

Narrabri Gas Project CCC #4: Tabled questions

No.	Question	Proposed action
1	Given the very real threat of fire in the Pilliga State Forest, and the risk to people, property and health, would Santos please provide to the community via the CCC a copy of Santos' Fire Management Plan, and the assumptions that underpin such a plan.	STO Response
Response	<ul style="list-style-type: none"> • Santos liaises regularly with the NSW Rural Fire Service as the lead agency in relation to bush fires in NSW. • NSW Rural Fire Service staff are professionally trained to undertake associated risk assessments and make appropriate decisions in relation to bush fire management in the areas for which they are responsible. • The Forestry Corporation of NSW is responsible for fire preparedness and management on the estate for which they administer, including the Pilliga State Forest. • Forestry Corporation of NSW implements appropriate fire management procedures with all permit and licence holders operating within their estate including timber harvesting operators and mineral and petroleum companies operating in Forestry Corporation of NSW administered areas. • The NSW Rural Fire Service and Forestry Corporation of NSW has had input to the Santos Bushfire Management Plan for our operations in PEL 238. The document is operational in nature and contains confidential information in relation to Santos' staff out of hours contact arrangements. • Santos is a member of the Mining Industry Fire Safety Group and participates in all meetings of this group that are chaired by NSW Rural Fire Service. • An action from the meeting in April was for all participating companies to prepare a summary document (omitting staff contact details) of their Bushfire Management Plans for distribution throughout the NSW Rural Fire Service network. • Santos will prepare this document and provide it to the NSW Rural Fire Service and other interested parties prior to the end of June 2015. 	
2	a) Why is it, that we continue to see untreated produced water releases to the environment, particularly, considering the considerable scrutiny of this project by members of the public and EPA?	STO response
	<ul style="list-style-type: none"> • The EPA has concluded two investigations into Santos' operations and found there has not 	

Narrabri Gas Project CCC #4: Tabled questions

	<p>been any environmental harm.</p> <ul style="list-style-type: none"> The first matter relates to an investigation into our Tintfield ponds. Since the issue was reported to the EPA in 2013, the ponds have been emptied, upgraded and recent inspections found they are not leaking and the integrity of both ponds is good. The second investigation relates to the minor release of small amount of water from a high point vent on the Dewhurst Southern water flow line in January 2015. The EPA has thoroughly investigated both issues and concluded there was no environmental harm at either site. Santos notes the EPA's desire to discuss some possible changes to our field operations. We will engage with the EPA to ensure continued confidence in our processes. <p>Santos operates our field to the highest standards as we explore for and extract natural gas safely without harm to the environment.</p>	
	b) Given the relative infancy of this (pilot) program, can we expect a continuation and an escalation of these problems as the Narrabri project progresses to a much larger scale?	STO response
Response	<ul style="list-style-type: none"> The EPA has thoroughly investigated these matters and has found no problems. 	
	c) Is it reasonable to assume that, participating landholders with CSG wells and infrastructure on their property could expect 'dead zones' in proximity to, for example, high point vents (and low point vents)?	Refer to response for Question 2 b)
3	a) Does Santos, by its presence and activities acknowledge the impact on land values (sale prices) of farms in PEL238 – PAL2 and nearby properties? Farms in this area have become hard if not impossible to market.	STO response
Response	<ul style="list-style-type: none"> The NSW Valuer-General's Report released early in 2014 was non-conclusive or limited with regard to land values and the effect of CSG, given the infancy of the CSG industry in New South Wales. "It was found that there were only a limited number of property sale transactions available to investigate in NSW. The property sales that were available were analysed using conventional valuation techniques and no impact to land values was evident". Source http://www.valuergeneral.nsw.gov.au/about_us/announcements/?a=197003 (p4) Real estate valuations and diminution in value studies are meaningful only if based upon market data and in New South Wales there is inadequate data to support a decrease in land value where CSG activities are occurring 	

Narrabri Gas Project CCC #4: Tabled questions

	<ul style="list-style-type: none"> Land values are influenced by a number of factors, with the Queensland Valuer-General's report in 2015 noting that "the ongoing and combined effects of the continuing drought, global economic factors, changes in bank lending policies, and rising costs have made potential rural purchasers cautious". In Queensland where the gas industry is more developed, the Valuer-General has noted that "commercial and industrial markets continue to benefit from the gas industry. Sales in these sectors do not demonstrate any change in values." Source: https://www.dnrm.qld.gov.au/data/assets/pdf_file/0004/252463/2015-property-market-movement-report-hires.pdf (p7) The compensation that is paid to a landholder for access to the land to undertake CSG activities is generally agreed to be important to the financial viability of the landholder's business 	
	<p>b) When does Santos and State Government intend to consult with individual landholders who will be directly affected by CSG mining and infrastructure? People need to know what is happening in the area and how this will impose on their farms and forward planning.</p>	<p>Info publicly available https://narrabrigasproject.com.au/community/landholders/ and http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/community/land-access-agreement</p>
	<p>c) What help and support did Santos provide to the recent fire in the Pilliga Forest in early March 2015?</p>	<p>STO response</p>
Response	<ul style="list-style-type: none"> Three large capacity tanks that Santos donated to the Narrabri community in April 2013 helped the NSW Rural Fire Service in their response to a bushfire in the Pilliga State Forest in March 2015. The three 380,000 litre tanks are located at the Narrabri airport so that the planes doing water bombing could refill quickly. 	

