STRATFORD MINING COMPLEX
ANNUAL REVIEW 2023

Document	Version	Issue	Author	Approved
SMC_RPT_ANNUAL REVIEW 2023	1	MARCH 2024	SCPL	

Name of operation	Stratford Mining Complex
Name of operator	Yancoal Australia Ltd
Development consent / project approval #	SSD-4966 (Stratford Extension Project)
Name of holder of development consent / project approval	Stratford Coal Pty Limited
Mining lease #	ML1360, ML1409, ML1447, ML1521, ML1528, ML1538, ML1577, ML1733, ML1787
Name of holder of mining leases	Gloucester Coal Ltd/CIM Stratford Pty Ltd/Stratford Coal Pty Ltd
Water licence #	WAL 41534, WAL 41535, WAL 41536, WAL 41537, WAL 41538
Name of holder of water licence	Gloucester Coal Ltd/CIM Stratford Pty Ltd/Stratford Coal Pty Ltd
RMP start date	1 August 2022
RMP end date	N/A
Annual Review start date	1 January 2023
Annual Review end date	31 December 2023

I, John Cullen, certify this audit report is true and accurate record of the compliance status of Stratford Coal Mine for the period of 1st January 2023 to 31st December 2023 and that I am authorised to make this statement on behalf of Yancoal.

Note.

The Annual Review is an 'environmental audit' for the purposes of section 122B(2) of the *Environmental Planning and Assessment Act 1979*. Section 122E provides that a person must not include false or misleading information (or provide information for inclusion in) an audit report produced to the Minister in connection with an environmental audit if the person knows that the information is false or misleading in a material respect. The maximum penalty is, in the case of a corporation, $1 million and for an individual, $250,000.

The *Crimes Act 1900* contains other offences relating to false and misleading information: section 192G (Intention to defraud by false or misleading statement—maximum penalty 5 years imprisonment); sections 307A, 307B and 307C (False or misleading applications/information/documents—maximum penalty 2 years imprisonment or $22,000, or both).

Name of authorised reporting officer	Mr John Cullen
Title of authorised reporting officer	Operations Manager – Stratford Coal
Signature of authorised reporting officer	
Date	28/3/2024

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1.0 STATEMENT OF COMPLIANCE

This Stratford Mining Complex (SMC) Annual Review has been prepared in accordance with Development Consent SSD-4966 Schedule 5 Condition 4 for the Stratford Extension Project (SEP) for the period 1 January 2023 to 31 December 2023. This report is also prepared in accordance with the annual reporting requirements for Mining Leases ML1360, ML1409, ML1447, ML1521, ML1528, ML1538, ML1577 ML 1733 and ML1787.

Table 1 provides a statement of compliance against SCPL's relevant approvals leases and licenses. A summary of the non-compliances with Development Consent SSD-4966, EPL5161 and the Mining Leases during the reporting period are included in **Table 3**.

Table 1 Statement of Compliance

Were all conditions of the relevant approval(s) complied with?	
SSD-4966	Yes
ML1360, ML1409, ML1447, ML1521, ML1528, ML1538, ML1577, ML 1733, ML1787	Yes

Table 2 Compliance Status Categories

Risk	Colour Code	Description
High	Non-Compliant	Non-compliance with potential for significant environmental consequences, regardless of the likelihood of occurrence
Medium	Non-Compliant	Non-compliance with: • potential for serious environmental consequences, but is unlikely to occur, or • potential for moderate environmental consequences, but is likely to occur
Low	Non-Compliant	Non-compliance with: • potential for moderate environmental consequences, but is unlikely to occur, or • potential for low environmental consequences, but is likely to occur
Administrative	Non-Compliant	Only to be applied where the non-compliance does not result in any risk of environmental harm (e.g. submitting a report to government later than required under approval conditions)

2.0 INTRODUCTION

The Stratford Mining Complex (SMC) is located in the Gloucester Basin approximately 100km north of Newcastle in New South Wales. Refer **Figure 1** (**Appendix 1**).

Stratford Coal Pty Ltd (SCPL), a wholly owned subsidiary of Yancoal Australia Limited (YAL), is the owner and operator of the SMC.

The SMC encompasses an area of approximately 1,580 hectares (ha) of cleared former grazing land (owned by SCPL) located to the east of The Bucketts Way, between the villages of Stratford and Craven. Refer **Figure 1** (**Appendix 1**).

Development Consent was originally approved for the Stratford Coal Mine by the then NSW Minister for Planning on 19 December 1994. Production commenced at the SMC in June 1995 with the first coal railed in July 1995 following a six-month construction program. Run-of-mine (ROM) coal at the SMC has been sourced from a number of open cut mining areas.

The SMC consists of an open-cut mine which utilises truck and excavator mining methods to produce run of mine (ROM) coal. ROM coal is processed at the Coal Handling and Processing Plant (CHPP) and transported via train on the North Coast Railway to the Port of Newcastle for distribution to the export market.

Mining activities approved under the former Stratford Coal Mine (DA 23-98/99) and Bowens Road North (DA 39-02-01) Development Consents were suspended in mid-2014.

The Development Consent (SSD-4966) for the Stratford Extension Project (SEP) was granted on 29 May 2015 under Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). The SEP provides for the continuation and extension of operations at the SMC, including the mining of three new open cut areas.

Mining activities approved under the SEP Development Consent (SSD-4966) commenced on 4 April 2018.

A Modification to SSD-4966 (MOD 2) was approved by the Director, Resource Assessments as delegate of the Minister for Planning and Public Spaces on 13 January 2020. The modification sought approval to allow for water stored within the SMC water management system to be available to the Mid Coast Council (as a public authority) for the benefit of local services and other potential public purpose water needs.

2.1 Scope

This Annual Review (AR) has been prepared in accordance with Schedule 5, Condition 4 of SSD-4966. This report is also prepared in accordance with the annual reporting requirements for the Mining Leases held by SCPL and in accordance with the Department of Planning, Industry and Environment *Annual Review Guidelines* (October 2015).

The AR describes the environmental performance, pollution control and rehabilitation activities at the SMC for the period 1 January 2023 to 31 December 2023. As required by SSD-4966, comparisons of environmental monitoring results have been made against relevant statutory requirements/performance criteria, monitoring results of previous years and relevant predictions of Environmental Assessments. This AR also reports on any non-compliances, trends in monitoring data and any discrepancies between the predicted and actual impacts of the development. Environmental management activities planned for the next 12 months are also discussed.

2.2 Mine Contacts

The SMC is an owner operated mine site by SCPL. Site personnel responsible for mining, CHPP, rehabilitation and environmental issues at the end of the reporting period are provided in **Table 4**.

Table 3 Site Contact Personnel

Position	Name	Contact	Email
Operations Manager, Stratford & Duralie Operations	Mr John Cullen	02 6538 4210	John.cullen@yancoal.com.au
Environment & Community Superintendent	Mr Thomas Kirkwood	02 6538 4208	Thomas.kirkwood@yancoal.com.au
CHPP Superintendent	Mr Bruce Robinson	02 6538 4235	Bruce.robinson@yancoal.com.au
Community Information Hotline	1300 658 239		
Postal Address	PO Box 168, Gloucester, NSW, 2422		

3.0 APPROVALS

3.1 Status of Leases, Licences and Approvals

The SMC operates in accordance with the approvals provided in **Table 5**.

Table 4 SMC – Leases, Licences and Approvals

Description	Date of Grant	Duration of Approval	Comment
NSW Development Consents			
Stratford Extension Project Development Consent SSD-4966	29 May 2015	31 December 2025 (mining operations)	• Action commenced on 4 April 2018. • MOD 2 granted 13/01/2020
Mining Leases and Exploration Licences			
ML 1360	21 December 1994 (renewed 21 December 2015)	21 December 2036	Variation of Conditions dated 22 June 2018
ML 1409	7 January 1997	7 January 2039	Renewed 7 March 2018 Variation of Conditions dated 8 October 2018
ML 1447	1 April 1999	1 April 2040	Renewed 14 March 2023.
ML 1521	24 September 2002	23 September 2044	Renewed 24 September 2023.
ML 1528	20 January 2003	19 January 2045	Renewed 30 July 2023.
ML 1538	25 June 2003	24 June 2045	Renewed 31 August 2023.
ML 1577	1 March 2006	1 March 2027	Variation of Conditions dated 8 October 2018
ML 1733	8 April 2016	8 April 2037	Variation of Conditions dated 19 February 2018
ML 1787	5 June 2019	5 June 2040	
A311	17 September 1982	17 September 2024	Renewed 21/12/2022
A315	27 December 1982	18 January 2027	Renewed 21/12/2022
EL 6904	9 October 2007	9 October 2024	Renewed 28/2/2023
Environment Protection Licences			
Environment Protection Licence (EPL) 5161	1 July 2000	Until the licence is surrendered, or revoked	As modified by subsequent variations (refer to EPA website)
EPBC Act Approvals			
Commonwealth Approval (EPBC 2011/6176)	29 January 2016	30 November 2030	Commencement of Action 04/04/2018
Water Licences			

Water Access Licences (WAL 41534, WAL 41535, WAL 41536, WAL 41537, WAL 41538)	Various	Perpetuity	Groundwater extraction – open cut dewatering
Groundwater bore licences – various	Various	Perpetuity	Groundwater monitoring
Water Access Licences – Surface Water (WAL 19536, WAL 19514, WAL 19540)	Various	Perpetuity	Avon River Water Source

3.1.1 Environmental Management Plans

Environmental Management Plans (EMPs) have been prepared and approved for the SMC. The current versions approved by Department of Planning, Housing and Infrastructure (DPHI) are available on the Stratford Coal website.

- Environmental Management Strategy (revised). Approved 21 January 2022
- Air Quality Management Plan (revised). Approved 21 January 2022
- Biodiversity Management Plan (revised). Approved 24 February 2023
- Blast Management Plan (revised). Approved 21 January 2022
- Heritage Management Plan. Approved 30 January 2023
- Life of Mine Rejects Disposal Plan (revised), October 2018
- Noise Management Plan (revised). Approved 4 October 2022
- Water Management Plan (revised). Approved 18 October 2021
- Rehabilitation Management Plan (RMP). Revised October 2023
- Pollution Incident Response Management Plan (revised). November 2023
- Squirrel Glider Management Plan (revised). Approved 5 July 2023
- Transport Monitoring Program. Approved 8 March 2018

4.0 OPERATIONS SUMMARY

A summary of operations (Production), during the preceding and current reporting period as well as a forward forecast for the next reporting period is provided below in **Table 7**.

Table 5 Production Summary

Material	Approved limit (specify source)	Previous reporting period	This reporting period	Next reporting period
Waste Rock/ Overburden (BCM)	N/A	4,445,576	3,321,903	2,138,289
ROM Coal (tonnes)	2.6 million tonnes per annum	1,008,842	884,706	223,701
Codisposal Reject (tonnes)	N/A	420,712	355,535	95,984
Saleable product Coal (tonnes)	N/A (Process limit of 5.6 million tonnes per annum)	686,356	553,765	153,276

ǂIncludes waste rock and PAF material rehandle

Total saleable product coal for the 12-month reporting period was 553,765 tonnes. 3,321,903 BCM of waste rock/overburden was mined from Stratford East and Avon North pits during the reporting period.

Saleable coal production by month for the reporting period is listed in **Table 8** below.

Table 6 Production Summary

MONTH	Coking Coal	Thermal Coal	Total Product Coal
January 2023	19,163	32,273	51,436
February 2023	16,912	32,739	49,651
March 2023	15,480	25,413	40,893
April 2023	2,591	10,372	12,963
May 2023	556	20,894	21,450
June 2023	8,689	17,158	25,847
July 2023	20,205	21,853	42,058
August 2023	32,656	57,570	90,226
September 2023	19,338	25,907	45,245
October 2023	22,575	46,309	71,215
November 2023	11,023	51,743	64,433
December 2023	8,421	18,478	38,348
Total Annual	**177,609**	**360,709**	**553,765**

4.1 Exploration

Exploration activities occur in the Mining Lease and Exploration Lease areas within, and external to, the open cut footprints and is used to investigate aspects such as geological features, seam structure and coal/overburden characteristics as input to detailed mine planning and feasibility studies.

An SMC Group ML Annual Exploration Report 2023 has been prepared and lodged for the period 21/12/2022 to 20/12/2023. Furthermore, Annual Exploration Reports and Community Consultation Reports have been prepared and lodged for AUTH 311, Auth 315 and EL 6904.

Hydrological studies (including groundwater and surface water studies), forming part of the mine closure studies are still ongoing.

During the reporting period exploration activity included core drilling and costean sampling to investigate the extent of coal resources in AUTH 315. Mining studies and feasibility type studies are ongoing to further investigate the data gathered during recent field mapping and exploration activity.

Exploration activities are undertaken in accordance with the RMP. Exploration outside the ML area requires a Review of Environmental Factors prior to activities commencing.

4.2 Estimated Mine Life

SSD-4966 provides approval for activities described in the SEP Environmental Impact Statement (EIS 2012) and includes:

- 11 years of mining;
- Up to 2.6 Mtpa ROM coal;

- 3 new open cut mining areas; and
- Use of existing CHPP and infrastructure.

Schedule 2, Condition 5 of SSD-4966 permits the carrying out of mining operations on the site until 31 December 2025.

A Rehabilitation Management Plan (RMP), in accordance with the requirements of the Resources Regulator's Rehabilitation Reforms, was prepared for the SMC during the previous reporting period. The RMP includes the ongoing compliance requirements in accordance with SSD-4966, ML1360, ML1409, ML1447, ML1521, ML1528, ML1538, ML1577, ML 1733 and ML1787 including rehabilitation obligations. As part of the Reforms a Rehabilitation Report and Forward Program for SMC has also been prepared which provides details of the scheduled surface disturbance and rehabilitation activities at the SMC from 1 January 2022 to 31 December 2024.

4.3 Mining

SMC consists of an open-cut mine which utilises truck and excavator mining methods to produce ROM coal. ROM coal is processed at the CHPP and transported via train on the North Coast Railway to the Port of Newcastle for distribution to the export market.

The following key activities were undertaken during the reporting period:

- Mining continued in the Avon North Open Cut within the existing footprint; and
- Reprocessing of coal from the western co-disposal area continued during the reporting period.

Mining operations are permitted 7 days per week. Operational time restrictions apply as prescribed in SSD-4966. During the reporting period SCPL complied with the approved operating hours.

The mining activities proposed for the next reporting period are described in Section 2.1.2(c) of the SMC Annual Rehabilitation Report Forward Program.

Surface facilities at the mine and current mine development and rehabilitation as of 31 December 2023 are indicated within **Figure 4** (**Appendix 1**).

4.4 Coal Handling and Beneficiation

4.4.1 CHPP Throughput and Rejects Management

Coal is processed in a 600 tonnes per hour (tph) coal handling and processing plant (CHPP) with coarse coal (i.e. 50mm down to 1mm) treated using dense medium cyclones (50mm to 1.5mm) and "teeter bed" separator/spirals (1.5mm to 0.4mm) and fine coal using floatation (0.4mm to <0.1mm). The CHPP operates on a two shift, 5 days per week basis. Feed to the CHPP is by front end loader based on blending of coal plies from the ROM stockpile. The essential elements of the CHPP and their design capacities are as follows:

ROM coal processing	5.6 Mtpa maximum
CHPP feed rate	600 tph
Product coal	3.3 Mtpa
Train load out rate	3,000 tph

Reclaimed previously emplaced CHPP reject material was also used as feed for the CHPP, as an addition to SMC ROM coals during the reporting period. No Duralie Coal Mine ROM coal was received during the reporting period.

4.4.2 Coal Stockpile Capacity (Rom and Product)

ROM coal stockpile capacity	150,000 t
Product coal stockpile capacity	400,000 t

4.4.3 Product Transport

All saleable (product) coal is transported from site by rail. A total of 131 export trains were loaded during the reporting period. Schedule 2, Condition 8 of SSD-4966 permits a maximum of 6 laden trains per day and no more than 2 laden trains during night-time hours to be dispatched. SCPL were compliant during the reporting period with regard to export trains.

A summary of product coal transported during the reporting period is provided below in **Table 9**. The minor difference in totals between Table 8 and Table 9 is due to stockpiled coal at the end of 2023 to be railed in 2024. Records of the export train movements are provided in **Appendix 8** and are also available on the Stratford Coal website.

Table 7 Export Train Coal Transported by Month

MONTH	Product Coal Transported (Tonnes)
January 2023	29,529
February 2023	52,900
March 2023	76
April 2023	44,362
May 2023	50,567
June 2023	20,056
July 2023	18,827
August 2023	55,730
September 2023	51,398
October 2023	64,945
November 2023	85,025
December 2023	51,786
Total Annual	**473,415**

4.4.4 CHPP Reject Management

Reject material produced at the SMC CHPP is disposed of in accordance with the SMC Life of Mine Rejects Disposal Plan (RDP). Reference should be made to the RDP for a detailed description of reject management at the SMC. Details of management measures undertaken at SMC are found in Section 7.3 of the SMC Surface Water Management Plan (SWMP).

In general, the coarse and fine reject materials are pumped via pipeline from the CHPP to the Stratford Main Pit where they are deposited in locations below the simulated final void ground water levels. Monitoring results for the CHPP rejects are included in **Section 6.12**.

5.0 ACTIONS REQUIRED FROM PREVIOUS ANNUAL REVIEW

DPE provided notification on 25 August 2023 that the SMC Annual Review 2022 satisfies the reporting requirements of the development consent (SSD-4966) and the Department's Annual Review guidelines. Actions requested for future Annual Reviews are summarised below.

No response regarding the SMC Annual Review 2022 was received from the Resources Regulator.

Action Required	Due Date	Action taken by SCPL	Where Discussed
Additional Annual Review reporting requirements for Greenhouse Gas Emissions.	31 March 2023	Reporting on GHG emissions is included in the 2023 AR. Reporting includes annual methane and annual total CO2 emissions with comparisons against the EIS predictions. Measures to minimise GHG emissions are described in the SMC AQMP.	**Section 6.2.2** and AQMP

6.0 ENVIRONMENTAL PERFORMANCE

A brief review of environmental performance in relation to SSD-4966 Development Consent conditions is provided below. This performance is further discussed in the sections on environmental management activities and environmental monitoring. The location of environmental monitoring undertaken during the 2022 reporting period are identified in **Figure 3** (**Appendix 1**). This section provides summary details on:

- **Section 6.1** – Meteorological Overview;
- **Section 6.2** – Air Quality;
- **Section 6.3** – Biodiversity;
- **Section 6.4** – Blasting;
- **Section 6.5** – Noise; and
- **Section 6.6** – Heritage.

Water, Rehabilitation and Community aspects are reported in **Sections 7.0, 8.0** and **9.0** respectively.

6.1 Meteorological Monitoring

A meteorological station (i.e., weather station) is operated at the mine site as required by SSD-4966. The location of the meteorological station and the two inversion monitoring towers is shown on **Figure 3** (**Appendix 1**).

6.1.1 Rainfall

Table 10 provided below summarises the rainfall record obtained from the site Weather Station rain gauge compared to the 1908 – 2007 district average. Graphical representation of the historical average and monthly recorded rainfall during the reporting period is provided in **Appendix 2**.

Table 8 Stratford Mine – Monthly Rainfall Records

MONTH	YEAR				Stratford District
	2023		2022		Average
	Monthly Total (mm)	No. of Rain Days/Month[1,2]	Monthly Total (mm)	No. of Rain Days/Month[1,2]	1908-2007
January	154.0	10	81.0	13	113.7
February	49.6	7	203.4	19	114.8
March	161.0	11	416.2	21	129.3
April	58.8	13	66.4	17	78.2
May	33.2	4	61.0	16	71.6
June	11.6	2	15.4	7	69.4
July	18.4	5	224.2	16	52.7
August	15.8	6	28.6	8	47.1
September	4.6	2	151.2	15	50.5
October	62.0	6	97.8	15	65.5
November	91.2	8	33.4	5	82.7
December	103.2	11	42.2	10	102.2
Total	**763.4**	**85**	**1420.8**	**162**	**977.7**

Notes:

1. No. of Rain Days/Month - the number of days in the month on which rain fell
2. When tipping bucket rain gauge data used, a "rain day" by definition requires a minimum recording of >0.20mm comprising dew, heavy fog or light rain (or a combination thereof.

The 2023 calendar year rainfall total was lower than both the long-term district average and the 2022 calendar year rainfall total. Four of the twelve months in 2023 exceeded their respective long-term average.

6.1.2 Wind Speed and Direction

Table 11 below indicates the monthly average and maximum wind speeds and dominant wind directions for the period January 2023 to December 2023, inclusive. The graphical representation of the daily average and maximum wind speeds recorded and monthly wind roses for each month during this period are provided in **Appendix 2**.

Table 9 Monthly Average and Maximum Wind Speeds and Dominant Wind Directions by Month

MONTH	Average wind speed (k/hr)	Maximum wind speed recorded (k/hr)	Dominant wind directions
January	9.2	45.6	SSW
February	8.8	57.8	NNE
March	7.8	44.4	NNE
April	6.9	36.3	SSW
May	6.8	43.5	NNE
June	5.8	38.9	NNE
July	5.9	49.4	NNE
August	7.0	38.9	NNE
September	8.0	38.8	NNE
October	10.7	46.4	NNE
November	8.4	40.8	NNE
December	9.1	64.3	S

6.1.3 Temperature

Table 12 summarises monthly air temperatures. The graphical representation of the daily minimum, average and maximum atmospheric temperatures recorded for each month is provided in **Appendix 2**.

Table 10 Monthly Minimum, Average and Maximum Air Temperatures

MONTH	Minimum air temp recorded (deg c)	Average air temp (deg c)	Maximum air temp recorded (deg c)
January	10.4	21.6	36.9
February	8.8	22.3	36.9
March	8.3	21.5	38.8
April	5.5	16.3	27.3
May	-1.4	11.6	25.0
June	-2.9	10.0	23.8
July	-1.8	10.4	24.0
August	-0.4	12.3	28.1
September	0.1	15.9	35.1
October	2.8	18.6	37.4
November	9.5	20.0	38.3
December	12.8	23.4	41.4

6.2 Air Quality

SMC manages air quality in accordance with an Air Quality Management Plan (AQMP). The AQMP was revised and approved in January 2022.

The monitoring network under the approved AQMP includes:

- Seven static dust deposition gauges
- Five high volume PM10 air samplers
- Two real-time dust monitors (TEOM); and
- One meteorological monitoring station.

Monthly dust deposition levels are measured so that dust deposition rates in g/m2/month can be determined at or near seven (7) residences that surround the mine site. The annual average condition of consent limit for dust deposition is 4.0g/m2/month.

The high-volume air samplers (HVAS) (PM10), are located near Stratford Village and Craven Village and are also located to the north and south of the operations. The HVAS results are also used for total suspended particulate (TSP) estimation.

HVAS sampling is undertaken over a 24 hour 6 day week cycle in accordance with AS 2724.3. The consent criteria for PM10 air quality is an annual average limit of 30ug/m3/day cumulative impact and a 24-hour average limit of 50ug/m3/day incremental impact.

Two Tapered Element Oscillating Microbalance (TEOM) analysers measuring PM10 and PM2.5 are used to continuously measure particulate matter. The TEOMs are located in close proximity to Stratford village and Craven village. Real-time air quality monitoring data is used to identify when ambient PM10 levels in the surrounding environment are elevated and require contingency action. Real-time response triggers have been established and are designed to provide a system to warn

operations personnel (via SMS) when dust levels are approaching a relevant criterion and to require management/control actions to mitigate potential impacts.

6.2.1 Review of Air Quality Monitoring Results and Performance

6.2.1.1 Dust Deposition Gauges

Table 13 shows the dust deposition results for seven (7) dust deposition gauges and annual averages at the end of the reporting period (December 2023).

Table 11 Dust Deposition Gauge Results

MONTH	D5	D6	D7	D8	D9	D10	D11
January	0.7	0.4	0.4	0.4	0.5	1.8	0.9
February	1.3	0.5	0.5	3.6	0.4	0.6	0.5
March	0.3	0.3	0.4	0.8	0.7	0.4	0.7
April	0.8	1.6	0.7	10.6[D,I,S]	0.5	0.4	0.4
May	0.3	0.8	0.3	15.3 [D,I,S]	0.2	0.3	0.4
June	0.5	0.9	0.4	4.6[V,I]	0.7	0.6	0.6
July	0.5	0.5	0.6	2.8	1.1	0.2	0.4
August	0.4	0.9	0.7	1.4	1.3	0.4	0.6
September	0.4	0.6	0.4	0.6	0.2	0.4	0.4
October	0.5	0.2	0.3	0.2	1.9	0.2	0.4
November	0.3	0.5	0.2	0.2	1.9	0.3	0.4
December	0.7	0.6	1.1	0.7	0.8	0.8	1.1
Annual Average	**0.6**	**0.7**	**0.5**	**1.2**	**0.9**	**0.5**	**0.6**

Notes/excluded results, Visual Description Guide:
D=Dirt: Subhedral to euhedral crystalline grains including fine sand, clay and other fine mineral particulates.
C=Coal: Black sharp angled grains with glossy conchoidal fractures or dull with cellular feature.
I=Insects: Whole insects e.g. spiders, ants, moths or outer parts of insects including wings, legs and exoskeletons.
S=Polysaccharide Slime: Slimy gelatinous material including decomposed soft body parts of insects and vegetation.
V=Vegetation: Plant debris and algae including trichomes, decomposed organic matter and particulates showing characteristic cellular structures.
B=Bird droppings: The most common contamination.
O=Other contaminants not included above.

Dust levels recorded had an average value of 0.7 g/m2/month (contaminated results not counted). Elevated values were at times affected by various degrees of contamination from insects, bird droppings, vegetation (seeds/grasses) and algae. Only one gauge was deemed contaminated during the reporting period; D8 in April, May and June 2023.

6.2.1.2 High Volume (PM10) Air Samplers

HVAS PM10 monitoring results show that all monitoring locations (in terms of monitored days) did not exceed the National Environmental Protection Measure (NEPM) of 50ug/m3/day, listed under Condition 19, Schedule 3 of the Project Approval. **Figure 3** (**Appendix 3**) shows the recorded PM10 24hr results across the five HVAS monitoring sites during the reporting period.

The HVAS annual rolling averages remained low and fluctuations generally reflect changes in meteorological conditions throughout the year, i.e. rainfall and wind (**refer Figure 4 Appendix 3**).

6.2.1.3 High Volume (TSP) Calculation

A site-specific correlation between Total Suspended Particulates (TSP) and PM10 concentrations was developed by SCPL, based on co-located HVAS measuring PM10 and TSP as per the AQMP. From the

monitoring, approximately 45% of TSP was PM10, which compares well with the relationship developed by the NSW Minerals Council for the Hunter Valley (NSW Minerals Council, 2000), which found that approximately 40% of TSP is PM10.

Figure 5 (**Appendix 3**) shows the TSP estimates across the five HVAS during the reporting period. The Development Consent Criteria of 90ug/m3 was not exceeded during the reporting period.

The HVAS monitoring results are generally similar to those reported in previous ARs and align with predictions made in the EIS (2012) that particulate levels (PM10 and TSP) would not exceed relevant air quality criteria at any residence.

6.2.1.4 TEOM (PM10) Monitoring

The annual average PM10 for the Stratford TEOM from 1 January 2023 to 31 December 2023 is 10.6ug/m3. The annual average PM10 for the Craven TEOM from 1 January 2023 to 31 December 2023 is 8.9ug/m3. The 24 hour average results for the reporting period and graphical representation of the rolling annual average of PM10 results are provided in **Appendix 3**.

The TEOM results are generally consistent with those measured by the HVAS units. The TEOM results continue to be utilised as a management tool for operations to determine proactive and reactive dust controls.

A register was maintained of any trigger alarms from the TEOM system to record the response implemented by SCPL. Alarms during the reporting period primarily resulted from either external events such as wind or system faults such as erroneous recorded values. The real-time dust monitoring response register for the reporting period is provided in **Appendix 3**.

TEOM data is screened to check the operating state of the instrument and the validity of air quality monitoring data through:

- checks on equipment status codes;
- comparison of measure values to upper and lower limits (range check);
- rate of change checks to identify data that changes too rapidly or not at all (stuck signal); and
- physical principle assessments relating two or more variables (e.g. dew point should never exceed the dry-bulb temperature.

6.2.1.5 Analysis of Data Trends and Comparison with EA Predictions

Table 14 presents the annual average dust deposition levels at the end of the reporting period (December 2023) along with the previous five years. The 2023 reporting period annual average dust deposition levels are within the range of results recorded in the previous five years at all sites. All 2023 annual averages are well below the performance criteria. Graphical representation of dust gauge results and annual rolling averages are provided in **Appendix 3**.

Table 12 Annual Average Dust Depositional Gauge Results

Reporting Period	Total Insoluble Solids (g/m^2/month)						
	D5	D6	D7	D8	D9	D10	D11
Criteria	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**	**4.0**
2018	0.8	1.1	0.9	0.8	1.1	0.7	1.2
2019	1.1	1.2	0.9	1.3	1.0	1.2	1.7
2020	0.6	1.1	1.2	1.0	0.8	1.1	0.9
2021	0.4	0.5	0.4	1.8	0.8	0.4	0.8
2022	0.5	0.5	0.4	2.3	0.9	0.6	0.5
2023	0.6	0.7	0.5	1.2	0.9	0.5	0.6

The dust deposition monitoring results are similar to results presented in previous reports and align with predictions made in the Stratford Extension Project EIS (2012) that dust deposition levels would not exceed relevant air quality criteria at any private residence.

Table 15 presents the reporting period (December 2023) HVAS PM10 annual averages along with the previous five years.

Table 13 Annual Average HVAS (PM10) Results

Reporting Period	PM10 (µg/m3)				
	Stratford	Craven	Ellis	Clarke	Glen Road*
Criteria	**30**	**30**	**30**	**30**	**30**
2018	8.3	9.2	14.9	9.7	NA
2019**	16.1	15.7	24.6	16.1	30.7
2020	8.6	8.7	9.8	8.3	10.5
2021	6.2	6.0	6.3	5.8	8.0
2022	5.6	6.0	5.2	4.3	6.0
2023	7.7	7.5	7.7	7.2	9.6

*Glen Road added to monitoring program late 2019
**High results recorded due to extraordinary bushfire events during 2019

Annual averages for all sampling locations were well below the 30 µg/m3/day criterion set under the Project Approval. The HVAS rolling averages generally increased over the 12-month period but are consistent with previous years (excluding 2019 where widespread bushfires caused elevated results).

Results of HVAS monitoring are in concurrence with the EIS (2012), which predicts the annual average PM10 criteria of 30µg/m3 will not be exceeded at any private receiver and that project only 24 hour PM10 concentrations will not be above the 50 µg/m3 assessment criteria at any privately owned receiver. The HVAS annual rolling averages reduced to near background levels following exclusion of bushfire affected results. HVAS results remain low and fluctuations generally reflect changes in meteorological conditions throughout the year, i.e. rainfall and wind.

6.2.2 Greenhouse Gas

Measures taken to minimise GHG emissions from the SMC are described in Section 6.2 of the AQMP.

Yancoal's operations are reported under the National Greenhouse and Energy Reporting Scheme (NGERS) each financial year. SMC Scope 1 and Scope 2 total emissions calculated for the 2022-2023

financial year was 31,985 tCO_2-e. **Table 16** below shows GHG emissions at the SMC over the past three financial years.

The approximate 18% decrease in emissions since the previous financial year (2021-2022) can be attributable to an decrease in electricity usage, decrease in Diesel (stationary) usage and an decrease in production within the reporting period. 2022-2023 emissions returned to levels similar to the 2019-2020 and 2020-2021 financial years. Scope 1 and Scope 2 emissions at the SMC are generally consistent with the EIS (2012) predictions.

Table 14 SMC GHG Emissions

	2019-2020	2020-2021	2021-2022	2022-2023
Scope 1	23,937	23,116	25,969	21,832
Scope 2	8,570	9,296	12,759	10,153
Total GHS Emissions (tCO_2-e)	**32,507**	**32,412**	**38,728**	**31,985**

6.2.3 Air Quality Complaints

There were nil complaints related to air quality received during the reporting period. SCPL continues to implement measures to reduce the impacts to air quality far as reasonably practicable. A full detailed complaints list is provided in **Appendix 7**.

6.3 Biodiversity Management

In accordance with Condition 33, Schedule 3 of SSD-4966, SCPL is required to implement the Biodiversity Offset Strategy and achieve the broad completion criteria to the satisfaction of the Secretary of the DPE. The management of biodiversity at the SMC in both the Mining Lease areas and the Biodiversity Areas is undertaken in accordance with the approved Biodiversity Management Plan (BMP).

The Stratford Mining Complex Annual Biodiversity Report 2023 provides a review of the effectiveness of measures in the Biodiversity Management Plan (BMP) for the annual year ending 31 December 2023 in accordance with Section 8.2.1 of the BMP. The scope of the report includes the biodiversity management activities across the Mining Lease areas, the Biodiversity Offset Areas and the Biodiversity Enhancement Area.

In accordance with the BMP, the Stratford Mining Complex Annual Biodiversity Report 2023 is included in **Appendix 9**. A summary of the main biodiversity activities and conclusions are provided in the subsections below.

6.3.1 Vegetation Clearance Report

Vegetation clearance is undertaken in accordance with the BMP Section 4.1 Vegetation Clearance Protocol. Prior to any clearance operations being undertaken a Clearing Plan is prepared, and pre-clearance surveys are undertaken.

Information obtained during the preparation of the Clearing Plans and the vegetation clearance activities (i.e. habitat features, hollows cleared and fauna observed) is used to determine the requirements for nest box replacement in the Biodiversity Offset and Enhancement Areas.

Section 4.1.4 of the BMP requires salvaged material from vegetation clearance activities to be used for habitat enhancement within the rehabilitation, Biodiversity Offset areas and Biodiversity

Enhancement Areas. Habitat features such as trunks, logs, large rocks, branches, stumps and roots are salvaged and relocated where practicable.

During the 2023 reporting period, an exploration program commenced. There was no clearing of native vegetation as part of this program, all drillholes were placed on previously cleared farmland directly next to or on existing light vehicle tracks.

6.3.2 Managing Access, Fencing, Gates and Signage

Managing access, fencing, gates and signage is undertaken in accordance with the BMP Section 5.1 and 5.2.

During the reporting period, mapping of fencing and access tracks has been completed to assist with ongoing management of the Biodiversity Areas. During the reporting period the removal of redundant fencing has continued and maintenance of existing fencing has been undertaken as required. Access tracks and previously erected signage have continued to be maintained.

The installation of signage was completed in 2018. All key points of access to the Biodiversity Areas were identified and had signage erected. During the reporting period the need for further signage and locks on gates has been identified to restrict access to the Biodiversity Areas. An audit of signage was completed in 2023, no repairs or signage replacements were identified

6.3.3 Revegetation Management

Seed Collection & Propagation

Seed collection and propagation is undertaken in accordance with the BMP Sections 4.1.5 and 5.3. Revegetation in the BMP Revegetation Areas (BMP Management Zone A) will occur via seed and tube-stock. Local endemic (adapted) species are preferentially be used where a seed supply is available, however consideration will be given to the use of a high-quality seed sourced further from the site as required.

In preparation for revegetation works each year, SCPL has prepared a scope and schedule for the revegetation works to be implemented. The total volume of seed required was calculated based on the floral listings for the target communities in the BMP appendices.

Gloucester Worimi First Nations Aboriginal Corporation and Wedgetail Project Consulting have been engaged to assist in the propagation of native plant species with tube-stock grown under controlled nursery conditions and delivered to site as required for revegetation works in the next reporting period.

Revegetation & Regeneration

Revegetation management is undertaken in accordance with the BMP Section 5.3 Revegetation Programme.

The aim of revegetation is to establish a range of habitat niches including native canopy, and understorey. The Revegetation Area (Management Zone A) in the Biodiversity Areas will be revegetated to substantially increase the area of native vegetation in the area and maximise habitat diversity and a range of successional stages.

During 2023, SCPL prepared a scope and schedule for the revegetation works to be implemented in the Biodiversity Areas. Wedgetail Project Consulting, have been engaged to assist with both the site planning and implementation of the revegetation works. The site planning included;

- a scope and schedule for the revegetation works to be implemented for the Stratford Coal Mine for the period 2024 – 2027.

The 2023 revegetation program completed the 2022 autumn revegetation program that was heavily disrupted by the higher-than-average rainfall experienced in late 2021 and throughout most of 2022. The areas revegetated in the autumn of 2023 were the Avondale Creek area in the northern section of the Biodiversity Enhancement Area (approximately 8 ha) and a five-hectare section of Offset Area 1 located on the northern boundary of the offsets.

Monitoring

Vegetation Monitoring commenced in 2019 to assess the effectiveness of revegetation in the Revegetation Area (Management Zone A) and to assess the natural regeneration in the Existing Remnant Vegetation Area (Management Zone B). The data gathered in 2019 will serve as a baseline to assess the success of the revegetation efforts for future reporting periods.

Vegetation monitoring was undertaken again in April 2023. Habitat and vegetation monitoring is discussed in Section 11 of the Annual Biodiversity Report (**Appendix 9**). Habitat and vegetation condition monitoring will continue to be undertaken annually to quantitatively measure the change in habitat and vegetation condition over time and to inform any ongoing maintenance requirements.

6.3.4 Weed Control and Monitoring

Weed control is undertaken in accordance with the BMP Sections 4.4 and 5.6. The weed control program aims to manage weeds to minimise their impact on native flora and fauna.

Two contracting companies are engaged at the SMC to undertake weed management activities on an ongoing basis. Weed management during summer 2022/23 was continued following above average rainfall in December 2022 spraying and weed control works continued through autumn. During Winter 2023, Manual weed control programs were implemented in the BRN rehabilitation area and within the Avondale Creek Corridor. Summer 2023/24 Weed spraying programme commenced again during October 2023 and will continue through to Autumn 2024. The weed control activities in 2023 continued to target areas of known weed infestation. The key species targeted included blackberry, lantana, privet, wild tobacco, Giant Parramatta grass and control of the Cadagi Tree.

