

Dewhurst Gas Exploration Pilot Expansion

Application Number: SSD13_6038

Sir/Madam

I thank you for the opportunity to place a submission regarding this expansion. Whilst I am not opposed to the concept of using CSG, I find it very difficult to approve of the Industry when I read in their EIS many glaring errors and simple ones at that, the type that makes you wonder if the Industry were allowed to "self-regulate" could they do so and do it honestly? In my opinion under their current management, they could not.

Simple errors like as found on page 157 in section 15.0 Traffic and transport, 15.1.1 Road network: the EIS states that Westport and Killara Roads are unsealed Forestry roads; nothing can be further from the truth. These two roads are unsealed Narrabri Shire Council roads whose road numbers are SR60 and SR65 respectively.

Their estimate of traffic along the above Council roads falls well short of what is expected, for a start and by Santos' own admission, if Santos uses the 'Ensign 967 Drill rig', currently located on the Dewhurst 21 to 25 Pilot Production, to do the drilling on the Dewhurst 13-18H site which is located on private land which Santos is going to access via Narrabri Shire Councils Westport and Killara Roads, this rig takes 45 semi-trailers to move it. Do not forget that the trucks have to return to collect another load and thus 45 truck movements becomes 90. The last time this rig was moved it was from the Dewhurst 8A site located on the same property as Dewhurst 13 to 18H, they travelled along two separate routes, one was along Killara, Westport and Monument Roads the other was along Killara Road, Rockdale Road (Narrabri Shire Road 62) and then via forest roads to Monument and thus to Dewhurst 22 site. I live on Rockdale road and for 4 ½ days we had a constant stream of semis moving parts of the rig and support material from one location to the other. Then there is the daily movement of semis removing and returning with the Drill fluid, the constant stream of smaller support and repair vehicles. The amount of vehicular movements during the Dewhurst 13-18H phase has been grossly understated and as there are very obvious errors in Road ownership it places the credibility of this EIS in doubt.

That then brings me to the point of Consultation with the Neighbouring Landowners (page 73 of the EIS). You will recall Mr Knox responding to a question on Q & A about consulting with Mr Pickard and his answer was no, well on the point Santos has told the truth. I am the immediate neighbour to the South of the Dewhurst 13-18H Expansion and Santos has never initiated contact with me over any work that has, is or will be carried out on Dewhurst 13-18H, I have always spoken to them and in General terms not specifics. I am a member of the Santos Narrabri CCC and if Santos calls that consulting with the neighbouring land owners then they are greatly mistaken. As an example of the lack of consultation or even abiding by their own written word, as mentioned above, the Drill Rig was moved from one location to another past my property and I received no 14 day notice, no follow-up phone call and the move was not mentioned in the November Narrabri Santos CCC meeting, so what is the Department of Planning going to do to ensure Santos complies with what they have stated in this EIS? A complaint was submitted to Santos on 19th November 2013 and to date no reply only an acknowledgement at the November Santos CCC that a "formal complaint had been

received". I have been informed by the Director of Engineering at Narrabri Council that Santos wrote to them over the matter and that the Council will be writing to me. Why the Council and not Santos?

In the EIS in section 5.3, Santos has a chart that shows a wide range of Consultation tools, well I can assure you that Santos has never approached me of their own accord, I have always initiated contact with Santos to have a one-to-one meeting at my property and the last time Santos was at my place at my request (according to my Diary) was February 20th 2013, hardly what you would call current Activity Consultation. Further in section 5.3.7 on page 67 of the EIS Santos claims to have had "ten meetings with the Landowner of Dewhurst 13-18H since December 2011 with regular telephone contact during this period". I suppose Santos does not want to reveal the nature of those phone calls, but suffice to say, the owner of Dewhurst 13-18H did inform me in July 2013 that he was not happy with the way the activity on his land was being carried out. Santos took out a lease on the property in December 2012 and requested that the owner vacate the leased property and this included the removal of all his worldly possessions, then in November of 2013 Santos further asked the owner to remove more property that was left behind in a scrap metal dump. I find Santos' behaviour to be a little strange if not bizarre as the area concerned was not going to be used for any exploration activity during the term of the lease and posed no obvious Work Cover problems.

As a further example of the cavalier attitude of Santos to me as an adjacent neighbour is regarding a noise complaint that I made on 12th November 2013. This complaint centred around having my sleep disturbed at 0340 hours on 12th November 2013 and was reported to Santos. Two things became evident as a result of this complaint; one, there is no easily identifiable reporting line for incidents, and two, Santos has a very flippant attitude to the concerns of others, to the point of almost complete denial that anything happened. The old, "It was not me Sir" excuse.

Noise, at times from the operation next door and from certain heavy trucks using the Council Roads has been a problem and was reported way back in 2009 to the then operator, Eastern Star Gas, and was treated very flippantly during a private hearing for the NSW Government No.5 Inquiry held in Narrabri in 2011. I can assure you this is a genuine complaint and the problem is causing serious distress to me and my wife.