Narrabri Gas Project CCC #4: Tabled questions

	<ul style="list-style-type: none"> The NSW Rural Fire Service used the water to assist with their fire-fighting response to a bushfire that burnt in the Dangar Road area in the western part of the Pilliga. Santos has also donated two other tanks that are installed at Pilliga and Gwabegar for additional fire-fighting water reserves. Santos also provide NSW Rural Fire Service with access to our licenced bores at operational sites to access fire-fighting water as required 	
4	Would you please bring to the attention of Santos that they have not answered my questions asked at the last CCC meeting. When is this likely to happen?	STO response
Response	Noted and a response is being prepared.	
5	a) Could Santos please detail what the 40 parameters are that are currently being tested for in the produced water from CSG drilling?	STO response
Response	Environment Protection Licence No. 20350 includes the requirement to monitor water quality at eight produced water storage ponds. The licence specifies 40 physical and chemical parameters that must be analysed, but does not include radioisotopes. Please refer to the following link for a listing of the parameters tested for under EPL 20350: http://www.santoswaterportal.com.au/water-resource-library/nsw-water-monitoring-data.aspx	
	b) Could Santos please give a current account of their appraisal of reverse osmosis in the treatment of produced water? Please detail what reverse osmosis will be capable of removing, the parameters and their concentrations. What happens to the bi-products after they are removed from the treated water?	A copy of the Leewood REF document is available on the Santos website at http://www.narrabrigasproject.com.au/ and the DTI (Division of Resources and Energy) website at http://digsopen.minerals.nsw.gov.au/
6	a) What are the facts on hydraulic fracturing in the Pilliga gas project, is it carried out on every well drilled?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs

Narrabri Gas Project CCC #4: Tabled questions

	b) I have been told that at some time in their life, wells will be fractured to extend their production?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	c) I have been told that only water, air and sand are used in hydraulic fracturing, is that so?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	d) In another communication, I was told that food grade emulsifiers were used as well, is this true and what are they?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	e) Are BTEX chemicals used at all in the Narrabri gas project?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	f) Are not the same chemicals used in drilling as in fracturing?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	g) I have heard from your supporters that the “Pilliga scrub is virtually unused land”, doesn’t this belief devalue the well-known flora and fauna and cultural heritage uses for the forest? As	STO response

Narrabri Gas Project CCC #4: Tabled questions

	your supporters value your opinions do not you have an obligation to educate them and the community in these areas as Santos seems to be given custodianship of the forest?	
Response	<ul style="list-style-type: none"> • The part of the Pilliga in which our Narrabri Gas Project is located, was set aside by the NSW Government for forestry and extractive industries following a thorough ecological assessment. • Our Project area is largely dry scrub land in the State Forest and is outside of the part of the Pilliga protected under the National Parks and Wildlife Act. • The Pilliga State Forest as with other State Forest areas is controlled by the Forestry Corporation of NSW. • Santos and the many other individuals and entities that undertake activities in State Forests are issued a permit to be able to undertake activities but are not custodians of the land. • All activities relating to Santos' exploration and appraisal program are authorised by the Office of Coal Seam Gas through either a Review of Environmental Factors (REF) or an Environmental Impact Statement (EIS). • Significant ecological and cultural heritage assessments are undertaken as part of the assessment and approval process associated with these activities. All documentation, including ecological and cultural heritage assessments associated with REFs and EIS' are available through the DTI (Division of Resources and Energy) website at http://digsopen.minerals.nsw.gov.au/ • Santos staff and contractors have a mandatory requirement prior to undertaking any field based activities in PEL 238 to undertake an Ecological Induction that is specific to ecological values (including flora and fauna) in the licence area. 	
	h) The forest is also a water catchment area for the Namoi River and a recharge area for the groundwater resources of the valley, are you educating your staff and contractors as to this significance of this area so they build respect and not just tick boxes for compliance processes?	STO Response
Response	<ul style="list-style-type: none"> • Santos staff and contractors are trained to ensure the protection of the environment is integral across all operational areas. 	
	i) The Yes2Gas facebook page has seen a lot of improvement in its administration lately, has	STO Response

