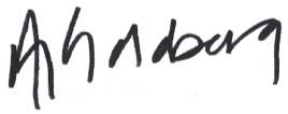
Notice of Modification

Section 75W of the *Environmental Planning and Assessment Act 1979*

As delegate of the Minister for Planning under delegation from the Minister dated 14 September 2011, the Planning Assessment Commission of New South Wales (the Commission) modifies the project approval referred to in Schedule 1, as set out in Schedule 2.



Abigail Goldberg
Member of the Commission

Sydney 24 September 2014

SCHEDULE 1

The project approval (08_0154) for the Gloucester Gas Stage 1 Project, granted by the Planning Assessment Commission as delegate for the Minister for Planning and Infrastructure on 22 February 2011.

SCHEDULE 2

1. In Schedule 1, delete "existing gas supply network at Hexham" and replace with "receiving station located at Tomago".

2. In Schedule 1, delete the fourth dot point under "Proposal" and replace with the following:

    - *Tomago Receiving Station* - a gas receiving station at Tomago to deliver the transported gas to the existing Newcastle-Sydney gas supply pipeline; and

3. In the page footer, delete references to "Planning", and replace with "Planning and Environment".

4. In Schedule 2, delete the definitions for "DECCW", "Department, the", "Director-General, the", "DII", "DSEWPaC", "HCRCMA", "RTA" and insert the following in alphabetical order:

Department	Department of Planning and Environment
DoE	Commonwealth Department of the Environment
DPI	Department of Primary Industries
DRE	Division of Resources and Energy (within NSW Trade & Investment)
EA (Mod 1)	The Environmental Assessment *Minor Pipeline Corridor Realignments - Modification to the Gloucester Gas Project*, prepared by EMGA Mitchell McLennan Pty Limited, and dated 15 November 2013, and associated response to submissions dated 18 February 2014 and supplementary information dated 5 June 2014 and 22 August 2014.
EPA	Environment Protection Authority
Hunter LLS	Hunter Local Land Services
OCSG	Office of Coal Seam Gas
OEH	Office of Environment and Heritage
RMS	NSW Roads and Maritime Services
Secretary	Secretary of the Department, or nominee
Statement of Commitments (Mod 1)	Statement of Commitments contained in *Minor Pipeline Corridor Realignments - Modification to the Gloucester Gas Project*, dated 15 November 2013, prepared by EMGA Mitchell McLennan Pty Limited

5. Delete all references to "DECCW" and replace with:
    a) "OEH", in conditions 3.34, 7.2 and 7.3 of Schedule 2; and

b) "EPA" in all other cases.

6. Delete all references to "DSEWPaC" and replace with "DoE".
7. Delete all references to "DII" and replace with:
   a) "DPI (Fisheries)" in conditions 3.4 and 7.3; and
   b) "OCSG" in all other cases.

8. Delete all references to "Director-General" and replace with "Secretary".

9. Delete all references to "HCRCMA" and replace with "Hunter LLS".

10. Delete all references to "RTA" and replace with "RMS".

11. Delete all references to "Hexham Delivery Station" and replace with "Tomago Receiving Station".

12. In condition 1.1 of Schedule 2, delete all words after "Gloucester Gas Project (08_0154);" and replace with:
    h) Statement of Commitments;
    i) EA (Mod 1);
    j) Statement of Commitments (Mod 1); and
    k) the conditions of this approval.

13. In condition 1.2 of Schedule 2, replace all reference to "1.1g)" with "1.1j)".

14. After condition 1.3 of Schedule 2, insert the following:

    1.3A The Applicant must ensure that all wells:
    a) must be designed, constructed, maintained and abandoned in accordance with the *Code of Practice for Coal Seam Gas – Well Integrity* (DRE 2012) or its latest version; and
    b) where hydraulic fracturing is proposed, are operated in accordance with the Code of *Practice for Coal Seam Gas – Fracture Stimulation* (DRE 2012) or its latest version.

15. In condition 3.6 of Schedule 2 insert:
    c) "gas" before "exploration wells";
    d) "that have not already been plugged and are" before "located within"; and
    e) the following after "via these wells":

    , to the satisfaction of the OCSG. Where casing has been installed in any of the abandoned or old exploration wells, and the extent of cementing to support the casing is unclear or unknown, the bore annulus must be sealed to prevent waters intermixing. Perforation of the casing is required such that the seals shall be set in impermeable strata immediately above and below each aquifer formation

16. In condition 3.9 of Schedule 2, delete "(including well location areas and phasing program)".

17. In condition 3.10 of Schedule 2, insert "for approval" before:
    a) "a Field Development Plan"; and
    b) "prior to the commencement of each phase".