Weeds mapping has been undertaken during the reporting period to assist in setting future management priorities and developing on-ground actions for weed control. Refer to the Annual Biodiversity Report (**Appendix 9**).

Weeds monitoring to evaluate the effectiveness of control measures is undertaken in conjunction with the annual vegetation monitoring and is documented in Annual Biodiversity Report.

6.3.5 Feral Animal Control and Monitoring

Feral animal control is undertaken in accordance with the BMP Section 4.5 and Section 5.7. The objective of feral animal control program is to manage feral animals to minimise their impact on native flora and fauna in the Biodiversity Offset and Biodiversity Enhancement Areas or the impact on agricultural production in other surrounding areas.

MDP Vertebrate Pest Management has been engaged by SCPL since 2016 to implement wild dog and fox control programs across property owned by SCPL including both the Stratford & Duralie Mining Leases and the Stratford & Duralie Biodiversity Offset Areas. During the reporting period, one feral animal control program was undertaken. The program was conducted between 28 August to 26 September 2023 and focused on wild dog, fox and pig control. The program was productive and successful with a total of 3 wild dogs, 2 foxes and 2 feral cats trapped over the 30-Day program.

During the control programs no non-target species were trapped. Soft jaw wild dog traps were used to trap the targeted pest animals. MDP trap dog & trail camera monitoring was used to find and locate wild dog, fox, and cat signs in the program area for trap placement. The wild dog and fox numbers were moderate in the previous controlled areas of the Stratford/Duralie Mining Lease and Biodiversity Areas which demonstrates the control programs are being successful in having an impact and lowering the numbers and presence of wild dogs and foxes within that area. The program is showing positive results of reducing the impacts of wild dogs, foxes, and cats within the area to the native animals and reducing the impact of livestock attacks to the surrounding agricultural properties.

6.3.6 Bushfire Management

Bushfire management is undertaken in accordance with the BMP Sections 4.7 and 5.9. The objective of bushfire management in the Biodiversity Areas is to prevent impacts from unplanned bushfire and to use fire to promote biodiversity.

Monitoring of fuel loads to evaluate bushfire risk and guide bushfire hazard reduction activities is undertaken in conjunction with the annual vegetation monitoring and was conducted in April 2023. Bushfire risk has continued to be mitigated through the maintenance of access tracks and fire breaks. Additionally, fuel loads have been reduced during 2023 by slashing where required in the Mining Leases and Biodiversity Areas. During 2023 no hazard reduction burning has been undertaken. Following the revegetation works, the aim is to exclude fire from the offset areas for at least 5 years to allow for tubestock and seedlings to establish.

Schedule 3 Condition 51 of SSD-4966 requires the SCPL to assist the Rural Fire Service and emergency services as much as possible if there is a fire in the surrounding area.

Section 4.7 of the BMP states SCPL will:

- ensure that the development is suitably equipped to respond to any fires on site; and
- assist the Rural Fire Service (RFS), emergency services and National Parks and Wildlife Service as much as possible if there is a fire in the surrounding area

6.3.7 Nest Box Program

Nest box management is undertaken in accordance with the BMP Section 5.10. Nest boxes have been installed to provide habitat opportunities in the short to medium-term for a number of arboreal fauna species including the Squirrel Glider.

The nest box programme consists of two main components to replace any tree hollows cleared prior to mining activities:

- suitable nest boxes for the Squirrel Glider will be installed at a ratio of least 3:1 for each tree hollow cleared suitable for the Squirrel Glider.
- for tree hollows that provide habitat to arboreal fauna species (other than the Squirrel Glider), nest boxes will be installed at a minimum ratio of 1:1 (i.e. one nest box of appropriate size to

replace one hollow of similar size and properties).

Nest boxes are installed within the Biodiversity Offset Area and Biodiversity Enhancement Area in Existing Remnant Vegetation (Management Zone B) as well as the Revegetation Area (Management Zone A).

In accordance with Section 5.10 of the BMP, nest boxes will be monitored by suitably qualified personnel with quarterly inspections during the first year followed by annual inspections in spring. Nest box monitoring was undertaken during 13 – 20 February, 18 – 20 September, 9 – 13 October and 20 – 24 November 2023. A summary of these monitoring reports are included in the Annual Biodiversity Report (**Appendix 9**).

Nest boxes will continue to be installed in accordance with the BMP.

6.3.8 Squirrel Glider Management Plan

The management of Squirrel Glider populations is undertaken in accordance with the Squirrel Glider Management Plan (SQMP). The SGMP has been prepared to facilitate the management of squirrel glider populations at the SMC, Biodiversity Enhancement Areas and Biodiversity Offset Areas.

Squirrel glider management programs which have commenced include:

- definition of the squirrel glider colonies (SQMP Section 4.1)
- identification of the squirrel glider home ranges (SQMP 4.2)
- tree hollow census within the home ranges (SQMP Section 7.1)
- nest box program (SQMP Section 7.2) in conjunction with BMP nest box program
- Squirrel Glider vegetation pathways (SQMP Section 8.1) in conjunction with BMP revegetation
- Squirrel Glider population monitoring (SQMP Section 10.1) in conjunction with BMP fauna monitoring.

6.3.9 Biodiversity Offset Monitoring and Reporting

The Biodiversity Offset monitoring program is prescribed in the BMP Section 7. The program aims to monitor and report on the effectiveness of the BMP management measures and progress against the detailed performance and completion criteria.

The Stratford Mining Complex Annual Biodiversity Report 2023 provides a review of the effectiveness of measures in the Biodiversity Management Plan (BMP) for the annual year ending 31 December 2023 in accordance with Section 8.2.1 of the BMP and is included in **Appendix 9**. The annual report includes the results of the monitoring for:

- habitat and Vegetation monitoring, including visual and photo monitoring;
- fauna monitoring program
- effectiveness of weed control;
- effectiveness of feral animal control; and
- nest box monitoring program.

Habitat and Vegetation Monitoring

Habitat and vegetation condition monitoring is undertaken to quantitatively measure the change in habitat and vegetation condition over time. The visual monitoring and photo monitoring programs are

undertaken concurrently with the vegetation monitoring to provide additional information on the change of the Biodiversity Areas over time and inform maintenance requirements.

Vegetation Monitoring commenced in 2019 to assess the effectiveness of revegetation in the Revegetation Area (Management Zone A) and to assess the natural regeneration in the Existing Remnant Vegetation Area (Management Zone B). The data gathered in 2019 serves as a baseline to assess the success of the revegetation efforts and progress against the project specific performance and completion criteria. This survey was undertaken prior to the revegetation works commencing in the Biodiversity Offset areas.

Vegetation monitoring was undertaken again in April 2023. Habitat and vegetation condition monitoring will continue to be undertaken annually to quantitatively measure the change in habitat and vegetation condition over time and to inform any ongoing maintenance requirements.

Survey results from the 2023 monitoring state that the revegetation program is progressing well with all areas where installation has occurred having some success and well over half the areas achieving or exceeding target densities.

Fauna Monitoring

Monitoring of fauna usage within the Biodiversity Areas is conducted every three years to document the fauna species response to improvement in vegetation and habitat in the Biodiversity Areas and assess the performance in providing habitat for a range of vertebrate fauna. The surveys include an assessment of habitat complexity, species richness and abundance.

The first round of fauna monitoring was completed by AMBS Ecology and Heritage (AMBS) during September and October 2019.

During 2022 AMBS were engaged to undertake a fauna survey within the SMC Biodiversity Offset Areas Biodiversity Enhancement Areas and Stratford Rehabilitation Areas. The full report is included as an Appendix in the Annual Biodiversity Report (**Appendix 9**) An extracted summary of the survey results is outlined below.

Targeted fauna surveys were undertaken at six sites within the Stratford Offset Areas, two sites within the Stratford Biodiversity Enhancement Area, and two sites within the Stratford Rehabilitation Area, from 7 to 12 November 2022 and 21 to 26 November 2022. At each site survey techniques included pitfall traps, funnel traps, Elliott A traps, harp traps, ultrasonic call recording, spotlighting, diurnal bird surveys and reptile searches. Frog surveys were undertaken at four separate sites. Opportunistic observations of signs of fauna were noted throughout the field survey period, including travel to and during transit between surveys sites.

A total of 166 species of vertebrate were recorded, comprising 15 frogs, 13 reptiles, 100 birds and 38 mammals most of which were native (refer to the species list). The fauna surveys confirm that the Stratford Offset, Biodiversity Enhancement and Rehabilitation areas provide foraging and breeding habitat for a range of native vertebrate fauna, including birds, mammals, reptiles, and frogs. Further detail of monitoring results can be found in **Appendix 9.**

6.3.10 Long Term Security and Conservation Bond

Long-term Security

In accordance with Condition 36, Schedule 3 of Development Consent SSD-4966, SCPL is required to make suitable arrangements for the long-term security of the Stratford Extension Project Biodiversity Offset Area. SCPL has pursued the mechanisms available under section 88E(3) of the NSW *Conveyancing Act, 1919*, namely:

- registration of a Positive Covenant under section 88E(3) of the NSW *Conveyancing Act, 1919*; and
- registration of a Restriction on the Use of Land by a Prescribed Authority under section 88E(3) of the NSW *Conveyancing Act, 1919*.

Public Positive Covenants and Restrictions on the Use of Land for the Biodiversity Offsets have been registered on title with NSW Land and Property Information (LPI) in October 2019. Copies of the executed Positive Covenants and notice of registration of the instruments was included in the 2019 SMC Annual Biodiversity Report.

Conservation Bond

In accordance with Condition 40, Schedule 3 of Development Consent SSD-4966, SCPL is required to lodge a Conservation Bond with the DPE which covers the cost of implementing the Biodiversity Offset Strategy detailed in the BMP.

The conservation bond calculation was prepared by Kleinfelder and a verification of the costs was undertaken by Rider Levett Bucknall. The conservation bond calculation was submitted in January 2019 and subsequently approved by DPE on 15 January 2019.

The Conservation Bond in the form of a bank guarantee was executed and lodged with DPE on 8 February 2019. During the next reporting period the Conservation Bond will be updated by SCPL.

6.4 Blasting

6.4.1 Blast Criteria and Control Procedures

Blasting at the SMC is conducted in accordance with Conditions 9-15, Schedule 3 of SSD-4966, respective EPL conditions and the approved Blast Management Plan (BLMP). Blasting criteria, blasting hours, blasting frequency, property inspection requirements and operating conditions are provided in Conditions 9 to 15, Schedule 3 of the Project Approval.

6.4.2 Review of Blast Monitoring Results and Performance

Blasting activities during the reporting period were undertaken within the Avon North Open Cut and the Stratford East Open Cut.

The locations of blast monitoring units are shown on **Figure 3** (**Appendix 1**). Blast monitors are located at the following residences:

- Isaac Property (mine owned) (south-west of blasting);
- Ex-Judge Property (mine owned) (west);
- Atkins Property (mine owned) (north-west);
- Greenwood Property (south); and
- Clarke Property (mine owned) (east).

Monitoring is undertaken at the Clarke property due to restrictions with monitoring at the next closest residence on privately-owned land. Enviro Strata Consulting (ESC) has been previously engaged to

undertake an independent assessment of blasting results and prepare a model to extrapolate the overpressure and ground vibration levels at private residences where monitoring is not possible.

Blast monitoring is also undertaken at Aboriginal heritage site CTS-1 when blasting is within 1km. Blasting has now ceased in the Stratford East Pit and subsequently blast monitoring at CTS-1 has also ceased and the potential impact pathway to CTS-1 no longer exists

Airblast overpressure and ground vibration results for all blasts undertaken during the reporting period are provided in **Appendix 5** and summarised below.

Overpressure Results

There were no exceedances of the overpressure criteria of 120 dBL or 115 dBL overpressure criteria during the reporting period.

Vibration Results

During the reporting period, there were no blasts where ground vibration exceeded 5 mm/s.

Fume Results

The level of blast fume generation is monitored for each blast by the shotfirer as described in the BLMP. During the reporting period, there was no occasion of blast fume being recorded.

The EIS (2012) provides predictions on blast emissions for various residential receivers. The blasting predictions indicate that blasting emissions would generally comply with airblast criteria of 115 dBL and ground vibration of 5 mm/s at nearby private receivers. During the reporting period, predicted blast emissions were generally consistent with measured values.

6.4.3 Property Inspections and Investigations

In accordance with the Development Consent Schedule 3 Conditions 12 landowners within 2 kilometres of blasting may request a property inspection to establish the baseline condition of a building. Additionally, in accordance with Condition 13 if a landowner claims damage has been caused to a building as a result of blasting they may request a property investigation.

Prior to recommencing blasting activities at the SMC, SCPL notified all relevant landowners of their rights in accordance with the Development Consent.

During the reporting period no further building inspections were requested. Building inspections have previously been undertaken by Bill Jordon as a suitably qualified, experienced and independent person to undertake the building condition inspections.

Building condition inspections will continue to be undertaken on request.

No requests have been received by SCPL for a property investigation due to claims of damage resulting from blasting activities.

6.4.4 Blasting Complaints

Nil (0) blast related complaints were received during the reporting period. A full list of complaints received, including responses by SCPL is provided in **Appendix 7**.

6.5 Noise

6.5.1 Noise Criteria and Control Procedures

SMC has an approved Noise Management Plan (NMP) that establishes a noise management strategy which:

- identifies noise criteria;
- outlines proactive and responsive noise management and control measures;
- formulates a noise monitoring program;
- establishes data assessment protocols; and
- details reporting and review requirements.

Noise emissions from the SMC are managed in accordance with the criteria and procedures described in the NMP. SCPL implements measures to ensure noise from the SMC is managed to approved levels, through a combination of the following:

- ensuring best management practices are implemented and reviewed;
- implementing noise controls to reduce noise from the source and attenuate noise transmission; and
- if necessary, implementing measures to control noise at receivers following a review of monitoring data.

The SMC noise monitoring program comprises attended noise surveys, real-time noise monitoring, rail noise monitoring, meteorological monitoring and sound power testing. The results of compliance attended monitoring are used to assess compliance with relevant noise impact assessment criteria in SSD-4966 and the NMP. Real-time noise monitoring results are used for ongoing performance assessment and will assist in the implementation of pre-emptive management actions to avoid potential non-compliances.

SCPL undertakes monthly attended noise monitoring surveys in accordance with the NMP in order to determine the status of compliance with noise limits provided in SSD-4966 and the EPL.

The Sentinex real-time noise (RTN) monitors are used as a management tool for operations to measure mine contribution noise emissions and implement management controls as outlined under the approved NMP. Sentinex RTN monitors are located near Stratford Village and Craven Village.

6.5.2 Review of Attended Noise Monitoring Results and Performance

The summary results of the attended noise surveys undertaken during the reporting period are provided in **Appendix 6**. Noise monitoring locations are shown on **Figure 3** (**Appendix 1**). The full Noise Survey Reports are available at the Stratford Coal website (www.stratfordcoal.com.au).

Operator-attended operational noise monitoring was conducted on a monthly basis at eight nominated locations in the NMP, as well as additional locations representative of receivers in the area surrounding the SMC, in January through to December 2023.

All noise performance assessments of day, evening and night operational noise emissions found SMC to be compliant with the relevant criteria, contained within SSD-4966, at all attended monitoring locations.

6.5.3 Analysis of Data Trends and Comparison with EA Predictions

The SEP EIS 2012 provides predictions on mine contributed noise emissions for various operational years. In terms of the nine monitoring locations ("Atkins", "Clarke", "Wadland", "Hall", "141 Deards Lane", "Lowrey", "Pryce-Jones", "Van der Drift" and "Greenwood") predicted mine contributed noise emissions were consistent with measured values for all locations.

Results of noise monitoring during 2017 to 2023 has shown mine contribution to be generally inaudible.

6.5.4 Real Time Noise Monitoring System

A real-time noise (RTN) monitoring system is described in the NMP. Real-time monitoring is used as a management tool to assist SCPL to take proactive management actions and implement additional noise mitigation measures to avoid potential non-compliances. A Sentinex RTN monitor is located near Craven Village and a second Sentinex unit is located near Stratford Village.

Noise investigation triggers have been established in the NMP which send alarms when noise emissions are approaching levels which may exceed the noise criteria at privately-owned receivers. Details of any RTN alarms and the operational responses implemented by SCPL are recorded in the RTN Response Register (**Appendix 6**).

In general, noise alarms during the reporting period related to abnormal meteorological conditions, environmental and traffic noise from The Bucketts Way. The SMC noise contribution was generally inaudible and the alarms activated by external noise sources. The RTN response register details the response actions taken by SCPL.

To address any noise alarms regardless of abnormal meteorological conditions such as inversions, SCPL continue to implement the management measures described in the NMP. Additionally, SCPL implement operational management measures in accordance with the real-time noise monitoring response protocol described in the NMP Section 7.3.4.

6.5.5 Noise Prediction and Forecasting System

A noise and meteorological forecasting system is implemented at the SMC to predict meteorological conditions for the coming day to determine, one day in advance, where the risk of noise-enhancing meteorological conditions may occur (e.g. based on wind speed, direction and atmospheric stability).

Predictive noise and meteorological forecasting information is provided at the start of every operational shift to inform the need for any control of the locations of major mobile equipment (i.e. to maintain compliance with Development Consent SSD-4966 noise criteria). The predictive meteorological forecasting system operates in conjunction with the real-time monitoring system, providing an alert for the appropriate personnel to review the real-time data and manage the intensity of activities for that day, increase controls (e.g. gear restriction) or limit activity to various areas of the site.

6.5.6 Rail Noise Monitoring

The Stratford export train is required to be approved to operate on the NSW rail network in accordance with the noise limits specified in ARTC's EPL 3142, as per Condition 5(d), Schedule 3 of SSD-4966. ARTC have recently received a variation to EPL 3142 which has amended conditions relating to the operation of rolling stock. Previously only the rail infrastructure operator was required to hold an EPL. The changes now require the rolling stock operators to also hold an EPL for the operation of

rolling stock. PN are the operator of the Stratford export train and have confirmed the Stratford locomotives are listed in locomotives class register approved to operate on the NSW rail network.

The NMP requires rail noise monitoring to be undertaken along the North Coast railway on a quarterly basis at the existing Wards River and Craven village monitoring points.

Rail noise monitoring is reported against rail noise criteria described in Section 4 of the NMP. Rail operations aim to progressively reduce noise levels to the goals of 65dB(A)Leq, (daytime from 7am – 10pm), 60dB(A)Leq (night-time from 10pm –7am) and 85dB(A) (24hr) max pass-by noise, at one metre from the façade of affected residential properties. This is consistent with the criteria in the ARTC EPL noise limits.

Rail noise monitoring was conducted during the January 2023, May 2023, August 2023 and November 2023 Noise Surveys when export trains were operating. Rail noise survey results are included in the Noise Survey reports which are available at the Stratford Coal website. Attended noise measurements were conducted at two locations; TN1 (Craven) and TN2 (Wards River Village).

During the reporting period for all rail noise monitoring undertaken, the maximum SMC rail pass-by noise levels complied with the noise goal of 85 dBA at all monitoring locations, excluding the sounding of horns on approach to level crossings.

6.5.7 Mobile Plant Noise Assessments

Sound power testing is undertaken in accordance with the NMP. The indicative mine fleet at the SMC is provided in the SEP Noise Impact Assessment (NIA) (EIS 2012 Appendix C). The NIA provides the overall A-weighted and Linear Sound Power Levels (SWLs) for each item of plant and equipment proposed to be used at the SMC.

The current mining fleet is shown in **Section 4.3.1** of this report. The SMC fleet of mobile plant are assessed annually against the target SWLs.

Sound power testing of existing plant and equipment at the SMC was undertaken by SLR during December 2023. A summary of the results from the sound power testing is included below.

Most of the plant and equipment tested conformed to the target SMC sound power levels.

- Four CAT 785s (ID 107, 109, 110, 112) exceeded the static A-weighted SWLs and three CAT 785s (ID 107, 110, 114) exceeded the target A-weighted SWLs under dynamic test conditions by a negligible 1 dB. All CAT 785s conformed with the Linear SWL targets under both the static and dynamic test conditions.
- CAT D10T dozer (ID 214) exceeded the A-weighted SWL target when in first gear reverse, second gear forward and second gear reverse operation. CAT D10T (ID 216) exceeded the A-weighted SWL target when in second gear reverse. CAT D10T (ID 217) exceeded the A-weighted SWL target when in second gear forward and second gear reverse.
- CAT777 Water Cart (ID 502) exceeded the static A-weighted SWL target.
- Drill 51 exceeded both the A weighted and Linear SWL targets.
- All excavators conformed with the A-weighted and Linear SWL targets.
- CAT988 ROM Loader (ID 402) conformed with the A-weighted and Linear SWL targets.
- CV01 Conveyor, CV02 conveyor, CV04 Drive, CV04 Conveyor, CV05 Drive and CV05 Conveyor

exceeded the A weighted SWL target. CV01, CV02, CV04 and CV05 exceeded the Linear weighted target.

The results of the equipment measured in 2022 compared to 2023 show improvement in SWLs across a significant portion of the fleet. Improvements were seen in the following equipment;

- Dozer CAT D10T (ID 216) showed improvement in static SWL testing;
- Wheel Loader CAT988 improved from 2022 to below target SWL (dynamic testing);
- Water Cart CAT777 showed improvement in both static and dynamic SWL testing;
- Excavator CAT349 significant improvement; and
- Overall improvement in all dozers CAT D10T.

Equipment that have exceeded targets will be reviewed during 2024 to identify possible noise sources and potential noise mitigation options.

Within the next reporting period, SCPL will complete additional sound power testing on the fleet that has received sound improvements.

Notwithstanding, given that the current equipment fleet in use at SMC is considerably less than those predicted in the EIS 2012 the overall sound power level from SMC is likely to be less than 136 dBA.

6.5.8 Noise Complaints

No noise related complaints were received during the reporting period. SCPL continue to implement management and mitigation measures for noise. The complaints list is provided in **Appendix 7**.

6.6 Heritage

Aboriginal culture heritage and non-Aboriginal heritage at the SMC is managed in accordance with the approved Heritage Management Plan (HMP). The purpose of the HMP is to ensure that the development does not cause any direct or indirect impact on identified Aboriginal or Non-Aboriginal heritage sites located outside the approved disturbance area of the development on the site.

6.6.1 Aboriginal Heritage

Aboriginal cultural heritage sites within the vicinity are shown on Figure 3 of the HMP and status of each site is outlined below in **Table 17**.

Table 15 Aboriginal Cultural Heritage Sites

Site Name	AHIMS[1]	Site Type	Status
OS-1	38-1-0087	Open Artefact Scatter	Monitored quarterly
OS-2	38-1-0088	Open Artefact Scatter	Monitored quarterly
OS-3	38-1-0089	Open Artefact Scatter	Salvaged 2018
OS-4	38-1-0077	Open Artefact Scatter	Salvaged 2018
OS-5	38-1-0008	Open Artefact Scatter	Salvaged 2019
ST-1	38-1-0079	Scarred Tree	Monitored quarterly
ST-2	38-1-0080	Scarred Tree	Relocated 2019
ST-3	38-1-0081	Scarred Tree	Monitored quarterly
ST-4	38-1-0082	Scarred Tree	Monitored quarterly

Site Name	AHIMS[1]	Site Type	Status
IF-1	38-1-0083	Isolated Find	Salvaged 2018
IF-2	38-1-0084	Isolated Find	Salvaged 2018
IF-3	38-1-0085	Isolated Find	Salvaged 2020
IF-4	38-1-0086	Isolated Find	Salvaged 2020
IF-5	38-1-0031	Isolated Find	Monitored quarterly
PAD-1	38-1-0101	PAD	Monitored quarterly
PAD-2	38-1-0078	PAD	Monitored quarterly
CTS-1	-	Cultural/Traditional Site	Monitored quarterly, access restricted

[1] AHIMS = Aboriginal Heritage Information Management System.

During the reporting period SCPL continued the management of Aboriginal heritage sites associated with the project. The results of all survey activities during the period have been record and included on the SMC Heritage database. No salvage activities were completed during the reporting period.

There was no unapproved or unplanned disturbance of any Aboriginal heritage sites during the reporting period. No previously unidentified heritage sites were identified during the reporting period.

6.6.2 Non-Aboriginal Heritage

No items of state or regional non-Aboriginal heritage significance were identified in the vicinity of the SMC (EIS, 2012). If sites with suspected non-Aboriginal heritage significance are identified in the future, an appropriately qualified individual will be required to determine management measures.

There was no unapproved or unplanned disturbance of any non-Aboriginal heritage sites during the reporting period. No previously unidentified heritage sites were identified during the reporting period.

6.7 Waste Management

All waste streams generated at the SMC are managed in accordance with the SMC Waste Management and Minimisation Strategy. Key waste streams (apart from waste rock) generated at the SMC comprise:

- recyclable and non-recyclable wastes;
- sewerage and wastewater; and
- other wastes from mining and workshop activities (e.g. used tyres, scrap metal and waste hydrocarbons and oil filters).

All general domestic waste (e.g. general solid [putrescibles] waste and general solid [non-putrescible] waste as defined in *Waste Classification Guidelines Part 1: Classifying Waste* [EPA, 2014]) and general recyclable products are collected by an appropriately licensed contractor. SMC will maintain a register of regulated waste collected by the licensed waste contractor.

Heavy vehicle waste tyres at the SMC are to be disposed into the open cut voids (Bowens Road North Pit and Roseville West Pit) in accordance with the methodology described in the SEP (SCPL, 2012) and the Waste Management and Minimisation Strategy which is summarised below.

- tyres are stockpiled before disposal in discrete patches;
- overburden is segregated into potential acid-forming and non acid-forming (NAF) materials. Tyres are placed with NAF overburden into backfilled sections of the open cut voids, with approximately

20 m coverage in unsaturated zones above the groundwater table;

- each tyre has a unique serial number that is recorded before disposal; and
- burial locations are recorded in the used tyre register that is maintained on a regular basis by SCPL, and land surveyed (location and depth) (consistent with the SMC Waste Management and Minimisation Strategy)

Scrap metal is collected by a licensed waste contractor for recycling.

Sewage and wastewater from ablution facilities on-site is collected and transferred via a sewerage system to the existing on-site sewage treatment plant. Sewage is treated in the on-site sewage treatment plant (that consists of an aerobic treatment system) and is disposed of in a manner to the satisfaction of the EPA and the MidCoast Council.

6.7.1 Waste Minimisation and Performance

The waste management contractor provides monthly reporting on all waste streams disposed from the SMC. The monthly reports also provide details of recycling achieved and hazardous substances.

A review of the effectiveness of waste minimisation and management measures is provided below, including a comparison against results of previous years and assessment of any trends over time. The volume of waste generated at the SMC decreased from the previous reporting period.

As SMC moves into the mine closure phase of operations it is anticipated that waste generation will potentially increase over this period.

During the reporting period the SMC recycled 88.42% of the total waste generated. This is consistent with previous reporting periods with waste recycling showing a slight increase since 2019 as shown in **Table 18**.

Table 16 Waste Generation at SMC

	2019	2020	2021	2022	2023
Total Waste (kg)	498.75	431.41	521.70	578.12	**500.11**
Recycled Waste (t)	428.11	375.86	463.29	521.42	**429.0**
Percentage Recycled	85.84%	87.12%	88.8%	90.19%	**88.42%**

6.8 Hazardous and Explosive Materials Management

Hazardous materials are stored and used in accordance with relevant safety data sheets (SDS). SDS's are kept in a file inside the First Aid Room and are available from an online database on the company intranet.

Bulk explosive area approved for storage within an explosives compound at site.

All hazardous waste is appropriately disposed of by a fully accredited waste contractor and waste tracking certificates are supplied to SCPL.

6.9 PAF Material Management and Spontaneous Combustion

An assessment of the geochemical characteristics of the waste rock material associated with the development of the SEP is provided in the Geochemistry Assessment (EIS 2012 Appendix L) prepared

by EGi (2012). The Geochemistry Assessment (EGi, 2012) concluded that the waste rock materials generated from three of the four SMC open cut mining areas are likely to be non-acid forming (NAF). The acid base accounting test work indicates that the Stratford East Open Cut waste rock materials would be expected to be generally potentially acid forming (PAF), with some potentially acid forming – low capacity (PAF-LC) and NAF materials also expected to be present (EIS Appendix L).

PAF material is managed in accordance with Section 7.2 of the SMC Surface Water Management Plan. PAF waste rock material is segregated and selectively handled and then placed in in-pit (below the predicted final water table recovery level) waste rock emplacements.

During operations, limestone is placed on the open pit floor and interim waste rock in-pit and historical out-of-pit waste rock emplacement lifts/faces where PAF material is present, to minimise the generation of acid rock drainage.

SCPL monitors the water quality of contained water storages (i.e. pH and solute concentrations) as part of the existing surface water monitoring program. If in the event acid rock drainage is identified through the surface water monitoring program, specific acid rock drainage controls will be implemented. Refer to the surface water monitoring results in **Section 7.2.2** of this report.

During the reporting period PAF materials have been appropriately managed to minimise the potential for any short-term or long-term effects of acid rock drainage.

Any incidences of spontaneous combustion at the SMC are managed in accordance with a Spontaneous Combustion Management Procedure. Management and mitigation practices generally involve reducing the interaction of potentially reactive materials with water and oxygen by appropriate dumping practices, profiling and capping any materials likely to heat and reducing the time coal faces are exposed prior to mining.

There have been very few occurrences of spontaneous combustion on the Stratford site during the 20 years of operation. During the reporting period there were no spontaneous combustion events on site or observed heating in any stockpiles.

6.10 CHPP Reject Management

Reject material produced at the Stratford CHPP is disposed of in accordance with the SMC Life of Mine Rejects Disposal Plan (RDP 2018).

The Development Consent SSD-4966 Table 8 prescribes the performance criteria for CHPP rejects. Reference should be made to the RDP for a detailed description of reject management at the SMC. In general the rejects, both coarse and fine fractions, are pumped via pipeline from the CHPP to the Stratford Main pit where they are deposited below final void ground water levels.

Rejects at the SMC have been previously characterised as being PAF and the EIS 2012 geochemical assessment report concluded that implementation of appropriate management measures would be required to manage potential ARD impacts associated with the existing and proposed co-disposed CHPP rejects. Rejects management measures include placement into the Stratford Main Pit where they are inundated with water to prevent significant pyrite oxidation and acid generation in the long term, with monitoring of water quality undertaken during operations and provision for lime (calcium hydroxide - Ca[OH]2) dosing and limestone (calcium carbonate - CaCO3) treatment as required.

Reject placement in the Stratford Main Pit for the reporting period involved sub-aqueous deposition only, eliminating the use of reject beaches. Hence, no liming or monitoring of the exposed reject beach was undertaken during the reporting period. Lime dosing of the reject stream was continued.

Water quality monitoring in the Main Pit is undertaken monthly, refer to the results in **Section 7.0** Water Management. The management measures implemented have successfully controlled the formation of acid conditions in the Stratford Main Pit, with recorded pH circum neutral.

7.0 WATER MANAGEMENT

Water management is undertaken in accordance with the approved Water Management Plan (WMP) and sub-components of the plan including surface water, groundwater and site water balance required under SSD-4966. The local and regional hydrological setting along with the baseline data is provided in the WMP.

SCPL has investigated options for the beneficial reuse of mine water however continue to maintain zero discharge of mine water from site. The mine water balance at SMC is managed predominantly through storage within on site containment facilities. Where possible all clean water is diverted offsite.

7.1 Water Licences

7.1.1 Surface Water Licencing

The SMC is located within the mapped extent of the Avon River Water Source under the Water Sharing Plan for the Lower North Coast Unregulated and Alluvial Water Sources 2009. SMC is a water surplus site and no extraction of surface water from any unregulated stream is proposed for the SMC.

7.1.2 Groundwater Licencing

The groundwater systems within which the SMC lies, specifically relate to:

- Gloucester Basin Water Source (i.e. porous rock aquifer) under the *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources 2016*
- Avon River Water Source (i.e. alluvial aquifers) under the *Water Sharing Plan for the Lower North Coast Unregulated and Alluvial Water Sources 2009*

SCPL currently holds several WALs in the Gloucester Basin Groundwater Source, for a total of 1,476 share components under the *Water Sharing Plan for the North Coast Fractured and Porous Rock Groundwater Sources 2016*, to account for direct and indirect take of groundwater from the porous rock aquifer.

SCPL holds existing groundwater licences for dewatering issued by the NSW DPE Water that allow for the dewatering requirements from the open cut pits. The estimated groundwater inflows at the SMC during 2022 where are below the annual extraction limits as shown in **Table 19.**

Table 17 Water Take

Water Licence	Operation	Entitlement	Estimated 2023 take total (ML)
WAL 41534 (20BL169400)	Stratford Main Pit, ANOC, SEOC	500ML extraction	143.2
WAL 41535 (20BL169101)	Stratford (Roseville) Pit	20ML extraction	10
WAL 41536 (20BL169102)	Roseville Extended and West Pit	315ML extraction	169.7
WAL 41538 (20BL169103)	Bowens Road North Pit	410ML extraction	0
WAL 41537 (20BL169104)	Parkers Pit	186ML extraction	-

7.2 Water Balance

SCPL monitors the water balance for the operation to assist in forecasting and management of site water. The site water balance (**Table 20**) for the reporting period was prepared by ATC Williams.

During the reporting period, no water was extracted from licenced production bores.

Table 18 Input Output Water Balance Statement for SMC

Description	Volume (ML)
Total Inputs	2,193
Total Outputs	1,710
Total Inputs minus Total Outputs	**483**
Storage at Start of 2023	32,140
Storage at End of 2023	32,676
Change in Storage over 2023	**536**

7.3 Surface Water

7.3.1 Surface Water Management

Surface water management is managed in accordance with the SWMP, Appendix 2 of the WMP. The SWMP outlines the procedures and strategies for surface water management at the SMC to ensure compliance with SSD-4966. The SWMP includes the management of clean water and mine related water as outlined below. Mine related water comprises both mine water and sediment laden/turbid water. The local and regional hydrological setting along with the baseline data is provided in the SWMP.

7.3.1.1 Erosion and Sediment Control

The primary objectives of the erosion and sediment control strategy at the SMC are to:

- minimise and control soil erosion and sediment generation in areas disturbed by ongoing mining and construction activities; and
- minimise the potential for mine related activities to lower the water quality (particularly in terms of total suspended solids content) of downstream local watercourses.

Control strategies for soil erosion and sediment migration for the SMC include:

- maximum separation of runoff from disturbed and undisturbed areas
- construction of sediment dams downstream of disturbed areas to contain runoff up to specified design criteria (refer Design Criteria below)
- subsequent priority use of these waters in SMC related activities and/or natural controlled release to substantial buffer zones in a manner that minimises the potential for change to downstream turbidity
- selective use of benign flocculants such as gypsum to assist in the settlement of suspended solids if required
- construction of surface drains to facilitate the efficient transport of surface runoff.
- construction of silt fences downslope of disturbed sites
- rapid and progressive stabilisation of disturbed surfaces

SMC operate a network of sediment control structures to control sediment laden runoff from disturbed areas and active mining areas. All sediment control structures at the SMC were reviewed during 2018 following the approval of the SMP with maintenance or upgrades undertaken in accordance with the SWMP as required. In 2022 no new sediment control structures were constructed.

All sediment dams are inspected/monitored on a minimum quarterly basis or following receipt of sufficient rain whereby such dams have the potential to spill. Maintenance activities are undertaken on sediment dams as required. Sediment dams are cleaned out when the storage volume is reduced by sediment deposition (i.e. when 30% of storage volume is lost to sediment build up) and inspected after major rainfall events. Silt fences are cleaned out and/or repaired to maintain their effectiveness.

During the reporting period there were no sediment dam spills.

In addition to dedicated sediment dams, clean water is directed around disturbed areas (where practicable) using diversion drains/bunds to minimise sediment laden water. Areas under rehabilitation are stabilised by structural controls such as bench drains and contour banks (as required), to break up effective slope length exposed to erosion. Final slopes will generally not exceed 14 degrees to limit the potential for erosion and sediment generation.

Inspections of diversion structures were undertaken during and after rainfall events of >50mm/day or a minimum of every 6 months. Remedial and maintenance works were completed as required within the diversion drains and dams during the reporting period.

7.3.2 Surface Water Monitoring and Performance

SCPL monitors surface water quality on and surrounding the mine site by sampling from a series of selected locations. These locations comprise both streams and water storage structures. A meteorological monitoring station (i.e. weather station) provides site rainfall data. The locations of these monitoring sites are shown on **Figure 3** (**Appendix 1**).

Surface water monitoring is conducted in accordance with the approved SWMP and EPL 5161.

Surface water is sampled and analysed on a weekly, monthly, event basis or following a sediment dam spill.

Water sampling is not undertaken in no-flow conditions. Collected waters are analysed for a suite of physical and chemical parameters. Results are compared with the performance indicators and measures described in the SWMP Section 9 (WMP Appendix B).

During the reporting period there was one (1) surface water related (minor) incident. Details regarding the water related incident are included in **Section 1**, **Table 3**.

The routine surface water monitoring sites at the SMC are described in **Table 21**.

