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Mr Stephen O'Donoghue  
Director Resource Assessments  
Department of Planning, Industry and  
Environment  
12 Darcy St  
Parramatta NSW 2124

7 September 2021

Dear Stephen,

**RE: Liddell Battery and Bayswater Ancillary Works Project (SSD-8889679) Requests for Additional Information**

I refer to:

- State Significant Development application 8889679 lodged by AGL Macquarie Pty Limited (**AGLM**) for the Liddell Battery and Bayswater Ancillary Works Project (**Project**); and
- your letters to AGLM dated 17 August 2021 and 27 August 2021 requesting additional information in relation to State Significant Development application 8889679.

This letter and the consultant memos included in the appendices contains AGLM's response to the additional information requested in these letters.

For ease of reference, each request for additional information has been summarised in **bold** with AGLM's response included below each item.

**A. Request for additional information – DPIE**

***Submission of a tabulated version of the development consents proposed to be consolidated as provided in Appendix B of the Environmental Impact Statement. The table should:***

- ***identify conditions that are proposed to be included in the SSD-8889679 approval (subject to the determination of the project);***
- ***provide justification for conditions that are not proposed to be included in SSD-8889679;***
- and***



- ***include any other relevant information to the consolidation of the consent***

Please see consolidated consents table attached as Appendix A.

**B. Request for additional information - Biodiversity Conservation Division (BCD)  
Recommendations (letter from BCD dated 24 August 2021)**

- 1. BCD recommends that the hierarchy of avoid, minimise and offset is applied to the development footprint to reduce direct impacts on biodiversity and reduce the need for offsetting.***

AGLM are seeking approval for the Project as defined in the Environmental Impact Statement prepared by Jacobs dated March 2021. Opportunities to limit the extent of vegetation clearance required would be considered as part of detailed design and construction planning. This would include:

- Detailed design to avoid PCTs with higher integrity scores to the extent practicable
- Confirmation of actual disturbance footprint for each Project component
- Recalculation of biodiversity credit requirements
- Provision of final layout plans and agreement of associated biodiversity credit requirements to DPIE and BCD
- Retirement of biodiversity credits prior to commencement of construction for each Project component (or sub-component).

Impacts to biodiversity will be reduced where possible and total number of credits to be retired for each component of the development is proposed to be retired on a pro-rata based on a credit / ha (of impact) calculation.

- 2. BCD recommends that effort for targeted flora searches is demonstrated in all vegetation zones for Plant Community Type 1691 within the development footprint.***

Please see memo from Jacobs attached as Appendix B.



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Please do not hesitate to contact me on 0410 479310 if you would like to discuss the matters contained in this letter.

Yours sincerely,

A handwritten signature in black ink, which appears to read "Arianna Henty". The signature is fluid and cursive, with a large, stylized loop at the end.

**Arianna Henty**

**Land and Approvals Manager – Major Projects**

*Appendix A – Response to DPIE - Consolidated consents table*

*Appendix B – Response to BCD Correspondence – Jacobs memo*

APPENDIX A																									
Conditions of Approval	Consent Condition			Additional Information	Status																				
DA Reference 8/2016 – Construction of a new blast wall at Bayswater Power Station (MSC)																									
1	The development being carried out in accordance with the DA and drawings referenced below, and endorsed with Council's approval stamp, except where amended by the following conditions. <table><tr><td>Drawing No.</td><td>Revision</td><td>Drawn by</td><td>Drawing</td><td>Received</td></tr><tr><td>235281-S-001</td><td>F</td><td>Aurecon</td><td>20/5/13</td><td>5/2/16</td></tr><tr><td>235281-S-002</td><td>E</td><td>Aurecon</td><td>31/7/13</td><td>5/2/16</td></tr><tr><td>235281-S-003</td><td>E</td><td>Aurecon</td><td>31/7/13</td><td>5/2/16</td></tr></table>			Drawing No.	Revision	Drawn by	Drawing	Received	235281-S-001	F	Aurecon	20/5/13	5/2/16	235281-S-002	E	Aurecon	31/7/13	5/2/16	235281-S-003	E	Aurecon	31/7/13	5/2/16	Construction is complete and meets the requirements of Muswellbrook Shire Council.	Complete – not to be carried over to SSD1.
Drawing No.	Revision	Drawn by	Drawing	Received																					
235281-S-001	F	Aurecon	20/5/13	5/2/16																					
235281-S-002	E	Aurecon	31/7/13	5/2/16																					
235281-S-003	E	Aurecon	31/7/13	5/2/16																					
2	Plans on Site - A copy of all stamped approved plans, specifications and documents (including the Construction Certificate if required for the work incorporating certification of conditions of approval) must be kept on site at all times so as to be readily available for perusal by any officer of Council or the Principal Certifying Authority.			Construction is complete and meets the requirements of Muswellbrook Shire Council.	Complete – not to be carried over to SSD1.																				
3	All building work must be carried out in accordance with the provisions of the Building Code of Australia.			Construction is complete and meets the requirements of the Building Code of Australia.	Complete – not to be carried over to SSD1.																				
4	All required erosion and sedimentation techniques are to be properly installed prior to the commencement of any site works and maintained in a functional and effective condition throughout the construction activities until the site is stabilised.			Construction completed to meet the requirements of Muswellbrook Shire Council.	Complete – not to be carried over to SSD1.																				

**DA Reference 74/2018 – Construction of office and car park ancillary to security at Bayswater Power Station (MSC)**

1	<p>Development in Accordance with Plans - The development being carried out in accordance with the DA, the statement of environmental effects and the drawings referenced below, and endorsed with Council's approval stamp, except where amended by the following conditions.</p> <table><tr><td>Drawing No</td><td>Revision</td><td>Drawn by</td><td>Drawing</td><td>Received</td></tr><tr><td>001A Office Plan Section and Elevations</td><td>B</td><td>Marathon Modular</td><td>20/06/2018</td><td>21/08/2018</td></tr><tr><td>Survey Plan Sheet 1 of 2</td><td>-</td><td>Tony Mexon and Associates</td><td>29/06/2018</td><td>29/06/2018</td></tr><tr><td>Site Plan to be updated upon receipt of doc</td><td>2</td><td>Tony Mexon and Associates</td><td>29/06/2018</td><td>29/06/2018</td></tr></table>	Drawing No	Revision	Drawn by	Drawing	Received	001A Office Plan Section and Elevations	B	Marathon Modular	20/06/2018	21/08/2018	Survey Plan Sheet 1 of 2	-	Tony Mexon and Associates	29/06/2018	29/06/2018	Site Plan to be updated upon receipt of doc	2	Tony Mexon and Associates	29/06/2018	29/06/2018	Construction completed to meet the requirements of Muswellbrook Shire Council.	<b>Complete – not to be carried over to SSD1.</b>
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Site Plan to be updated upon receipt of doc	2	Tony Mexon and Associates	29/06/2018	29/06/2018																			
<b>Operational Conditions Imposed Under the Environmental Planning and Assessment Act and Regulations and other Relevant Legislation</b>																							
2	Building Code of Australia - All building work must be carried out in accordance with the provisions of the Building Code of Australia.	Condition is for the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>																				
3	Access to Premises Standard - All building work must be carried out in accordance with the provisions of the Commonwealth (Access to Premises — Buildings) Standards 2010.	Condition is for the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>																				
<b>Conditions to be addressed Prior to the Issue of a Construction Certificate</b>																							

4	No works shall commence on site until such time as a Construction Certificate has been issued for either part or all of the works. If a certificate is issued for part of the works it must cover the works being undertaken onsite.	Condition is for prior to construction of the project.	<b>Complete – not to be carried over to SSD1.</b>
5	Section 7.12 Contributions - Pursuant to section 4.17(1) of the EPA Act 1979, and the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010, a contribution of \$625 shall be paid to Muswellbrook Shire Council. The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the provisions of the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010. The contribution is to be paid prior to the issue of the Construction Certificate.	Condition is for prior to construction of the project.	<b>Complete – not to be carried over to SSD1.</b>
<b>Conditions that must be Addressed Prior to Commencement</b>			
6	<p>Site Sign - A sign must be erected in a prominent position on any worksite on which work involved in the erection or demolition of a building is being carried out:</p> <ul style="list-style-type: none"> <li>(a) Stating that unauthorised entry to the work site is prohibited;</li> <li>(b) Showing the name of the principal contractor (or person in charge of the work site), and a telephone number at which that person may be contacted at any time for business purposes and outside working hours; and</li> <li>(c) Showing the name, address and telephone number of the Principal Certifying Authority for the work.</li> </ul> <p>Any such sign must be maintained while not building work or demolition work is being carried out but must be removed when the work has been completed.</p> <p>This condition does not apply to building works being carried out inside an existing building.</p>	Condition is for prior to the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>
7	Sediment and Erosion Control - Where construction or excavation activity requires the disturbance of the soil surface and existing vegetation, adequate measures for erosion and sediment control shall be provided. As a minimum, control techniques are to be in accordance with 'The Blue Book' published by Landcom provisions on	Condition is for prior to the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>