Before I go further I would like to point out the certain roads belonging to the Crown which had Enclosure Permits over them and had locked gates or fallen trees placed over them to prevent access for use by the General Public. Not only does this contravene the Crown Lands Act but also the Roads Act. These roads had been closed since 2009 and despite repeated attempts and discussions with the Permit Holders, Eastern Star Gas and Santos, they remained closed to the public until a sit-in was carried out on November 7th 2013, after which Santos unlocked the gates and cleared the tree obstruction at the other end on Saturday 9th November.

This road is essential to be open at all times as it is the only road North from the area, and links up with other roads to the East out of the area; in case of emergency this road needs to be accessible by the public should the Council roads to the West be cut.

This road should have also formed part of Santos' Emergency Escape Plan for the Drill Workers and Santos Personnel in the event of emergency, but somehow all that got lost in the need to keep the public from gaining access to an essential and potential lifesaving escape route.

There is also the matter of closing large areas of the Pilliga State Forest to all but Santos personnel and their contractors. This is not illegal as the Forestry Act was altered in July 2013 to enable this to occur, however, it does pose the same problem as that of locking the gates on the enclosed land to the North. The roads to the

South are again an escape route in case of emergency and do allow linking up with further roads leading to the East and West.

I have spoken to Local Santos people about this matter again to no avail and now have written to the Forest NSW Local Manager and am awaiting a reply.

All the above matters need to be fully and permanently addressed before any approval for this Pilot Expansion is given.

I will now go through the EIS and mention some points of interest.

On page 4 of the EIS I find it interesting that Santos is going to take and analyse surface water monthly when water flows. What water? What areas are the surface waters in? If it is only the Namoi River water that is tested, WHY? This river is nowhere near the Dewhurst Exploration Pilot Expansion (DGEPE), surface waters taken from around the DEPP would be what is needed and there are Forest Dams and Springs in the area, which are identified by the EIS, there is also Bohena Creek and its tributaries that have permanent pools of water in them and then there is the creek itself. While being ephemeral in nature there is always water flowing. Surely these are the perfect places to be sampling and analysing the waters for changes due to the CSG Activities, they are in the middle of the operation.

I notice that the groundwater monitoring, when eventually Santos gets this very poor attempt at water quality monitoring up and running, is going to be of even a lesser standard and quality than the surface water monitoring, there is no detail on frequency and the extent of Water Analysing is not shown above what can be considered "very basic".

In the EIS, in section 9.1.4 *Water Quality: "the overall (average) values of pH ranging from 6.81 to 11.2, and the Total Dissolved Solids in the same sampling being between approximately 300 and 6000 milligrams per litre (ppm)."*

All I can say is that they must have picked some very bad spots to analysis as when **Santos took my ground water sample on 22nd March 2012 the pH was 6.02 and the TDS was 114 ppm. Santos has never returned to do a follow-up on the sampling of my bores so how can a true-over-time baseline groundwater quality be established?** And what credence can be put on the figures given, they are not from the area of operation which really makes them unable to be classed as a true baseline picture of groundwater quality as applies to this DGEPE.

With regard to the above, I have carried out 5 very extensive Water and Bacterial Analysis on 3 bores on my property since May 2012 as well as analysis on near-by properties and in an area 30 km away, so you could say I have the true and actual baseline figures for the area around Dewhurst 13-18H as well as the Dewhurst 21-25 Pilot.

My water study has thrown up a surprising result and that is the discovery of Stygofauna in the Aquifers that supply my bores and all those tested, something Santos has denied finding in their studies. I will give Santos this they are very good at using material gathered by others that was presented to the various Government Inquiries as well as to the EPBC and the NSW Chief Scientist, for it helped them establish that there were more Groundwater Dependent Ecosystems that are contained in this EIS (16 plus over the PEL according to Mr G Toogood of Santos) with one of the GWDEs coming directly from the July 2012 Report on the Findings of the Stygofauna.

I would also like to say that we have asked Santos to allow us to take water samples from the Dewhurst 13-18H site to place into our Water Study and they have refused, siting a number of grounds.

That then comes to the Hydrology and Geology of the area, something that is not well known in the area of the DGEPE. Even Santos now admits that this area has had little to no studies done on it and that the information they and others have has been obtained from the scant seismic Surveys, the Drillers logs from the office of water, the Drillers logs of the previous Companies who carried out exploration in the area and from any wells that Santos has put down in the area since taking over from Eastern Star Gas in December 2011. With some of this information still sealed by confidentiality and locked away in NSW Government vaults it is difficult to understand how Santos can paint a picture of the Aquifer systems as being all porous Pilliga Sandstone. My water study and the finding of Stygofauna disprove this, as anyone who understands the physiology of the animals will attest to.

Santos needs to establish the exact range of the Stygofauna and constantly monitor them as they will indicate very early in the piece any changes to water quality (see Stygofauna Study as presented to NSW Chief Scientist).

