



Questions and Answers on Pilliga Pond Incident

13 March 2014

On 18 February 2014 the NSW Environment Protection Authority (EPA) announced it had fined Santos for a pollution incident at a pond which is part of its Narrabri Gas Fields operations in the Pilliga. The EPA media release is here:

<http://www.epa.nsw.gov.au/epamedia/EPAMedia14021802.htm>

The EPA's report on the incident is available on request.

This brief Q&A document has been jointly produced by the Department of Premier and Cabinet, the Department of Trade and Investment, the EPA, the NSW Office of Water (NOW) and the Division of Resources & Energy (DRE). It is designed to help people understand what has happened and to address any queries they may have.

1. Who is responsible for the incident?

The pond is called the Bibblewindi Pond 3 and was installed by Eastern Star Gas (ESG) in 2007. It is part of the Bibblewindi Water Treatment Facility established by ESG to treat produced water from pilot wells it operated. Santos acquired ESG in 2011 so it has taken on responsibility for (and any liability for) its facilities there.

2. When was the government notified and what was done by government?

Santos notified the government in May 2012 that it suspected the pond may be leaking. Santos was instructed to undertake assessment to determine if the pond was leaking and to what extent.

Further studies and monitoring were undertaken by Santos between May 2012 and April 2013 in consultation with DRE. These studies revealed that the leak was small and hard to detect. Santos installed 8 additional groundwater monitoring bores during this period to confirm the results.

Details of Santos' surveys and monitoring that confirmed the existence of a leak, its extent and impact were provided to government in March 2013. The EPA immediately commenced a formal investigation.

3. What did the EPA investigation find?

The EPA investigation confirmed that the liner in Pond 3 was leaking. The liner had not performed adequately and water had leaked to a groundwater system at a depth of between 22m and 33m. The leak was not caused by any drilling or other resource extraction related activity.

The EPA investigation found elevated salt levels in the groundwater between depths of 20m and 33m and elevated concentrations of Aluminium, Arsenic, Barium, Boron, Lead, Nickel, Strontium and Uranium. These are all naturally occurring elements in the surrounding soil and groundwater. Importantly, testing did not detect Uranium in the pond's water. However, Uranium was detected in the natural soils on the site. This indicates that the naturally occurring Uranium in the soil is the source of the elevated concentrations of Uranium in the groundwater. It is suspected that the leaking water mobilised the elements and moved them into the groundwater.

4. How close is the pond to other water sources?

The NSW Office of Water confirmed the shallow groundwater site is more than 5 km away from the nearest drinking water bore. The nearest stock and domestic bore is 4km away and is extracting water at a depth of between 60 and 84 metres.

5. Is my stock or my crops in any danger?

No. There is no danger to stock or crops in the area.

The leak is small, localised and contained, and it is extremely unlikely that the impacted groundwater will migrate beyond the confines of the localised groundwater system within the immediate vicinity of the pond. Water within this groundwater system is barely moving. Therefore there is no risk to private bores.

6. What is an aquifer?

An aquifer is any geological structure or formation, or an artificial landfill that is permeated with water or is capable of being permeated with water. This includes water of non-drinking water quality and that may even be saline.

More generally, the term 'aquifer' is commonly understood to mean a groundwater system that is sufficiently permeable to allow water to move within it, and which can yield productive volumes of groundwater. Groundwater is all water that occurs beneath the ground surface in the saturated zone.

7. Is the aquifer affected by the leak connected to any other aquifers, especially those which supply water for irrigation, livestock or human consumption?

No. Equally, there is no evidence that this groundwater system is connected to other deeper aquifers (for instance the Pilliga Sandstone).

8. How did the EPA determine that there was little or no risk to environment and health?

The leak is small, localised and contained, and the groundwater is barely moving. It is more than 4km to the nearest private stock and domestic water source and more than 5km from the nearest drinking water source. Therefore there is no such risk as there are no exposure pathways.

9. What regulatory action was taken?

The EPA fined Santos \$1,500 for the incident. The fine imposed on Santos reflected the small environmental impact of the incident, the fact that the company self-reported the incident, cooperated in the investigation and is implementing measures to minimise the impact.

10. Could this happen again?

The NSW Government has significantly strengthened the regulatory controls that apply to CSG operations in NSW to prevent this kind of incident occurring again.

Companies are now required to be licensed by the EPA for environmental matters as well as the Office of Coal Seam Gas for engineering and operational matters. Companies must also now have in place an approved Produced Water Management Plan prepared in consultation with the EPA and NSW Office of Water.

The NSW Government has also banned the use of evaporation ponds.

11. What will happen now and will the site be rehabilitated?

Santos' Environment Protection Licence will include a number of requirements and comprehensive rehabilitation will be carried out. Pond 3 will be fully decommissioned once leaked water has been monitored and pumped back to the pond. The water from the pond will be transferred to a new, approved water treatment facility "Leewood" being constructed by Santos. The new facility has double lined membranes with leakage detection and collection systems. Monitoring and acting on the groundwater will continue until levels return to background/ambient levels.

It is estimated that Santos will spend more than \$10m to rehabilitate the Bibblewindi site.

12. What overall regulatory controls has the government put in place?

The NSW Government has the most comprehensive measures in the country for the regulation of coal seam gas.

Any petroleum exploration or assessment licence granted in NSW has conditions that require the development of a Groundwater Modelling and Monitoring Plan in consultation with the NSW Office of Water and a Produced Water Management Plan in consultation with the EPA and NSW Office of Water.

The government has made the EPA the lead environmental regulator of coal seam gas activities in NSW with responsibility for compliance and enforcement.

The government has also put in place a range of protections including an Aquifer Interference Policy and a Code of Practice for Well Integrity to protect groundwater, banned the use of BTEX chemicals, and banned the use of evaporation ponds.

The NSW Government has also put in place a Land and Water Commissioner to provide independent advice to the community.

13. Who do I contact if I have any queries or concerns?

Phone the EPA's Environment Line on: 131 555;
or email: info@environment.nsw.gov.au

or

Phone the Office of the NSW Land and Water Commissioner on:
(02) 6391 3429;
or email:
commissioner@landandwater.nsw.gov.au

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