	Erosion and Sediment Control, or a suitable effective alternative method. All required sedimentation control techniques are to be properly installed prior to the commencement of any site works and maintained in a functional and effective condition throughout the carrying out the development.		
8	<p>Damage to Public Infrastructure - The applicant shall bear the cost of all restoration works to Council property damaged during the course of this development. The applicant shall submit in writing and/or photographic record, of any existing damage to Council property before commencement of work. Note: This documentation will be used to resolve any dispute over damage to infrastructure. If no documentation is received prior to commencement of work it will be assumed that the infrastructure was undamaged and the applicant will be required to restore all damaged infrastructure at their expense.</p>	Condition is for the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>
9	<p>Site Facilities -</p> <p>(a) If the development involves building work or demolition work, the work site must be fully enclosed by a temporary security fence (or hoarding) before work commences.</p> <p>(b) A minimum width of 1.2m must be provided between the work site and the edge of the roadway so as to facilitate the safe movement of pedestrians.</p> <p>(c) Any such hoarding or fence is to be removed when the work has been completed.</p> <p>(d) A garbage receptacle fitted with a tight fitting lid for the reception of all food scraps and papers from the work site must be provided prior to building work commencing and must be maintained and serviced for the duration of the work.</p> <p>(e) Toilet facilities must be provided on the work site at the rate of one toilet for every 20 persons or part of 20 persons employed at the work site.</p> <p>(f) Each toilet provided must:</p> <ul style="list-style-type: none"> <li>• be a standard flushing toilet, connected to a public sewer, or</li> <li>• if connection to a public sewer is not available, to an on-site effluent disposal system approved by the council, or</li> </ul>	Condition is for the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>

	<ul style="list-style-type: none"> <li>• an approved temporary chemical closet.</li> </ul> <p>(g) The provision of toilet facilities must be completed before any other work is commenced.</p> <p>(h) A person having the benefit of this certificate who causes an excavation that extends below the level of the base of the footings of a building on an adjoining allotment of land must at their own expense and where necessary:</p> <ul style="list-style-type: none"> <li>• protect and support the building from damage, and</li> <li>• If necessary, underpin and support the building in accordance with the details prepared by a professional engineer.</li> </ul> <p>(i) A person having the benefit of this certificate who causes the excavation must, at least 7 days before commencing this work, give notice of intention to do so to the owner of the adjoining allotment of land and provide particulars of the proposed work.</p> <p>(j) Erosion and sediment controls must be provided in accordance with the details shown on the approved plans, prior to the disturbance of any soil on the work site.</p>		
<b>Conditions that must be Complied with during Demolition and Building Work</b>			
10	<p>Site Waste Minimisation - Throughout the carrying out of building works the person acting with this consent shall take reasonable steps to minimise waste from the carrying-out of the development in accordance with the following objections of Chapter 24 Waste Minimisation and Management of Council's Development Control Plan.</p> <ul style="list-style-type: none"> <li>* Optimise adaptive reuse opportunities of existing building/structures</li> <li>* Maximise reuse and recycling of materials</li> <li>* Minimise waste generation</li> <li>* Ensure appropriate storage and collection of waste</li> <li>* Minimise environmental impacts associated with waste management</li> <li>* Avoid illegal dumping</li> <li>* Promote improved project management</li> </ul>	Condition is for the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>



11	Materials - In accordance with the provisions of the Muswellbrook Development Control Plan the external cladding of the building shall be constructed from non-reflective metal cladding. Zincalume or reflective white sheet metal cladding is not to be used without the prior written approval from Council.	Condition is for the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>
<b>Conditions which must be Complied with Prior to the Issue of the Occupation Certificate</b>			
12	Occupation - The building is not to be used or occupied until a final inspection has been carried out and an occupation certificate has been obtained from the Principal Certifying Authority.	Condition is for the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>
13	<p>Construction of Parking Areas - Prior to the issue of any Occupation Certificate, all required parking areas, loading bays, driveways, internal access ways, vehicular ramps and turning areas shall fully constructed, sealed, line marked, sign posted in accordance with the approved car parking plans and AS.2890.1 2004 Parking Facilities and the relevant provisions of AS1428.1 and AS1428.4.</p> <p>Where an accessible parking space is required to comply with the provisions of the Building Code of Australia and/or the Access to Premises Standard, the proposed car parking arrangement is to be modified to include such a car parking space which is to be constructed sealed and line marked in accordance with the provisions of the relevant Australian Standard.</p>	Condition is for the construction of the project.	<b>Complete – not to be carried over to SSD1.</b>
<b>Conditions that must be Complied with at all Times</b>			
14	Bush Fire Threat Management - At all times bushfire threat and vegetation control measures are to be maintained in relation to the proposed development in accordance with the Control Measures specified by Bushfire Risk Management Plan provided in respect to the site's operations or an updated version of that plan. Where the Bushfire Risk Management Plan is updated a copy of the new document should be provided to Council for its records.	Required for operation and maintenance of the approved works.	<b>Included in operational management plans.</b>

15	Stormwater Disposal - All stormwater from the development including all hardstandings and overflows from rainwater tanks is to be collected and disposed of to an appropriately constructed discharge into the sites existing stormwater infrastructure. The point of discharge for this stormwater is to be constructed and managed to avoid erosion of the adjacent ground.	Required for operation and maintenance of the approved works.	<b>Ongoing – to be carried across for SSD1.</b>																				
16	Decommissioning - All buildings, hard stand areas and other improvements, constructed as part of this consent, are to be removed, and the site rehabilitated with grass and native trees and shrubs when the security facilities are no longer required.	Required for decommissioning and rehabilitation of the approved project.	<b>Ongoing – to be carried across for SSD1.</b>																				
<b>DA Reference 8.2018.273.1 – Feed water pipeline, water reticulation system and relocation of water pipeline (SC)</b>																							
1	<p>Approved Plans and Documentation – The work must be carried out in accordance with the requirements of the Building Code of Australia (National Construction Code).</p> <p>a) Approval is limited to a period five (5) years from the date of consent.</p> <p>b) The development consent incorporates this schedule of conditions and the plans referenced and stamped as follows:</p> <table border="1"> <tr> <td colspan="4">Plans prepared by: AGL Macquarie, Project Name: BCP Feed Water Pipe</td></tr> <tr> <td>Name of Plan</td><td>Drawing Number</td><td>Revision</td><td>Date</td></tr> <tr> <td>General</td><td>BW 838299</td><td>A</td><td>16/10/2018</td></tr> <tr> <td>Concrete Thrust Blocks &amp; support Pipe Crossover</td><td>BW 838300</td><td>A</td><td>16/10/2018</td></tr> <tr> <td>Expansion Branch Leg Rd Crossing and Culvert Detail</td><td>BW 838301</td><td>A</td><td>16/10/2018</td></tr> </table>	Plans prepared by: AGL Macquarie, Project Name: BCP Feed Water Pipe				Name of Plan	Drawing Number	Revision	Date	General	BW 838299	A	16/10/2018	Concrete Thrust Blocks & support Pipe Crossover	BW 838300	A	16/10/2018	Expansion Branch Leg Rd Crossing and Culvert Detail	BW 838301	A	16/10/2018	<p>Construction completed to meet the requirements of the building code</p> <p>Expires 10/01/2024</p> <p>Construction completed to meet the requirements of Singleton Council.</p>	<b>Complete - not to be carried across for SSD1.</b>
Plans prepared by: AGL Macquarie, Project Name: BCP Feed Water Pipe																							
Name of Plan	Drawing Number	Revision	Date																				
General	BW 838299	A	16/10/2018																				
Concrete Thrust Blocks & support Pipe Crossover	BW 838300	A	16/10/2018																				
Expansion Branch Leg Rd Crossing and Culvert Detail	BW 838301	A	16/10/2018																				

	<table> <tr> <td>Unsupported Pipe Crossover</td><td>BW 838302</td><td>A</td><td>16/10/2018</td></tr> <tr> <td>Ancillary Civil Works Water Pipe</td><td>BW 838303</td><td>A</td><td>16/10/2018</td></tr> </table> <p>Details of the development shown in the approved plans and documents referenced are altered in the manner indicated by:</p> <p>I Any amendments made by Council on the approved plans or documents;</p> <p>li Any notes, markings, or stamps on approved plans or documents, and</p> <p>lii Any conditions contained in this consent.</p>	Unsupported Pipe Crossover	BW 838302	A	16/10/2018	Ancillary Civil Works Water Pipe	BW 838303	A	16/10/2018		
Unsupported Pipe Crossover	BW 838302	A	16/10/2018								
Ancillary Civil Works Water Pipe	BW 838303	A	16/10/2018								
<b>Prior to the commencement of Works</b>											
2	Notification of Commencement of Works - A minimum of 60 days prior to the commencement of works, notification shall be given to Singleton Council Water and Sewer of the intent to commence works.	Condition not relevant as AGLM site it not connected to council water or sewer. Confirmed with SC over the phone.	<b>Complete however AGLM has no written evidence of this given confirmation was via a phone call.</b>								
3	Service Relocations - The registered proprietor of the land shall be responsible for all costs incurred in the necessary relocation of any services affected by the required construction works. Council and other service authorities should be contacted for specific requirements prior to commencement of any works.	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>								
4	Sediment and Erosion Control - The control of erosion and the prevention of silt discharge into drainage systems and waterways will be necessary in accordance with Council's Development Engineering Specifications, Landcom's 'Soil and Construction – Managing Urban Stormwater - Current edition. Sediment and erosion control measures are to be implemented prior to the commencement of any earthworks and shall be maintained until satisfactory completion and restoration of site earthworks, including revegetation of all exposed areas.	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>								
<b>Conditions that must be Complied with during Works</b>											

