rd

40. May 23, 2011 – Qld farmer worried about gas leak on land - Arrow

<http://news.smh.com.au/breaking-news-national/qld-farmer-worried-about-gas-leak-on-land-20110523-1f063.html>

Mr O'Connor told AAP it was **the fourth gas incident on his property in two years**. "We've had **three gas leaks** prior to this but none as big as this," he said. "The other incidents didn't come from the wells. One was from a **leaking pipe**." Mr O'Connor has 12 wells on his 1847-hectare property after Arrow Energy gained access in 2006.

41. May 23, 2011 – Queensland coal seam gas leak plugged – Arrow

http://mines.industry.qld.gov.au/assets/mines-safety-health/Safety_Alert_Well_48.pdf

<http://www.theaustralian.com.au/news/nation/queensland-coal-seam-gas-well-blows-its-top/story-e6frg6nf-1226061049085>

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A LEAKING coal seam gas well west of Brisbane has been plugged. The gas well, **west of Dalby**, began leaking yesterday while Arrow Energy, the company which operates the well, was preparing it for gas production. The well was uncapped to install a pump when **water and gas burst to the surface**. Greens spokeswoman Libby Connors said water and gas exploded up to 100 metres high. Contractors at the scene were not hurt and a 100m exclusion zone was established around the well on a farmer's property **off Kogan-Condamine Road**

42. March 3, 2011 - CSG concerns bubble to surface - Metgasco

<http://www.echonews.com.au/story/2011/03/03/csg-concerns-bubble-to-surface-locals-csg-concerns/>

Northern Rivers residents continue to be alarmed by the practices involved in coal seam gas exploration, with revelations that a tailing pond (where water used in the test bore is kept until it can be trucked away) is poorly maintained. The **pond at Dyraaba** has a **lining made of builder's plastic** that is ripped in places and overflowed in the January rains. Reports of a possible third leaking test well, at the same site at Dyraaba.

43. March 1, 2011 - Leaking coal seam gas concerns - Metgasco

<http://www.northernstar.com.au/story/2011/03/01/leaking-coal-seam-gas-concerns/>

STATE Greens candidates Sue Stock and Janet Cavanaugh say they have been alerted about a potential leaking coal seam gas site at Lower Dyraaba, west of Casino. This **leaking drill site** is north- **west of Casino at Lower Dyraaba**, close to Dyraaba Creek which forms the boundary between the Clarence and Lismore electorates. I was contacted by a concerned resident downstream of the well," Ms Cavanaugh said. "This is one of **Metgasco's exploratory drill sites**. It is the third of their sites that has been found to be leaking by members of the public. According to Metgasco's own Review of Environmental Factors, on completion of the 10 to 20 days spent drilling at the site the bore should have been abandoned to the satisfaction of the relevant Government department, namely Industry and Investment NSW.

44. March 2011 – QGC contractor breaches environmental laws

<http://www.pnronline.com.au/article.php/212/1670>

March 2011 - QGC suspended work in its major pipeline in Queensland after admitting one of its contractors may have breached Federal and State environmental conditions in clearing a 6 km long, 40 m-wide route for the pipeline near Dalby. Knudson said at the time that the **lack of approved plans for soil and species management** may have resulted in the breach, but said QGC does not believe the clearing had an adverse impact on protected plants and animals.

45. February 24, 2011 – Leaking gas - Call to hold off on gas drilling – Metgasco

<http://www.northernstar.com.au/story/2011/02/24/call-hold-gas-drilling/>

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The Northern Star revealed **at least two sites on the Northern Rivers were leaking**. The Star yesterday revealed there were more than 50 drill sites in place or approved across the region. It revealed two supposedly sealed drill sites **near Bentley** were leaking methane gas through the soil. **Metgasco**, which is responsible for the sites, insists the **leaking gas** is not entering underground water reservoirs around the drill sites.