Table 19 Routine Surface Water Monitoring Sites

Site	Area	Property	Hydrological location
W1	Wenham Cox Road	Glenavon	Avon River upstream of the mine (i.e. upstream of junction with Dog Trap Creek)
W2	Marengo	Bignall	Avon River downstream of the mine (i.e. downstream of junction with Dog Trap Creek)

Site	Area	Property	Hydrological location
W3	Dog Trap Creek	Ex-Ellis/SMC	Upstream Dog Trap Creek (above junction with Avondale Creek)
W3A	Dog Trap Creek	Ex-Ellis/SMC	Upstream Dog Trap Creek (above junction with Avondale Creek) and Upstream of BRN Operations
W4	Dog Trap Creek	Ex-Atkins/SMC	Dog Trap Creek downstream of junction with Avondale Creek and upstream of Avon River
W5	Wenham Cox Road	SMC	Avondale Creek downstream of mine and upstream of junction with Dog Trap Creek
W6	Parkers Road	SMC	Upstream of Mine on Avondale Creek
W8	Bowens Road	SMC	Avondale Creek in the centre of operations
W9	Glen Road	SMC	Upper Avondale Creek
W10	Lemon Tree Creek - Bowens Road	SMC	"Lemon Tree" Creek upstream of Avondale Creek junction
W11	Dog Trap Creek	Ex-Ellis	Dog Trap Creek upstream of Avon North operations

7.3.2.1 Review of Local Streams Monitoring Results

Reference should be made to accompanying data tables provided in **Appendix 4**.

Assessment of Performance Indicators

The surface water monitoring results are used to assess the SMC against the performance indicators and performance measures as detailed in Section 9 Table 12 of the SWMP. If data analysis indicates a performance indicator has been exceeded or is likely to be exceeded, an assessment will be made against the performance measure. If a performance measure is considered to have been exceeded, the Contingency Plan will be implemented (SWMP Section 10). If data analysis indicates that the performance measure has not been exceeded, SCPL will continue to monitor.

Table 22 provides a summary of surface water analysis of the monitoring data to assess against the surface water performance indicators and measures outlined in Table 12 of the SWMP.

Table 20 Summary of Water Monitoring Results – 2023 Reporting Period

Monitoring Site	Indicator	Long Term Mean	Standard Deviation	12 Month Mean 2023
W4	pH	7.0	0.5	7.1
	EC	571	376	459
	Sulphate	37	59	19
	Iron	1.0	0.9	1.9
W3	pH	7.0	0.4	7.5
	EC	416	203	459
	Sulphate	12	11	10
	Iron	1.0	1.2	1.1
W1	pH	7.1	0.4	7.4
	EC	323	181	360
	Sulphate	9	9	6
	Iron	1.9	2.8	2.0
	pH	6.8	0.3	6.3*

Monitoring Site	Indicator	Long Term Mean	Standard Deviation	12 Month Mean 2023
W11	EC	258	93	424*
	Sulphate	13	5	23*
	Iron	0.8	1.0	0.1*
W6	pH	6.7	0.6	6.6*
	EC	663	720	408*
	Sulphate	23	98	5*
	Iron	1.6	1.7	1.2*
W9	pH	6.7	0.7	**
	EC	178	217	**
	Sulphate	5	5	**
	Iron	2.3	1.3	**

*Average based on one result only.
**No results. Site W9 was under no flow and/or dry conditions for all monthly sampling events during 2023.

Assessment of the Performance Indicators and Performance outcomes are presented in **Table 23.** Monitoring results during the reporting period were influenced by below average rainfall resulting in dry/no flow conditions across most upstream sites during the fourth quarter of 2023.

Table 21 Surface Water Monitoring Performance Outcomes – 2023 Reporting Period

Performance Measure	Specific Performance Indicators	Data Analysis to Assess against Performance Indicators	Monitoring			Cascading Trigger Levels	Assessment of Performance Indicator and Performance Measure	Relevant Management and Contingency Measures
			Sites	Parameters	Frequency			
No impact on water quality in Avondale Creek as a result of the SMC	Greater than negligible decline in water quality at W4 or W3	Select water quality data analysed annually (as part of Annual Review: - The mean and standard deviation for each water quality parameter at W4 and W3 will be calculated from the long-term monitoring data. - The mean and standard deviation for each water quality parameter at upstream control sites (W1, W11, W6 and W9) will be calculated from the long-term monitoring data.	W4 (and W3) W1, W11, W6 and W9	EC, pH, SO_4, Iron	Monthly/Event	**Low Risk (Negligible) Outcome:** The 12 month mean is within the long-term data 'mean plus 1.5 standard deviation', and the same trigger has not been exceeded at an upstream control site. **Moderate Risk Trigger:** The 12 month mean exceeds the long term data 'mean plus 1.5 standard deviation', and the same trigger has not been exceeded at an upstream control site. **High Risk Trigger:** The 12 month mean exceeds the long term data 'mean plus 2 standard deviation', and the same trigger has not been exceeded at an upstream control site.	Analysis of the monitoring data indicates no statistically significant change in the quality of water at W4 and W3 compared to the long-term data. The 12 month mean for all water quality parameters did not exceed the long-term data mean plus 1.5 standard deviation. Additionally, a similar trend was observed at the reference sites. No further requirement for assessment of Performance Measure.	Continue monitoring as per SWMP.

7.3.2.2 Review of Mine Water Monitoring Results

Mine Water Storages

The monitoring program for the water management system is described in the SWMP Section 8.2.

The performance measure and performance indicator for the mine water storages (SWMP Table 12) states "No discharge of mine affected water to downstream surface waters" indicated by "Modelled forward risk of spill from Stratford Main Pit is negligible".

Table 2 provides a summary of Stratford mine water storage surface water analysis. The full results are included in **Appendix 4**.

Table 22 Summary of Mine Water Storage and Open Cut Monitoring Results – 2023

	pH		EC (µS/cm)		TSS (mg/L)	
Site	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**
Stratford Main Pit	7.8 – 8.4	8.2	2160 - 3500	3098	<5 - 27	9
Stratford East Dam	8.1 – 8.8	8.5	613 - 721	679	<5 - 10	6
Return Water Dam	7.7 – 8.2	8.0	2690 - 3490	3016	NA	NA
Parkers Pit	7.2 – 8.7	8.0	1140 - 3290	2466	7 - 114	38
Roseville West Pit	8.1 – 8.3	8.2	2590 - 3160	2875	40 - 78	59
Stratford East Pit	7.7 – 8.0	7.9	3560 - 4800	4333	6 - 17	10
Avon North Pit	7.7 – 8.4	8.1	1680 - 3230	2390	13 - 8230	1483

NA = Not applicable

Sediment Dams

The management of sediment dams is described in **Section 7.3.1.1** of this report. The monitoring program for the water management system is described in the SWMP Section 8.2. Monitoring of sediment dams was undertaken on a monthly and rain event basis as required in the SWMP.

During the reporting period there were no spills from sediment dams and disturbed area dams.

Table 23 Summary of Sediment Dam/Disturbed Area Dam Monitoring Results – 2023

	pH		EC (µS/cm)		TSS (mg/L)	
Site	**Range**	**Average**	**Range**	**Average**	**Range**	**Average**
SD12	7.5 – 9.4	7.8	429 - 553	496	<5 - 53	18
SD15	7.2 – 7.8	7.5	2700 - 4350	3738	<5 - 10	6
SD16	6.9 – 7.9	7.5	106 - 418	193	17 - 192	68
SD17	8.0 – 9.6	8.9	1020 – 2680	1536	<5 - 66	17
DAD4	7.8 – 8.9	8.4	2240 - 3070	2657	<5 - 14	8
DAD10	7.7 – 9.3	8.3	584 - 1040	687	<5 - 202	27
DAD13	7.7 – 8.9	8.1	919 - 2370	1404	10 - 52	27
DAD14	7.6 – 8.1	7.8	804 - 3890	2328	<5 - 84	27
DAD19	7.5 – 8.3	7.8	359 - 742	536	11 - 254	75
DAD20	7.8 – 8.3	8.1	1910 - 4510	3863	<5 - 251	29

7.3.3 Analysis Data Trends and Comparison With EA Predictions

7.3.3.1 Local Streams Monitoring

As shown in **Tables 23** and **23**, the monitoring results during the reporting period did not exceed any of the performance indicators or measures. Results of surface water monitoring during the reporting period are consistent with previous year's monitoring results are in concurrence with the EIS 2012 that concluded "mining operations at the SMC would not jeopardise local or regional water quality".

During the reporting period the Gloucester region experienced below average rainfall. This is reflected in the monitoring results.

7.3.3.2 Mine Water Monitoring

The simulated water quality for the SMC water management system was prepared for the EIS 2012 including a salinity balance. Mine water pH has remained generally near neutral or slightly alkaline for the life of the project. The Stratford Main Pit EC trend has been generally consistent with the simulated EC.

7.3.4 Biological Monitoring

As part of SMC's environmental monitoring program, Invertebrate Identification Australasia was commissioned to conduct biological (aquatic ecology – macroinvertebrates) monitoring of the streams near the SMC. Biological monitoring has been conducted each year since the start of mining operations.

Monitoring during this reporting period was conducted in September 2023 and involved sampling from six sites. For the September 2023 survey a total of 34 families of aquatic macroinvertebrates were recorded. The report concluded that;

"*there are no adverse impacts on the Avon River and its tributaries that are associated with the Stratford Mine complex and its operations*." (Invertebrate Identification Australasia, 2023).

Biological monitoring reports to date have not indicated any significant adverse effects on the aquatic ecosystem as a result of the mine's operations as per predictions made in the environmental assessments.

7.4 Groundwater

7.4.1 Groundwater Management

A Groundwater Management Plan (GWMP) (WMP Appendix 3) has been prepared to control potential impacts on local and regional groundwater resources and includes a monitoring program to validate and review the groundwater model predictions.

Groundwater characteristics of the mine have been studied prior to and over the life of the SMC and for the SEP EIS. A hydrogeological characterisation of the Gloucester Basin is included in the GWMP.

Groundwater resources within the project area were utilised in the early stages of the Stratford Project, as required, to provide make-up water for the CHPP. Since the mine start-up period, water has not been in deficit and no groundwater harvesting has occurred.

Locally there is little reliance on groundwater bores as a source of water, as agricultural enterprises predominantly rely on surface water sources which are more abundant and generally better quality. There are no high priority groundwater dependent ecosystems (GDEs) identified within the WSP as occurring in the vicinity of the SMC.

Groundwater seepage to the SMC mining areas (open cut pits and voids) is actively dewatered to the mine water storage area as required to facilitate mining activities. Groundwater may also be stored in the inactive open cut pits.

7.4.2 Groundwater Monitoring Results and Performance

SCPL monitors a network of groundwater bores in accordance with the GWMP. The groundwater monitoring network includes:

- Stratford Village Bores;
- Stratford Project Bores (GW Series);
- Roseville Series Bores (RB Series);
- BRN Series Bores (MW Series); and
- Stratford Extension Project Bores (F Series).

Further detail on the groundwater monitoring program is included in the GWMP Section 7. The network of monitoring bores will be used to monitor the potential impacts on aquifers, groundwater levels and quality in the vicinity of the SMC. The general location of these bores is shown on **Figure 3** (**Appendix 1**).

Stratford Village Bores

Monitoring of the Stratford Village bores, during the reporting period, was undertaken in April 2023 and October 2023. SCPL Germon and Bagnall bores are sampled monthly in accordance with the approved WMP. Full results are included in **Appendix 4**. Sampling is not undertaken at the Stratford village bores when access can't be gain through the landholder. Sampling of the Stratford Village bores was limited during the reporting period predominantly due to denied access and/or resident unavailability.

Sampling to date shows no significant changes in groundwater level or quality and no evidence of impacts from mining operations. The groundwater quality is highly variable, with better quality generally in the shallower bores such as Smith. It is understood that these bores are relatively shallow, and given the lower elevations of the sites are tapping into the shallower alluvial aquifers, as opposed to the deeper groundwater.

Results show that there has been no significant difference in depth to standing water level for the bores gauged to date.

Stratford Project Bores (GW Series)

Monitoring of the GW bores was undertaken on a 6-monthly basis in line with the approved GWMP. Monitoring is undertaken for both groundwater depth and water quality. The locations of these bores are shown on **Figure 3** (**Appendix 1**). Full analytical results are also shown in **Appendix 4**.

A summary of monitoring results for the Stratford Project GW bores is provided in **Table 26**.

Table 24 Bores Monitored in Relation to the Stratford Project – 2023

Site	Average Depth to Water (m)	Average pH	Average EC (uS/cm)	Average Na (mg/l)	Average Cl (mg/l)	Average Fe (mg/l)	Average SO4 (mg/l)
GW1	16.03	*	*	*	*	*	*
GW2	11.47	6.9	4940	751	1450	26.5	31
GW3	2.04	5.77	3035	506	843.5	42.15	208.5
GW4	1.14	6.51	14750	2275	4875	2.055	105
GW5	2.35	6.72	12600	1920	4135	15.5	269
GW7	3.21	6.31	2670	383	751	18.35	5.5
GW8	7.0	5.27	2295	427	429	24	442
BRWN1	0.75	6.1	5980	1380	802	230	755

Notes: *Too low for sample

Monitoring for the GW series bores during the reporting period has indicated (when compared to historic data):

- water table levels across all bores were comparable to the previous reporting periods;
- average pH units recorded were similar to historical results across the data set with neutral pH at all bores except GW3 and GW8 which showed slightly acidic pH. This is consistent with baseline data;
- electrical conductivities were generally similar to the historical results;
- water quality parameters had similar average levels to the previous period results and baseline data; and
- GW1 was too low to obtain a sample during the February and August 2023 sampling periods.

Roseville Pit Bores (RB Series)

The RB series monitoring is undertaken on a quarterly basis for depth to water quality. The locations of these bores are shown on **Figure 3** (**Appendix 1**).

Monitoring results for the Roseville groundwater bores are provided in **Table 27** below with full analytical results within **Appendix 4**.

Table 25 Bores Monitored in Relation to Roseville Pit – 2023

Bore	Average DTW	Average pH	Average EC	Average SO4	Average Na	Average Cl
RB1	3.73	7.1	10725	40	1590	3533
RB2	2.26	6.8	10500	133	1678	3375
RB3	8.73	4.2	2860	690	524	546

Monitoring data recorded during the reporting period indicated:

- prevailing high water table near Avondale creek – particularly for RB1 and RB2.;
- neutral pH at RB1 and RB2; this is consistent with historic monitoring results; An acidic pH at RB3 which is consistent with historical results particularly following dry spells.
- electrical conductivity is consistent with historical data. Average electrical conductivity readings for RB1 and RB2 bores were similar to those of previous reporting periods. Average electrical conductivity readings for RB3 were similar to historical data; and
- water quality parameters had similar average levels to the previous period results and baseline data.

Bowens Road North Pit Bores (MW Series)

Monitoring results for the BRN groundwater bores are provided in **Table 28** below with full analytical results within **Appendix 4**.

Table 26 Bores Monitored in Relation to Bowens Road North Pit – 2023

Bore	Average DTW	Average pH	Average EC (uS/cm)	Average SO4 (mg/l)
MW3	**	**	**	**
MW4	**	**	**	**
MW6	6.67	6.4	373	27
MW7	8.67	5.7	1506	150
MW8	**	**	**	**
MW11	7.38	6.6	884	30
MW12	3.76	6.5	635	11
Griffin	1.96	7.9	2229	<1

** Unable to retrieve sample due to dry bore

Monitoring data recorded during the reporting period indicated:

- depth to water measurement generally indicated a similar water table relative to results from previous reporting periods;
- pH results were neutral across all sampled bores except MW7 which has a slightly acidic average pH. Results were consistent with historical data;
- electrical conductivity was consistent with historical data and comparable with those in the previous reporting period; and
- water quality parameters had similar average levels to the previous period results and baseline data.

MW3, MW4 and MW8 were dry and unable to be sampled during the reporting period.

7.4.3 Analysis Data Trends and Comparison with EA Predictions

Groundwater monitoring data from the Stratford Project bores during the reporting period demonstrates no significant or measurable change in water table level or groundwater quality that could be attributed to the mining activities across the SMC. These results concur with predictions made in the EIS 2012 and the Groundwater Assessment 2012 that negligible impact on groundwater levels or quality, from mining in the long term is likely. Localised groundwater drawdown is consistent with EIS 2012 predictions.

Groundwater monitoring data from the Roseville Pit Bores during the reporting period demonstrates no significant or measurable change in water table level or groundwater quality that could be attributed to the mining activities across the SMC. These results concur with predictions made in the EIS 2012 and the Groundwater Assessment 2012 that negligible impact on groundwater levels or quality, from mining in the long term is likely.

Groundwater monitoring data from the BRN Pit Bores during the reporting period demonstrates no significant or measurable change in water table level or groundwater quality that could be attributed to the mining activities across the SMC. These results concur with predictions made in the EIS 2012 and the Groundwater Assessment 2012 that negligible impact on groundwater levels or quality, from mining in the long term is likely. Localised groundwater drawdown is consistent with EIS 2012 predictions.

Assessment of Performance Indicators

Groundwater monitoring results are assessed against Performance Indicators and Measures as described Section 8 and Table 10 of the GWMP (2021). If data analysis indicates a performance indicator has been exceeded or is likely to be exceeded, an assessment will be made against the performance measure. If a performance measure is determined to have been exceeded, the Contingency Plan will be implemented. Monitoring data for the reporting period assessed against the performance measures and indicators is shown in **Table 29** below.

Table 27 Groundwater Monitoring Performance Outcomes – 2023 Reporting Period

Performance Measure	Specific Performance Indicators	Data Analysis to Assess against Performance Indicators	Monitoring			Cascading Trigger Levels	Assessment of Performance Indicator and Performance Measure	Relevant Management and Contingency Measures
			Sites	Parameters	Frequency			
No more than a negligible impact on water levels in groundwater bores on privately-owned land as a result of the SMC.	No groundwater related notification received	If a notification is received, an investigation will be conducted to determine if the SMC has resulted in a greater than negligible change in water levels in the Stratford Village bores.	NA	Notification	When received	Notification Received. Investigation (monitoring) confirms that the SMC has resulted in a greater than negligible change in water levels in the Stratford Village bores (refer below). **Low Risk (Negligible) Outcome**: No more than two successive monthly readings at MW12 or SCPL bore are below the P20 groundwater level (116.8 mAHD and 114.8m AHD, respectively). **Moderate Risk Trigger:** More than two successive monthly readings at MW12 or SCPL bore are below the P20 groundwater level (116.8 mAHD and 114.8m AHD, respectively) and the equivalent P20 historical groundwater levels have not been exceeded at other shallow control sites (e.g. dry conditions or other anthropogenic changes are not prevalent). **High Risk Trigger:** More than two successive monthly readings at MW12 and SCPL bore are below the P5 groundwater level (116.3 mAHD and 114.4m AHD, respectively) and the equivalent P5 historical groundwater levels have not been exceeded at control sites (e.g. dry conditions or other anthropogenic changes are not prevalent).	No notifications received. Analysis of the monitoring data indicates no statistically significant change in water levels at MW12 and SCPL bores. A similar trend was observed in the reference sites. No further requirement for assessment of Performance Measure.	Continue monitoring
	No significant decline in groundwater level at MW12 (Mine Site) or SCPL Bore (Stratford Village).	An investigation will be conducted to determine if the SMC has resulted in a greater than negligible change in water levels in the Stratford Village bores.	MW12 (Control Site: MW11) SCPL Bore (Control Sites: Germon & Bagnall)	Groundwater level	Monthly (MW12, MW11 & SCPL Bore) Monthly (Germon & Bagnall)			

Table 29 (cont'd) Groundwater Monitoring Performance Outcomes – 2023 Reporting Period

Performance Measure	Specific Performance Indicators	Data Analysis to Assess against Performance Indicators	Monitoring			Cascading Trigger Levels	Assessment of Performance Indicator and Performance Measure	Relevant Management and Contingency Measures
			Sites	Parameters	Frequency			
No impact on regional groundwater quality that reduces the beneficial use as a result of the SMC.	No lowering of the beneficial use category (based on groundwater quality) at a groundwater production bore as a result of the SMC.	Each bore to be assigned a beneficial use category based on EC (refer Table 8 of GWMP). If data analysis indicates the performance indicator has been exceeded, the performance measure will be assessed to determine if there has been a reduction in regional groundwater quality that has lowered the beneficial use.	SCPL Bore (Control Sites: Germon & Bagnall)	EC (field)	Monthly	**Low Risk (Negligible) Outcome**: No more than two successive monthly readings at the SCPL bore are outside the applicable beneficial use category range based on EC. **Moderate Risk Trigger**: More than two successive monthly readings at the SCPL bore are outside the applicable beneficial use category range (based on EC) and the equivalent beneficial use categories at the control sites have not been lowered. **High Risk Trigger:** More than two successive monthly readings at the SCPL bore are outside the applicable beneficial use category range (based on EC) and the equivalent beneficial use categories at the control sites have also been lowered.	Beneficial use categories (SWMP Section 5.1.3 Table 8): SCPL bore - 3 Irrigation Germon - 3 Irrigation Bagnall - 2 Marginal Potable Analysis of the monitoring data indicates no more than one (1) readings at the SCPL bore was outside the applicable beneficial use category range based on EC (i.e. 3 Irrigation). Average results at SCPL Bore during the reporting period show average EC to be lower than 7,800µS/cm upper level for irrigation beneficial use category (i.e. 4 Saline). No results are available for comparison at either of the control sites as both bores are now disused. No significant change identified at any other monitoring bores. No evidence of a reduction in regional groundwater quality that has lowered the beneficial use.	Continue monitoring at SCPL Bore. Update GWMP and establish replacement control sites for Baganll and Germon.

7.4.4 Groundwater Inflows to Open Cut Mining Operations

Groundwater seepage inflows to mining voids is directed and collected in pit sumps along with rainfall and surface water runoff and seepage through backfilled pit areas. Water levels and water quality analysis of the pit sumps is undertaken on a monthly basis. The volumes of water extracted from the pit sumps is recorded where practicable.

The water quality monitoring results for the open cut pits during the reporting period is included in **Section 7.3.2.2** of this report.

A site water balance review is undertaken on an annual basis to monitor the status of inflows (including groundwater inflows to open pits), storage and consumption. The site water balance review includes an assessment of the measured groundwater inflows (groundwater take) compared to the predicted/modelled groundwater inflow. This is also compared to the groundwater licence extraction entitlements. A summary of the 2023 site water balance review is included in **Section 7.1.2** of this report.

The measured groundwater inflows at the SMC during 2023 where well below the annual licenced extraction limits and also remain below the predicted/modelled groundwater inflow rates.

SCPL is currently developing the detailed mine closure planning in accordance with the Rehabilitation Management Plan, which includes refinement of the final landforms and other closure strategies. Following this, further updates to both the post-mining groundwater model and site water balance will be required.

8.0 REHABILITATION

Rehabilitation of disturbed land at SMC has previously been undertaken in accordance with the approved Mining Operations Plan and Rehabilitation Management Plan (MOP, 2020) required under the Mining Lease conditions and SSD-4966.

A Rehabilitation Management Plan (RMP) was prepared by SCPL to satisfy the requirements of the SMC ML conditions and Development Consent (SSD-4966) in July 2022.

An amendment to the *Mining Regulation 2016* under the *Mining Act 1992*, commenced on 1 July 2021. The amendment provided new standard rehabilitation conditions for mining leases which replaces existing mining lease conditions. The RMP replaces the SMC Mining Operations Plan (MOP)/RMP (1 January 2021 to 31 December 2023). The RMP is available on the Stratford Coal website.

An Annual Rehabilitation Report and Forward Program (ARRFP) has also been prepared and submitted for SMC which provides details of the scheduled surface disturbance and rehabilitation activities at the SMC from 1 July 2022 to 30 June 2025.

Condition 5, Schedule 2 of the SMC's Development Consent (SSD-4966) authorises mining operations to be carried at the SMC until 31 December 2025. As the SMC progresses towards the end of its approved mine life, operations and activities at the SMC over the next four years will progressively change to reflect this. SCPL has revised relevant EMPs to reflect the current stage of operations and to describe anticipated mine closure activities and describe the change to environmental impacts, mitigation measures and monitoring programs at the SMC for the mine closure phase. A summary of the rehabilitation objectives, performance indicators and completion criteria relevant to the SMC rehabilitation domains is provided in the RMP. Plan 1 in the RMP shows the conceptual final landform, relevant primary domains and secondary rehabilitation domains.

8.1 Buildings and Infrastructure

Buildings and infrastructure at the SMC have been utilised during the life of the operations, the infrastructure areas are currently active.

The existing infrastructure and services at the SMC will continue to be utilised throughout the life of the mining operations.

No buildings or infrastructure were constructed or demolished during the reporting period. No decommissioning of infrastructure is scheduled during the next reporting period. Building and infrastructure decommissioning is further addressed in the **Section 8.6** Mine Closure.

8.2 Rehabilitation of Disturbed Land

Rehabilitation of disturbed areas is undertaken progressively and concurrently with ongoing mining operations. Rehabilitation planning, management, stage plans and implementation is described in the RMP.

The SMC rehabilitation progress is generally in accordance with the planned activities described in the RMP 2023 Plan 3A to Plan 3D – Life of Mine Rehabilitation Schedule. The current (June 2023) total mine footprint area (disturbance) is 758.15 hectares.

Table 30 presents a summary of the rehabilitation undertaken at the SMC up to the current reporting period. The current mining areas and rehabilitation as of 30 June 2023 are shown in Figure 4 in **Appendix 1**.

Table 28 Rehabilitation Status

Mine Area Type	Previous RP (actual hectares)	Current RP (actual hectares)	Next RP (forecast hectares)
Total Mining Lease	1580	1580	1580
Total Mine Footprint – Surface Disturbance	758.15	758.15	758.15
Total Active Disturbance	524.1	524.1	513.14
Rehabilitation – Land Preparation	5.23	5.23	16.19
Ecosystem and Land Use Development	228.8	228.8	234.03
Rehabilitation Completion	0	**0**	**0**

Note: The rehabilitation and disturbance boundaries have been realigned and the areas recalculated for the provision of the RMP. This includes the disturbance of previously rehabilitated land.

8.2.1 Rehabilitation Resources

Topsoil resources are managed in accordance with the RMP Section 6.2.4. No topsoil stripping was undertaken during the reporting period. No further disturbance is proposed for mining activities at SMC.

The site topsoil balance is updated annually to track the recovery and usage of topsoil and to ensure adequate resources are available for rehabilitation of disturbed areas at the SMC. The latest topsoil balance was updated in December 2022 as no topsoil stripping has been undertaken since. At December 2022, an estimated 401,578 cubic metres of topsoil was held in various stockpiles at the SMC. This would provide for rehabilitation of approximately 401 ha to the nominal topsoil depth of 100mm. The current area of disturbance which will require topsoil (i.e. not including final void areas (estimated 138ha) or permanent water bodies (estimated 32ha)) is 326 ha. Hence, the SMC currently holds sufficient topsoil resources to complete all rehabilitation works. There has been no change to the topsoil balance during the reporting period.

Existing topsoil stockpiles will continue to be managed to maintain soil viability until they are all utilised as part of the rehabilitation program at the SMC.

8.2.2 Rehabilitation Maintenance

During the reporting period maintenance activities focussed on the improvement of pasture rehabilitation across the Stratford Waste Emplacement and included slashing and the removal of woody acacia regrowth. Slashing was also undertaken on the rehabilitated Codam pasture area. Weed control has been undertaken across all rehabilitation areas targeting lantana and wild tobacco.

Infill planting was also conducted during the reporting period within the rehabilitation areas on Bowens Road North and Roseville West. Additional tubestock planting in targeted areas of Domain A (Native Ecosystem) rehabilitation was undertaken to improve biodiversity and stem density.

8.3 Rehabilitation Monitoring

SCPL undertakes a monitoring program of rehabilitation areas in accordance with the RMP. The annual rehabilitation monitoring program includes the areas designated for agriculture (grazing) and native ecosystem final land uses. The monitoring program includes visual monitoring, ecosystem function analysis and fauna monitoring.

Visual Monitoring

Rehabilitation monitoring includes a visual assessment:

- monitoring of soil erosion status and the effectiveness of erosion control methods;
- assessing germination success and vegetation establishment (diversity and abundance);
- usage of habitat enhancement features;
- the presence of weeds or feral animals; and
- mine landform runoff water quality.

The visual monitoring provides an early identification of areas requiring remedial planting or other maintenance works to maintain rehabilitation progress. The rehabilitation reports provide a list of maintenance recommendations predominantly relating to erosion control, weeds control and vegetation management and enhancement.

Ecosystem Function Analysis

In-depth monitoring and assessment of the quality and ecological value of native ecosystem rehabilitation will be required prior to lease relinquishment. This assessment will be conducted using Ecosystem Function Analysis (EFA). EFA aims to measure the progression of rehabilitation areas towards self-sustaining ecosystems. EFA has been incorporated into the overall SMC rehabilitation monitoring program to provide an assessment of ecosystem functionality (refer to Section 8 of the RMP).

The EFA is comprised of the following components:

- Landscape Function Analysis (LFA);
- vegetation dynamics; and
- habitat complexity.

EFA Analogue Transects have been established in proximal areas to the SMC which represent the varying landscapes (i.e. slopes and aspects) and target communities planned for each rehabilitation area.

The rehabilitation transects were assessed again in March 2023 as part of the ninth annual round of monitoring in accordance with Section 8 of the RMP. Conclusions and recommendations from the 2023 Stratford Mining Complex Rehabilitation EFA Monitoring Report (Wedgetail Project Consulting, 2023) are discussed in the Annual Biodiversity Report (**Appendix 9**). A brief overview is outlined below:

- native flora revegetation at the SMC has met with a mix of results. Several areas have been successfully revegetated with native flora (Stratford Waste Emplacement, BRN Waste Emplacement and Avon North Waste Emplacement)
- where revegetation has been less successful, canopy species in particular are in very low numbers (Bowens Road North Waste Emplacement)
- aspect may play a role with west and north facing slopes subject to higher evaporation

facilitating canopy dieback and exotic grass colonisation.

- the more successful woodland rehabilitation areas appear to have higher overstorey densities
- woody weeds and lantana are an ongoing and now urgent issue for some of the woodland rehabilitation and require control works before these weeds increase their density to such an extent that they prevent development and maturation of the native flora in these areas
- serious consideration should be given to environmental, cool season burns followed by a seeding program. This will serve to reduce the biomass and expose bare soil for the seeding, but also serve to stimulate the germination of whatever seed bank has formed from the previously planted and seeded native vegetation.
- pasture rehabilitation has been successful for several years now and with the previous on-going grazing of cattle a demonstration of its success.

Fauna Monitoring

Fauna usage of the native ecosystem rehabilitation areas is monitored and documented over time. Fauna monitoring is conducted every three years to assess the success of the rehabilitation and revegetation activities in providing habitat for a range of vertebrate fauna. The surveys include an assessment of habitat complexity, species richness and abundance.

Recent fauna surveys conducted over the SMC rehabilitation areas, Biodiversity Offset Areas and Biodiversity Enhancement Areas indicate that these areas provide habitat for a range of native vertebrate fauna, including birds, mammals, reptiles and frogs.

Fauna monitoring is undertaken every three years and was last undertaken in November 2022. A total of 166 species of vertebrate were recorded, comprising 15 frogs, 13 reptiles, 100 birds and 38 mammals most of which were native (Annual Biodiversity Report (**Appendix 9**).

8.3.1 Threats to Rehabilitation Completion

The SMC RMP Section 4 establishes the rehabilitation objectives and completion criteria for the rehabilitation of the SMC. Section 10 of the RMP includes a description of intervention and adaptive management for threats to achieving the rehabilitation completion criteria. SCPL has successfully undertaken rehabilitation activities at the SMC since 1997 with the results of rehabilitation monitoring continuing to inform the effectiveness of rehabilitation methods and requirements for contingency measures.

The 2012 ERA (SP Solutions, 2012), 2020 Rehabilitation Risk Assessment (CKC, 2020) (RMP Section 3.1) and the 2021 Closure & Rehabilitation Risk Assessment (IEMA, 2021) identified potential issues and risks associated with rehabilitation and mine closure at the SMC. These risks/threats to rehabilitation are outlined in the rehabilitation trigger, action, response plan (TARP) in the RMP Table 10 (Section 10) along with actions that will be undertaken to mitigate these risks.

8.4 Rehabilitation Trials and Research

SCPL has extensive experience in both native woodland/forest revegetation and agricultural pasture rehabilitation, with successful rehabilitation areas completed over the past 20 years at both the Stratford and Duralie mine sites. Learnings from the rehabilitation works undertaken onsite to date along with industry best practice guidelines are employed in the methodology for new rehabilitation areas.

Rehabilitation trials have been also undertaken in the Duralie Coal Mine Biodiversity Offset Areas. These trials have provided learnings and methods for the rehabilitation and biodiversity offset work at SMC.

8.5 Rehabilitation Targets

The rehabilitation targets reported in the previous AR, have been replaced and outlined in the new RMP.

The rehabilitation targets and proposed rehabilitation schedule over the life of the SMC are described in Section 6.1 of the RMP. The rehabilitation target is a cumulative total of 525.3ha. Year 1 of the 2023 SMC Forward Program targets 0ha, year 2 targets 36.78ha and year 3 targets 94.43ha.

8.6 Mine Closure Planning

Condition 5, Schedule 2 of the SMC's Development Consent (SSD-4966) authorises mining operations to be carried at the SMC until 31 December 2025. Accordingly, SCPL is planning for the commencement of the mine closure phase after the cessation of mining operations. During the 2023 reporting period a new RMP was prepared consistent with the requirements of the Resources Regulator Operational Rehabilitation Reform. The new RMP incorporates a Mine Closure Plan for the SMC consistent with the Mine Closure Planning Program described in Section 8 of the MOP.

The mine closure planning program developed for the SMC includes a schedule of all technical and/or environmental assessments that are required to undertake final rehabilitation once open-cut mining at the SMC has ceased. The technical assessments identified in the Mine Closure Planning Program have been informed by the key risks and risk reduction strategies associated with rehabilitation and mine closure of the SMC.

The majority of the assessments/studies required by the Mine Closure Planning Program have been completed progressively. The remaining components of the program will continue to be developed in accordance with the RMP.

SCPL has revised relevant EMPs to reflect the current stage of operations and to describe anticipated mine closure activities and describe the change to environmental impacts, mitigation measures and monitoring programs at the SMC for the mine closure phase.

The Mine Closure Planning Program components and completion status/schedule for each component is provided in Appendix 1 of the RMP. The subsections below provide progressive updates on the key mine closure planning requirements for the SMC and the actions completed during the reporting period. Further information can be found within the Stratford RMP.

8.6.1 Final Landform Designs

The proposed final landforms for the SMC would include a combination of pasture and native ecosystem consistent with the surrounding environment. This would also include final voids and wildlife corridors.

The rehabilitation objectives for the final landforms requires final landform designs which sustain the intended post-mining land use. Final landforms are to be consistent with and complement the topography of the surrounding region to minimize the visual prominence of the final landforms in the postmining landscape. Final landforms are to incorporate design relief patterns and principles consistent with natural drainage.

SCPL have continued to develop the detailed final landform designs consistent with the conceptual rehabilitation strategy in the EIS 2012 and rehabilitation objectives in the Development Consent. The RMP also includes detail regarding the rehabilitation implementation requirements and the conceptual final rehabilitated landform for the SMC.

As required by the Mine Closure Planning Program, numerous technical assessments have commenced based on the refined final landform design, including a Geotechnical Assessment of the final voids, final void water balance and final void water quality review, and a revised site water balance. A stability assessment and erosion modelling will also be required to be undertaken for the final landform design.

8.6.2 Final Void Management

The SMC final landform will include partially backfilled final voids located at Roseville West Pit, Avon North Open Cut, and Stratford Main Pit. SCPL is required to rehabilitate the final void to ensure the landform is safe, stable and non-polluting. The final void design aims to minimise the overall extent of the final void as much as is reasonably feasible and within the Project Approval constraints.

The refined final landform of Roseville West, Avon North and Stratford Main Pit voids is described in the SMC Mine Closure Plan and Schedule (Appendix 1 of the RMP) and depicted in Plan 1 of the RMP.

8.6.3 Water Management

The rehabilitation and post-mining water management strategy is described in the SEP EIS 2012.

Site Water Balance

A site water balance has been prepared for the SEP EIS by a suitably qualified and experienced person (Gilbert & Associates, 2012). A revised post-mining site water balance is currently being undertaken to reflect the refined final landform and final void designs, including all surface water inflows and outflows.

Water Infrastructure

Minor water management structures and sediment control dams will be decommissioned and rehabilitated or retained as farm water dams in consultation with relevant regulatory authorities and private landholders (if applicable).

Sediment dams downstream of the waste rock emplacements will be maintained until the revegetated surface is stable and the runoff water quality is suitable for release off-site. The stability of the landform will be determined by rehabilitation monitoring.

Decommissioning of water management infrastructure and on-site irrigation system infrastructure will commence following cessation of mining activities on 31 December 2025. Pumps and pipelines will be removed from site unless required for the final land use. A Detailed Decommissioning Strategy is detailed in the SMC Mine Closure Plan and Schedule (Appendix 1 of the RMP).

Retained water infrastructure will include Stratford East Dam, permanent up-catchment diversion structures (associated with final voids) and some irrigation structures.

Post-mining, the Stratford East Dam will be retained for future agricultural (grazing) use, use by a public authority and/or environmental benefit.

A number of up-catchment diversions associated with the catchments reporting to the final voids will be permanent structures that would remain post-mining.

Infrastructure that is retained will be determined in consultation and is further described in the SMC Mine Closure Plan and Schedule (Appendix 1 of the RMP).

8.6.4 Contaminated Lands Assessment

A contaminated land assessment was completed during the reporting period. The assessment included an assessment of areas potentially impacted by carbonaceous material (e.g. coal spillage, coal storage), by hydrocarbon spillage (e.g. workshops, fuel storage areas) or by sedimentation (e.g. dams which have directly received pit water).

The Contaminated Lands Assessment will provide recommendations for the development of a Remediation Action Plan, that will inform future contamination clean-ups any required remediation will be implemented as part of the mine closure program.

8.6.5 EMPs, Post-Closure Monitoring and Maintenance Program

The development of the post-closure monitoring and maintenance program is described in Section 11 of the SMC Mine Closure Plan and Schedule (RMP, Appendix 1).

