

## Director General's Environmental Assessment Requirements

### Section 78A(8A) of the *Environmental Planning and Assessment Act 1979*

#### State Significant Development

<b>Application Number</b>	SSD 6038
<b>Development</b>	<p>The Dewhurst Gas Exploration Pilot Expansion, which includes:</p> <ul style="list-style-type: none"> <li>- the expansion of one existing pilot (Dewhurst 13-18) and one proposed pilot (Dewhurst 26-31);</li> <li>- re-drilling within three existing wells (Dewhurst 16H, 17H and 18H), converting each well from a single lateral to a tri-stacked lateral well;</li> <li>- drilling two additional wells, including one vertical well (Dewhurst 30) and one triple-stacked lateral (Dewhurst 31);</li> <li>- installing surface infrastructure at the Dewhurst 13-18 Pilot and Dewhurst 30-31; and</li> <li>- operating the two pilots for up to three years.</li> </ul>
<b>Location</b>	<p>Dewhurst 13-18, approximately 25 kilometres south of Narrabri.  Dewhurst 26-31, Pilliga East State Forest, approximately 44 kilometres south of Narrabri.</p>
<b>Applicant</b>	Santos NSW (Eastern) Pty Ltd
<b>Date of Issue</b>	22 July 2013
<b>General Requirements</b>	<p>The Environmental Impact Statement (EIS) for the development must meet the form and content requirements in Clauses 6 and 7 of Schedule 2 of the <i>Environmental Planning and Assessment Regulation 2000</i>.</p> <p>In addition, the EIS must include a:</p> <ul style="list-style-type: none"> <li>• detailed description of the development, including: <ul style="list-style-type: none"> <li>- need for the proposed development;</li> <li>- justification for the proposed plan, including efficiency of resource recovery, safety and environmental protection;</li> <li>- likely staging of the development - including construction, operational stage/s and rehabilitation;</li> <li>- likely interactions between the development and existing, approved and proposed gas exploration and production activities in the vicinity of the site;</li> <li>- plans of any proposed building works;</li> </ul> </li> <li>• consideration of all relevant environmental planning instruments, including identification and justification of any inconsistencies with these instruments;</li> <li>• risk assessment of the potential environmental impacts of the development, identifying the key issues for further assessment;</li> <li>• detailed assessment of the key issues specified below, and any other significant issues identified in this risk assessment, which includes: <ul style="list-style-type: none"> <li>- a description of the existing environment, <u>using sufficient baseline data</u>;</li> <li>- an assessment of the potential impacts of all stages of the development, including any cumulative impacts, taking into consideration relevant guidelines, policies, plans and statutes; and</li> <li>- a description of the measures that would be implemented to avoid, minimise and if necessary, offset the potential impacts of the development, including proposals for adaptive management and/or contingency plans to manage any significant risks to the environment; and</li> </ul> </li> <li>• consolidated summary of all the proposed environmental management and monitoring measures, highlighting commitments included in the EIS.</li> </ul> <p>The EIS must be accompanied by a report from a qualified quantity surveyor providing:</p>