18. In condition 3.10 of Schedule 2, delete the second paragraph and insert the following:

    The Proponent shall ensure that the Field Development Plan includes a program that:
    a) for the first phase of gas well development, is consistent with the recommendations of condition 3.9c); and
    b) for all subsequent phases of gas well development, is prepared in consultation with NOW, and:
       i. is consistent with the outcomes of the groundwater monitoring program and associated numerical hydro-geological model implemented in accordance with conditions 4.1 and 4.2;
       ii. demonstrates satisfactory management of groundwater risks in accordance with condition 3.5; and
       iii. is in accordance with any requirements of the Secretary following review of groundwater monitoring results in accordance with condition 4.1 and 4.2,

    to the satisfaction of the Secretary.

19. In Table 3, delete "Hexham Delivery Station" and the three associated rows, and replace with the following:

Tomago Receiving	P18/R37	49	59

Station	P19/R38	49	59
	P20/R39	42	52
	P21/R41	51	61

20. In condition 3.24 of Schedule 2, delete "commencement of construction", and insert "commissioning".

21. In Table 5 and Table 6, delete "1" under "Discharge Point" and replace with "1 (TRS)".

22. In condition 3.36 of Schedule 2, insert "to the satisfaction of the Secretary" after "AHIMS 38-1-0031".

23. In condition 3.46 of Schedule 2, insert "to the satisfaction of the Secretary" after "*Operating Coal Seam Methane Wells' "*

24. In condition 3.47 of Schedule 2:
    a) delete all words before paragraph (a), and replace with the following:

       The Proponent shall prepare and implement the following hazards and safety studies to the satisfaction of the Secretary:

    b) after "construction of the project.", insert the following paragraph:

       The hazards and safety studies shall be submitted to the Secretary for approval no later than 2 months prior to the proposed commencement of construction of the project (or a relevant stage of the project), or within such further period as the Secretary may agree. Except for construction of preliminary works that are outside the scope of the hazard and safety studies, construction of the project (or a relevant stage of the project), shall not commence until these documents are approved by the Secretary.

25. In condition 3.47(c) of Schedule 2, insert the following after "Environmental Assessment":

    and *Appendix 5 Addendum to the GGP Preliminary Hazard Analysis* prepared by Planager Pty Ltd dated 4 November 2013

26. In condition 3.48 of Schedule 2:
    a) delete all words before paragraph (a), and replace with the following:

       The Proponent shall prepare and implement the following plan and system to the satisfaction of the Secretary:

    b) after "'*Safety Management*'.", insert the following paragraph:

       Documents describing the plan and system shall be submitted to the Secretary for approval no later than 2 months prior to the proposed commencement of commissioning of the project, or within such further period as the Secretary may agree. Commissioning of the project shall not commence until these documents are approved by the Secretary.

27. After condition 3.50 of Schedule 2, insert the following:

    3.50A Prior to the construction of the Tomago Receiving Station, the Proponent shall ensure that the following hazard studies, prepared under the approval for the Newcastle Gas Storage Project (MP 10_0133), are updated to account for the presence of the Station:
    a) Fire Safety Study;
    b) Hazard and Operability Study;
    c) Final Hazard Analysis;
    d) Emergency Plan; and
    e) Safety Management System,
    to the satisfaction of the Secretary.

28. In condition 3.52 of Schedule 2, insert "to the satisfaction of the Secretary" after "materials off site".

29. In condition 3.53 of Schedule 2, insert "to the satisfaction of the Secretary" after "accept the materials".

30. In condition 3.55 of Schedule 2, insert "to the satisfaction of the Secretary" after:
    a) "ongoing operation of the gas transmission pipeline)";
    b) "cessation of construction activities"; and
    c) "condition of the rehabilitated areas".

31. In condition 4.2 of Schedule 2:

a) delete “The” where first occurring, and insert “Prior to the commencement of construction of the Stage 1 Gas Field Development Area, the”; and
b) delete “the monitoring results from the operation of the project, obtained in accordance with condition 4.1” and insert instead “to the satisfaction of the Secretary’.