5	Noise – Construction Sites - The operating noise level of construction site operations, including machinery, plant and equipment when measured at any affected premises, shall be evaluated and comply with the requirements of the NSW Office of Environment and Heritage publication “Interim Construction Noise Guideline” July 2009.Approved Construction Times - The approved hours for construction of this development are: Monday to Friday - 7.00am to 6.00pm / Saturday – 8am to 1pm.No construction work shall take place on Sundays or Public Holidays.	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>
6	Waste Management - Rubbish generated from the development is to be suitably contained on site at all times. No rubbish shall be stockpiled in a manner which facilitates the rubbish to be blown off site.	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>
7	Earthworks - All earthworks carried out as part of the development are to be constructed in accordance with Australian Standard 3798-2007, ‘Guidelines on Earthworks for Commercial and Residential Developments’.	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>
<b>Advice</b>			
a	Vegetation - No native vegetation is to be removed in association with this consent unless expressly applied for.	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>
b	“Dial Before You Dig” Dial 1100 - Before any excavation work starts, contractors and others should phone the “Dial Before You Dig” service to access plans/information for underground pipes and cables. <a href="http://www.dialbeforeyoudig.com.au">www.dialbeforeyoudig.com.au</a> .	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>
c	Site Contamination Issues During Construction - Should any new information come to light during demolition or construction works which has the potential to alter previous conclusions about site contamination, Council must be immediately notified by the applicant, and works must cease. Works must not recommence on site until approval is granted by Council.	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>

d	Other Approvals and Permits - The applicant shall apply to Council for all necessary permits including crane permits, road opening permits, hoarding or scaffolding permits, footpath occupation permits, and/or any other approvals under Section 68 (Approvals) of the Local Government Act, 1993 or Section 138 of the Roads Act, 1993.	Condition is for the construction of the project.	<b>Complete - not to be carried across for SSD1.</b>
DA Reference 8.2018.23.1 – Low pressure pump station stabilisation (SC) / DA Reference 8.2018.23.2 as modified			
<b>General Conditions</b>			
1	<p>Approved Plans and Documentation – The work must be carried out in accordance with the requirements of the Building Code of Australia (National Construction Code).</p> <p>a. Approval is limited to a period five (5) years from the date of consent.</p> <p>b. A sign must be erected in a prominent position on any site on which building work, subdivision work or demolition work is being carried out:</p> <p>i) showing the name, address and telephone number of the Principal Certifying Authority for the work, and</p> <p>ii) showing the name of the principal contractor (if any) for any building work and a telephone number on which that person may be contacted outside working hours, and</p> <p>iii) stating that unauthorised entry to the work site is prohibited</p> <p>Any such sign is to be maintained while the building work, subdivision work or demolition work is being carried out, but must be removed when the work has been completed.</p> <p>c. The person having the benefit of the consent shall ensure that critical stage inspections are carried out and notify the Principal Certifying Authority giving adequate notice of the time that each stage of the building/development is ready for inspection. Note: Failure to have a critical stage inspection conducted by the Principal Certifier will constitute a breach of the Environmental Planning and Assessment Act 1979. Penalties may apply.</p> <p>d) The development consent incorporates this schedule of conditions and the plans referenced and stamped as follows:</p>	<p>Construction ongoing.</p> <p>Expires 9/05/2023.</p>	<b>To be carried over to SSD in a generic condition.</b>

	Plans prepared by: AGL Macquarie - River Water System Structures at Hunter River (River Mains)					
	Name of Plan	Drawing Number	Issue	Date		
	Site Plan	BW825373	Rev	10/11/2017		
	Arrangement	BW825374	Rev	10/11/2017		
	Typical sect thru River Main 3	BW825375	Rev 1	10/11/2017		
	Sections	BW825376	Rev	10/11/2017		
	Details of the development shown in the approved plans and documents referenced are altered in the manner indicated by: i) Any amendments made by Council on the approved plans or documents; ii) Any notes, markings, or stamps on approved plans or documents, and iii) Any conditions contained in this consent.					
Prior to the Commencement of any Development work						
1a	The development is to be undertaken in accordance with the mitigation and management measures contained within Table 5-1 of the Biodiversity Development Assessment Report, prepared by GHD, dated December 2018.				Construction ongoing.	To be carried across for SSD1.
2	Controlled Activity Approval - Should works be required within 40m of the top of bank of a watercourse, separate approval from the Department of Primary Industry – Water will be required. Prior to the issue of a Construction Certificate, evidence shall be submitted to Council that the necessary Controlled Activity Approval has been issued to undertake the works. Where a Controlled Activity Approval is not required, evidence shall be submitted to Council of the Department of Primary Industry – Water advice in this regard.				Construction ongoing	Complete – Controlled Activity A013527 issued for the project.

3	Service Relocation - The registered proprietor of the land shall be responsible for all costs incurred in the necessary relocation of any services affected by the required construction works. Council and other service authorities should be contacted for specific requirements prior to commencement of any works.	Required prior to construction.	<b>Complete - not to be carried across for SSD1.</b>
4	Sediment and Erosion Control - The control of erosion and the prevention of silt discharge into drainage systems and waterways will be necessary in accordance with Council's Development Engineering Specifications, Landcom's 'Soil and Construction – Managing Urban Stormwater - Current edition. Sediment and erosion control measures are to be implemented prior to the commencement of any earthworks and shall be maintained until satisfactory completion and restoration of site earthworks, including revegetation of all exposed areas.	To be carried over to the SSD1 – works are ongoing.	<b>Ongoing - to be carried over to SSD1.</b>
<b>During any Development Work</b>			
5	Noise – Construction Sites - The operating noise level of construction site operations, including machinery, plant and equipment when measured at any affected premises, shall be evaluated and comply with the requirements of the NSW Office of Environment & Heritage publication "Interim Construction Noise Guideline" July 2009. The approved hours for construction of this development are: Monday to Saturday - 7.00am to 6.00pm. No construction work shall take place on Sundays or Public Holidays.	Construction ongoing.	<b>To be carried across for SSD1.</b>
6	Discharge into waterways - No wastewater, chemicals or other substances harmful to the environment shall be permitted to discharge into the waterway adjacent to the site. A floating bund shall be installed to capture any pollutants from further entering the watercourse.	Construction ongoing.	<b>To be carried across for SSD1.</b>
7	Machinery - All noise generating machinery and equipment shall be maintained in an efficient, working condition during works.	Construction ongoing.	<b>To be carried across for SSD1.</b>

8	Dust - Water spray equipment shall be readily available for dust suppression at all times and used as necessary to prevent dust migration off-site. Works shall not be undertaken during weather conditions likely to facilitate or exacerbate dust migration off-site.	Construction ongoing.	<b>To be carried across for SSD1.</b>
9	Prevent Pollution to Stormwater - All reasonable and practicable measures must be taken to prevent pollution of any stormwater system as a result of silt run-off, oil and grease spills from any machinery. Wastewater for cleaning equipment must not be discharged direct or in-directly to any stormwater system. Soil used for filling or spoil from the excavation is not to be stockpiled in locations that can be viewed from adjoining premises or a road frontage.	Construction ongoing.	<b>To be carried across for SSD1.</b>
10	Stockpiling Material - Stockpiles of topsoil, sand, aggregate, spoil or other material shall be stored clear of any drainage path or easement, natural watercourse, footpath, kerb or road surface and shall have measures in place to prevent the movement of such material off site.	Construction ongoing.	<b>To be carried across for SSD1.</b>
11	Site Contamination Issued During Construction - Should any new information come to light during demolition or construction works which has the potential to alter previous conclusions about site contamination, Council must be immediately notified by the applicant, and works must cease. Works must not recommence on site until approval is granted by Council.	Construction ongoing.	<b>To be carried across for SSD1.</b>
12	Waste Material - All waste material shall be removed from the construction area and appropriately disposed of on-site or offsite at an appropriately licensed waste facility.	Construction ongoing.	<b>To be carried across for SSD1.</b>
<b>Advice</b>			
a	"Dial Before You Dig" Dial 1100 - Before any excavation work starts, contractors and others should phone the "Dial Before You Dig" service to access plans/information for underground pipes and cables. <a href="http://www.dialbeforeyoudig.com.au">www.dialbeforeyoudig.com.au</a>	Construction ongoing.	<b>To be carried across for SSD1.</b>



b	Water Pollution - The applicant is advised of their responsibility that the development is not to contribute to water pollution or pollution of waters as defined by the Protection of the Environment Operations Act 1997.	Construction ongoing.	<b>To be carried across for SSD1.</b>
c	Discharge of Water - The discharge of polluted waters into a river, lake or otherwise than in accordance with the conditions of a licence under the Protection of the Environment Operations Act 1997 may render the offender subject to prosecution and penalty under the Act. Therefore, where an approved drainage disposal system involves the possible discharge of drainage water into a river or lake, a licence may be required under the Protection of the Environment Operations Act 1997 to authorise such discharge.	Construction ongoing.	<b>To be carried across for SSD1.</b>
d	Responsibility for Other Consents / Agreements - The applicant is solely responsible for ensuring that all additional consents and agreements are obtained from other authorities, as relevant.	Construction ongoing.	<b>To be carried across for SSD1.</b>
<b>DA Reference 54-86 – Construction of Hunter Valley Gas Turbines (MSC)</b>			
i.	The submission of a building application, fees and minimum of four (4) sets of plans and specifications in relation to the proposed buildings. The applicant shall also submit all deeds, bonds, agreements and the like, and headworks contributions if required by the Development Consent with the Building Application.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
ii.	The building complying in all respects with the requirements of the Mine Subsidence Board.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
iii.	The buildings being painted to blend with the surrounding environment.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