	<ul style="list-style-type: none"> <li>• a detailed calculation of the capital investment value (as defined in clause 3 of the <i>Environmental Planning and Assessment Regulation 2000</i>) of the proposal, including details of all the assumptions and components from which the CIV calculation is derived;</li> <li>• a close estimate of the jobs that will be created by the development during the construction and operational phases of the development; and</li> <li>• certification that the information provided is accurate at the date of preparation.</li> </ul>
<p><b>Key Issues</b></p>	<p>The EIS must address the following specific issues:</p> <ul style="list-style-type: none"> <li>• <b>Land Resources</b> – including an assessment of the potential impacts on: <ul style="list-style-type: none"> <li>- soils and land capability (including contamination);</li> <li>- soil erosion, sediment transport and regional salinity;</li> <li>- agricultural land, including a Site Verification Certificate and Agricultural Impact Statement;</li> <li>- land use, including forestry, conservation, agriculture and recreational use, with particular reference to the Pilliga East State Forest and the Jacks Creek State Forest;</li> </ul> </li> <li>• <b>Water Resources</b> – including: <ul style="list-style-type: none"> <li>- adequate baseline monitoring for all surface water and groundwater sources and dependent ecosystems within and adjacent to the development;</li> <li>- demonstrated compliance with the <i>NSW Aquifer Interference Policy (2012)</i>;</li> <li>- detailed assessment of potential impacts on the quality and quantity of existing surface water and groundwater resources, including: <ul style="list-style-type: none"> <li>○ detailed modelling of potential groundwater impacts including identification of any highly productive groundwater (as defined by the <i>Aquifer Interference Policy</i>) or groundwater dependent ecosystems, with particular reference to the Gunnedah-Oxley and Lachlan Ford Murray Darling Basin buried groundwater sources and the southern recharge groundwater sources of the NSW Great Artesian Basin;</li> <li>○ a description of any proposed hydraulic fracturing;</li> <li>○ impacts on riparian, ecological, geomorphological and hydrological values of watercourses or swamps, including environmental flows, with particular reference to Cowallah Creek, Mount Pleasant Creek, Tuppiari Creek and Jacks Creek and associated tributaries;</li> <li>○ cumulative impacts associated with existing developments as well as any currently approved developments or proposed future developments;</li> <li>○ the quantity and quality of regional water supplies;</li> <li>○ details of critical thresholds for negligible impacts to surface water and groundwater sources and dependent ecosystems; and</li> <li>○ affected licensed water users and basic landholder rights (including downstream water users);</li> </ul> </li> <li>- a detailed site water balance, including a description of site water demands, water disposal methods (inclusive of volume and frequency of any water discharges), water supply infrastructure and water storage structures;</li> <li>- a detailed description of the management of water at both the Bibblewindi Water Management Facility and the Leewood Produced Water and Brine Management Facility;</li> <li>- identification of any licensing requirements, including existing or future Environment Protection Licences (EPLs) or Pollution Reduction Programs (PRPs), and approvals under the <i>Water Act 1912</i> and/or <i>Water Management Act 2000</i>;</li> <li>- a description of the casing of wells that ensures the protection of the integrity of all underground aquifers, prevents gas escape and maintains groundwater quality, in accordance with the <i>Code of Practice for Coal Seam Gas Well Integrity</i>;</li> <li>- demonstration that water for the construction and operation of the</li> </ul> </li> </ul>

development can be obtained from an appropriately authorised and reliable supply in accordance with the operating rules of any relevant Water Sharing Plans (WSP) or water source embargo;

- a description of the measures proposed to ensure the development can operate in accordance with the requirements of any relevant WSP;
- a description of the proposed water management system (including sewage), water monitoring program and other measures to mitigate surface and groundwater impacts, including the use of above ground tanks to contain drilling fluids, adequate spill control measures, contingency planning and produced water management; and
- an assessment of local flood risks, including appropriate mitigation measures;
- **Biodiversity** – including:
  - accurate estimates of any proposed vegetation clearing;
  - an assessment of potential impacts of the development on any:
    - terrestrial or aquatic threatened species or populations and their habitats, endangered ecological communities and groundwater dependent ecosystems; and
    - regionally significant remnant vegetation, or vegetation/wildlife corridors;
  - impacts on the Pilliga State Forest, including impacts on conservation and recreational values; and
  - measures taken to avoid, reduce or mitigate impacts on biodiversity;
- **Air Quality** – including a quantitative assessment of potential:
  - construction and operational impacts, with a particular focus on dust emissions including PM<sub>10</sub> emissions and the dust generation from transport;
  - risk associated with potential discharges of fugitive and point source emissions for all stages of the proposal, including risk of environmental harm and risk to human health and amenity;
  - cumulative impacts associated with existing emission sources as well as any currently approved developments or proposed future developments;
  - flaring and/or venting; and
  - monitoring and management measures, including real-time air quality monitoring;
- **Greenhouse Gases** – including:
  - a quantitative assessment of potential Scope 1, 2 and 3 greenhouse gas emissions;
  - a qualitative assessment of the potential impacts of these emissions on the environment; and
  - an assessment of reasonable and feasible measures to minimise greenhouse gas emissions and ensure energy efficiency, including consideration of alternative power sources;
- **Noise** – including an assessment of potential:
  - construction, operational and transport noise impacts;
  - offsite road noise impacts; and
  - reasonable and feasible mitigation measures, including evidence that there are no such measures available other than those proposed; and
  - monitoring and management measures;
- **Traffic & Transport** – including:
  - an assessment of the project on the capacity, functionality, efficiency and safety of the local road network;
  - details of road transport volumes and types broken down into origin and destination, travel routes and peak hours for the construction, operation and decommissioning of the project;
  - a description of the measures that would be implemented to maintain and/or improve the capacity, functionality, efficiency and safety of the road networks in the surrounding area over the life of the project;
  - details of the location of all waterways crossings, including any new access tracks or existing waterway crossing upgrades; and
  - a description of the transfer of gas via pipeline and flowline to the