46. February 24, 2011 - Gas wells **leaking methane** - Metgasco

<http://www.northernstar.com.au/story/2011/02/24/local-gas-wells-found-leaking-metgasco-lismore/>

METGASCO has confirmed methane gas has escaped from two of its drilling wells, prompting calls that the industry regulator immediately inspects all coal seam wells in the region to discover if more are leaking. **Metgasco's** chief operations officer, Mick O'Brien, said yesterday methane was found to be leaking from sealed wells **near Bentley and north-west of Casino**. "These were small gas leaks from the piping connections at the top of the ground," he said, adding they have both since been re-sealed. "At Bentley we couldn't detect any methane, but I heard someone managed to light it and from the piping you would expect it to be methane."

47. February 2011 –QGC fracturing causes **interconnectivity between aquifers** and **leaking wells** not rectified in a timely manner

http://www.abc.net.au/4corners/special_edds/20110221/gas/docs/QGC_Response.pdf

Myrtle 3 – Anne Bridle: About six weeks after the fracturing process in mid-2009, QGC's monitoring indicated that the Walloons and the Springbok formations were connected where the Myrtle 3 well had been drilled.

Argyle 2 & 5 – Scott and Kate Lloyd: The Argyle 2 well, about 1km from the Lloyd's homestead and the Argyle 5 well, about 1.4km from the Lloyd's homestead, were leaking gas for 5 years before QGC decided to rectify the matter after being exposed by the ABC.

Lauren and Cody: Leaks identified

48. January, 2011 – **Huge Loss of Containment Toowoomba Range – Roma to Brisbane Pipeline**

http://pipeliner.com.au/news/roma_to_brisbane_pipeline_flood_damage_and_response/077836/

On 10 January 2011, a violent 'inland tsunami' struck Toowoomba causing landslides and washouts. The RBP, which runs down the Toowoomba escarpment at an acute angle, **suffered exposure and damage at several sites**. In particular, there was a significant washout of the DN400 pipeline **approximately 200 m from the top of the Toowoomba range** where the pipeline crosses under a dual railway line. **Approximately 20 m further down the slope there was also a loss of containment** on the DN250 pipeline caused by an excessive amount of stress placed on the pipeline during a landslide.

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49. November 19, 2010 - *Toxins found at third site as fracking fears build* – Arrow & Metgasco

<http://www.smh.com.au/environment/toxins-found-at-third-site-as-fracking-fears-build-20101118-17zfv.html#ixzz1ViDujTwr>

TRACES of toxic chemicals have been found at a "fracking" operation to extract coal seam gas - the third time this year that gas producers have detected contamination at a drill site. **Arrow Energy** confirmed that **benzene, toluene, ethylene and xylene** - together known as BTEX - had been found in wells at a gas site **east of Mackay**, Queensland. In NSW documents obtained from the Department of Industry and Investment show that a coal seam gas drilling site near Lismore, run by the Sydney company, **Metgasco**, was permitted to use fracking after supplying a generic list of hazardous materials safety guidelines. Emails [between department staff and **Metgasco**] show that testing for coal seam gas using fracking can go ahead without approval being sought, or required, from the Environment Department.

50. October 21, 2010 - *Origin stops coal seam gas drilling after chemicals found in water around 8 wells* – Admits contaminating water - Origin

<http://www.smh.com.au/environment/energy-smart/origin-stops-coal-seam-gas-drilling-after-chemicals-found-in-water-20101020-16ud7.html#ixzz1ViEpErIH>

Farmers near a coal seam gas "fracking" site in Queensland will have their water supplies tested for toxic benzene and other chemicals today after **Origin Energy found contaminated water near drilling sites**. The discovery of BTEX - a mixture of benzene, toluene, ethylbenzene and xylene - around eight coal seam gas wells near Miles, west of Brisbane, **marks the first time a resources company has admitted to contaminating water at a fracking site**. Origin detected the chemicals a week ago and told the Queensland government - which is legislating to ban the use of BTEX chemicals during coal seam gas drilling - on Friday. Most landholders in the area have been notified of the contamination. There is no known impact on drinking water in the gas field. **Origin has shut down all 17 of its drilling rigs across a 40-kilometre-wide area while an investigation is carried out.**

