

1  
Name: M. Culshaw  
Address: 32 Epacais Ave  
CARRINGBATH  
Date: 15/4/17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

I OBJECT TO THE NARRABRI GAS PROJECT ON THE FOLLOWING GROUNDS: FAILURE TO MITIGATE  
HAZARDS TO ASTRONOMY

Ref: EIS Appendix Q (GHD) and section 5.3.3; SSD 14\_6456

Santos has failed to ensure that vital astronomical assets of the Commonwealth of Australia, and 50 other international research institutions, are not detrimentally impacted by the operation of a large gas field and gas processing equipment to the north of Siding Spring.

Over the years, major public funds have been invested in these world class facilities for astronomy. Australian taxpayers and science institutions are rightly deserving of protection of this asset.

There is no recognition of the cumulative impact of future expansion from PEL238 to other gas licence areas much closer to the observatory.

Santos has not proposed adequate mitigation measures to protect the observatory operations, particularly in not ensuring the clarity of the night sky from light pollution impacting negatively on visible light telescopes, and from not preventing an increase in chemical air pollution impacts on delicate instrumentation and mirror surfaces. It has also not recognised or mitigated chemical air pollution impacts on the Narrabri radio telescope facilities.

There is no recognition in the Santos EIS that air pollution (Chapter 18) at times will concentrate in certain weather conditions, such as during temperature inversions or cloudy, still nights and drift southward towards the observatory.

Air pollution from gas fields is well-documented but has not been correctly identified in Chapter 18. It comprises methane, ethane, butane, and some higher hydrocarbons that can form ozone smog in sunlight, especially mixed with flaring combustion products like nitrous oxide. There is also hydrogen sulphide. This air pollution is not documented in the EIS by Santos. Gas field smog is highly corrosive on delicate instrumentation and can cause smog haze.

Santos have failed to propose adequate mitigation measures to minimise the impact of light pollution from flaring operations - in fact, no flare shielding is proposed. Two major flare stacks will likely operate continuously at Bibblewind and Leewood. Santos has under-estimated the likely continuous operation of these stacks and not proposed adequate shielding

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The NSW EPA recommends that flare stacks be shielded.

Appendix Q mentions the potential high light pollution impact of major flare events but minimise the frequency of such events. This is NOT the experience in the QLD coal seam gas fields. The Santos EIS does not reflect practical on the ground experience of coal seam gas field operations.

The reality of gas fields is that gas supply restrictions mean that gas flaring can occur whenever the market is not drawing gas from the Project. This means that flaring can be a constant feature of an operational gas field. Claims by Santos that flaring will be minimal are simply not supportable

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I do not consider light and air pollution that will be caused by the Project has been effectively mitigated by Santos's proposed mitigation measures

Yours sincerely



Name: Pam Chapman.....

Address: 85 Carrington Lane  
Coonabarabran

Date: 15.4.2017.....

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Name: Rae Riley  
 Address: 98 Dalgarino Street  
Conabarahan  
 Date: 7 April 2017

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 GPO Box 39 Sydney NSW 2001

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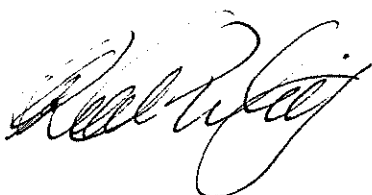
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Name: DIANE POWELLAddress: 100A BEULAH ST  
GUNNEDAHDate: 7-4-2017

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: MARCUS DONNELLY  
Address: 1599 TIMOR RD  
BOONABRABRAN  
Date: 15/4/17

Secretary  
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Level 22 320 Pitt St Sydney NSW 2000,  
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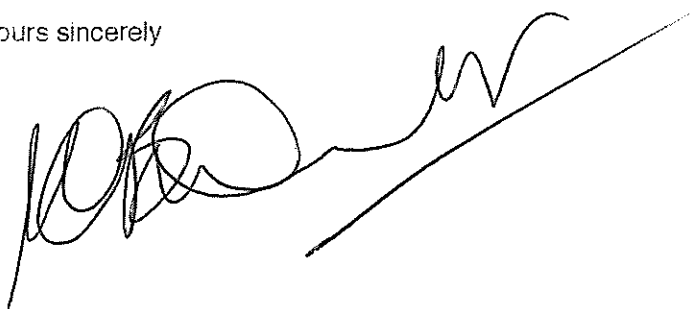
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6  
Name: Dell Tink

Address: "Myola"

Coonabarabran

Date: 14.4.17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Dell Tink

7

Name: Paula Foster

Address: 36 DALGARNO ST.  
COONABARABRAN 2357.