32. In condition 4.8 of Schedule 2, insert “to the satisfaction of the Secretary” after “performance of the project”.

33. After Schedule 2, insert the following appendices:

APPENDIX 1
STATEMENT OF COMMITMENTS

Issue	Commitments
General (applicable to all four project components)	
General	1. The Proponent shall undertake the activities subject of the Project application in accordance with the general descriptions and details provided in this EA, including the mitigation and management measures recommended by this EA. 2. The Proponent will gain all necessary approvals and permits supporting both construction and operation. 3. The Proponent will prepare and implement the following management plans for the Project: • A Construction Environmental Management Plan (CEMP); and • An Operations Environmental Management Plan (OEMP). 4. The Proponent will ensure that the location of compound sites and other ancillary facilities are selected generally in line with the following : • In existing disturbed areas wherever possible; • Avoiding vegetation and riparian areas where possible; • Minimum of 40 m from a major watercourse and 20 m from a minor watercourse; • Avoiding Indigenous and European heritage places or items • Utilising existing access tracks where practicable; • Avoiding impacts on existing infrastructure • On relatively flat ground where possible; • Considering visual effects and opportunistic use of natural screening such as vegetation; • In consultation with landowners.
Further Studies	5. The Proponent shall prepare and implement the following studies, to the satisfaction of the Director General prior to the commencement of construction: • A Hazard and Operability Study; • A Final Hazard Analysis (update of the PHA); • A Fire Safety Study; • An Emergency Response Plan; • A Construction Safety Study. 6. The Proponent shall prepare/undertake the following to the satisfaction of the Director General prior to the commencement of operation of the Project: • A Safety Management System; • An Independent Hazard Audit.

Issue	Commitments
	7. The Proponent shall prepare a Petroleum Production Operations Plan in accordance with DPI requirements.
Air Quality	8. An Air Quality Management Plan (AQMP) will be prepared for inclusion in the CEMP. The Proponent will ensure that the AQMP outlines all activities required to minimise dust and vehicle emissions during the construction of the Stage 1 GFDA, CPF, pipeline and HDS. 9. The Proponent will ensure that the OEMP includes measures regarding monitoring, assessing and if required rectifying any air quality issues associated with the operation of the Stage 1 GFDA, CPF, pipeline and HDS.
Ecology	10. The Proponent shall ensure that all practicable measures are implemented to minimise the potential impacts on flora and fauna. 11. The Proponent shall manage the potential ecological impacts of the construction of the proposed project in accordance with the Flora and Fauna Management Plan which is to form part of the CEMP for the Project, as detailed in **Chapter 25** of this EA. 12. The Proponent shall manage the potential ecological impacts of the operation of the proposed project in accordance with the OEMP for the Project as detailed in **Chapter 25** of this EA. 13. Rehabilitation shall be undertaken in areas disturbed by the Project in accordance with a Landscape and Rehabilitation Management Plan (LRMP) as detailed in **Chapter 5, 10, 12** and **22** of this EA to ensure that the site is restored to existing or better conditions.
Land Use	14. The Proponent will ensure that ongoing consultation is undertaken with affected landowners throughout the detailed design phase of the Project and prior to and during the construction and operation phases of the Project. 15. The Proponent will adopt locational principles for siting of the construction workforce camps within the Stage 1 GFDA and proximate to the pipeline. 16. The Proponent will prepare and implement a Construction Workforce Management Plan as part of the CEMP to manage potential impacts associated with the construction workforce camps. 17. The Proponent will implement acoustic attenuation and mitigation where necessary as recommended by the Project noise assessment to ensure impacts upon surrounding land uses (particularly residential land) are minimised. 18. The Proponent will provide landscape screening as recommended in the visual assessment to ensure visual impacts are minimised. 19. The Proponent will negotiate access arrangements during construction and operation with relevant landholders and stakeholders in advance of commencement of works. 20. The Proponent will undertake rehabilitation as soon as practical upon completion of construction works to allow normal farming practices to resume. 21. The Proponent will ensure that access to properties and farming land is maintained during works. Should the works require closure of access, a detailed consultation program would be undertaken with affected