Over the next reporting period, SCPL will revise EMPs to reflect the current stage of operations and to describe anticipated mine closure activities and describe the change to environmental impacts, mitigation measures and monitoring programs at the SMC.

SCPL will refine its monitoring and maintenance programs in consultation with the relevant government agencies during the mine closure planning phase. Amendments to the monitoring programs during the post- closure phase will be reflected in further environmental management plan revisions. It is expected that the residual monitoring programs will be undertaken for approximately ten years following mine closure.

Post-closure maintenance activities will continue until the specific completion criteria has been met and confirmation has been received from the relevant authority.

8.6.6 Stakeholder Consultation, Community & Human Resources Strategies

The Mine Closure Planning Program includes requirements for the development of the following strategies:

- Stakeholder Consultation Strategy
- Human Resources Strategy

The above strategies are described conceptually in Section 4.2 of the RMP. The strategies have been further developed and incorporated into the Mine Closure Plan and Schedule. SCPL will continue to consult with relevant government agencies and the community throughout the mine life and during mine closure.

9.0 COMMUNITY

9.1 Community Engagement

During 2023, SCPL continued to foster positive relationships with the local community through engagement and ongoing support provided to a range of community groups and events. SCPL is committed to a policy of regular liaison with the local community and strives to maintain positive relationships with stakeholders. SCPL's community objectives aim to:

- ensure employees and contractors are informed about SCPL's policies and are made aware of their environmental and community responsibilities in relation to SCPL's activities;
- inform the community of SCPL's activities and consult with the community in an open and honest fashion in relation to SCPL's projects; and
- address complaints/conflicts and consult to achieve mutually acceptable outcomes.

Community/Stakeholder related activities undertaken during the reporting period include:

- Yancoal Vacation and Cadet student placements
- Community Support Program
- Education Support Fund; and
- direct engagement with nearby landholders.

SCPL continued to provide the community with information on its website (www.stratfordcoal.com.au). Information available included project approvals, CCC meeting minutes, community complaint records, environmental monitoring information, environmental audits, EMPs and Annual Reviews.

SMC maintains a 24-hour Community Information Hotline (1300 658 239). This Hotline is available to receive any complaints, compliments, information requests and to assist with creating a direct line to speak with a Mine Representative.

9.2 Community Consultive Committee

The Stratford Coal Community Consultative Committee (CCC) operates under the guidance of the NSW DPE. Meetings were held quarterly during 2022 and provide a forum for open discussion between the community, Council, the Company and other stakeholders on issues relating to the mine's operations, environmental performance and community engagement.

The Community Consultative Committee (CCC) for the SMC is currently comprised of:

- an independent Chairperson;
- five (5) local community representatives;
- two (2) local government representatives (MidCoast Council); and
- two (2) SCPL representatives.

The CCC was formed in accordance with Schedule 5, Condition 6 of SSD-4966. The CCC operates in such a manner as to satisfy the *Community Consultative Committee Guidelines - State Significant Projects* (DPE, 2019) and to the satisfaction of the Secretary of the DPE.

During the reporting period, quarterly meetings were held in February, May, August and November 2023. Items raised and/or discussed during these CCC meetings include but are not limited to:

- environmental management and monitoring;
- rehabilitation and land management;
- Independent Environmental Audit;
- community sponsorship; and
- future land use opportunities.

A tour of the Cabbage Gum Floodplain Open Forest planting area and the Stratford Rehabilitation lookout was conducted during the May 2023 CCC meeting.

An Annual Report for the Stratford Coal CCC was prepared by the Chair and submitted to DPE on 17 February 2023 (**Appendix 7**).

9.3 Environmental Complaints

SCPL manages complaints received at the SMC in accordance with the protocol established in the Environmental Management Strategy (EMS). SCPL aims to address all complaints/conflicts and consult to achieve mutually acceptable outcomes. In accordance with the conditions of SSD-4966, SCPL is required to establish and maintain a complaint handling and response procedure. SCPL operates a system to receive, handle, respond to and record complaints or information requests relating to operation of the SMC which is described in the EMS.

Complaints may be received in any form. SCPL operates a dedicated Community Information Hotline (1300 658 239) 24 hours per day.

Complaints (by category) received by SMC over the last 5 reporting years are shown in **Table 31**:

Table 29 Community Complaints Summary

Complaint Category	2019	2020	2021	2022	2023
Noise	1	28	12	2	0
Blasting	4	6	4	1	0
Air Quality	0	2	1	1	0
Water	0	0	0	0	0
Lighting	0	6	4	2	0
Visual	0	0	0	0	0
Train	0	0	0	0	0
Other	0	1	0	0	0
Total Complaints	**5**	**43**	**19***	**3***	**0**

*Note some complaints included multiple categories

A summary of complaints received during 2023 is below:

- the total number of complaints received during the reporting period was zero (0).
- the total number of complaints decreased during the reporting period.

During the 2023 reporting period the SMC continued full scale operations. Operations at SCPL includes mining operations 7 days per week and typically between the hours of 6:30am am 1:00am, albeit there is no evening/night shift on weekends. Nil complaints were received during 2023 decreasing from the previous reporting period and was similar to the years prior to resuming full scale operations.

SCPL continues to implement mitigation measures described in the EMPs and identify improvements to reduce the overall level of offsite emissions/impacts. SCPL continues to engage with complainants to achieve mutually acceptable outcomes.

A full complaints listing is provided in **Appendix 7** and includes details of SCPL's responses to complaints. A summary of complaints by category is provided in the relevant sections of the report.

10.0 INDEPENDENT ENVIRONMENTAL AUDIT

An Independent Environmental Audit (IEA) was undertaken during the reporting period in accordance with SSD-4966 Schedule 5, Conditions 9 and 10. The purpose of the audit was to review compliance over the 2021-2023 audit period with the conditions and obligations of the SMC environmental licences, approvals and management plans.

The SMC 2023 IEA site inspection was undertaken on 12 December 2023. IEA outcomes and actions will be provided in the 2024 annual review.

11.0 INCIDENTS & NON-COMPLIANCES

Activities at the SMC continue to be carried out in accordance with Development Consent SSD-4966 for the SEP. Additionally, activities at the SMC are undertaken in accordance with EPL 5161 and the SMC Mining Leases.

A protocol for managing incidents and non-compliances is included in the SMC EMS.

A statement of compliance is included in **Section 1** of this report. During the reporting period there were no incident/non-compliances recorded in accordance with SSD-4966 at the SMC..

Incidents/non-compliances at the SMC are reported and recorded in Yancoal's compliance management system. The severity of the incident will determine the level of investigation required. The reporting of incidents to regulators is conducted in accordance with the EMS specifically, Condition 7, Schedule 5 of SSD-4966 as well as EPL 5161 as applicable.

12.0 ACTIVITIES TO BE COMPLETED IN THE NEXT REPORTING PERIOD

SCPL will continue mining operations in accordance with Development Consent SSD-4966 for the Stratford Extension Project during 2023.

The following environmental targets have been set for the next 12 months:

- mining and progressive rehabilitation activities will be implemented in accordance with the timing in stage plans in the SMC RMP and Forward Program;
- review and, if necessary, update the EMPs to the satisfaction of the Secretary of DPE to ensure suitable management plans are in place for the SEP;
- continue developing the detailed Mine Closure Plans in accordance with the mine closure

planning schedule in the RMP for the SMC;

- progress biodiversity offset works in accordance with the BMP including full implementation of the revegetation works;
- continue to meet the environmental management, monitoring and reporting requirements in accordance with the Development Consents conditions; and
- maintain low level of complaints and non-compliances.

13.0 REFERENCES

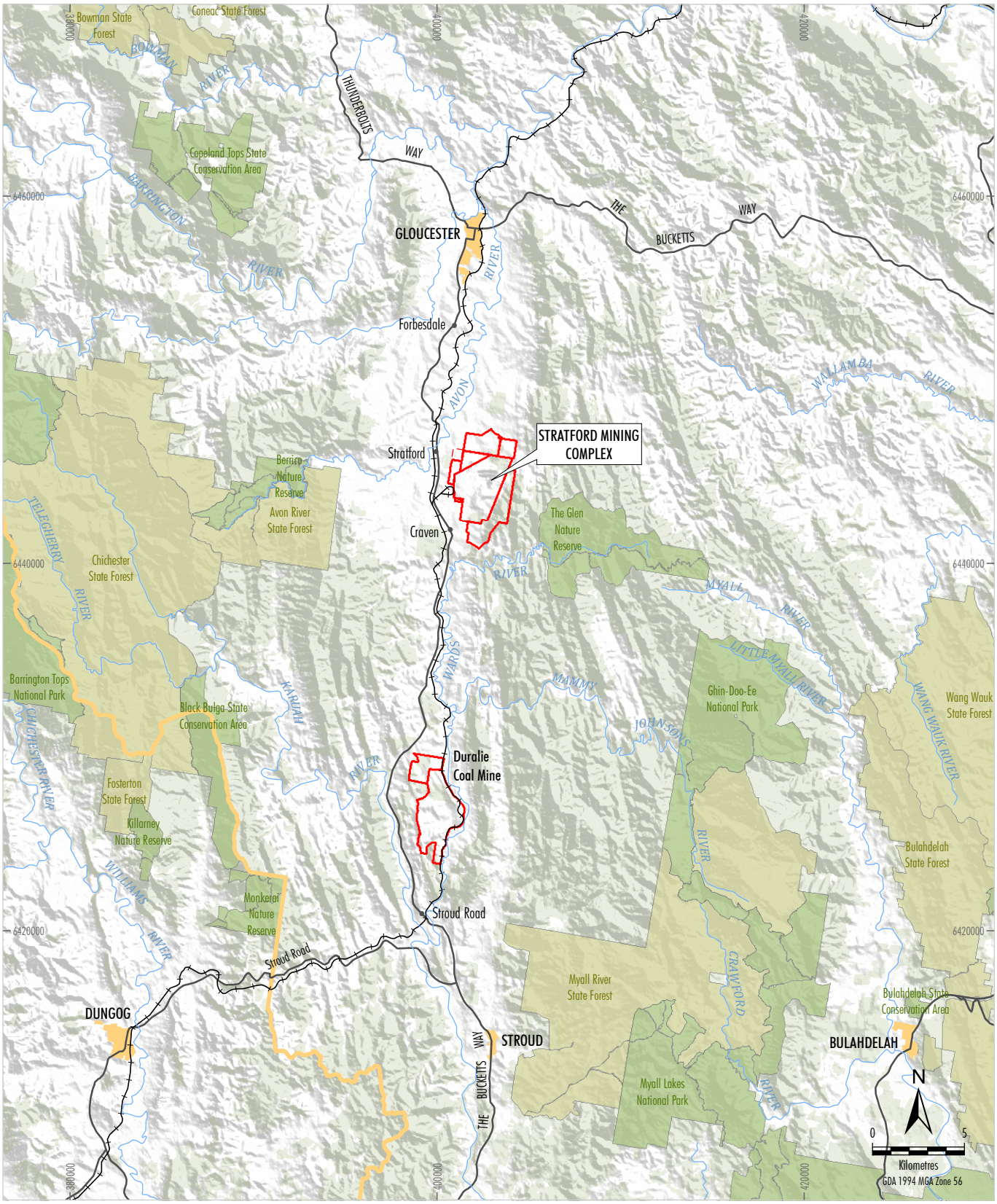
- CK Consultants Pty Ltd (CKC) (2020). *Stratford Mining Complex Rehabilitation & Mine Closure Risk Assessment*
- Department of Planning, Industry and Environment (2015). *Annual Review Guidelines*
- Department of Planning and Environment (2019). *Community Consultative Committee Guidelines – State Significant Projects*
- Environmental Geochemistry International Pty Ltd (EGi) (2012). *Geochemical Assessment of the Stratford Assessment Project*
- EPA (2014). *Waste Classification Guidelines Part 1: Classifying Waste*
- Gilbert and Associates (2012). *Stratford Extension Project Surface Water Assessment for Stratford Coal Pty Ltd, Gloucester*
- Integrated Environmental Management Australia (IEMA) (2021). *Stratford Mining Complex: Closure & Rehabilitation Risk Assessment: Summary of Key Risks and Controls*
- Invertebrate Identification Australasia (2023). *Biological Monitoring of the Stratford Mining Complex Survey 26 September 2023*
- NSW Minerals Council (2000). *Technical Paper – Particulate Matter and Mining: Interim Report*
- Safe Production Solutions Pty Ltd (SP Solutions) (2012). *Stratford Extension Project Environmental Risk Assessment*
- Stratford Coal Pty Ltd (2023). *Stratford Mining Complex (Stratford Extension Project) Biodiversity Management Plan*
- Stratford Coal Pty Ltd (2018). *Stratford Mining Complex (Stratford Extension Project) Life of Mine Rejects Disposal Plan*
- Stratford Coal Pty Ltd (2018a). *Stratford Mining Complex (Stratford Extension Project) Squirrel Glider Management Plan*
- Stratford Coal Pty Ltd (2021). *Stratford Mining Complex (Stratford Extension Project) Air Quality Management Plan*
- Stratford Coal Pty Ltd (2021a). *Stratford Mining Complex (Stratford Extension Project) Water Management Plan*
- Stratford Coal Pty Ltd (2021b). *Stratford Mining Complex (Stratford Extension Project) Blast* Management Plan
- Stratford Coal Pty Ltd (2021c). *Stratford Mining Complex Mining Operations Plan and Rehabilitation Management Plan*
- Stratford Coal Pty Ltd (2022). *Stratford Mining Complex (Stratford Extension Project) Noise Management Plan*
- Stratford Coal Pty Ltd (2022a). *Stratford Mining Complex Rehabilitation Management Plan*

- Stratford Coal Pty Ltd (2022b) *Stratford Coal Mine Pollution Incident Response Management Plan*
- Stratford Coal Pty Ltd (2022c). *Stratford Mining Complex (Stratford Extension Project) Heritage Management Plan*
- Stratford Coal Pty Ltd (2022d). *Stratford Mining Complex Annual Biodiversity Report 2023*
- Stratford Coal Pty Ltd (2012) *Stratford Extension Project Environmental Impact Statement* (EIS)

APPENDIX 1

Site Plans

- **Regional Location**
- **Site General Arrangement**
- **Environmental Monitoring Locations**
- **Mining and Rehabilitated Areas**



YAN-22-44 SAR 2023_201A

LEGEND

- Mining Lease Boundary
- Mining Lease Application Boundary *
- NSW State Forest
- National Park, Nature Reserve or State Conservation Area
- Local Government Area Boundary

**MLA1 is a proposed future Mining Lease Application (MLA) area and has not yet been lodged.*

Source: Geoscience Australia (2006); Yancoal (2019); NSW Department of Planning & Environment (2017)

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Regional Location

Figure 1

YAN-22-44 SAR 2023 _202A

LEGEND
- Mining Lease Boundary
- Mining Lease Application Boundary*
- Electricity Transmission Line
- Approximate Extent of Existing/Approved Surface Development
- Conceptual Up-Catchment Diversion

MLA1 is a proposed future Mining Lease Application (MLA) area and has not yet been lodged.

Source: Orthophoto - Yancoal (2021); NSW Department of Planning & Environment (2017)

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Approved General Arrangement

Figure 2

YAN-22-44 SAR 2023 _203A

LEGEND

- Mining Lease Boundary
- Mining Lease Application Boundary*
- Electricity Transmission Line
- Approximate Extent of Existing/Approved Surface Development
- Conceptual Up-Catchment Diversion

**MLA1 is a proposed future Mining Lease Application (MLA) area and has not yet been lodged.*

Monitoring Sites

- Groundwater Monitoring Site
- Surface Water Quality Monitoring Site
- Meteorological Station
- Static Dust Gauge
- High Volume Air Sampler
- Noise Monitoring Site
- Real-time Noise Monitoring Site
- Blast Monitoring Site
- TEOM Monitoring Site
- Macroinvertebrate Monitoring Site

Source: Orthophoto - Yancoal (2021); NSW Department of Planning & Environment (2017)

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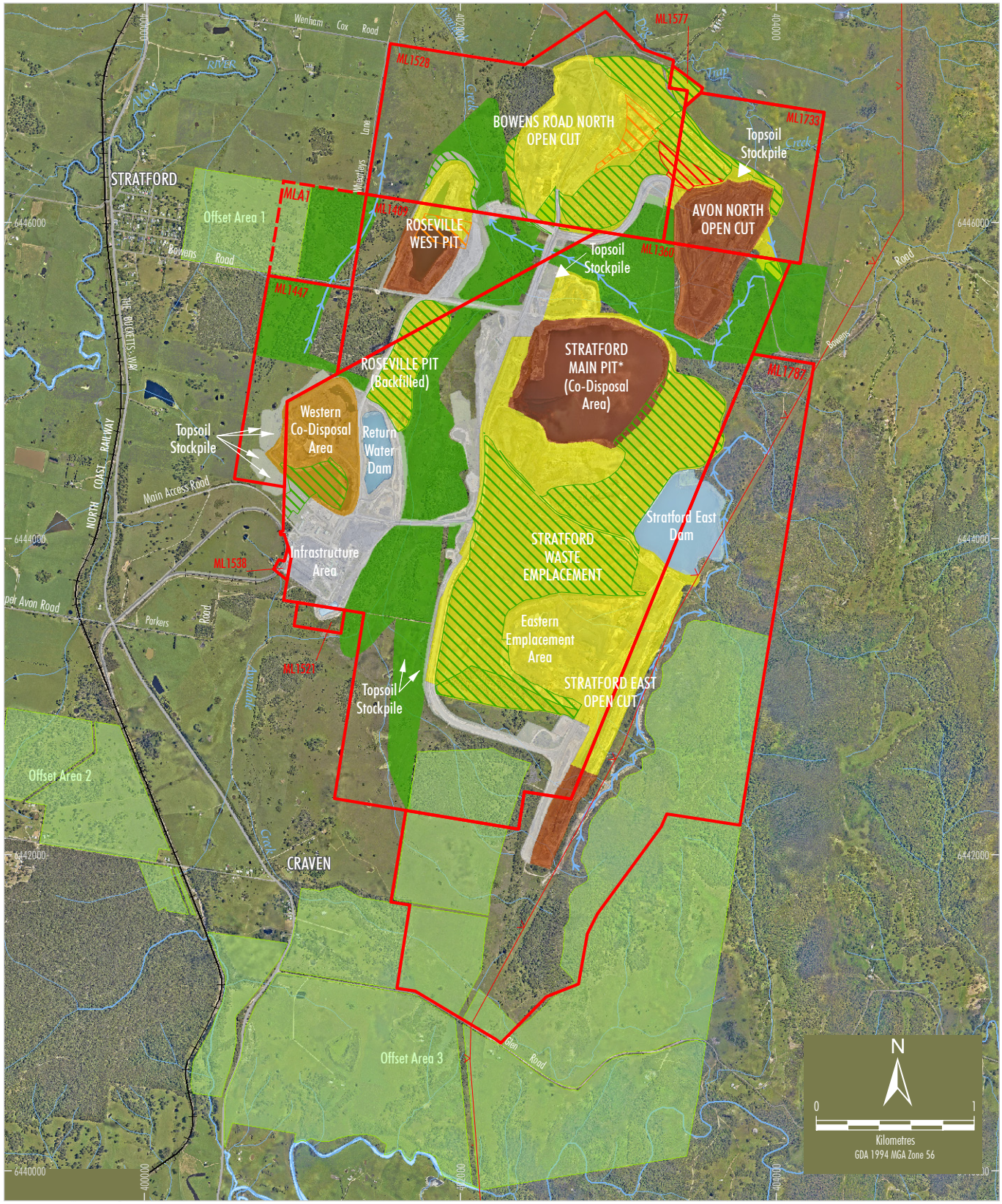
Environmental Monitoring Sites

Figure 3



YAN-22-44 SAR 2023 _204A

LEGEND

- Mining Lease Boundary
- Mining Lease Application Boundary
- Electricity Transmission Line
- Up-catchment Diversion

Mining Domain

- Infrastructure Area
- Active Mining Area (Open cut void)
- Beneficiation Facility
- Overburden Emplacement Area
- Water Management Area
- Biodiversity Enhancement Area/ Biodiversity Offset Area (6)

Rehabilitation Phase

- Landform Establishment
- Ecosystem and Land Use Establishment

2024 Activities

- Proposed Rehabilitation Area 2024

* Stratford Main Pit is used as both a Water Management Area and CHPP Rejects Material Management Area

Source: Orthophoto -Yancoal (2021); NSW Department of Planning & Environment (2017)

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STRATFORD MINING COMPLEX 2023 ANNUAL REVIEW

Mining and Rehabilitation Areas 2023

Figure 4

APPENDIX 2

Meteorological Monitoring

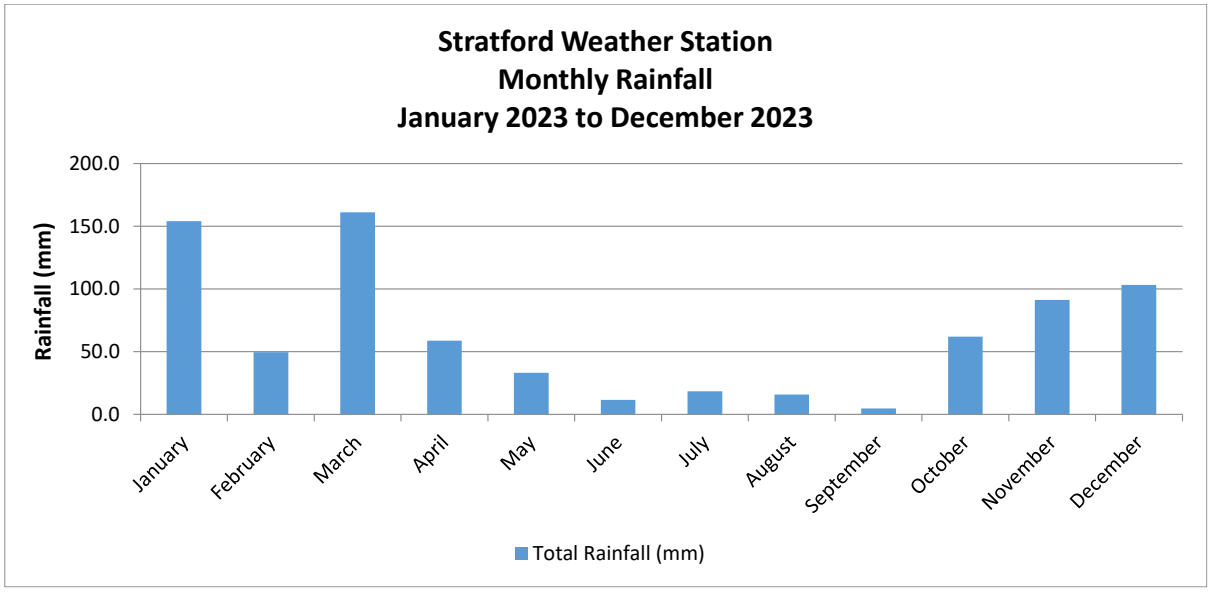

Figure 1: Monthly Recorded Rainfall during the Reporting Period

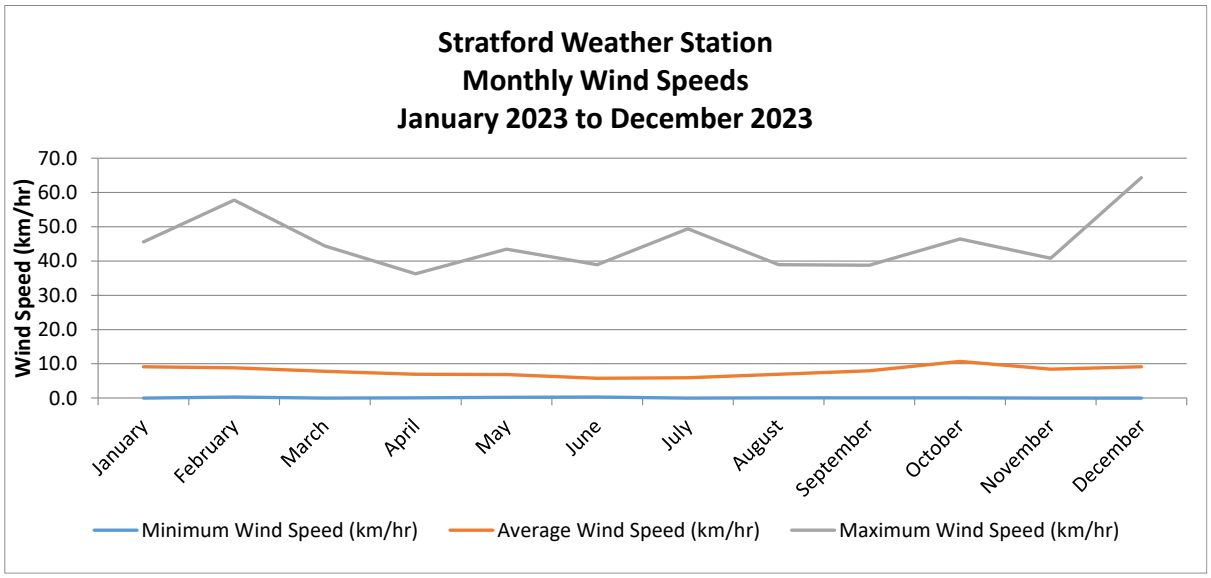

Figure 2: Minimum, Maximum and Average Wind Speeds during the Reporting Period

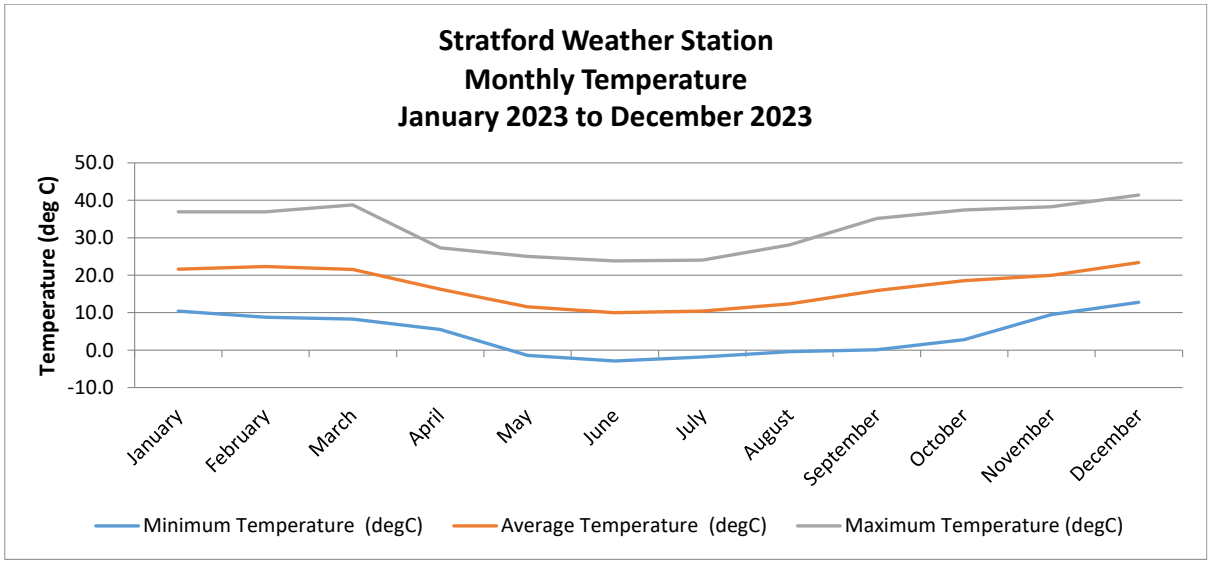

Figure 3: Minimum, Maximum and Average Temperatures during the Reporting Period

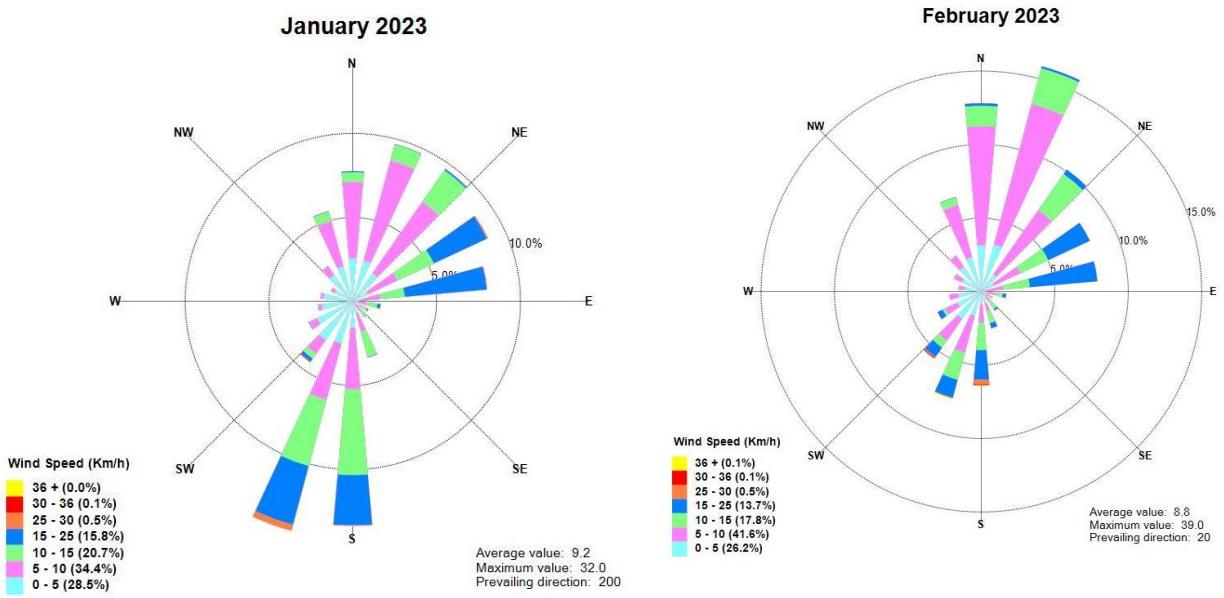

Figure 4: Monthly Windroses Displaying Wind Direction and Speed Frequencies during the Reporting Period

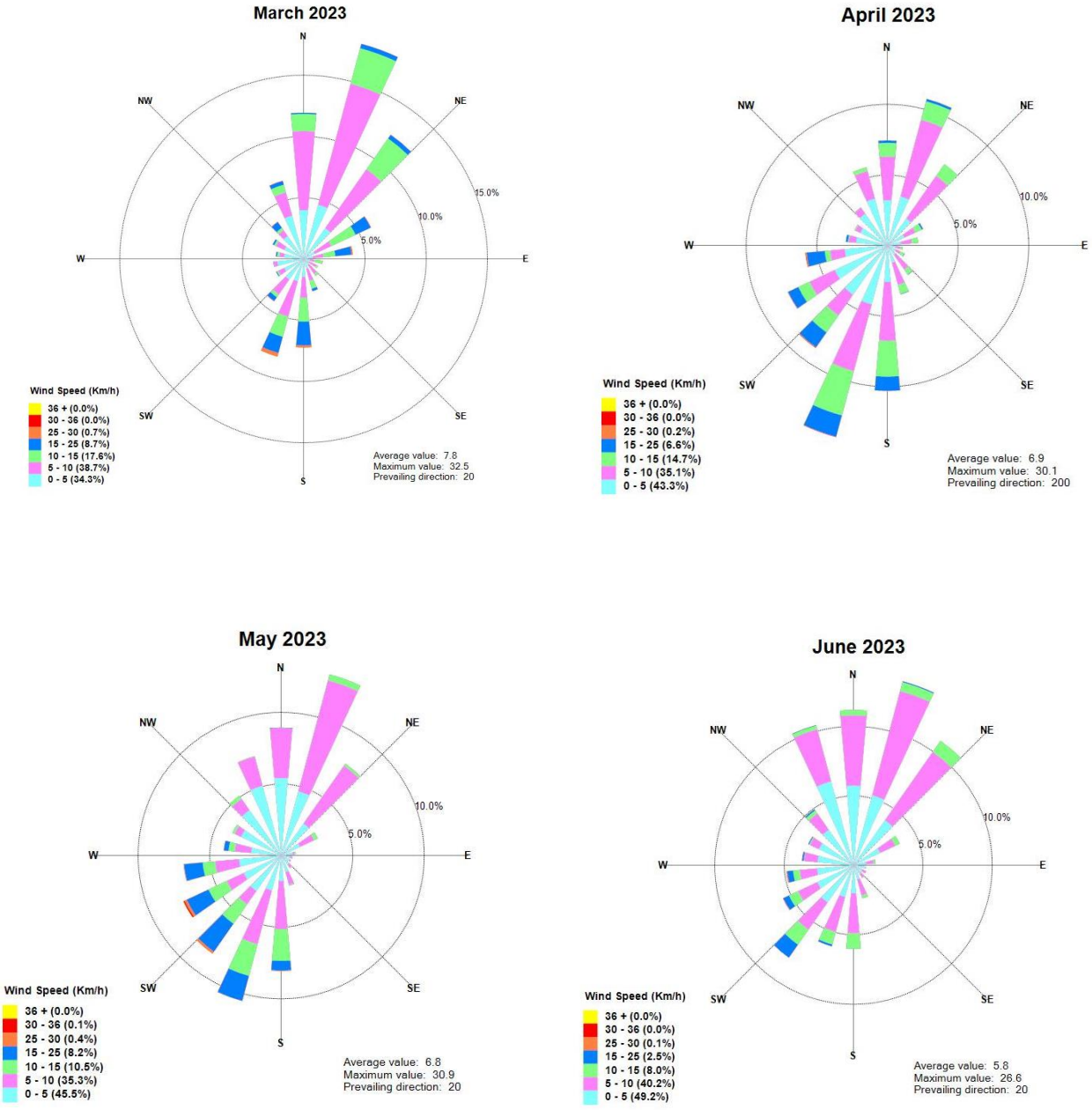

Figure 4 (Continued): Monthly Windroses Displaying Wind Direction and Speed Frequencies during the Reporting Period

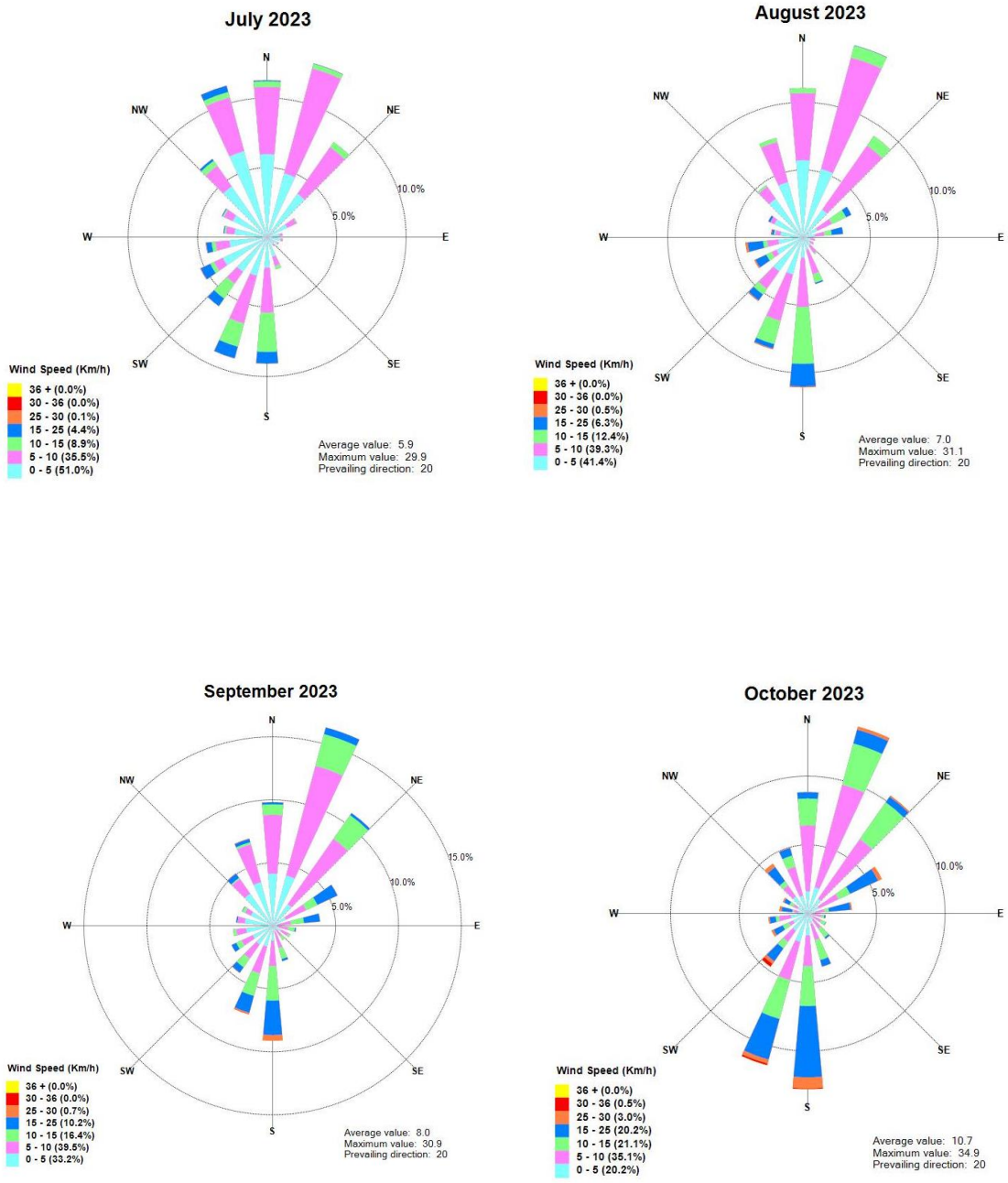

Figure 4 (Continued): Monthly Windroses Displaying Wind Direction and Speed Frequencies during the Reporting Period

