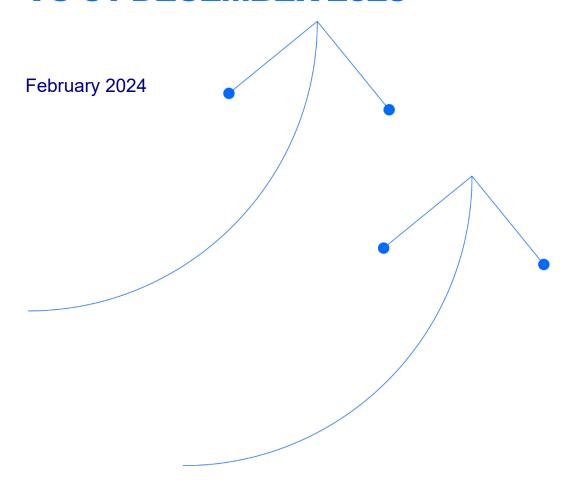
WILGA PARK POWER STATION

ANNUAL ENVIRONMENTAL
MANAGEMENT REPORT 2023

APPROVAL 07-0023

REPORTING PERIOD 1 JANUARY 2023 TO 31 DECEMBER 2023



Project name		Wilga Park Power Station					
Document title		Wilga Park Power Station Annual Environmental Management Report					
Status	Revision	Author	Reviewer Approved for issue				
Code			Name	Signature	Name	Signature	Date
TBC	А	S. Mayberry	J.Twyman	On file	B.Child	On file	TBC

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Abbreviations and acronyms

Abbreviations	Terms
AEMR	Annual Environmental Management Report
CSG	coal seam gas
DPE	NSW Department of Planning and Environment
EP&A Act	Environmental Planning and Assessment Act 1979 (NSW)
EP&A Regulation	Environmental Planning and Assessment Regulation 2021 (NSW)
EPL	Environment Protection Licence
ESG	Eastern Star Gas
km	kilometre
MW	Mega Watts
NSC	Narrabri Shire Council
NSW	New South Wales
OEMP	Operational Environmental Management Plan
PAL	petroleum assessment lease
PEL	petroleum exploration licence
PPL	petroleum production lease
SSD	State significant development
WPPS	Wilga Park Power Station

1. Approval Details

Approval Details				
Name of Operation	Wilga Park Power Station			
Name of Operator	Santos NSW (Eastern) Pty Ltd			
Development Consent / project approval #	MP 07_0023 Narrabri Coal Seam Gas Utilisation Project			
Name of holder of development consent	Santos NSW (Eastern) Pty Ltd			
Petroleum Exploration Licence (PEL) #	PEL 238			
Name of holder of Petroleum Exploration Licence	Santos NSW Pty Ltd (ACN 094 269 780) and Santos NSW (Narrabri Gas) Pty Ltd (ACN 147 609 729)			
Water Licence #	N/A for this operation			
Name of holder of water licence	N/A			
Annual Review start date	1 January 2023			
Annual Review end date	31 December 2023			
the compliance status	fy that this annual environmental management report is a true and accurate record of of the Narrabri Coal Seam Gas Utilisation Project for the reporting period 1 January 2023 and that I am authorised to make this statement on behalf of Santos NSW			
Name and Title of authorised reporting officer	Brendon Child Area Manager – Scotia, Arcadia and Narrabri			
Signature and Date				

2. Regulatory Context

This Annual Environmental Management Report (AEMR) has been prepared for submission to the NSW Department of Planning, Housing and Infrastructure (DPHI) by Santos NSW (Eastern) Pty Ltd to satisfy commitment 11.7 in the Narrabri Coal Seam Gas Utilisation Project, Final Statement of Commitments, dated August 2008 made by the previous operator Eastern Star Gas (ESG) for the Narrabri Coal Seam Gas Utilisation Project (the Project).

ESG submitted the original Project Application 07-0023 in early 2007 with the approval being granted by the (then) Department of Planning in December 2008 (Approval Doc. No. S07/00277). There was no specific obligation in the conditions of approval for the submission of an AEMR or an Annual Review document.

The Wilga Park Power Station (WPPS) was originally constructed and operated pursuant to a development consent granted by Narrabri Shire Council (NSC) on 14 November 2002 and subsequent modifications. The consent and modifications allowed the power station to operate up to a capacity of 12 megawatts using gas extracted from the Coonarah Gas Field in Petroleum Production Lease (PPL) 3. The WPPS is located north of the Piliga Forest, approximately 12 km from Narrabri (refer to Figure 2.1).