Issue	Commitments
	stakeholders and landholders. 22. The Proponent will ensure that upon completion of construction activities, disturbed areas (excluding the Stage 1 GFDA) would be rehabilitated to restore the areas to their original land use. 23. The Proponent will ensure that upon completion of the Project, the entire site would be rehabilitated, including restoration of the area to its original land use.
Water	24. The Proponent shall implement all practicable measures to minimise soil erosion and discharge of sediments from the various project sites. 25. The Proponent shall prepare and implement the following management plans as part of the CEMP for the Project prior to commencement of construction, as detailed in **Chapter 25**: • Construction Soil and Water Management Plan; • Erosion and Sediment Control Plan; • Acid Sulfate Soils Management Plan; • Emergency Response Plan. 26. The Proponent shall prepare and implement the following management plans as part of the OEMP for the Project, as detailed in **Chapter 25**: • Soil and Water Management Plan; • Emergency Response Plan.
Groundwater	27. The Proponent shall prepare and implement a Groundwater Management Plan (GWMP), as detailed in **Chapter 25**.
Noise	28. A Noise Management Plan (NMP) would be prepared as part of the CEMP to address construction noise and vibration, and methods to minimise impacts. 29. A NMP would also be prepared as part of the OEMP to address operation noise and vibration, particularly related to operation of the CPF and HDS and post-commissioning noise monitoring.
Hazard and Risk	30. The Proponent shall prepare and implement the following for the Project prior to commencement of construction, as detailed in **Chapter 15**: • Hazard and Operability Study; • Final Hazard Analysis (comprising an update of the PHA); • Fire Safety Study; • Emergency Response Plan. • A Construction Safety Study. 31. The Proponent shall undertake the following for the Project prior to commencement of operations, as detailed in **Chapter 15**: • Development of a Safety Management System • An Independent Hazard Audit. 32. The Proponent shall undertake the following specific mitigation measures in respect of the Stage 1 GFDA, CPF and HDS:

Issue	Commitments
	• Designed and operated in accordance with the relevant Australian Standards; • Security fencing would be installed around infrastructure as appropriate, including installation of a security fence around the HDS outside the hazardous area classified by AS 2430 to minimise risk of ignition sources; • Vehicle barriers would be installed around infrastructure where appropriate; • A regular program of maintenance/inspection of infrastructure would be adopted in accordance with the Proponent's standard procedure; • Gravel or hardstand area to be constructed inside the fenced site around gas filled equipment to minimise risk of grass fires; • Lightning protection to be fitted as appropriate; • Adoption of the Proponent's standard operating procedures in respect of the proposed facilities; • Monitoring of pressure via SCADA system. • Use of remotely operated ESD valves; • Ignition control as per AS2430 Hazardous Area requirements; • Appropriate separation distances to be maintained between release points and site boundary in accordance with the consequence impact distances reported in the PHA report; • Disused wells and coal holes encountered throughout the Stage 1 GFDA would be cemented to minimise the likelihood of gas migration.
Traffic and Transportation	33. The Proponent shall ensure that construction and operational traffic is managed in accordance with a Traffic Management Plan prepared and implemented as part of the CEMP and OEMP for the Project.
Geology and Soils	34. The Proponent shall prepare and implement the following management plans as part of the CEMP for the Project prior to commencement of construction, as detailed in **Chapter 25**: • Construction Soil and Water Management Plan; • Acid Sulfate Soils Management Plan.
Visual	35. The Proponent shall ensure that directional lighting is employed during construction, to minimise light spill from construction footprints, particularly for night time drilling. 36. The Proponent shall prepare and implement a Landscape and Rehabilitation Management Plan as part of the OEMP for the Project, to minimise potential visual impacts during operations.
Heritage	37. The Proponent shall prepare and implement a Heritage Management Plan as part of the CEMP for the Project, to minimise potential impacts on Aboriginal and/or historic heritage during operations.