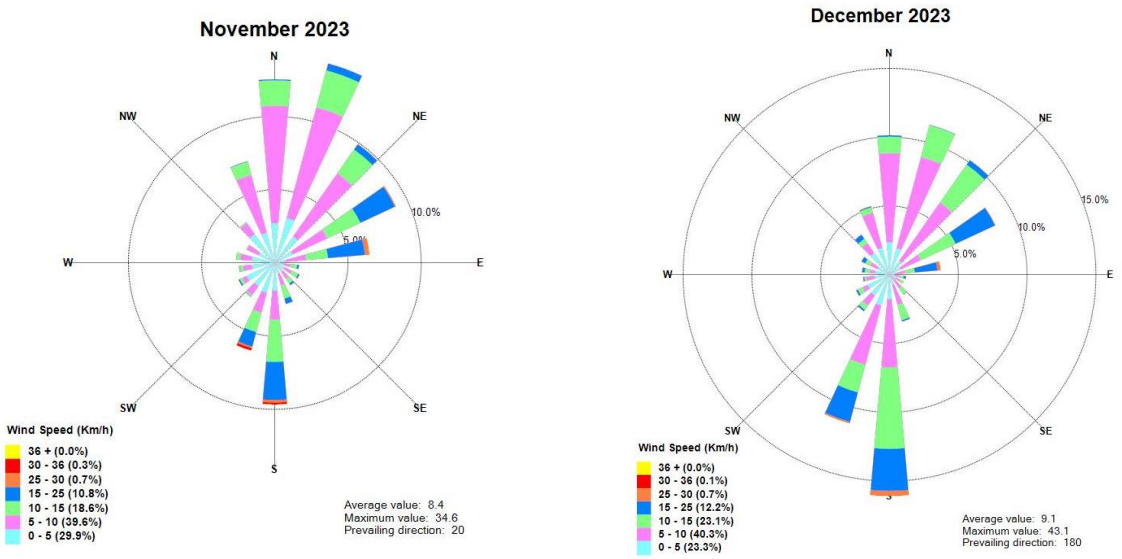

Figure 4 (Continued): Monthly Windroses Displaying Wind Direction and Speed Frequencies during the Reporting Period

APPENDIX 3

Air Quality Monitoring

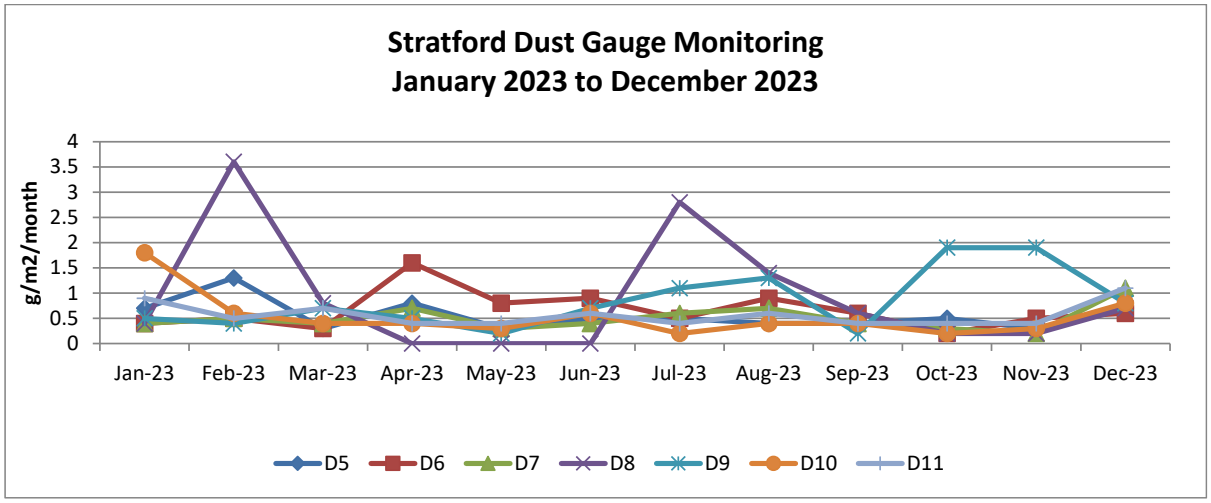

Figure 1: Depositional Dust Monitoring Results from January 2023 to December 2023

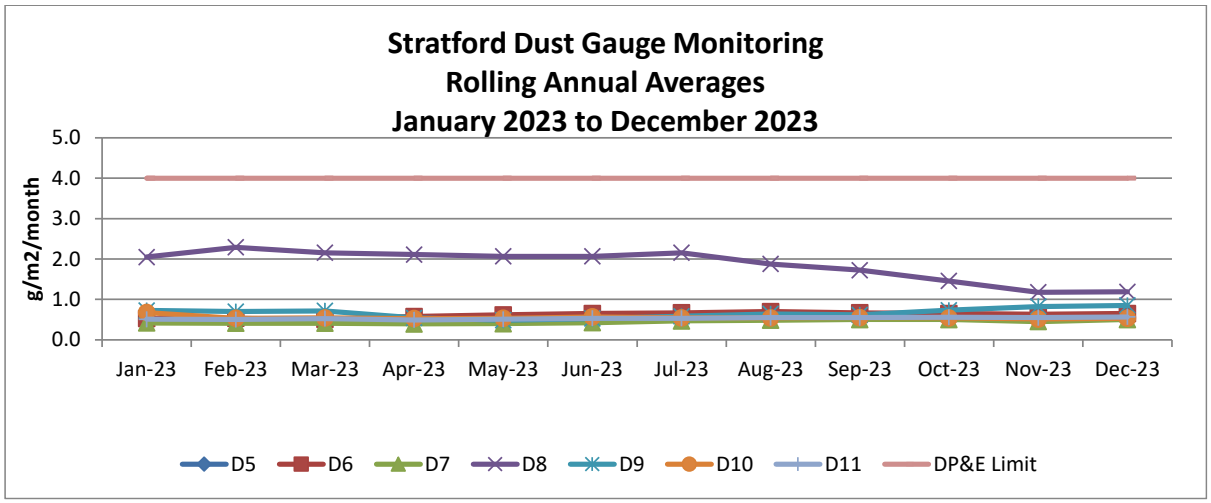

Figure 2: Depositional Dust Annual Averages from January 2023 to December 2023

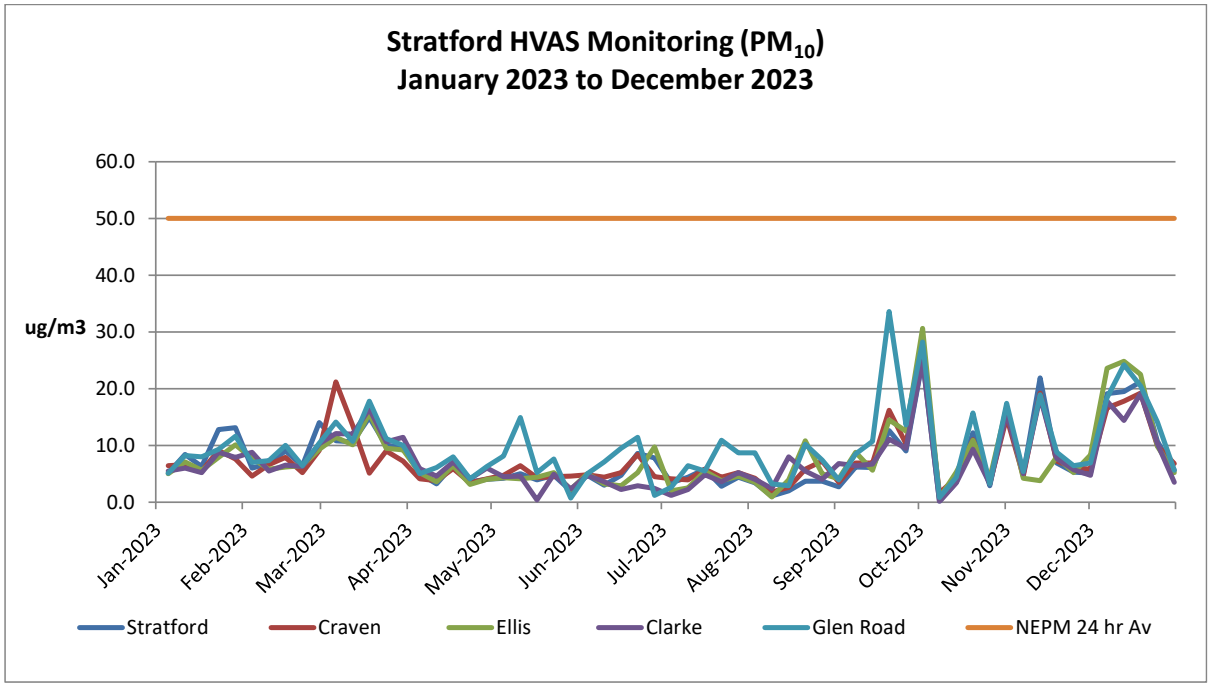

Figure 3: High Volume Air Sampler (HVAS) PM_{10} Results

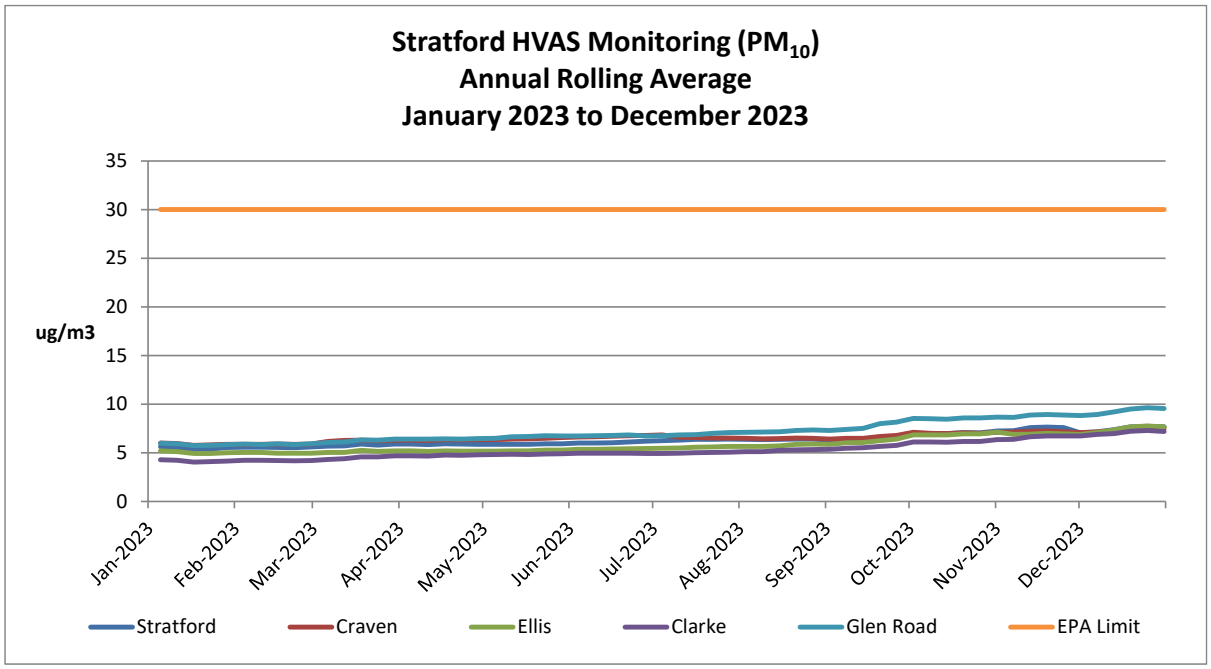

Figure 4: HVAS PM_{10} Rolling Annual Average Results

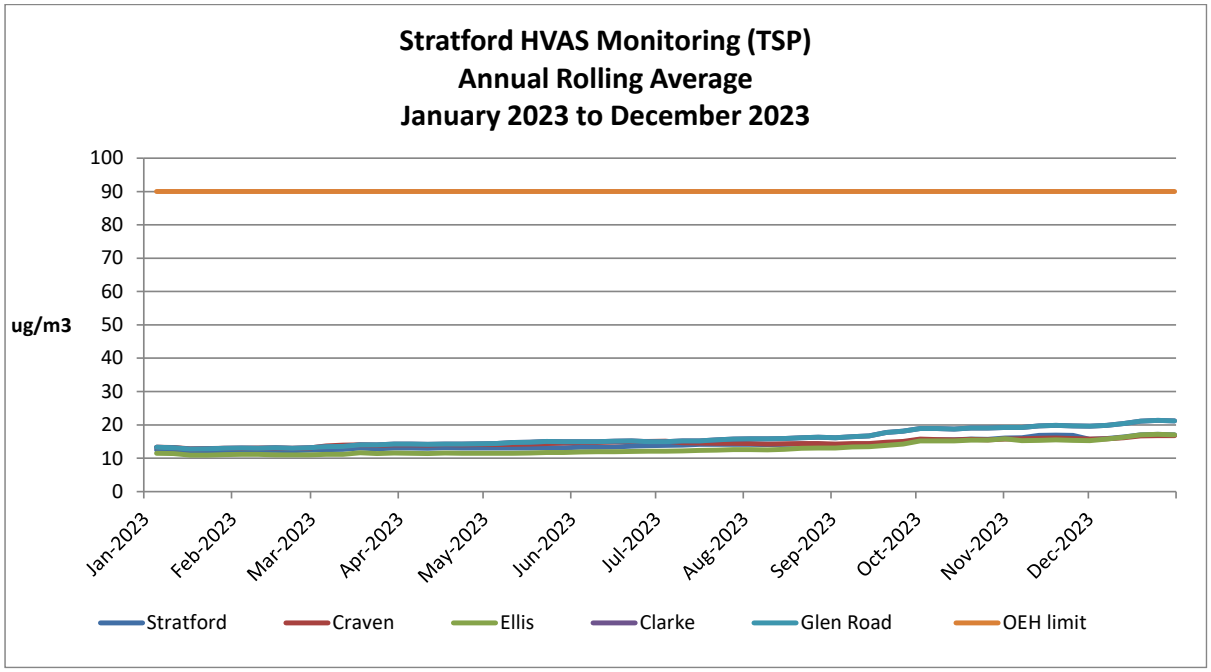

Figure 5: HVAS Total Suspended Particulates (TSP) Results

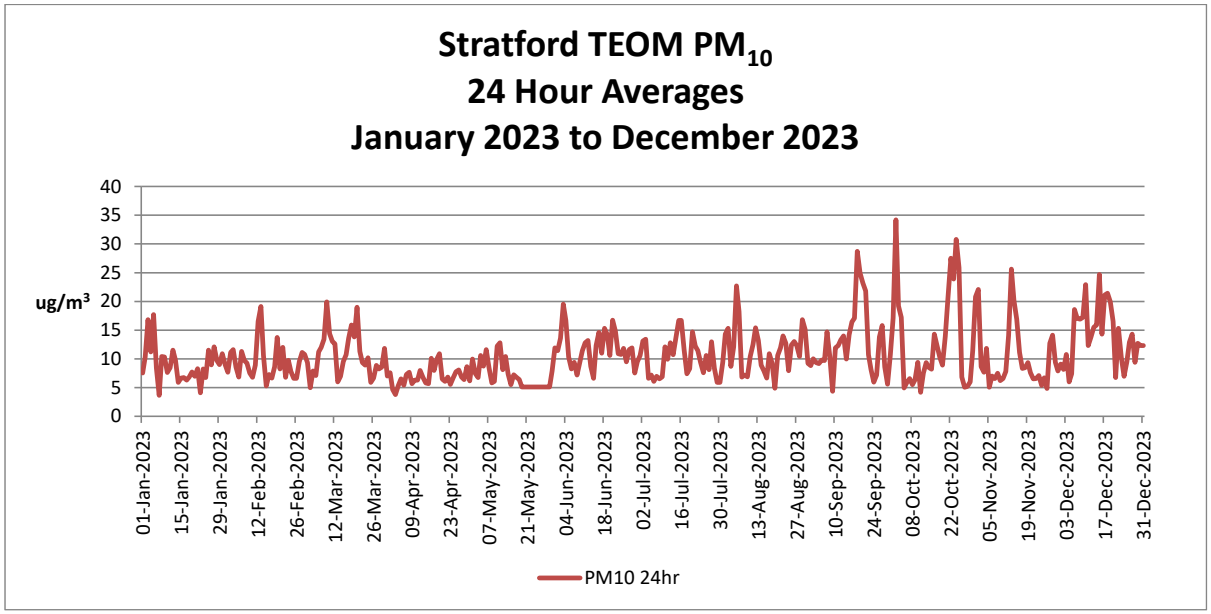

Figure 6: Stratford TEOM Real Time Dust Monitoring (PM_{10}) Results during the Reporting Period

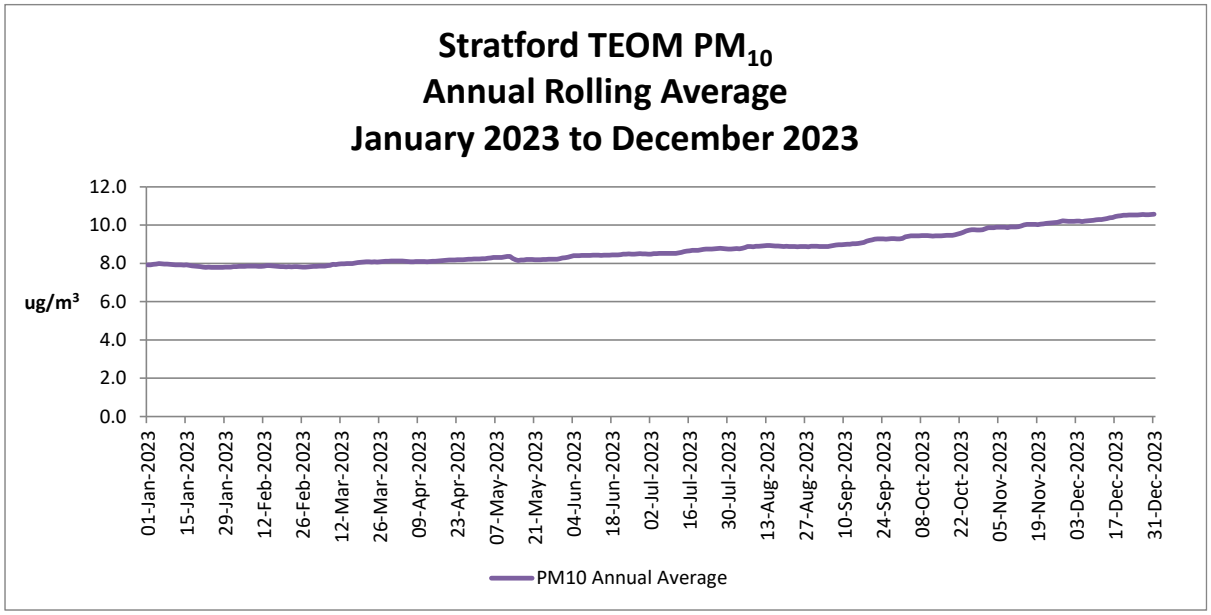

Figure 7: Rolling Annual Average Stratford TEOM (PM_{10}) Results during the Reporting Period

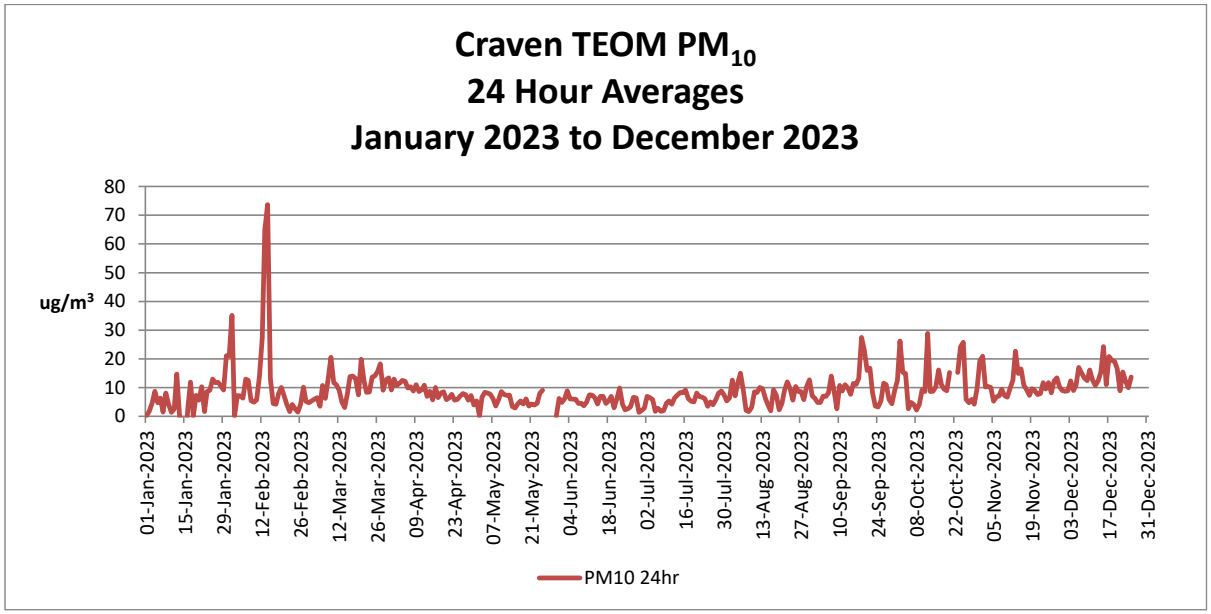

Figure 8: Craven TEOM Real Time Dust Monitoring (PM_{10}) Results during the Reporting Period

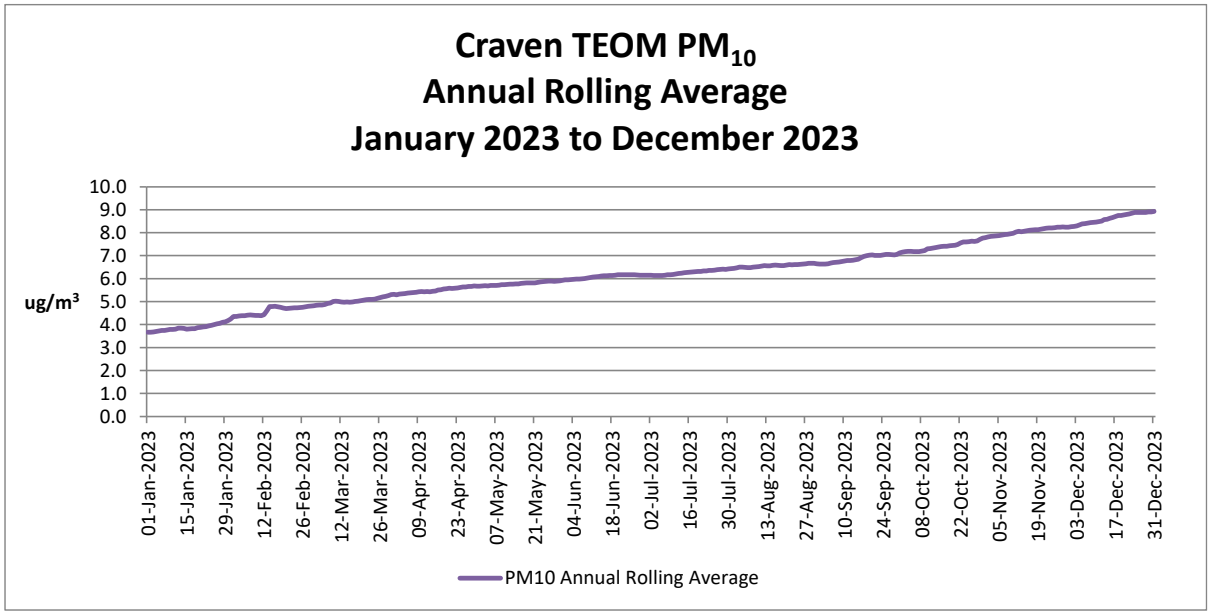

Figure 9: Rolling Annual Average Craven TEOM (PM_{10}) Results during the Reporting Period

APPENDIX 4

Surface Water and Groundwater Monitoring

Surface waters

W1 **Upstream Avon River**
(Wenhams Cox Road - Glenavon)

DATE	EVENT	Flow	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	Steady flow, clear, brown	7.26	409	21.3	26.1	253	22	76	7	82	16	9	<0.001	0.357		2.95	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.9
28-Feb-23	Monthly	Steady flow, clear, colourless	7.44	295	26.8	7.31	183	<5	77	5	50	14	7	<0.001	0.174		2.67	0.002	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.5
13-Mar-23	Event	Slow flow, clear, light brown	7.26	339	21.3	20.5	216	15	92	<1	56	15	8	<0.001	0.46		2.23	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.9
28-Apr-23	Monthly	Steady flow, clear, colourless	7.47	312	19	5.91	180	6	63	7	48	14	8	<0.001	0.042		1.82	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.4
29-May-23	Monthly	Slightly turbid, brown	7.58	330	10.9	11.95	192	<5	66	9	56	12	7	<0.001	0.032	0.17	1.48	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.2
30-Jun-23	Monthly	Slow flow, clear, colourless	7.3	346	10.6	6.59	184	8	64	7	61	16	9	<0.001	0.102	0.05	1.8	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.4
27-Jul-23	Monthly	Slow flow, clear, colourless	7.53	403	13.9	6.4	208	<5	72	6	80	15	10	<0.001	0.105	0.05	1.62	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3
30-Aug-23	Monthly	Trickle flow, clear, colourless	7.19	443	13.8	7.45	247	8	90	4	104	22	12	<0.001	0.077	0.03	1.43	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.4
28-Sep-23	Monthly	No flow																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	No flow																						
20-Dec-23	Event	No flow																						

W2 **Downstream Avon River**
(Marengo - Bignall)

DATE	Event	Flow	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Al (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	Steady flow, clear, brown	6.93	579	21	17.46	362	12	100	4	137	22	12	<0.001	0.968	5.24		0.002	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.7	0.11
28-Feb-23	Monthly	Slow flow, clear, colourless	7.41	362	25	6.06	212	9	87	2	66	16	9	<0.001	0.169	2.22		0.002	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.5	0.07
13-Mar-23	Event	Steady flow, clear, colourless	7.27	371	22	9.01	196	6	84	<1	65	15	8	<0.001	0.294	1.04		<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.5	0.05
28-Apr-23	Monthly	Steady flow, clear, colourless	7.28	351	17.9	7.46	201	8	61	17	54	14	9	<0.001	0.129	1.87		0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.7	0.05
29-May-23	Monthly	Steady flow, clear, brown	7.47	384	10.9	11.33	217	8	69	9	73	12	7	<0.001	0.066	1.62	0.19	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3	0.02
30-Jun-23	Monthly	Slow flow, clear, colourless	7.28	366	11.2	2.22	206	<5	66	6	71	15	9	<0.001	0.072	0.71	0.03	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.4	0.03
27-Jul-23	Monthly	Trickle flow, clear, colourless	7.48	473	13.9	1.71	236	<5	72	7	95	16	11	<0.001	0.104	0.59	0.03	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3	0.03
30-Aug-23	Monthly	Trickle flow, clear, colourless	7.24	427	17.4	1.91	236	<5	92	4	94	21	11	<0.001	0.091	0.55	0.02	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3	0.02
28-Sep-23	Monthly	No flow																							
27-Oct-23	Event	No flow																							
29-Nov-23	Monthly	No flow																							
20-Dec-23	Event	No flow																							

W3 **Upstream Dog Trap Creek**
(Dog Trap Creek - Ellis)

DATE	Event	Flow	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	Trickle flow, clear, colourless	7.33	475	20.4	9.3	292	18	102	4	96	16	10	<0.001	0.774	1.04	0.003	<0.0001	<0.001	<0.05	<0.0001	<0.001	1.4	0.16
28-Feb-23	Monthly	Trickle flow, clear, colourless	7.64	454	25.7	6.9	258	6	99	2	88	15	11	<0.001	0.318	0.58	0.002	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.9	0.08
13-Mar-23	Event	Trickle flow, clear, brown	7.41	451	22.5	11.94	252	14	97	2	88	15	10	<0.001	0.37	0.57	0.001	0.0002	<0.001	<0.05	<0.0001	<0.001	0.9	0.1
28-Apr-23	Monthly	Steady flow, clear, colourless	7.22	408	22.7	3.75	220	<5	62	24	66	14	10	<0.001	0.121	0.76	0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.4	0.05
29-May-23	Monthly	Trickle flow, clear, colourless	7.32	447	12.6	7.81	247	7	71	16	90	13	9	<0.001	0.128	0.52	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3	0.04
30-Jun-23	Monthly	Trickle flow, turbid, brown	7.32	453	13.9	71.7	240	91	68	16	99	15	11	<0.001	0.493	----	2.36	0.002	<0.0001	<0.001	<0.05	<0.0001	0.002	1.2
27-Jul-23	Monthly	Trickle flow, clear, colourless	8.54	499	15.3	2.26	250	<5	82	10	102	15	12	<0.001	0.088	----	0.52	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.4
30-Aug-23	Monthly	Trickle flow, slightly turbid, brown	7.28	488	25.9	59.3	288	58	91	6	121	20	13	<0.001	0.353	2.83	2.83	0.003	<0.0001	<0.001	<0.05	<0.0001	0.002	2.6
28-Sep-23	Monthly	No flow																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	No flow																						
20-Dec-23	Event	No flow																						

W3A **Upstream Dog Trap Creek**
(Dog Trap Creek - Ellis)

DATE	Event	Flow	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	Trickle flow, clear, brown	6.77	268	20	30	168	13	76	5	42	9	6	0.002	1.17	3.64	0.004	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.5	0.06
28-Feb-23	Monthly	Trickle flow, slightly turbid, brown	7.04	301	28.6	32	185	<5	69	7	51	10	7	<0.001	1.19	3.38	0.003	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.5	0.04
13-Mar-23	Event	Trickle flow, slightly turbid, brown	6.81	305	21.8	69.8	200	18	67	9	50	9	6	<0.001	1.09	3.4	0.003	<0.0001	<0.001	<0.05	<0.0001	<0.001	1.1	0.17
28-Apr-23	Monthly	Trickle flow, clear, colourless	6.62	367	21.6	19.8	217	7	51	24	65	14	10	<0.001	1.56	3.76	0.004	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.4	0.04
29-May-23	Monthly	Trickle flow, slightly turbid, colourless	6.73	384	15	42.6	220	10	54	16	76	12	8	<0.001	1.95	4.35	0.003	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3	0.03
30-Jun-23	Monthly	Trickle flow, slightly turbid, brown	6.72	371	17.1	36.5	208	15	48	14	82	14	9	<0.001	2.32	----	4.32	0.003	<0.0001	<0.001	<0.05	<0.0001	<0.001	<0.1
27-Jul-23	Monthly	Trickle flow, slightly turbid, colourless	6.86	428	16.6	29.4	220	6	54	15	90	14	10	<0.001	1.84	----	3.28	0.002	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3
30-Aug-23	Monthly	Trickle flow, slightly turbid, brown	6.57	399	22.6	59.2	238	13	58	14	102	18	11	<0.001	2.13	3.97	3.97	0.002	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3
28-Sep-23	Monthly	Trickle flow, turbid, brown	6.79	420	20.6	42.8	232	27	64	13	93	23	22	<0.001	2.62	5.77	0.004	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.7	0.08
27-Oct-23	Event	Trickle flow, slightly turbid, brown	7.28	438	18.9	67	244	36	73	11	101	17	12	<0.001	2.28	7.18	0.004	<0.0001	<0.001	<0.05	<0.0001	<0.001	2	0.17
29-Nov-23	Monthly	No flow																						
20-Dec-23	Event	No flow																						

W4 **Avondale Creek - Downstream of Dog Trap Creek**
(Avondale Swamp - Atkins)

DATE	Event	FLOW	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	Trickle flow, clear, brown	7.03	499	21.5	12.31	284	9	98	4	108	20	11	<0.001	0.695	3.4	0.002	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.7	0.1
28-Feb-23	Monthly	Trickle flow, clear, colourless	7.33	364	26.8	6.28	224	<5	90	2	68	16	9	<0.001	0.157	2.04	0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.6	0.08
13-Mar-23	Event	Slow flow, clear, colourless	7.23	374	22.4	5.5	202	<5	82	<1	65	15	8	<0.001	0.254	0.81	0.002	0.0002	<0.001	<0.05	<0.0001	<0.001	0.4	0.03
28-Apr-23	Monthly	colourless	6.7	691	17.7	40.8	382	12	29	102	133	18	17	<0.001	0.379	2.03	0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.8	0.1
29-May-23	Monthly	Slow flow, clear, brown	7.17	390	9.7	10.78	214	6	68	9	72	12	7	<0.001	0.068	1.76	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3	0.03
30-Jun-23	Monthly	colourless	7.16	377	11.5	4.27	195	<5	68	6	77	15	9	<0.001	0.142	----	0.94	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3
27-Jul-23	Monthly	Slow flow, clear, colourless	7.1	552	12.7	1.75	280	<5	76	8	120	17	12	<0.001	0.301	----	0.86	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	2.4
30-Aug-23	Monthly	colourless	7.19	422	19.2	4.24	237	<5	92	4	101	21	12	<0.001	0.183	1.03	1.03	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.4
28-Sep-23	Monthly	No flow																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	No flow																						
20-Dec-23	Event	No flow																						

W5 **Downstream of Mine - Upstream of Avondale Swamp**
(Wenhams Cox Road - SCPL)

DATE	Event	FLOW	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	No flow																						
28-Feb-23	Monthly	No flow																						
13-Mar-23	Event	No flow																						
28-Apr-23	Monthly	No flow																						
29-May-23	Monthly	No flow																						
30-Jun-23	Monthly	No flow																						
27-Jul-23	Monthly	No flow																						
30-Aug-23	Monthly	Dry																						
28-Sep-23	Monthly	Dry																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	No flow																						
20-Dec-23	Event	No flow																						

W6 **Upstream of Mine on Avondale Creek**
(Parkers Road - SCPL)

DATE	Event	FLOW	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	No flow																						
28-Feb-23	Monthly	Dry																						
13-Mar-23	Event	Dry																						
28-Apr-23	Monthly	No flow																						
29-May-23	Monthly	Trickle flow, clear, colourless	6.55	408	11.5	10.76	268	<5	9	5	116	6	7	<0.001	0.025	1.22	<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.5	0.05
30-Jun-23	Monthly	No flow																						
27-Jul-23	Monthly	Dry																						
30-Aug-23	Monthly	Dry																						
28-Sep-23	Monthly	Dry																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	Dry - No flow																						
20-Dec-23	Event	No flow																						

W8

DATE	Event	FLOW	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	No flow																						
28-Feb-23	Monthly	No flow																						
13-Mar-23	Event	Dry																						
28-Apr-23	Monthly	No flow																						
29-May-23	Monthly	No flow																						
30-Jun-23	Monthly	No flow																						
27-Jul-23	Monthly	Dry																						
30-Aug-23	Monthly	Dry																						
28-Sep-23	Monthly	Dry																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	Dry - No flow																						
20-Dec-23	Event	No flow																						

W9 **Upper Avondale Creek**
(Off Glen Road - SCPL)

DATE	Event	FLOW	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
05-Jan-23	Event	No flow																						
28-Feb-23	Monthly	No flow																						
13-Mar-23	Event	No flow																						
28-Apr-23	Monthly	No flow																						
29-May-23	Monthly	No flow																						
30-Jun-23	Monthly	No flow																						
27-Jul-23	Monthly	Dry																						
30-Aug-23	Monthly	Dry																						
28-Sep-23	Monthly	No flow																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	No flow																						
20-Dec-23	Event	No flow																						

W10 **Lemon Tree Creek**
(Off Bowens Road - SCPL)

DATE	Event	FLOW	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
5-Jan-23	Event	No flow																						
28-Feb-23	Monthly	Dry																						
13-Mar-23	Event	Dry																						
28-Apr-23	Monthly	Trickle flow, clear, colourless	6.94	742	19.7	16.26	435	6	94	50	137	31	17	<0.001	0.069	0.72		<0.001	<0.0001	<0.001	<0.05	<0.0001	<0.001	0.3
29-May-23	Monthly	No flow																						
30-Jun-23	Monthly	Dry																						
27-Jul-23	Monthly	Dry																						
30-Aug-23	Monthly	Dry																						
28-Sep-23	Monthly	Dry																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	No flow																						
20-Dec-23	Event	No flow																						

W11

DATE	Event	FLOW	pH	Cond. (uS/cm)	Temp °C	Turbidity (NTU)	TDS (mg/L)	TSS (mg/L)	Alkalinity (mg/L)	Sulphate (mg/L)	Chloride (mg/L)	Calcium (mg/L)	Mg (mg/L)	Copper (mg/L)	Mn (mg/L)	Iron (filt.) (mg/L)	Arsenic (mg/L)	Cd (mg/L)	Cr (mg/L)	Boron (mg/L)	Mercury (mg/L)	Lead (mg/L)	Tot. N (mg/L)	Tot. P (mg/L)
05-Jan-23	Event	No flow																						
28-Feb-23	Monthly	Dry																						
13-Mar-23	Event	Dry																						
28-Apr-23	Monthly	Trickle flow, clear, colourless	6.33	424	22.7	0.15	244	<5	52	23	87	17	12	<0.001	0.054	0.08	<0.001	<0.0001	0.004	<0.05	<0.0001	<0.001	0.2	0.04
29-May-23	Monthly	No flow																						
30-Jun-23	Monthly	Dry																						
27-Jul-23	Monthly	Dry																						
30-Aug-23	Monthly	Dry																						
28-Sep-23	Monthly	Dry																						
27-Oct-23	Event	No flow																						
29-Nov-23	Monthly	No flow																						
20-Dec-23	Event	No flow																						