Narrabri Gas Project CCC #4: Tabled questions

	Santos taken a more active part in administering this site themselves?	
Response	<ul style="list-style-type: none"> The Yes2Gas group are an independent group of local businesses and individuals that are supportive of the natural gas industry in NSW. Santos does not administer the Yes2Gas Facebook page. 	
	j) I have heard that all the royalties from the Narrabri/Pilliga gas project will stay in the Narrabri Shire, is this true? How much can Narrabri Shire expect to receive?	Refer to http://www.resourcesandenergy.nsw.gov.au/energy-supply-industry/legislation-and-policy/nsw-gas-plan
	k) How much money in donations did Santos give the Labor, Liberal and National party over the last 5 years? I am worried about a conflict of interest with the approval processes?	Refer to http://www.efa.nsw.gov.au/
7	a) Please ask the CCC if they can definitely say that they won't have to "frack" the Gunnedah Basin project?	
Response	<ul style="list-style-type: none"> Santos has no plans to use fracking as part of the Narrabri Gas Project. 	Refer to https://narrabrigasproject.com.au/ask-us/ and http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	b) Please ask if the people in the current advertisement campaign, e.g. Young Mr Gett are employed or getting payed to be a part of the ad?	STO Response
Response	<ul style="list-style-type: none"> All community participants and staff that agree to appear in Santos social media clips do so voluntarily and without payment. 	
	c) Please ask the CCC if Santos actions will have a direct effect on the depressuring of bores in	Groundwater Baseline Data

Narrabri Gas Project CCC #4: Tabled questions

	the Liverpool Plains?	link (gov) + STO Response
Response	No.	
	d) Please ask the CCC that the recent media reports are correct and that there is far less gas under the project area than recently thought?	Refer to the Santos Annual Report 2014 http://www.santos.com/Archive/NewsDetail.aspx?p=121&id=1493
	e) I would also like to ask how the CCC can be defined as effective community engagement? If you had not sent out an email, I would not know whom to direct my questions to.	CCC Secretariat to respond
	To ensure best practice community consultation in relation to exploration activities, the NSW Government released the Strategic Regional Land Use Policy Delivery – Guideline for Community Consultation Requirements for Exploration (March, 2012) (the Policy). This Policy encourages the use of community consultative committees (CCCs) to provide for ongoing and open discussion with the community. Community consultation involves proponents informing and being informed by the community. The purpose of the NGP CCC is to provide a forum for members to raise, discuss and analyse issues in relation to the Narrabri Gas Project. NGP CCC delegates are responsible for communicating with their respective member organisations; this includes relaying information discussed at each NGP CCC meeting and outlining the method of requesting information from the CCC. As such, each NGP CCC delegate plays an important role in the consultation process.	
8	a) I highlight an excerpt from a reply Santos gave about flaring, however the reply raises more questions as to the products of combustion from both burning the ‘produced gas’ at the flares located at Bibblewindi, and at the Dewhurst 28 and Wilga Park (Tintsville flare) sites and in the engines at the Wilga Park Power Station. “In terms of emissions, the two main by-products of natural gas combustion are carbon dioxide and water vapour, making it an extremely clean fuel when compared to coal and petroleum, which have higher carbon dioxide emissions, in addition to other by-products. The burning of gas produces virtually no ash or particulate matter.”.	STO response

Narrabri Gas Project CCC #4: Tabled questions

	In your answer, you say “In addition to other by-products”.	
	Can you name these additional gaseous by-products of combustion, their percentage of the by-products of Combustion and the effect upon the environment (vegetable and animal) and Human Health that these by-products might have either singularly or when combined with other by-products such as water?	
Response	<ul style="list-style-type: none"> That is in reference to the burning of coal, and those other by-products generally include sulphur dioxide, sulphur trioxide, oxides of nitrogen and particulates as examples. 	
	b) Hydrogen sulphide or ‘rotten egg gas’ has been smelt emitting from a number of Pilot sites in the Pilliga Forest. Can you inform me of the percentage of the Hydrogen Sulphide in both the produced water and the produced gas which is/was flared at Bibblewindi, Dewhurst 28 and at the Wilga Park (Tintfield Flare) and is also being burnt in the Engines at the Wilga Park Power Station?	STO response
Response	<ul style="list-style-type: none"> The coal seam gas from our wells has not been found to contain detectable concentrations of hydrogen sulphide, nor has the produced water. The NSW EPA has undertaken gas detection monitoring and they have found no detectable levels of Hydrogen Sulphide in the Santos operational area. 	
	c) Does Santos have any ‘gas scrubbers’ to remove the Hydrogen Sulphide gas on any of the gas lines leading to the flares at all locations or to the Engines at the Wilga Park Power Station, also does Santos have any ‘gas scrubbers’ to remove the Hydrogen Sulphide from the produced water that flows eventually back to the Dams at Leewood located at the Wilga Park site?	STO Response
Response	<ul style="list-style-type: none"> Gas scrubbers are not required. See response to 8b). 	
	d) What measures has Santos in place to warn the public to the presence of this gas? And more importantly, what measures has Santos put in place to protect their workforce from the dangers of this gas?	See response to 8b).
	e) What precautions is Santos taking to protect the metallic pieces within the produced water transmission system of their operation?	STO Response
Response	<ul style="list-style-type: none"> Previously addressed as part of Santos Narrabri Shire Community Committee and available on Santos website at http://www.santos.com/library/SantosCCC_Narrabri_14May2013_minutes_and_appendic 	