	<p>Biblewindi Water Management Facility and Wilga Park Power Station;</p> <ul style="list-style-type: none"> <li>• <b>Waste</b> – including: <ul style="list-style-type: none"> <li>- estimates of the quantity and nature of the potential waste streams of the development, including well cuttings, drilling fluids and produced water;</li> <li>- identification, characterisation and classification of all waste that is proposed to be disposed of to an offsite location, including proposed quantities and disposal locations;</li> <li>- a description of measures that would be implemented to minimise production of other waste, and ensure that the waste is appropriately managed; and</li> <li>- outline contingency plans for any event that affects operations at the site that may result in environmental harm;</li> </ul> </li> <li>• <b>Hazards</b> – with particular attention to public safety, chemical use and including bushfires;</li> <li>• <b>Social &amp; Economic</b> – including an assessment of the: <ul style="list-style-type: none"> <li>- potential direct and indirect economic benefits of the project for local and regional communities and the State; and</li> <li>- an assessment of the costs and benefits of the development as a whole, and whether it would result in a net benefit for the NSW community; and</li> </ul> </li> <li>• <b>Rehabilitation</b> – including the proposed rehabilitation strategy for the site, having regard to the key principles in the <i>Code of Practice for Coal Seam Gas Well Integrity</i>, including: <ul style="list-style-type: none"> <li>- rehabilitation objectives, methodology, monitoring programs, performance standards and proposed completion criteria;</li> <li>- nominated final land use, having regard to any relevant strategic land use planning or resource management plans or policies;</li> <li>- timeframes for exploration activities and subsequent rehabilitation;</li> <li>- justification of criteria regarding completion of any rehabilitation program; and</li> <li>- the potential for integrating this strategy with any other rehabilitation strategies in the region.</li> </ul> </li> </ul>
<b>Plans and Documents</b>	<p>The EIS must include all relevant plans, architectural drawings, diagrams and relevant documentation required under Schedule 1 of the <i>Environmental Planning and Assessment Regulation 2000</i>. These documents should be included as part of the EIS rather than as separate documents.</p>
<b>Consultation</b>	<p>During the preparation of the EIS, you must consult with relevant local, State and Commonwealth Government authorities, service providers, community groups and affected landowners.</p> <p>In particular you must consult with the:</p> <ul style="list-style-type: none"> <li>• Commonwealth Department of Sustainability, Environment, Water, Population and Communities;</li> <li>• Office of Coal Seam Gas and Division of Resources and Energy within the Department of Trade and Investment, Regional Infrastructure and Services;</li> <li>• Department of Primary Industries (including the NSW Office of Water, Forestry Corporation, NSW Agriculture and NSW Fisheries, and Catchments and Lands (Crown Lands Division));</li> <li>• Environment Protection Authority;</li> <li>• NSW Health;</li> <li>• Office of Environment and Heritage (including the Heritage Branch);</li> <li>• Namoi Catchment Management Authority;</li> <li>• Transport for NSW (including the Centre for Transport Planning and Roads and Maritime Services);</li> <li>• Narrabri Shire Council;</li> <li>• Rural Fire Services;</li> </ul> <p>The EIS must:</p> <ul style="list-style-type: none"> <li>• describe the consultation process used and demonstrate that effective</li> </ul>

	<p>consultation has occurred;</p> <ul style="list-style-type: none"> <li>• describe the issues raised by public authorities, service providers, community groups and landowners;</li> <li>• identify where the design of the development has been amended in response to issues raised; and</li> <li>• otherwise demonstrate that issues raised have been appropriately addressed in the assessment.</li> </ul>
<b>Further consultation after 2 years</b>	If you do not lodge a DA and an EIS for the development within 2 years of the issue date of these DGRs, you must consult further with the Director-General in relation to the requirements for lodgement.
<b>References</b>	The assessment of the key issues listed above must take into account relevant guidelines, policies, and plans as identified. While not exhaustive, Appendix 1 contains a list of some of the guidelines, policies, and plans that may be relevant to the environmental assessment of this development.