Date: 15/4/17

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Name: CNA16 FDS DR

Address: 36 DARGANNO ST

COONABARRAN

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*CF Foster*



Name: Sarah HenleyAddress: CoonabarabranDate: 15/4/17

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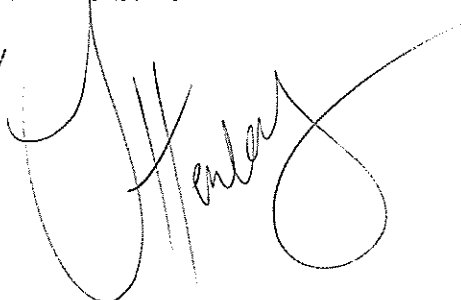
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Name: Robin McMillan  
 Address: "Berea"  
Coonahurra  
 Date: 15/4/17

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Yours sincerely



Name: Barbara Young  
 Address: PO Box 472  
 Coonabarabran  
 Date: 15th April 2017

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

I OBJECT TO THE NARRABRI GAS PROJECT ON THE FOLLOWING GROUNDS: FAILURE TO MITIGATE HAZARDS TO ASTRONOMY

Ref: EIS Appendix Q (GHD) and section 5.3.3; SSD 14\_6456

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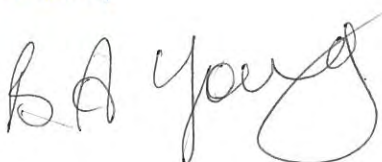
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Yours sincerely





Name: Michelle Saunders.Address: 40 Koala Place  
COONABARRABARRA.Date: 16.04.2017

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: Finlay McAaney  
 Address: 7 Masman St  
Coonabarabran  
 Date: 15/07/17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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Name: Deborah McCalla  
 Address: Berea  
Coonabarabran  
 Date: 15/4/17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

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Name: TONY FENTONAddress: 3 NAPIER STBINNAWA 9Date: 15/4/11

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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Name: ANDREW JERONICH

Address: 26A PATTERSON ST

CONCORD NSW 2137

Date: 15/04/2017

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: Mark Willis

Address: 2142 Tamar Rd  
Cronulla NSW

Date: 15-4-17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: Elizabeth Macintosh

Address: 7 Reservoir St.,

Canberra 2357

Date: 15/4/17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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E. G. Macintosh



Name: DIAN BEDGGOOD.

Address: 67 HAWKINS LANE  
COONABARABRAN 2387

Date: 15/04/2017

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Yours sincerely

*Di Bedggood*



Name: HEATHER CHAMBERSAddress: 22 BLACKWOOD STMIRANA 2228Date: 15/4/17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

I OBJECT TO THE NARRABRI GAS PROJECT ON THE FOLLOWING GROUNDS: FAILURE TO MITIGATE HAZARDS TO ASTRONOMY

Ref: EIS Appendix Q (GHD) and section 5.3.3; SSD 14\_6456

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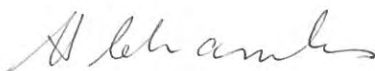
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Yours sincerely





Name: Clemence King  
 Address: 13 Plunkett  
rd, Gosman  
 Date: 15/04/2012

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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Name: Giles DevangAddress: 50 Bungoon head  
rd Newport 2106Date: 15/04/2017

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: Tina Peck  
 Address: 76 Wellington St  
 Baradine 2396  
 Date: 15/04/17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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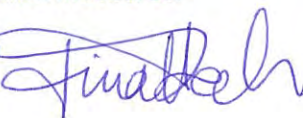
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24

Name: Dome Dall'Aquila  
Address: 10 Robertson Street  
Coonabarabran  
Date: 15/4/17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Dome Dall'Aquila  
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Name: Catherine Somervaille  
 Address: 509 Timor Road  
 Coonabarabran 2357  
 Date: 7/4/2017

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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C Somervaille



Name: Barbara BrooksmaAddress: Box 52Bonabarnan 2357Date: 7/4/17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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Yours sincerely

*Barbara Brooksma*

*As our future is in the stars I feel light pollution should be kept to a bare minimum to enhance this.*



28

Name: Steve Wallace

Address: P.O. Box 621

Coeur d'Alene 83814

Date: 7 - 4 - 2017

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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S. Wallace  
7 - 4 - 17



29

Name: Sandi Middleton

Address: Lynwood.....