On 2 December 2008, the Minister for Planning approved the Narrabri Coal Seam Gas Utilisation Project under Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) (MP 07 0023).

The approved Project includes:

- construction and operation of gas gathering systems at the Bibblewindi and Bohena Coal Seam Gas Pilots;
- construction and operation of gas compression facilities at the Bibblewindi and Bohena Coal Seam Gas Pilots:
- construction of an approximately 32 kilometre buried gas flow line between the Bibblewindi and Bohena Pilot and the Wilga Park Power Station; and
- the staged expansion and operation of the WPPS (base load gas-fired power station) from a capacity of 12 megawatts to 40 megawatts, fuelled by coal seam gas extracted from the Bibblewindi and Bohena Coal Seam Gas Pilots.

Construction works under the then Part 3A approval commenced in 2009. Further works continued during 2010-2012. The works which have been undertaken under the approval to date include:

- construction of the gas gathering systems at the Bibblewindi and Bohena CSG Pilots;
- construction of the gas compression facilities for the Bibblewindi and Bohena CSG Pilots:
- construction of the 32 kilometre buried gas flow line between the Bibblewindi and Bohena pilots and the WPPS;
- installation of 4 x 3MW gas generators at WPPS together with a switch room, gas conditioning skid, auxiliary transformers, ventilation fans, substation upgrade and other related equipment;
- Installation of an additional 2 x 3MW gas generators at the WPPS; and
- Installation of a slug catcher at WPPS on the 32 kilometre buried gas flow line.

As outlined above, the EP&A Act is the principal law regulating development in NSW. It establishes a regime for the making of development applications, assessment of their environmental impacts, and development consent.

The Project was approved pursuant to Part 3A (since repealed) of the EP&A Act in December 2008, with the existing consents that apply to the Project summarised in Table 2.1.

Table 2.1 - Existing consents for the Project

Consent	Date approved	Description
Part 3A – now SSD (MP 07_0023)	2 December 2008	Approval to expand and operate power station at 40 megawatts and construct and operate associated buried gas pipeline and gas gathering and compression systems.
Modification 1 (MP 07_0023 - Mod 1)	11 February 2011	Extension of timeframe for submission of offset package.
Modification 2 (MP 07_0023 - Mod 2)	14 March 2012	Allowance of the temporary use of the gas flow line to transfer produced water.
Modification 3 (MP 07_0023 - Mod 3)	18 July 2014	Installation of a riser in pipeline, continued transfer of produced water in pipeline, and use of CSG from existing or future wells within PAL 2 or PPL 3 at WPPS.
Modification 4 (MP 07_0023 - Mod 4)	Withdrawn	Use of CSG from existing or future wells.
Modification 5 (MP 07_0023 - Mod 5)	14 July 2017	Extension of duration of consent to use CSG.
Modification 6 (MP 07_0023 - Mod 6)	23 July 2018	Use of CSG from existing or future wells.
Modification 7 (MP 07_0023 - Mod 7)	21 October 2019	Installation of slug catcher, transfer pipe and water storage tank upstream of the existing buried gas pipeline.