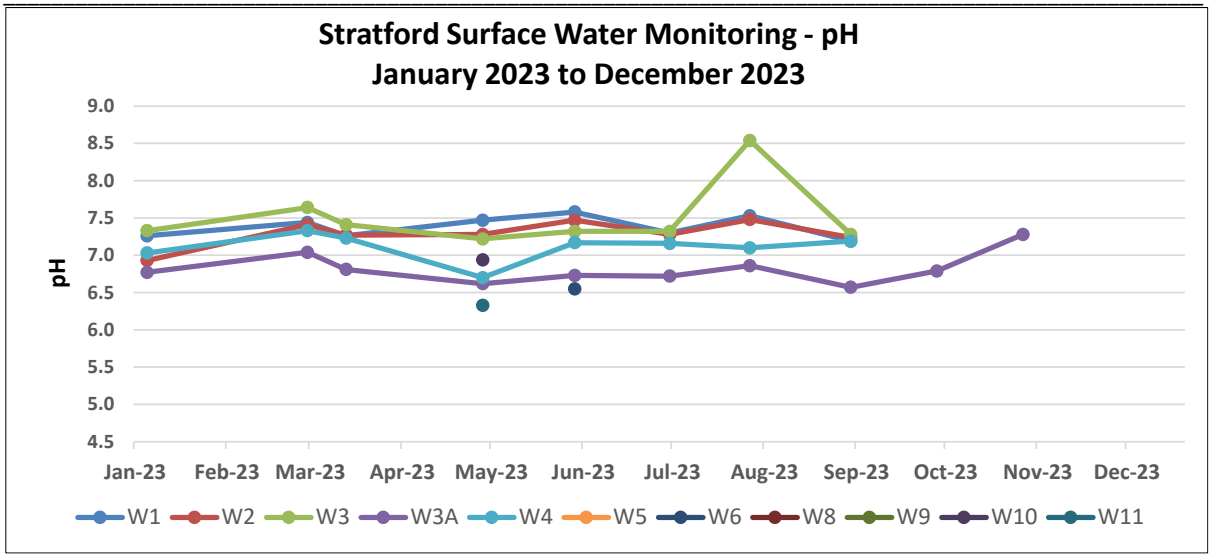

Figure 1: Surface Water Monitoring Results - pH

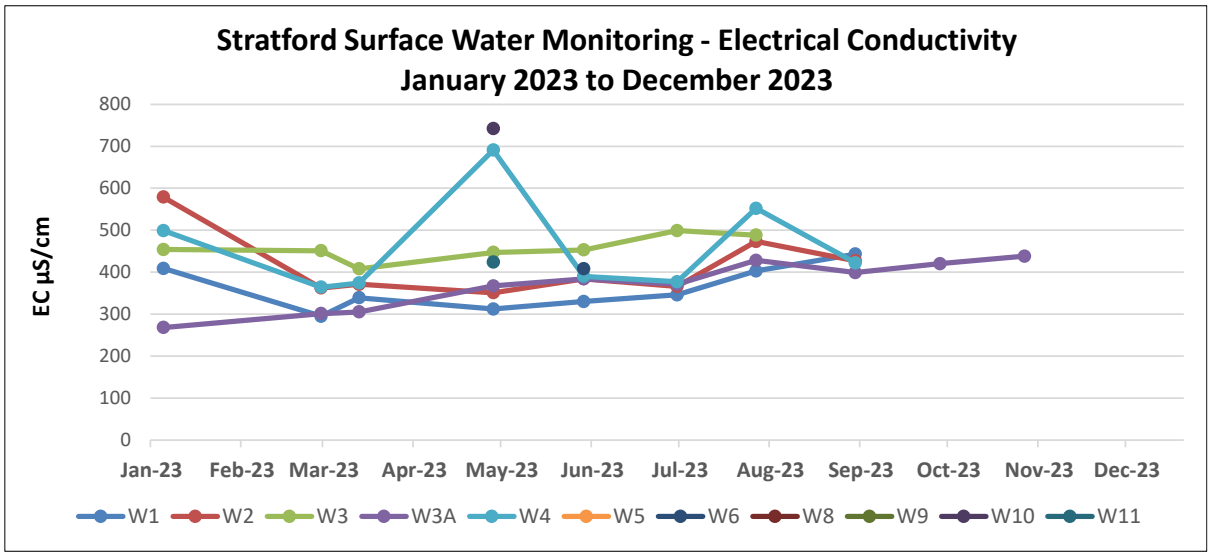

Figure 2: Surface Water Monitoring Results - Electrical Conductivity

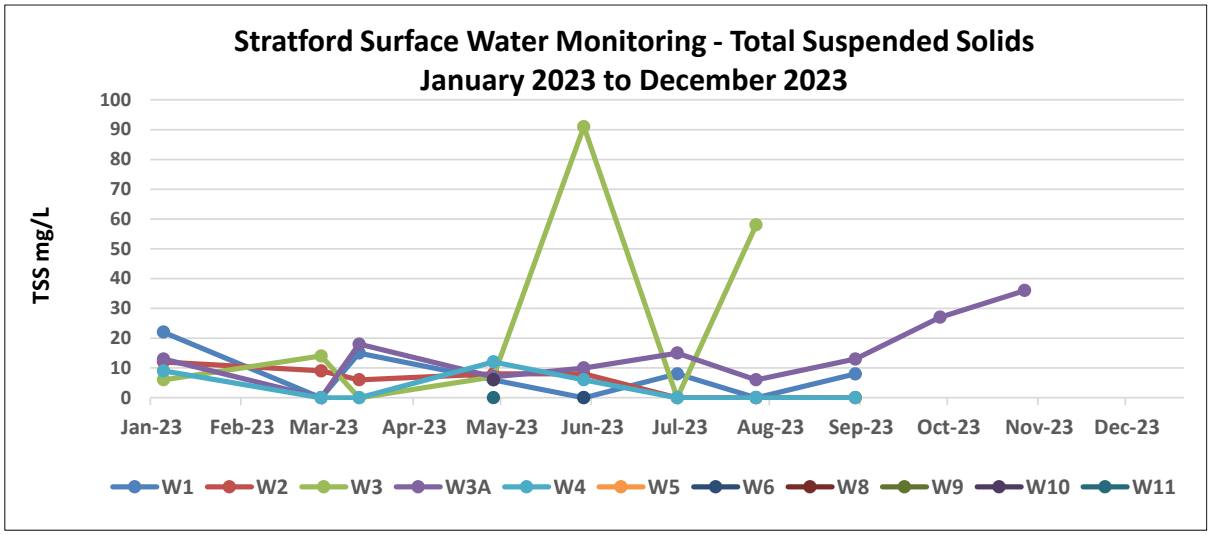

Figure 3: Surface Water Monitoring Results - Total Suspended Solids

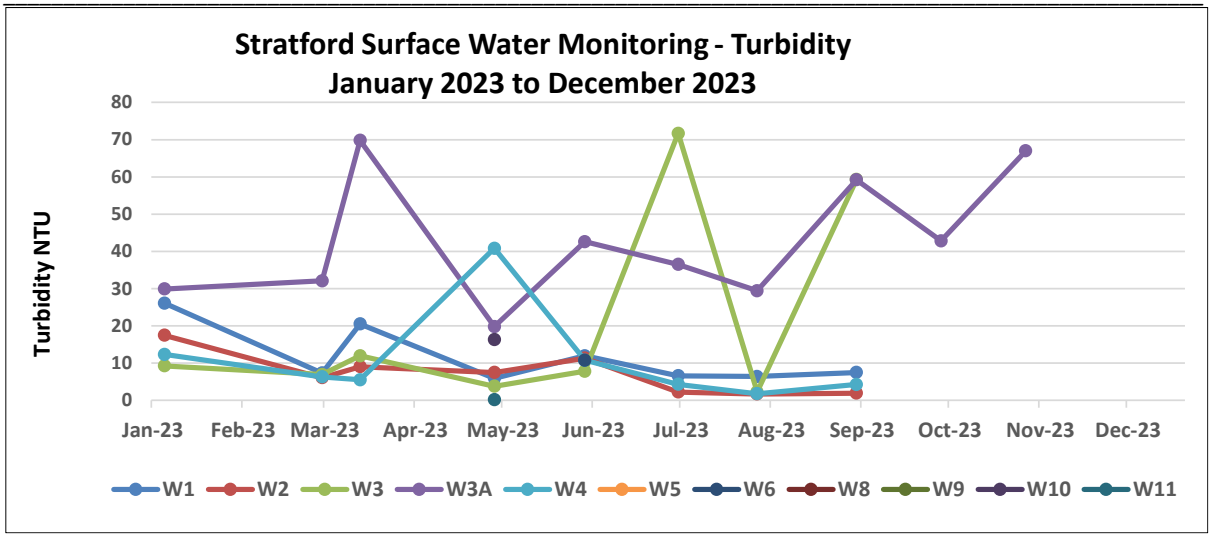

Figure 4: Surface Water Monitoring Results - Turbidity

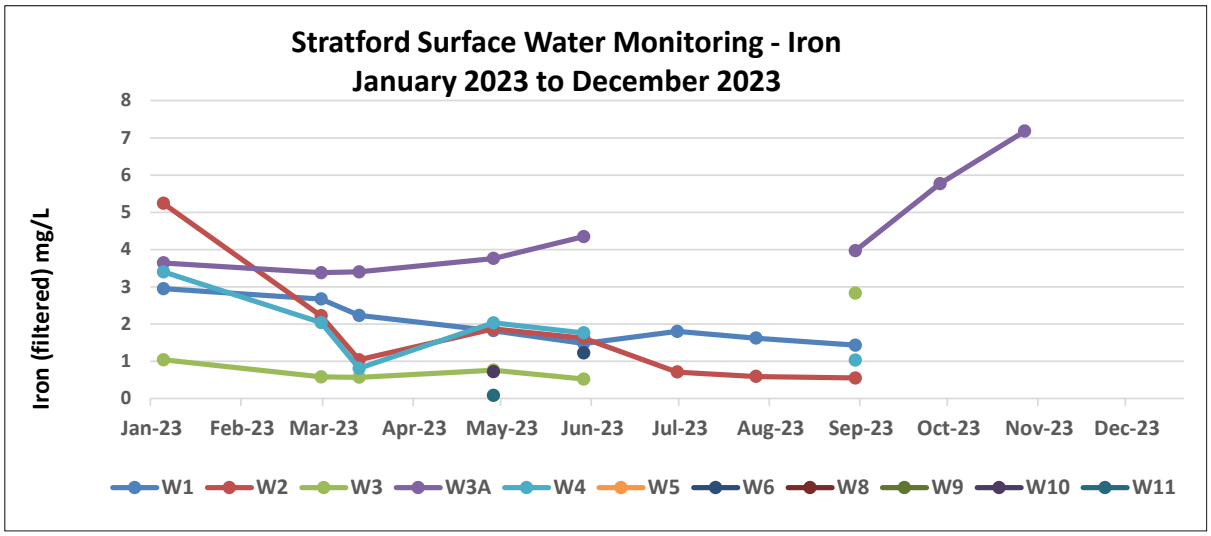

Figure 5: Surface Water Monitoring Results - Iron

Summary of Results – Mine Water Storage Monitoring Points

Site	Roseville West Pit		BRW (Parkers) Pit	
Parameter	**Range**	**Average**	**Range**	**Average**
pH	8.1 to 8.3	8.2	7.2 to 8.7	8.0
EC	2590 to 3160	2875	1140 to 3290	2466
ORP	-1 to 158	79	7 to 114	38
Acidity	2 to 3	3	<1 to 8	5
Aluminium	0.51 to 0.55	0.53	0.07 to 0.69	0.33
Sulphate	973 to 974	973.5	439 to 1440	942
Sodium	368 to 431	400	110 to 388	267
Calcium	202 to 212	207	102 to 302	213
Chloride	358 to 362	360	118 to 378	268
Iron	0.71 to 1.52	1.115	0.08 to 0.84	0.44
Zinc	<0.005 to 0.01	0.008	<0.005 to 0.08	0.03
Magnesium	64 to 67	66	39 to 131	91
Manganese	0.039 to 0.083	0.061	0.063 to 0.902	0.48
Site	**RWD (Return Water Dam)**		**ESD (Stratford East Dam)**	
Parameter	**Range**	**Average**	**Range**	**Average**
pH	7.7 to 8.2	8.0	8.1 to 8.8	8.5
EC	2690 to 3490	3016	635 to 721	685
ORP	-28 to 168	98	-11 to 208	98
Acidity	NA	NA	<1 to 6	1.4
Aluminium	NA	NA	0.02 to 0.24	0.07
Sulphate	NA	NA	40 to 49	45
Sodium	NA	NA	85 to 107	92
Calcium	NA	NA	21 to 38	26
Chloride	NA	NA	88 to 129	106
Iron	NA	NA	<0.05 to 21	0.11
Zinc	NA	NA	<0.005 to <0.005	<0.005
Magnesium	NA	NA	17 to 24	20
Manganese	NA	NA	0.007 to 0.044	0.018
Site	**Stratford Main Pit**		**Stratford East Pit**	
Parameter	**Range**	**Average**	**Range**	**Average**
pH	7.8 to 8.4	8.2	7.7 to 8.0	7.9
EC	2160 to 3500	3098	3560 to 4800	4333
ORP	52 to 166	113	10 to 190	125
Acidity	<1 to 8	3.4	3 to 12	8
Aluminium	<0.01 to 0.19	0.07	<0.01 to 0.28	0.08
Sulphate	900 to 1350	1184	1990 to 2720	2303
Sodium	260 to 377	344	301 to 394	361
Calcium	218 to 333	273	490 to 708	597
Chloride	254 to 368	325	232 to 355	305
Iron	<0.05 to 0.23	0.12	0.22 to 1.73	0.84
Zinc	<0.005 to 0.015	0.005	<0.005 to 0.054	0.027
Magnesium	82 to 119	109	130 to 191	169
Manganese	0.01 to 0.103	0.06	0.207 to 2.73	1.48

Site	Avon North Pit	
Parameter	**Range**	**Average**
pH	7.7 to 8.4	8.1
EC	1680 to 3230	2390
ORP	-60 to 180	99
Acidity	1 to 11	6
Aluminium	0.07 to 24.1	5.4
Sulphate	17 to 146	63
Sodium	304 to 666	490
Calcium	24 to 91	42
Chloride	297 to 788	475
Iron	0.06 to 100	17.4
Zinc	<0.005 to 0.5	0.14
Magnesium	7 to 22	11
Manganese	0.005 to 1.84	0.33

Groundwaters

GW Series Groundwater Monitoring Bores

Bore ID	Date	Depth to Water from top of collar m	Well Depth m	DtoW below ground m	pH	EC uS/cm	Na mg/L	Cl mg/L	Fe(filt) mg/L	SO4 mg/L	TDS mg/L	Ca mg/L	Mg mg/L	ORP mV	Temp °C
GW1	27-Feb-23	16.00	16.12	15.10											
	3-Aug-23	16.05	16.12	15.15											
	Averages	**16.03**	**16.12**	**15.125**											
GW2	27-Feb-23	11.37	17.05	10.17	6.87	5000	733	1490	33.6	35	2540	56	124	-47	29
	3-Aug-23	11.56	17.05	10.36	6.99	4880	768	1410	19.4	27	3020	60	129	-31	21
	Averages	**11.47**	**17.05**	**10.265**	**6.93**	**4940**	**750.5**	**1450**	**26.5**	**31**	**2780**	**58**	**126.5**	**-39**	**25.25**
GW3	27-Feb-23	1.83	6.4	0.93	5.88	3230	521	880	73.7	283	2000	38	63	42	26
	3-Aug-23	2.24	6.4	1.34	5.65	2840	491	807	10.6	134	1730	25	40	150	20
	Averages	**2.04**	**6.4**	**1.135**	**5.765**	**3035**	**506**	**843.5**	**42.15**	**208.5**	**1865**	**31.5**	**51.5**	**96**	**22.85**
GW4	27-Feb-23	1.12	5.98	0.42	6.5	14500	2210	5040	3.07	106	10100	323	347	35	24.0
	3-Aug-23	1.15	5.98	0.45	6.51	15000	2340	4710	1.04	104	10500	318	386	52	18.5
	Averages	**1.14**	**5.98**	**0.435**	**6.505**	**14750**	**2275**	**4875**	**2.055**	**105**	**10300**	**320.5**	**366.5**	**43.5**	**21.25**
GW5	27-Feb-23	2.23	8.16	1.23	6.77	12400	1880	4340	12.8	256	8440	184	331	-12	29.9
	3-Aug-23	2.46	8.16	1.46	6.67	12800	1960	3930	18.2	282	8800	200	366	-7	21.0
	Averages	**2.35**			**6.72**	**12600**	**1920**	**4135**	**15.5**	**269**	**8620**	**192**	**348.5**	**-9.5**	**25.45**
GW7	27-Feb-23	3.07	8.56	2.32	6.3	2270	338	652	18.1	<1	1500	41	52	-2	29.1
	3-Aug-23	3.34	8.56	2.59	6.31	3070	428	850	18.6	<1	1980	63	76	-8	19.5
	Averages	**3.21**	**8.56**	**2.46**	**6.31**	**2670**	**383**	**751**	**18.35**	**5.5**	**1740.0**	**52.0**	**64.0**	**-5.0**	**24.3**
GW8	27-Feb-23	7.16	12.74		5.2	2480	453	493	41.3	471	1680	6	28	47	22
	3-Aug-23	6.83	12.74		5.34	2110	400	364	7.68	412	1470	4	20	-13	20
	Averages	**7.00**	**12.74**		**5.27**	**2295**	**427**	**429**	**24.5**	**442**	**1575**	**5**	**24**	**17**	**21**

Bore ID	Date	Depth m	Bore Volume L	Volume Purged L	pH	EC uS/cm	ORP mV	SO4 mg/L	Na mg/L	Cl mg/L	Iron mg/L	TDS mg/L	Ca mg/L	Mg mg/L	Temp °C
BRWN1	27-Feb-23	0.68	7.37	9	6.12	5930	83	1080	1620	4.25	459	3720	63	78	23.9
	03-Aug-23	0.81	6.25	7	6.16	6030	149	430	1140	1600	1.07	3630	68	85	17.0
	Averages	**0.75**			**6.14**	**5980**	**116**	**755**	**1380**	**802.1**	**230.0**	**3675**	**65.5**	**81.5**	**20.45**

Bore Id	DATE	Depth to Water Level m	Corrected DTWL m	pH	EC µS/cm	ORP mV	Fe mg/L	Na mg/L	Cl mg/L	SO4 mg/L	TDS mg/L	Mg mg/L	Ca mg/L
RB1	14-Feb-23	3.51	2.91	7.12	10700	55	16.7	1550	3810	39			
	17-May-23	3.52	2.92	6.97	10500	75	8.51	1500	3450	41	7170	233	249
	17-Aug-23	3.82	3.22	7.09	10900	7	11.5	1690	3450	34	7540	272	280
	22-Nov-23	4.07	3.47	7.14	10800	84	17.8	1620	3420	44	7860	260	296
	Averages	**3.73**	**3.13**	**7.08**	**10725**	**55**	**14**	**1590**	**3533**	**40**	**7523**	**255**	**275**
RB2	14-Feb-23	2.26	1.16	6.73	10400	49	3.06	1610	3620	127			
	17-May-23	2.17	1.07	6.73	10400	77	0.62	1590	3290	142	6860	205	221
	17-Aug-23	2.12	1.02	6.87	10600	140	0.17	1780	3360	133	7030	236	218
	22-Nov-23	2.50	1.40	6.82	10600	117	2.5	1730	3230	129	7530	232	238
	Averages	**2.26**	**1.16**	**6.79**	**10500**	**96**	**2**	**1678**	**3375**	**133**	**7140**	**224**	**226**
RB3	14-Feb-23	9.36	8.51	4.2	2990	176	43.7	551	692	716			
	17-May-23	8.67	7.82	3.94	2250	128	9.15	428	475	520	1930	27	6
	17-Aug-23	8.39	7.54	4.83	3160	174	48.8	583	505	754	2230	59	13
	22-Nov-23	8.48	7.63	3.96	3040	202	14.80	533	511	769	2180	48	10
	Averages	**8.73**	**7.88**	**4.23**	**2860**	**170**	**29.11**	**524**	**546**	**690**	**2113**	**45**	**10**

Bowens Road North Groundwater Monitoring Bores

Bore Id	DATE	Depth to Water Level	Corrected DTWL	Bore Volume	Volume Purged	pH	EC	ORP	Ca	Fe	Pb	Mg	Mn	P	K	Na	Bicarbonate (as CaCO3)	Cl	SO4	Zn
		m	m	L	L		µS/cm	mv	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
MW3	14-Feb-23	Dry																		
	17-May-23	Dry																		
	17-Aug-23	Dry																		
	21-Nov-23	Dry																		
MW4	14-Feb-23	Dry																		
	17-May-23	Dry																		
	17-Aug-23	Dry																		
	21-Nov-23	Dry																		
MW6	14-Feb-23	6.45	5.95	8.36	16.0	6.44	309	47	6	6.98	0.007	7	0.265	0.28	2	50	65	42	31	0.046
	17-May-23	5.94	5.44	9.25	25.0	6.43	317	79	8	3.68	0.005	8	0.203	0.46	1	44	89	34	19	0.024
	17-Aug-23	7.69	7.19	5.93	12.0	6.47	418	79	14	10.3	0.013	13	0.315	0.28	2	63	118	65	16	0.073
	21-Nov-23	6.60	6.10	7.96	15.0	6.4	446	157	9	3.42	0.005	9	0.285	0.2	2	62	80	68	40	0.036
MW7	14-Feb-23	8.53	8.03	4.41	12.0	5.43	1440	105	16	10.5	0.01	28	1.04	0.35	3	217	36	379	158	0.16
	17-May-23	9.28	8.78	2.88	8.0	5.68	1350	27	15	2.77	0.009	26	1.35	0.47	3	207	46	335	131	0.193
	17-Aug-23	10.31	9.81	0.86	1.0	6.03	1574	104												
	21-Nov-23	8.56	8.06	4.29	13.0	5.46	1660	188	27	7.68	0.036	36	1.45	0.4	5	254	37	433	161	0.425
MW8	14-Feb-23	Dry																		
	17-May-23	Too low to sample																		
	17-Aug-23	Too low to sample																		
	21-Nov-23	Dry																		
MW11	18-Jan-23	7.50	7.00			6.54	825.1													
	14-Feb-23	7.49	6.99	63.50	192.0	6.6	802	87	42	1.57	<0.001	10	0.112	0.07	2	123	185	151	34	0.019
	16-Mar-23	7.48	6.98			6.7	901.2													
	14-Apr-23	7.29	6.79			6.58	808.8													
	17-May-23	7.28	6.78	57.80	180.0	6.54	827	18	42	1.39	<0.001	10	0.105	0.07	2	113	186	141	34	0.017
	16-Jun-23	7.24	6.74			6.53	826.4													
	21-Jul-23	7.18	6.68			6.47	831.5													
	17-Aug-23	7.11	6.61	62.90	190.0	6.67	802	33	40	1.64	<0.001	10	0.123	0.07	2	118	184	150	31	0.005
	21-Sep-23	7.16	6.66			6.48	795.6													
	11-Oct-23	7.26	6.76			6.5	818.3													
	22-Nov-23	7.67	7.17	37.08	115.0	6.83	1030	123	54	0.92	<0.001	10	0.117	0.06	2	145	266	188	21	0.013
	27-Dec-23	7.94	7.44			6.97	1338													
MW12	18-Jan-23	3.55	3.05			6.7	440.9													
	14-Feb-23	3.66	3.16	11.68	36.0	6.59	561	72	20	1.15	<0.001	15	1.16	0.04	3	77	113	128	8	<0.005
	16-Mar-23	3.55	3.05			6.57	570.3													
	14-Apr-23	3.43	2.93			6.33	522.6													
	17-May-23	3.45	2.95	11.85	36.0	6.61	517	5	16	0.76	<0.001	12	0.856	0.06	3	65	105	104	12	0.009
	16-Jun-23	3.45	2.95			6.63	508.6													
	21-Jul-23	3.49	2.99			6.52	524.7													
	17-Aug-23	3.63	3.13	11.50	35.0	6.64	676	62	27	1.2	<0.001	18	1.29	0.04	4	96	109	165	10	0.01
	21-Sep-23	3.93	3.43			6.38	747.1													
	11-Oct-23	4.11	3.61			6.47	847.4													
	21-Nov-23	4.37	3.87	10.05	31.0	6.6	834	146	25	1.92	0.006	18	1.8	0.08	4	116	134	210	12	0.075
	27-Dec-23	4.52	4.02			6.49	865.6													
GRIFFIN	14-Feb-23	1.46	1.06			7.85	2060	46	26	0.68	<0.001	10	0.019	0.14	2	442	518	519	<1	<0.005
	17-May-23	1.57	1.17			7.82	2110	18	27	1.61	<0.001	11	0.014	0.21	2	453	549	462	<1	<0.005
	17-Aug-23	1.65	1.25			7.91	2445	6	21	1.13	<0.001	9	0.014	0.1	2	480	554	472	<1	0.023
	21-Nov-23	3.15	2.75			7.89	2300	167	24	0.38	<0.001	10	0.014	0.08	2	485	585	462	<1	<0.005

Stratford Groundwater Monitoring Bores

Bore Id	DATE	Depth to water m	pH	EC µS/cm	ORP mv	Temp mg/L	Ca mg/L	Fe mg/L	Mg mg/L	Mn mg/L	Pb mg/L	P mg/L	K mg/L	Na mg/L	Cl mg/L	SO4 mg/L	Bicarbonate as CaCO3 mg/L	Zn mg/L	TDS mg/L
Bagnell (Stratford Shop)	18-Jan-23																		
	14-Feb-23																		
	16-Mar-23																		
	14-Apr-23																		
	17-May-23																		
	16-Jun-23																		
	21-Jul-23																		
	17-Aug-23																		
	21-Sep-23																		
	10-Oct-23																		
	21-Nov-23																		
	27-Dec-23																		
Ex-Bramley	18-Apr-23	6.67	7.15	1988															
	10-Oct-23	7.32	7.38	2140	22	25	106	0.47	32	0.169	0.002	4.43	19	276	537	11	330	0.016	1170
Ex-Butler/McDonald	18-Apr-23	No access																	
	10-Oct-23	Does not want tested																	
Fardell (ex Horner)	18-Apr-23	No access																	
	10-Oct-23	oken pump blocking bore																	
Forbes	18-Apr-23	No access																	
	10-Oct-23	9.31	7.05	5340	27	25.8	125	1.05	83	0.404	<0.001	0.03	6	922	1240	67	825	0.019	2910
Germon	18-Jan-23	No access																	
	14-Feb-23	No access																	
	16-Mar-23	No access																	
	14-Apr-23	8.41	7.17	3630															
	17-May-23	No access																	
	16-Jun-23	8.50	7.01	3760															
	21-Jul-23	No access																	
	17-Aug-23	No access																	
	21-Sep-23	No access																	
	10-Oct-23	8.42																	
	21-Nov-23	No access																	
	27-Dec-23	9.25	7.05	3480															
Hooker	18-Apr-23	4.06	7.44	420.9															
	10-Oct-23	No access																	
Mitchell	18-Apr-23	9.39	7.12	1192															
	10-Oct-23	9.26	7.23	3270	19	26.4	66	1.19	35	0.16	<0.001	0.15	5	678	608	60	952	0.009	1930
Glew	18-Apr-23	No access																	
	10-Oct-23	No access																	
Smith	18-Apr-23	No access																	
	10-Oct-23	No access																	
SCPL Bore, Wood St	18-Jan-23	11.13	6.57	6870															
	14-Feb-23	11.11	6.6	6700															
	16-Mar-23	11.15	6.48	5480															
	14-Apr-23	11.05	6.65	7380															
	17-May-23	11.12	6.61	7940															
	16-Jun-23	11.09	6.28	7780															
	21-Jul-23	7.18	6.36	7540															
	17-Aug-23	11.04	6.59	7540															
	21-Sep-23	11.10	6.32	7100															
	10-Oct-23	11.10	6.66	7680	4	25.2	253	2.85	203	0.522	0.006	0.06	10	1150	2200	230	642	0.029	4650
	21-Nov-23	11.20	6.49	7260															
	27-Dec-23	11.18	6.53	6960															

APPENDIX 5

Blast Monitoring Results

Shot #	Location	Date	Time	Isaac (B1) 7432		Ex-Judge (B2) 7441		Atkins (B6) 7434		Greenwood 7422		Clarke (B5) (Mine-owned) 7433 (previously 7377)		Bagnall (Extrapolated result)		Powerline Monitor Result		PPV CTS-1 (Extrapolated Result)		Overpressure Site Exceedance [1]	Overpressure "Cumulative Exceedance" [1]	Ground Vibration Site Exceedance [1]	Ground Vibration "Cumulative Exceedance" [1]	Monitored Blasts[1]	Fume Rating
			24hr	mm/s	dBL	mm/s	dBL	mm/s	dBL	mm/s	dBL	mm/s	dBL	mm/s	dBL	mm/s	dBL	mm/s	dBL	%		%			
AN305	Avon North	Friday, 6 January 2023	12:47:24	0.27	83.6	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114					0.00%	0	0.0%	0	1	Nil
AN307	Avon North	Thursday, 12 January 2023	12:40:55	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.86	102.8	0.59	98.9					0.00%	0	0.0%	0	2	Nil
AN308	Avon North	Friday, 20 January 2023	12:43:51	0.25	89.6	0.25	80.7	<0.24	102.2	<0.24	<114	1.08	106.6	0.68	101.8					0.00%	0	0.0%	0	3	Nil
AN309	Avon North	Monday, 30 January 2023	12:36:41	0.25	83.6	<0.24	<114	<0.24	<114	<0.24	<114	0.64	107.5	0.44	103.5					0.00%	0	0.0%	0	4	Nil
AN310	Avon North	Friday, 10 February 2023	10:08:34	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.53	105.3	0.34	100.7					0.00%	0	0.0%	0	5	Nil
AN311	Avon North	Friday, 17 February 2023	12:40:41	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	1.11	106.1	0.70	101.3					0.00%	0	0.0%	0	6	Nil
AN314	Avon North	Friday, 24 February 2023	12:37:02	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.32	104.8	0.22	100.7					0.00%	0	0.0%	0	7	Nil
AN315	Avon North	Friday, 3 March 2023	12:30:06	0.25	83.6	<0.24	<114	<0.24	<114	<0.24	<114	0.52	107.0	0.35	102.8					0.00%	0	0.0%	0	8	Nil
AN312	Avon North	Tuesday, 7 March 2023	12:48:44	0.37	87.1	<0.24	<114	0.28	107.0	0.29	86.0	1.11	114.5	0.76	110.5					0.00%	0	0.0%	0	9	Nil
AN316	Avon North	Friday, 17 March 2023	12:35:15	0.32	97.5	<0.24	<114	<0.24	<114	<0.24	<114	0.94	113.6	0.63	109.4					0.00%	0	0.0%	0	10	Nil
AN317	Avon North	Tuesday, 21 March 2023	12:38:23	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.27	99.3	0.19	95.4					0.00%	0	0.0%	0	11	Nil
AN318	Avon North	Friday, 24 March 2023	12:40:07	0.29	97.5	<0.24	<114	<0.24	<114	0.24	86.0	0.66	106.6	0.45	102.7					0.00%	0	0.0%	0	12	Nil
AN319	Avon North	Tuesday, 28 March 2023	12:40:02	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.39	106.3	0.27	102.3					0.00%	0	0.0%	0	13	Nil
AN320	Avon North	Thursday, 30 March 2023	12:38:42	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.45	103.8	0.31	99.9					0.00%	0	0.0%	0	14	Nil
AN321	Avon North	Monday, 3 April 2023	12:37:53	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.46	93.3	0.32	89.4					0.00%	0	0.0%	0	15	Nil
AN323	Avon North	Tuesday, 4 April 2023	12:41:10	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.43	94.3	0.63	98.2					0.00%	0	0.0%	0	16	Nil
AN322	Avon North	Thursday, 6 April 2023	12:41:08	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.35	106.6	0.24	102.7					0.00%	0	0.0%	0	17	Nil
AN324	Avon North	Thursday 13 April 2023	12:307	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114					0.00%	0	0.0%	0	18	Nil
AN325	Avon North	Friday, 21 April 2023	12:46:25	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.58	112.8	0.40	108.8					0.00%	0	0.0%	0	19	Nil
AN321B	Avon North	Monday, 24 April 2023	12:33:53	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.37	93.0	0.26	89.1					0.00%	0	0.0%	0	20	Nil
AN326	Avon North	Friday, 28 April 2023	12:33:23	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.47	94.3	0.31	89.9					0.00%	0	0.0%	0	21	Nil
AN328	Avon North	Wednesday, 10 May 2023	12:39:07	0.31	99.1	<0.24	<114	<0.24	<114	<0.24	<114	1.15	106.4	0.76	102.1					0.00%	0	0.0%	0	22	Nil
AN332	Avon North	Friday, 12 May 2023	12:33:28	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.37	100.9	0.24	96.4					0.00%	0	0.0%	0	23	Nil
AN330	Avon North	Thursday, 18 May 2023	9:19:24	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	1.46	109.5	1.00	105.5					0.00%	0	0.0%	0	24	Nil
AN334	Avon North	Friday, 19 May 2023	12:36:35	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.57	99.7	0.38	95.3					0.00%	0	0.0%	0	25	Nil
AN337	Avon North	Friday, 26 May 2023	12:22:00	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114					0.00%	0	0.0%	0	26	Nil
AN333	Avon North	Friday, 2 June 2023	12:31:51	0.31	85.1	<0.24	<114	0.34	109.1	<0.24	<114	1.03	100.3	0.69	96.1					0.00%	0	0.0%	0	27	Nil
AN338	Avon North	Tuesday, 6 June 2023	12:31:31	<0.24	<114	<0.24	<114	0.25	106.0	<0.24	<114	0.97	101.5	0.66	97.4					0.00%	0	0.0%	0	28	Nil
AN342	Avon North	Thursday, 8 June 2023	12:39:57	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	1.41	99.0	0.96	94.9					0.00%	0	0.0%	0	29	Nil
AN342	Avon North	Friday, 9 June 2023	12:36:00	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114					0.00%	0	0.0%	0	30	Nil
AN343	Avon North	Friday, 16 June 2023	12:39:50	0.23	85.1	<0.24	<114	0.31	113.7	<0.24	<114	1.22	103.0	0.79	98.5					0.00%	0	0.0%	0	31	Nil
AN339	Avon North	Friday, 23 June 2023	12:32:08	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.50	103.4	0.33	98.9					0.00%	0	0.0%	0	32	Nil
AN344	Avon North	Tuesday, 27 June 2023	12:49:07	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	1.06	112.7	0.72	108.6					0.00%	0	0.0%	0	33	Nil
AN345	Avon North	Friday, 30 June 2023	12:39:53	0.26	85.1	<0.24	<114	<0.24	<114	<0.24	<114	0.91	112.5	0.61	108.2					0.00%	0	0.0%	0	34	Nil
AN346	Avon North	Wednesday, 5 July 2023	12:40:13	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.99	122.1	<0.24	<114					2.86%	1	0.0%	0	35	Nil
AN349	Avon North	Thursday, 6 July 2023	11:12:44	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.44	101.5	0.29	97.3					0.00%	0	0.0%	0	36	Nil
AN347	Avon North	Friday, 7 July 2023	12:31:58	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.28	100.3	0.18	95.9					0.00%	0	0.0%	0	37	Nil
AN350A	Avon North	Wednesday, 12 July 2023	12:54:14	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.58	100.3	0.40	96.3					0.00%	0	0.0%	0	38	Nil
AN350B	Avon North	Thursday, 13 July 2023	10:12:08	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.28	97.4	0.19	93.4					0.00%	0	0.0%	0	39	Nil
AN352	Avon North	Wednesday, 19 July 2023	12:33:33	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.62	108.0	0.41	103.5					0.00%	0	0.0%	0	40	Nil
AN353	Avon North	Friday, 21 July 2023	12:31:12	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.24	102.5	0.16	98.0					0.00%	0	0.0%	0	41	Nil
AN351	Avon North	Thursday, 27 July 2023	12:46:52	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.71	105.4	0.48	101.4					0.00%	0	0.0%	0	42	Nil
AN356	Avon North	Friday, 4 August 2023	12:37:50	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.57	103.9	0.37	99.3					0.00%	0	0.0%	0	43	Nil
AN357	Avon North	Wednesday, 9 August 2023	12:33:56	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	1.15	110.1	0.74	105.5					0.00%	0	0.0%	0	44	Nil
AN359	Avon North	Monday, 21 August 2023	12:42:52	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.46	108.0	0.29	103.2					0.00%	0	0.0%	0	45	Nil
AN360	Avon North	Tuesday, 29 August 2023	12:30:53	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.33	103.9	0.22	99.5					0.00%	0	0.0%	0	46	Nil
AN361	Avon North	Wednesday, 6 September 2023	12:54:20	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	1.21	113.4	0.81	109.2					0.00%	0	0.0%	0	47	Nil
AN363	Avon North	Friday, 15 September 2023	12:35:38	<0.24	<114	<0.24	<114	0.26	103.1	<0.24	<114	1.03	110.1	0.68	105.8					0.00%	0	0.0%	0	48	Nil
AN364	Avon North	Wednesday, 20 September 2023	12:52:42	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.71	104.3	0.48	100.2					0.00%	0	0.0%	0	49	Nil
AN366	Avon North	Thursday, 21 September 2023	12:29:27	<0.24	<114	<0.24	<114	0.30	101.8	<0.24	<114	1.19	104.3	0.81	100.2					0.00%	0	0.0%	0	50	Nil
AN362	Avon North	Thursday, 28 September 2023	12:34:32	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.97	113.3	0.65	109.1					0.00%	0	0.0%	0	51	Nil
AN368	Avon North	Friday, 29 September 2023	12:35:48	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.77	102.5	0.50	98.0					0.00%	0	0.0%	0	52	Nil
AN370	Avon North	Friday, 6 October 2023	12:44:09	<0.24	<114	<0.24	<114	0.34	106.2	<0.24	<114	1.51	116.9	0.97	112.2					0.00%	0	0.0%	0	53	Nil
AN371	Avon North	Tuesday, 10 October 2023	12:38:39	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.47	107.8	0.32	103.7					0.00%	0	0.0%	0	54	Nil
AN372	Avon North	Thursday, 12 October 2023	12:37:24	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.87	116.8	0.58	112.5					0.00%	0	0.0%	0	55	Nil
AN374	Avon North	Thursday, 19 October 2023	12:42:09	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.85	109.9	0.54	105.2					0.00%	0	0.0%	0	56	Nil
AN376	Avon North	Tuesday, 31 October 2023	12:47:58	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	0.58	102.0	0.39	97.9					0.00%	0	0.0%	0	57	Nil
AN377	Avon North	Tuesday, 14 November 2023	12:36:05	0.29	88.6	<0.24	<114	<0.24	<114	<0.24	<114	1.83	100.9	1.23	96.7					0.00%	0	0.0%	0	58	Nil
AN379	Avon North	Thursday, 23 November 2023	11:29:00	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114	<0.24	<114					0.00%	0	0.0%	0	59	Nil
AN378	Avon North	Monday, 27 November 2023	12:37:35	0.25	94.7	<0.24	<114	<0.24	<114	<0.24	<114	1.85	97.4	1.23	93.1					0.00%	0	0.0%	0	60	Nil
AN381	Avon North	Wednesday, 13 December 2023	12:31:21	<0.24	<114	<0.24	<114	0.25	99.3	<0.24	<114	1.13	107.2	0.75	102.9					0.00%	0	0.0%	0	61	Nil

Note 1 Site exceedance, monitored blasts & cumulative exceedances reference blasts between 1/7/20 and most recent blast.
Note 2 Blast exceedance of 115dBL or 5mm/s.
Note 3 Blast exceedance of 120dBL or 10mm/s

**Note: Blast compliance,*

** No more than 5% of total blasts for annual monitoring period to exceed an overpressure of 115dB(L) or ground vibration of 5mm/s.*

** No blast is to exceed an overpressure of 120dB(L) or ground vibration of 10mm/s.*

** SEP Environmental Impact Statement (SCPL, 2012) concluded that vibration velocity at the Aboriginal heritage site CTS-1 is predicted to beless than a nominated archaeological/geological vibration damage criteria of 80 mm/s (SLR Consulting, 2012).*

APPENDIX 6

Noise Monitoring Results

Table 1: Noise Performance Assessment – Operations – 11 & 12 January 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	29	<25	29	35	35	35	Yes	Yes	Yes
Clarke[2,5]	I/A[1]	<30	<30	37	37	37	N/A[5]	N/A[5]	N/A[5]
Wadland[2,5]	27	I/A[1]	<25	37	37	37	N/A[5]	N/A[5]	N/A[5]
Bagnall[3]	24	<16	<20	37	37	37	Yes	Yes	Yes
Hall	I/A[1]	I/A[1]	<25	35	35	35	Yes	Yes	Yes
Lowrey	I/A[1]	29	31	35	35	35	Yes[8]	Yes	Yes
Pryce Jones	I/A[1]	I/A[1]	23	43	43	43	Yes	Yes	Yes
Van der Drift	30	35	33	37	36	35	Yes	Yes	Yes
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.

Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.

Note 3: Modelled result.

Note 4: Not Measurable

Note 5: Criteria adopted as a guide only.

Note 6: Not modelled. Compliance achieved at representative monitoring location therefore noise levels would comply at this receiver, or criteria not applicable due to non-compliant weather conditions.

Note 7: Criteria not applicable due to non-compliant weather conditions.

Table 2: Performance Assessment – Operations – 1, 15 & 16 February 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	32	<25	24	35	35	35	Yes	Yes	Yes
Clarke[2,5]	30[7]	37	38	37	37	37	N/A[5]	N/A[5]	N/A[5]
Wadland[2,5]	I/A[1]	<25	34[7]	37	37	37	N/A[5]	N/A[5]	N/A[5]
Bagnall[3]	18	28	31	37	37	37	Yes	Yes	Yes
Hall	I/A[1]	32[7]	26[7]	35	35	35	Yes	Yes	Yes
Lowrey	I/A[1]	33[7]	<25[7]	35	35	35	Yes[8]	Yes	Yes
Pryce Jones	I/A[1]	31[7]	28[7]	43	43	43	Yes	Yes	Yes
Van der Drift	<30[7]	33[7]	34[7]	37	36	35	Yes	Yes	Yes
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.

Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.

Note 3: Modelled result.

Note 4: Not Measurable

Note 5: Criteria adopted as a guide only.

Note 6: Not modelled. Compliance achieved at representative monitoring location therefore noise levels would comply at this receiver, or criteria not applicable due to non-compliant weather conditions.

Note 7: Criteria not applicable due to non-compliant weather conditions.

Table 3: Performance Assessment – Operations – 23, 24 & 30 March 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	I/A[1]	30	I/A[1]	35	35	35	Yes	Yes	Yes
Clarke[2,4]	I/A[1]	I/A[1]	35	37	37	37	N/A[4]	N/A[4]	N/A[4]
Wadland[2,4]	I/A[1]	34	33[5]	37	37	37	N/A[4]	N/A[4]	N/A[4]
Bagnall	-	31[3]	28[3]	37	37	37	Yes	Yes	Yes
Hall	I/A[1]	30	25	35	35	35	Yes	Yes	Yes
Lowrey	<25	27	<25	35	35	35	Yes	Yes	Yes
Pryce Jones	<25	29	I/A[1]	43	43	43	Yes	Yes	Yes
Van der Drift	<25	<30	25	37	36	35	Yes	Yes	Yes
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 4: Performance Assessment – Operations – 18 & 19 April 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	27	I/A[1]	40[5]	35	35	35	Yes	Yes	Yes
Clarke[2,4]	I/A[1]	42[5]	42[5]	37	37	37	N/A[4]	N/A[4]	N/A[4]
Wadland[2,4]	I/A[1]	34[5]	32[5]	37	37	37	N/A[4]	N/A[4]	N/A[4]
Bagnall	-	33[3]	33[3]	37	37	37	Yes	Yes	Yes
Hall	I/A[1]	32	27	35	35	35	Yes	Yes	Yes
Lowrey	I/A[1]	31[5]	32[5]	35	35	35	Yes	Yes	Yes
Pryce Jones	I/A[1]	31	26	43	43	43	Yes	Yes	Yes
Van der Drift	32	27	30[5]	37	36	35	Yes	Yes	Yes
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 5: Performance Assessment – Operations – 15 & 16 May 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	29	28	32	35	35	35	Yes	Yes	Yes
Clarke[2,4]	29[5]	35[5]	33	37	37	37	N/A[4]	N/A[4]	N/A[4]
Wadland[2,4]	<30[5]	29[5]	28	37	37	37	N/A[4]	N/A[4]	N/A[4]
Bagnall	17[3]	<29[3]	25[3]	37	37	37	Yes	Yes	Yes
Hall	I/A	<30	25	35	35	35	Yes	Yes	Yes
Lowrey	I/A	32[5]	34[5]	35	35	35	Yes	Yes	Yes
Pryce Jones	I/A	<25	25	43	43	43	Yes	Yes	Yes
Van der Drift	<25	32[5]	35[5]	37	36	35	Yes	Yes	Yes
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 6: Performance Assessment – Operations – 27 & 28 June 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	32	<25	38[5]	35	35	35	Yes	Yes	N/A[5]
Clarke[2,4]	32	44[5]	43[5]	37	37	37	N/A[4]	N/A[4]	N/A[4]
Wadland[2,4]	<25	33[5]	32[5]	37	37	37	N/A[4]	N/A[4]	N/A[4]
Bagnall	<22[3]	35[3,5]	35[3,5]	37	37	37	Yes	N/A[5]	N/A[5]
Hall	<25	29	30	35	35	35	Yes	Yes	Yes
Lowrey	I/A[1]	32	34[5]	35	35	35	Yes	Yes	N/A[5]
Pryce Jones	31	<25	31	43	43	43	Yes	Yes	Yes
Van der Drift	26	32[5]	35[5]	37	36	35	Yes	N/A[5]	N/A[5]
Greenwood	24	I/A[1]	21	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 7: Performance Assessment – Operations – 26 & 27 July 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	28	26	34[5]	35	35	35	Yes	Yes	N/A[5]
Clarke[2,4]	32	44[5]	48[5]	37	37	37	Yes	N/A[4]	N/A[4]
Wadland[2,4]	27	37[5]	42[5]	37	37	37	Yes	N/A[4]	N/A[4]
Bagnall	23[3]	36[3,5]	39[3,5]	37	37	37	Yes	N/A[5]	N/A[5]
Hall	28	32	34	35	35	35	Yes	Yes	Yes
Lowrey	I/A[1]	28	30	35	35	35	Yes	Yes	Yes
Pryce Jones	I/A[1]	32	25	43	43	43	Yes	Yes	Yes
Van der Drift	33	32[5]	36[5]	37	36	35	Yes	N/A[5]	N/A[5]
Greenwood	I/A[1]	26	21	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 8: Performance Assessment – Operations – 29, 30 & 31 August 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	I/A[1]	25	28	35	35	35	Yes	Yes	Yes
Clarke[2,4]	I/A[1]	36[5]	48[5]	37	37	37	Yes	N/A[4,5]	N/A[4,5]
Wadland[2,4]	I/A[1]	28[5]	33[5]	37	37	37	Yes	N/A[4,5]	N/A[4,5]
Bagnall	I/A[1]	28[3,5]	33[3,5]	37	37	37	Yes	N/A[5]	N/A[5]
Hall	I/A[1]	25	20	35	35	35	Yes	Yes	Yes
Lowrey	<25	26	25	35	35	35	Yes	Yes	Yes
Pryce Jones	I/A[1]	28	28	43	43	43	Yes	Yes	Yes
Van der Drift	29	30	25	37	36	35	Yes	Yes	Yes
Greenwood	I/A[1]	20	21	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 9: Performance Assessment – Operations – 26 & 27 September 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	I/A[1]	I/A[1]	34[5]	35	35	35	Yes	Yes	N/A[5]
Clarke[2,4]	32[5]	39[5]	40[5]	37	37	37	N/A[4,5]	N/A[4,5]	N/A[4,5]
Wadland[2,4]	<30[5]	31[5]	29[5]	37	37	37	N/A[4,5]	N/A[4,5]	N/A[4,5]
Bagnall	30[3,5]	31[3,5]	32[3,5]	37	37	37	N/A[5]	N/A[5]	N/A[5]
Hall	I/A[1]	I/A[1]	28	35	35	35	Yes	Yes	Yes
Lowrey	I/A[1]	25	30	35	35	35	Yes	Yes	Yes
Pryce Jones	I/A[1]	I/A[1]	22	43	43	43	Yes	Yes	Yes
Van der Drift	I/A[1]	31	34[5]	37	36	35	Yes	Yes	N/A[5]
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 10: Performance Assessment – Operations – 25 & 26 October 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	I/A[1]	<25	30	35	35	35	Yes	Yes	Yes
Clarke[2,4]	34	34	30	37	37	37	N/A[4,5]	N/A[4,5]	N/A[4,5]
Wadland[2,4]	<30	20	26	37	37	37	N/A[4,5]	N/A[4,5]	N/A[4,5]
Bagnall[3]	<29	23	23	37	37	37	N/A[5]	N/A[5]	N/A[5]
Hall	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes
Lowrey	<30	<30	29	35	35	35	N/A[5]	Yes	N/A[5]
Pryce Jones	I/A[1]	I/A[1]	I/A[1]	43	43	43	Yes	Yes	Yes
Van der Drift	I/A[1]	31	30	37	36	35	Yes	Yes	N/A[5]
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 11: Performance Assessment – Operations – 13 & 14 November 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	<25	I/A[1]	<25	35	35	35	N/A[5]	Yes	Yes
Clarke[2,4]	I/A[1]	29	29	37	37	37	N/A[4]	N/A[4]	N/A[4]
Wadland[2,4]	I/A[1]	<25	25	37	37	37	N/A[4]	N/A[4,5]	N/A[4]
Bagnall[3]	I/A[1]	21	21	37	37	37	Yes	N/A[5]	Yes
Hall	I/A[1]	I/A[1]	25	35	35	35	Yes	Yes	Yes
Lowrey	<30	<30	29	35	35	35	Yes	N/A[5]	Yes
Pryce Jones	I/A[1]	I/A[1]	34	43	43	43	Yes	Yes	Yes
Van der Drift	35	36	29	37	36	35	Yes	N/A[5]	Yes
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

Table 12: Performance Assessment – Operations – 5, 12 & 13 December 2023 Survey

Location	Estimated SMC LAeq(15minute) Noise Level dBA			Noise Criteria LAeq(15minute) dBA			Compliance		
	Day	Eve	Night	Day	Eve	Night	Day	Eve	Night
Atkins	I/A[1]	I/A[1]	<25	35	35	35	Yes	Yes	Yes
Clarke[2,4]	<30	33	31	37	37	37	N/A[4]	N/A[4]	N/A[4]
Wadland[2,4]	I/A[1]	<25	22	37	37	37	N/A[4]	N/A[4]	N/A[4]
Bagnall[3]	<18	22	20	37	37	37	Yes	Yes	Yes
Hall	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes
Lowrey	I/A[1]	32	24	35	35	35	Yes	N/A[4]	Yes
Pryce Jones	I/A[1]	I/A[1]	30	43	43	43	Yes	Yes	Yes
Van der Drift	31	34	30	37	36	35	N/A[4]	N/A[4]	Yes
Greenwood	I/A[1]	I/A[1]	I/A[1]	35	35	35	Yes	Yes	Yes

Note 1: I/A = Inaudible.
Note 2: Owned by Stratford Coal Pty Ltd. Criteria adopted from Bagnall.
Note 3: Modelled result.
Note 4: Criteria adopted as a guide only.
Note 5: Criteria not applicable due to non-compliant weather conditions.

SMC Real-Time Noise Monitoring Response Register

** Register of alarms when the real-time monitoring system detects any potential exceedance of noise limits (NMP Section 7.3.3)*

Alarm Description			Validate Data	Source Identification	Management Strategy	Review	
Alarm Date/Time	Name/Location	What Performance Indicator has been exceeded?	Review of Meteorological Data (Does the noise criteria	Review of real-time audio to determine mine contribution. Identify main contributing noise source.	Management measure taken, i.e. Additional mitigation measures applied or ceasing of activities.	Review of real-time data to determine whether the management strategy has resulted in a discernible noise	OCE report comments
8:00:10 PM Wednesday, 4 January 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
10:45:10 PM Wednesday, 4 January 2023	Craven	RedNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
12:00:10 AM Thursday, 5 January 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
6:45:10 PM Wednesday, 11 January 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
6:45:10 PM Thursday, 12 January 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
12:00:10 AM Tuesday, 17 January 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
12:45:10 AM Tuesday, 17 January 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
8:15:10 PM Thursday, 19 January 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
8:15:10 PM Monday, 23 January 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
9:30:10 PM Monday, 23 January 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
3:00:10 AM Tuesday, 24 January 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
7:15:10 PM Tuesday, 24 January 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
7:30:10 PM Tuesday, 24 January 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
10:45:10 PM Tuesday, 24 January 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
12:00:10 AM Wednesday, 25 January 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
12:45:10 AM Wednesday, 25 January 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
7:15:10 PM Monday, 30 January 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
11:30:10 PM Monday, 30 January 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers using low gears on exposed dumps	No Audible Mine Noise	
7:45:10 PM Tuesday, 7 February 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
11:30:10 PM Wednesday, 15 February 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
6:45:10 PM Monday, 20 February 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:15:10 PM Tuesday, 21 February 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
8:15:10 PM Wednesday, 22 February 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
8:30:10 PM Wednesday, 22 February 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
1:15:10 AM Thursday, 23 February 2023	Craven	RedNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
8:00:10 PM Monday, 27 February 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:15:10 PM Wednesday, 1 March 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
11:45:10 PM Monday, 6 March 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:15:10 PM Tuesday, 7 March 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
8:15:10 PM Tuesday, 7 March 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
10:45:10 PM Tuesday, 7 March 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:30:10 PM Wednesday, 8 March 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
10:30:10 PM Wednesday, 8 March 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
10:45:10 PM Thursday, 9 March 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
11:30:10 PM Thursday, 9 March 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
8:00:10 PM Tuesday, 14 March 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
11:15:10 PM Tuesday, 14 March 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:45:10 PM Wednesday, 15 March 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:15:10 PM Thursday, 16 March 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
8:30:10 PM Thursday, 16 March 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
9:30:10 PM Thursday, 16 March 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
9:45:10 PM Thursday, 16 March 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
12:30:10 AM Thursday, 23 March 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
6:45:10 PM Thursday, 23 March 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
11:00:10 PM Thursday, 23 March 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
11:30:10 PM Thursday, 23 March 2023	Craven	RedNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:15:10 PM Monday, 27 March 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
10:15:10 PM Monday, 27 March 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
11:45:10 PM Monday, 27 March 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:30:10 PM Tuesday, 28 March 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
9:30:10 PM Tuesday, 28 March 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:15:10 PM Wednesday, 29 March 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:30:10 PM Wednesday, 29 March 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
6:45:10 PM Thursday, 30 March 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
8:00:10 PM Thursday, 30 March 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:30:10 PM Thursday, 6 April 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:15:10 PM Wednesday, 12 April 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:30:10 PM Wednesday, 12 April 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:45:10 PM Wednesday, 26 April 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:45:10 PM Tuesday, 2 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
8:30:10 PM Tuesday, 2 May 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
7:15:10 PM Wednesday, 3 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
1:15:10 AM Monday, 8 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
9:45:10 PM Monday, 8 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
10:15:10 PM Monday, 8 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
10:30:10 PM Monday, 8 May 2023	Craven	RedNCraven	Yes	External Noise Source	Nil Required - Noise bunds where possible, Dozers operating on dumps - Limiting noise with horn	No Audible Mine Noise	
11:00:10 PM Monday, 8 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Tuesday, 9 May 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:30:10 PM Tuesday, 9 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
12:30:10 AM Tuesday, 9 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:00:10 PM Thursday, 18 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
6:45:10 PM Monday, 22 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
9:45:10 PM Monday, 22 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
6:45:10 PM Tuesday, 23 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Tuesday, 23 May 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
9:00:10 PM Tuesday, 23 May 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
11:45:10 PM Tuesday, 23 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
6:45:10 PM Wednesday, 24 May 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:45:10 PM Wednesday, 24 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:15:10 PM Wednesday, 24 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
6:45:10 PM Thursday, 25 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:00:10 PM Thursday, 25 May 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
9:30:10 PM Thursday, 25 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:45:10 PM Thursday, 25 May 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
11:30:10 PM Thursday, 25 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:00:10 PM Tuesday, 30 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:45:10 PM Tuesday, 30 May 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:30:10 PM Tuesday, 30 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:45:10 PM Tuesday, 30 May 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:15:10 PM Tuesday, 30 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
11:30:10 PM Tuesday, 30 May 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Wednesday, 31 May 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:45:10 PM Wednesday, 31 May 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:30:10 PM Thursday, 1 June 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:00:10 PM Tuesday, 6 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
9:15:10 PM Tuesday, 6 June 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Wednesday, 7 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:45:10 PM Wednesday, 7 June 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:15:10 PM Wednesday, 7 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
9:00:10 PM Wednesday, 7 June 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
9:45:10 PM Wednesday, 7 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:15:10 PM Wednesday, 7 June 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Thursday, 8 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:45:10 PM Thursday, 8 June 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
6:45:10 PM Tuesday, 13 June 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:00:10 PM Tuesday, 13 June 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
9:30:10 PM Tuesday, 13 June 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:30:10 PM Tuesday, 13 June 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
11:30:10 PM Thursday, 15 June 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Monday, 19 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:15:10 PM Monday, 19 June 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:45:10 PM Monday, 19 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
12:45:10 AM Tuesday, 20 June 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Tuesday, 20 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:15:10 PM Tuesday, 20 June 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
6:45:10 PM Wednesday, 21 June 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:15:10 PM Wednesday, 21 June 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:45:10 PM Thursday, 29 June 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
11:30:10 PM Thursday, 29 June 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
6:45:10 PM Tuesday, 4 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Thursday, 6 July 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Monday, 10 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:00:10 PM Monday, 10 July 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Tuesday, 11 July 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
10:30:10 PM Tuesday, 11 July 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
11:45:10 PM Tuesday, 11 July 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
12:00:10 AM Wednesday, 12 July 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Wednesday, 12 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:30:10 PM Wednesday, 12 July 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:00:10 PM Wednesday, 12 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
11:15:10 PM Wednesday, 12 July 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
12:00:10 AM Thursday, 13 July 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
6:45:10 PM Thursday, 13 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Thursday, 13 July 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
9:15:10 PM Thursday, 13 July 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:15:10 PM Monday, 17 July 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
8:15:10 PM Monday, 17 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	
7:45:10 PM Tuesday, 18 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trucks	No Audible Mine Noise	

6:45:10 PM	Wednesday, 19 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
6:45:10 PM	Thursday, 20 July 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:15:10 PM	Thursday, 20 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
9:45:10 PM	Thursday, 20 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
10:30:10 PM	Thursday, 20 July 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
11:30:10 PM	Thursday, 20 July 2023	Craven	RedNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:00:10 PM	Wednesday, 26 July 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
10:45:10 PM	Tuesday, 1 August 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:00:10 PM	Wednesday, 2 August 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:45:10 PM	Wednesday, 2 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
11:00:10 PM	Wednesday, 2 August 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:15:10 PM	Tuesday, 8 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:15:10 PM	Wednesday, 9 August 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:15:10 PM	Wednesday, 9 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:30:10 PM	Thursday, 10 August 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:15:10 PM	Thursday, 17 August 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
9:45:10 PM	Thursday, 17 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:00:10 PM	Monday, 21 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
11:30:10 PM	Monday, 21 August 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
11:45:10 PM	Monday, 21 August 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:15:10 PM	Tuesday, 22 August 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:45:10 PM	Tuesday, 22 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
9:45:10 PM	Tuesday, 22 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
11:00:10 PM	Tuesday, 22 August 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
9:00:10 PM	Thursday, 24 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:45:10 PM	Monday, 28 August 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
10:45:10 PM	Monday, 28 August 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:45:10 PM	Wednesday, 30 August 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
10:15:10 PM	Thursday, 31 August 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:15:10 PM	Thursday, 14 September 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
6:45:10 PM	Tuesday, 19 December 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:00:10 PM	Tuesday, 19 December 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
6:45:10 PM	Tuesday, 19 September 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:00:10 PM	Tuesday, 19 September 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
8:30:10 PM	Tuesday, 19 September 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
12:00:10 AM	Wednesday, 20 December 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:15:10 PM	Wednesday, 20 September 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
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8:30:10 PM	Tuesday, 26 September 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
9:00:10 PM	Thursday, 28 September 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:30:10 PM	Tuesday, 3 October 2023	Craven	RedECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:15:10 PM	Wednesday, 4 October 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
12:15:10 AM	Thursday, 5 October 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:00:10 PM	Thursday, 12 October 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:15:10 PM	Tuesday, 17 October 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
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11:45:10 PM	Thursday, 2 November 2023	Craven	AmberNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
10:15:10 PM	Thursday, 9 November 2023	Craven	RedNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
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12:00:10 AM	Wednesday, 22 November 2023	Craven	GreenNCraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:15:10 PM	Monday, 27 November 2023	Craven	GreenECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:45:10 PM	Monday, 27 November 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
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8:30:10 PM	Thursday, 21 December 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	
7:00:10 PM	Thursday, 28 December 2023	Craven	AmberECraven	Yes	External Noise Source	Nil Required - Dozers in first gear on exposed area's , Limit noise with hornless systems used Trud	No Audible Mine Noise	

APPENDIX 7

Complaints & CCC Annual Report

Stratford Complaint Summary

Period: 12 Months to December 2023

Total No. of Complaints: 0 (0 noise, 0 air quality, 0 blast overpressure, 0 lighting, 0 other)

Total No. of Complainants:

Date/Time of Complaint	Complainant Location	Method of Complaint	Nature of Complaint	Investigation/Outcome

Stratford Community Consultative Committee (CCC) – 2023 Annual Report

CCC project name:	**Stratford Coal Mining Complex**	Reporting period:	**January 1 to December 31 2023**
Independent chairperson:	**Margaret MacDonald-Hill**	Proponent contact:	**Tom Kirkwood, Environment and Community Superintendent**

1. Executive summary / introduction

The Stratford Community Consultative Committee began in 1995 as part of the consent of the Stratford Coal Mine Development. Following the approval of the Stratford Extension Project in 2015, the committee's role was expanded to cover the Stratford Mining Complex operations of 1,500 hectares situated east of The Bucketts Way between the villages of Stratford and Craven, within the MidCoast Council Local Government Area.

The committee is comprised of:

- Five local community representatives;
- Two MidCoast representatives; one elected councillor and one staff member with a designated councillor alternate;
- Two Stratford Coal representatives with attendance from other personnel as required;
- One independent Chairperson.

2. CCC activities over last 12 months:

- The committee met four times during the reporting period in February, May, August and November and discussed general environmental management and monitoring, operational activities, land management and rehabilitation activities, the upcoming triennial Independent Audit, company reports and community sponsorship and revised DPE CCC guidelines and requirements.

  Planning for mine closure and the Socio-Economic Impact Assessment is well progressed, in tandem with broader community engagement sessions, a new dedicated webpage, appointment of specialist staff to assist and investigation into a potential transition to a renewable energy hub with feasibilities studies currently underway and future land use opportunities are a major focus of the committee's long standing members and residents.

- Attendance at meetings is consistently high with a very occasional apology from members of this dedicated group. The committee has regular attendance from guest speakers.
- Meetings are held on site and the May meeting included a tour of the Cabbage Gum Floodplain Open Forest planting area and the Stratford Rehabilitation lookout.
- The committee meetings are informative and responsive to the members' needs. This committee has existed for almost three decades with original members who are all well informed, respected and known within the area. The collective knowledge base is quite

high and Stratford Coal enjoy an ongoing, good rapport amongst the members, the community and the MidCoast Council beyond the structured meeting schedule. 2023 was another year without any community complaints and vindicates the committee as a clear example of what can be achieved by effective community engagement. It fulfils its purpose under the current Departmental guidelines. All committee members have signed the revised Code of Conduct and Declarations of Interest documents and adopted a Terms of Reference as required by the Department.

3. Key issues

Issue	Actions taken	Next steps
Mine Closure Planning	Consultation with CCC on Socio-economic Impact Assessment – presentation of findings. Dedicated webpage created for mine closure.	Information will support preparation of detailed mine closure planning and guide future consultation with all key stakeholders. Appointment of specialist staff to assist with ongoing community liaison.
Rehabilitation Progress	Agenda item to each meeting. Included on November fact sheet and dedicated webpage.	Updates at quarterly meetings and as required.
MidCoast Council Annual Financial Report on Community Enhancement Funding	Comprehensive Report provided by Council to CCC. (Resolution of Council to allocate 50% of contributions received from Stratford to the Education Fund & 25% of annual contributions for next two years to upgrade facilities within the Stratford area in consultation with committee	Ongoing annual action.

CCC input into allocation of Stratford Community Infrastructure funds	Improvements to park identified and actions implemented.	CCC will be consulted in the distribution of 25% future funding allocation.

4. Focus for next 12 months:

- Continued comprehensive reporting on all company operations, including monitoring and environmental performance, any community complaints/ responses.
- Progress on rehabilitation.
- Progress on mine closure planning and emerging options.

Name of chairperson:	**Margaret MacDonald-Hill**
Date:	January 18 2024

APPENDIX 9

SMC Annual Biodiversity Report 2023

YANCOAL
兖煤澳大利亚有限公司

STRATFORDCOAL
Part of the Yancoal Australia Group

Stratford Mining Complex

Annual Biodiversity Report 2023

FOR THE YEAR ENDING 31 DECEMBER 2023

CONTENTS

LIST OF APPENDICES

1 INTRODUCTION

The Stratford Mining Complex (**SMC**), located in the northern part of the Gloucester Basin NSW, is approximately 10 kilometres (km) south of Gloucester and is owned and operated by Stratford Coal Pty Ltd (**SCPL**), a fully owned subsidiary of Yancoal Australia Limited (**YAL**).

1.1 Scope

In accordance with the Stratford Extension Project (SEP) Development Consent SSD-4966, the proponent (SCPL) is required in accordance with *Schedule 2, Condition 39* to prepare and implement a Biodiversity Management Plan (BMP). This Plan must include:

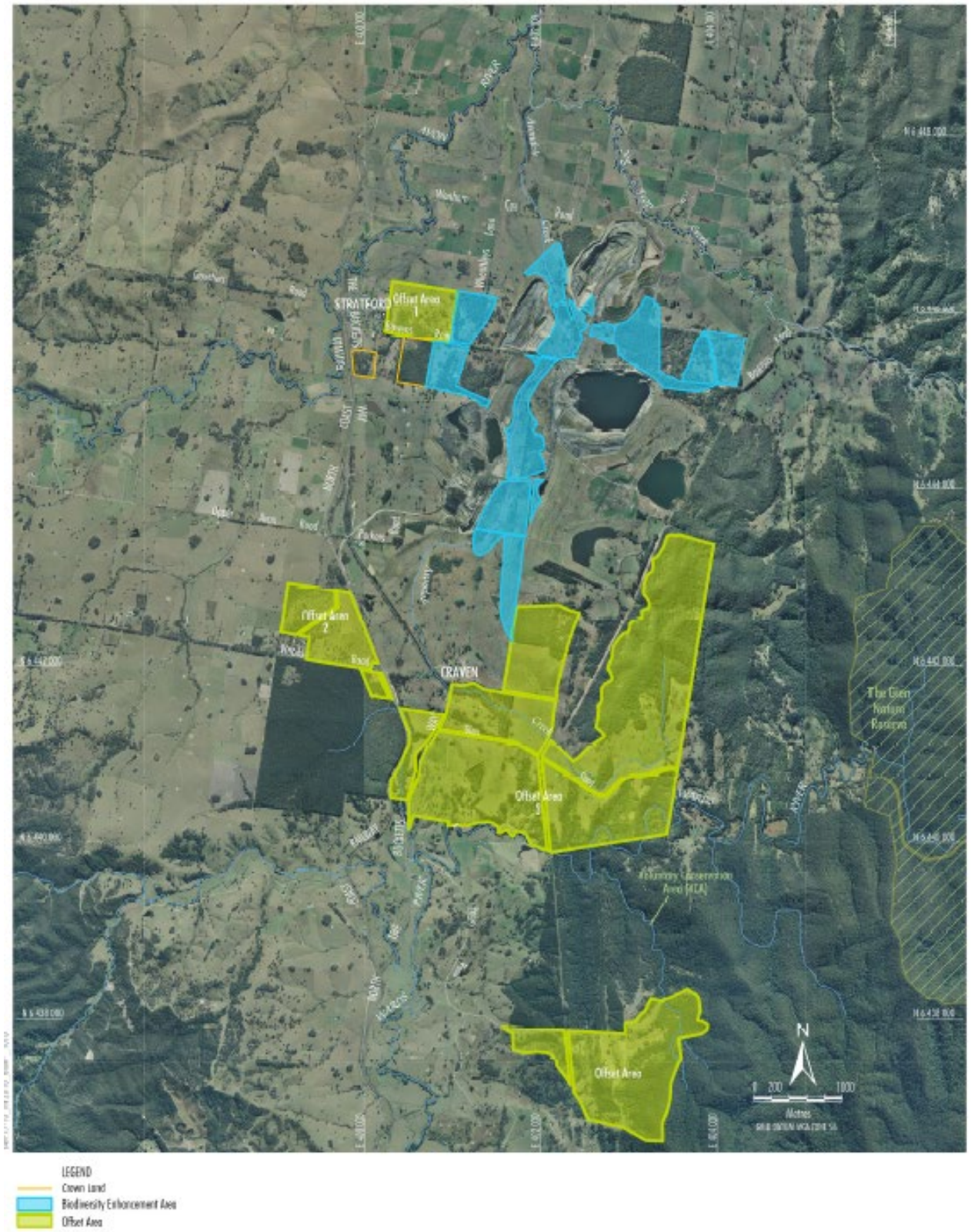
> *"a program to monitor and report on the effectiveness of the measures in the Biodiversity Management Plan, and progress against the detailed performance and completion criteria".*

The BMP was approved by the Department of Planning & Environment (DPE) on 24 February 2023. This is the sixth Annual Biodiversity Report prepared for the SEP. This SMC Annual Biodiversity Report provides a review of the effectiveness of measures in the BMP for the annual year ending 31 December 2023 in accordance with Section 8.2.1 of the BMP. The scope of the review includes the Mining Lease areas, the Biodiversity Offset areas and the Biodiversity Enhancement area as indicated on Plan A.

This report (and associated Appendices) is included as an Appendix of the SMC Annual Review which is available on the Stratford Coal website www.stratfordcoal.com.au.

2 STATUS OF BMP PERFORMANCE CRITERIA

Performance criteria as prescribed in the BMP is presented in **Tables 1 to 9**. The performance criteria have been developed to meet the specific objectives for the areas described in Section 1.2 of the BMP. All performance criteria are linked to the management specifications listed in the BMP Section 4 and Section 5, and monitoring/reporting specifications in the BMP Section 7. The status of BMP performance criteria is provided in the subsequent sections of this report.



STRATFORDCOAL

STRATFORD EXTENSION PROJECT

Biodiversity Offset Areas,
Biodiversity Enhancement Area

Plan A – BMP Figure 3

3 VEGETATION CLEARANCE PROTOCOL

3.1 Vegetation Clearance Report

Vegetation clearance is undertaken in accordance with the BMP Section 4.1 Vegetation Clearance Protocol. Prior to any clearance operations being undertaken a Clearing Plan is prepared, and pre-clearance surveys are undertaken.

During the 2023 reporting period, an exploration program commenced. There was no clearing of native vegetation as part of this program, all drillholes were placed on previously cleared farmland directly next to or on existing light vehicle tracks.

Information obtained during the preparation of the Clearing Plans and the vegetation clearance activities (i.e. habitat features, hollows cleared and fauna observed) is used to determine the requirements for nest box replacement in the Biodiversity Offset and Enhancement Areas (refer to Section 9).

A summary of the habitat features and tree hollows cleared since the commencement of the SEP is included below:

- 2018 – six (6) habitat features including zero (0) tree hollows
- 2019 – forty-two (42) habitat features including nine (9) glider suitable tree hollows and five (5) other hollows
- 2020 H1 – thirty-three (33) habitat features including nineteen (19) glider suitable tree hollows and eleven (11) other hollows
- 2020 H2 – eighteen (18) habitat features including seven (7) glider suitable tree hollows and eleven (11) other hollows
- 2021 – four (4) habitat features all of which were suitable for gliders
- 2022 – Nil.
- 2023 – Nil.

**Note tree hollows are included in the total habitat features reported above.*

3.2 Salvaged and Reused Material for Habitat Enhancement

Section 4.1.4 of the BMP requires salvaged material from vegetation clearance activities to be used for habitat enhancement within the rehabilitation, Biodiversity Offset areas and Biodiversity Enhancement Areas. Habitat features such as trunks, logs, large rocks, branches, stumps and roots are salvaged and relocated where practicable.

The areas cleared in advance exploration drilling in 2023 as described in Section 3.1 were immediately adjacent to roads and had been previously cleared. Minor removal of regrowth saplings, slashing and weed removal were required. No habitat material was suitable for salvage.

4 MANAGING ACCESS, FENCING, GATES AND SIGNAGE

Managing access, fencing, gates and signage is undertaken in accordance with the BMP Section 5.1 and 5.2.

Table 1: Fencing, Gate and Signage Performance and Completion Criteria

Management Action	Performance Criteria			Completion Criteria
	Year 1 (January – December 2018)	Year 2 (January – December 2019)	Year 3 (January – December 2020)	
Review of fencing requirements for offset areas.	Review of fencing complete including development of mapping showing fence and gate types, redundant fences and fences to be retained.	-	-	-
Gate and fence installations	50% of gates and fences installed	Installation of gates and fences complete	-	Gate and fence installations complete. Livestock excluded.
Redundant fence removal	50% of redundant fencing removed	Redundant fences removed	-	No redundant fencing
Installation of signage	-	Installation of signage complete	-	Signage installed

Table 2: Access Track Performance and Completion Criteria

Management Action	Performance Criteria			Completion Criteria
	Year 1 (January – December 2018)	Year 2 (January – December 2019)	Year 3 (January – December 2020)	
Operational review and mapping to facilitate site access for offset management activities.	Operational review developed. Mapping complete	-	-	Operational review and mapping completed
Access track enhancement and maintenance	Enhancement of access tracks undertaken as identified in operational review.	Maintenance of access tracks annually	Maintenance of access tracks annually	-

Legend	Not commenced	In progress	Completed

The implementation of the BMP management measures continued in 2023. The BMP requires works to be undertaken to exclude livestock and control access to the Biodiversity Offset areas and Biodiversity Enhancement Areas.

Following the initial 2018 review of the existing fencing, gates and access tracks, contractors were engaged to implement the removal of redundant fencing and install new fencing where required. Contractors were also engaged to maintain access tracks required for the ongoing management of the Biodiversity Areas.

During the reporting period mapping of fencing and access tracks has been completed to assist with ongoing management of the Biodiversity Areas. During the reporting period the removal of redundant fencing has continued and maintenance of existing fencing has been undertaken as required. Access tracks and previously erected signage have continued to be maintained.

The installation of signage was completed in 2018. All key points of access to the Biodiversity Areas were identified and had signage erected. During the reporting period the need for further signage and locks on gates has been identified to restrict

access to the Biodiversity Areas. An audit of signage was completed in 2023, no repairs or signage replacements were ideintified

5 REVEGETATION MANAGEMENT

5.1 Seed Collection and Propagation

Seed collection and propagation is undertaken in accordance with the BMP Section 4.1.5 and 5.3.