Ullamambri...2357

Date: 7/4/17.....

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: *Shannon McConnaughty*Address: *"Elstow"**Baradine NSW 2396*Date: *7-4-17*

Secretary  
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 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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Yours sincerely





Name: MICHAEL DORRIAN

Address: 10 MASMAN ST.

COONABARA BRAN NSW

Date: 7-4-17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

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Name: Alan MENTAddress: 39 HARVEY'S LANECOONABARAN  
NSW 2357Date: 15-4-17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: Steve ChapmanAddress: 85 Carrington Lane  
COOMBARABRA 2357Date: 15-4-17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: CATHIE AMUET  
 Address: 8 NAWDI ST.  
 C/BRAN  
 Date: 15/04/17

Secretary  
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 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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Address: 48 Bullaburra Rd  
Bullaburra  
Date: 15/4/17

Secretary  
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Level 22 320 Pitt St Sydney NSW 2000,  
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Jennife Johnston

Name: JEREMY SCHMIDT.

Address: 69 Hawkins Lane

Coonabarabran NSW 2357.

Date: 15/4/17.

Secretary  
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 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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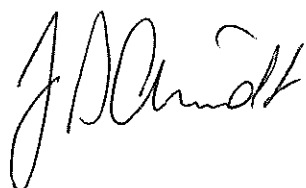
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Name: *Mikayla Bussell*  
 Address: *54 Hillside*  
*Road, Newport*  
 Date: *15.4.17*

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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*M Bussell*

Name: Jack Bussell

Address: 59 Hills de RD NEWPORT

2166

Date: 15/04/2017

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: Tara Prebble

Address: 42-44 Pemberton St, Botany  
Sydney

Date: 15/4/17

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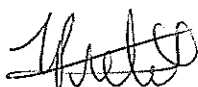
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Yours sincerely



Name: Jenna Jackson

Address: 6 Robert St.

LISMORE NSW  
2480

Date: 15/04/17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

I OBJECT TO THE NARRABRI GAS PROJECT ON THE FOLLOWING GROUNDS: FAILURE TO MITIGATE  
HAZARDS TO ASTRONOMY

Ref: EIS Appendix Q (GHD) and section 5.3.3; SSD 14\_6456

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Name: E. CHAMBERSAddress: 22 BLACKWOOD STMIRANDA 2228Date: 15/4/17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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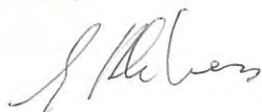
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Yours sincerely



42

Name: David Trumble  
Address: 386-388 Spring Mt  
Drive Erenbark  
Date: 15/04/17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

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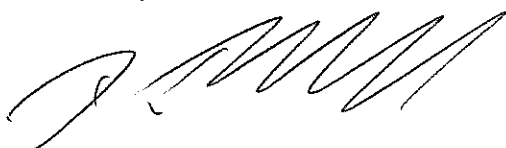
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 Address: 386-388 Spring Mt Dr  
Greenbank  
 Date: 15-4-17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

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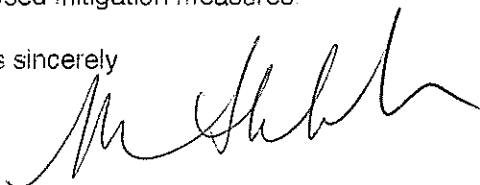
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Name: Alan MinckertonAddress: 43 Barker Rd  
Greenbra 2282Date: 15/4/2017

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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Name: Suzanne Day  
 Address: 15/4/17  
Cooraburra  
 Date: 15/4/17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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Name: Catherine Kelly  
 Address: 14/11-15 Chapman street  
 Gymea  
 Date: 15.4.17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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Name: U2BraAddress: 99 WansbeckValley Rd CardiffDate: 15.04.17

