

JUNE 2017

The following is a monthly update for the Narrabri Community Consultative Committee (CCC) regarding activities undertaken by the NSW Environment Protection Authority (EPA) relating to PEL 238, PAL 2 and PPL 3 (Narrabri Gas Project).

It includes activities relating to the regulation of Environment Protection Licence (EPL) 20350 and the EPA's functions conducted under the NSW Gas Plan.

Attachments to this month's update:

- Running Log – Old Investigations of PEL 238 Outcomes
- Inspections undertaken by EPA – June 2017
- EPA Site Inspection Map – June 2017
- Feature Article – The gas monitoring tools used by the NSW EPA

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EPA ACTION ITEMS SINCE LAST NCCC

Nil.

INVESTIGATIONS

Background

On 19 February 2013 the EPA became responsible for investigating environmental incidents that occur during coal seam gas activities under the provisions of the *Protection of the Environment Operations Act 1997* (POEO) and issuing Environment Protection Licences (EPL) for coal seam gas activities.

On 1 July 2015 the EPA commenced a new role as the lead regulator for compliance with, and enforcement of, conditions of approval for gas activities in NSW. This includes regulating consent conditions and activity approvals issued by other agencies (excluding work health and safety). In carrying out this role the EPA works with the relevant experts and NSW Government agencies.

Gas activities must comply with a broad range of regulatory controls, including Acts, regulations, codes of practice, titles, approvals and other controls.

The prioritisation of investigations is determined using a risk assessment for investigations that considers the level of environmental impact and the likelihood of environmental harm occurring.

Current Investigations

Bohena 13C and Bohena South 2C (PAL 2)

The EPA previously identified some minor issues at Bohena 13C and Bohena South 2C during inspections relating to submission of ESF2 rehabilitation completion documents.

The EPA has further investigated and re-inspected both sites with matters being finalised and no further action considered necessary.

Running Log – Old Investigations PEL 238 Outcomes

Incident	Outcome
<p>February 2017 <u>Groundwater pH levels at Dewhurst 14C (EPL 20350)</u> The EPA investigated data from groundwater monitoring bore, Dewhurst 14C, following an Environment Line call on 17 February 2017 that raised concern about data published on the Santos Water Portal, showing alkaline results (pH>9.5) for water samples collected from monitoring well Dewhurst 14C.</p>	<p>An EPA investigation showed the findings indicated the alkaline pH reported for Dewhurst 14C was the result of local geological and groundwater conditions, and that there was no evidence that the groundwater chemistry in Dewhurst 14C had been modified because of water pollution.</p> <p>The investigation has been finalised, with no issues identified.</p>
<p>February 2017 <u>Tintfield Flare Incident (PEL 238)</u> On 24 February 2017, the EPA were notified by Santos of an incident relating to unauthorised access to Wilga Park, resulting in damage to the Tintfield Flare.</p>	<p>Investigation confirmed that the gas pipe had not been ruptured and there was no environmental harm.</p> <p>The EPA has concluded its investigation.</p>
<p>December 2016 <u>Leewood Northern Sediment Dam</u> EPA Officers Investigated Leewood Northern Sediment Dam following an Environment Line call alleging an overflow incident from Leewood Ponds Water Treatment Facility.</p>	<p>Incident was investigated and samples taken, with lab results confirming no BTEX present and the materials classed as organic; dried sun bleached algae; and a naturally occurring protozoa. Investigation finalised, with no issues identified.</p>
<p>November 2016 <u>Bohena Creek</u> Report alleging that Bohena Creek was impacted by the Bibblewindi Water Treatment Plant and gas wells.</p>	<p>EPA officers visited the area of Bohena Creek that the reporter referenced. There was no evidence that environmental harm has occurred.</p>
<p>September 2016 <u>Leewood (PAL002)</u> Report alleging Leewood produced water dams were overflowing.</p>	<p>The EPA officers visited the site and all ponds were observed to be operating with adequate freeboard. There was no evidence of any overflow or spill from the ponds.</p>
<p>September 2016 <u>Bohena 2</u> Report alleging Santos were using produced water from Leewood for watering program at Bohena 2 salinity site.</p>	<p>Environment Line complaint alleging Santos were using produced water from Leewood for the watering program at Bohena 2 salinity site following a Namoi Waste truck seen leaving Leewood and heading to Bohena 2 salinity site. EPA Officers attended the site, investigated and took water samples. Lab results indicate that the source of water is not consistent with produced water.</p> <p>The EPA sent a response letter to complainant advising this.</p>