Table 3: Seed Collection and Propagation Performance and Completion Criteria

Management Action	Performance Criteria			Completion Criteria
	Year 1 (January – December 2018)	Year 2 (January – December 2019)	Year 3 (January – December 2020)	
Develop seed collection species list	Species list developed over time.			-
Seed collection	Seed collection commenced	Seed collection to continue	Seed collection to continue	-
Seed propagation	-	Seed propagation commenced	Seed propagation to continue	-

Revegetation in the BMP Revegetation Areas (BMP Management Zone A) will continue via seed and tube-stock. Local endemic (adapted) species are preferentially used where a seed supply is available, however consideration will be given to the use of a high quality seed sourced further from the site as required. An indicative list of flora species proposed to be used in the Revegetation Area (BMP Management Zone A) is provided in the BMP (**Appendix A**).

In preparation for revegetation works each year, SCPL has prepared a scope and schedule for the revegetation works to be implemented (further discussed in Section 5.2). The total volume of seed required was calculated based on the floral listings for the target communities in the BMP appendices.

Gloucester Worimi First Nations Aboriginal Corporation, Wedgetail Project Consulting, Tubeaus, Australian Seed Company and Riverdene Nursery have been engaged to assist in the propagation of native plant species with tube-stock grown under controlled nursery conditions and delivered to site as required for revegetation works in the next reporting period.

5.2 Revegetation and Regeneration

Revegetation management is undertaken in accordance with the BMP Section 5.3 Revegetation Programme. The aim of revegetation is to establish a range of habitat niches including native canopy, and understorey. The Revegetation Area (Management Zone A) in the Biodiversity Areas will be revegetated to substantially increase the area of native vegetation in the area and maximise habitat diversity and a range of successional stages.

Table 4: Revegetation and Regeneration Performance and Completion Criteria

Management Action	Performance Criteria			Completion Criteria
	Year 1 (January – December 2018)	Year 2 (January – December 2019)	Year 3 (January – December 2020)	
Site Planning	Site inspection complete and advice received.	-	-	-
Map Revegetation Areas (Management Zone A) and identify target vegetation communities to establish	Mapping complete and target vegetation communities identified	-	-	-
Develop a species list for each target vegetation community	Species list developed	-	-	-

Management Action	Performance Criteria			Completion Criteria
	Year 1 (January – December 2018)	Year 2 (January – December 2019)	Year 3 (January – December 2020)	
Develop application rates for seeds as well as planting densities for tube stock	Application rates developed	-	-	-
Implement revegetation schedule	Develop revegetation schedule	Implement revegetation schedule	Implement revegetation schedule	-
Revegetation Area (Management Zone A)	Commence revegetation works within the Revegetation Area (Management Zone A) (Figures 12a to 12c)	Continue revegetation works within the Revegetation Area (Management Zone A) (Figures 12a to 12c)	Continue revegetation works within the Revegetation Area (Management Zone A) (Figures 12a to 12c)	Vegetation established and provides suitable habitat for use by native fauna species.
Squirrel Glider Vegetation Pathways (Management Zone A1)	Commence planting *of* flora species which provide habitat for the Squirrel Glider within designated revegetation zones (Figures 12a to 12c)	Continue plantings of flora species which provide habitat for the Squirrel Glider	Continue plantings of flora species which provide habitat for the Squirrel Glider	Squirrel Glider vegetation pathways planted within the indicative area shown on Figures 12a to 12c, and provide connective habitat for the Squirrel Glider.
Allocasuarina spp. Plantings (Management Zone A2)	-	Commence planting of *Allocasuarina* spp. within designated revegetation zones (Figures 12a to 12c)	Complete *Allocasuarina* spp. plantings within Offset Area 3	*Allocasuarina* spp. plantings within the indicative area shown on Figures 12a to 12c, and provide foraging habitat for the Glossy Black-cockatoo
Coastal Floodplain Forest Revegetation (Management Zone A3)	-	-	Re-establishment of flora species characteristic of the Cabbage Gum open forest vegetation community	Improvement in condition of the riparian habitat along Avondale Creek within the indicative area shown on Figures 12a to 12c, as evidenced by monitoring data
Existing Remnant Vegetation (Management Zone B)	Inspection to be undertaken to monitor regeneration.	Inspection to be undertaken to monitor regeneration.	Inspection to be undertaken to monitor regeneration.	-
Power Line Corridor (Management Zone C)*	-N/A	-	-	-

Site Planning & Schedule

During the second half of 2022, a three-year scope and schedule was prepared for the revegetation works to be implemented 2023 – 2026. The proposed revegetation schedule for the Biodiversity Areas in 2024 is included in **Appendix C.** Wedgetail Project Consulting have been engaged to assist with both site planning and implementation of the revegetation works. The site planning included:

- Mapping of the priority revegetation areas and vegetation communities to be completed in 2023 - 2025.
- Calculation of seed and tube-stock requirements based on the indicative lists of flora species in the BMP appendices.

Plans showing the areas revegetated in 2023 are included in **Appendix B** (*2023 Stratford Biodiversity Offsets Planting Program Report, Wedgetail 2023*). These works were implemented during November and December 2022.

Revegetation Implementation

The 2023 revegetation program finished the 2022 autumn revegetation program that was heavily disrupted by the higher-than-average rainfall experienced in late 2021 and throughout most of 2022. The areas revegetated in the autumn of 2023 were the Avondale Creek area in the northern section of the Biodiversity Enhancement Area (approximately 8 ha), a five-hectare section of Offset Area 1 located on the northern boundary of the offsets, and an approximately 17 ha area of Offset

Area 2. Ground preparation work was undertaken prior to tubestock planting and involved slashing by tractor to reduce the biomass and then deep ripping to break the soil surface and provide a soil bed for easier tubestock installation. This was conducted prior to planting at the beginning of April 2023. Plants were installed beginning April 26th and continued through to May 12th.

A total of 14, 950 plants installed across the planting areas. These consisted of 6, 940 canopy stems made up of 12 species and 8, 010 midstorey and shrub species made up of 17 species across two vegetation communities. These were the Spotted Gum – Ironbark Woodland and the Rough-barked Apple Red Gum grassy woodland on floodplain (Cabbage Gum variant), refereed to as Cabbage Gun Woodland.

The next round of tube-stock planting is scheduled to commence in May 2024. Details of the 2024 revegetation works will be included in the next annual biodiversity report.

Monitoring

Vegetation Monitoring commenced in 2019 to assess the effectiveness of revegetation in the Revegetation Area (Management Zone A) and to assess the natural regeneration in the Existing Remnant Vegetation Area (Management Zone B). The data gathered in 2019 serves as a baseline to assess the success of the revegetation efforts.

Vegetation monitoring was undertaken again in April 2023. The full report is included in **Appendix D** (*Stratford Mining Complex 2023 Biodiversity Offsets Strategy Flora Monitoring Report, Wedgetail Project Consulting 2023*). Habitat and vegetation monitoring is discussed further in Section 11. Habitat and vegetation condition monitoring will continue to be undertaken annually to quantitatively measure the change in habitat and vegetation condition over time and to inform any ongoing maintenance requirements.

6 WEED CONTROL AND MONITORING

Weed control is undertaken in accordance with the BMP Section 4.4 and Section 5.6. The weed control program aims to manage weeds to minimise their impact on native flora and fauna.

Table 5: Weed Management Performance and Completion Criteria

Management Action	Performance Criteria			Completion Criteria
	Year 1 (January – December 2018)	Year 2 (January – December 2019)	Year 3 (January – December 2020)	
Monitoring of weed location and density	Mapping of weed extent and density produced	-	-	-
Bi-annual weed inspections and recording	Inspections and records completed	Inspections and records completed	Inspections and records completed	-
Weed control/treatment program	Strategic weed control as required, recording on areas worked and implementation of recommendations			Priority weed infestations appropriately controlled and minimised as evidenced through monitoring data

The general procedure for controlling weed involves:

- Monitoring to identify locations and densities of priority weed;
- Identification of suitable control measures;
- Implementation of the selected control measure by a suitable qualified person; and
- Follow-up inspections to evaluate effective of weed control.

Weed spraying activities are generally undertaken between the months of September and April each year. Physical management measures such as mechanical removal, slashing and/or back-burning can be undertaken at other times of the year as required.

Two contracting companies are engaged at the SMC to undertake weed management activities on an ongoing basis. Weed management during summer 2022/23 was continued following above average rainfall in December 2022 spraying and weed control works continued through autumn. During Winter 2023, Manual weed control programs were implemented in the BRN rehabilitation area and within the Avondale Creek Corridor. Summer 2023/24 Weed spraying programme commenced again during October 2023 and will continue through to Autumn 2024. The weed control activities in 2023 continued to target areas of known weed infestation. The key species targeted included blackberry, lantana, privet, wild tobacco, Giant Parramatta grass and control of the Cadagi Tree.

Weeds mapping has been undertaken during the reporting period to assist in setting future management priorities and developing on-ground actions for weed control (refer to **Appendix H**). Weed control plan, mapping and construction of a weed action plan is scheduled for Q1 2024.

Weeds monitoring to evaluate the effectiveness of control measures is undertaken in conjunction with the annual vegetation monitoring and is documented in **Appendix D** (*Stratford Mining Complex 2023 Biodiversity Offset Strategy Flora Monitoring Report, Wedgetail Project Consulting 2023).*

7 FERAL ANIMAL CONTROL AND MONITORING

Feral animal control is undertaken in accordance with the BMP Section 4.5 and Section 5.7. The objective of the feral animal control program is to manage feral animals to minimise their impact on native flora and fauna in the Biodiversity Offset and Biodiversity Enhancement Areas and/or their impact on agricultural production in other surrounding areas.

Table 6: Feral Animal Management Performance and Completion Criteria

Management Action	Performance Criteria			Completion Criteria
	Year 1 (January – December 2018)	Year 2 (January – December 2019)	Year 3 (January – December 2020)	
Abundance of feral animal species established	Initial study undertaken in the Biodiversity Offset Area and Biodiversity Enhancement Area.	-	-	-
Feral animal control and monitoring	-	Inspections and records completed	-	-
Feral animal control program	Feral animal control as required.			Feral animal numbers within offset areas minimised as evidenced through monitoring data

AMBS was commissioned to undertake the initial invasive animal survey in 2017, in accordance with Section 5.7 of the BMP. The objective of the study was to determine the range and abundance of invasive animals that occur or are likely to occur within the Stratford Mining Lease and Biodiversity Areas and provide recommendations for invasive animal control.

MDP Vertebrate Pest Management has been engaged by SCPL since 2016 to implement wild dog and fox control programs across property owned by SCPL including both the Stratford & Duralie Mining Leases and the Stratford & Duralie Biodiversity Offset Areas. During the reporting period, one feral animal control program was undertaken. The program was conducted between 28 August to 26 September 2023 and focused on wild dog, fox and pig control. The program was productive and successful with a total of 3 wild dogs, 2 foxes and 2 feral cats trapped over the 30-Day program.

During the control programs no non-target species were trapped. Soft jaw wild dog traps were used to trap the targeted pest animals. MDP trap dog & trail camera monitoring was used to find and locate wild dog, fox, and cat signs in the program area for trap placement. The wild dog and fox numbers were moderate in the previous controlled areas of the Stratford/Duralie Mining Lease and Biodiversity Areas which demonstrates the control programs are being successful in having an impact and lowering the numbers and presence of wild dogs and foxes within that area. The program is showing positive results of reducing the impacts of wild dogs, foxes, and cats within the area to the native animals and reducing the impact of livestock attacks to the surrounding agricultural properties.

In accordance with the BMP Section 5.7 follow-up feral animal monitoring surveys would be undertaken every two years. A feral animal survey of the Biodiversity Offset Area and Biodiversity Enhancement Area was undertaken in 2023 to monitor the success of control programs and determine priorities for ongoing control measures. The *2023 Feral Animal Study of the Stratford Mining Complex* (AMBS, 2024) is included as **Appendix E**.

8 BUSHFIRE PREVENTATION AND RISK MANAGEMENT

Bushfire management is undertaken in accordance with the BMP Section 4.7 and Section 5.9. The objective of bushfire management in the Biodiversity Areas is to prevent impacts from unplanned bushfire and to use fire to promote biodiversity.

Table 7: Bushfire Management Performance and Completion Criteria

Management Action	Performance Criteria			Completion Criteria
	Year 1 (January – December 2018)	Year 2 (January – December 2019)	Year 3 (January – December 2020)	
Mapping of Fire Breaks and Trails	Mapping complete	-	-	-
Monitoring of Fuel Loads	Inspections and records completed	Inspections and records completed	Inspections and records completed	-
Controlled Burning	-	Implement (if required)	Implement (if required)	Controlled burns implemented (where required)

Monitoring of fuel loads to evaluate bushfire risk and guide bushfire hazard reduction activities is undertaken in conjunction with the annual vegetation monitoring and was conducted in April 2023. Further detail is included in Section 11 and **Appendix D**.

Bushfire risk has continued to be mitigated through the maintenance and installation of new access tracks and fire breaks within the biodiversity offset areas. Additionally, fuel loads have been reduced during 2023 by slashing were required in the Mining Leases and Biodiversity Areas. During 2023, no hazard reduction burning has been undertaken. Following the revegetation works, the aim is to exclude fire from the offset areas for at least 5 years to allow for tubestock and seedlings to establish.

Section 4.7 of the BMP states SCPL will:

- Ensure that the development is suitably equipped to respond to any fires on site; and
- Assist the Rural Fire Service (RFS), emergency services and National Parks and Wildlife Service as much as possible if there is a fire in the surrounding area.

9 NEST BOX PROGRAMME

Nest box management is undertaken in accordance with the BMP Section 5.10. Nest boxes will be installed to provide habitat opportunities in the short to medium-term for a number of arboreal fauna species including the Squirrel Glider.

Table 8: Nest Box Program Performance and Completion Criteria

Management Action	Performance Criteria			Completion Criteria
	Year 1 (2018)	Year 2 (2019)	Year 3 (2020)	
Nest Boxes – Installation	Nest boxes installed for clearing activities	Installation continued as clearing progresses	Installation continued as clearing progresses	Nest boxes installed as required.
Nest Boxes – Monitoring and Reporting	Quarterly inspections undertaken – undertaken in Year 2	Annual inspection and records completed	Annual inspection and records completed	-
Nest Boxes – Maintenance	-	Maintenance or replacement as required	Maintenance or replacement as required	Nest boxes functioning as designed

Implementation & Installation

The nest box programme described in the BMP Section 5.10, consists of two main components to replace any tree hollows cleared prior to mining activities as described in Section 3 of this report:

- Suitable nest boxes for the Squirrel Glider will be installed at a ratio of least 3:1 for each tree hollow cleared suitable for the Squirrel Glider. Squirrel Glider nest boxes will have a small entrance hole (45-50 millimetres diameter) to exclude larger possums and birds.
- For tree hollows that provide habitat to arboreal fauna species (other than the Squirrel Glider), nest boxes will be installed at a minimum ratio of 1:1 (i.e. one nest box of appropriate size to replace one hollow of similar size and properties). These nest boxes will be provided for birds, bats and arboreal mammals.

Nest boxes will be installed within the Biodiversity Offset Area and Biodiversity Enhancement Area in Existing Remnant Vegetation (Management Zone B) as well as the Revegetation Area (Management Zone A).

As described in Section 3.1, a summary of the habitat features and tree hollows cleared since the commencement of the Stratford Extension Project is included below.

- 2018 – six (6) habitat features including zero (0) tree hollows
- 2019 – forty-two (42) habitat features including nine (9) glider suitable tree hollows and five (5) other hollows
- 2020 H1 – thirty-three (33) habitat features including nineteen (19) glider suitable tree hollows and eleven (11) other hollows
- 2020 H2 – eighteen (18) habitat features including seven (7) glider suitable tree hollows and eleven (11) other hollows
- 2021 – four (4) habitat features all of which were identified to be glider suitable tree hollows
- 2022 – Nil.
- 2023 – Nil

The current nest box program has a total of 202 boxes and involves:

- Five (5) nest boxes targeting Squirrel Glider *(Petaurus norfolcensis),* installed December 2018.
- Twenty-Five (25) nest boxes targeting Squirrel Glider *(Petaurus norfolcensis),* installed May 2019
- Fifty-four (54) nest boxes targeting Squirrel Glider *(Petaurus norfolcensis)* and Sixteen (16) nest boxes targeting a variety of hollow-dependent fauna, installed April 2020.
- Eighty-four (84) nest boxes targeting Squirrel Glider *(Petaurus norfolcensis)* and eighteen (18) nest boxes targeting a variety of hollow-dependent fauna, installed February and March 2021.

Monitoring

In Accordance with section 5.10 of the BMP nest boxes will be monitored by suitably qualified personnel with quarterly inspections during the first year followed by annual inspections in spring. Monitoring reports provide details of the nest box identification number, the tree species on which the box is installed, evidence of use and whether fauna was present. Details on each of the fauna species present within nest boxes is collected (sex, weight, length, breeding status and if it had been a new capture or recapture). Nest box monitoring was undertaken during 13 – 20 February, 18 – 20 September, 9 – 13 October and 20 – 24 November 2023. The *2022-2023 Stratford Annual Nest Box Programme for the Stratford Offset and Biodiversity Enhancement Areas Annual Report* is included as **Appendix F**.

A total of 20 vertebrate species were recorded within nest boxes, or shown signs of previous occupation during the current reporting period, including the Squirrel Glider, Sugar Glider, Feathertail Glider, Common Brushtail Possum, Common Ringtail

Possum, Brush-tailed Phascogale, Brown Antechinus, Bush Rat, Black Rat, Gould's Wattled Bat, Chocolate Wattled Bat, Gould Long-eared Bat, Australian Wood Duck, Eastern Rosella, Australian Owlet-nightjar, White-throated Treecreeper, Green Tree Snake, Lace Monitor, Peron's Tree Frog, and Screaming Tree Frog.
Overall, a total of 200 out of 202 nest boxes, or approximately 99%, have been occupied or shown signs of occupancy since their installation. This includes 100% of the nest boxes installed in 2019, 99% of the nest boxes installed in 2020, and 99% of the nest boxes installed in 2021. Occupancy of nest boxes has generally increased over time.

The next round of annual nest box monitoring will be scheduled for between September – December 2024.

10 SQUIRREL GLIDER MANAGEMENT PLAN

In accordance with Condition 38(a), Schedule 3 of the Development Consent SSD-4966 the management of Squirrel Glider populations is undertaken in accordance with the Squirrel Glider Management Plan (SQMP). The SQMP was approved by the DP&E on 19 October 2018 and includes specific management measures in addition to those in the BMP. The SGMP has been prepared to facilitate the management of squirrel glider populations at the SMC, Biodiversity Enhancement Areas and Biodiversity Offset Areas.

Squirrel Glider management programs which have been commenced include:

- Definition of the Squirrel Glider colonies (SQMP Section 4.1)
- Identification of the Squirrel Glider colony home ranges (SQMP 4.2)
- Tree hollow census within the home ranges (SQMP Section 7.1)
- Nest box program (SQMP Section 7.2), in conjunction with BMP nest box program in Section 9
- Squirrel Glider vegetation pathways (SQMP Section 8.1), in conjunction with BMP revegetation in Section 5
- Squirrel Glider population monitoring (SQMP Section 10.1), in conjunction with BMP fauna monitoring in Section 11.2.

10.1 Definition of the Squirrel Glider Colonies

Kleinfelder was engaged to undertake an initial targeted Squirrel Glider survey to confirm the location of Squirrel Glider colonies within the potential habitat in the vicinity of the SMC Biodiversity Areas, including the previously identified Squirrel Glider colonies and any new colonies which have been established within the areas identified as potential habitat. The surveys will ensure that future monitoring requirements of the SQMP are being implemented at locations of known colony locations.

The initial surveys were undertaken during November to December 2018 and the results are provided in the *Initial Squirrel Glider survey as part of Stratford Coal's Squirrel Glider Management Plan (Kleinfelder, 2018)*. Squirrel gliders were identified at five locations out of the 37 locations surveyed. These locations provided the basis for ongoing survey efforts.

Plate 5 – Squirrel Glider photographed during initial camera trap surveys**.**

10.2 Squirrel Glider Home Ranges

Objectives outlined in Section 4 of the SGMP require measures to establish the home range size of known squirrel glider colonies near the SMC. This information will be used to guide the ongoing management of squirrel glider populations within the SMC Biodiversity Offset Areas and Biodiversity Enhancement Areas. This information will also define the study area for further programs including the census of suitable tree hollows, food resources surveys and habitat enhancement including nest box installations.

Kleinfelder was commissioned by SCPL to conduct a radio tracking program to determine the Squirrel Glider home ranges of the local population based on the colony locations identified in the initial survey.

Two radio tracking programs were conducted between January - April 2019 and July - September 2019 (during the 2019 reporting period). The 2019 radio tracking programs consisted of trapping of Squirrel Gliders, followed by processing and collaring. Generally, two gliders from each colony area were targeted for radio tracking. Radio tracking of the selected gliders was then conducted, followed by analyse of the data and estimating home ranges for each radio-tracked squirrel glider. The findings of the initial survey, radio tracking and home range estimations are provided in previous versions of the SMC Annual Biodiversity Report.

Plate 6 - Radio-transmitting collar fitted to squirrel glider

Plate 7 - Squirrel glider (Sharon) with young

10.3 Tree Hollow Census

Condition 38(b), Schedule 3 of Development Consent SSD-4966 requires a census of suitable tree hollows in home ranges and offset areas suitable for Squirrel Gliders. A tree hollow census was undertaken within the home ranges identified by the radio tracking program (Section 10.2) to identify hollow bearing trees suitable for use as den sites by the Squirrel Glider. The results of the tree hollow census are provided in previous SMC Annual Biodiversity Reports.

11 BIODIVERSITY OFFSET MONITORING AND REPORTING

The Biodiversity Offset monitoring program is prescribed in the BMP Section 7. The program aims to monitor and report on the effectiveness of the BMP management measures and progress against the detailed performance and completion criteria.

Table 9: Monitoring Program – Biodiversity Offset Strategy

Monitoring Program	Relevant BMP Section	Frequency
Visual Monitoring	Section 7.1.1	Annual
Photo Monitoring	Section 7.1.2	Annually (spring)
Habitat and Vegetation Monitoring Program	Section 7.1.3	Annually (spring)
Fauna Monitoring Program	Section 7.1.4	Every three years
Weed Monitoring	Section 5.6	Biannually
Initial Feral Animal Study of the Biodiversity Offset Area and Biodiversity Enhancement Area	Section 5.7	Within 12 months of approval of the BMP
Feral Animal Monitoring	Section 5.7	Every two years
Nest Box Monitoring	Section 5.10	Quarterly for 12 months and then biannually

11.1 Habitat and Vegetation Condition Monitoring

Habitat and vegetation condition monitoring is undertaken to quantitatively measure the change in habitat and vegetation condition over time. The visual monitoring and photo monitoring programs are undertaken concurrently with the vegetation monitoring to provide additional information on the change of the Biodiversity Areas over time and inform maintenance requirements.

Vegetation Monitoring commenced in 2019 to assess the effectiveness of revegetation in the Revegetation Area (Management Zone A) and to assess the natural regeneration in the Existing Remnant Vegetation Area (Management Zone B). The data gathered in 2019 serves as a baseline to assess the success of the revegetation efforts and progress against the project specific performance and completion criteria. This survey was undertaken prior to the revegetation works commencing in the Biodiversity Offset areas.

Vegetation monitoring was undertaken again in April 2023. The full report is included in **Appendix D** (*2023 Stratford Mining Complex Biodiversity Offsets Strategy Flora Monitoring Report, Wedgetail Project Consulting 2024*). Habitat and vegetation condition monitoring will continue to be undertaken annually to quantitatively measure the change in habitat and vegetation condition over time and to inform any ongoing maintenance requirements. Survey results from the 2023 monitoring state that the revegetation program is progressing well with all areas where installation has occurred having some success and well over half the areas achieving or exceeding target densities.

11.2 Fauna Monitoring

Monitoring of fauna usage within the Biodiversity Areas is conducted every three years to document the fauna species response to improvement in vegetation and habitat in the Biodiversity Areas and assess the performance in providing habitat for a range of vertebrate fauna. The surveys include an assessment of habitat complexity, species richness and abundance.

During 2022 AMBS Ecology & Heritage (AMBS) were engaged to undertake a fauna survey within the SMC Biodiversity Offset Areas Biodiversity Enhancement Areas and Stratford Rehabilitation Areas. The full report is included in **Appendix G** (*SMC Fauna Surveys of the Biodiversity Offset, Biodiversity Enhancement and Rehabilitation Areas 2022, AMBS 2023)*. An extracted summary of the survey results is outlined below.

Targeted fauna surveys were undertaken at six sites within the Stratford Offset Areas, two sites within the Stratford Biodiversity Enhancement Area, and two sites within the Stratford Rehabilitation Area, from 7 to 12 November 2022 and 21 to 26 November 2022. At each site survey techniques included pitfall traps, funnel traps, Elliott A traps, harp traps, ultrasonic call recording, spotlighting, diurnal bird surveys and reptile searches. Frog surveys were undertaken at four separate sites. Opportunistic observations of signs of fauna were noted throughout the field survey period, including travel to and during transit between surveys sites.

A total of 166 species of vertebrate were recorded, comprising 15 frogs, 13 reptiles, 100 birds and 38 mammals most of which were native (refer to the species list included as Appendix A of **Appendix G** of this report).

The fauna surveys suggest the Stratford Offset, Biodiversity Enhancement and Rehabilitation Areas provide foraging resources for a range of native vertebrate fauna, including birds, mammals, reptiles and frogs. This includes at least sixteen species listed as threatened or migratory under the *Biodiversity Conservation Act 2016* (BC Act) and/or *Environment Protection and Biodiversity Conservation Act* 1999 (EPBC Act).

Notable survey results included:

- The Squirrel Glider being recorded in five locations, including three sites located in the Offset Areas, and both sites located in the Biodiversity Enhancement Area;
- The New Holland Mouse recorded in the Biodiversity Enhancement Area again (as per 2020 report); and
- The Southern Myotis captured in a harp trap positioned on the Wards River, which contained water during the current surveys. This site was dry during previous surveys undertaken in 2019.

The fauna surveys confirm that the Stratford Offset, Biodiversity Enhancement and Rehabilitation areas provide foraging and breeding habitat for a range of native vertebrate fauna, including birds, mammals, reptiles, and frogs.

Plate 8 - Brush-tailed Phascogale (Phascogale tapoatafa)

Plate 9 – Southern Myotis (*Myotis aelleni*)

12 LONG TERM SECURITY AND CONSERVATION BOND

12.1 Long-term Security

In accordance with *Condition 36, Schedule 3* of Development Consent SSD-4966, SCPL is required to make suitable arrangements for the long-term security of the SEP Biodiversity Offset Area. SCPL has pursued the mechanisms available under section 88E(3) of the NSW *Conveyancing Act, 1919* (CV Act) namely:

- Registration of a Positive Covenant under section 88E(3) of the CV Act; and
- Registration of a Restriction on the Use of Land by a Prescribed Authority under section 88E(3) of the CV Act.

To finalise securing the offset areas, the following actions were conducted:

- Confirmation that the completed instruments are to the satisfaction of the Secretary completed 15 April 2019;
- Execution of the instruments by the prescribed authority (the DP&E);
- Execution of the instruments by the three separate registered proprietors of the offset lands (i.e. Yancoal's subsidiary companies, CIM Stratford Pty Ltd; Stratford Coal Pty Ltd and Gloucester Coal Limited);
- Lodgment of the executed instruments with NSW Land Registry Services (LRS) in accordance with LRS's dealing lodgment requirements;
- LRS assessment/review of the instruments to confirm the instruments are acceptable for registration; and
- Registration of the instruments on the titles of the offset lands.

Public Positive Covenants and Restrictions on the Use of Land for the Biodiversity Offsets have been registered on title with NSW Land and Property Information (LPI) in October 2019. Copies of the executed Positive Covenants and notice of registration of the instruments was included in the 2019 SMC Annual Biodiversity Report.

12.2 Conservation Bond

In accordance with *Condition 40, Schedule 3* of Development Consent SSD-4966, SCPL is required to lodge a Conservation Bond with the DP&E which covers the cost of implementing the Biodiversity Offset Strategy detailed in the BMP.

The conservation bond calculation was prepared by Kleinfelder and a verification of the costs was undertaken by Rider Levett Bucknall. The conservation bond calculation was submitted in January 2019 and subsequently approved by DP&E on 15 January 2019.

The Conservation Bond in the form of a bank guarantee was executed and lodged with DP&E on 8 February 2019. During 2023, Conservation Bond review was commenced by SCPL.

13 COMMONWEALTH EPBC APPROVAL COMPLIANCE REPORTS

In accordance with Condition 10 of EPBC 2011/6176 for the Stratford Extension Project, by 31 March of each year after the commencement of the action, or as agreed with DoEE, SCPL is required to publish a report addressing compliance with the conditions of EPBC 2011/6176 during the previous calendar year, including implementation of any management documents as specified in the conditions of EPBC 2011/6176.

SCPL commenced the action approved under EPBC 2011/6176 on 4 April 2018. The first annual compliance report was submitted in March 2019. The *Stratford Extension Project (EPBC 2011/6176) Annual Compliance Report 2022*, was submitted on 30 March 2023.

Condition 10 also requires reporting on the implementation of the relevant management documents required in accordance with the conditions of EPBC 2011/6176. This SMC Annual Biodiversity Report provides a review of the implementation of the management measures in the BMP for the annual year ending 31 December 2023. This report is included as an Appendix of the SMC Annual Review.

14 APPENDICES

Appendix A: Stratford Mining Complex – Biodiversity Management Plan 2018

Appendix B: Wedgetail Project Consulting - 2023 Stratford Biodiversity Offsets Planting Program Report

Appendix C: Proposed Revegetation Schedule for the SMC Biodiversity Areas 2023-2026

Appendix D: Wedgetail Project Consulting - Stratford Mining Complex 2023 Biodiversity Offsets Strategy Flora Monitoring Report

Appendix E: AMBS Ecology & Heritage – Feral Animal Study of the Stratford Mining Complex 2021

Appendix F: AMBS Ecology & Heritage – Nest Box Programme for the Stratford Offset and Biodiversity Enhancement Areas, Annual Report for 2022-2023 – February 2023

Appendix G: AMBS Ecology & Heritage - SMC Fauna Surveys of the Biodiversity Offset and Biodiversity Enhancement and Rehabilitation Areas 2022 – February 2023

Appendix H: Stratford Mining Complex - Weeds Mapping 2022

(Appendices available on request)

APPENDIX 8

Export Train Summary

Stratford Mining Complex Export Train Summary

Note: Departure from Stratford Rail Loop.

2023	
Departure Date	**Departure time**
Thursday, 12 January 2023	11:14:00 AM
Tuesday, 17 January 2023	15:14:00 PM
Wednesday, 18 January 2023	4:53:00 PM
Thursday, 19 January 2023	8:35:00 AM
Tuesday, 24 January 2023	4:22:00 PM
Monday, 6 February 2023	9:56:00 AM
Friday, 10 February 2023	10:35:00 AM
Wednesday, 15 February 2023	9:30:00 PM
Thursday, 16 February 2023	11:13:00 AM
Monday, 20 February 2023	4:50:00 PM
Tuesday, 21 February 2023	12:40:00 PM
Wednesday, 22 February 2023	11:58:00 PM
Thursday, 23 February 2023	4:55:00 PM
Tuesday, 28 February 2023	8:48:00 PM
Monday, 17 April 2023	12:55:00 PM
Tuesday, 18 April 2023	8:47:00 AM
Tuesday, 18 April 2023	6:40:00 PM
Wednesday, 19 April 2023	8:34:00 AM
Wednesday, 19 April 2023	12:28:00 PM
Thursday, 20 April 2023	7:55:00 AM
Friday, 21 April 2023	11:00:00 AM
Monday, 24 April 2023	9:30:00 AM
Wednesday, 26 April 2023	2:08:00 PM
Thursday, 27 April 2023	2:26:00 PM
Friday, 28 April 2023	12:25:00 PM
Monday, 1 May 2023	8:10:00 AM
Tuesday, 2 May 2023	3:16:00 PM
Wednesday, 3 May 2023	8:53:00 AM
Wednesday, 3 May 2023	1:55:00 PM
Monday, 15 May 2023	9:15:00 AM
Tuesday, 16 May 2023	3:40:00 PM
Wednesday, 17 May 2023	8:33:00 AM
Thursday, 18 May 2023	8:14:00 AM
Friday, 19 May 2023	7:00:00 AM
Monday, 22 May 2023	8:14:00 AM
Thursday, 25 May 2023	10:43:00 AM
Friday, 26 May 2023	11:43:00 AM
Monday, 29 May 2023	2:40:00 PM
Tuesday, 30 May 2023	7:20:00 AM
Thursday, 1 June 2023	11:50:00 AM
Friday, 2 June 2023	9:40:00 AM
Monday, 5 June 2023	8:40:00 AM
Monday, 26 June 2023	11:30:00 AM
Tuesday, 27 June 2023	4:00:00 PM
Thursday, 29 June 2023	3:36:00 PM
Monday, 10 July 2023	9:40:00 AM
Tuesday, 11 July 2023	9:30:00 AM
Friday, 14 July 2023	2:15:00 PM
Tuesday, 8 August 2023	4:12:00 PM
Wednesday, 9 August 2023	8:06:00 AM
Thursday, 10 August 2023	2:26:00 PM
Friday, 11 August 2023	6:20:00 AM
Monday, 14 August 2023	9:50:00 AM
Thursday, 17 August 2023	4:35:00 PM
Thursday, 17 August 2023	7:20:00 PM
Monday, 21 August 2023	7:35:00 AM
Tuesday, 22 August 2023	11:06:00 AM
Wednesday, 23 August 2023	2:36:00 PM
Thursday, 24 August 2023	2:05:00 PM
Thursday, 24 August 2023	9:30:00 PM
Friday, 25 August 2023	9:40:00 AM
Monday, 28 August 2023	10:03:00 AM
Thursday, 31 August 2023	12:42:00 PM
Friday, 1 September 2023	8:15:00 AM

Month	**Number of Movements**
January	5
February	9
March	0
April	11
May	14
June	6
July	3
August	15
September	12
October	18
November	22
December	16
Annual Total	**131**

Monday, 4 September 2023	2:20:00 PM
Wednesday, 6 September 2023	7:38:00 AM
Thursday, 7 September 2023	6:46:00 AM
Monday, 11 September 2023	11:30:00 AM
Tuesday, 12 September 2023	7:54:00 PM
Thursday, 14 September 2023	6:40:00 AM
Thursday, 14 September 2023	11:43:00 AM
Friday, 15 September 2023	11:34:00 AM
Monday, 25 September 2023	11:18:00 AM
Tuesday, 26 September 2023	12:00:00 PM
Thursday, 28 September 2023	9:28:00 AM
Monday, 2 October 2023	6:47:00 AM
Tuesday, 3 October 2023	12:05:00 PM
Friday, 6 October 2023	1:05:00 PM
Monday, 9 October 2023	4:20:00 PM
Tuesday, 10 October 2023	9:25:00 PM
Wednesday, 11 October 2023	1:04:00 AM
Thursday, 12 October 2023	6:45:00 AM
Thursday, 19 October 2023	11:35:00 AM
Thursday, 19 October 2023	4:37:00 PM
Friday, 20 October 2023	11:00:00 AM
Monday, 23 October 2023	10:25:00 AM
Tuesday, 24 October 2023	7:57:00 AM
Wednesday, 25 October 2023	11:45:00 AM
Thursday, 26 October 2023	7:35:00 AM
Monday, 30 October 2023	8:24:00 AM
Monday, 30 October 2023	11:22:00 PM
Tuesday, 31 October 2023	8:20:00 AM
Tuesday, 31 October 2023	12:04:00 AM
Wednesday, 1 November 2023	10:20:00 AM
Wednesday, 1 November 2023	3:00:00 PM
Wednesday, 1 November 2023	1:55:00 AM
Thursday, 2 November 2023	8:04:00 PM
Friday, 3 November 2023	1:40:00 PM
Saturday, 4 November 2023	7:30:00 AM
Sunday, 5 November 2023	4:55:00 PM
Monday, 6 November 2023	4:10:00 PM
Monday, 6 November 2023	7:45:00 PM
Tuesday, 7 November 2023	11:55:00 AM
Tuesday, 7 November 2023	4:28:00 PM
Monday, 13 November 2023	2:00:00 PM
Tuesday, 14 November 2023	3:20:00 PM
Wednesday, 15 November 2023	1:50:00 PM
Thursday, 16 November 2023	6:40:00 AM
Friday, 17 November 2023	8:24:00 AM
Friday, 24 November 2023	8:47:00 AM
Monday, 27 November 2023	8:31:00 PM
Tuesday, 28 November 2023	9:20:00 PM
Wednesday, 29 November 2023	2:44:00 PM
Thursday, 30 November 2023	6:40:00 PM
Thursday, 30 November 2023	2:35:00 PM
Monday, 4 December 2023	08:15:00 AM
Tuesday,5 December 2023	2:56:00 PM
Wednesday,6 December 2023	1:30:00 PM
Thursday , 7 December 2023	11:15:00 AM
Friday ,8 December 2023	9:20:00 AM
Sunday,10 December 2023	6:30:00 AM
Sunday,10 December 2023	10:50:00 AM
Wednesday,12 December 2023	7:45:00 PM
Wednesday, 13 December 2023	12:00:00 PM
Thursday, 14 December 2023	7:15:00 PM
Saturday, 16 December 2023	6:30:00 PM
Sunday, 17 December 2023	7:50:00 AM
Monday, 18 December 2023	7:10:00 AM
Tuesday, 19 December 2023	8:10:00 AM
Wednesday, 20 December 2023	11:48:00 AM
Thursday, 21 December 2023	10:53:00 AM