Narrabri Gas Project CCC #4: Tabled questions

	es.pdf.pdf	
	f) Can Santos inform me as to whether the Biocide that they are currently using is effective in controlling the down-well bacteria, and if not what is Santos' plan with regard to the problem?	STO Response
Response	<ul style="list-style-type: none"> Information on the use and effectiveness of biocides was provided to the Santos Narrabri Shire Community Committee in May 2013. A copy of the meeting minutes and attachments (including the Material Safety Data Sheet and attachments is available from http://www.santos.com/library/SantosCCC_Narrabri_14May2013_minutes_and_appendices.pdf.pdf 	
9	a) EPA has pointed out that Santos is not following best practice for measuring and recording fugitive emissions. If this is true then why not?	STO response
Response	<ul style="list-style-type: none"> This is not true. Similar questions were previously answered in a tabled response to a list of questions from People for the Plains at the February 2015 Narrabri Gas Project CCC meeting – refer question 10 and question 14 https://narrabrigasproject.com.au/uploads/2015/03/Meeting-3_-February-2015_PFTP_Questions-Tabled_Response.pdf 	
	b) What are the computer-type boxes hooked up to the wells out in the scrub?	STO Response
Response	<ul style="list-style-type: none"> In addition to regular scheduled maintenance operator inspections, Santos wells are remotely monitored and the computer-type boxes house the Remote Telemetry Units (RTUs). 	
10	a) What is the difference between an evaporation pond and a holding pond, when an uncovered holding pond will also evaporate?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	b) What will prevent a pond from overflowing with a heavy rain event contaminating the	Refer to

Narrabri Gas Project CCC #4: Tabled questions

	surrounding area?	http://www.santos.com/library/NSW_CSG_REF_Leewood_Full.pdf
	c) What would prevent a plastic-lined pond leaking?	Refer to http://www.santos.com/library/NSW_CSG_REF_Leewood_Full.pdf
	d) How will you prevent wildlife and brumbies drinking the produced water? Is it fenced, how high is it?	Refer to http://www.santos.com/library/NSW_CSG_REF_Leewood_Full.pdf
	e) How will a fence prevent birds and very thirsty animals getting over it?	Refer to http://www.santos.com/library/NSW_CSG_REF_Leewood_Full.pdf
11	What provision has been made for the removal of infrastructure at the cessation of CSG mining activities in the respective area?	Refer to NSW legislation for <i>Petroleum (Onshore) Act 1991</i> and http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
12	a) What are Santos doing to warn the public at large that in this 'Public State Forest' there is the presence of dangerous Hydrogen Sulphide gas?	STO Response
Response	<ul style="list-style-type: none"> • See response to 8b). The insinuation that H2S is present at dangerous levels in the forest 	

Narrabri Gas Project CCC #4: Tabled questions

	from Santos activities is deliberately misleading.	
	b) I am aware of the state of Hydrogen Sulphide. How far does this gas travel heavily, close to the ground before it can dissipate? How far does this gas travel on the wind? How far are these organic volatile compounds travelling? Has there been a study on how far these compounds can travel, the acid rain and health implications experienced in towns surrounding the gas fields, 10km, 20km, 50km, 100km, 500km?	STO response
Response	<ul style="list-style-type: none"> See responses above. The rate of travel is largely contingent on the atmospheric conditions at the time. 	
13	a) I understand the use of evaporation ponds for the treatment of produced CSG water was banned in Queensland and NSW. Are they still banned? Why were they banned?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	b) I assume something other than water evaporated from these ponds. If so, what was it that evaporated? Was it harmful to people's health or the environment?	Refer to http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs
	c) Santos have storage ponds in the Pilliga that contain their produced CSG water. Is evaporation occurring from these ponds? If so, why are they allowed to let the water evaporate if the use of evaporation ponds is still banned?	STO Response
Response	<ul style="list-style-type: none"> This question was previously answered in a tabled response to a list of questions from People for the Plains at the February 2015 Narrabri Gas Project CCC meeting – refer question 8 https://narrabrigasproject.com.au/uploads/2015/03/Meeting-3_-February-2015_PFTP_Questions-Tabled_Response.pdf 	
14	a) How often do they test water bores in and around the CSG sites, who tests them and what	Refer to

Narrabri Gas Project CCC #4: Tabled questions

	do they test them for? Is the information automatically made available to the public and independent scientific bodies for external monitoring?	http://www.santoswaterportal.com.au/ and http://www.water.nsw.gov.au/water-management/groundwater/water-and-coal-seam-gas
	b) What do they have planned as an ongoing maintenance/monitoring program for abandoned wells at the end of their lives – 10, 50 to 100 years into the future?	Government response
	<ul style="list-style-type: none"> • Derelict Mines Program is undertaking a multi-staged project to assess and prioritise derelict petroleum boreholes. • The objective of the project is to develop a systematic and defensible method for evaluating and ranking derelict petroleum wells, and establishing a prioritised list for remediation works. 	Please see Stage1_Report_V2_Final_200215.pdf. NOTE: This document was emailed to NGP CCC members 02/06/2015.
	c) Can they assure me 100% that there will be no contamination of usable aquifers in the next 1-1000 years?	http://www.water.nsw.gov.au/water-management/groundwater/water-and-coal-seam-gas and http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/the-facts/faqs and