## APPENDIX 1 Technical and Policy Guidelines

The following guidelines may assist in the preparation of the Environmental Impact Statement. This list is not exhaustive and not all of these guidelines may be relevant to your proposal.

Many of these documents can be found on the following websites:

<http://www.planning.nsw.gov.au>

<http://www.bookshop.nsw.gov.au>

<http://www.publications.gov.au>

### Policies, Guidelines & Plans

#### Risk Assessment

AS/NZS 4360:2004 Risk Management (Standards Australia)

HB 203: 203:2006 Environmental Risk Management – Principles & Process (Standards Australia)

#### Biodiversity

Threatened Species Survey and Assessment Guidelines: Field Survey Methods for Fauna – Amphibians (DECCW 2009)

Threatened Biodiversity Survey and Assessment: Guidelines for Developments and Activities – Working Draft (DECC 2004)

Guidelines for Threatened Species Assessment (DoP 2005)

BioBanking Assessment Methodology and Credit Calculator Operational Manual (DECCW 2008)

BioBanking Assessment Methodology (DECC 2008)

The Threatened Species Assessment Guideline – The Assessment of Significance (DECC 2007)

NSW State Groundwater Dependent Ecosystem Policy (DLWC)

Policy & Guidelines - Aquatic Habitat Management and Fish Conservation (NSW Fisheries)

State Environmental Planning Policy No. 44 – Koala Habitat Protection

Policy & Guidelines - Fish Friendly Waterway Crossings (NSW Fisheries)

Why do Fish Need to Cross the Road? Fish Passage Requirements for Waterway Crossings (NSW Fisheries)

Principles for the Use of Biodiversity Offsets in NSW (OEH)

OEH Interim Policy on Assessing and Offsetting Biodiversity Impacts of State Significant Developments

Guidelines for Developments Adjoining Land and Water Managed by the Department of Environment, Climate Change and Water (DECCW 2010)

#### Water Resources

National Water Quality Management Strategy: Australian Guidelines for Fresh and Marine Water Quality (ANZECC/ARMCANZ)

National Water Quality Management Strategy: Australian Guidelines for Water Quality Monitoring and Reporting (ANZECC/ARMCANZ)

National Water Quality Management Strategy: Guidelines for Sewerage Systems – Effluent Management (ARMCANZ/ANZECC)

National Water Quality Management Strategy: Guidelines for Sewerage Systems – Use of Reclaimed Water (ARMCANZ/ANZECC)

#### Surface Water

Using the ANZECC Guideline and Water Quality Objectives in NSW (DEC)

State Water Management Outcomes Plan

Great Artesian Basin Groundwater Sources Water Sharing Plan (NOW)

Namoi Unregulated and Alluvial Water Sources Water Sharing Plan (NOW)

Murray-Darling Basin Porous Rock Groundwater Water Sharing Plan (NOW)

Murray-Darling Basin Fractured Rock Groundwater Water Sharing Plan (NOW)

NSW Government Water Quality and River Flow Objectives (DECC)

Approved Methods for the Sampling and Analysis of Water Pollutants in NSW (DEC)

Managing Urban Stormwater: Soils & Construction (Landcom) and associated Volume 2E: Mines and Quarries.