iv.	Intensive landscaping being carried out around the perimeter of the site to reduce the visual impact of the development. A plan of landscaping is to be submitted with the building application.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
v.	All plants and trees to be used in landscaping shall be at least one metre in height and shall be watered by a suitable underground irrigation system which shall be maintained to the satisfaction of Council.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
vi	All necessary approvals under the Clean Air Act, Clean Waters Act and Noise Control Act being obtained with copies of such approvals being submitted to Council.	Environment Protection Licence in place (EPL 2122).	<b>Complete - not to be carried across for SSD1.</b>
<b>DA Reference 20_98 – Development of Ravensworth Coal Unloader Facility (SC)</b>			
1	The development being carried out in accordance with the development application and accompanying Environmental Impact Statement prepared by HLA Envirosciences Pty Ltd described as "Proposed Macquarie Generation Rail Project at Ravensworth Environmental Impact Statement" dated December 1997 and certified in accordance with Section 77(3) of the Act and submitted on 2.298 as may be modified by the conditions set out herein.	Construction works have been completed. Project in operation phase.	<b>To be carried across for SSD1.</b>
2	<p>MINE SUBSIDENCE BOARD -</p> <p>a.Final drawings are to be submitted to the Mine Subsidence Board prior to the commencement of construction and contain a certification by a qualified structural engineer, to the effect that any improvement constructed to meet the specification of such final drawings will be safe, serviceable and repairable taking into account the following mine subsidence parameters:</p> <p>(i) Maximum vertical subsidence of 1500mm.</p> <p>(ii) Maximum ground strains of <math>\pm 7</math>mm.</p> <p>(iii) Maximum tilt of 22mm/m.</p> <p>b.Submission of a geotechnical report appropriate to the site together with certification that the footings designed for the development are appropriate considering the geotechnical conditions existing at the site.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

3	<p>RAIL ACCESS CORPORATION -</p> <p>a. The applicant is to submit plans for the new and altered rail track connections to the Main Northern Railway Line to Rail Access Corporation for approval prior to installation.</p> <p>b. The applicant is to submit plans for the main line signalling alterations associated with the new siding to Rail Access Corporation for approval prior to installation. These alterations will need to address appropriate push-pull train operations which may affect the railway level crossing working at Ravensworth.</p> <p>c. The applicant is to submit detailed plans showing permanent access arrangements for Rail Access Corporation. Unrestricted access is required to Newdell Junction signal box area, the Main Northern and Newdell Branch Line corridors for inspections, maintenance, emergencies and any other purpose. The plans should specify quality and type of road construction as well as clearances to conveyors etc to ensure maintenance vehicles can use the road. The applicant will require to enter into a permanent right of way agreement in favour of the corporation.</p> <p>d. The applicant is to liaise with Rail Access Corporation to develop and implement operational protocols and train working procedures to expedite push-pull trains onto and off the Main Northern Line.</p>	Construction works have been completed. Project is in the operational phase.	<p><b>Conditions 3a, 3b, and 3c are complete - not to be carried across for SSD1.</b></p> <p><b>Condition 3d is to be carried over to SSD1.</b></p>
4	<p>ABORIGINAL - sites, MP1 and MPS identified within the study area on the subject land are not to be disturbed or destroyed and are to be fenced off during the period of construction.</p> <p>Consultation between the Wonnarua Tribal Council and Macquarie Generation is to occur to determine further management of the identified sites. Any application made to the National Parks &amp; Wildlife Service to destroy the identified sites will require written evidence from the Wonnarua Tribal Council and Wonnarua Local Aboriginal Land Council supporting the application.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
5	<p>ENVIRONMENTAL PROTECTION AUTHORITY –</p> <p>a. The proposed water spray system is to be correctly designed and is to operate at all times when coal is being unloaded.</p> <p>b. The extractive ventilation system for the basement area of the coal receiving area is to be fitted with a dust collection system to prevent the emission of dust-laden exhaust from the building.</p> <p>c. The applicant is to obtain a Pollution Control licence from the EPA.</p> <p>d. Construction times are restricted between 7am to 5pm Monday to Friday and 8am to 1pm Saturday. No construction activities on Sunday or Public Holidays.</p>	Condition 5a and 5e are related to operation of the project. To be included in the CEMS/CEMP for SSD1.	<p><b>Ongoing - to be carried across for SSD1.</b></p> <p><b>Conditions 5b, 5c, and 5d not to be carried over to SSD1.</b></p>

	<p>i.Noise levels in areas to the northeast as represented by Ravensworth Farm do not exceed:  Night - 38.5dB(A)L10  Day - 40dB(A)L10</p> <p>ii.Noise levels in areas to the east as represented by Hebden road do not exceed:  Night - 35dB(A)L10  Day - 35dB(A)L10</p> <p>The above criteria should be met under prevailing atmospheric conditions which include calm or windy conditions but excludes temperature inversions.</p> <p>e. Where the monitoring programme, as outlined in the EIS, determines that the amenity criteria, as identified by the EPA, are exceeded, the applicant is to implement effective remedial measures and private agreements or voluntary property acquisition for those residences.</p>	Conditions 5b, 5c, and 5d are complete.	
6	<p>DEPARTMENT OF LAND AND WATER CONSERVATION</p> <p>a.The applicant is to prepare and implement a site Environmental Management Plan relating to:</p> <p>i.Locations and designs for clean and contaminated water pathways, with detailed design drawings for all sediment basins.</p> <p>ii.Segregated pathways and storage facilities for clean and contaminated stormwater runoff, with segregated reuse priority for contaminated water.</p> <p>iii.A commitment not to allow any excess contaminated runoff to enter Bowmans Creek, and a suitable monitoring programme to demonstrate that no excess contaminated water leaves the site.</p> <p>iv.A maintenance schedule for the pollution traps identifying cleaning periods and methods of disposal.</p> <p>v. A maintenance schedule for the sediment ponds identifying cleansing periods and methods of disposal.</p> <p>b.The applicant is to demonstrate a commitment to maintaining final drainage lines in a stable condition.</p>	To be included in the CEMS/CEMP for SSD1.	<b>Ongoing - to be carried across for SSD1.</b>
7	<p>PACIFIC POWER - That Macquarie Generation undertake the necessary relocation of easements and/or power lines, before the construction of the facility, to Energy Australia requirements and satisfaction.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

8	ROADS AND TRAFFIC AUTHORITY - That a Austroads "Type C" right turn lane treatment, and Austroads "Type A" left turn treatment in accordance with RTA requirements be provided for access to the site from the New England Highway.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>																																				
9	OCCUPATION OF THE SITE - Not to use the site until a final inspection has been undertaken by Council officers and all conditions of consent complied with.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>																																				
10	FINANCIAL ASSISTANCE - The applicant shall pay to Council a financial contribution of \$10,000 towards the cost of a master landscape plan for mine affected areas within six (6) months of acting upon this consent.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>																																				
<b>DA Reference 114_2016 – Change of use from storage shed to operations centre (MSC)</b>																																							
1	<p>Development in Accordance with Plans - The development being carried out in accordance with the development application and the drawings referenced below, and endorsed with Council's approval stamp, except where amended by the following conditions:</p> <table> <tr> <th>Drawings no.</th><th>Rev</th><th>Drawn by</th><th>Date</th></tr> <tr> <td>DD01: Layouts</td><td>K</td><td>R Ockendon</td><td>12/12/16</td></tr> <tr> <td>DD03: Plans and Elevations</td><td>K</td><td>R Ockendon</td><td>12/12/16</td></tr> <tr> <td>DD04: External Works /Roofs</td><td>G</td><td>R Ockendon</td><td>12/12/16</td></tr> <tr> <td>DD05: Sections</td><td>E</td><td>R Ockendon</td><td>12/12/16</td></tr> <tr> <td>DD06: Construction Details</td><td>D</td><td>R Ockendon</td><td>12/12/16</td></tr> <tr> <td>DD09: Detailed design</td><td>D</td><td>R Ockendon</td><td>12/12/16</td></tr> <tr> <td>SK10:Site and locality plans</td><td>A</td><td>R Ockendon</td><td>12/12/16</td></tr> <tr> <td>Statement of Environmental Effects</td><td></td><td>GHD</td><td>November 2016</td></tr> </table>	Drawings no.	Rev	Drawn by	Date	DD01: Layouts	K	R Ockendon	12/12/16	DD03: Plans and Elevations	K	R Ockendon	12/12/16	DD04: External Works /Roofs	G	R Ockendon	12/12/16	DD05: Sections	E	R Ockendon	12/12/16	DD06: Construction Details	D	R Ockendon	12/12/16	DD09: Detailed design	D	R Ockendon	12/12/16	SK10:Site and locality plans	A	R Ockendon	12/12/16	Statement of Environmental Effects		GHD	November 2016	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
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2	Plans on Site - A copy of all stamped approved plans, specifications and documents (including the Construction Certificate if required for the work incorporating certification of conditions of approval) must be kept on site at all times so as to be readily available for perusal by any officer of Council or the Principal Certifying Authority.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
3	Building Code of Australia - All building work must be carried out in accordance with the provisions of the Building Code of Australia.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
4	Section 94A Contributions - Pursuant to section 80A(1) of the Environmental Planning and Assessment Act 1979, and the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010, a contribution of \$8,630.00 shall be paid to Muswellbrook Shire Council. The amount to be paid is to be adjusted at the time of the actual payment, in accordance with the provisions of the Muswellbrook Shire Council Section 94A Development Contributions Plan 2010. The contribution is to be paid prior to the issue of the Construction Certificate.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
<b>Conditions that must be Addressed Prior to Commencement</b>			
5	Site Sign - A sign must be erected in a prominent position on any work site on which work involved in the erection or demolition of a building is being carried out: (a) Stating that unauthorised entry to the work site is prohibited; (b) showing the name of the principal contractor (or person in charge of the work site), and a telephone number at which that person may be contacted at any time for business purposes and outside working hours; and (c) showing the name, address and telephone number of the Principal Certifying Authority for the work. Any such sign must be maintained while building work or demolition work is being carried out, but must be removed when the work has been completed. This condition does not apply to building works being carried out inside an existing building.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