To Santos's credit, they have moved away from the wholesale use of potassium chloride as the primary drilling fluid chemical and into the use of the lesser environmentally damaging potassium sulphate. However Santos still reserves the right to use potassium chloride should the need arise. This then poses the question that Santos raised in the Amended Development Application DA768/2013 which was passed by Narrabri Council in October 2013, being that by using the potassium chloride in with the potassium sulphate based drilling fluid, thus making the resultant fluid untreatable at the Narrabri Fluid Treatment Plant and renders the product a waste that must be disposed of at an approved site.

There is also what could be considered a conflicting view as to which DA 769/2013 was approved in October 2013. Was it the original application or the amended application? The amended was to recycle the fluid only and under the Clause that was used there could be no adding of outside material to the drill fluid, yet the statement in this EIS indicates differently. *See page 52 section 4.3.7.5 Drilling fluid management: "Once drilling of the wells is completed, Santos is proposing to transport and **treat** drilling fluid at the FTF" and on the next line "Drilling fluids will be **mixed** at the FTF and then transported to site. This will reduce wastes associated with mixing chemicals on site (such as chemical containers)".*

So what provisions have been made to ensure that this waste does not enter the environment at another location totally remote from the area of the DGEPE?

Then there is the confusing table 4-9 on page 52; in most cases there is twice as much drilling fluid going off site as is coming to the site except for Dewhurst 30 and 31, where there is less going out than coming in.

So what is happening here? Where is the extra water coming from and at what stage of the drilling process is it entering the well?

Even though this matter is not covered by this EIS the question still remains unanswered as to what Santos intends to do with the salts and brine as well as any "treated water" from these pilot wells?

I look at 9.1.2 ground water on page 106 and then I compare what is being said here about the Irrigators on the Namoi River and I look at the CH2MHILL report in Appendix 3 Groundwater Impact Technical Report especially at section 4.3.1 and note that the *"The Upper and Lower Alluvium are not considered to overlie the Dewhurst 13-18H and Dewhurst 26-31 Pilots"*.

So what is Santos trying to say? Is it a justification of the water extraction or is the reference to some possible groundwater level fluctuations if these occur in the future around the well site?

9.3 Potential Impacts: This certainly throws up some questions as to the integrity of the existing well on Dewhurst 13-18H and to the possible contamination of the Aquifers from artificial connections between aquifers and the bypassing of the aquitards, fluid exchange during the drilling phase and the ground water (meaning the water from the Coal seams and that deeper Basin water that may have a higher saline or mineral value than that normally found in the upper aquifers) being discharged onto the surface. Just because they are constructed to the NSW Coal Seam Gas Code of Practice Well Integrity does not make them “fail-safe”.

Everything is based on modelling, and modelling is only as good as the computer program, the person who is entering in the information, the person who did the field research, the person who checked his field research, the person who backed all this research up with the “book” information and the overseer of the whole modelling run. Get one slightly wrong and the result is nowhere near the mark. Just so many variables to go wrong, is it really worth the risk?

We already know that not all aquifers in the area covered by this DGEPE are porous rock; there is the unconsolidated type (Phaeilo Channels) also.

On page 116 figure 10-1 Regional drainage plan; there seem to be some first order streams missing, especially from the Dewhurst 13-18H area. These are found in the CH2MHILL Attachment but not in the Santos EIS Main Document. Could this, I wonder, be because of the mention on page 118 that *“All watercourses of Dewhurst 26-31 and Dewhurst 13-18H appear to be ‘losing’ streams (where water is lost to the underlying groundwater), and therefore not groundwater influenced”*?

This then is an admission these streams are connected to the Aquifers below and hence are a direct connection to the Great Artesian Basin. So any discharge of contaminates or produced water is able to find its way into the Aquifers of the GAB no matter if the contaminates are spilt on the ground and run off into the streams or soak into the soil and are carried to the streams via a perched Aquifer water flow. Is the risk of a polluting event really as minimal as Santos states? Or has one or more already occurred from December 2009 through to the current day?

Santos has no historical data that proves otherwise and the NSW Government Departments have photographs and reports that show that a contaminating event has occurred on at least one occasion and was still occurring during heavy rainfall events up until end of 2012, when the last unbunded pond and dam was decommissioned and filled in, now it is the soaked in contaminates that are still moving through the soil to the streams every time it rains enough for the perched aquifers to flow.

Flaring of the Gas in the Pilliga East State Forest is at times an accident waiting to happen especially on hot windy days when there is a chance that an air borne piece of flammable material could be blown into the flame. Please note that the flame is outside and external of any “flame cone” hence is described as an “open Flame” and should be regulated by the same set of Laws as other open or naked flames, but for some reason it is exempt.

This is something that should be looked at because of the high fire risk that is the Pilliga State Forest.

My final point regards the air quality. At the November 2013 Narrabri Santos CCC, there was a presentation on the Air Quality Monitoring and where the readings had been taken to date. Unfortunately whilst they took readings near and around the existing Flare Stacks, none were in operation at the time so there are no readings at this time for the amounts of CH₄ or CO₂ available, and even if there were the data has to go to America to be interpreted and a report written which will not occur until mid-2014.