<p>April 2016 <u>Bohena Creek Road</u> Methanol Drum on road.</p>	<p>Santos staff located a 44 gallon drum labelled 'Methanol' dumped on Bohena Creek Road near the Leewood Water Treatment Facility. Police and HAZMAT attended and secured the item. The drum was not on the Santos site, nor related to its activities as per media Tweet by the EPA.</p>
<p>March 2016 <u>Leewood Pond</u> Alleged leaking.</p>	<p>EPA officer inspected storage ponds and met with Santos staff. No evidence that produced water was leaking. No further action was required.</p>
<p>March 2016 <u>Bohena Creek Road</u> Report that a vent had been left open, unattended and emitting methane gas.</p>	<p>Santos has approval to vent gas from high and low point vents along the water gathering lines for safety and operational purposes – this is performed manually by a field operator. Santos has amended the manual venting operating procedure. The procedure clearly notes that a high point vent is not operated without an operator present.</p>
<p>March 2016 <u>Santos Pilliga</u> Report received that there was a 'foamy residue' left along Beehive Road. The complainant returned to the site some days later with a Geiger counter and recorded a reading allegedly linked to the high and low point vents.</p>	<p>An EPA Officer spoke to the complainant who advised that the location they took the Geiger counter reading was a few kilometres away from the area of concern and there was no evidence to support the initial claim. No further action required.</p>
<p>March 2016 <u>Leewood Water Treatment Facility</u> Report alleging a truck was spraying produced water between the internal fence and the property boundary fence for dust mitigation.</p>	<p>An EPA Officer viewed available data confirming raw water from an on-site bore was used for dust suppression at the time of the allegation. The EPA supports dust suppression which is a requirement of the Santos EPL. No further action required as at 15 March 2016.</p>
<p>February 2016 <u>Santos Pilliga</u> Report of 35,000 litre spill at unmanned Santos facility.</p>	<p>Investigations proved minor water run off with no environmental or health risks. Media release: Water Run-off From Leewood Water Treatment Facility in Narrabri Cleaned Up</p>
<p>January 2016 <u>Leewood Water Treatment Facility</u> Alleged discharge of sediment laden water.</p>	<p>The rainwater discharge followed heavy rain. Santos undertook immediate works to prevent further discharge from the site installing coir mats and construction of bunding. The EPA inspected site and determined no environmental harm had occurred and that no regulatory action was required.</p>
<p>January 2016 <u>Santos Pilliga</u> Report a 'foamy caramel coloured' material on the roadside near operation site.</p>	<p>The EPA inspected the site and collected samples. Analysis determined it was a natural event, likely due to the decomposition of organic material. No further action was required.</p>
<p>September 2015 <u>Bohena Creek</u> Piezometer located in creek.</p>	<p>No regulatory action required.</p>
<p>January 2015 <u>Santos Dewhurst Southern</u> Water flow line.</p>	<p>No breach of EPL 20350 identified. Santos varied operational practices for high point vents following negotiations with the EPA. Media release: No environmental harm but improvements needed</p>

