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Supplementary Submission to Submission 177

Coal Seam Gas Inquiry

9<sup>th</sup> November 2011

Sir,

This Supplementary Submission is based on events that have occurred since September 2011.

I have always said that *"I am not opposed to mining if the miners follow and adhere to three principles, these being, Respect for the rights of those around them, Respect for the all aspects of the Environment, Respect for the Laws of the Commonwealth, State and Local Governments"*. Follow all these and you can mine to your heart's content.

However, Eastern Star Gas and Santos (to a lesser degree at least up until now in PEL 238) have not and are not following these principles, which I might add they themselves quote, but in their own words.

Dealing with Santos first, I have a copy of their Share Holder information from December 2009, it lists the gas wells which Santos has an interest. However, in the original document (attached), a number of the Dewhurst wells were given the incorrect locations of The Surat Basin, while the majority were given The Gunnedah Basin (both of which in my mind are incorrect as the wells are located on the Southern Recharge of the Great Artesian Basin; it is the Coal Seams that are located in the Gunnedah Basin). I rang Santos and informed them of this problem, but at first I got the run around, eventually I was able to talk to the staff at the operations centre in Brisbane and was told to put my concerns in writing to them, which I did. However, a reply came back saying that Eastern Star Gas had supplied the information and that as Santos was only a minor partner they could not change the given information. To cut a long story short, eventually, after toing and froing via fax, which included a schoolboy lesson on Geology in one of my fax's, Santos eventually changed the location from Surat to Gunnedah Basin.

The point of the above is to illustrate that this player in PEL 238 has misled the Australian people in regard to very basic and easily verifiable information.

I hold grave fears that the Namoi Water Study, currently under way, is not going to be able to deliver a true picture regarding the Namoi Catchment, especially the effects that Gas Extraction will have on the area of the PEL 238. This is because there is so much data that has been submitted by Eastern Star Gas (ESG) that has been found to be misleading to say the least. For instance, presented information regarding *location of rainfall stations on Figure 3.5 (attached,)* and you will note that 3 are located on a point where the Newell Highway crosses Bohena Creek to the south of Narrabri, yet in ESGs REF of 2006 titled Water Treatment and Disposal Project ( see att.1 submission 177) on page 35 under the heading 4.3.1 Rainfall and Evapotranspiration it states **"As there are no rainfall and/or evaporation stations within the Bohena Creek Catchment, long term rainfall evaporation data**

for the project area was obtained from the Queensland Department of Natural resources and Mines Data Drill (Database) for the period 1900 to 2006". So how can it now be said that there are monitoring stations at the point indicated for 11-50 years as indicated in figure 3.9 also attached.

Then there is the matter of Eastern Star Gas stating that it has carried out 97 to 122 Alluvial bore chemical analysis (see page 90 of the water study attached), and then look at Figure 5.8 (also attached), which clearly shows the Namoi Alluvium. ESG has certainly not drilled that amount of wells in that area, as ESG's area of current operation containing the bulk of its wells is to the south of the indicated alluvium.

What stands out in the table 7.16 is that ESG has made claims concerning the Chemical quality of water, these claims are vigorously disputed, for if ESG had sampled the bores in the area of operation they would have found that in most cases in the areas of Dewhurst 8, Dewhurst 11c, and the Bibblewindi Nine Spot (where ESG has at least 1 domestic bore at this location) that the chemical levels in the Domestic Aquifers are nowhere near their provided figures, then they would not make such high Chemical content claims (see analysis on page 3 of submission 177 to this inquiry).

Then there is the very obvious misleading report on page 62 of the Water Study: "Only 3 vertical wells fraced by ESG." The ASX, in 2006, reported that there are 10 at Bibblewindi alone (1 to 9 and the pressure well 10), and I know of 3 others at Bohena (Bohena 3, 7, 9).

Then there is the table 7.11 on page 80 of the study (attached), where it lists the summary of parameters of each geological unit; notice that the Napperby and Deriah Formations are classed as Minor Aquifers, and for years ESG has been telling us that they are Aquitards that form a barrier to the passage of water to and from the Great Artesian Basin to the coal seams below (see attachment 3 of submission 177). So which statement is correct? The one in the Water Study or the one ESG keeps pushing, you cannot have both. The aquitard ability of these formations is further reinforced by the tables, supplied by various Coal and CSG miners, which follow in the study section.