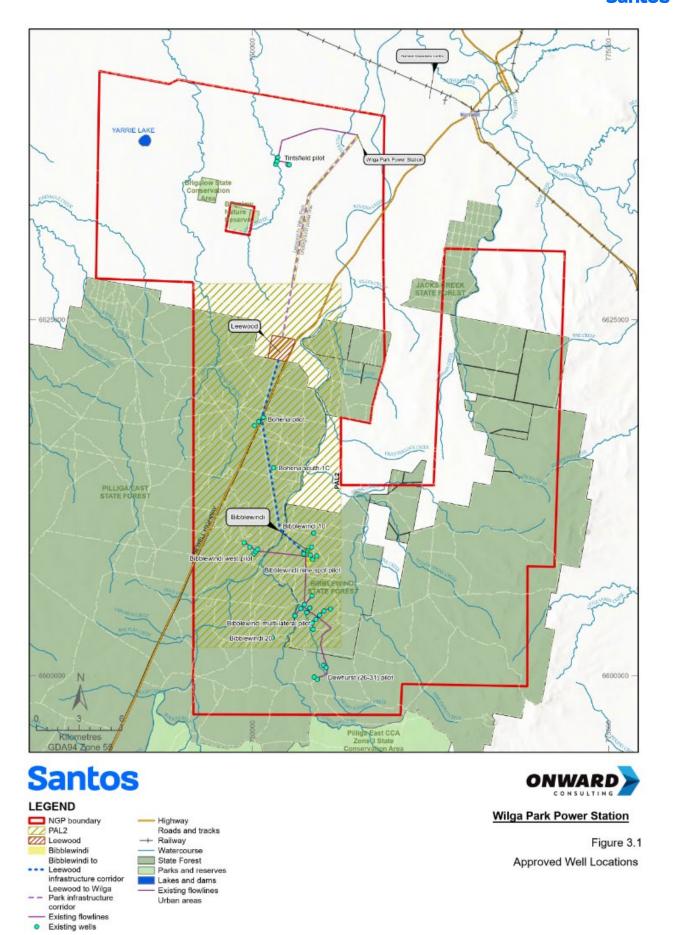


Figure 3.1 - Approved well locations

The most recent modification to the approval was in October 2019, for the installation of a slug catcher for capturing slugs of solids as a result of gas pipeline cleaning at the pipeline entry into the power station site. Figure 2.2 depicts the layout of the WPPS.



Figure 2.2 - Wilga Park Power Station Layout

The relevant approvals for the Project are:

- MP 07_0023 approval (as amended); and
- PEL 238.

Santos holds Environmental Protection Licence (EPL) 20350 for the operation of pilot wells and water management in PEL 238, PAL 2 and PPL 3. EPL 20350 does not apply to the operation of the Wilga Park Power Station. WPPS currently operates five 1 MW and six 3 MW generators resulting in a peak possible output of 22 MW. As per Schedule 1 of the *Protection of the Environment Operations Act* 1997, an EPL is not required until the capacity to generate electricity exceeds 30 MW.

3. Contacts

The author and nominated point of contact in relation to this report is Janelle Twyman, Senior Environmental Advisor (janelle.twyman@santos.com).

4. Actions from previous AEMR

The former Department of Planning and Environment (DPE) approval letter for the 2019 and 2022 AEMR's required the inclusion of additional reporting in future AEMRs as described in Table 4.1.

Table 4.1 – Environmental Management and Monitoring during the 2023 reporting period

Required Action	Where addressed in this report
2019 AEMR	
A section on the landscape and ecological monitoring during the reporting period is to be added in future AEMR's Tabulate the semiregular monitoring and reporting on weeds. (Section 12.1.4 of the approved Operational Environmental Management Plan.)	Section 4.4
2022 AEMR	
Under the provisions of Schedule 2, Condition 1.3 of the approval, I, as nominee of the Planning Secretary request that future AEMR's include the provision and discussion of environmental monitoring results in the body of the report.	Section 5.1.1

5. Summary of operations

In the period covered by this report, the WPPS operated continuously apart from scheduled maintenance. In 2019, Santos made preparations for increasing the generation output of the power station from the existing 16MW to 22 MW.

In 2020, installation was completed and approval to operate two newly installed generators (GO5B and GO6B) up to a maximum of 6MW was obtained.

In 2023, WPPS operated above 16MW but below 22MW. An additional 1MW generator was added for redundancy during maintenance. This triggered noise and air quality monitoring conditions to be undertaken within prescribed periods. All the required actions were completed and reports submitted to the Secretary as required by the conditions of approval.

5.1. Gas

Gas produced from the PAL 2 pilots is primarily consumed by the WPPS. Minor amounts are consumed by onsite power generation for surface equipment with the remaining gas flared at the Bibblewindi Flare.

5.2. Power

In 2023, the WPPS generated electricity from the gas produced in PAL2. Although the maximum operating capacity was increased to 22MW in 2021, the maximum average power generated (on a daily basis) was 20 MW.

5.3. Water

No water is used in the generation of electricity at the WPPS. Any water needed at the power station is Narrabri town water brought to site by a tanker. The water is stored in poly tanks at the power station. Accordingly, there is no applicable water licence for the facility.

5.3.1. Water transfers

There have been occasions in the past that the pipeline used to convey gas to the WPPS has been used for water transfer between the nearby Tintsfield Water Storage Ponds and either the Leewood Water Management Facility or the Bibblewindi Water Management Facility.

No water transfers took place during the reporting period.