Narrabri Gas Project CCC #4: Tabled questions

		http://www.chiefscientist.nsw.gov.au/coal-seam-gas-review
	d) Where will the waste/produced water go?	A copy of the Leewood REF document is available on the Santos website at http://www.narrabrigasproject.com.au/ and the DTI (Division of Resources and Energy) website at http://digsopen.minerals.nsw.gov.au/
	e) What ongoing monitoring of air pollution, native flora and fauna and soil sampling near drill sites will be happening? Who will be undertaking this, and what costs will ongoing monitoring incur? Who covers the costs and will the outcomes be made publicly available?	Refer to https://narrabrigasproject.com.au/ask-us/
	f) Do they have a route for the proposed pipeline as yet?	STO response
Response	<ul style="list-style-type: none"> • Santos is still studying evacuation routes to take gas from the Narrabri Gas project south to connect into the Moomba to Sydney pipeline market. • When we have selected a route we will communicate further. • We are also engaged in discussions with various gas pipeline companies as to what serves they may be able to offer in order to take the NGP production at the field and provide it into the NSW market. • It should be noted that there are many thousands of kilometres of natural gas pipelines that flow through Australia, including up and down many residential streets in NSW. There is an existing natural gas pipeline traversing the Liverpool Plains. • The pipeline from the NGP will be no different regardless of the final route selected; landholders will be able to conduct their normal business across the top of the buried pipeline as they do elsewhere in Australia. 	
	g) If Siding Spring Observatory is affected detrimentally, if native flora and fauna is affected detrimentally or if water, air and soil are contaminated, will they be prepared to cease	Government to respond

Narrabri Gas Project CCC #4: Tabled questions

	operations indefinitely and cover the costs of rehabilitation, ongoing monitoring and loss of income to staff, neighbours and community and are they contractually obligated to do so?	
	<ul style="list-style-type: none"> • Please refer to: <ul style="list-style-type: none"> ○ http://www.epa.nsw.gov.au/licensing/csgchanges.htm ○ http://www.epa.nsw.gov.au/licensing/licencePOEO.htm ○ http://www.epa.nsw.gov.au/licensing/dutytonotify.htm • 	
	h) Given the instability of the gas market, with the lower costs of oil and movement towards renewable energy... If the company is declared bankrupt and ceases operations who will have to cover the costs of rehabilitation, ongoing maintenance and monitoring and loss of employment?	Refer to NSW legislation for <i>Petroleum (Onshore) Act 1991</i>
	i) What is the percentage of Australian ownership of Santos including shareholders?	Refer to http://www.santos.com/sha-re-price-performance/company-reporting/annual-reports.aspx
15	a) Why are there no minutes taken at the CCC meetings? I have been involved in a lot of community groups and minute taking is just proper procedure.	Government response
	The Chair of the NGP CCC made the decision to produce a Communique following each committee meeting.	
	b) Can we have a community gallery, like at council meetings? For what is there to hide? I believe our community is respectful and would not disrupt these meetings.	Government response
	It is at the discretion of The Chair of the NGP CCC as to whether a community gallery is allowed. It was decided not to allow a community gallery.	
	c) Why are flares not turned off during total fire bans? I know you liaise with the rural fire brigade but bush fires are very unpredictable?	STO response
Response	<ul style="list-style-type: none"> • Santos has approvals to operate flares at appraisal wells within PEL 238 if required during periods of high temperature. These flares are designed to operate in all weather conditions with suitable sterile and heat radiation zones put in place to ensure the flares do not start a fire in the surrounding vegetation. 	

Narrabri Gas Project CCC #4: Tabled questions

	d) Are the emissions from the flares measured, especially particulate matter? This is of great concern to me as I am concerned about people living near by, a lot of them are my friends. If so, who sees this data?	STO Response
Response	<ul style="list-style-type: none"> This question was previously answered in a tabled response to a list of questions from People for the Plains at the February 2015 Narrabri Gas Project CCC meeting – refer question 14 https://narrabrigasproject.com.au/uploads/2015/03/Meeting-3_-February-2015_PFTP_Questions-Tabled_Response.pdf 	
	e) Is the water testing that Santos undertakes done by an independent laboratory? Who do the tests get reported to?	<p>Refer to http://www.santoswaterportal.com.au/</p> <p>and http://www.water.nsw.gov.au/water-management/groundwater/water-and-coal-seam-gas</p>
	f) Is there regular reporting to the EPA or only if there is an accident?	Government response
	Please refer to http://www.epa.nsw.gov.au/prpoeoapp/ViewPOEOLicence.aspx?DOCID=33816&SYSUID=1&LICID=20350 .	
	g) Has Santos ever reported an incident to the EPA themselves without a member of the community whistle blowing the incident first?	STO response
Response	<ul style="list-style-type: none"> Yes. Refer to Santos and EPA website and media statements. 	
	h) Has there been any lay off of staff, casual or permanent, since September 2014? If so, how many are local Narrabri residents?	
Response	<ul style="list-style-type: none"> David Knox, CEO of Santos has made numerous public statements in relation to the reduction in the Santos workforce nationally as a result of the decrease in global oil prices and the consequent impact on Santos’s operations. This information is available through a simple internet search of national newspapers. 	