Issue	Commitments
Socio Economic	38. The Proponent shall prepare and implant a site specific Construction Workforce Management Plan (CWMP) as part of the CEMP for the Project.
Rehabilitation	39. The Proponent shall prepare a Landscape and Rehabilitation Management Plan as part of the CEMP for the Project, as detailed in **Chapter 25.**
Waste	40. The Proponent shall prepare and implement a Waste Management Plan as part of the CEMP for the Project.
Stage 1 GFDA	
Air Quality	41. The Proponent will ensure that the Construction AQMP outlines activities required to minimise potential impacts to air quality from: • Flaring of wells during commissioning. • Dust and vehicle emissions during the construction of the Stage 1 GFDA. 42. The Proponent will ensure that the OEMP includes measures aimed at monitoring, assessing and if required rectifying any air quality issues associated with the operation of the Stage 1 GFDA.
Ecology	43. The Proponent shall implement the following measures to minimise clearing of native vegetation required for construction of the Stage 1 GFDA: • Place disturbance footprints of gas wells outside remnant vegetation patches (about 6% of GFDA) and at least 40 m from major watercourses. • Design gas gathering system to avoid large remnant vegetation patches and to cross watercourses at sites with no or limited native vegetation, wherever possible, based on further survey work.
Land Use	44. The Proponent shall adopt an environmental envelope approach to allow for the movement of proposed well locations within designated limits, in order to be able to address and accommodate constraints as they arise. 45. The Proponent will decommission each well upon expiration of the life of the well. Land comprising the Stage 1 GFDA will be rehabilitated and returned to its previous use.
Noise & Vibration	46. The proponent shall conduct construction activities that are generally between the following hours of 7.00 am to 6.00 pm Monday to Saturday. Where it is demonstrated that construction noise goals can be achieved construction would be undertaken outside these hours. 47. Fraccing to be undertaken only during daytime hours, subject to geological conditions. Secondary noise controls such as portable acoustic screens would be utilised for fraccing activities. 48. Activities associated with the construction of access tracks and the clearing of vegetation would be undertaken during daytime hours only.
Heritage	49. The Proponent shall prepare and implement a Heritage Management Plan as part of the CEMP for the Project, to minimise potential impacts on Aboriginal and/or historic heritage during operations.
CPF	
Air Quality	50. The Proponent will ensure that the AQMP outlines activities required to minimise potential impacts to air quality from dust and vehicle emissions

Issue	Commitments
	during the construction of the CPF. 51. The Proponent will ensure that the OEMP includes measures aimed at monitoring, assessing and if required rectifying any air quality issues associated with the operation of the CPF. .
Ecology	52. Place disturbance footprints of the CPF outside remnant vegetation patches and at least 40 m from major watercourses.
Land Use	53. The Proponent will decommission the CPF plant upon completion of the Project. CPF Site 1 will be redeveloped with a land use compatible with the land use zoning at the time of decommissioning.
Noise and Vibration	54. The proponent shall conduct construction activities that are generally between the following hours of 7.00 am to 6.00 pm Monday to Saturday. Where it is demonstrated that construction noise goals can be achieved construction would be undertaken outside these hours. 55. The Proponent shall undertake a program of noise monitoring once the CPF is operational in order to validate the design and mitigation measures applied to the facility. If required, further mitigation may be recommended following the monitoring program to ensure that operational noise is maintained in accordance with the relevant project noise goals. 56. The Proponent shall undertake the following design measures for the CPF plant to ensure that operational noise levels are maintained within the relevant project noise goals: 57. Following final plant selection and detailed design, the Proponent shall commission a further detailed operational noise assessment of the CPF plant to establish and confirm expected operational noise levels and inform detailed design of noise mitigation for the plant.
Hazard and Risk	58. The PHA should be updated when final design details are known, particularly for the operation of the flare. 59. Once final design details are known, a HAZOP of the design will be undertaken, particularly to assess abnormal operating modes such as flare and blowdown operations.
Pipeline	
General	60. The Proponent shall ensure that the pipeline is provided with marker tape at all sections of pipeline located within 35 m of residential development (as measured from the pipeline centreline). 61. Pipeline works, including construction, operation and decommissioning, would be undertaken in accordance with the recommendations in The Australian Pipeline Industry Association Limited – *Code of Environmental Practice – Onshore Pipeline (2005)* and AS 2885.
Air Quality	62. The Proponent will ensure that the Construction AQMP outlines activities required to minimise potential impacts to air quality from dust and vehicle emissions during the construction of the pipeline. 63. The Proponent will ensure that the OEMP includes measures aimed at monitoring, assessing and if required rectifying any air quality issues associated with the operation of the pipeline. .
Ecology	64. The Proponent shall implement all practicable measures to minimise potential impacts to flora and fauna from the construction of the pipeline in accordance with the Flora and Fauna Management Plan which is to form