6	<p>Site Facilities -</p> <p>a) A garbage receptacle fitted with a tight fitting lid for the reception of all food scraps and papers from the work site must be provided prior to building work commencing and must be maintained and serviced for the duration of the work.</p> <p>b) Toilet facilities must be provided on the work site at the rate of one toilet for every 20 persons or part of 20 persons employed at the work site.</p> <p>c) Each toilet provided must:</p> <ul style="list-style-type: none"> <li>• be a standard flushing toilet, connected to a public sewer, or</li> <li>• if connection to a public sewer is not available, to an on-site effluent disposal system approved by the council, or <ul style="list-style-type: none"> <li>▪ an approved temporary chemical closet.</li> </ul> </li> </ul> <p>d) The provision of toilet facilities must be completed before any other work is commenced.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
<b>Conditions that must be Complied with During demolition and Building Work</b>			
7	<p>Hot Water Installations - Hot water installations shall be in accordance with AS 3500 and shall deliver hot water to all sanitary fixtures used primarily for personal hygiene purposes, at a temperature not exceeding 50°C.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
8	<p>Demolition or Removal of Buildings -</p> <p>(a) Demolition must be carried out in accordance with AS 2601-1991, Demolition of structures.</p> <p>(b) Demolition materials must not be burnt or buried on the work site.</p> <p>(c) A person having the benefit of this certificate must ensure that all vehicles leaving the work site carrying demolition materials, have their loads covered and do not track soil or waste material onto the road.</p> <p>(d) If Demolition work obstruct or inconvenience pedestrians or vehicular traffic on an adjoining public road or reserve, a separate application must be made to council to enclose the public place with a hoarding or fence.</p> <p>(e) The work site must be left free of waste and debris when work has been completed.</p>	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
<b>Conditions that must be Complied with Prior to the Issue of the Occupation Certificate</b>			

9	Occupation - The building is not to be used or occupied until a final inspection has been carried out and an occupation certificate has been obtained from the Principal Certifying Authority.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
10	Access for People with Disabilities - Provision shall be made for access to and within the building on the site for persons with a disability in accordance with the provisions of AS 1428 Part 1 prior to the issue of any Occupation Certificate.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
11	Domestic Works as Executed Plans - Prior to the issue of an Occupation Certificate a works as executed plan drawn on the NSW Fair Trading approved template detailing the layout and location of the sewer and stormwater pipe work is to be submitted to Muswellbrook Shire Council.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
<b>Conditions that must be Complied with at all Times</b>			
12	Stormwater Disposal - All stormwater from the development including all hardstandings and overflows from rainwater tanks is to be collected and disposed of to the existing stormwater drainage on site.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
<b>DA Reference 223_2004 – Construction of Rail Sidings (SC)</b>			
1	APPROVAL IN ACCORDANCE WITH PLANS - The development being carried out generally in accordance with the development application and accompanying plans described as described in the Statement of Environmental Effects, dated 25 March 2004 and submitted on 1 April 2004.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
2	LAPSING OF CONSENT - Consent for the development lapsing after 5 years unless an extension of consent is granted by Council. Note that this relates to the period within which the development must commence.	Expired 9/8/2009. Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>



3	<p>INSPECTION REQUIREMENTS - The applicant shall ensure that arrangements are made for Council to carry out inspections of the development at the following stages of construction as applicable.</p> <p>a.Internal drainage lines before the floor is laid, or concrete placed.</p> <p>b.External drainage lines before backfilling of the trenches.</p> <p>c.The on-site sewage management installation when completed.</p> <p>Requests for inspections may be made either by telephone (02) 65 787 290 or in person at the Customer Services Counter. Inspection requests are subject to the following:-</p> <p>1.Applicants are required to nominate the relevant development application number and location prior to the inspection request being granted.</p> <p>2.Clerical staff only will receive all requests for inspections.</p> <p>3.Where work is not prepared, ready for inspection, applicants will be required to re-book inspections through the Customer Service Centre for the next available day and a re-inspection fee may be charged.</p> <p>4.Inspections must be received before 3.30 pm on the working day prior to when the inspection is required, except as detailed in (6) below.</p> <p>5.Inspections within the township of Singleton will generally be carried out as AM or PM inspections. Inspections for all other areas, except as detailed in (6) below, will be carried out at some stage during the day nominated.</p> <p>6.Inspections in outlying areas eg. Putty, Howes Valley, Lambs Valley, Mt Royal etc, may not be available on the next working day and will generally be carried out within two working days (48 hours) or on days specified by Council in those areas. Applicants should contact Council to determine when inspections are available in these areas and advise all contractors of inspection availability.</p> <p>7.Where Council has been appointed as the PCA, inspection requests will not be accepted if evidence of payment of building insurance under the Home Building Act, 1989 or evidence of an owner builders permit has not been received by Council.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
4	<p>CONSTRUCTION CERTIFICATE - Prior to the commencement of work for the construction of a building or structure it will be necessary to obtain a Construction Certificate and notify the Principal Certifying Authority of the license or permit number of the Principal Contractor and proof of any appropriate insurance in accordance with</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

	the Home Building Act, 1989. Note: If a Construction Certificate is approved by an independent accredited certifier it will be necessary to lodge the Construction Certificate and other approved documents with Council a minimum of two (2) days prior to the commencement of work.		
5	COMPLIANCE WITH LEGISLATION (GENERAL) - It is the responsibility of the applicant to construct the building in compliance with the Environmental Planning & Assessment Act 1979, amendments thereto and the Building Code of Australia.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
6	TEMPORARY CLOSET REQUIREMENTS - A temporary closet shall be provided on site from the commencement of building work. No inspections will be made until the closet is installed. A temporary closet shall be:- a.A water closet connected to an approved septic tank. b.A chemical closet supplied by a contractor approved by Council.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
7	CONTROL OF WASTE - Suitable provision for the containment of building waste materials generated by the building process, shall be provided within the boundaries of the building site prior to any construction work being commenced above natural or excavated ground level, as follows:- A.Such containment measures are to be either by means of a screened area of silt stop fabric or shade cloth, having dimensions of 1.8 x 1.8 x 1.2 metre high area OR equivalent size waste disposal bin. b.The provision of a suitable enclosure or bin shall be maintained for the term of the construction to the completion of the project. c. The enclosure or bin shall be regularly cleaned to ensure proper containment of the building wastes generated on the construction site.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
8	STABILISING EXCAVATIONS - The excavated and/or filled areas of the site are to be stabilised and drained to prevent scouring of soils. The finished ground around the perimeter of the building is to be graded to prevent ponding of water and to ensure the free flow of water away from the building and adjoining properties.	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

9	<p>RETAINING WALLS - Excavations or filling are to be adequately retained by Council approved retaining walls, or be battered to a slope of not greater than 2 (horizontal) to 1 (vertical). Retaining walls that fit any of the following criteria require Development Consent from Council and Construction Certificate Approval from a Principal Certifying Authority:</p> <p>a.Total height exceeding 600mm;</p> <p>b.Within 1 metre of the centreline of the sewer main or a distance equivalent to the invert depth of the main whichever is the greater;</p> <p>c.Within any registered easement; and</p> <p>d.Positioned within 500mm of a common boundary of an adjoining parcel of land.</p> <p>Note: The submission of a separate Development Application is not required for a retaining wall associated with this approval and indicated on the approved plans. Commencement of works in this instance however is not permitted until a Construction Certificate is obtained from a Principal Certifying Authority.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
10	<p>PROXIMITY OF CUT AND FILL - The cut and/or fill shall extend for minimum of one metre clear of the building and the finished ground shall slope away from the building with a minimum fall of 50mm over the first metre.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
11	<p>COMPLETION OF RETAINING WALLS - Retaining walls and associated drainage shall be constructed prior to the occupation of the building.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
12	<p>FILLING AND NATURAL DRAINAGE - Filling shall not be placed in such a manner that natural drainage from adjoining land will be obstructed.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
13	<p>FILLING AND SURFACE WATER - Filling shall not be placed on land in such a manner that surface water will be diverted to adjoining land.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

14	<p><b>SEDIMENT AND EROSION CONTROL</b> - Prior to the commencement of work, erosion and sediment control barriers shall be installed in accordance with Council's Guidelines for Erosion and Sediment Control from Building Sites as follows:-</p> <p>a.Silt fence consisting of driven pickets at 3metre maximum centres, Geotextile filter fabric securely attached to the pickets with the base of the fabric buried a minimum 150mm below undisturbed ground surface and/or straw bales fixed in a 100mm deep trench and held in position with stakes driven 600mm into the ground.</p> <p>b.The site entrance/exit shall be constructed at a minimum width of 3 metres with a surface of compacted chitter, gravel or a sealed surface. A diversion drain shall be installed to minimise runoff via the access to the road.</p> <p>c.Provision of a blue metal filled groin adjacent to the kerb inlet. The groin shall be 900mm long by 200mm diameter to be filled with 10-18mm blue or crushed rock.</p> <p>These controls are to be effectively maintained throughout the building phase. Failure to comply with these requirements may lead to Council instituting legal proceedings under the Protection of the Environment Operations Act 1997. Should any soil or sediment escape from the building site (for example from an access or vehicle tyres) it is to be cleaned off the roadway or gutter immediately to ensure it cannot enter the drainage system. Any nearby drainage pit must be protected with blue metal sausages.</p>	Construction works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
15	<p><b>FIRE SAFETY MEASURES (GENERAL)</b> - Prior to occupation of the building, the applicant shall submit to Council a Final Fire Safety Certificate in respect of each essential fire safety measures installed in the building indicating that:</p> <p>i.the measure has been inspected and tested by a person (chosen by the owner of the building) who is competent to carry out such an inspection and test; and</p> <p>ii.the measure was or was not (as at the date on which it was inspected or tested) found to have been designed and installed, and to be capable of operating, to a standard not less than that required by or under the Environmental Planning and Assessment Regulation or by the Council.</p> <p>The building owner shall cause Council to be given a Fire Safety Statement every 12 months after the first Fire Safety Statement is supplied, certifying that the fire safety measures have been maintained in an operable condition.</p>	Planned building works not constructed and no plan to develop them as Macquarie Generation constructed the Antiene Facility as an alternative.	<b>Not to be carried across for SSD1.</b>