51. September 2010 – APPEA Report: *Significant spill of produced water* – QGC

[http://www.appea.com.au/images/stories/Policy - Safety and Health/32 - High Potential Incident Alert - Water Trunk Line Strike.pdf](http://www.appea.com.au/images/stories/Policy_-_Safety_and_Health/32_-_High_Potential_Incident_Alert_-_Water_Trunk_Line_Strike.pdf)

During excavation of a new trench along an existing right off way **the bucket of an excavator struck and ruptured a buried 315mm water line resulting in a significant spill of produced water**. The water trunk line was immediately adjacent to a gas gathering system pipeline. 'As Built' **information was not available for the buried pipelines** but their approximate location was indicated on alignment drawings and the contractor being aware of the Brownfield nature of the site, had also sought to locate and mark these pipelines prior to excavation via the use of Pot Holing and or Metro Tech devices. The incident occurred when the excavator struck a roping bend in the buried pipeline that had not been properly located. The Company did not ensure the contractor had located all underground services prior to commencing the physical work program.

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The activity was covered by a Permit to Work but relevant controls were not checked prior to issue of the Permit.

52. September 2010 - Bogged Grader Pipeline Strike & Gas Release – Santos

<http://www.appea.com.au/images/stories/Policy - Safety and Health/36 - High Potential Incident Alert - Bogged Grader Pipeline Strike Gas Release.pdf>

A grader operator bogged over a live gas pipeline attempted to use the blade to recover the grader. **The blade struck and ruptured the HDPE line, releasing gas to atmosphere.**

53. March 2010 – APPEA Report: LNG Loss of Containment incident – Gas release – Woodside

<http://www.appea.com.au/images/stories/Policy - Safety and Health/41 - High Potential Incident Alert - LNG Loss of Containment Incident.pdf>

During an LNG carrier's routine cool-down operations, the shore terminal loading arm emergency release coupling (ERC) separated close to the vessel cargo manifold. The separation did not close the ERC dry break arrangement, resulting in LNG loss of containment. Cargo operations were immediately stopped with the activation of an emergency shutdown, ship and shore staff mustered, and area secured until gas free. **The release size was classified as Major using the RIDDOR system.** The officer of the watch on board the LNG carrier suffered LNG cold-burn injuries.

54. February 2010 – APPEA Report: Uncontrolled Gas Release – Arrow

<http://www.appea.com.au/images/stories/Safety/11 - High Potential Incident Alert - Uncontrolled Gas Release.pdf>

Incident summary - A 1/2" ball valve was attached to the pressure test points to enable diagnostics to be conducted. **The nipple on the ball valve failed resulting in the release of methane gas.** Personnel advised not to enter the plant in the event of a gas release, due to the potential for explosion.

55. September 21, 2009 - Broken leg from coal seam gas sampling incident involving high pressure

http://mines.industry.qld.gov.au/assets/petroleum-pdf/safety_alert043.pdf

56. August 29, 2009 - Crushing fatality – pipe racks load shift

http://mines.industry.qld.gov.au/assets/petroleum-pdf/safety_alert042.pdf

A 24-year-old man was struck and crushed by pipe racks which came off a truck that was being unloaded at a drill site. **The rig worker did not survive his injuries.**

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57. June 25, 2009 - Drill Rig Walkway - Toe amputated when securing walkway

http://mines.industry.qld.gov.au/assets/petroleum-pdf/safety_alert041.pdf

58. June 3, 2008 – Varanus Island explosion

<http://www.watoday.com.au/wa-news/apache-should-have-seen-it-coming-varanus-report-20120524-1z6zh.html>

On the afternoon of June 3 2008, a high pressure export sales gas pipeline, which had been "critically weakened by a region of external corrosion", ruptured and exploded on the Varanus Island beach, off the WA coast. Moments later a parallel high-pressure inflow gas pipeline, less than a foot away, also ruptured, with both pipelines spraying "intense fires towards the main gas processing plant on the island", according to the report. The investigators found Apache documentation that "should have alerted the company to serious risks" involving external corrosion around the shore crossing of the 12 inch pipe, where it ruptured, the report revealed.