Secretary  
 Planning & Environment,  
 Level 22 320 Pitt St Sydney NSW 2000,  
 GPO Box 39 Sydney NSW 2001

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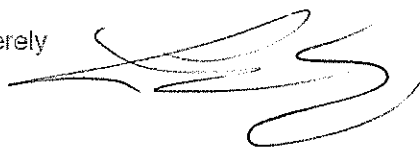
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48

Name: Chris Stone

Address: 14/11-15 Chapman

St gy mee

Date: 15/4/17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

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The reality of gas fields is that gas supply restrictions mean that gas flaring can occur whenever the market is not drawing gas from the Project. This means that flaring can be a constant feature of an operational gas field. Claims by Santos that flaring will be minimal are simply not supportable.

It is inconceivable that the negative impacts of the Project on Siding Spring would be acceptable to Australian and international astronomers nor to the Australian public who have heavily invested in these world class facilities.

I do not consider light and air pollution that will be caused by the Project has been effectively mitigated by Santos's proposed mitigation measures

Yours sincerely





Name: WENDY ABBERTONAddress: SULLIVAN'S RD  
COONABARA BRANDate: 15-4-17

Secretary  
Planning & Environment,  
Level 22 320 Pitt St Sydney NSW 2000,  
GPO Box 39 Sydney NSW 2001

Dear Sir/Madam

I OBJECT TO THE NARRABRI GAS PROJECT ON THE FOLLOWING GROUNDS: FAILURE TO MITIGATE  
HAZARDS TO ASTRONOMY

Ref: EIS Appendix Q (GHD) and section 5.3.3; SSD 14\_6456

Santos has failed to ensure that vital astronomical assets of the Commonwealth of Australia, and 50 other international research institutions, are not detrimentally impacted by the operation of a large gas field and gas processing equipment to the north of Siding Spring.

Over the years, major public funds have been invested in these world class facilities for astronomy. Australian taxpayers and science institutions are rightly deserving of protection of this asset.

There is no recognition of the cumulative impact of future expansion from PEL238 to other gas licence areas much closer to the observatory.

Santos has not proposed adequate mitigation measures to protect the observatory operations, particularly in not ensuring the clarity of the night sky from light pollution impacting negatively on visible light telescopes, and from not preventing an increase in chemical air pollution impacts on delicate instrumentation and mirror surfaces. It has also not recognised or mitigated chemical air pollution impacts on the Narrabri radio telescope facilities.

There is no recognition in the Santos EIS that air pollution (Chapter 18) at times will concentrate in certain weather conditions, such as during temperature inversions or cloudy, still nights and drift southward towards the observatory.

Air pollution from gas fields is well-documented but has not been correctly identified in Chapter 18. It comprises methane, ethane, butane, and some higher hydrocarbons that can form ozone smog in sunlight, especially mixed with flaring combustion products like nitrous oxide. There is also hydrogen sulphide. This air pollution is not documented in the EIS by Santos. Gas field smog is highly corrosive on delicate instrumentation and can cause smog haze.

Santos have failed to propose adequate mitigation measures to minimise the impact of light pollution from flaring operations - in fact, no flare shielding is proposed. Two major flare stacks will likely operate continuously at Bibblewind and Leewood. Santos has under-estimated the likely continuous operation of these stacks and not proposed adequate shielding.

Santos has under-estimated the amount of light pollution and has contradictory statements in the EIS about the number of flares - at one point it is stated that there will be 'up to 6' (5.3.3) pilot well flares, but in other parts of the EIS it is estimated over 25 pilot flares (Greenhouse Gas Chapter 24) will be operational at any time

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 Address: 10 Masman st  
 Baradine  
 Date: 15/4/17

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 Level 22 320 Pitt St Sydney NSW 2000,  
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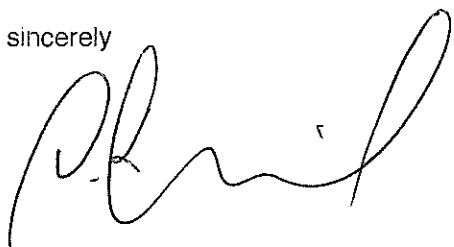
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