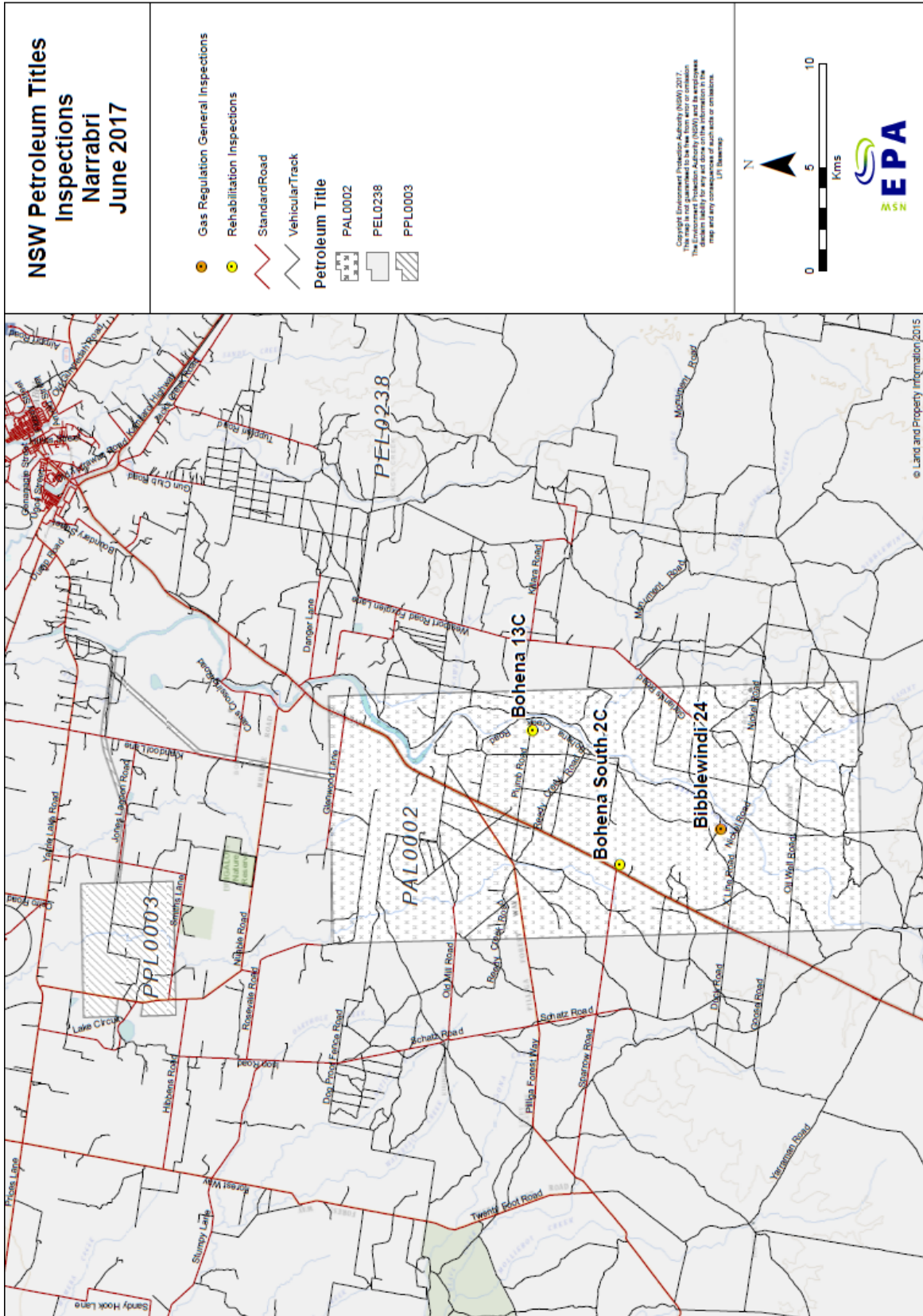
<p>February 2014 <u>Namoi Waste</u> Storage of Santos drilling mud onsite.</p>	<p>6 May 2014 The EPA issued Namoi Waste Corp with a Penalty Notice for breach of s145 of the POEO Act. Note - The Penalty Notice issued was not related to the original compliant regarding waste from coal seam gas, rather other waste material identified during the course of the investigation. Media release: EPA issues Naracor and Namoi Wastecorp with penalty notices for unlawful waste transport and storage</p>
<p>March 2013 <u>Bibblewindi Water Treatment Facility</u> Pond liner failure.</p>	<p>11 Feb 2014 The EPA issued a Penalty Notice for s120 Pollution of Waters. A Pollution Reduction Program (PRP) was added to EPL 20350 (Environment Protection Licence) requiring the development of a Remediation and Monitoring Plan and the implementation of this plan.</p>
<p>March 2013 <u>Tintfield Ponds</u> Detection of elevated levels salinity and metals.</p>	<p>Insufficient evidence to determine if the changes detected in groundwater were the result of leaks from the Tintfield ponds or were from natural factors. A PRP was added to EPL 20350. Media release: No environmental harm but improvements needed</p>

Inspections undertaken by the EPA – June 2017

Inspections					
Site ID	Date Inspected	Reasons	Action/Outcome	Site Status	Statutory Document
Bohena 13C	07/06/2017	Rehabilitation Inspection	Compliant – No further action	Rehabilitated	PAL 2
Bohena South 2C	07/06/2017	Rehabilitation Inspection	Compliant – No further action	Rehabilitated	PAL 2
Bibblewindi 24	07/06/2017	General Site Inspection	No issues identified	Active	PAL 2

SITE INSPECTION MAP

EPA site inspections undertaken at Narrabri during June 2017



The gas monitoring tools used by the NSW EPA

The EPA requires environment protection licence (EPL) holders for gas activities to carry out regular monitoring, so that fugitive emissions (leaks) are reduced through timely identification and repair. The licensees are also required to submit annual reports summarising their monitoring results.

