

JUNE 2018

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 2018
- EPA Site Inspection Map – June 2018

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EPA ACTION ITEMS SINCE LAST NCCC

No new items.

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

The EPA is continuing the ongoing investigation on the matter related to approvals required by Santos for the irrigation activity at the Narrabri Gas Field. Santos have temporarily ceased irrigation at Leewood following discussions with the EPA, with no evidence of environmental harm identified.

Running Log – Old Investigations PEL 238 and PAL 2 Outcomes

Incident	Outcome
<p>February 2018 <u>Crop Health at the Leewood Facility</u> The EPA investigated the Leewood facility following a community complaint on 9 February 2018 that raised concern about the alleged poor condition of the Lucerne crop being irrigated at the Leewood facility.</p>	<p>EPA officers inspected the Leewood facility on 12 February 2018, and reported that the irrigated crop appeared to be healthy and relatively uniform across the irrigated area. The matter was finalised, as no environmental harm was identified from the inspection that warranted further investigation. The EPA advised the complainant of the outcome of the inspection.</p>
<p>December 2017 <u>Crop Health at the Leewood Facility</u> A community complaint was received on 27 November 2017 regarding alleged poor condition of the crop being irrigated at the Leewood facility and concerns about the high level of water in one of the Leewood Ponds. NSW EPA officers attended the Leewood facility on the 15 December 2017 to check the irrigated crop, and were satisfied that the growth of the irrigated crop appeared to be healthy and was relatively uniform across the irrigated area. An inspection was also undertaken at the Leewood Ponds on the same day, and EPA officers confirmed the produced water levels were within operating capacity. Water levels in the ponds can often fluctuate dependent on several factors including the weather, water treatment at the Reverse Osmosis Plant and the irrigation activities taking place at the time.</p>	<p>Following the inspections at the irrigated crop and produced water ponds, the EPA were satisfied that the crop was in good health and observed no environmental concerns during the inspection that would warrant further investigation. The EPA advised the complainant of the outcome of the inspection.</p>
<p>August 2017 <u>Crop Health at the Leewood Facility</u> The EPA is liaising with Crown Lands and Water on a matter raised with the EPA relating to approvals required by Santos for the irrigation activity at the Narrabri Gas Field. Multiple approvals and licences are currently in place for the irrigation activity including an Environment Protection Licence.</p>	<p>The results from the initial round of monitoring, as required by the Environment Protection Licence, has been submitted to the EPA. The EPA has reviewed the data and confirmed that the irrigation water meets the monitoring requirements of this Licence.</p>
<p>June 2017 <u>Bohena 13C and Bohena South 2C (PAL 2)</u> The EPA undertook a review of Bohena 13C and Bohena South 2C following the submission of ESF2 rehabilitation relinquishment documents from Santos. The EPA undertook unaccompanied inspections of the sites, and followed up on some matters with Santos regarding the rehabilitation status of the sites. A community call to the EPA Environment Line was also lodged with regards to Bohena 13C.</p>	<p>EPA officers re-inspected both sites. No environmental harm was identified from the inspections, with the matters finalised and no further action considered necessary. The EPA also sent a response letter to the complainant advising the outcome and finalisation of the matter at Bohena 13C.</p>

<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>Tintsville 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 Tintsville 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.</p> <p>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.</p> <p>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.</p> <p>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.</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.</p> <p>No further action required.</p>