Narrabri Gas Project CCC #4: Tabled questions

	i) Is the water used for dust suppression treated through the reverse osmosis plant?	A copy of the Leewood REF document is available on the Santos website at http://www.narrabrigasproject.com.au/ and the DTI (Division of Resources and Energy) website at http://digsopen.minerals.nsw.gov.au/
	j) Who guarantees the integrity of the plastic liners of the Leewood ponds?	STO Response
Response	<ul style="list-style-type: none"> Environment Protection Licence No. 20350 refers. A question was previously answered in a tabled response to a list of questions from People for the Plains at the February 2015 Narrabri Gas Project CCC meeting – refer question 1 https://narrabrigasproject.com.au/uploads/2015/03/Meeting-3_-February-2015_PFTP_Questions-Tabled_Response.pdf 	
	k) Is the water quality of Bohemia Creek monitored? I know it is dry now but we all know it will rain one day. This creek drains the whole Pilliga and is very close to areas that have affected by spills.	STO Response
Response	<ul style="list-style-type: none"> The EPA has undertaken monitoring activities at Bohena Creek and no environmental harm was found to have occurred. Subsurface water within Bohena Creek has previously been monitored as part of baseline catchment water quality surveys. 	
	l) It seems to me that the contaminated spill areas are not regenerating very successfully? And in some areas it appears to be spreading out and affecting more vegetation. Are these areas in constant review?	STO response
Response	<ul style="list-style-type: none"> Santos is continuing to monitor these sites, which are showing improvements in soil quality. This will be an ongoing process until the sites are fully rehabilitated. 	
16	a) What is the ultimate plan for the disposal of salt contained in the produced water?	STO Response

Narrabri Gas Project CCC #4: Tabled questions

Response	<ul style="list-style-type: none"> • Santos is currently working with industry experts to develop salt handling solutions which will be put in place when the project moves into the development phase. • Until these plans are finalised, the concentrated brine that we produce will be stored in our state of the art ponds at our Leewood facility. • Santos will strictly adhere to all regulatory guidelines set out by the NSW office of Coal Seam Gas and the EPA – as we do in all of our operations – when we are dealing with salts as a by-product. 	
	b) What is the plan for the disposal of the produced water?	A copy of the Leewood REF document is available on the Santos website at http://www.narrabrigasproject.com.au/ and the DTI (Division of Resources and Energy) website at http://digsopen.minerals.nsw.gov.au/
	c) Are fugitive emissions measured at the moment? How are these to measured and controlled in the future? E.g. from water flow lines at the point of separation of water from gas at the well head, at highpoint vents and at the point of release of water at the reverse osmosis plant and at all points along gas flow lines?	A similar question was previously answered in a tabled response to a list of questions from People for the Plains at the February 2015 Narrabri Gas Project CCC meeting – refer question 10 and question 14 https://narrabrigasproject.com.au/uploads/2015/03/Meeting-3-February-2015-PFTP-Questions-Tabled-Response.pdf
	d) What is the anticipated loss of methane to the atmosphere at all of these points, from the well to the end user, as a percentage of gas produced? What percentage of gas is anticipated	STO response

Narrabri Gas Project CCC #4: Tabled questions

	to be lost at the point of use?	
Response	<ul style="list-style-type: none"> Less than 0.1%. A recent CSIRO study examined 43 gas wells and concluded the emissions from a well would be equal to the total production of methane from 4 cows in a year. http://www.environment.gov.au/system/files/resources/57e4a9fd-56ea-428b-b995-f27c25822643/files/csg-fugitive-emissions-2014.pdf A similar question was previously answered in a tabled response to a list of questions from People for the Plains at the February 2015 Narrabri Gas Project CCC meeting – refer question 10 and question 14 https://narrabrigasproject.com.au/uploads/2015/03/Meeting-3_-February-2015_PFTP_Questions-Tabled_Response.pdf 	
	e) Please stipulate in the operation phase of the NGP, how many positions will be based in Narrabri and how many personnel will be required for each of these positions?	Please refer to http://www.santos.com/our-activities/eastern-australia/new-south-wales/narrabri-gas-project.aspx
	f) How many of these personnel are expected to be FIFO, relocated from elsewhere and sourced locally?	Please refer to http://www.santos.com/our-activities/eastern-australia/new-south-wales/narrabri-gas-project.aspx
	g) Assuming that the required experience will mean that none of these people will come from the dole queue, what will be the net gain in employment of locals?	STO Response
Response	<ul style="list-style-type: none"> The Narrabri Gas Project will create up to 1200 jobs during construction and 200 ongoing jobs and deliver significant opportunities and benefits to the local Narrabri area and across north west NSW. 	
	h) Please provide an estimate of the amount of revenue that will be taken out of Narrabri Shire each year by the remote workforce, compared to the amount which will remain in the	STO Response