To illustrate the point of how ineffective the Namoi Water Study (attached) is going to be in the area of ESG's operation, I asked nine (9) questions of the SAG and MOC. These questions were all easily answerable with most of the answers already in the public domain, where to find the answers was provided to the person and group submitting the questions to the SAG and MOC from CAG (Community Advisory Group). I understand that the Water Study Mining side refused to answer the questions sighting Commercial in Confidence and saying that the questions were too specific. So much for an open, honest and truthful study (an attached a copy the questions submitted to the end of this document).

I will leave the Namoi Water Study at this point, but I believe that I have provided enough information to at least cast serious doubts over the validity and correctness of the information ESG has supplied to the study, and how all the supplied information **cannot** be used to give a true and accurate conclusion of the Study, at least in the area of ESG operation in PEL 238.

The attachments relating to the water study can be found in the study as indicated by the cover page attached below. The attachments will be with the document proper by Wednesday the 16<sup>th</sup> November 2011, time is a little short and my email is not big enough to handle the amount.

Yours faithfully,  
Mr Anthony J Pickard

Questions for the SAG to ask and to obtain answers

October 2011

1. i. How much Production Water is being produced per day at:
  - a) at full production of the current wells, and
  - b) at the current time with reduced production?ii. How are these production numbers included in the Namoi water study (NWS)?
  
2. i. Where was the data for the Rainfall and Evapotranspiration for the Bohena Creek Catchment obtained?
  - ii. Over what length of time was this data collected?
  - iii. Has this data been included in the study and where is it referenced?  
(See page 35 of 4.3.1 of x.)
  
3. Rainfall run-off modelling for Bohena Creek (Developed by Eastern Star Gas):
  - i. Over what length of time was the data actually collected?
  - ii. Was this actual data recollected and updated, then a new model run?
  - iii. How current was the model used to present information to the Namoi Water Study?
  - iv. Where is this model represented in the NWS and is it referenced?  
(See pages 36 to 38 of 4.3.3 of x.)
  
4. From all the publically available data and that given to both the EPBC and the NSW DoP for the proposed 550 well sets:
  - i. What is the expected and predicted outcome for the ephemeral creek known as Bohena Creek in both the summer and winter months?
  - ii. How and when has this data been presented to the Namoi Water Study?  
(See pages 36 to 45 of x.)
  
5. i. What was the flow rate of the water in the sand of Bohena Creek prior to the commencement of discharge in 2010 with the older RO plant?
  - ii. What is the current data with the new RO plant, and also in the Aquifers of the area of proposed operation?
  - iii. How is this modelled in the CSG section of the NWS model?  
(See page 36 to 45 of x.)

6. The locations of the various rainfall and flow monitoring stations as indicated in and around the Bohena Creek area, in particular those near and south of the Newell Highway, where are they and are they an official recording site?  
(See the various provided locations in figures 3.5 to 3.18 [3.5 best shows the locations in question. 3 close spaced dots located 0.8 millimeters from Narrabri where Bohena Creek is crossed by the Newell Highway] of the Namoi Water Study a, d compare with data in REF, as above)
  
7.
  - i. Have water pressure monitoring bores ever been used in the Southern Recharge area of the Great Artesian Basin to check and monitor the water pressures in the targeted coal seams?
  - ii. If so, how many are there, what are their locations, and for what period of time have they been used?
  - iii. Are there pressure monitoring bores located in the shallow Aquifer systems of the coal seam gas operation in the Pilliga region?
  - iv. If so where are they and how many are there?
  - v. How has this monitoring data been included in the NWS?  
(See attached page Y)
  
8. With regards to the Namoi River, what is the expected effect that the increased treated water volume flow (from the 550 well sets as provided in the EPBC Referral 2011/5914 discharged into Bohena Creek) is upon:
  - i. River water flow?
  - ii. River water quality?
  - iii. Marine life and river side vegetation?
  - iv. GAB Aquifer recharge and chemical values of the water in those aquifers?
  - v. How does the NWS model allow for this?
  
9.
  - i. How long will it take before the increased flow of Bohena Creek reaches the Namoi River?
  - ii. How long after the discharge that is causing the flow will the river and Creek return to normal flow and to the pre-existing water values (chemical)?  
(For part answer see page 46, 5.2.7 of x.)

Notes

X is called "The Bohena Coal Seam Gas Project, review of Environmental Factors, Water Treatment and Disposal Project" written in December 2006 and is the only publically available document of its type on this subject for the PEL 238.