5.4. Landscape and Ecological Monitoring

Inspections are conducted over the Bibblewindi Facilities to WPPS pipeline on a regular basis. Inspections focus on identifying potential environmental impacts such as pest plants. Records of these inspections are saved within Santos' EHS Toolbox.

Operators frequent the power station on a regular basis conducting visual inspections on the facility.

Follow up actions are captured and assigned within Santos' EHS Toolbox.

Regular pest plant management is undertaken over the Project area when required, particularly when seasonal conditions favour pest species.

6. Environmental Management and Performance

MP 07_0023 requires the development, approval and implementation of an Operation Environmental Management Plan (OEMP). The original plan was approved on 14 July 2009.

No review of the OEMP was required within the reporting period.

6.1. Environmental Management and Monitoring

Mandatory monitoring for noise and air discharges were undertaken during the reporting period with the reports provided to DPHI and published on the Santos website within the required timelines. These reports were accepted by the former DPE. A list of the monitoring conducted and the results of the monitoring is presented in Table 6.1.

Table 6.1 – Environmental Management and Monitoring during the 2023 reporting period

Monitoring	Monitoring Trigger	Monitoring Requirement	Monitoring Results Discussion
Air Quality	>16MW	Required to be undertaken within 90 days of exceeding 12MW and at every stage of new generation capacity is added to the power station or as otherwise agreed with Secretary, and a report is required to be provided within two months of completion of the assessment.	Ektimo was engaged by Santos Limited to perform emission testing from gas fired engines situated at the WPPS to quantify emissions from multiple discharge points to determine compliance with Schedule 2, Condition 2.4 of MP07- 0023. Emissions testing was undertaken from 24 to 26 October 2023. Engine GO3B was offline for a 60k hour service occurring during the testing window. All tested locations were compliant with the discharge limit described in Schedule 2, Condition 2.4 of the approval. The Wilga Park Emissions Testing Report, dated November 2023 was submitted on the Major Projects Planning Portal on 27 November 2023 and on the Santos Narrabri Coal Seam Gas Utilisation Project Approvals webpage. Correspondence was received from DPE dated 5 December 2023 stating that 'NSW Planning has reviewed the S2C3.2 WPPS Emissions Testing Report 2023 and considers it to generally satisfy the
			conditions of approval'.
Noise	>16MW	Required to be undertaken within 90 days of exceeding 12MW and at every stage of new generation capacity is added to the power	GHD Pty Ltd (GHD) was commissioned by Santos to undertake noise monitoring as the WPPS has increased capacity to 18

		station, and a report is required to be provided within twenty eight days of completion of the assessment.	MW. Monitoring was undertaken from 6 and 8 February 2023 to determine compliance with Schedule 2, Condition 3.5 of the approval. Based on the direct attended noise measurements and the assessment methodology, all receivers comply with the criteria (considering any low frequency noise modification factor). The WPPS – Compliance Noise Modelling Report, dated February 2023 was submitted on the Major Projects Planning Portal on 9th March 2023 and on the Santos Narrabri Coal Seam Gas Utilisation Project Approvals webpage. Correspondence was received from DPE dated 29 March 2023 stating that 'the department has reviewed the report and considers it to generally satisfy the conditions of approval.'
Biodiversity	N/A	There were no new disturbances during the reporting period. The construction period ended in 2009, and pipeline corridors have been undergoing rehabilitation since that time. See also Section 8 for inspections of the pipeline corridor, and for the biodiversity offset.	N/A
Heritage	N/A	There were no new disturbances during the reporting period. No aboriginal or non-aboriginal heritage items were discovered in the reporting period.	N/A
Water Management	N/A	See sections 5.3 and 5.3.1	N/A

6.2. Environmental Performance

Refer to Table 6.2

Table 6.2 - Statement of Compliance

Were all conditions of the relevant approval complied with as they relate to the development in 2023			
07_0023	Yes		
PEL 238	Yes		

Appendix 1 to this report shows the results of the internal compliance review for the 2023 reporting period. Santos has in place a compliance management system to monitor its performance against conditions of approval. Inspections are scheduled through a corporate database (Landfolio). Results of inspections are saved within Santos' EHS Toolbox Audit and Inspection Manager. Any identified corrective actions are tracked through to completion.