Narrabri Gas Project CCC #4: Tabled questions

	Shire?	
Response	<ul style="list-style-type: none"> Santos does not dictate to local staff and contractors where the money paid to them in salaries and wages is spent. 	
17	a) Why is it in numerous areas located in PEL238, including areas around gas vents, storage tanks and gas wells, that the strong (and I mean <u>strong</u> – not just detected) smell of Hydrogen Sulphide can be found and smelt, in such concentrations that it burns the eyes and throat, causing pain and discomfort to people well away behind fences and on roadways?	STO Response
Response	<ul style="list-style-type: none"> See response to 8b). To date, hundreds of visitors have toured the gas fields at various times and no one has reported to experience those conditions described in the question. However, if in an event that H2S may be observed, it will be at minute concentrations and will not pose any risk to human health. 	
	b) Why do you not publically disclose this instead of the claim it's just methane and carbon dioxide in news articles and website?	STO Response
Response	<ul style="list-style-type: none"> Reporting is very comprehensive and we disclose data in accordance with our obligations. 	
	c) If this makes such a small proportion of the gas mix, then how much volume (in kgs) of the other gases are being emitted at the same time?	STO Response
	<ul style="list-style-type: none"> Gas composition and quantities can vary significantly between wells. Information in relation to gas composition in NSW is publicly available as a Background Paper to the NSW Chief Scientist and Engineer's September 2014 report - <i>Final Report of the Independent Review of Coal Seam Gas Activities in NSW</i>. <p>Refer in particular to Section 2.1.3, 2.1.4 and 3.3 of Stalker, L.H., 2013. <i>Methane origins and behaviour</i>, EP – 1310665. Report to the Office of the NSW Chief Scientist and Engineer - http://www.chiefscientist.nsw.gov.au/_data/assets/pdf_file/0006/38337/NSW-Chief-S-and-E-Methane-Origins-28_11_13_LS-v2.pdf</p>	
	d) Are you renewing all the other PEL's for exploration? This includes PEL6, 427, 428, 434, 450, 462, 433, 12, 1, 454 and 456. How long do they last? Are there any you won't be renewing?	STO response
Response	<ul style="list-style-type: none"> At this time all NSW Petroleum Exploration Licences (PELs) Operated by Santos are either renewed or intended to be renewed for exploration via the appropriate application for the 	

Narrabri Gas Project CCC #4: Tabled questions

	<p>periods allowed under the Petroleum (Onshore) Act, being a maximum of six years per renewal period.</p> <ul style="list-style-type: none"> • Santos holds no interest in PEL 454 that is referred to in the question. • The Division of Resources and Energy publishes a map entitled Petroleum Titles in New South Wales that is available from their website at http://www.resourcesandenergy.nsw.gov.au/landholders-and-community/coal-seam-gas/facts-maps-links/petroleum-titles-in-new-south-wales 	
	<p>e) How many workers have lost their jobs or contracts for Santos since 1st September 2014? Including contractors, FIFO, staff etc. How many were directly from Narrabri (according to residential address or licences)?</p>	<p>Refer to response to Question 15(h)</p>
18	<p>a) What is present status of the MOU between the NSW State Gov't and Santos given that the deadlines are well past? i.e. will both parties seek to fulfil the commitments given in the MOU and does it have standing beyond the NSW State election?</p>	<p>Please refer to http://www.santos.com/our-activities/eastern-australia/new-south-wales/narrabri-gas-project.aspx</p>
	<p>b) In reference to page 20 of the Preliminary Environmental Assessment for the Narrabri Gas Project, point number 4, under the title 3.2 Need and Benefits, the "Santos committing to contribute to the Regional Community Benefit Fund, the equivalent of 5% of the royalty payment made to the NSW Government. It is estimated that the fund could reach \$160 million over the next two decades."</p> <p>Please confirm the actual level of contribution by Santos (excluding subsidies matched by the government).</p> <p>Please confirm that this fund excludes the compensation payments made to landholders who agree to a well on their land.</p> <p>Please confirm that the royalty payments are based on the market price for gas, therefore, that the Regional Community Benefit Fund contributions will be tied to the market price for</p>	<p>STO response</p>