	<p>The Fire Safety Statement shall be in a form approved by Council. One copy shall be displayed in a prominent position on the premises, one copy being submitted to Council and one copy to the NSW Fire Brigade.</p> <p>Clauses 170, 171, 172, 173, 174, 175, 176 and 177, Environmental Planning &amp; Assessment Regulation 2000.</p>		
16	<p>EMERGENCY RESPONSE PLAN - An Emergency Response Plan and a Hazard and Operability Plan shall be conducted in respect of the site operations. Copies of such are to be provided to Singleton Council.</p>	Emergency response plan in place for entire Bayswater and Liddell Operations.	<b>Complete - not to be carried across for SSD1.</b>
17	<p>EROSION MANAGEMENT PLAN - Preparation of an erosion management plan to be submitted to Council for approval prior to physical commencement of the development. Measures are to be taken to ensure that soil erosion is minimised and such measures are to be complied with during the carrying out of the development.</p>	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
18	<p>NATIONAL PARKS AND WILDLIFE SERVICES - Compliance with the following general terms of approval of NSW National Parks and Wildlife Services;</p> <ol style="list-style-type: none"> <li>1.S87 permit(s) to salvage will be issued by DEC covering aboriginal sites MG#1 and MG#2 and covering areas of high and moderate archaeological sensitivity.</li> <li>2.A research program for the above sites/areas of archaeological sensitivity, including testing, will be developed in consultation with DEC to establish the extent and nature of any archaeological deposits within the area.</li> <li>3.Aboriginal site MG#3 will not be impacted by the proposed development.</li> <li>4.On the basis of the outcomes of the salvage program, s90 consent(s) may be issued by DEC covering Aboriginal sites MG#1 and MG#2 and areas of high and moderate archaeological sensitivity.</li> <li>5.Aboriginal community groups to be provided with the opportunity to participate in all salvage programs.</li> </ol>	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
19	<p>ROADS AND TRAFFIC AUTHORITY - Any form of vehicular access across the common boundary between the subject site and Lot 2 DP 730417, Lot 7 DP 808670 New England Highway is denied. A traffic management plan shall be prepared by the proponent and submitted to the RTA for approval prior to commencing any works on</p>	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

	the site. This shall include the impacts of any construction and operational traffic on the New England Highway.		
20	<p>MINE SUBSIDENCE BOARD - Compliance with the following requirements of the Mines Subsidence Board;</p> <ul style="list-style-type: none"> <li>The subject area is within the Patrick Plains Mine Subsidence District and the Mine Subsidence Board's prior approval is required before any construction commences.</li> </ul> <p>The proposed modifications will need to take into account the following;</p> <ul style="list-style-type: none"> <li>The final drawings, to be submitted prior to commencement of construction, contain a certification by a qualified structural engineer, to the effect that any improvement constructed to meet the specifications of such final drawings will be safe, serviceable and repairable taking into account the flowing mine subsidence parameters:- <ul style="list-style-type: none"> <li>Maximum ground strains of +/- 7mm/m.</li> <li>Maximum tilt of 22mm/m</li> </ul> </li> </ul> <p>Submission of a geotechnical report appropriate to the site together with certification that the footings designed for the development are appropriate considering the geotechnical conditions existing at the site.</p>	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
21	EPA — RAIL UNLOADER - The proposed rail unloader augmentation is to comply with all requirements of the Environmental Protection Authority in respect of modifying the existing Pollution Control licence.	EPL 779 is in place for the development.	<b>Complete - not to be carried across for SSD1.</b>
22	<p>EPA — ENVIRONMENTAL MANAGEMENT DEVICES - All environmental management devices are to comply with the requirements of the Environmental Protection Authority, particularly in respect of:</p> <ol style="list-style-type: none"> <li>Stormwater separation from dirty water.</li> <li>Containment if contaminated water on site.</li> <li>Provision of dust suppression measures along the additional rail spur.</li> </ol>	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
23.	RAIL ACCESS CORPORATION /FREIGHT CORP - The applicant is to consult with Rail Access Corporation and/or Freight Corp.	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

**DA Reference 401\_2000 – Coal/rail unloader augmentation (SC)**

1	APPROVAL IN ACCORDANCE WITH PLANS - The development being carried out generally in accordance with the development application and accompanying plans described as described in the Statement of Environmental Effects - Proposed Ravensworth Rail Unloader Augmentation, prepared by HLA - Envirosciences dated 31st August 2000.	Ongoing requirement.	<b>To be carried across for SSD1.</b>
2	SURVEY MARKS - There being no interference with or destruction of Survey Marks, and Council is to be advised in writing if any such interference occurs.	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
3	EROSION MANAGEMENT PLAN - Preparation of an erosion management plan to be submitted to Council for approval prior to physical commencement of the development. Measures are to be taken to ensure that soil erosion is minimised and such measures are to be complied with during the carrying out of the development.	Ongoing requirement.	<b>To be carried across for SSD1.</b>
4	CONTAMINATED WATER - Any contaminated water from the site is to be collected and treated to ensure that there are not adverse off site environmental effects.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>
5	Final drawings are to be submitted to the Mine Subsidence Board prior to the commencement of construction and contain a certification by a qualified structural engineer, to the effect that any improvement constructed to meet the specification of such final drawings will be safe, serviceable and repairable taking into account the following mine subsidence parameters: i.Maximum vertical subsidence of 1500mm. ii.Maximum ground strains of $\pm 7$ mm. iii.Maximum tilt of 22mm/m.	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>

6	The proposed rail unloader augmentation is to comply with all requirements of the EPA in respect of modifying the existing Pollution Control licence.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>
7	All environmental management devices are to comply with the requirements of the EPA, particularly in respect of: a.Stormwater separation from dirty water. b.Containment if contaminated water on site. c,Provision of dust suppression measures along the additional rail spur.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>
8	The applicant is to consult with Rail Access Corporation and/or Freight Corp.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>
<b>DA Reference 460_2001 – Ravensworth rail unloader upgrade (SC)</b>			
1	APPROVAL IN ACCORDANCE WITH PLANS - The development being carried out generally in accordance with the development application and accompanying plans described in the Statement of Environmental Effects - Proposed Ravensworth Rail Unloader Upgrade prepared by HLA Envirosciences dated 29 August 2001.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>
2	CONTAMINATED WATER - Any contaminated water from the site is to be collected and treated to ensure that there are not adverse off site environmental effects.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>
3	EROSION MANAGEMENT PLAN - Preparation of an erosion management plan to be submitted to Council for approval prior to physical commencement of the development. Measures are to be taken to ensure that soil erosion is minimised and such measures are to be complied with during the carrying out of the development.	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>



4	SURVEY MARKS - There being no interference with or destruction of Survey Marks, and Council is to be advised in writing if any such interference occurs.	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
5	Final drawings are to be submitted to the Mine Subsidence Board prior to the commencement of construction and contain a certification by a qualified structural engineer, to the effect that any improvement constructed to meet the specification of such final drawings will be safe, serviceable and repairable taking into account the following mine subsidence parameters: i.Maximum vertical subsidence of 1500mm. ii.Maximum ground strains of $\pm 7$ mm. iii.Maximum tilt of 22mm/m.	Works have been completed.	<b>Complete - not to be carried across for SSD1.</b>
6	The proposed rail unloader augmentation is to comply with all requirements of the EPA in respect of modifying the existing Pollution Control licence.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>
7	All environmental management devices are to comply with the requirements of the EPA, particularly in respect of: a.Stormwater separation from dirty water. b.Containment if contaminated water on site. c,Provision of dust suppression measures along the additional rail spur.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>
8	The applicant is to consult with Rail Access Corporation and/or Freight Corp.	Ongoing requirement.	<b>Ongoing - to be carried across for SSD1.</b>

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<b>Subject</b>	<b>Response to new BCD recommendations –Project Name</b>	Liddell Battery and Bayswater Ancillary Works Project (SSD-8889679)
	<b>Appendix B</b>	
<b>Attention</b>	Mr Jack Turner	<b>Project No.</b> IS334000
<b>From</b>	Matt Consterdine	
<b>Date</b>	07 September 2021	

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## 1. Introduction

Jacobs was commissioned by AGL Macquarie Pty Ltd (AGLM) to deliver an Environmental Impact Statement (EIS) for the proposed Liddell Battery and Bayswater Ancillary Works Project (SSD-8889679) (the Project). The EIS was supported by various technical assessments including a Biodiversity Development Assessment Report (BDAR) and placed on public exhibition from 15 April to 12 May 2021. The BDAR was prepared by accredited assessor Matt Consterdine (BAAS 20027) referred to as 'the assessor' from hereon.