Issue	Commitments
	part of the CEMP for the Project, as detailed in **Chapter 25** of this EA.
Land Use	65. The Proponent will ensure that where possible, the pipeline route remains within existing infrastructure easements. 66. The Proponent will ensure that the proposed pipeline is buried underground in accordance with AS2885 and protected by easements. The Proponent will ensure that future landowners and other stakeholders are aware of the location of the pipeline and any restrictions on the use of land within the easement. 67. Upon expiration of the life of the Project, the Proponent will abandon the pipeline in accordance with the regulator's guidelines. The easement will be extinguished from the title and the above ground infrastructure removed.
Noise and Vibration	68. Construction works would typically occur between 7.00am to 6.00pm, seven days per week with the exception of HDD which may need to be continued beyond typical construction hours in order to ensure the integrity and safety of the process. Blasting would typically occur between 9.00am to 5.00pm Monday to Friday, 9.00am to 1.00pm Saturday and no blasting on Sundays, if blasting is required. 69. The Proponent shall ensure that advanced notification of commencement of construction works is provided to potentially affected landowners indicating the length of time during which impacts may be experienced, the nature of potential impacts and a contact number for complaints to be recorded and responded to. 70. The Proponent shall ensure that works requiring the use of rock hammers do not occur within 20 m of a residence. 71. The Proponent shall ensure that works requiring blasting do not occur within 200 m of a residence.
Hazard and Risk	The Proponent shall undertake the following specific mitigation measures in respect of the pipeline: 72. The pipeline is to be provided with marker tape at all sections that would be located within a 35 m distance of residential development (as measured from the pipeline centreline) and or additional depth of cover in these areas. 73. Appropriate safety measures to be designed and adopted for sections of the pipeline which are in close proximity to 132 and 330 kV power lines to ensure the safety of personnel and equipment. These measures may include: • Selective earthing at certain positions along the pipeline; • Installation of zinc ribbon in the pipeline trench; • Installation of inline isolation in the pipeline; • Restriction of access to the pipeline and its facilities; • Use of equi-potential grids or other similar safety equipment during maintenance of the pipeline; and • Use of lockable test points for the cathodic protection system. 74. Preparation of a Construction Safety Study in respect of the pipeline. This

Issue	Commitments
	study should address general construction safety requirements as well as specific locational hazards such as AC induction. 75. Pipeline to be designed and operated in accordance with AS 2885-2007. Pipeline design to meet the requirements for T1 locations, being rural areas developed for residential, commercial or industrial use, where allotments are less than 1 hectare in area and buildings do not exceed four floors. 76. Regular maintenance/inspection of pipeline in accordance with the Proponent's standard procedures. 77. Relieving of stress where ground movement stresses pipework. 78. Installation of marker signs and marker tape along the length of the pipeline to alert people to the presence and location of the pipeline. Signage to include details of 'One-Call'/'Dial before-you-dig' services. 79. External surfaces of pipeline to be coated to protect against corrosion. Testing of the integrity of the coating ('Holiday' detection) to be carried out prior to burial of the pipeline. 80. Use of sacrificial anode cathodic protection system to provide further protection against corrosion. 81. Gas quality to be such that corrosion enhancing components are minimised. 82. Intelligent pigging of the pipeline to be carried out to assess pipeline condition every 5-10 years. 83. Regular patrolling of pipeline by the Proponent to assess for damage or activities which have the potential to cause damage to the pipeline. Patrols would also facilitate detection of ground movement or land subsidence. Where significant ground movement is detected and stresses are determined to be high, the ground around the pipeline/gathering line would be dug up to relieve stresses. 84. Pipeline design to make provision for current subsidence parameters for the location (as provided by the Mine Subsidence Board), where required. 85. Liaison with Mine Subsidence Board to determine the location and details of likely future mining activity in the vicinity of the pipeline.