A performance review of the operation of the WPPS was undertaken in May 2019 given the increase in electricity generation. A recommendation from the performance review was to engage an independent environmental audit in accordance with AS/NZ ISO 19011:2003 Guidelines for Quality and/or Environmental Systems Auditing once electricity generation reaches 22MW. As outlined in section 5.2 the maximum average power generated (on a daily basis) during the 2023 reportion period was 20 MW. As such an independent environmental audit was not required to be undertaken during the 2023 reporting period.

6.3. Comparison against criteria and Environmental Assessment predictions

A compliance audit as outlined in the OEMP is attached in Appendix 1 to this report. There were no non-compliances identified against the Environmental Assessment criteria within the reporting period.

6.3.1. Comparisons against EIS predictions

The EIS covered:

- construction and operation of gas gathering systems at the Bibblewindi and Bohena Coal Seam Gas Pilots;
- construction and operation of gas compression facilities at the Bibblewindi and Bohena Coal Seam Gas
 Pilots:
- construction of an approximately 32 kilometre buried gas flow line between the Bibblewindi and Bohena Pilot and the Wilga Park Power Station; and
- the staged expansion and operation of the Wilga Park (base load) gas-fired power station from a capacity
 of 12 megawatts to 40 megawatts, fuelled by coal seam gas extracted from the Bibblewindi and Bohena
 Coal Seam Gas Pilots.

The construction components occurred in 2009 and is outside the period covered by this 2023 Annual Environmental Management Report.

Emissions testing was undertaken between 24 and 26 October 2023 to confirm compliance with Schedule 2, condition 2.4 of MP07_0023. During the emissions testing Engine GO3B was offline for a 60k hour service which occurred during the testing window. All tested locations were compliant with the discharge limit described in Schedule 2, Condition 2.4. The data collected was not representative of the typical operating capacity within the reporting period. This report is published and available on the website https://narrabrigasproject.com.au.

The EIS refers to an instack nitrogen oxide (NO2) discharge limit of 450mg/m3 set by the NSW DECC, *Protection of Environment Operations (Clean Air) Regulation 2002*. All generators at the WPPS tested below this trigger limit.

Noise assessments were undertaken between 6 and 8 February 2023 to confirm compliance with Schedule 2, condition 2.8 and 2.9 of PM07-0023. The WPPS – Compliance Noise Modelling Report, dated February 2023 was submitted on the Major Projects Planning Portal on 9 March 2023 and on the Santos Narrabri Coal Seam Gas Utilisation Project Approvals webpage.

6.4. Environmental Incidents and Improvements

There were no reportable environmental incidents made during the reporting period for the Project. Equipment continued to be serviced in accordance with manufacturers' specifications. Santos has an operational maintenance program in place.

7. Community and Stakeholder Relations

7.1. Complaints

Santos did not receive any complaints either directly, or referred, in relation to the WPPS during the reporting period. As part of Santos' operations, complaints are entered to a database and the response provided or action taken is recorded. There have been no complaint trends over the previous five years of operation.

7.2. Engagement

Key community consultation activities for the Narrabri Gas Project are managed by Santos on a 'whole-of-project' basis, and relate to activities undertaken across PEL 238, PAL 2 and PPL 3 generally and are not specific to the WPPS.

There is a comprehensive Community Consultation Plan in place for PEL 238. Key stakeholders are identified, and a risk-based assessment is undertaken regarding the level of impact or benefit project activities may potentially have on individual stakeholders and the community.

Santos does not retain separate consultation records for the WPPS; however, community activities undertaken during the reporting period (1 September 2022 to 31 August 2023) for PEL 238 licence area, include WPPS.

Activities that were undertaken include:

- Operation of the Santos Narrabri shopfront (approximately 200 visitors)
- Community and field site tours were hosted in the Narrabri Gas Project area (almost all of which included a visit to the WPPS)
- The Narrabri Gas Project website hosts fact sheets and project information
- Distribution of the Monthly Activity Update for PEL 238 activities to over 360 individuals each month; and
- Four Narrabri Gas Project Community Consultative Committee meetings.

Well established consultation methods are utilised which are complementary to the mature relationship that Santos has with stakeholders in the PEL 238 licence area. These methods provide ongoing opportunities for stakeholders and members of the community to learn about, provide feedback and input to, and raise concerns about activities that Santos is conducting, or planning to conduct including those at the WPPS. The consultation activities that have occurred during the reporting period include those listed below in Table 7.1.