References:

- X. <http://www.dpi.nsw.gov.au/minerals/environment/nod/exploration-2006/20061201-PEL238.pdf>
- Y. <http://www.asx.com.au/asxpdf/20070430/pdf/3126cc7tpqmpsj.pdf>

Santos - Investor Centre - Current Well Information

Coxon Creek 7 60%	CSG Appraisal	ATP 336P Surat Basin	26° 21'30.4"S 149° 6'12.6"E	GL 361.4m	364.5m	EWG 102	19/01/09	25/01/2009 410m C&S CSG
Coxon Creek 8 60%	CSG Appraisal	ATP 336P Surat Basin	26° 21'36.3"S 149° 5'11.7"E	GL 387.7m	390.8m	EWG 102	27/02/09	04/03/2009 445m C&S CSG
Coxon Creek 9 60%	CSG Appraisal	ATP 336P Surat Basin	26° 21'52"S 149° 6'9.9"E	GL 360.3m	363.4m	EWG 102	25/01/09	29/01/2009 440m C&S CSG
Currawong 1 100%	CSG Core Hole	ATP803P Surat Basin	25° 49'38.6"S 149° 44'.4"E	GL 269.1m	269.1m	MDC 107	11/03/09	20/03/2009 411.6m P&A Core hole
Daralingie 27 66.6%	Gas Development	PPL10 Cooper Basin	28° 22'47.9"S 139° 57'34.5"E	GL 120'	139'	Ensign 32	18/10/09	29/10/2009 7526' C&S gas well
Dawson Bend 3 47.70%	CSG Appraisal and Core Hole	PL 100 Bowen Basin	25° 44'7.2"S 149° 4'57.1"E	GL 291.4m	295.4m	EWG 101	28/04/09	21/05/2009 1654m C&S CSG
Dewhurst 10 35%	CSG Appraisal	PEL238 Gunnedah Basin	30° 41'2.9"S 149° 41'37.5"E	GL 304.1m	308.2m	Lucas 26	25/07/09	30/07/2009 976m C&S CSG
Dewhurst 11 35%	CSG Exploration & core hole	PEL238 Surat Basin	30° 33'1.6"S 149° 43'30.9"E	GL 285.7m	287.6m	BL 1200-1	30/09/09	10/11/2009 1038m P&A
Dewhurst 13 35%	CSG Appraisal and Core Hole	PEL238 Surat Basin	30°33'2"S 149° 45'28.6"E	GL 287.4m	291.5m	Lucas DRS026	05/11/09	12/11/2009 1225m P&A
Dewhurst 14 35%	CSG Appraisal and Core Hole	PEL238 Surat Basin	30° 32'56.1"S 149° 45'31.7"E	GL 288.0m	292.1m	Lucas DRS026	28/10/09	04/11/2009 1220m C&S CSG
Dewhurst 15 35%	CSG Appraisal and Core Hole	PEL238 Surat Basin	30° 32'50.2"S 149° 45'34.8"E	GL 286.3m	290.4m	Lucas DRS026	18/10/09	25/10/2009 1205m C&S CSG
Dewhurst 17H 35%	CSG Development	PEL238 Surat Basin	30° 33'10.1"S 149° 46'10.6"E	GL 293.7m	297.8m	Lucas DRS026	28/11/09	In progress  2048m
Dewhurst 18H 35%	CSG Development	PEL238 Surat Basin	30° 33'4.2"S 149° 46'13.7"E	GL 295.4m	299.5m	Lucas DRS026	13/11/09	26/11/2009 2035m C&S CSG
Dewhurst 9 35%	CSG Appraisal	PEL238 Gunnedah Basin	30° 42'58.4"S 149° 39'16.6"E	GL 304.1m	308.2m	Lucas 26	17/07/09	24/07/2009 1082m C&S CSG
Donnabar 1 60.00%	CSG Appraisal	ATP 336P Surat Basin	26° 43'11.1"S 149° 12'19.7"E	GL 280.1m	284.1m	EWG 102	16/05/09	08/06/2009 1143m C&S CSG
Dullingari 36DW1 66.6%	Gas Development	PPL12 Cooper Basin	28° 8'7.6"S	GL 291.6'	310.7'	Ensign 32	23/11/09	03/12/2009



# NAMOI CATCHMENT WATER STUDY

## INDEPENDENT EXPERT

### PHASE 2 REPORT



IINSW09/19  
50371/P2-R1