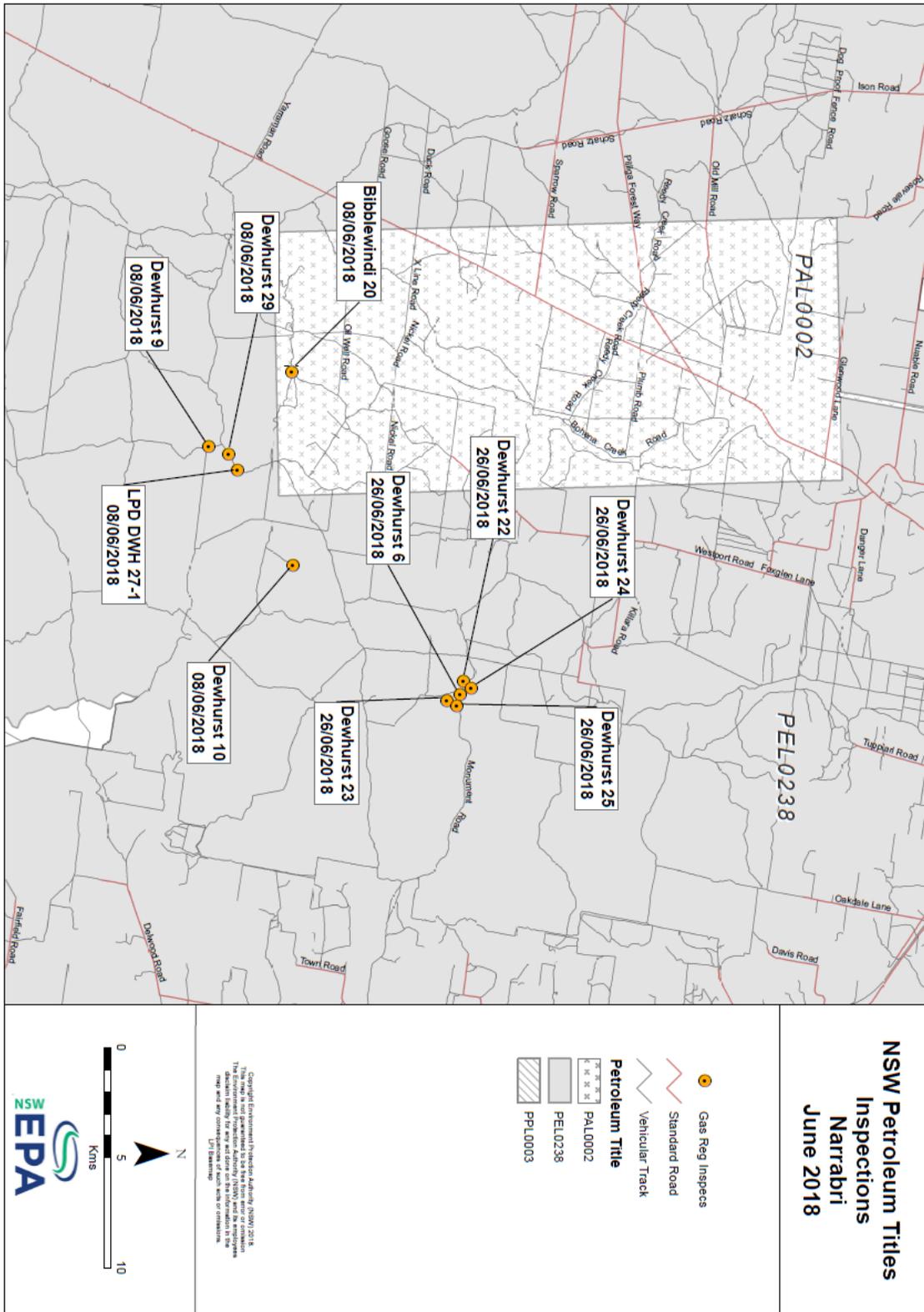
<p>The complainant returned to the site some days later with a Geiger counter and recorded a reading allegedly linked to the high and low point vents.</p>	
<p>March 2016 <u>Leewood Water Treatment Facility</u> Report alleging a truck was spraying produced water between the internal fence and the property 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 complaint 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>Biblewindi 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>Tintsville 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 Tintsville 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 2018

Site ID	Date Inspected	Reason	Action / Outcome	Status	Relevant statutory document
Dewhurst 9	8/06/2018	General Inspection	No issues identified	Shut in	PEL 238
Dewhurst 10	8/06/2018	General Inspection	No issues identified	Shut in	PEL 238
Dewhurst 29	8/06/2018	General Inspection	No issues identified	Active	PEL 238
Low Point Drain (LPD) Dewhurst 27-1	8/06/2018	General Inspection	No issues identified	Active	PEL 238
Bibblewindi 20	8/06/2018	General Inspection	No issues identified	Shut in	PAL 2
Dewhurst 6	26/06/2018	General Inspection	No issues identified	Shut in	PEL 238
Dewhurst 22	26/06/2018	General Inspection	No issues identified	Shut in	PEL 238
Dewhurst 23	26/06/2018	General Inspection	No issues identified	Shut in	PEL 238
Dewhurst 24	26/06/2018	General Inspection	No issues identified	Shut in	PEL 238
Dewhurst 25	26/06/2018	General Inspection	No issues identified	Shut in	PEL 238

SITE INSPECTION MAP

EPA site inspections undertaken at Narrabri - June 2018



FEATURE ARTICLE

Oil and gas industry acronyms and commonly used terms explained

This article aims to provide you with information that can help you understand some of the acronyms and terms commonly used in the oil and gas industry. This list is by no means exhaustive but could be handy as a reference guide when reading other information about the gas industry.