Table 7.1 - Consultation activities

Consultation Activity	Frequency	
Narrabri Gas Project CCC	NGP CCC meetings are held quarterly or as determined by the Independent Chair.	
Face to face meetings	Regular face to face meetings are facilitated with key stakeholders relevant to their level of interest in activities.	
Community Site Tours	Site tours are provided upon request for interested community groups and other stakeholders.	
	Site tours are advertised in the local newspaper when activities of significance are being planned and/or undertaken in the project area.	
Communication tools	An email and a contact telephone number for the Narrabri Shopfront is referenced on the Santos website and on external printed documentation.	

	Enquiries are answered promptly, and issues raised are recorded in a consultation database.
Activity Update Reports	Monthly activity updates are emailed to key stakeholders and subscribers, uploaded to the website and printed monthly in the Narrabri Courier, Wee Waa News and Gunnedah Times newspapers. Updates are also distributed to the Narrabri Gas Project CCC members to disseminate to their respective organisations.
Media Updates	Santos provides information through print media including advertisements and media releases regarding key milestones and announcements. Social media pages including Facebook, Instagram and LinkedIn are used to provide information to interested parties.
Attendance at community events	Santos will continue to attend the local agricultural shows, AgQuip, and other relevant community events where staff are available to provide information, receive feedback and answer questions community members may have.
Santos shopfront	The Narrabri shopfront has printed information and displays aimed to build awareness and understanding of project activities. Community staff are available to answer questions and provide information during business hours.

8. Rehabilitation and Disturbance

There was no additional disturbance during the reporting period. Rehabilitation along pipeline corridors has been monitored quarterly. Santos maintains contact with private landholders who have the pipeline passing through their properties and attend to any matters raised.

9. Activities proposed for the next AEMR period

- Undertake noise monitoring and emissions monitoring in the 2024 reporting period;
- Routine scheduled maintenance in accordance with manufacturers' specifications; and
- Independent environmental audit to be undertaken if operating conditions exceed the next trigger level (22MW)
 as recommended by the 2019 Independent Environmental Report.

Appendix 1 – Compliance audit for 2023 AEMR reporting period

Conditions of Consent	Comments / Corrective Action
1 Air Quality	'
Condition 2.2 - Odour Are any discernible odours apparent at Wilga Park at or around the generators or any part of the facility	No
SEC 2.4 Discharge Limits Does air quality monitoring confirm compliance with maximum allowable discharge concentration limits listed in table 1 of approval	Yes
SEC 3.1 Air Quality Monitoring Has air quality monitoring been completed during the reporting period in accordance with the appropriate methodology of Table 3 of approval?	Yes Refer to Table 6.1
SEC 3.2 and 3.3 Air Quality Monitoring Has the facility exceeded the 12 MW or 40 MW (or agreed) monitoring triggers during the reporting period (refer to SEC 3.1 and 2.4 if triggers exceeded). If so, refer to the following:	Yes Wilga Park Power Station operated above 12MW commencing 22nd December 2018.
2 Noise and Vibration	
SEC 3.5 Noise Monitoring Has the facility exceeded the 16 MW monitoring triggers (next new stage of power generation) during the reporting period? If so, refer to the following:	No Refer to Table 6.1
SEC 2.5 Does vibration monitoring confirm that operations does not exceed the preferred vibration values for low probability of adverse comment presented in Assessing Vibration: A Technical Guideline (DECC, February 2006) stated in SEC 2.5.	Not required as per the OEMP, which was approved by the former NSW DPE on 13 December 2018.
SEC 2.8 Operational Noise Criteria Does noise monitoring confirm compliance with maximum allowable noise contributions listed in table 2 of the approval?	Refer to Table 6.1
SEC 2.9 Operational Noise Criteria Has noise monitoring been conducted during the reporting period in accordance with the methodology listed in SEC 2.9?	Refer to Table 6.1
SEC 2.10 to SEC 2.23 – Noise Related Actions Have there been any actions taken consistent with noise mitigation and land acquisition outlined in SEC 2.10 to 2.23. Outline any actions taken in detail.	N/A for reporting period.
3 Waste Management	
Are the operational sites clear of general rubbish and receptacles being utilised?	Yes
SEC 2.27 Waste generation and management Is there any evidence of waste generated outside of the site being used for storage, treatment, processing	No

Yes
Yes
No
No

Appendix 2 – Location of the Compensatory Habitat (offset) area