(Not CSG but worth considering the implications)

59. Queensland Petroleum and Gas Industries, Summary of Serious Accident and High Potential Incident Reports, May 2006, Qld Dept. of Natural Resources, Mines & Water.

A meter station operator was ready to commence exporting gas into a pipeline when the pipeline operator had a view that the gas was still too wet and requested the meter station operator to vent gas from the line until it met with approval. The venting of gas commenced through a two-inch vent located approximately 30 metres from the pipeline infrastructure. The line being vented was at an operating pressure of 8000kPa. After venting commenced, **ignition of the vented gas occurred**. The local fire service was called and depressurisation of the pipeline commenced. When the pipeline pressure had fallen to 2000kPa, the vent valve was closed and the fire extinguished. The vent isolation valve was sprayed with water to preserve it, allowing it to be used to stop the venting gas. Damage was confined to a pressure gauge on the line and ignition was sufficiently distances from the pipeline to prevent damage. A project is to be established in an attempt to recreate the circumstances of this incident, which may have an impact on venting procedures throughout the industry.

(This incident may or may not be CSG related – cannot locate further information- but another salient reminder of the dangers of gas pipelines)

60. Jan 10, 2004 – Big Stink in gasland – Santos (Ethane – not CSG)**

<http://www.smh.com.au/articles/2004/01/09/1073437472720.html>

Minor volumes of methane from coal seams are being tapped around Camden, with plans to tap into the coal reserves of the Hunter Valley. A small gas field near Narrabri is also being developed. But NSW is yet to find an oil or gas field large enough to reduce its reliance on Moomba in South Australia, which is becoming increasingly unreliable with **three incidents over the past two years** - and declining reserves, to boot. **Exploration of the acreage off the NSW**

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coast begins in earnest this month, with seismic mapping of the most likely section - a huge underground structure called Biggus, which lies about 12 kilometres off Terrigal - to start on Monday week, and an exploration well to be drilled 2 kilometres into the earth's crust later this year. The structure is around 30km long and 7km wide, and large enough to hold 1 trillion cubic feet of gas, according to estimates of former holders of the acreage.

61. March 2003 – **Fatality** on CSG Drill Rig

http://mines.industry.qld.gov.au/assets/petroleum-pdf/safety_alert012.pdf

A drill rig operator suffered fatal injuries when he was crushed between a length of drill collar and an adjacent “mousehole” during stacking pipe on an unstable foundation. It appears that the ground gave way between the position where the pipe was being stacked and the hole excavated to locate the “mousehole”.

62. 21 September 2009 - A **crushing incident** involving drill collars and selection of lifting elevators

http://mines.industry.qld.gov.au/assets/petroleum-pdf/safety_alert044.pdf

63. September 6, 2002 – **Injury**

http://mines.industry.qld.gov.au/assets/petroleum-pdf/safety_alert010.pdf

A floorman was removing the covers from casing when two stands fell on him resulting in a **broken leg** and evacuation by the Royal Flying Doctor. Stoppers were not in place and the activity was being carried out in poor light conditions.

64. January 5, 1998 – Drill rig **Serious leg injury**

http://mines.industry.qld.gov.au/assets/petroleum-pdf/safety_alert002.pdf

Repairs to a rig at night involved electric welding and the rig was shut down while work was carried out. The electric welder cables were coiled on the deck and draped across an exposed drive shaft. When the clutch was engaged to test the repair, cables which were thought to have been removed were caught up in the drive shaft. The cables wrapped up the leg of an operator standing on the coil and dragged him into the shaft. The young operator suffered serious injuries to his leg.