In May 2021 the Hunter Central Coast Branch of the Biodiversity and Conservation Division (BCD) provided a submission which contained a list of recommendations for addressing information gaps or improvements to the BDAR which have since been addressed in the Response to Submissions (dated July 2012).

More recently BCD have provided two further recommendations for the BDAR in a letter titled *Liddell Battery and Bayswater Ancillary Works Project (SSD-8889679) – Request for Advice – 24 August 2021*.

Point 1 of the *Request for Advice* is a matter for AGLM and the response to this is provided in the cover letter. The purpose of this memorandum is to communicate the response to Point 2 of the *Request for Advice* received from BCD.

## 2. Response to BCD Recommendation - Point 2

Point 2 of BCD's *Request for Advice* is:

*BCD recommends that effort for targeted flora searches is demonstrated in all vegetation zones for Plant Community Type 1691 within the development footprint.*

Specifically:

*Targeted flora surveys should be done in all vegetation zones for PCT 1691. The targeted flora survey tracks shown in Figure 6-1 (pp. 66-80) and provided as shapefiles do not show that targeted flora surveys were conducted in all vegetation zones for PCT 1691 within the development footprint. This is apparent on pages 68-70, 75-76, 78 and 80.*

*This PCT is associated with threatened orchids *Pterostylis chaetophora* and Tarengo Leek Orchid (*Prasophyllum petium*) as well as Tall Knotweed (*Persicaria elatior*). Targeted flora searches should be conducted for these species in all vegetation zones for PCT 1691 in accordance with the requirements detailed in Section 4.2 of the Surveying threatened plants and their habitats – NSW survey guide for the Biodiversity Assessment Method.*

### Assessors Response:

PCT 1691 Narrow-leaved Ironbark – Grey Box grassy woodland of the Central and Upper Hunter was divided into four zones based on condition, this included areas of 'moderate condition' woodland, 'regrowth' (*Acacia salicina*), rehabilitation (containing some planted Grey Box or Ironbark) and derived 'native grassland'. Threatened flora surveys were conducted over approximately 17 hectares of PCT 1691 including throughout the 'moderate', 'rehabilitation' and 'native grassland' vegetation zones (VZ) of this PCT (VZ 1, VZ 3 and VZ 4). These vegetation zones were considered as potentially suitable habitat for threatened flora species (including *Pterostylis chaetophora* and *Prasophyllum petium*). Suitable habitat for these species was chosen in accordance with the species profiles of the NSW BioNet Threatened Biodiversity Profile Data Collection (TBDC) – both species requiring vegetation 'characterised by grassy open forests or derived native grasslands'.

### Habitat Assessment results and discussion

Targeted flora survey did not include the areas of PCT 1691 'Regrowth' (VZ 2) as this zone was determined to be too degraded for these target threatened orchid species to occur. This assessment was based on the vegetation integrity score (VI) of this zone (VI score of only 10) as well as the habitat assessments for threatened species conducted by the assessor to inform selection of a candidate species list. Large areas of PCT 1691 'Regrowth' were examined while carrying out the vegetation integrity (VI) plots and vegetation mapping surveys in 2020.

The BDAR provides detailed discussion about the condition of PCT 1691 'Regrowth' vegetation zone. The poor condition of this zone is evident by the final VI score for this vegetation zone (see BAM-C case 00022769/ BAAS20027/ 21/00023909 and also the final Vegetation integrity assessment plot data shown in Appendix B1 below). It must be noted that the assessor mapped PCT 1691 'Regrowth' as a way to distinguish between the areas of dense exotic grass *and* the areas of dense exotic grass which also contained scattered regrowth *Acacia salicina* (a small native tree). If it were not for the emergent *A.salicina* here, these areas would have been classed as exotic grass, and would not have been included as a vegetation zone at all (as a result of the high proportion of exotic species cover). Given *A.salicina* is also common throughout the better condition patches of PCT 1691, these degraded areas were attributed to a regrowth form of this PCT. The ground layer of PCT 1691 'Regrowth' was dominated (exclusively in many areas) by dense Coolatai grass (*Hyparrhenia hirta*), which was growing up to a metre high in places (see photos). The growth of native species beneath this layer of grass was significantly suppressed by effects of shading, crowding and likely nutrient competition. The *A.salicina* did not provide sufficient shading effects to limit growth of exotic grass, and there were no refuges for small native plants beneath *A.salicina* trees (see photos). Chapter 5.4 of the BDAR states:

*'This vegetation zone is characterized by a monoculture of regrowth and mature *Acacia salicina* (Native Willow) growing amongst dense exotic grasses, particularly *Hyparrhenia hirta* (Coolatai Grass). It is likely that the dense exotic grass is currently suppressing germination of other native plant species. Given the lack of woodland structure, this vegetation zone is in poor condition with low ecological value.'*

*Hyparrhenia hirta* (Coolatai Grass) and *Carthamus lanatus* (Saffron Thistle) are highly dominant in most areas. Other exotic species include *Sida rhombifolia* (Paddy's Lucerne), *Senecio madagascariensis* (Fireweed), *Galenia pubescens* (Galenia), *Gomphocarpus fruticosus* (Cotton Bush), *Plantago lanceolata* (Lamb's Tongues), *Chloris gayana* (Rhodes Grass), *Axonopus fissifolius* (Narrow-leafed Carpet Grass), *Rapistrum rugosum* (Wild Mustard) and *Bidens pilosa* (Cobblers Pegs).

Appendix B1 shows the data captured from four vegetation integrity plots taken in PCT 'Regrowth'. This data shows the very low number of native species and very low cover of native species recorded in these four plots:

- Native grass (average 0.5 composition score / average 0.75 structure score)
- Native shrubs (average 0.5 composition score/ average 0.0025 structure score)
- Native trees (average 1.25 composition score / average 16.75 structure score)
- Native forbs (average 1.75 composition score / average 9.25 structure score)
- Native ferns (average 0 composition score / average 0 structure score)
- Native 'other' (average 0 composition score / average 0 structure score).

This data confers with the habitat observed across all areas of the zone as shown in the photographs below.

Furthermore, the areas of regrowth *A.salicina* in the development site have been subject to decades of land clearing and disturbance from cattle grazing, and more recent land modification for power station infrastructure. Some patches of regrowth *A.salicina* occurring within the development footprint were found to be growing on foreign fill material, such as coal reject and modified surfaces near power station infrastructure (see photo 5). Such areas are also considered too degraded to provide habitat for threatened flora including terrestrial orchids (given the soil here is not the original substrate).

### BAM-C Data Inputs

During the selection of candidate species in the BAM-C (Tab 5) the assessor is able to select 'habitat degraded' for specific candidate species (where habitat on a development site is too poor for the species to occur or persist). This 'habitat degraded' selection option is linked to the entire PCT of which that species may be associated with. Thus, when making this selection there is no option for the assessor to specify which vegetation zone is considered too degraded, rather the BAM-C removes the species as a confirmed candidate species altogether. So, if a PCT contains a high-quality vegetation zone (good habitat) and a low-quality vegetation zone (habitat degraded), the assessor cannot select 'habitat degraded' as this would nullify the vegetation zone with good quality habitat. PCT 1691 'Regrowth' on its own cannot be separated from the other vegetation zones of PCT 1691 in the BAM-C. This means that the assessor could not select 'habitat degraded' for threatened flora species (including *Pterostylis chaetophora* and *Prasophyllum petium*) within PCT 1691 'Regrowth', even though this is the case.

### Likelihood of occurrence

*Pterostylis chaetophora* and *Prasophyllum petium* (and *Diuris tricolor*) were not recorded within the study area during targeted surveys throughout better condition vegetation zones of PCT 1691 (9th-11th September 2020). The survey time was considered optimal as *Prasophyllum petium* was observed to be flowering at a known reference site at Mangoola (approximately 20 km from Lake Liddell) at the time of survey (Bell, 2020).

*Pterostylis chaetophora* and *Prasophyllum petium* (and *Diuris tricolor*) have not been recorded during recent comprehensive targeted surveys for orchids in the WOAOW project area (land surrounding our development site), which included walked flora transects over approximately 142 hectares of PCT1691 (including 'good', 'rehabilitation', 'regrowth' and 'derived native grassland' condition classes), (Kleinfelder, 2020). Recent survey by Kleinfelder was carried out during 15-18 September 2020, which corresponded with observation of flowering in these species elsewhere in the Hunter Valley (Bell, 2020). In the recent expert advice provided to Kleinfelder titled *Re: Threatened orchid surveys for the Bayswater Water and Other Associated Operational Works Project* by Stephen Bell (26<sup>th</sup> October 2020), Bell states 'it is worth noting that the 2020 season for Spring-flowering terrestrial orchids has been one of the best for several years'.

Furthermore, this advice explains likely reasons that these orchids do not occur in the Bayswater areas. Specifically:

*'With the exception of Pterostylis bicolor in Borrow Pit 4, the absence of any Spring-flowering orchids across the (WOAOW) Project area is likely indicative of an absence of mycorrhizal fungi in the soil. This is an ongoing research topic, which on current understanding suggests that all terrestrial orchids may be constrained in distribution within the central Hunter Valley because of a lack of fungi. It is unknown if such an absence of fungi is due to the prolonged presence of agricultural grazing in this region (which compacts the soil and therefore restricts fungi growth), or if the fungi were never present there' (Bell, 2020).*

Bell also provides more discussion on why *Diuris tricolor* and/or *Prasophyllum petilum* are highly unlikely to occur within the (WOAOW) Project area given the available evidence, specifically:

- *inconsistencies in fine-scale habitat attributes between the Project area and other locations supporting the target species, as outlined in the Expert Report;*
- *the lack of target orchids detected within the Project area during mid-September 2020, the best Spring-flowering orchid season there has been for several years;*
- *the extent of targeted survey conducted by Kleinfelder along transects 10 m apart across the 142 ha of potential orchid habitat within the Project area;*
- *the absence or low abundance of any other terrestrial orchid species within the Project area, suggestive of an absence of mycorrhizal fungi (and/or insect pollinators) for all terrestrial species.*

Whilst Bell does not discuss *Pterostylis chaetophora* in the 2020 letter to Kleinfelder, the evidence above indicates why this species (or any terrestrial orchid species) is considered highly unlikely to occur with the study area. Furthermore, the likelihood of them occurring in the PCT 1691 'regrowth' vegetation zone (the lowest condition class of PCT 1691 recorded) is even lower given the high dominance of exotic species in the ground layers.