Some of these acronyms and terms may be familiar to you already however, if you have other people around you who are less familiar with this information, please share this feature article with them too.

Acronym	Definition
ABARE	Australian Bureau of Agricultural and Resource Economics
AMSL	Above Mean Sea Level
API	American Petroleum Institute (www.api.org). API is the world's foremost authority in oil and gas industry standards and practices.
APIA	Australian Pipeline Industry Association
APPEA	Australian Petroleum Production and Exploration Association
ASX	Australian Stock Exchange
CO ₂ -e	Carbon dioxide equivalent is a measure of greenhouse gases (e.g. carbon dioxide, methane, nitrous oxide) with the equivalent global warming potential as carbon dioxide when measured over a specific time
CSG	Coal Seam Gas. It is predominantly methane gas stored within coal deposits or seams
LNG	Liquefied Natural Gas is natural gas that has been liquefied by refrigeration to store or transport it. Generally, LNG comprises mainly methane
LPG	Liquefied Petroleum Gas is a mixture of light hydrocarbons derived from oil-bearing strata. LPG is gaseous at normal temperatures but in order to transport or store it, it is liquefied by refrigeration or pressure. Generally, LPG comprises mainly propane and butane

Definitions

adsorb

The adhesion of one substance onto the surface of another substance (example methane onto coal). Similar to absorb but only involving the surface, not the entire volume.

annulus

An annulus is the space between two concentric cylinders, for example, the two steel casings typically used in CSG well construction.

appraisal

The appraisal phase of petroleum operations follows successful exploratory drilling. During the appraisal phase, more seismic surveys may be recorded and more wells may be drilled to establish the lateral and vertical extent of the reservoir. The information acquired during this phase will help to determine the economic viability of the petroleum field.

appraisal well

A well or wells drilled to follow up a discovery and evaluate its commercial potential.

aquifer

A water-bearing stratigraphic layer. A geological structure or formation, or an artificial landfill, that is permeated with water or is capable of being permeated with water.

aquitard

A stratigraphic layer through which water cannot easily pass.

basement

Non-sedimentary rock (metamorphic or igneous rock) underlying a sedimentary basin. Generally considered non-productive, rarely drilled into, and considered the 'bottom' of the basin.

basin or sedimentary basin

A basin is a large area holding a thick accumulation of sedimentary rock.

casing

Heavy steel pipe used to seal off fluids from the hole or to keep the hole from caving in

condensate or natural-gas condensate or gas condensate

Mixture of hydrocarbons which are in a gaseous state under reservoir conditions and, when produced, become a liquid as the temperature and pressure is reduced. Typically associated with conventional oil and gas, generally low levels associated with CSG.

crude oil

A general term for unrefined liquid petroleum or hydrocarbons.

delineation well

A name of an appraisal well, usually one drilled specifically to determine the boundary of an exploration discovery.

development wells

Wells designed to produce hydrocarbons from a gas or oil field within a proven productive reservoir defined by exploration or appraisal drilling.

hydrocarbons

A general term for an organic compound that contains only the elements hydrogen and carbon, which may exist as a solid (waxes or paraffin), liquid (crude oil) or gas.

liquid hydrocarbons (liquids)

A sales product in liquid form; for example, condensate and LPG. Hydrocarbons in liquid stage at the surface condition.

oil

A mixture of liquid hydrocarbons of difference molecular weights.

oil field

An area which is underlain by one or more reservoirs containing oil.

petroleum liquids

Crude oil, condensate, or its derivative naphtha, and the liquefied petroleum gases propane and butane.

platform

Structure used in offshore drilling on which the drilling rig, crew quarters and other related items are located.

seismic survey

A survey used to gain an understanding of rock formations beneath the earth's surface by using sound waves. Onshore operations generally use specialised trucks called vibroseis.

vibroseis or seismic vibrator or vibrator truck

A truck-mounted or buggy-mounted device that is capable of injecting low-frequency vibrations into the earth.

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 EPA is happy to include a feature article in the monthly newsletters as it's a good opportunity to provide additional information and address any questions you have. Your feedback is key to ensuring we provide 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.

We work hard to find the most helpful way to communicate with stakeholders and we will continue to ask for your feedback regarding our communication methods, messages and styles. We want to know what works for you, so please have your say. Please send 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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