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New Zealand

1. *September 20, 2012 – Fracking in Southland exposed – New Zealand*

<http://www.3news.co.nz/Fracking-in-Southland-exposed/tabid/423/articleID/259325/Default.aspx>

But over the 21 months it was active, **more than 11 million litres of waste water - including fracking chemicals and potentially carcinogenic coal residue - was dumped in the stream.** “The stream was looked at with regard to its ability to assimilate such waste water,” says Environment Southland consents manager John Engel. “The nature of it was such that it was relatively clean water but it did contain materials from the coal seam that were not normal for that stream.” The permit - granted by Environment Southland - to dump the waste was non-notified, meaning only the bare minimum of people knew.

2. *September 20, 2012 - Taranaki gas field contaminates soil – New Zealand*

<http://www.3news.co.nz/Taranaki-gas-field-contaminates-soil/tabid/1160/articleID/269871/Default.aspx>

Hundreds, **potentially thousands of cubic metres of soil have been contaminated** by toxic chemicals at a gas field in Taranaki. **Six well sites at the Kapuni gas field south of New Plymouth used unlined pits in the earth to store and burn off chemicals from operations, including hydraulic fracturing.** And the company was sometimes doing so without the required council consent. Kapuni is the oldest gas field in the country. For decades the normal practice was to use unlined pits to store and burn off chemicals and sludge from the wells. Six well sites are contaminated. Soil from one had to be transported recently to a waste treatment plant in Wellington to be stabilised

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Accidents and Safety – Critical Reports

<http://www.appea.com.au/oil-a-gas-in-australia/safety-and-health.html>

<http://mines.industry.qld.gov.au/safety-and-health/accident-incident-reports.htm> (NB: Gas industry incident reports appear to be unavailable)

Other Information

<http://www.jeremybuckingham.org/?p=967>

“The depth of the Wyoming gas wells blamed for the contamination is very similar to the depth that many Australian coal seam gas will operate, and much shallower than typical North American East Coast shale gas wells. This is a direct warning for the Australian situation.

“The NSW Government should make public a list of all coal seam gas wells in NSW that have been fracked and their location, and initiate an investigation to see if there has been any contamination of adjoining aquifers.”

“We heard evidence in the coal seam gas inquiry yesterday that **AGL had fracked 117 wells at its Camden Gas Project but also heard that no groundwater monitoring has been conducted by the company of surrounding ground water**,” he said.

https://www.youtube.com/watch?feature=player_embedded&v=NQ6_Uvs_vxE

This paper mentions some Australian CSG incidents (page 37 & 38):

“Drilling Down - Coal Seam Gas - A background paper”

Queensland: Jan - June 2011 (6 months) there were:

- 23 spills - Releases of CSG water during operations account for the largest incident type. These spills typically occurred during drilling activities or resulted from opened/faulty valves within pipework.
- 4 Discharge - These incidents involved the controlled or uncontrolled release of coal seam gas water or permeate to the environment.
- 3 discharges - Overflow (flooding) During the January 2011 floods, several CSG water storage dams breached the dam banks and discharged directly into the environment.
- 3 Exceedance release limits - Discharge limits are set on environmental authorities and these limits were exceeded on several occasions.
- 4 Other (vegetation clearing, BTEX etc.) - There was one incident relating to BTEX contamination and one incident of excessive vegetation clearing.

<http://www.cityofsydney.nsw.gov.au/environment/EnergyAndEmissions/documents/CoSCSMReportfinalv4pdf.pdf>

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<http://www.cityofsydney.nsw.gov.au/environment/EnergyAndEmissions/documents/CoSCSMReportfinalv4pdf.p>