	Managing Urban Stormwater: Treatment Techniques (DECC)
	Managing Urban Stormwater: Source Control (DECC)
	Floodplain Development Manual (DIPNR)
	Floodplain Risk Management Guideline (DECC)
	A Rehabilitation Manual for Australian Streams (LWRRDC and CRCCH)
	Technical Guidelines: Bunding & Spill Management (DECC)
	Environmental Guidelines: Use of Effluent by Irrigation (DECC)
	NSW Government Water Quality and River Flow Environmental Objectives (OEH)
	Office of Water Guidelines for Controlled Activities (2012)
	NSW Water Conservation Strategy (2000)
	NSW Water Extraction Monitoring Policy (2007)
	NSW Salinity Strategy (2000)
<i>Groundwater</i>	National Water Quality Management Strategy Guidelines for Groundwater Protection in Australia (ARMCANZ/ANZECC)
	Code of Practice for Coal Seam Gas Fracture Stimulation (DTIRIS)
	Code of Practice for Coal Seam Gas Well Integrity (DTIRIS)
	NSW State Groundwater Policy Framework Document (DLWC, 1997)
	NSW State Groundwater Quality Protection Policy (DLWC, 1998)
	NSW State Groundwater Quantity Management Policy (DLWC, 1998)
	Murray-Darling Basin Groundwater Quality. Sampling Guidelines. Technical Report No 3 (MDBC)
	Murray-Darling Basin Commission. Groundwater Flow Modelling Guideline (Aquaterra Consulting Pty Ltd)
	Guidelines for the Assessment & Management of Groundwater Contamination (DECC, 2007)
	Any relevant Water Sharing Plan for groundwater and surface water resources
	NSW Aquifer Interference Policy (2012)
<b>Air Quality</b>	
	Protection of the Environment Operations (Clean Air) Regulation 2002
	Approved Methods for the Modelling and Assessment of Air Pollutants in NSW (DEC)
	Approved Methods for the Sampling and Analysis of Air Pollutants in NSW (DEC)
	The Assessment and Management of Odour from Stationary Sources in NSW: Technical Framework and Notes (OEH)
<b>Noise &amp; Blasting</b>	
	NSW Industrial Noise Policy (DECC)
	NSW Road Noise Policy (DECCW)
	Interim Construction Noise Guideline (DECC 2009)
	Environmental Criteria for Road Traffic Noise (EPA 1999)
<b>Land Resources</b>	
	Agricultural Impact Assessment Guidelines 2011 (DP&I)
	Agfact AC25: Agricultural Land Classification (NSW Agriculture)
	Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites (ANZECC)
	State Environmental Planning Policy No. 55 – Remediation of Land
<b>Traffic &amp; Transport</b>	
	Guide to Traffic Generating Development (RTA)
	Road Design Guide (RTA)
<b>Heritage</b>	
<i>Aboriginal</i>	Draft Guidelines for Aboriginal Cultural Heritage Assessment and Community Consultation (DEC 2005)
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)
	Aboriginal Cultural Heritage Consultation Requirements for Proponents (DECCW 2010)
<i>Historic</i>	Code of Practice for the Archaeological Investigation of Aboriginal Objects in New South Wales (DECCW 2010)
	NSW Heritage Manual (NSW Heritage Office)
	The Burra Charter (The Australia ICOMOS charter for places of cultural significance)

<b>Greenhouse Gases</b>	<p>National Greenhouse Accounts Factors (Australian Department of Climate Change (DCC))</p> <p>Guidelines for Energy Savings Action Plans (DEUS)</p> <p>National Greenhouse and Energy Reporting System, Technical Guidelines</p> <p>Australian Greenhouse Emissions Information System (AGEIS)</p> <p>The Greenhouse Gas Protocol: Corporate Standard, World Council for Sustainable Business Development and World Resources Institute</p>
<b>Waste</b>	<p>Waste Classification Guidelines (DECC 2008)</p>
<b>Hazards</b>	<p>State Environmental Planning Policy No. 33 – Hazardous and Offensive Development</p> <p>Hazardous and Offensive Development Application Guidelines - Applying SEPP 33</p> <p>Hazardous Industry Planning Advisory Paper No. 4 – Risk Criteria for Land Use Safety Planning</p> <p>Hazardous Industry Planning Advisory Paper No. 6 – Guidelines for Hazard Analysis</p> <p>Ban on use of BTEX Compounds in CSG Activities Policy (NSW Trade and Investment 2012)</p>
<b>Rehabilitation</b>	<p>Mine Rehabilitation – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia)</p> <p>Mine Closure and Completion – Leading Practice Sustainable Development Program for the Mining Industry (Commonwealth of Australia)</p> <p>Strategic Framework for Mine Closure (ANZMEC-MCA)</p>
<b>Socio-Economic</b>	<p>Draft Economic Evaluation in Environmental Impact Assessment (DoP)</p> <p>Techniques for Effective Social Impact Assessment: A Practical Guide (Office of Social Policy, NSW Government Social Policy Directorate)</p> <p>Guideline for Community Consultation Requirements for the Exploration of Coal and Petroleum, including Coal Seam Gas (NSW Trade and Investment 2012)</p>