The EPA verifies the monitoring results by reviewing the annual reports and conducting independent site inspections to test wells and other equipment as part of its general operational duties.

The EPA uses two types of gas detection monitoring units when conducting these inspections:

- the *Eagle 2* gas monitor, which detects a wide range of gases, including methane and Hydrogen Sulphide at various concentration levels and;
- the *Heath Detecto Pak-infrared (DP-IR)* detection monitor, which operates an infrared optical gas detection system to detect methane at lower concentrations.

The term 'parts per million' (ppm) describes small quantities, such as the fractions of gases in air. These measures can be used to compare the ratio of methane or other gases in the atmosphere.

Measurements are conducted by placing the tip of the probe from either instrument at the surface of components where leakage could occur. This is typically at the interface of components, such as at flanges, gaskets, valves and seals.

The Eagle 2 monitor

The Eagle 2 gas detector is versatile and detects specific gas such as methane, oxygen, hydrogen sulfide, carbon monoxide and carbon dioxide.

The Eagle 2 monitor is useful for measuring low concentrations of methane, and is accurate to ± 25 ppm.

How the Eagle 2 measures

The Eagle 2 uses a catalytic combustible sensor (LEL Sensor) to measure methane and other combustible hydrocarbons as either a percentage (%) or ppm. The detection principal is based on the catalytic oxidation of combustible gases – like the catalytic converter in your car, methane reacts with the catalyst in the sensor and 'burns off'.

The instrument detects the increased temperature and determines the amount of combustible gas present. Although calibrated against methane, this sensor can respond to other combustible gases such as hexane, propane, butane, acetone etc.

Eagle 2 calibration, care and servicing

The Eagle 2 monitors are calibrated every six months as per the manufacturers specifications. The monitors are calibrated by the authorized service provider, Control Equipment, which is a specialist in gas detection equipment.

The instruments are labelled with a calibration sticker each time they are recalibrated, ensuring that every time the instrument is used the operator knows it is within calibration.

The monitors have built in filters which are present in the probe to prevent unwanted material entering the instrument. These filters can be replaced as necessary.

More information about the Eagle 2 monitor can be found at <http://www.rkiinstruments.com/product/eagle-2/>



Picture: An EPA operations officer holding the Eagle 2 gas monitor

The DP-IR monitor

The DP-IR is a very sensitive gas detector that is used to detect methane in the environment. The detector can measure methane down to ppm with an accuracy of $\pm 10\%$.

How the DP-IR measures

The DP-IR uses an advanced optical method called infrared controlled interference polarization spectrometry to detect and measure the concentration of methane gas.

This instrument is highly selective to methane gas and is less susceptible to false alarms in the presence of other hydrocarbon gases.

It has an internal calibration cell that verifies instrument is giving accurate results. It also continuously monitors internal parameters to ensure they are within operational limits.

DP-IR calibration, care and servicing

The DP-IR monitor comes calibrated from the factory and does not require regular recalibration as it uses an Infrared optical detector and has an in-built calibration cell.

The instrument has a built in self-test which is performed before use and checks against the internal calibration cell.

More information about the DP-IR monitor can be found at <http://heathus.com/products/detecto-pak-infrared/>



Picture: The DP-IR gas monitor

Where can I find out more?

The May 2016 [Narrabri CCC Monthly Update](#) provided a comprehensive overview of gas detectors used by the EPA which can be downloaded from the EPA website.

The EPA has produced a range of gas industry related fact sheets including a [Methane Fact Sheet](#) which can be downloaded from the EPA website.

The CSIRO has information about [Methane and Environmental Impacts](#) which can be downloaded from the CSIRO website.

CONTACT US

Want to know more about what the EPA does? Want to understand a process used by the gas industry in a bit more detail? ...

...Tell us what you would like discussed in a Feature Article!

The feature article in this newsletter each month is an opportunity for the EPA to provide additional information and address any questions you have. Your feedback is key to ensuring we are providing the sort of information the community would like to see, and so, we would like to hear from you all.

Previous editions of this newsletter have included articles on 'who we are and what we do', groundwater quality monitoring, specific EPA projects and decommissioning and rehabilitation of gas well sites – these examples may give you an idea of a question you would like to ask.

Please send us any activities, processes, questions or information you would like to see in a feature article to gas.reg@epa.nsw.gov.au.

We look forward to hearing from you!

Every effort has been made to ensure that the information in this document is accurate at the time of publication. However, as appropriate, readers should obtain independent advice before making any decision based on this information.

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