APPENDIX 2
STATEMENT OF COMMITMENTS (MOD 1)

Environmental attribute	Recommendation/management	Relevant Project approval condition
Ecology		
Seaham	Surrounding remnant vegetation • Implement sedimentation and erosion controls • Undertake follow up weed control	3.2, 7.3(a), 7.3(c)
	Waterways • Implement sediment and erosion controls before trenching of watercourses (ID to 138 to 141)	3.2, 7.3(c)
Brandy Hill	Native vegetation in alignment • Limit clearing in areas of remnant and regrowth vegetation • Implement sedimentation and erosion controls • Undertake follow up weed control	3.2, 7.3(a), 7.3(c)
	Swamp Oak Floodplain Forest (EEC) – Mapped as 'Marginal" habitat for Koala under the Port Stephens Council CKPoM. • Minimise ROW to 15 m width • Implement and regularly check sediment and erosion controls	3.2
	Hunter Lowland Redgum Forest (EEC) • Minimise ROW to 15 m width • Implement and regularly check sediment and erosion controls	3.2, 7.3(a), 7.3(c)
	Adjacent Barties Creek (constructed irrigation channel) • Implement and regularly check sediment and erosion controls	3.2, 7.3(c)
Tomago	Swamp Oak Floodplain Forest (EEC) • Minimise ROW to 15 m width • Implement and regularly check sediment and erosion controls	3.2, 7.3(a), 7.3(c)
	Tributary of Francis Greenway Creek • Implement sediment and erosion controls before trenching	3.2, 7.3(c)

Environmental attribute	Recommendation/management	Relevant Project approval condition
	Hunter River • Underboring or HDD will be set back from the riparian areas to avoid the fringing Mangrove Forest and patch of Swamp Oak Forest (EEC) at KP 91 (Rev F)	7.3(c)
Aboriginal cultural heritage		
All sections	Disturbance of previously unidentified Aboriginal objects • AGL will cease work in the immediate vicinity if during the course of construction, they become aware of any previously unidentified Aboriginal objects Management of construction activities and consultation with RAPs • AGL will implement measures to manage potential impacts and consult with the RAPs during construction of the proposed pipeline corridor realignments	3.35 and 7.2(iv)
Noise		
All sections and the TRS	Construction noise management to minimise impacts to nearby receptors • Construction activities of the modified pipeline and the TRS will be managed and impacts to surrounding nearby receptors minimised. Blasting management to minimise impacts to nearby receptors • Blasting activities of the modified pipeline and the TRS will be managed and impacts to surrounding nearby receptors minimised. Management of complaints during construction and operation • Complaints from the community regarding construction and operational activities of the modified pipeline and the TRS will be managed and handled appropriately.	3.14, 3.15, 3.17, 7.2(g) 3.18, 3.20, 3.21 6.2, 6.3
TRS	Operational noise management to minimise impacts to nearby receptors • Operational noise of the TRS will be managed and impacts to surrounding nearby receptors minimised.	3.24, 7.4(e)iii
Hazard and risk		
Seaham	MLV final location • AGL will prepare a FHA which will provide a quantitative evaluation of the risk	3.47(c)
Tomago	The placement of the pipeline in proximity to an existing high pressure pipeline in the cleared easement to the TRS • AGL will prepare a FHA which provide a quantitative evaluation of the risk The potential for excess dosing at the odourant facility either within the TRS or within the NGSF • AGL will prepare a HAZOP study which will include analysis and mitigation for the final location of the odourant facility	3.47(c) 3.47(b)
Soils		
All sections	Encountering ASS during construction activities • The existing draft ASSMP will be finalised to incorporate the modified pipeline corridor alignment	1.1(f), 7.3(c)i and iii

Environmental attribute	Recommendation/management	Relevant Project approval condition
Surface water		
All sections	Watercourse crossings • The revised watercourse crossings due to the proposed modification will be included within the Watercourse Crossing Management Strategy Ground disturbance • Construction activities will manage soil and erosion to minimise effects to surface water quality, both in the immediate area and downstream	3.4, 7.3(b)
Groundwater		
All sections	Groundwater interception with ASS during trenching • The modified sections will require pre-construction investigations to be undertaken in relevant areas to determine ASS and implementation of appropriate management strategies	7.3(c)i
Air quality		
Tomago	TRS discharges to air due to dual water bath heaters • A discharge monitoring point will be established at the TRS and monitor relevant emissions similar to the requirements of the HDS stated in the Project approval	3.30, 3.31 and 4.5
Socio-economic		
All sections	Community stakeholder engagement • The Community and Stakeholder Engagement Plan will be updated to incorporate the modified pipeline corridor alignment	6.5
Visual		
Tomago	Building materials • AGL will consider the use of building materials and treatments for the TRS which visually complement the surrounding land uses	3.40