Narrabri Gas Project CCC #4: Tabled questions

	gas.	
Response	<ul style="list-style-type: none"> The Narrabri Gas Project is currently expected to generate around \$1.6 billion in royalties for the NSW Government. Santos will contribute the equivalent of five per cent of the State royalty payment into a Regional Community Benefit Fund. If matched by the State Government through the Gas Community Benefits Fund, on current estimates, the fund could equal \$160 million. The NSW Government announced the establishment of a Gas Community Benefits Fund as a key action in its NSW Gas Plan. The Fund will be supported by industry and the Government to ensure that communities in which the gas industry operates benefit from gas activities through the funding of local projects in those communities. In announcing the Fund, the NSW Government outlined that gas explorers and producers will be able to elect to contribute to the Fund and that the Government will reduce \$1 from a company's gas royalty liability for every \$2 paid into the Fund, capped at 10 percent of the royalty take for each gas project in each production year. The initiatives above exclude the compensation made to landholders. In addition, landholders involved in the longer term production phase will share in a Landholders Incentive Fund. The Fund will be equivalent to 5% of Santos' statutory annual royalty payment. Landholders will receive a share of the Fund proportionate to the amount of their land being utilised by Santos. 	
	c) Does Santos still stand by and use the work done by the Allen Consulting Group, The Economic Impacts of Development of Coal Seam Gas Operations in Northwest NSW, December, 2011? Where on page 18 it states "of the 200 additional (ongoing) jobs that expect many will be filled by the existing industry skills base in the Hunter and Central Macquarie regions, resulting in an actual gain within the North Central Plains region of a total of 16 jobs".	STO response
Response	<ul style="list-style-type: none"> The Narrabri Gas Project will create up to 1200 jobs during construction and 200 ongoing jobs and deliver significant opportunities and benefits to the local Narrabri area and across north west NSW. 	
19	How many Santos employees and/or contractors have been made redundant, lost their jobs, or not had their contracts renewed since 1 September 2014? Of these, how many were residents of Narrabri Shire according to the Australian Electoral Commission?	Refer to response to Question 15(h)
20	What is the proposed pipeline route from the Narrabri Gas Project? Stakeholders cannot make	STO response

Narrabri Gas Project CCC #4: Tabled questions

	<p>succession plans or long term investments without this information. ESG made their route public, ARTC have made the inland rail route public. Santos cannot claim to be consulting with the community or stakeholders if this information is not available. Hold their feet to the fire on this one!</p>	
Response	<ul style="list-style-type: none"> • Santos is still studying evacuation routes to take gas from the Narrabri Gas project south to connect into the Moomba to Sydney pipeline market. When we have selected a route we will communicate further. • We are also engaged in discussions with various gas pipeline companies as to what serves they may be able to offer in order to take the NGP production at the field and provide it into the NSW market. • It should be noted that there are many thousands of kilometres of natural gas pipelines that flow through Australia, including up and down many residential streets in NSW. There is an existing natural gas pipeline traversing the Liverpool Plains. • The pipeline from the NGP will be no different regardless of the final route selected; landholders will be able to conduct their normal business across the top of the buried pipeline as they do elsewhere in Australia. • As part of the State assessment process under the Environmental Planning and Assessment Act (EP&A Act), an Environmental Impact Statement (EIS) will be required • The EIS is a comprehensive document that identifies potential impacts of the project during construction and operation and the mitigations to minimise the potential impacts. Studies include air quality and noise monitoring, transport, flora and fauna, cultural heritage, surface and ground water management, methods of construction, land management and rehabilitation. • Public consultation with community members and key stakeholders is undertaken prior to an application being considered. 	
21	<p>a) When do they intend to have the EIS completed and how long will we have to comment, given that it will be an extremely bulky document (like their presentations) and we don't have corporate support to analyse it in a short timeframe. It was promised last July.</p>	<p>Please refer to http://www.santos.com/our-activities/eastern-australia/new-south-wales/narrabri-gas-project.aspx</p>

Narrabri Gas Project CCC #4: Tabled questions

	<p>b) Could I have a copy of their detailed rehabilitation plans and review of the success/failure of their actions?</p>	<p>The rehabilitation of well sites in PEL 238 has been discussed at three previous Santos Narrabri Community Committee meetings, with Mr Pickard in attendance at all of these meetings (refer to minutes at the links below).</p> <p>11 June 2014 Minutes: http://www.santos.com/library/20140611_CCC%20June%202014%20meeting%20minutes_Final-and-appendices.pdf Presentation: http://www.santos.com/library/SantosCCC_narrabri_14_Nov12_minutes.pdf</p> <p>12 February 2013 Minutes: http://www.santos.com/library/SantosCCC_Narrabri_12Feb_presentation.pdf Presentation: http://www.santos.com/library/SantosCCC_Narrabri_12Feb_presentation.pdf</p>
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Narrabri Gas Project CCC #4: Tabled questions

		<p>14 November 2012 Minutes: http://www.santos.com/library/SantosCCC_narrabri_14_Nov12_minutes.pdf Presentation: http://www.santos.com/library/SantosCCC_Narrabri_minutes_14Nov2012.pdf</p> <p>Minutes of all previous Santos Narrabri Community Committee meetings are available on the Santos website at http://www.santos.com/our-activities/eastern-australia/new-south-wales/community/community-consultative-committee.aspx</p>
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