According to Section 3.3 of the *Surveying threatened plants and their habitats: NSW survey guide for the Biodiversity Assessment Method* (DPIE, 2020), the assessor can plan surveys for threatened flora based on the extent of suitable habitat:

- *Only the suitable habitat of the target species within the subject land needs to be surveyed*
- *To identify suitable habitat, the threatened plant surveyor will need to consider the subject land in relation to its range of known plant habitats (according to TBDC and the Threatened Species Profile website)*



- *Suitable habitat may encompass entire PCTs or be restricted to specific niches*
- *Habitat for a species may diminish due to grazing, logging or drought.*

The development site is located within a highly disturbed landscape that does not possess large expanses of intact native vegetation and generally has a low ecological value. As most of the development site is in pre-existing developed areas, or areas which were previously cleared for grazing, there is only a limited amount of native vegetation (mostly rehabilitation or regrowth). Where the flora transects show small gaps (Figure 6-1 of the BDAR) in other vegetation zones of PCT 1691 (including moderate, rehabilitation or native grassland condition classes), these gaps were often due to the surveyors avoiding dense patches of Coolatai grass (*Hyparrhenia hirta*), Rhodes grass (*Chloris gayana*), Guinea grass (*Megathyrsus maximus* var. *maximus*) or other unsuitable habitat areas.



Photo 1: PCT 1691 Regrowth (east of Bayswater Power Station). Scattered *Acacia salicina* surrounded by very dense and tall Coolatai Grass (*Hyparrhenia hirta*) smothering the ground.





Photo 2: PCT 1691 Regrowth to the south of Bayswater Power Station showing scattered *Acacia salicina* surrounded by very dense and tall Coolatai Grass.



Photo 3: PCT 1691 Regrowth to the west of Bayswater Power Station showing scattered patches of *Acacia salicina* in the middle ground with dense Coolatai Grass in the foreground.





Photo 4: Coolatai Grass (*Hyparrhenia hirta*) dominates the ground layer of the majority of the study area, and areas of PCT 1691 'Regrowth'. The density between stems would mean native species (threatened or otherwise) would unlikely be able to compete with the exotic grass. Survey amongst Coolatai Grass in PCT 1691 Regrowth was deemed unproductive and unachievable.



Photo 5: PCT 1691 Regrowth to the south of Liddell Power Station showing scattered *Acacia salicina* growing on foreign fill (gravel substrate layer for old solar array). Not suitable habitat for threatened terrestrial orchids.



### Tall Knotweed (*Persicaria elatior*)

Regarding concerns about survey effort for *Persicaria elatior* – this species is associated with PCT 1071 (*Phragmites australis* and *Typha orientalis* coastal freshwater wetlands of the Sydney Basin Bioregion) according to the TBDC. PCT 1691 is not an associated community for *Persicaria elatior*.

The assessor acknowledges that some small patches of PCT 1071 within the development site do not show flora transect survey (in Figure 6-1 of the BDAR). Not all patches of PCT 1071 were accessible to conduct walked transects. Many patches of *Typha orientalis* were recorded growing beyond the banks of operational dams or ponds (in water too deep to access). Surveyors were limited by site safety protocols and could not enter man-made waterbodies to these depths to take tracks with GPS. These patches of PCT 1071 were inspected from the water edges during vegetation mapping work and were found to be monocultures of emergent *Typha orientalis* (with no terrestrial habitat for *Persicaria elatior* or other species) (see photos 6 to photo 8 below). Small strips of *Typha orientalis* also grew along operational canals (see page 78 and 80 of BDAR) and were mapped as PCT 1071. While no flora transect was marked in these locations, inspection of these *Typha* monoculture patches during vegetation mapping did not show other native species growing here (and no *Persicaria* species). The excavated banks of man-made canals and dams were characterized by thick exotic grass which bounded the edges of the emergent *Typha orientalis* (see photo 6). No *Persicaria* species were recorded throughout the mapped flora transects or vegetation mapping surveys in other parts of the study area. *Persicaria elatior* was not recorded during surveys of twelve hectares of nearby wetlands and dams carried out by Kleinfelder (during December) for the surrounding WOAOW project area (Kleinfelder, 2020).

According to Section 3.3 of the *Surveying threatened plants and their habitats: NSW survey guide for the Biodiversity Assessment Method* (DPIE, 2020), the assessor can plan surveys for threatened flora based on the extent of suitable habitat (according to TBDC and the Threatened Species Profile website). Many patches of monoculture *Typha orientalis* growing in water were not considered to be suitable habitat for *Persicaria elatior* which is only semi-aquatic and favours damp places on banks of waterbodies. Numerous patches of emergent *Typha orientalis* (or sometimes *Typha domingensis*) were mapped as PCT 1071, however these patches were not considered suitable habitat for *Persicaria elatior* or other semi-aquatic threatened plants.



Photo 6: one of the man-made dams to the south of Bayswater Power station. Patches of emergent *Typha orientalis* (or sometimes *Typha domingensis*) grow a distance from the bank. These patches were mapped as PCT 1071 however do not provide habitat for semi-aquatic plants due to the depth of water. The banks of this dam were dominated by dense exotic grasses and herbs.



Photo 7: Man-made dam to the south of Bayswater Power station. Patches of emergent *Typha orientalis* (or sometimes *Typha domingensis*) grow a distance from the bank. These patches were mapped as PCT 1071 however do not provide habitat for semi-aquatic plants due to the depth of water. The shoreline is dominated by dense exotic grasses and herbs.





Photo 8: Man-made dam to the south of Bayswater Power station. Patches of emergent *Typha orientalis* (or sometimes *Typha domingensis*) grow a distance from the bank. These patches were mapped as PCT 1071 however do not provide habitat for semi-aquatic plants due to the depth of water. The shoreline is dominated by dense exotic grasses and herbs.



Photo 9: Man-made canal to the south of Bayswater Power station. Patches of emergent *Typha orientalis* (or sometimes *Typha domingensis*) grow in deep water adjacent to steep banks. These patches were mapped as PCT 1071 however do not provide habitat for semi-aquatic plants due to the depth of water. Dense exotic grass grows all the way to the water edge. Flora transects were not recorded through small patches of PCT 1071 here due to safety and access issues.

Response to new BCD  
recommendations –  
Appendix B

### References:

Bell, SAJ. 2020. Threatened orchid surveys for the Bayswater Water and Other Associated Operational Works Project (Letter to Kleinfelder), Eastcoast Flora Survey Vegetation Assessment & Mapping. Kotara NSW

Department of Planning, Industry and Environment 2020. Surveying threatened plants and their habitats, NSW survey guide for the Biodiversity Assessment Method.

Kleinfelder (2020). Biodiversity Development Assessment Report: Bayswater Power Station Water and Other Associated Operational Works Project. Report Prepared for AGL Macquarie Pty Ltd.

### Appendix B1 : Vegetation integrity assessment plot data for PCT 1691 'Regrowth' Vegetation Zone

Plot	PCT	Area	Patch size	Condition	Zone	Easting	Northing	Bearing	compTree	compShrub	compGrass	compForbs	compFerns	compOther	strucTree	strucShrub	strucGrass	strucForbs	strucFerns	strucOther	funLargeTree	funHollower	funLitterCov	funLenFalle	funTreeSte	funTreeSte	funTreeSte	funTreeSte	funTreeSte	funTreeRege	funHighThre
7	1691	21.6	100	RE	56	306764.72	6413698.05	210	2	1	2	3	0	0	17	0.1	3	30.7	0	0	0	0	10	0	1	0	0	0	0	0	23.2
9	1691	21.6	100	RE	56	307444.64	6413465.23	288	1	0	0	3	0	0	20	0	0	5.2	0	0	0	0	15	0	1	1	0	0	0	1	81.1
12	1691	21.6	100	RE	56	309917.5	6416175.01	185	1	0	0	1	0	0	20	0	0	1	0	0	0	0	8	0	1	1	0	0	0	1	6.5
13	1691	21.6	100	RE	56	310013.15	6416119.27	178	1	1	0	0	0	0	10	0.1	0	0	0	0	0	0	18	0	1	1	0	0	0	1	1.5

### BAM-C Tab 3 - Vegetation Integrity Score:

Vegetation zones (Current vegetation integrity score)													
#	Import	PCT code	Condition class *	Vegetation zone name	Patch Size*	Area (ha)*	Location *	Composition condition score	Structure condition score	Function condition score	Current vegetation integrity score	Management zones	Delete
1		1691 ▾	Modera	1691_Mod erate01	100	2.3		32.9	24.3	44.2	32.8		
2		1691 ▾	Regrow	1691_Regr owth	100	21.6		2.4	15.8	25.8	10		
3		1691 ▾	Rehabil	1691_Reh abilitation	100	11.4		25.5	34.4	39.5	32.6		